

Civil Engineering and Development Department

**Agreement No. CE 59/2015 (EP)
Environmental Team for
Tseung Kwan O – Lam Tin Tunnel
Design and Construction**

**Monthly Environmental Monitoring and
Audit Report for May 2017**

(version 1.0)

Approved By



(Dr. Priscilla Choy,
Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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EXECUTIVE SUMMARY

Introduction

1. This is the 7th Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction” (hereinafter called “the Project”). This report documents the findings of EM&A Works conducted in May 2017.
2. During the reporting month, the following works contracts were undertaken:
 - Contract No. NE/2015/01 – Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works;
 - Contract No. NE/2015/02 – Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works;
 - Contract No. NE/2015/03 – Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
4. Summary of the non-compliance in the reporting month for the Project is tabulated in **Table I**.

Table I Non-compliance Record for the Project in the Reporting Month

Environmental Monitoring	No. of Exceedance		No. of Exceedance due to Construction Activities of this Project		Action Taken
	Action Level	Limit Level	Action Level	Limit Level	
Air Quality	0	0	0	0	N/A
Noise	9	0	8	0	Refer to the Appendix O
Groundwater Quality	N/A	N/A	N/A	N/A	N/A (Refer to Part 8, Executive Summary)
Marine Water Quality	0	0	0	0	N/A
Groundwater Level Monitoring (Piezometer Monitoring)	N/A	N/A	N/A	N/A	N/A
Ecological	0	0	0	0	N/A
Cultural Heritage	0	0	0	0	N/A
Landfill Gas	0	0	0	0	N/A

Air Quality Monitoring

5. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

6. All 24-hour TSP monitoring was conducted as scheduled in the reporting month, except that monitoring at Station AM4(A) – Cha Kwo Ling Public Cargo Working Area Administrative Office on 8, 12 and 29 May 2017 were cancelled due to power supply failure. The monitoring were re-scheduled to 10, 22 May and 1 June 2017 respectively. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

7. All noise monitoring was conducted as scheduled in the reporting month. Nine Action Level exceedance was recorded due to the documented complaints received in the reporting month. According to the Event and Action Plan for Construction Noise, monitoring frequency at the concerned monitoring stations was increased to check mitigation effectiveness. No Limit Level exceedance was recorded.

Water Quality Monitoring

8. Groundwater monitoring was conducted as scheduled in the reporting month. According to the information provided by the Contractor, no tunnel boring or tunnel construction works were carried out in both Lam Tin side and Tseung Kwan O side in May 2017. Therefore, monitoring results obtained in the reporting month will be considered as reference for baseline condition.
9. All marine water monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
10. Construction phase daily piezometer monitoring was not carried out in this reporting period as there is no tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan.

Ecological Monitoring

11. 2nd post-translocation coral monitoring survey was carried out on 12 May 2017. No action/limit level of mortality was exceeded in the monitoring survey conducted in May 2017.

Monitoring on Cultural Heritage

12. Monitoring of impacts on Cultural Heritage at Cha Kwo Ling Tin Hau Temple commenced in April 2017. No Alert Alarm and Action (AAA) Level exceedance was recorded in the reporting month.

Landscape and Visual Monitoring and Audit

13. The implementation of landscape and visual mitigation measures was checked during the environmental site inspections. Recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 10.

Landfill Gas Monitoring

14. Monitoring of landfill gases commenced in December 2016 and were carried out by the Contractor at excavation location, Portion III. No Limit Level exceedance was recorded.

Environmental Site Inspection

15. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. The representative of the IEC joined the site inspection on 25 and 31 May 2017. Details of the audit findings and implementation status are presented in Section 10.

Waste Management

16. Wastes generated from this Project include inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediments. Details of waste management data is presented in Section 11 and **Appendix P**.

Key Information in the Reporting Month

17. Summary of key information in the reporting month is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received / Complaint referred by EPD (May 2017)	10	Construction dust and noise nuisance	Investigation completed	Closed	Details refer to App O
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues

18. The future key environmental issues in the coming month include:
- Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
 - Noisy construction activity such as rock-breaking activities and piling works;
 - Runoff from exposed slope or site area;
 - Wastewater and runoff discharge from site;
 - Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
 - Set up and implementation of temporary drainage system for the surface runoff;
 - Storage of chemicals/fuel and chemical waste/waste oil on site;
 - Accumulation and storage of general and construction waste on site; and
 - Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation.

1. INTRODUCTION

- 1.1 Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) as the Environmental Team (ET) to undertake environmental monitoring and auditing services for the Works Contracts involved in the implementation of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) project to ensure that the environmental performance of the Works Contracts comply with the requirements specified in the Environmental Permit (EP), Environmental Monitoring & Audit (EM&A) Manual, Environmental Impact Assessment (EIA) Report of the TKO-LTT project and other relevant statutory requirements. This is the 7th Monthly EM&A report summarizing the EM&A works for the Project in May 2017.

Purpose of the Report

- 1.2 This is the 7th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in May 2017.

Structure of the Report

- 1.3 The structure of the report is as follows:

Section 1: **Introduction** – purpose and structure of the report.

Section 2: **Contract Information** – summarises background and scope of the Contract, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting month.

Section 3: **Air Quality Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 4: **Noise Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 5: **Water Quality Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 6: **Ecological Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and Action and Limit Levels, monitoring results and Event / Action Plans.

Section 7: **Cultural Heritage** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and monitoring results.

Section 8: **Landscape and Visual Monitoring Requirements** – summarises the requirements of landscape and visual monitoring

Section 9: **Landfill Gas Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, monitoring results and Limit Levels and Action Plan

Section 10: **Environmental Site Inspection** – summarises the audit findings of the weekly site inspections undertaken within the reporting month.

Section 11: **Waste Management** – summarises the waste management data in the reporting month.

Section 12: **Environmental Non-conformance** – summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.

Section 13: **Future Key Issues** – summarises the impact forecast and monitoring schedule for the next three months.

Section 14: **Conclusions and Recommendation**

2. PROJECT INFORMATION

Background

- 2.1 In 2002, Civil Engineering and Development Department (CEDD) commissioned an integrated planning and engineering study under Agreement No. CE 87/2001 (CE) “Further Development of Tseung Kwan O – Feasibility Study” (the “TKO Study”) to formulate a comprehensive plan for further development of TKO New Town. It recommended to further develop TKO to house a total population of 450,000 besides the district’s continuous commercial and industrial developments.
- 2.2 At present, the Tseung Kwan O Tunnel is the main connection between Tseung Kwan O (TKO) and other areas in the territory. To cope with the anticipated transport need, the TKO Study recommended the provision of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) (hereinafter referred to as “the Project”) and Cross Bay Link (CBL) to meet the long-term traffic demand between TKO and the external areas. The site layout plan for the Project is shown in **Figure 1**.
- 2.3 The Environmental Impact Assessment (EIA) Report for the TKO-LTT project was approved under the Environmental Impact Assessment Ordinance (EIAO) in July 2013. The corresponding Environmental Permit (EP) was issued in August 2013 (EP no.: EP-458/2013). Variations to the EP was applied and the latest EP (EP no.: EP-458/2013/C) was issued by the Director of Environmental Protection (DEP) in January 2017.
- 2.4 The commencement dates of construction of this Project is:
- Contract No. NE/2015/01 and Contract No. NE/2015/02: 7 November 2016.
 - Contract No. NE/2015/03: 29 May 2017.

Project Organizations

- 2.5 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Civil Engineering and Development Department (CEDD)
 - The Engineer and the Engineer’s Representative (ER) – AECOM
 - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
 - Independent Environmental Checker (IEC) – AnewR Consulting Limited (AnewR)
- 2.6 The key contacts of the Project are shown in **Table 2.1**.

Table 2.1 Key Project Contacts

Party	Role	Contact Person	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Chiang Nin Tat, Eric	2301 1384	2739 0076
AECOM	Engineer’s Representative	Mr. KY Chan	3922 9000	2759 1698
Cinotech	Environmental Team	Dr. Priscilla Choy	2151 2089	3107 1388
		Ms. Ivy Tam	2151 2090	
AnewR	Independent Environmental Checker	Mr. Adi Lee	2618 2836	3007 8648

Construction Activities undertaken during the Reporting Month

2.7 The major site activities undertaken in the reporting month included:

Table 2.2 Summary Table for Major Site Activities in the Reporting Month

Contract No.	Project Title	Site Activities (May 2017)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) Excavation for Tunnel Adit 2) Haul Road Construction 3) EHC2 U-Trough 4) Site Formation – Area 1G1, Area 2, Area 3, Area 4 5) Temp Steel Bridge across Cha Kwo Ling Road & Barging Facility 6) Pipe Pile wall – Area 2A 7) Ground Investigation
		Main Tunnel	1) Tunnel Team Mobilisation Works
		TKO Interchange	1) Haul Road Construction, Site Formation and Slope Works 2) Temporary Barging Facilities & Temporary Works 3) Temporary Cut Slope For BMCP
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Site Clearance 2) Hoarding Erection 3) Pre-bored and Sheet Piling Works for Construction of Temporary Cofferdam 4) Installation of Temporary Steel Cofferdam 5) Installation of Double Water Gate 6) Construction of Retaining Wall 7) E&M Works of DSD transformation room	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	1) Excavating channel for piling works 2) UU Diversion 3) Soldier Pier 4) East Pier Trial Pit	

2.8 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in **Table 2.3**.

Table 2.3 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Table 2.2	Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting activities • Properly cover the stockpiles • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge • Use of quiet plant and well-maintained construction plant • Provide movable noise barrier

Status of Environmental Licences, Notification and Permits

2.9 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.4**.

Table 2.4 Summary of the Status of Environmental Licences, Notification and Permits

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Environmental Permit (EP)				
N/A	EP-458/2013/C	20/1/2017	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation				
NE/2015/01	EPD Ref no.: 405305	21/07/2016	N/A	Valid
	EPD Ref no.: 405582	28/07/2016	N/A	Valid
NE/2015/02	EPD Ref no.: 406100	12/08/2016	N/A	Valid
NE/2015/03	EPD Ref no.: 416072	26/04/2017	N/A	Valid
Billing Account for Construction Waste Disposal				
NE/2015/01	Account No. 7025431	11/07/2016	N/A	Valid
NE/2015/01	Account No. 7027764	10/05/2017	N/A	Valid
NE/2015/02	Account No. 7025654	16/08/2016	N/A	Valid
NE/2015/03	Account No. 7026805	30/12/2016	N/A	Valid
Registration of Chemical Waste Producer				
NE/2015/01	Waste Producer No. 5218-290-L2881-02	22/08/2016	N/A	Valid
	Waste Producer No. 5213-833-L2532-03	22/08/2016	N/A	Valid
NE/2015/02	Waste Producer No. 5213-838-C4094-01	19/08/2016	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance				
NE/2015/01	WT00025806-2016	22/11/2016	30/11/2021	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
	WT00026212-2016	25/11/2016	30/11/2021	Valid
	WT00027354-2017	22/03/2017	31/03/2022	Valid
	WT00027405-2017	22/03/2017	31/03/2022	Valid
NE/2015/02	WT00026386-2016	15/12/2016	31/12/2021	Valid
	WT00027226-2017	23/02/2017	28/02/2022	Valid
NE/2015/03	WT00027295-2017	20/03/2017	18/04/2019	Valid
	WT00027266-2017	08/03/2017	18/04/2019	Valid
Construction Noise Permit (CNP)				
NE/2015/01	GW-RE1211-16	24/12/2016	22/06/2017	Valid
	GW-RE0154-17	08/03/2017	05/09/2017	Valid
	GW-RE0191-17	20/03/2017	19/09/2017	Valid
	GW-RE0224-17	26/03/2017	25/06/2017	Valid
	GW-RE0267-17	08/04/2017	07/05/2017	Expired on 7 May 2017
	GW-RE0365-17	08/05/2017	07/06/2017	Valid
NE/2015/02	GW-RE1141-16	06/12/2016	17/05/2017	Expired on 17 May 2017
	GW-RE1208-16	23/12/2016	22/06/2017	Valid
	GW-RE0049-17	01/02/2017	31/07/2017	Valid
	GW-RE0097-17	15/02/2017	14/08/2017	Valid
	GW-RE0281-17	13/04/2017	02/10/2017	Valid
	GW-RE0317-17	29/04/2017	28/06/2017	Valid
Marine Dumping Permit				
NE/2015/02	EP/MD/17-118	01/12/2016	31/05/2017	Expired on 31 May 2017
	EP/MD/17-174	31/05/2017	30/09/2017	Valid

Summary of EM&A Requirements

- 2.10 The EM&A programme requires construction noise monitoring, air quality monitoring, water quality monitoring, environmental site audit, etc. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental mitigation measures, as recommended in the Project EIA Report.
- 2.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 10 of this report.
- 2.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the monitoring parameters of the required environmental monitoring works and audit works for the Project in May 2017.

3. AIR QUALITY

Monitoring Requirements

- 3.1 According to EM&A Manual of the Project, 1-hour and 24-hour TSP monitoring are required to monitor the air quality. For regular impact monitoring, a sampling frequency of at least once in every six days shall be undertaken at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.2 Six designated monitoring stations were selected for air quality monitoring programme. **Table 3.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 3.1 Locations for Air Quality Monitoring

Monitoring Stations	Location	Location of Measurement
AM1	Tin Hau Temple	Ground Level
AM2	Sai Tso Wan Recreation Ground	Ground Level
AM3	Yau Lai Estate Bik Lai House	Rooftop (41/F)
AM4 ⁽¹⁾	Sitting-out Area at Cha Kwo Ling Village	Ground Level
AM4(A) ^{(2) (*)}	Cha Kwo Ling Public Cargo Working Area Administrative Office	Rooftop (3/F)
AM5(A) ^(*)	Tseung Kwan O DSD Desilting Compound	Ground Level
AM6(A) ^(*)	Park Central, L1/F Open Space Area	1/F

Remarks: (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring
(*) Air quality monitoring at designated station AM4(24-hr TSP), AM5 and AM6 was rejected by the premise owners. Therefore, baseline and impact air quality monitoring works were carried out at alternative air quality monitoring stations AM4(A) (24-hr TSP only), AM5(A) and AM6(A) respectively.

Monitoring Equipment

- 3.3 High Volume Samplers (HVS) were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined periodically by HVS to check the validity and accuracy of the results measured by direct reading method.
- 3.4 Wind data monitoring equipment was set at rooftop (about 41/F) of Yau Lai Estate Bik Lai House for logging wind speed and wind direction such that the wind sensors are clear of obstructions or turbulence caused by building. The wind data monitoring equipment is re-calibrated at least once every six months and the wind directions are divided into 16 sectors of 22.5 degrees each. The location is shown in **Figure 2**.
- 3.5 **Table 3.2** summarizes the equipment to be used in the air quality monitoring. Copies of calibration certificates are attached in **Appendix B**.

Table 3.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	TISCH Model: TE-5025A	1
1-hour TSP Dust Meter	Sibata Model No.: LD-3 / LD-3B	2
	Met One Instruments Model No.: AEROCET-531	0
	Handheld Particle Counter Hal-HPC300 / Hal-HPC301	6
HVS Sampler	TISCH Model: TE-5170	1
	GMW Model: GS2310	5
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	1

Monitoring Parameters and Frequency

- 3.6 **Table 3.3** summarizes the monitoring parameters, monitoring period and frequencies of air quality monitoring.

Table 3.3 Frequency and Parameters of Air Quality Monitoring

Monitoring Stations	Parameter	Frequency
AM1, AM2, AM3, AM4, AM5(A) and AM6(A)	1-hour TSP	3 times per 6 day
AM1, AM2, AM3, AM4(A), AM5(A) and AM6(A)	24-hour TSP	Once per 6 days

Monitoring Methodology

1-hour TSP Monitoring

Measuring Procedures

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

(Model LD3 / LD3B)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

(AEROCET-531)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Remove the red rubber cap from the AEROCET-531 inlet nozzle.
- Turn on the power switch that is located on the right side of the AEROCET-531.
- On power up the product intro screen is displayed for 3 seconds. The intro screen displays the product name and firmware version.
- Then the main counter screen will be displayed.
- Press the START button. Internal vacuum pump start running. After 1 minute the pump will stop and the 0.5 μ m and 5 μ m channels will show the cumulative counts of particles larger than 0.5 μ m and 5 μ m per cubic foot.
- The AEROCET-531 is now checked out and ready for use.
- To switch off the AEROCET-531 power to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, and display value and site condition were recorded during the monitoring period.

(Equipment: Hal Technology; Model no. Hal-HPC300)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to “ON” and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

3.8 The following maintenance/calibration is required for the direct dust meters:

- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

3.9 High volume samplers (HVS) (TISCH Model: TE-5170) complete with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

3.10 The positioning of the HVS samplers are as follows:

- a horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
- no two samplers shall be placed less than 2 meter apart
- the distance between the sampler and an obstacle, such as buildings, must be at least twice

- the height that the obstacle protrudes above the sampler;
- a minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;
 - a minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
 - no furnace or incinerator flue is nearby;
 - airflow around the sampler is unrestricted;
 - the sampler is more than 20 metres from the dripline;
 - any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
 - permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
 - a secured supply of electricity is needed to operate the samplers.

Operating/analytical procedures for the operation of HVS

- 3.11 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 3.12 For TSP sampling, fiberglass filters with a collection efficiency of > 99% for particles of 0.3µm diameter were used.
- 3.13 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 3.14 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 3.15 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 3.16 The shelter lid was closed and secured with the aluminum strip.
- 3.17 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 3.18 After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time will be also recorded.
- 3.19 Before weighing, all filters was equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

- 3.20 The following maintenance/calibration is required for the HVS:
- The high volume motors and their accessories will be properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking will be made to ensure that the equipment and necessary power supply are in good working condition.
 - High volume samplers will be calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

- 3.21 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 3.22 All 24-hour TSP monitoring was conducted as scheduled in the reporting month, except that monitoring at Station AM4(A) – Cha Kwo Ling Public Cargo Working Area Administrative Office on 8, 12 and 29 May 2017 were cancelled due to power supply failure. The monitoring were re-scheduled to 10, 22 May and 1 June 2017 respectively. No Action/Limit Level exceedance was recorded.
- 3.23 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer at rooftop of Yau Lai Estate Bik Lai House (41/F). The location is shown in **Figure 2**. This weather information for the reporting month is summarized in **Appendix C**.
- 3.24 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix E** and **Appendix F** respectively.
- 3.25 The summary of exceedance record in reporting month is shown in **Appendix K**. No exceedance was recorded for the air quality monitoring.
- 3.26 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Table 3.4 Major Dust Source during Air Quality Monitoring

Station	Major Dust Source
AM1 – Tin Hau Temple	Road Traffic at Cha Kwo Ling Road
AM2 – Sai Tso Wan Recreation Ground	N/A
AM3 – Yau Lai Estate Bik Lai House	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
AM4 - Sitting-out Area at Cha Kwo Ling Village	Road Traffic at Cha Kwo Ling Road
AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office	Road Traffic at Cha Kwo Ling Road
AM5(A) - Tseung Kwan O DSD Desilting Compound	Vehicle Movement within the Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area	Road Traffic at Po Yap Road

4. NOISE

Monitoring Requirements

- 4.1 According to EM&A Manual of the Project, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 4.2 Noise monitoring was conducted at 8 designated monitoring stations (CM1, CM2, CM3, CM4, CM5, CM6(A), CM7(A), CM8(A)) in the reporting period. **Table 4.1** and **Figure 3** show the locations of these stations.

Table 4.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	Rooftop (41/F)
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Rooftop (41/F)
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Rooftop (40/F)
CM4	Tin Hau Temple, Cha Kwo Ling	Ground Level
CM5	CCC Kei Faat Primary School, Yau Tong	Rooftop (6/F)
CM6(A)*	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	Ground Level
CM7(A)*	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	Ground Level
CM8(A)*	Park Central, L1/F Open Space Area	1/F

Remarks: * Noise monitoring at designated station CM6, CM7 & CM8 was rejected by the premise owners. Therefore, baseline and impact noise monitoring works were carried out at alternative noise monitoring stations CM6(A), CM7(A) and CM8(A) respectively.

Monitoring Equipments

- 4.3 Integrating Sound Level Meter was used for impact noise monitoring. The meters are Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 4.2** summarizes the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix B**.

Table 4.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVAN 955 / 957 / 977	7
	BSWA 801	1
Calibrator	SV30A	2
	Brüel & Kjær 4231	1

- 4.4 **Table 4.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

Table 4.3 Frequency and Parameters of Noise Monitoring

Monitoring Stations	Parameter	Period	Frequency	Measurement
CM1	L ₁₀ (30 min) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade
CM2				Façade
CM3				Façade
CM4	L ₉₀ (30 min) dB(A)			Façade
CM5	Façade			
CM6(A)	L _{eq} (30 min) dB(A)			Free Field
CM7(A)	Free Field			
CM8(A)	Façade			

Monitoring Methodology and QA/QC Procedure

- 4.5 The monitoring procedures are as follows:
- The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
 - For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).
 - The battery condition was checked to ensure the correct functioning of the meter.
 - Parameters such as frequency weighting, the time weighting and the measurement time was set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - measurement time : 30 minutes
 - Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement will be more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
 - At the end of the monitoring period, the L_{eq}, L₉₀ and L₁₀ was recorded. In addition, noise sources was recorded on a standard record sheet.
 - Noise monitoring will be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. Supplementary monitoring was provided to ensure sufficient data would be obtained.

Maintenance and Calibration

- 4.6 The microphone head of the sound level meter and calibrator was cleaned with a soft cloth at quarterly intervals.
- 4.7 The sound level meter and calibrator was checked and calibrated at yearly intervals.
- 4.8 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

- 4.9 All noise monitoring was conducted as scheduled in the reporting month. Nine Action Level exceedance was recorded due to the documented complaints received in the reporting month. No Action/Limit Level exceedance was recorded.
- 4.10 Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 4.11 The summary of exceedance record in the reporting month is shown in **Appendix K**.
- 4.12 The major noise source identified at the noise monitoring stations are shown in **Table 4.4**.

Table 4.4 Major Noise Source during Noise Monitoring

Monitoring Stations	Locations	Major Noise Source
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM4	Tin Hau Temple, Cha Kwo Ling	Road Traffic at Cha Kwo Ling Road
CM5	CCC Kei Faat Primary School, Yau Tong	Road Traffic at Yau Tong Road
CM6(A)	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	Road Traffic at O King Road near Ocean Shores
CM7(A)	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	Road Traffic at Tong Yin Street
CM8(A)	Park Central, L1/F Open Space Area	Road Traffic at Po Yap Road

- 4.13 All the Construction Noise Levels (CNLs) reported in this report were adjusted with the corresponding baseline level (i.e. Measured L_{eq} – Baseline L_{eq} = CNL), in order to facilitate the interpretation of the noise exceedance. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 4.5**.

Table 4.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Station	Baseline Noise Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)	Noise Limit Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)
CM1	65.5	75
CM2	63.6	
CM3	65.6	
CM4	62.0	
CM5	68.2	70*
CM6(A)	61.9	75
CM7(A)	58.3	
CM8(A)	69.1	

(*) Noise Limit Level is 65 dB(A) during school examination periods.

Updated Construction Noise Assessment

- Contract No. NE/2015/01, Contract No. NE/2015/02 and Contract No. NE/2015/03
- 4.14 No update of Construction Noise Assessment in the reporting period. Any updated Construction Noise Assessment will be shown in **Appendix S**.

5. WATER QUALITY

Monitoring Requirements

Groundwater Quality

- 5.1 Groundwater quality monitoring shall be conducted as identified in the EIA report (locations refer to Figure 4, Stream 1 to 3). According to the EM&A Manual, dissolved oxygen (DO), pH, temperature, turbidity, suspended solids (SS), 5-day biochemical oxygen demand (BOD₅), Total organic carbon (TOC), Total Nitrogen, Ammonia-N and Total Phosphate are the parameters for the monitoring. **Appendix A** shows the established Action and Limit Levels.
- 5.2 As stated in the Baseline Environmental Monitoring Plan submitted to EPD in September 2016, Groundwater quality monitoring could not be conducted at the other identified monitoring station in the EIA Report, Stream 4, as it was found to be not accessible due to safety reason. EPD has no further comment on the Plan in October 2016.

Marine Water Quality

- 5.3 Marine water quality monitoring was conducted three times per week at the designated monitoring stations. Monitoring took place two times per monitoring day during mid ebb and mid flood tides at three depths (1 meter from surface, mid depth and 1 meter from the bottom). For Tseung Kwan O Salt Water Intake (i.e. Station M6), water sampling and in situ measurements was taken at the vertical level where the water abstraction point of the intake is located (i.e. approximately mid-depth level). If the water depth is less than 6m, the mid-depth measurement may be omitted. If the depth is less than 3m, only the mid-depth measurements need to be taken.
- 5.4 Duplicate in-situ measurements (Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity) and water samples (suspended solids (SS)) at each depth were monitored in accordance with the requirements in the EM&A Manual. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides were not less than 0.5m.

Groundwater Level Monitoring (Piezometer Monitoring)

- 5.5 Daily piezometer monitoring at any time of the day shall be carried throughout the whole period when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan. The monitoring has not commenced in this reporting period.

Monitoring Locations

Groundwater Quality

- 5.6 Stream 1 – Stream 3 is designated for the groundwater quality monitoring according to EM&A Manual. The locations are also summarized in **Table 5.1** and shown on **Figure 4**.

Table 5.1 Groundwater Quality Monitoring Stations

Monitoring Streams	Descriptions	Sampling Location
Stream 1	Stream running between the Kwong Tin Estate and Lei Yue Mun Road	1 sampling location for each stream
Stream 2	Stream on western coast of Chiu Keng Wan	
Stream 3	Stream on western coast of Chiu Keng Wan	

Marine Water Quality

- 5.7 A total of twelve monitoring stations are designated for the water quality monitoring program according to EM&A Manual. The locations are also summarized in **Table 5.2** and shown on **Figure 5**.

Table 5.2 Marine Water Quality Monitoring Stations

Monitoring Stations	Descriptions	Coordinates	
		Easting	Northing
M1	Junk Bay Coral Site – Junk Bay near Chiu Keng Wan	844255	817565
M2	Junk Bay Coral Site – Junk Bay	844076	817087
M3	Junk Bay Coral Site – Junk Island	844491	817890
M4	Junk Bay Coral Site – Chiu Keng Wan	843209	816416
M5	Junk Bay Coral Site – Fat Tong Chau	845463	815769
M6	Tseung Kwan O Salt Water Intake	845512	817442
C1	Control Station – Southeast	844696	814773
C2	Control Station – Northwest	842873	816014
G1	Gradient Station	844418	817560
G2	Gradient Station	844290	817384
G3	Gradient Station	844488	817735
G4	Gradient Station	844967	817551

Monitoring Equipments

- 5.8 For in-situ monitoring, a multi-parameter meter (Aquaread AP-2000-D) was used to measure Dissolved oxygen (DO) concentration, DO saturation (DO %), pH, temperature and turbidity. A sampler was used to collect water samples for laboratory analysis of SS, BOD₅, TOC, Total Nitrogen, Ammonia-N and Total Phosphate.

Dissolved Oxygen (DO) and Temperature Measuring Equipment

- 5.9 The instrument for measuring dissolved oxygen and temperature was portable and weatherproof complete with cable, sensor, comprehensive operation manuals and use DC power source. It was capable of measuring:
- a dissolved oxygen level in the range of 0-20 mg/L and 0-200% saturation; and
 - a temperature of 0-45 degree Celsius.
- 5.10 It has a membrane electrode with automatic temperature compensation complete with a cable.
- 5.11 Sufficient stocks of spare electrodes and cables were available for replacement where necessary.

5.12 Salinity compensation was built-in in the DO equipment.

Turbidity

5.13 Turbidity was measured in situ by the nephelometric method. The instrument was portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment was capable of measuring turbidity between 0-1000 NTU. The probe cable was not be less than 25m in length.

pH

5.14 The instrument was consisting of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It was readable to 0.1pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 were used for calibration of the instrument before and after use.

Water Depth Detector

5.15 A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

Water Sampler

5.16 Water samples collected for laboratory analysis were stored in high density polythene bottles sample containers, with appropriate preservatives added. All sampling bottles were labeled (waterproof) with the sampling date and time, sample lot number and sampling location reference number to avoid mishandling.

Sample Container and Storage

5.17 Following collection, water samples for laboratory analysis were stored in high density polythene bottles, with preservative appropriately added where necessary. They will be packed in ice (cooled to 4°C without being frozen), delivered to the laboratory and analysed as soon as possible.

Calibration of In Situ Instruments

5.18 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring.

5.19 For the on-site calibration of field equipment, the BS 1427:1993, "Guide to Field and on-site test methods for the analysis of waters" was observed.

5.20 Before each round of monitoring, a zero check in distilled water was performed with the turbidity probe of Aquaread AP-2000-D. The probe was then be calibrated with a solution of known NTU.

5.21 Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also being made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.

5.22 **Table 5.3** summarizes the equipment used in the water quality monitoring program. Copies of the calibration certificates of the equipment are shown in **Appendix B**.

Table 5.3 Water Quality Monitoring Equipment

Equipment	Model and Make	Qty.
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	1
Multi-parameter Water Quality System	YSI 6820-C-M	0
	Aquaread AP-2000-D	2
	YSI EXO1 Multiparameter Sondes	0
Monitoring Position Equipment	“Magellan” Handheld GPS Model GPS-320	1
Water Depth Detector	Fishfinder 140	1

Monitoring Parameters and Frequency

5.23 **Table 5.4** summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring in the reporting period.

Table 5.4 Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameters, unit	Depth	Frequency
Groundwater Quality			
Stream 1- Stream 3	<ul style="list-style-type: none"> • DO, mg/L • DO Saturation, % • pH • Water Temperature (°C) • Turbidity, NTU • SS, mg/L • BOD₅, mg O₂/L • TOC, mg-TOC/L • Total Nitrogen, mg/L • Ammonia-N, mg NH₃-N/L • Total Phosphate, mg-P/L 	Mid-depth	Biweekly (When the tunnel construction works are found within 50m of the location, weekly.)
Marine Water Quality			
M1 M2 M3 M4 M5 M6 C1 C2 G1 G2 G3 G4	<p><i>In-situ:</i> Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity</p> <p><u>Laboratory Testing:</u> Suspended Solids (SS)</p>	<p><u>M1-M5, C1-C2, G1-G4</u></p> <ul style="list-style-type: none"> • 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. • If the water depth is less than 3m, mid-depth sampling only. • If the water depth is less than 6m, omit mid-depth sampling. <p><u>M6</u></p> <ul style="list-style-type: none"> • at the vertical level where the water abstraction point of the intake is located(i.e. approximately mid-depth level) 	<p>3 days per week / 2 per monitoring day (1 for mid-ebb and 1 for mid-flood)</p>

Monitoring MethodologyGroundwater Quality

5.24 At each monitoring location, two consecutive in-situ measurements for DO concentration,

DO saturation, pH, temperature and turbidity were taken for water samples on site. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

- 5.25 For SS, BOD₅, TOC, Total Nitrogen, Ammonia-N and Total Phosphate, measurement and grab samples of surface water was collected. Water samples of about adequate volume was collected and stored in high density polythene bottles. Following collection, water samples was stored in high density polythene bottles. Preservation H₂SO₄ was appropriately added for water samples for TOC, Total Nitrogen, Ammonia-N and Total Phosphate testing. Water samples was packed in ice and cooled to 4°C (without being frozen), delivered to the HOKLAS accredited laboratory, Wellab Limited and analyzed.

Marine Water Quality

- 5.26 The monitoring stations were accessed using survey boat by the guide of a hand-held Global Positioning System (GPS). The depth of the monitoring location was measured using depth meter in order to determine the sampling depths. Afterwards, the probes of the in-situ measurement equipment was lowered to the predetermined depths (1 m below water surface, mid-depth and 1 m above seabed) and the measurements was carried out accordingly. The in-situ measurements at predetermined depths was carried out in duplicate. In case the difference in the duplicate in-situ measurement results was larger than 25%, the third set of in-situ measurement would be carried out for result confirmation purpose.
- 5.27 Water sampler was lowered into the water to the required depths of sampling. Upon reaching the pre-determined depth, a messenger to activate the sampler was then released to travel down the wire. The water sample was sealed within the sampler before retrieving. At each station, water samples for SS at three depths (1 m below water surface, mid-depth and 1 m above seabed) were collected accordingly. Water samples were stored in a cool box and kept at less than 4°C but without frozen and sent to the laboratory as soon as possible.

Laboratory Analytical Methods

- 5.28 The testing of all parameters were conducted by Wellab Ltd. (HOKLAS Registration No.083) and comprehensive quality assurance and control procedures in place in order to ensure quality and consistency in results. The testing method and limit of reporting are provided in **Table 5.5**.

Table 5.5 Methods for Laboratory Analysis for Water Samples

Parameters (Unit)	Proposed Method	Reporting Limit	Detection Limit
SS (mg/L)	APHA 2540 D	0.5 mg/L ⁽¹⁾	0.5 mg/L
BOD ₅ (mg O ₂ /L)	APHA 19ed 5210B	2 mg O ₂ /L	--
TOC (mg-TOC/L)	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L	--
Total Nitrogen (mg/L)	In-house method SOP063 (FIA)	0.6 mg/L	--
Ammonia-N (mg NH ₃ -N/L)	In-house method SOP057 (FIA)	0.05 mg NH ₃ - N/L	--
Total Phosphorus (mg-P/L) ⁽²⁾	In-house method SOP055 (FIA)	0.05 mg-P/L	--

Note:

1) Limit of Reporting is reported as Detection Limit for non-HOKLAS report.

2) Parameter Total Phosphorus represents the laboratory testing for total phosphate content in water which is the sum of all three forms of phosphates in water.

QA/QC Requirements

Decontamination Procedures

- 5.29 Water sampling equipment used during the course of the monitoring programme was decontaminated by manual washing and rinsed clean seawater/distilled water after each sampling event. All disposal equipment was discarded after sampling.

Sampling Management and Supervision

- 5.30 Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.
- 5.31 QA/QC procedures as attached in **Appendix J** are available for the parameters analyzed in the HOKLAS-accredited laboratory, WELLAB Ltd.

Results and Observations

Groundwater Quality Monitoring

- 5.32 All groundwater quality monitoring was conducted as scheduled in the reporting month. Summary of groundwater quality monitoring results is shown in **Table 5.6**. Groundwater monitoring results, graphical presentations and laboratory testing reports are shown in **Appendix H**.

Table 5.6 Summary of Groundwater Quality Monitoring Results

Date	Location	Parameters (unit)								
		pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	SS (mg/L)	BOD ₅ (mg O ₂ /L)	TOC (mg-TOC/L)	Total Nitrogen (mg/L)	NH ₃ -N (mg NH ₃ -N/L)	Total Phosphorus (mg-P/L)
11 May 2017	Stream 1	7.1	8.0	0.7	0.5	<2	4	<0.6	<0.05	<0.05
	Stream 2	7.3	7.9	0.6	0.8	<2	4	1.1	0.41	<0.05
	Stream 3	7.3	8.0	1.3	<0.5	<2	4	0.9	0.35	<0.05
23 May 2017	Stream 1	7.8	8.0	0.7	1.8	<2	3	1.7	<0.05	<0.05
	Stream 2	7.9	7.9	0.7	2.0	<2	3	1.7	<0.05	<0.05
	Stream 3	8.0	8.0	1.1	2.4	<2	3	1.7	<0.05	<0.05

5.33 According to the information provided by the Contractor, no tunnel boring or tunnel construction works were carried out in both Lam Tin side and Tseung Kwan O side in May 2017. Therefore, monitoring results obtained in the reporting month will be considered as reference for baseline condition. Action and Limit Level for groundwater is subjected to be reviewed with consideration of monitoring results obtained in the reporting month.

5.34 Other relevant data was also recorded, such as monitoring location / position, time, sampling depth, weather conditions and any special phenomena or work underway nearby.

Marine Water Quality Monitoring

5.35 All marine water quality monitoring was conducted as scheduled in the reporting month. Marine water monitoring results and graphical presentations are shown in **Appendix I**. Other relevant data was also recorded, such as monitoring location / position, time, sampling depth, weather conditions and any special phenomena or work underway nearby.

5.36 Calculated Action and Limit Levels for Marine Water Quality is presented in **Appendix I**. No exceedance of Action and Limit Levels of marine water quality was recorded during the reporting period.

Groundwater Level Monitoring (Piezometer Monitoring)

5.37 Daily piezometer monitoring at any time of the day shall be carried throughout the whole period when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan.

5.38 Construction Phase Piezometer Monitoring has not commenced in this reporting period.

6. ECOLOGY

Post-Translocation Coral Monitoring

- 6.1 Post-translocation monitoring survey is recommended in the EM&A Manual to audit the success of coral translocation. Information gathered during each post-translocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.
- 6.2 Under Contract No. NE/2015/01 and NE/2015/02, a total of 14 and 29 coral colonies were tagged and translocated respectively from the Donor Site to the Recipient Site in November 2016. Ten (10) corals at the Recipient Site were also tagged by each Contract as reference for post-translocation monitoring.
- 6.3 The post-translocation coral monitoring shall be conducted once every 3 months after completion for a period of 12 months. The second post-translocation coral monitoring was carried out on 12 May 2017.

Monitoring Methodology and Parameters

- 6.4 On 12 May 2017, the post-translocation coral monitoring survey was conducted at the Recipient Site (**Figure 7**) to monitor the health parameters of the translocated coral colonies as well as the tagged, original coral colonies at the Recipient Site.
- 6.5 During the survey, the health conditions of each tagged coral colony was recorded, including percentage cover (%) of (1) sedimentation; (2) bleaching and (3) mortality. The general environmental conditions including weather, sea and tidal conditions of the coral recipient site will also be monitored.
- 6.6 The condition of each tagged coral colony was recorded by taking a photograph from an angle and distance that best represents the entire colony.
- 6.7 The result of the post-translocation monitoring was reviewed with reference to findings of the pre-translocation survey and the data from the tagged, original colonies at the recipient site.
- 6.8 All monitoring exercises were led and conducted by an experienced marine ecologist who is approved by AFCD.

Event and Action Plan

- 6.9 The post-translocation monitoring result was evaluated against Action and Limit Levels presented in **Appendix A**. Evaluation was based on recorded changes in percentage of partial mortality of the corals.
- 6.10 If the defined Action Level or Limit Level for coral monitoring is exceeded, the actions as set out in **Appendix M** will be implemented.
- 6.11 If observations of any die-off / abnormal conditions of the translocated corals are made during the post-translocation monitoring, the ET shall inform the Contractor, IEC and AFCD, and liaise with AFCD to investigate any mitigation measures needed.

Results and Observations

- 6.12 The location of the survey site is shown in **Figure 7**, and survey conditions in **Table 6.1**. The code, species name, area, percentage of sedimentation level, bleaching and mortality of the tagged coral colonies are summarized in **Tables 6.2** and **6.3**. Photographs of the coral colonies, taken on 12 May 2017, are shown in **Appendix T**. The survey team had tried to take photographs of the corals from an angle and distance that best represented the colonies but difficulties sometimes occurred as a result of low water visibility during the surveys.

Table 6.1 Location and Physical attributes of the Coral Recipient Site

Sites	GPS Coordinates	Depth (m)	Visibility (m)	Substrate type	Weather	Tidal Condition	Sedimentation on Hard Substrate? (thickness, mm)	
Recipient Site	Start	N 22°17.333' E 114°14.744'	2.0 – 4.0	1.0 - 2.0	Sand with gravel, rubbles and boulders	Calm; Sunny	Ebbing	YES (<1 – 4)
	End	N 22°17.344' E 114°14.763'						

Tagged Coral colonies under Contract No. NE/2015/01

Tagged, original coral colonies at the Recipient Site

- 6.13 Sedimentation cover on the coral colonies ranged from <1 to 5%, with thickness ~1mm. When compared with baseline data in November 2016, increased sedimentation cover was recorded on three (3) colonies (C07, C09 and C10) by ~5%. No apparent coral bleaching or mortality was recorded.

Translocated coral colonies

- 6.14 Sedimentation cover on the coral colonies ranged from <1 to 10%, with thickness ~1mm. When compared with baseline data in November 2016, increased sedimentation cover was recorded on two (2) colonies (01 and 06) by ~5 to 10%. Increased mortality was recorded on two (2) colonies (02 and 12) by ~5 to 50%, which was similar to the record in the 1st coral monitoring. No apparent coral bleaching was recorded.
- 6.15 It is considered that increased mortality of the two coral colonies (02 and 12) was due to their adaptability to changes in ambient physical conditions (e.g. water current) after coral translocation, and/or direct disturbance caused by coral translocation. High percentage change in mortality was not observed in other tagged or translocated corals, indicating such mortality was not commonly occurred in the tagged or translocated corals, and not due to any nearby construction works.

Tagged Coral colonies under Contract No. NE/2015/02

Tagged, original coral colonies at the Recipient Site

- 6.16 Sedimentation cover on the coral colonies ranged from <1 to 10%, with thickness ~1mm. When compared with baseline data in November 2016, increased sedimentation cover was recorded five (5) colonies (SWJB-2, SWJB-3, SWJB-5, SWJB-9 and SWJB-10) by ~5 to 10%. No apparent coral bleaching or mortality was recorded.

Translocated coral colonies

- 6.17 Sedimentation cover on the coral colonies ranged from <1 to 10%, with thickness ~1mm. When compared with baseline data in November 2016, increased sedimentation cover was recorded on five (5) colonies (TKW-T3, TKW-T9, TKW-T10, TKW-T11 and TKW-T24) by ~5 to 10%.

- 6.18 Coral bleaching was recorded on 2 colonies (TKW-T5 and TKW-T26), and the level of bleaching (<1 to 5%) was more or less the same as the level recorded in baseline survey in November 2016.
- 6.19 Coral mortality was recorded on 6 colonies (TKW-T4, TKW-T12, TKW-T15, TKW-T22, TKW-T23 and TKW-T29), and the level of mortality (5 to 10%) was more or less the same as the level recorded in baseline survey in November 2016.

Table 6.2a. Original Corals under Contract No. NE/2015/01

Code	Coral Species	Size (max. diameter, cm)	Sedimentation, % (thickness, mm)		Bleaching, %		Mortality, %	
			Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)	Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)
C01	<i>Gonipopra stutchburyi</i>	19	<1	<1 (1)	<1	<1	<1	<1
C02	<i>Cyphastrea serailia</i>	26	<1	<1 (1)	<1	<1	<1	<1
C03.	<i>Gonipopra stutchburyi</i>	16	<1	<1 (1)	<1	<1	<1	<1
C04	<i>Cyphastrea serailia</i>	41	<1	<1 (1)	<1	<1	<1	<1
C05	<i>Cyphastrea serailia</i>	29	<1	<1 (1)	<1	<1	<1	<1
C06	<i>Cyphastrea serailia</i>	35	<1	<1 (1)	<1	<1	<1	<1
C07	<i>Cyphastrea serailia</i>	23	<1	<1 (1)	5 (1) ▲	<1	<1	<1
C08	<i>Turbinaria peltata</i>	12	<1	<1 (1)	<1 (1)	<1	<1	<1
C09	<i>Psammocora superficialis</i>	48	<1	4 (1) ▲	5 (1) ▲	<1	<1	<1
C10	<i>Psammocora superficialis</i>	32	<1	<1 (1)	5 (1) ▲	<1	<1	<1

Note: “▲” and “▼” indicate increased and decreased in percentage, respectively, when compared with the baseline data.

Table 6.2b Translocated Corals under Contract No. NE/2015/01.

Code	Coral Species	Size (max. diameter or length, cm)	Sedimentation, % (thickness, mm)		Bleaching, %		Mortality, %	
			Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)	Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)
01	<i>Turbinaria peltata</i>	7	<1	<1 (<1)	5 (<1) ▲	<1	<1	<1
02	<i>Cyphastrea serailia</i>	13	<1	<1 (<1)	<1 (<1)	<1	35	40 ▲
03	<i>Gonipopra stutchburyi</i>	14	<1	<1 (<1)	<1 (<1)	<1	<1	<1
04	<i>Gonipopra stutchburyi</i>	12	<1	<1 (<1)	<1 (<1)	<1	<1	<1
05	<i>Gonipopra stutchburyi</i>	17	<1	<1 (<1)	<1 (<1)	<1	<1	<1
06	<i>Gonipopra stutchburyi</i>	15	<1	<1 (<1)	10 (<1) ▲	<1	<1	<1
07	<i>Gonipopra stutchburyi</i>	6	<1	5 (<1) ▲	<1 (<1)	<1	<1	<1
08	<i>Dendronephthya</i> sp.	10	<1	<1 (<1)	<1 (<1)	<1	<1	<1
09	<i>Menella</i> sp.	13	<1	<1 (<1)	<1 (<1)	<1	<1	<1
10	<i>Echinogorgia</i> sp.	19	<1	<1 (<1)	<1 (<1)	<1	<1	<1
11	<i>Echinomuricea</i> sp.	23	<1	<1 (<1)	<1 (<1)	<1	<1	<1
12	<i>Menella</i> sp.	14	<1	<1 (<1)	<1 (<1)	<1	<1	<1
13	<i>Menella</i> sp.	20	<1	<1 (<1)	<1 (<1)	<1	<1	50 ▲
14	<i>Psammocora superficialis</i>	16	<1	<1 (<1)	<1 (<1)	<1	<1	<1

Note: “▲” and “▼” indicate increased and decreased in percentage, respectively, when compared with the baseline data.

Table 6.3a. Original Corals under Contract No. NE/2015/02.

Code	Coral Species	Size (max. diameter, cm)	Sedimentation, % (thickness, mm)			Bleaching, %			Mortality, %		
			Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)	Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)	Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)
SWJB-1	<i>Plesiastrea versipora</i>	28	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
SWJB-2	<i>Plesiastrea versipora</i>	20	<1 (<1)	<1 (<1)	5 (<1) ▲	<1	<1	<1	<1	<1	<1
SWJB-3	<i>Porites</i> sp.	73	<1 (<1)	<1 (<1)	5 (<1) ▲	<1	<1	<1	<1	<1	<1
SWJB-4	<i>Dipsastraea speciosa</i> *	16	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
SWJB-5	<i>Favites pentagona</i>	17	<1 (<1)	<1 (<1)	5 (<1) ▲	<1	<1	<1	<1	<1	<1
SWJB-6	<i>Plesiastrea versipora</i>	35	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
SWJB-7	<i>Plesiastrea versipora</i>	19	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
SWJB-8	<i>Favites flexuosa</i>	25	<1 (<1)	4 (<1) ▲	<1 (<1)	<1	<1	<1	<1	<1	<1
SWJB-9.	<i>Porites</i> sp.	16	<1 (<1)	<1 (<1)	10 (<1) ▲	<1	<1	<1	<1	<1	<1
SWJB-10	<i>Favites chinensis</i>	61	<1 (<1)	<1 (<1)	5 (<1) ▲	<1	<1	<1	<1	<1	<1

Note: "▲" and "▼" indicate increased and decreased in percentage, respectively, when compared with the baseline data.

* Former name: *Favia speciosa*

Table 6.3b. Translocated Corals under Contract No. NE/2015/02

Code	Coral Species	Size (max. diameter or length, cm)	Sedimentation, % (thickness, mm)			Bleaching, %			Mortality, %		
			Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)	Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)	Baseline (Nov16)	1 st (06Mar17)	2 nd (12May17)
TKW-T1	<i>Favites flexuosa</i>	20	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T2	<i>Gonipoppra stutchburyi</i>	15	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T3.	<i>Porites</i> sp.	12	<1 (<1)	<1 (<1)	5 (<1) ▲	<1	<1	<1	<1	<1	<1
TKW-T4.	<i>Porites</i> sp.	55	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	5	5	5
TKW-T5.	<i>Porites</i> sp.	14	<1 (<1)	<1 (<1)	<1 (<1)	5	5	<1	<1	<1	<1
TKW-T6	<i>Gonipoppra stutchburyi</i>	10	<1 (<1)	4 (<1) ▲	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T7	<i>Gonipoppra stutchburyi</i>	15	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T8	<i>Gonipoppra stutchburyi</i>	6	<1 (<1)	4 (<1) ▲	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T9	<i>Gonipoppra stutchburyi</i>	17	<1 (<1)	5 (<1) ▲	5 (<1) ▲	<1	<1	<1	<1	<1	<1
TKW-T10	<i>Gonipoppra stutchburyi</i>	14	<1 (<1)	10 (<1) ▲	10 (<1) ▲	<1	<1	<1	<1	<1	<1
TKW-T11	<i>Coscinarea</i> sp.	20	<1 (<1)	<1 (<1)	10 (<1) ▲	<1	<1	<1	<1	<1	<1
TKW-T12	<i>Plesiastrea versipora</i>	20	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	5	5	5
TKW-T13	<i>Gonipoppra stutchburyi</i>	16	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T14	<i>Favites magnistellata</i> *	11	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T15	<i>Porites</i> sp.	21	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	5	5	5
TKW-T16	<i>Astrea curta</i> #	10	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T17	<i>Porites</i> sp.	35	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T18	<i>Platygyra acuta</i>	15	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T19	<i>Favites flexuosa</i>	20	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T20	<i>Gonipoppra stutchburyi</i>	10	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T21	<i>Favites magnistellata</i> *	12	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T22	<i>Turbinaria peltata</i>	27	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	5	5	5
TKW-T23	<i>Porites</i> sp.	14	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	10	10	10
TKW-T24	<i>Gonipoppra stutchburyi</i>	20	<1 (<1)	<1 (<1)	5 (<1) ▲	<1	<1	<1	<1	<1	<1
TKW-T25	<i>Plesiastrea versipora</i>	14	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T26.	<i>Gonipoppra stutchburyi</i>	6	<1 (<1)	<1 (<1)	<1 (<1)	10	10	5	<1	<1	<1
TKW-T27	<i>Plesiastrea versipora</i>	18	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	<1	<1	<1
TKW-T28	<i>Porites</i> sp.	20	<1 (<1)	<1 (<1)	<1 (<1)	20	<1	<1	<1	<1	<1
TKW-T29	<i>Astrea curta</i> #	13	<1 (<1)	<1 (<1)	<1 (<1)	<1	<1	<1	10	10	10

Note: "▲" and "▼" indicate increased and decreased in percentage, respectively, when compared with the baseline data.

* Former name: *Montastrea magnistellata*

Former name: *Montastrea curta*

7. CULTURAL HERITAGE

Monitoring Requirement

- 7.1 According to the EP Conditions and EM&A Manual, monitoring of vibration impacts should be conducted when the construction works are less than 100m from the Built Heritage in close proximity of the worksite, namely the Cha Kwo Ling Tin Hau temple. Tilting and settlement monitoring should be applied on the Cha Kwo Ling Tin Hau Temple. Construction works less than 100m from the Cha Kwo Ling Tin Hau temple commenced on 8 April 2017.
- 7.2 As stated in the approved “*Built Heritage Mitigation Plan*” for this Project, during the period of the construction works conducted within 100m from the Cha Kwo Ling Tin Hau Temple, monitoring on settlement and tilting will be conducted once a day for the Cha Kwo Ling. Monitoring of vibration will be conducted during blasting at Cha Kwo Ling area once a day. When there is no blasting to be conducted at the area, vibration monitoring at the Cha Kwo Ling Tin Hau Temple will be conducted once per day when there are piling works or rock breaking works within the 100m from the Cha Kwo Ling Tin Hau Temple.

Monitoring Locations

- 7.3 One (1) vibration monitoring point, one (1) building settlement monitoring point and one (1) building tilting monitoring point are proposed for the vibration impacts monitoring of the construction works. The building settlement marker and the tiltmeter will be placed on the wall of the Cha Kwo Ling Tin Hau Temple and the vibration monitoring point is located within the Cha Kwo Ling Tin Hau Temple.
- 7.4 Confirmation from the Cha Kwo Ling Tin Hau Temple on the installation of these monitoring equipment is yet to be obtained by the Contractor. Vibration monitoring was carried out at a temporary location outside the Cha Kwo Ling Tin Hau Temple in the reporting period. Monitoring Location is shown in **Figure 8**.

Monitoring Equipment

- 7.5 Building settlement should be measured by surveyors via settlement marker and tiltmeter attached to the wall of the Cha Kwo Ling Tin Hau Temple.
- 7.6 Vibration monitoring was conducted by using vibrographs: Minimate Plus manufactured by InstanTel. These vibrographs will be calibrated annually and its performance follows the requirements given in the “*Guidance Note on Vibration Monitoring*” (GN-VM) issued by the Civil Engineering and Development Department, which is based on the Performance Specification for Blasting Seismographs by International Society of Explosive Engineers (ISEE (2000)).
- 7.7 **Table 7.1** summarizes the equipment employed by the Contractor for vibration monitoring. Copies of calibration certificates are attached in **Appendix B**.

Table 7.1 Vibration Monitoring Equipment

Equipment	Manufacturer and Model	Quantity
DNA03 Digital Level for building settlement and tilting	Leica Geosystems Article No.: 723289	1

Vibrographs for vibration monitoring	MiniMate Plus manufactured by InstanTel Model No.: 716A0403	9
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Monitoring Methodology

- 7.8 Vibrograph (velocity seismograph) was deployed at each monitoring station to measure and record the PPV and amplitude of ground motion in three mutually perpendicular directions. Vibration monitoring equipment fulfils the requirements stated in the Government guidelines and is calibrated to HOKLAS standards. Each monitoring would not be more than 10 minutes. Settlement and tilting monitoring should be conducted by surveyors manually.

Alert, Alarm and Action Levels

- 7.9 The Alert, Alarm and Action (AAA) Levels are given in **Table 7.2**.

Table 7.2 AAA Levels for Monitoring for Cultural Heritage

Parameter	Alert Level	Alarm Level	Action Level
Vibration	ppv: 4.5 mm/s	ppv: 4.8 mm/s	ppv: 5mm/s Maximum Allowable Vibration Amplitude: 0.1mm
Building Settlement Markers	6mm	8mm	10mm
Building Tilting	1:2000	1:1500	1:1000

Results

- 7.10 In the reporting month, vibration monitoring was carried out by the Contractor at the aforesaid location on 24 occasions. No AAA Level exceedance for vibration monitoring was recorded in the reporting month. The monitoring results are provided in **Table 7.3**.

Table 7.3 Vibration Monitoring Results

Date	Time	Building Settlement (mm)	Ground Settlement (mm)	Vibration (mm/s)		
				Measurement Direction		
				Tran	Vertical	Longitudinal
2 May 2017	17:14	NA	NA	0.508	1.143	0.254
4 May 2017	17:20	NA	NA	0.889	0.889	0.889
5 May 2017	10:53	NA	NA	0.254	0.508	0.381
6 May 2017	14:22	NA	NA	0.254	0.381	0.254
8 May 2017	13:34	NA	NA	0.381	0.508	0.254
9 May 2017	15:40	NA	NA	0.254	0.381	0.381
10 May 2017	17:27	NA	NA	0.381	0.635	0.254
11 May 2017	15:31	NA	NA	0.381	0.508	0.254
12 May 2017	14:39	+0	+1	0.254	0.762	0.254
13 May 2017	13:34	+1	+0	0.381	0.381	0.254
15 May 2017	17:06	-2	-1	0.254	0.508	0.381
16 May 2017	10:51	Data missing due to technical errors		0.254	0.381	0.254
17 May 2017	09:30	+0	+1	0.381	1.778	0.508
18 May 2017	10:45	+2	+0	0.254	0.381	0.254
19 May 2017	14:17	+0	-1	0.508	0.635	0.381
20 May 2017	16:31	+0	+0	0.175	0.302	0.222

Date	Time	Building Settlement (mm)	Ground Settlement (mm)	Vibration (mm/s)		
				Measurement Direction		
				Tran	Vertical	Longitudinal
22 May 2017	16:30	+0	+0	0.381	0.508	0.381
23 May 2017	13:09	+0	+0	0.254	0.508	0.254
24 May 2017	16:11	Cancelled due to adverse weather		0.127	0.508	0.254
25 May 2017	11:27	+0	+0	0.254	0.508	0.254
26 May 2017	13:41	+0	+1	0.381	0.508	0.254
27 May 2017	15:08	+0	+0	0.381	0.508	0.254
29 May 2017	16:26	-2	+0	0.254	0.381	0.254
31 May 2017	16:25	+2	+0	0.381	0.508	0.381

Note: Installation of equipment for settlement and tilting monitoring is obtained by the Contractor from the Cha Kwo Ling Tin Hau Temple on 12 May 2017.

Mitigation Measures for Cultural Heritage

- 7.11 According to Condition 3.6 of the EP (EP No.: EP-458/2013/C), to prevent damage to Cha Kwo Ling Tin Hau Temple and its fung Shui rocks (Child-given rocks) during the construction phase, a temporarily fenced-off buffer zone (Rocks buffer zone is 5 m from the edge of Rocks and 15m from the edge of Rocks alter) with allowance for public access (minimum 1 m) around the temple and the fung shui rocks shall be provided. The open yard in front of the temple should be kept as usual for annual Tin Hau festival.
- 7.12 As there is a large buffer distance from the current works to Cha Kwo Ling Tin Hau Temple and the fung Shui rocks (Child-given rocks), the temporarily fenced-off rocks buffer zone and from the edge of Rocks alter is not required. The fenced-off rocks buffer zone would be implemented when there is construction activities in vicinity of the cultural heritage.

8. LANDSCAPE AND VISUAL IMPACT REQUIREMENTS

- 8.1 Landscape and visual mitigation measures during the construction phase shall be checked to ensure that they are fully realized and implemented on site.
- 8.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures. The summaries of site audits are attached in **Appendix L**.
- 8.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.

9. LANDFILL GAS MONITORING

Monitoring Requirement

- 9.1 In accordance with the EM&A Manual, monitoring of landfill gas is required for construction works within the Sai Tso Wan Landfill Consultation Zone during the construction phase. This section presents the results of landfill gas measurements performed by the Contractor. **Appendix A** shows the Limit Levels for the monitoring works.
- 9.2 The “Landfill Gas Monitoring Proposal”, including the monitoring programme and detailed actions, is submitted to the EPD for approval. Details of monitoring in this Proposal is in line with the monitoring requirements stipulated in the EM&A Manual.

Monitoring Parameters and Frequency

- 9.3 Monitoring parameters for Landfill gas monitoring include Methane, Carbon dioxide and Oxygen.
- 9.4 According to the implementation schedule and recommended mitigation measures of the EM&A Manual, measurements of the following frequencies should be carried out:

Excavations deeper than 1m

- at the ground surface before excavation commences;-
- immediately before any worker enters the excavation;
- at the beginning of each working day for the entire period the excavation remains open; and
- periodically throughout the working day whilst workers are in the excavation.

Excavations between 300mm and 1m deep

- directly after the excavation has been completed; and
- periodically whilst the excavation remains open.

For excavations less than 300mm deep

- monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person

Monitoring Locations

- 9.5 Monitoring of oxygen, methane and carbon dioxide was performed for excavations at 1m depth or more within the Consultation Zone. In this reporting month, the area required to be monitored for landfill gas are shown below and **Figure 6** shows the landfill gas monitoring locations.
- | | |
|-----------------------------------|-------------|
| ➤ Excavation Locations: | Portion III |
| ➤ Manholes and Chambers: | N/A |
| ➤ Relocation of monitoring wells: | N/A |
| ➤ Any other Confined Spaces: | N/A |

Monitoring Equipment

- 9.6 **Table 9.1** summarizes the equipment employed by the Contractor for the landfill gas monitoring.

Table 9.1 Landfill Gas Monitoring Equipment

Equipment	Model and Make	Quantity
Intrinsically safe, portable gas detector	Crowcon Tetra Portable Gas Detector (Serial No. 100486262/01-020)	1

Results and Observations

- 9.7 In the reporting month, landfill gas monitoring was carried out by the Contractor at the aforesaid locations on 48 occasions. No Limit Level exceedance for landfill gas monitoring was recorded in the reporting month. The monitoring results are provided in **Appendix R**. Copies of calibration certificates are attached in **Appendix B**.

10. ENVIRONMENTAL AUDIT**Site Audits**

- 10.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix L**.
- 10.2 Joint weekly site audits by the representatives of the Engineer, Contractor and the ET were conducted in the reporting month as shown in below:
- Contract No. NE/2015/01: 2, 10, 17, 24 and 31 May 2017
 - Contract No. NE/2015/02: 4, 11, 16 and 25 May 2017
 - Contract No. NE/2015/03: 31 May 2017
- Monthly joint site inspection with the representative of IEC was conducted on 25 May 2017 (Contract No. NE/2015/02) and 31 May 2017 (Contract No. NE/2015/01 and NE/2015/03).

Implementation Status of Environmental Mitigation Measures

- 10.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Implementation Schedule and Recommended Mitigation Measures is provided in **Appendix N**.
- 10.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 10.1**.

Table 10.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Contract No. NE/2015/01			
Water Quality	15, 22 Mar, 12, 19 Apr 2017	<u>Observation:</u> To set up proper drainage system in CKL site Portion 3.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 31 May 2017.
	2 May 2017	<u>Observation:</u> Stagnant water should be cleared at TKO site.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 10 May 2017.
	10 May 2017	<u>Reminder:</u> To repair silt curtain for marine works in TKO to ensure that geotextile is extended to seabed.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 31 May 2017.
	17 May 2017	<u>Reminder:</u> To repair the silt curtain in TKO that geotextile should be extended to seabed.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 31 May 2017.
	17 May 2017	<u>Reminder:</u> To repair the holes at bottom of compartment of sedimentation tank in TKO.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 31 May 2017.
	17 May 2017	<u>Reminder:</u> To remove the mud accumulated in U-channel near discharge point in TKO.	The deficiency was observed to be improved/rectified by the Contractor during the audit

Parameters	Date	Observations and Recommendations	Follow-up
			session on 24 May 2017.
	24 May 2017	<u>Observation:</u> Muddy water observed near marine works in Tseung Kwan O. The Contractor is reminded to regularly maintain silt curtain on-site and ensure that geotextile is extended to seabed.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 31 May 2017.
	24 May 2017	<u>Observation:</u> Overflow of muddy water observed from sedimentation tank in Tseung Kwan O under Red Rainstorm Warning Signal. The Contractor is reminded to ensure that the tank is of adequate capacity for wastewater treatment.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 31 May 2017.
<i>Noise</i>	2, 10 May 2017	<u>Observation:</u> Mitigation measure for noise emission of the drill rig at CKL site should be applied where necessary.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 17 May 2017.
	10 May 2017	<u>Reminder:</u> To provide adequate noise barrier to drilling works and to repair the existing noise barrier to avoid gaps in Portion 4c.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 17 May 2017.
	17 May 2017	<u>Reminder:</u> To repair the gaps of temporary noise barrier for drill rig in Portion 3.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 24 May 2017.
	17 May 2017	<u>Reminder:</u> To repair the temporary noise enclosure for breaker in Portion 3.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 24 May 2017.
<i>Landscape and Visual</i>	12, 19 Apr 2017	<u>Reminder:</u> To properly set-up tree protection area in Portion 3.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 10 May 2017.
<i>Air Quality</i>	10 May 2017	<u>Reminder:</u> To provide adequate water spray to drilling works in Portion 4c to avoid dust generation.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 17 May 2017.
	10 May 2017	<u>Reminder:</u> To cover stockpile of sand in TKO to avoid dust generation.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 17 May 2017.
	31 May 2017	<u>Reminder:</u> Dry unpaved area was observed. Contractor was advised to provide spraying regularly.	Follow up action will be reported in next reporting month.
<i>Waste / Chemical Management</i>	31 May 2017	<u>Reminder:</u> Oil containers should be provided with drip tray.	Follow up action will be reported in next reporting month.
<i>Impact on Cultural Heritage</i>	--	--	--
<i>Permits / Licenses</i>	--	--	--
Contract No. NE/2015/02			
<i>Water Quality</i>	26 Apr and 4, 11 May 2017	<u>Reminder:</u> To repair the holes near the discharge point in Area A to prevent surface runoff flow into the discharge point.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 16 May 2017.

Parameters	Date	Observations and Recommendations	Follow-up
	4, 11 May 2017	<u>Reminder:</u> To replace the broken sand bags near the gullies in Portion 1.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 16 May 2017.
	11, 16 May 2017	<u>Reminder/Observation:</u> To remove muddy water / sediment accumulated in catchpits / U-channels in Area A.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 25 May 2017.
	16 May 2017	<u>Observation:</u> Silt and sediments observed at footing of hoarding at Portion SR2B. The Contractor is reminded to remove the silt and sediment to avoid wastewater flow out of site.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 25 May 2017.
<i>Noise</i>	--	--	--
<i>Landscape and Visual</i>	--	--	--
<i>Air Quality</i>	11 May 2017	<u>Reminder:</u> To cover stockpiles of dusty material in Area A after works	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 16 May 2017.
<i>Waste / Chemical Management</i>	16 May 2017	<u>Reminder:</u> To remove construction waste accumulated near site office.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 25 May 2017.
<i>Permits / Licenses</i>	25 May 2017	<u>Reminder:</u> To display valid Environmental Permit and Construction Noise Permit for marine works area.	Follow up action will be reported in next reporting month.
Contract No. NE/2015/03			
<i>Water Quality</i>	31 May 2017	<u>Reminder:</u> Contractor was reminded to place geotextile materials on all the manholes before commencing any construction works.	Follow up action will be reported in next reporting month.
<i>Noise</i>	31 May 2017	<u>Observation:</u> Contractor was advised to place noise emission label on the air compressor.	Follow up action will be reported in next reporting month.
<i>Landscape and Visual</i>	--	--	--
<i>Air Quality</i>	--	--	--
<i>Waste / Chemical Management</i>	31 May 2017	<u>Observation:</u> Contractor was advised to clean oil stains on the paved road.	Follow up action will be reported in next reporting month.
	31 May 2017	<u>Observation:</u> Contractor was advised to clean all muddy silt in the drip tray.	Follow up action will be reported in next reporting month.
<i>Permits / Licenses</i>	--	--	--

11. WASTE MANAGEMENT

- 11.1 Waste generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediments. Inert C&D waste includes soil, broken rock, broken concrete and building debris, while non-inert C&D materials are made up of C&D waste which cannot be reused or recycled and has to be disposed of at the designated landfill sites. Marine sediment shall be expected from excavation and dredging works of this Project.
- 11.2 With reference to relevant handling records of this Project, the quantities of different types of waste generated in the reporting month are summarised and presented in **Appendix P**.
- 11.3 The Contractors are advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in the approved EM&A Manual and waste management plans shall be fully implemented. The status of implementation of waste management and reduction measures are summited in **Appendix N**.

12. ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

- 12.1 Nine Action Level exceedance of noise monitoring was recorded due to the documented complaints received in the reporting month. No Limit Level exceedance of noise monitoring was recorded.
- 12.2 Should the monitoring results of the environmental monitoring parameters at any designated monitoring stations indicate that the Action / Limit Levels are exceeded, the actions in accordance with the Event and Action Plans in **Appendix M** be carried out.

Summary of Environmental Non-Compliance

- 12.3 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

- 12.4 Ten environmental complaints were received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix O**. The investigation status and result is also reported in **Appendix O**.

Summary of Environmental Summon and Successful Prosecution

- 12.5 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix O**.

13. FUTURE KEY ISSUES

13.1 Tentative construction programmes for the next three months are provided in **Appendix Q**.

13.2 Major site activities to be undertaken for the next reporting period are summarized in **Table 13.1**.

Table 13.1 Summary Table for Site Activities in the next Reporting Period

Contract No.	Project Title	Site Activities (June 2017)	
NE/2015/01	Tseung Kwan O - Lam Tin Tunnel - Main Tunnel and Associated Works	Lam Tin Interchange	1) Haul Road Construction 2) EHC2 U-Trough 3) Site Formation – Area 1G1, Area 2, Area 3, Area 4 4) Temp Steel Bridge across CKL Road 5) Pipe Pile Wall – Area 2A 6) Ground Investigation
		Main Tunnel	1) Tunnel Team Mobilisation Works 2) Construction Adit 3) MT Excavation
		TKO Interchange	1) Haul Road Construction and Site Formation 2) Temporary Barging Facilities 3) BMCPC Bridge Temporary Diversion
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Construction and Backfilling of Retaining wall 2) Installation of Temporary Cofferdam 3) Dredging Works 4) Construction of sloping seawall 5) Advance Works and ELS for Installation of Steel Cofferdams 6) Preparation of Treatment work for Marine Sediment 7) E&M Works Temporary Transformer Room 8) Construction of outfall for diversion of existing drainpipe 9) Installation of 2100mm dia. Drainage at Portion IV 10) Construction of preboring socket H-piles	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge.	1) Excavating channel for piling works 2) UU Diversion 3) Soldier Pier 4) East Pier Trial Pit	

Key Issues for the Coming Month

13.3 Key environmental issues in the coming month include:

- Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Noisy construction activity such as rock-breaking activities and piling works;
- Runoff from exposed slope or site area;
- Wastewater and runoff discharge from site;
- Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
- Set up and implementation of temporary drainage system for the surface runoff;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation and storage of general and construction waste on site; and
- Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation.

Monitoring Schedule for the Next Month

13.4 The tentative environmental monitoring schedules for the next month are shown in **Appendix D**.

14. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 14.1 This is the 7th Environmental Monitoring and Audit (EM&A) Report which presents the EM&A works undertaken during the period in May 2017 in accordance with EM&A Manual and the requirement under EP.

Air Quality Monitoring

- 14.2 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 14.3 All 24-hour TSP monitoring was conducted as scheduled in the reporting month, except that monitoring at Station AM4(A) – Cha Kwo Ling Public Cargo Working Area Administrative Office on 8, 12 and 29 May 2017 were cancelled due to power supply failure. The monitoring were re-scheduled to 10, 22 May and 1 June 2017 respectively. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

- 14.4 All noise monitoring was conducted as scheduled in the reporting month. Nine Action Level exceedance was recorded due to the documented complaints received in the reporting month. According to the Event and Action Plan for Construction Noise, monitoring frequency at the concerned monitoring stations was increased to check mitigation effectiveness. No Limit Level exceedance was recorded.

Water Quality Monitoring

- 14.5 Groundwater monitoring was conducted as scheduled in the reporting month. According to the information provided by the Contractor, no tunnel boring or tunnel construction works were carried out in both Lam Tin side and Tseung Kwan O side in May 2017. Therefore, monitoring results obtained in the reporting month will be considered as reference for baseline condition.
- 14.6 All marine water quality monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Ecological Monitoring

- 14.7 The 2nd post-translocation coral monitoring survey was carried out on 12 May 2017. No Action/Limit Level exceedance was recorded.

Monitoring on Cultural Heritage

- 14.8 No Alert Alarm and Action (AAA) Level exceedance of vibration monitoring on cultural heritage was recorded in the reporting month.

Landscape and Visual Monitoring and Audit

- 14.9 No non-compliance of the landscape and visual impact was recorded in the reporting

month.

Landfill Gas Monitoring

- 14.10 Monitoring of landfill gases in the reporting month was carried out by the Contractor at excavation location, Portion III. No Limit Level exceedance was recorded.

Environmental Site Inspection

- 14.11 Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. During site inspections in the reporting month, no non-conformance was identified

Complaint, Prosecution and Notification of Summons

- 14.12 10 environmental complaints, no successful prosecution or notification of summons were received during the reporting period.

Recommendations

- 14.13 According to environmental audits performed in the reporting month, the following recommendations were made:

Air Quality Impact

- To implement dust suppression measures such as water spray on all haul roads, stockpiles, dry surfaces and open slopes.
- To cover stockpile of dusty material by impervious material.

Construction Noise

- To provide noise mitigation measures (e.g. Temporary noise barrier or Full enclosure) to PME as proposed in the approved Noise Mitigation Plan.
- To repair the gaps between the noise barriers.

Water Quality Impact

- To provide and repair the silt curtain to fully enclose the site and prevent any gap between the silt curtains.
- To review and implement temporary drainage system.
- To clear the litter, debris, silt and sediment in drainage or catchpits.
- To remove the sand or dusty material deposited near the seafront.
- To provide bund or covers to gullies and stockpile storage area on site to avoid leakage of surface runoff.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.

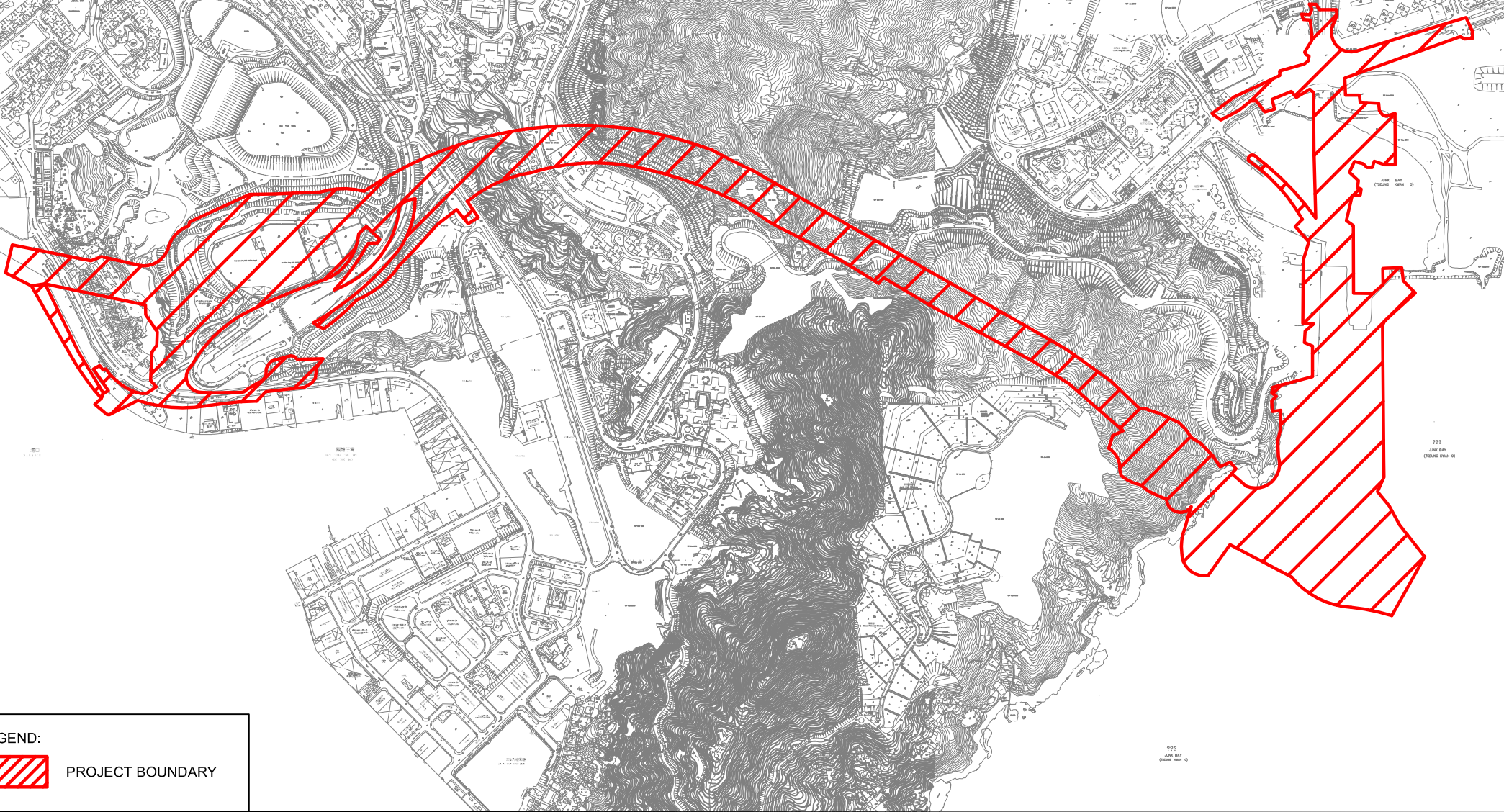
Waste/Chemical Management

- To remove construction waste regularly.

Landscape and Visual

- To set up proper tree protection area.

FIGURES



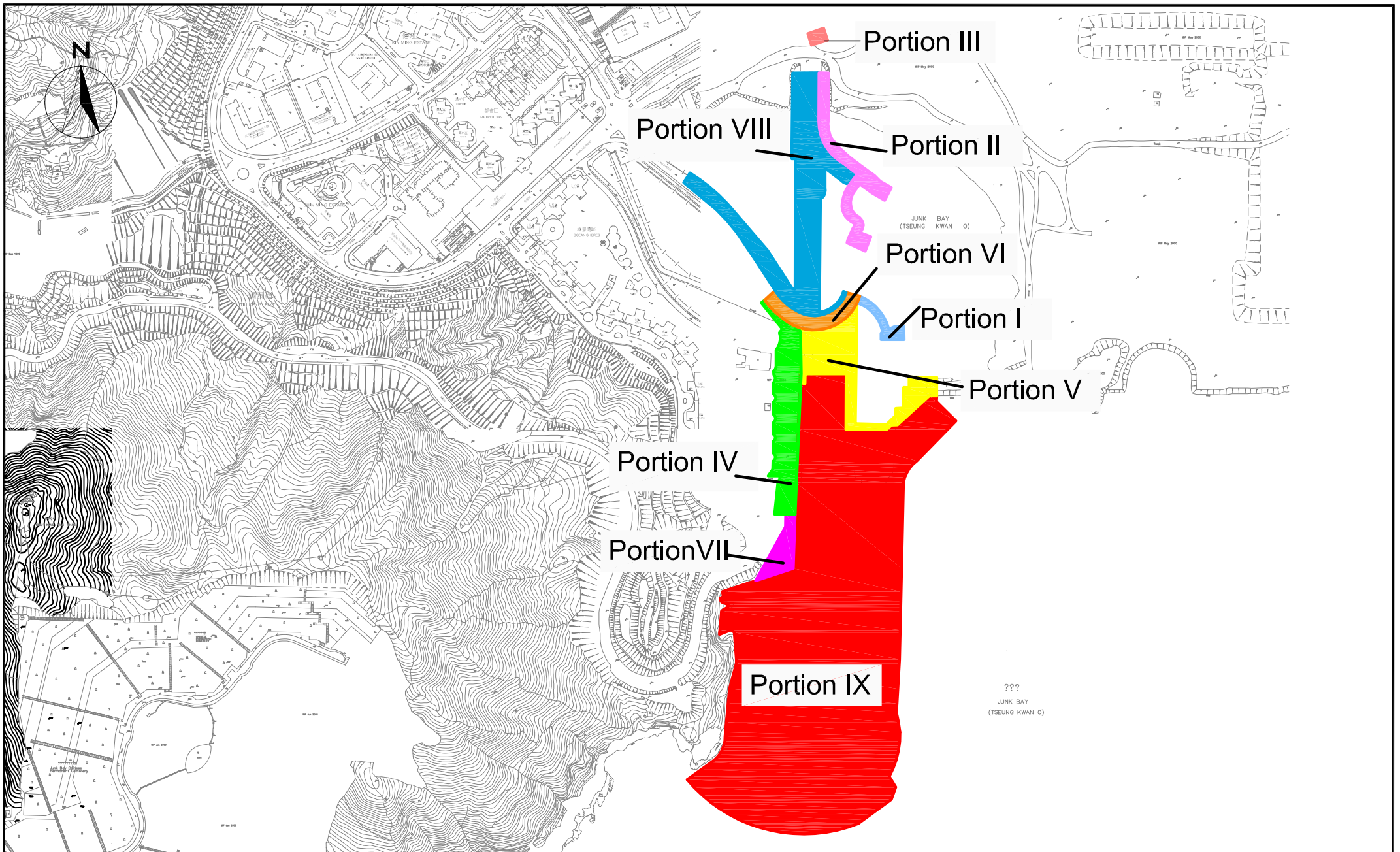
LEGEND:

 PROJECT BOUNDARY

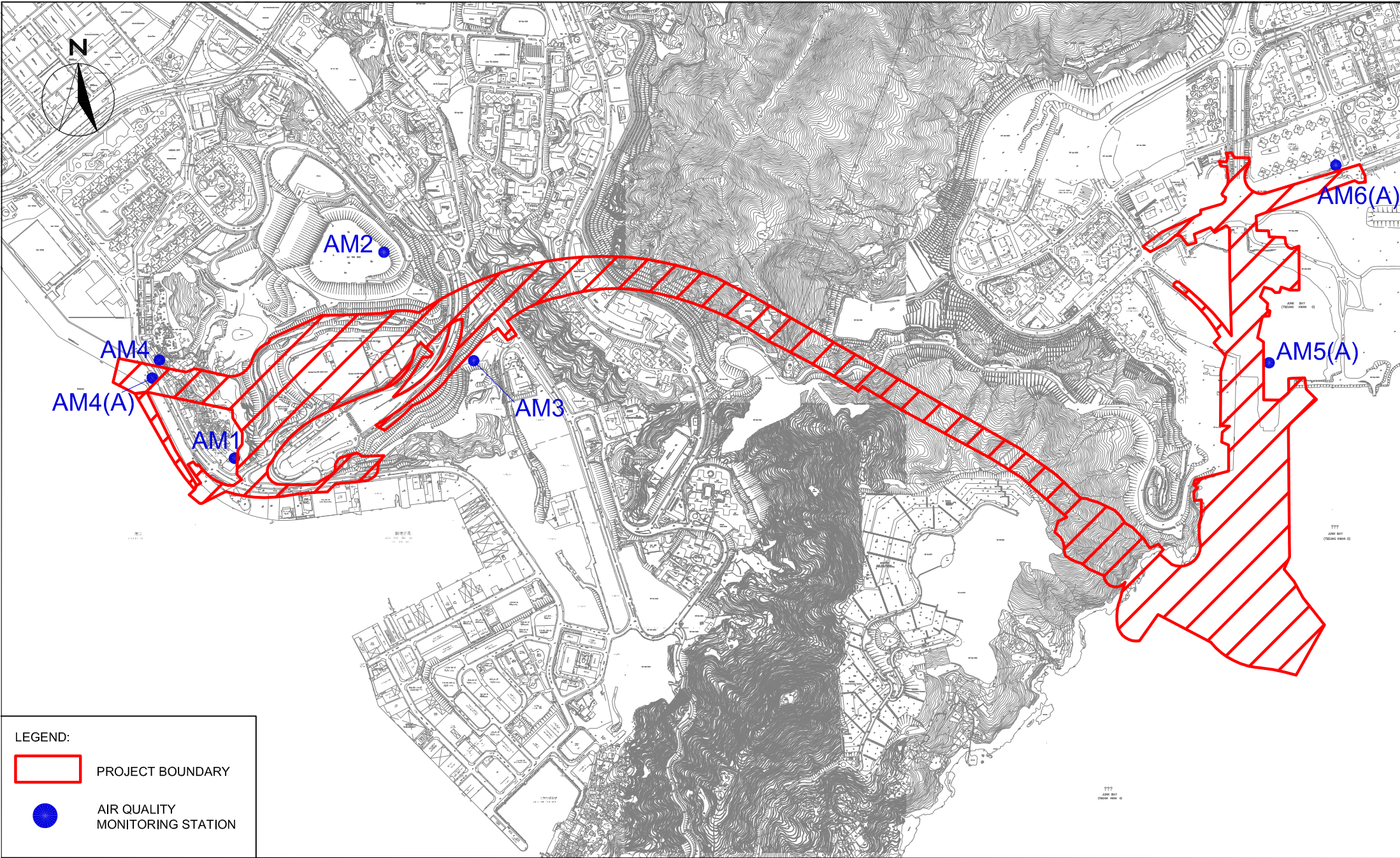
CINOTECH
Cinotech Consultants Limited

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel
- Design and Construction
Site Layout Plan

SCALE	1:15000 @ A4	DATE	APR 2017	
CHECK	JF	DRAWN	JW	
JOB No.	MA16034	FIGURE NO.	1	REV
				-



SCALE	N.T.S.	DATE	JUN 2017	
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JOB No.	MA16034	FIGURE NO.	1a	REV -



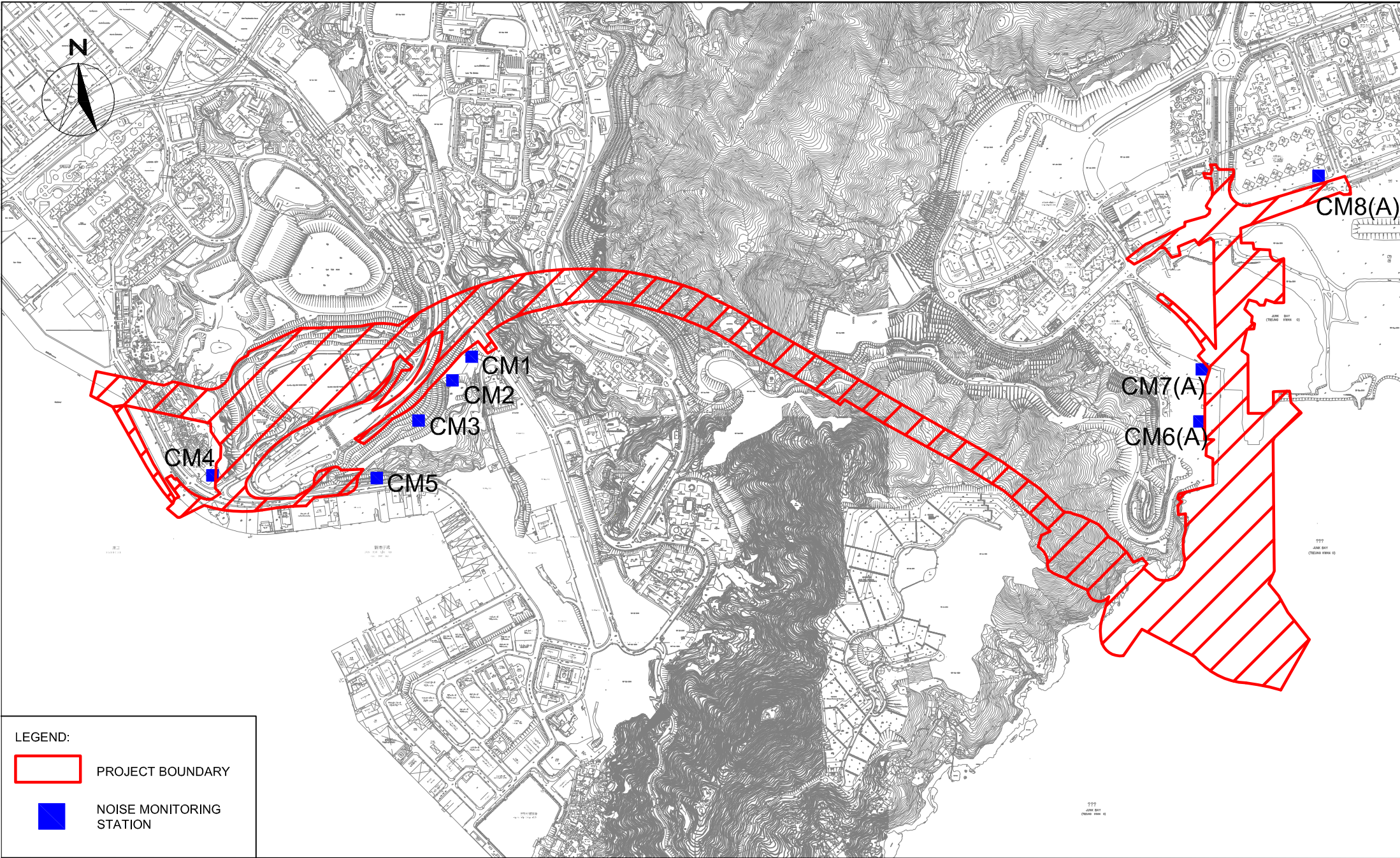
LEGEND:

- PROJECT BOUNDARY
- AIR QUALITY MONITORING STATION



Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel -
 Design and Construction
 Air Quality Monitoring Stations

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JOB No.	MA16034	FIGURE NO.	2	REV
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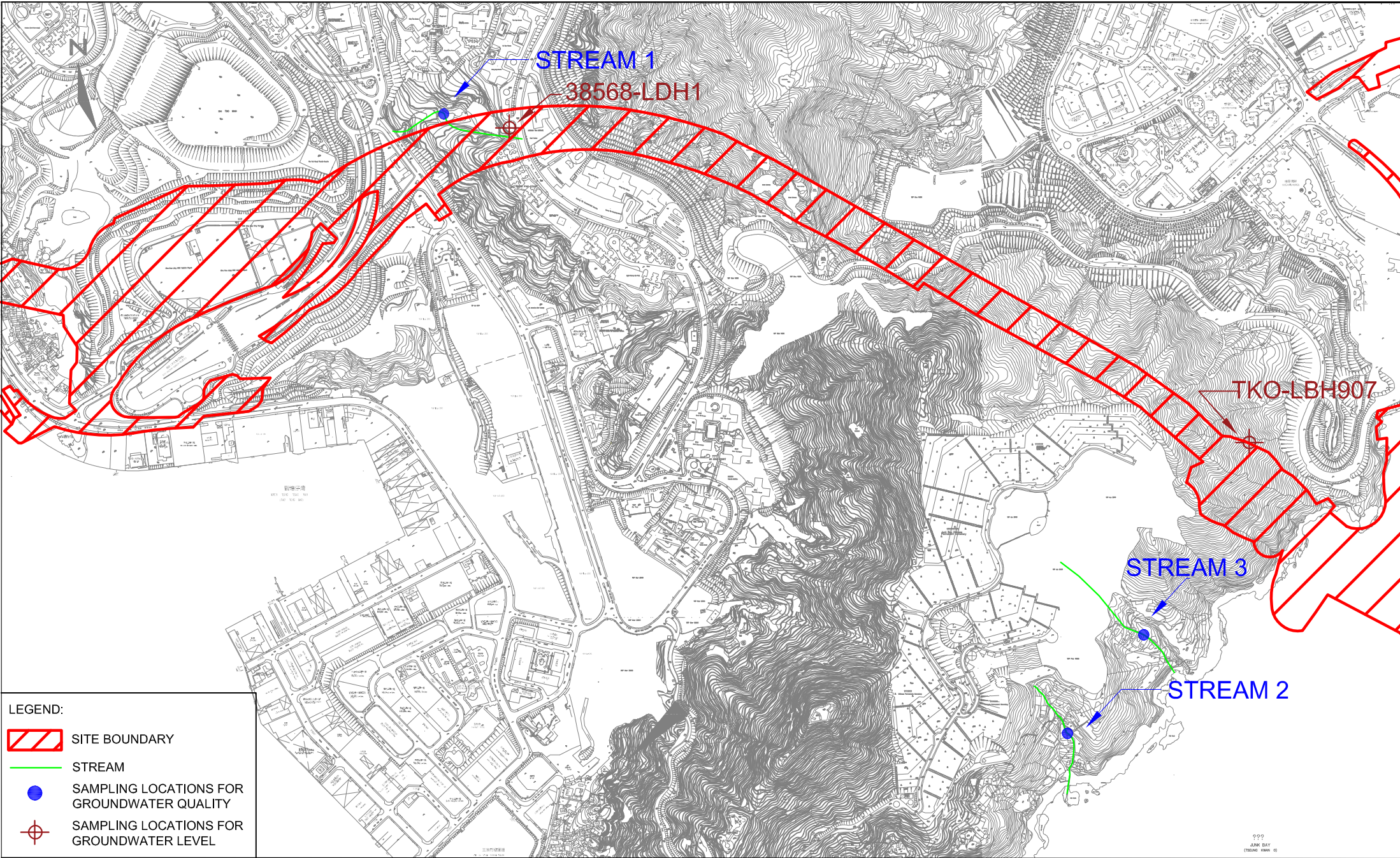
LEGEND:

- PROJECT BOUNDARY
- NOISE MONITORING STATION







Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel -
 Design and Construction
 Noise Monitoring Stations

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JOB No.	MA16034	FIGURE NO.	3	REV
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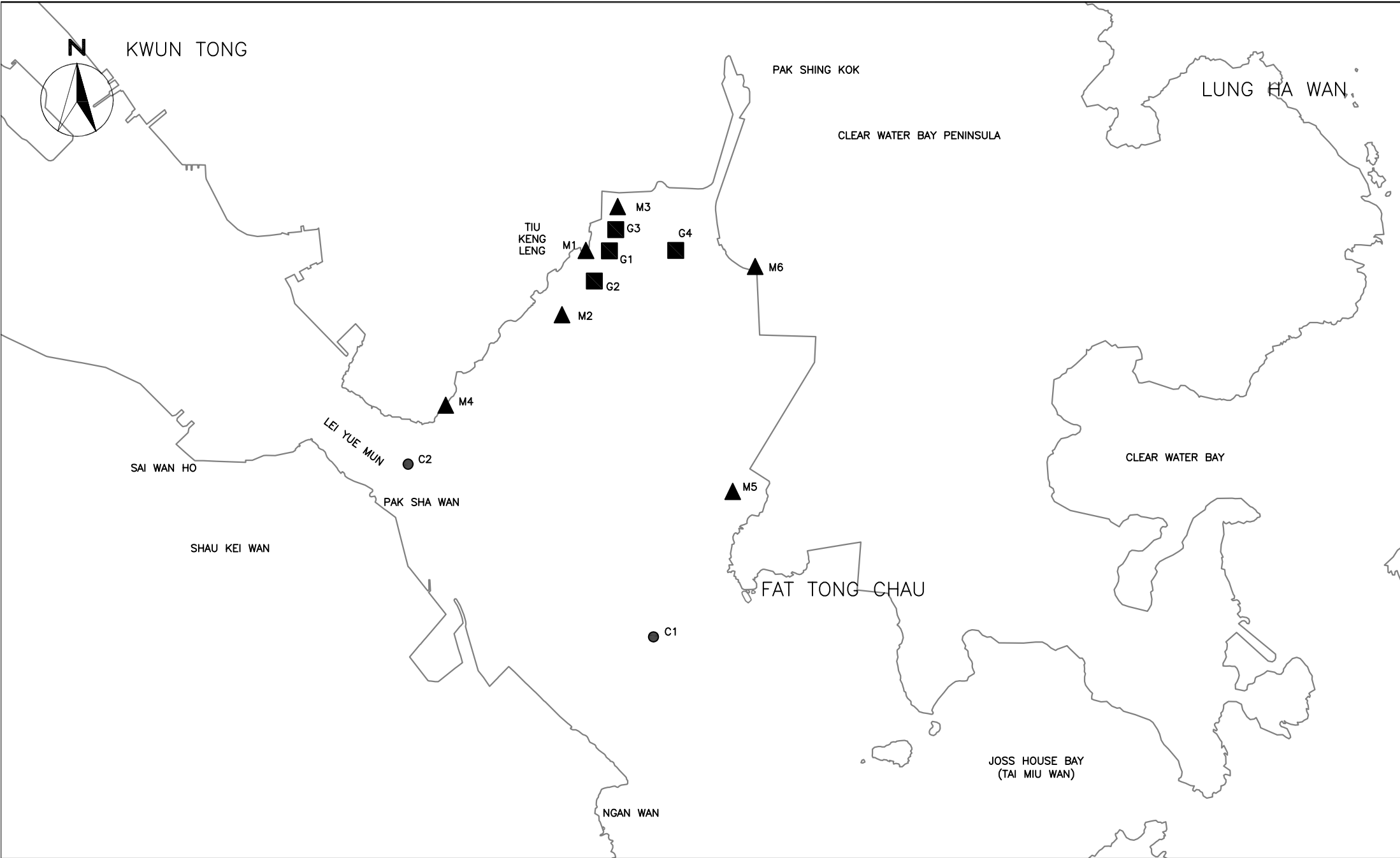
LEGEND:

-  SITE BOUNDARY
-  STREAM
-  SAMPLING LOCATIONS FOR GROUNDWATER QUALITY
-  SAMPLING LOCATIONS FOR GROUNDWATER LEVEL



Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel -
 Design and Construction
 Location of Streams for Groundwater Quality and Groundwater Level Monitoring

SCALE	1:10000 @ A4	DATE	APR 2017	
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JOB No.	MA16034	FIGURE NO.	4	REV
				-



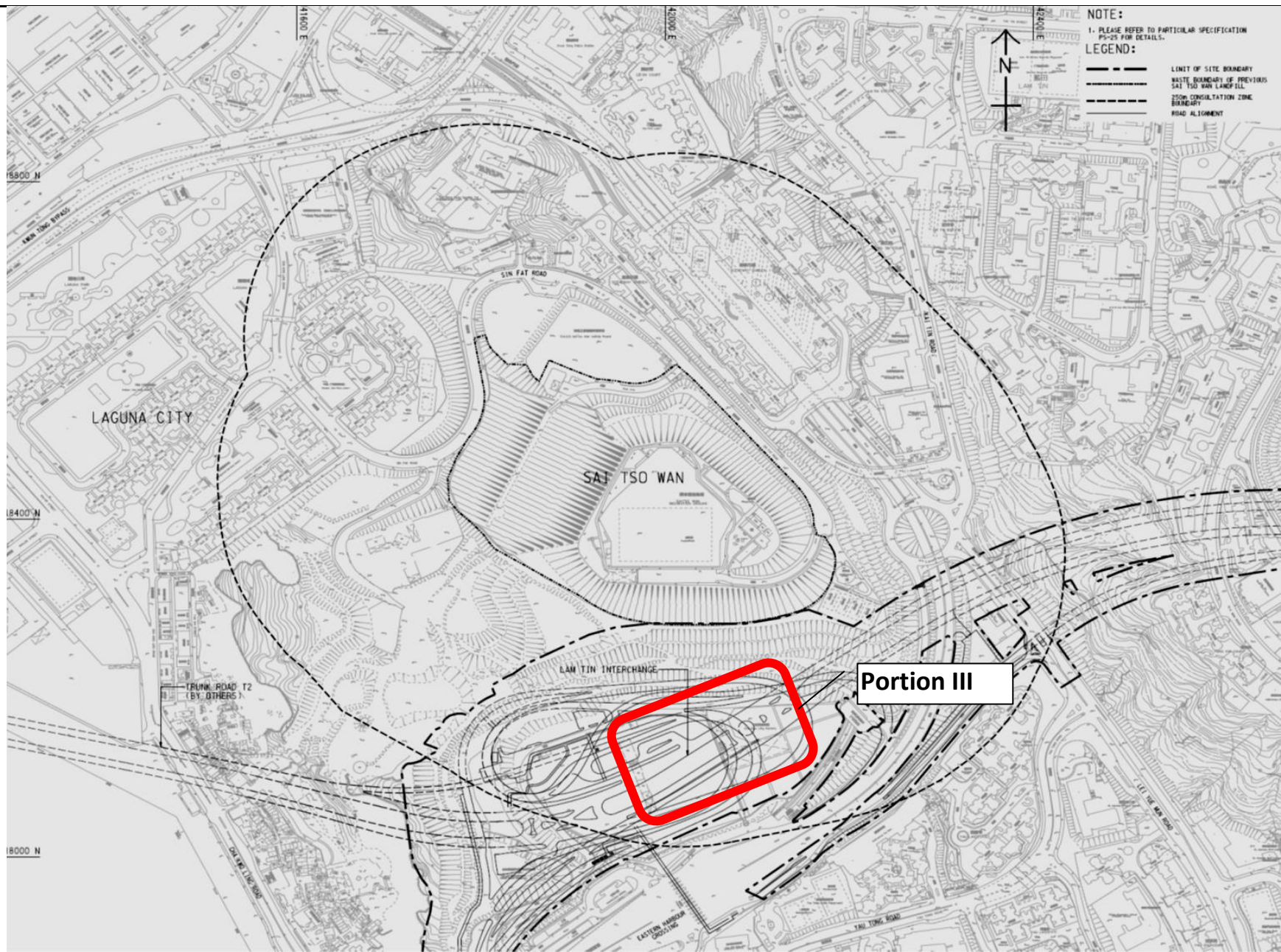
CINOTECH

Cinotech Consultants Limited

Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O – Lam Tin Tunnel –
 Design and Construction

Locations of Water Quality Monitoring Stations

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PROJECT NO.	MA16034	FIGURE NO.	5	REV —

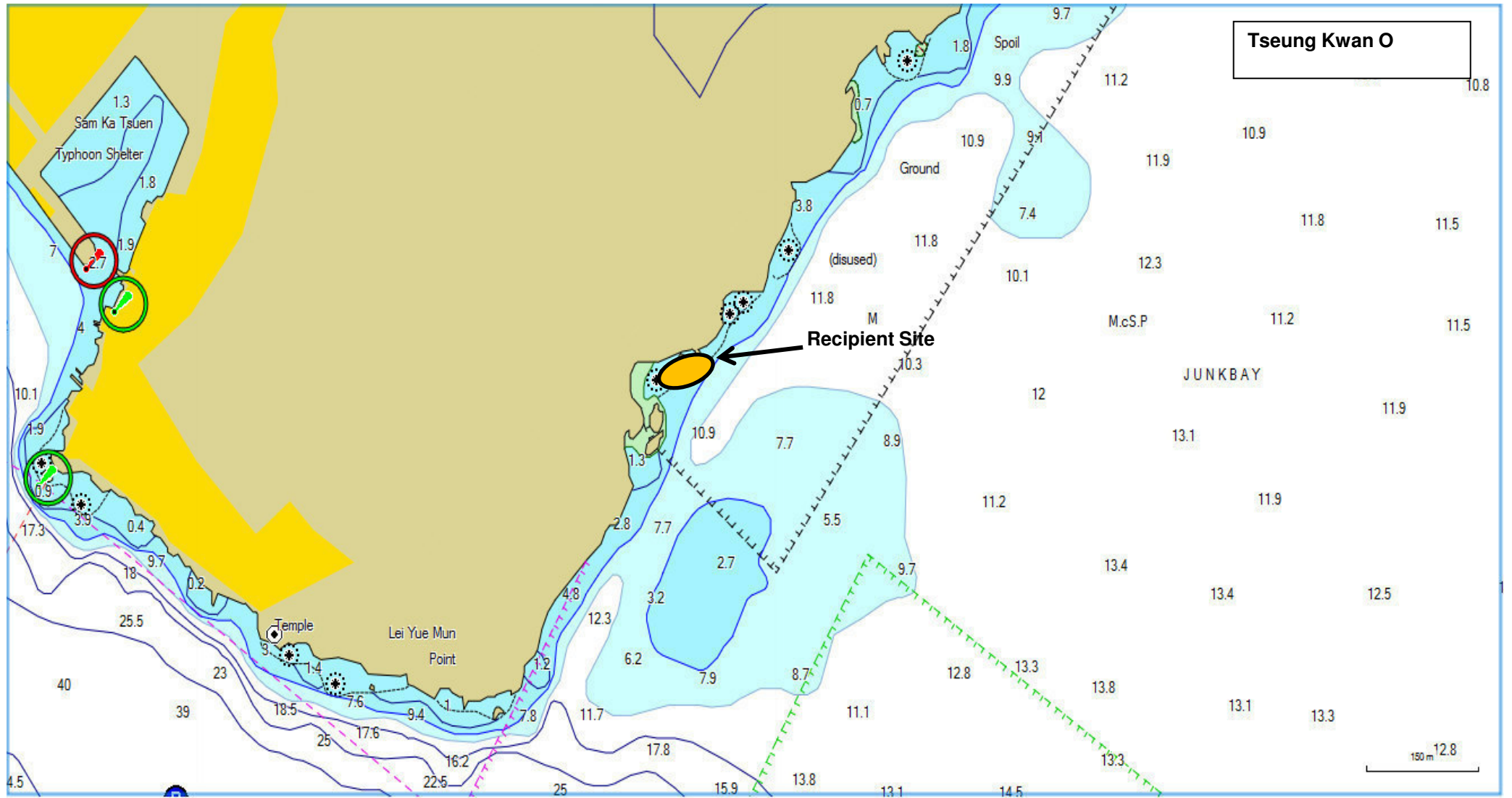


Title Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
 Locations of Landfill Gas Monitoring

Scale N.T.S
 Date Dec-16

Project No. MA16034
 Figure 6





Title Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
 Location of Post-translocation Coral Monitoring

Scale N.T.S
 Date Mar-17

Project No. MA16034
 Figure 7





Cha Kwo Ling Tin Hau Temple



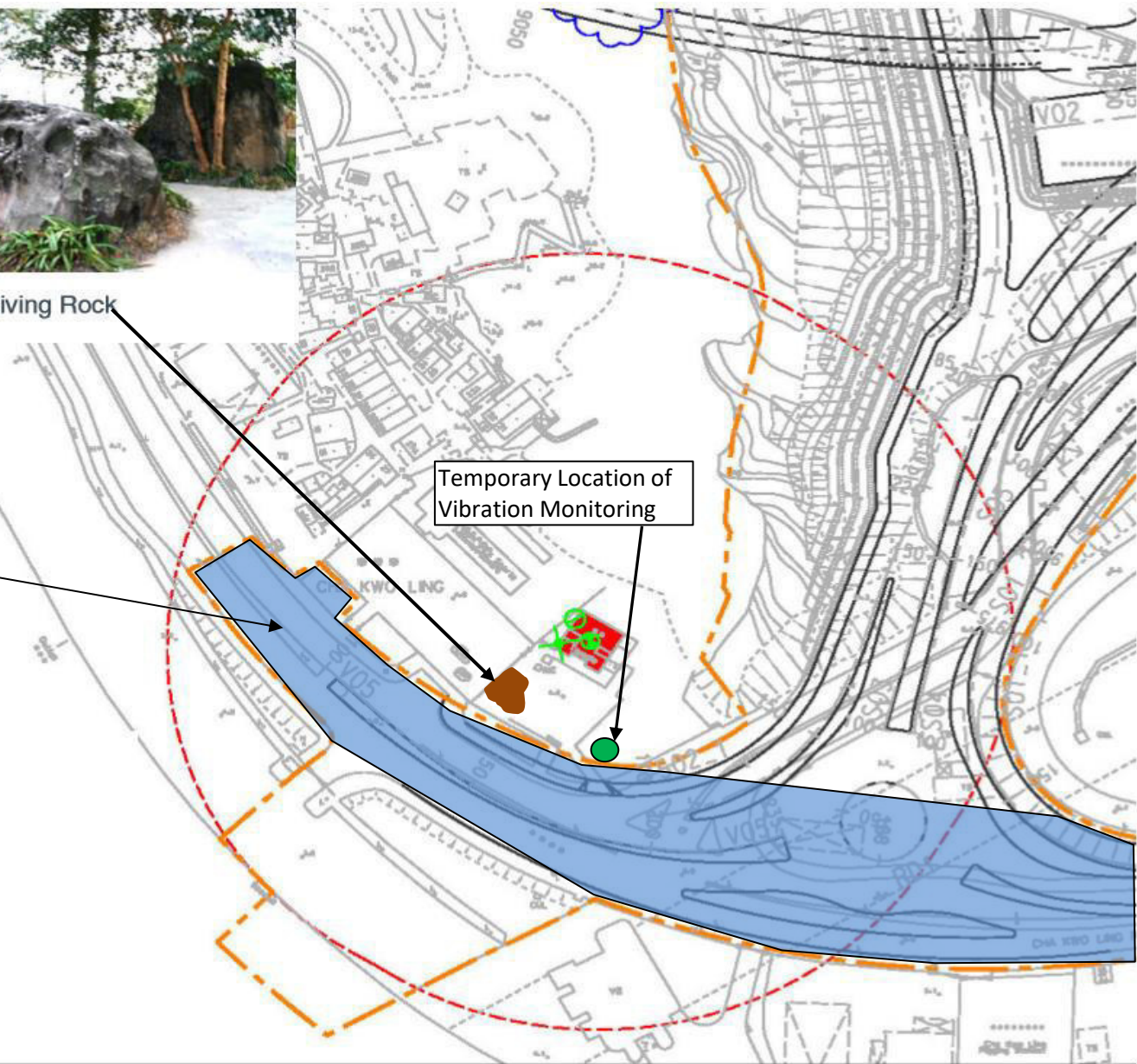
Child Giving Rock

No works in this area (in blue color) in the reporting peiod.

Temporary Location of Vibration Monitoring

LEGEND

- - - SITE BOUNDARY
- - - 100M FROM THE CHA KWO LING TIN HAU TEMPLE
- CHA KWO LING TIN HAU TEMPLE
- ⊕ VIBRATION MONITORING POINT
- ⊗ BUILDING SETTLEMENT POINT
- ⊘ TILTMETER



Title Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Locations of Monitoring for Cultural Heritage

Scale	N.T.S	Project No.	MA16034
Date	Apr-17	Figure	8



**APPENDIX A
ACTION AND LIMIT LEVELS**

APPENDIX A – Action and Limit Levels**Air Quality*****1-hr TSP***

Monitoring Stations	Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	Tin Hau Temple	275	500
AM2	Sai Tso Wan Recreation Ground	273	
AM3	Yau Lai Estate Bik Lai House	271	
AM4	Sitting-out Area at Cha Kwo Ling Village	278	
AM5(A)	Tseung Kwan O DSD Desilting Compound	273	
AM6(A)	Park Central, L1/F Open Space Area	285	

24-hr TSP

Monitoring Stations	Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	Tin Hau Temple	173	500
AM2	Sai Tso Wan Recreation Ground	192	
AM3	Yau Lai Estate Bik Lai House	167	
AM4(A)	Cha Kwo Ling Public Cargo Working Area Administrative Office	210	
AM5(A)	Tseung Kwan O DSD Desilting Compound	175	
AM6(A)	Park Central, L1/F Open Space Area	165	

Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) ⁽¹⁾
1900-2300 on all days and 0700-2300 on general holidays (including Sundays)		60/65/70 dB(A) ⁽²⁾⁽³⁾
2300-0700 on all days		45/50/55 dB(A) ⁽²⁾⁽³⁾

¹ 70 dB(A) for schools and 65 dB(A) for schools during examination period.² Acceptable Noise Levels for Area Sensitivity Rating of A/B/C³ If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

Water Quality***Groundwater***

Parameters	Action	Limit
DO in mg L ⁻¹	7.6	7.5
pH	6.0 – 8.9	6.0 – 9.0
BOD ₅ in mg L ⁻¹	2.0	2.0
TOC in mg L ⁻¹	4.3	4.9
Total Nitrogen in mg L ⁻¹	1.7	1.7
Ammonia-N in mg L ⁻¹	0.05	0.06
Total Phosphate in mg L ⁻¹	0.05	0.05
SS in mg L ⁻¹	5.5	6.2
Turbidity in NTU	2.2	2.4

Notes:

1. For pH, non-compliance of the water quality limits occurs when monitoring result is out of the range of the limits.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity, SS, 5-day biochemical oxygen demand (BOD₅), Total organic carbon (TOC), Total Nitrogen, Ammonia-N and Total Phosphate, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

Groundwater Level Monitoring

Drill Hole No.	38568-LDH1	TKO-LBH907
Action Level (mPD)	+74.65	+17.59

Marine Water Quality

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2, 4 and 5)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
SS in mg/L (See Note 2, 4 and 5)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day	<u>6.9mg/L</u> or 130% of upstream control station's SS at the same tide of the same day
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day
	<u>Station M6</u>		
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.
5. Refer to Appendix I – Marine Water Quality Monitoring Results and Graphical Presentations for results of upstream control stations at each tide on each day.

Ecology***Post-translocation Coral Monitoring***

Parameter	Action Level Definition	Limit Level Definition
Mortality	If during Impact Monitoring a 15% increase in the percentage of partial mortality on hard corals occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Action Level is exceeded.	If during the Impact Monitoring a 25% increase in the percentage of partial mortality occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Limit Level is exceeded.

Landfill Gas Monitoring

Parameter	Limit Level
Oxygen	<19%
	<18%
Methane	>10% LEL (i.e. > 0.5% by volume)
	>20% LEL (i.e. > 1% by volume)
Carbon Dioxide	>0.5%
	>1.5%

**APPENDIX B
COPIES OF CALIBRATION
CERTIFICATES**

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0004

Station: AM1 - Tin Hau Temple Operator: HL
 Date: 17-Mar-17 Next Due Date: 16-May-17
 Equipment No.: A-01-05 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	290.6	Pressure, Pa (mmHg)	766.4

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	13.4	3.72	65.28	7.4	2.77
2	10.2	3.25	57.06	5.6	2.41
3	8.6	2.98	52.46	4.8	2.23
4	5.5	2.38	42.13	3.3	1.85
5	3.2	1.82	32.33	2.1	1.47

By Linear Regression of Y on X

Slope, mw = 0.0388 Intercept, bw : 0.2094
 Correlation coefficient* = 0.9994

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation	
From the TSP Field Calibration Curve, take Qstd = 43 CFM	
From the Regression Equation, the "Y" value according to	
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$	
Therefore, Set Point; W = (mw x Qstd + bw) ² x (760 / Pa) x (Ta / 298) =	<u>3.41</u>

Remarks: _____

Conducted by: he Signature: he Date: 17/3/2017
 Checked by: Wk Tang Signature: Wk Tang Date: 17/3/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0005

Station: AM1 - Tin Hau Temple Operator: HL
 Date: 16-May-17 Next Due Date: 15-Jul-17
 Equipment No.: A-01-05 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	296.5	Pressure, Pa (mmHg)	758.3

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.2	3.64	63.82	7.4	2.72
2	10.0	3.17	55.66	5.7	2.39
3	8.7	2.95	51.97	4.9	2.22
4	5.4	2.33	41.13	3.3	1.82
5	3.2	1.79	31.85	2.1	1.45

By Linear Regression of Y on X

Slope, mw = 0.0396 Intercept, bw = 0.1859
 Correlation coefficient* = 0.9995

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.55

Remarks: _____

Conducted by: hev Signature: hev Date: 16/5/17
 Checked by: w-k tang Signature: w-k tang Date: 16/5/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0004

Station: AM2 - Sai Tso Wan Recreation Ground Operator: HL
 Date: 13-Mar-17 Next Due Date: 12-May-17
 Equipment No.: A-01-08 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	291.3	Pressure, Pa (mmHg)	764.1

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.3	3.70	64.86	7.5	2.78
2	10.8	3.33	58.54	6.2	2.53
3	8.6	2.97	52.33	5.0	2.27
4	5.3	2.33	41.26	3.3	1.84
5	3.3	1.84	32.74	2.0	1.43

By Linear Regression of Y on X

Slope, $mw =$ 0.0413 Intercept, $bw =$ 0.1043
 Correlation coefficient* = 0.9993

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.44

Remarks: _____

Conducted by: LEE MAN HEI Signature: Lee Date: 13-3-2017
 Checked by: W.K. TANG Signature: W.K. Tang Date: 13/3/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0005

Station: AM2 - Sai Tso Wan Recreation Ground Operator: HL
 Date: 10-May-17 Next Due Date: 9-Jul-17
 Equipment No.: A-01-08 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	301.4	Pressure, Pa (mmHg)	764.1

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	13.6	3.68	64.49	7.5	2.73
2	10.7	3.26	57.30	6.1	2.46
3	8.7	2.94	51.75	5.0	2.23
4	5.4	2.32	40.95	3.2	1.78
5	3.4	1.84	32.67	2.1	1.44

By Linear Regression of Y on X

Slope, mw = 0.0407 Intercept, bw = 0.1197
 Correlation coefficient* = 0.9998

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = (mw x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 3.51

Remarks: _____

Conducted by: he Signature: he Date: 10/5/17
 Checked by: W.K. Tang Signature: W.K. Tang Date: 10/5/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/03/0004

Station: AM3 - Yau Lai Estate, Bik Lai House Operator: HL
 Date: 7-Mar-17 Next Due Date: 6-May-17
 Equipment No.: A-01-03 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	290.2	Pressure, Pa (mmHg)	766.1

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.7	3.63	63.60	7.0	2.69
2	10.5	3.30	57.91	5.9	2.47
3	7.6	2.80	49.39	4.4	2.13
4	5.4	2.36	41.77	3.3	1.85
5	3.4	1.88	33.32	2.0	1.44

By Linear Regression of Y on X

Slope, mw = 0.0409 Intercept, bw = 0.1070
 Correlation coefficient* = 0.9988

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation	
From the TSP Field Calibration Curve, take Qstd = 43 CFM	
From the Regression Equation, the "Y" value according to	
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$	
Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$	<u>3.36</u>

Remarks: _____

Conducted by: W.E. MAN Signature: W.E. Man Date: 7/3/2017
 Checked by: W.K. Tang Signature: W.K. Tang Date: 7/13/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/03/0005

Station: AM3 - Yau Lai Estate, Bik Lai House Operator: HL
 Date: 4-May-17 Next Due Date: 3-Jul-17
 Equipment No.: A-01-03 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	295.9	Pressure, Pa (mmHg)	761.9

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.8	3.59	63.07	7.2	2.70
2	10.8	3.30	58.00	5.9	2.44
3	7.5	2.75	48.48	4.3	2.08
4	5.3	2.31	40.89	3.2	1.80
5	3.3	1.83	32.44	2.0	1.42

By Linear Regression of Y on X

Slope, mw = 0.0406 Intercept, bw = 0.1134
 Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.43

Remarks: _____

Conducted by: hen Signature: hen Date: 4/5/17
 Checked by: w.k. tang Signature: Kwan Date: 4/5/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/54/0004

Station: AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office Operator: HL

Date: 17-Mar-17 Next Due Date: 16-May-17

Equipment No.: A-01-54 Serial No. 1536

Ambient Condition			
Temperature, Ta (K)	291.3	Pressure, Pa (mmHg)	764.4

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	17.7	4.27	74.71	10.4	3.27
2	13.0	3.66	64.15	7.9	2.85
3	10.7	3.32	58.28	6.4	2.57
4	6.8	2.65	46.63	4.2	2.08
5	4.2	2.08	36.83	2.8	1.70

By Linear Regression of Y on X

Slope, $m_w =$ 0.0419 Intercept, $b_w =$ 0.1393

Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$m_w \times Qstd + b_w = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (m_w \times Qstd + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.67

Remarks: _____

Conducted by: LEE MAN WAI Signature: *Lee Man Wai* Date: 17-3-2017

Checked by: W.K. TANG Signature: *W.K. Tang* Date: 17/3/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/54/0005

Station: AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office Operator: HL

Date: 16-May-17 Next Due Date: 15-Jul-17

Equipment No.: A-01-54 Serial No. 1536

Ambient Condition			
Temperature, Ta (K)	296.4	Pressure, Pa (mmHg)	758.9

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	17.6	4.20	73.61	10.3	3.22
2	13.2	3.64	63.86	8.0	2.83
3	10.7	3.28	57.58	6.5	2.55
4	6.5	2.55	45.06	4.3	2.08
5	4.1	2.03	35.96	2.7	1.65

By Linear Regression of Y on X

Slope, mw = 0.0414 Intercept, bw : 0.1822

Correlation coefficient* = 0.9994

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation	
From the TSP Field Calibration Curve, take Qstd = 43 CFM	
From the Regression Equation, the "Y" value according to	
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$	
Therefore, Set Point; W = (mw x Qstd + bw) ² x (760 / Pa) x (Ta / 298) = <u>3.83</u>	

Remarks: _____

Conducted by: hev Signature: hev Date: 16/5/17

Checked by: wk-tang Signature: wk-tang Date: 16/5/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/37/0004

Station: AM5(A) - DSD Desilting Compound Operator: HL
 Date: 13-Mar-17 Next Due Date: 12-May-17
 Equipment No.: A-01-37 Serial No. 1704

Ambient Condition			
Temperature, Ta (K)	292	Pressure, Pa (mmHg)	764.5

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	17.1	4.19	73.37	9.0	3.04
2	13.6	3.74	65.52	7.1	2.70
3	10.7	3.31	58.21	5.9	2.46
4	6.4	2.56	45.21	3.5	1.90
5	4.3	2.10	37.21	2.3	1.54

By Linear Regression of Y on X

Slope, mw = 0.0412 Intercept, bw = 0.0214
 Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation
From the TSP Field Calibration Curve, take Qstd = 43 CFM
From the Regression Equation, the "Y" value according to
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$
Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>3.14</u>

Remarks: _____

Conducted by: LEE MAN YEE Signature: he Date: 13-3-2017
 Checked by: W.K. Tang Signature: Kashi Date: 13/3/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/37/0005

Station: AM5(A) - DSD Desilting Compound Operator: HL
 Date: 10-May-17 Next Due Date: 9-Jul-17
 Equipment No.: A-01-37 Serial No. 1704

Ambient Condition			
Temperature, Ta (K)	301.8	Pressure, Pa (mmHg)	763.7

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	17.2	4.13	72.35	9.0	2.99
2	13.5	3.66	64.20	7.1	2.65
3	10.8	3.27	57.51	5.8	2.40
4	6.7	2.58	45.48	3.4	1.84
5	4.2	2.04	36.18	2.4	1.54

By Linear Regression of Y on X

Slope, mw = 0.0408 Intercept, bw : 0.0359
 Correlation coefficient* = 0.9985

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.23

Remarks: _____

Conducted by: he Signature: he Date: 10/5/17
 Checked by: w.k.tang Signature: hwa Date: 10/5/17

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/07/0004

Station AM6 - Park Central Operator: WK
 Date: 31-Mar-17 Next Due Date: 30-May-17
 Equipment No.: A-01-07 Serial No. 10592

Ambient Condition			
Temperature, Ta (K)	294.4	Pressure, Pa (mmHg)	763.2

Orifice Transfer Standard Information			
Serial No.:	0993	Slope, mc (CFM)	0.0578
		Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$	

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.46	60.79	7.5	2.76
2	9.7	3.14	55.20	5.9	2.45
3	7.4	2.74	48.32	4.7	2.19
4	5.2	2.30	40.64	3.3	1.83
5	3.3	1.83	32.55	2.1	1.46

By Linear Regression of Y on X

Slope, mw = 0.0452 Intercept, bw : -0.0105
 Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.68

Remarks: _____

Conducted by: Wk Tang Signature: [Signature]
 Checked by: [Signature] Signature: _____

Date: 31/3/17
 Date: 31 March 2017



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELS, OH
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 513.467.9000
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ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 28, 2017 Rootsmeter S/N 0438320 Ta (K) - 294
 Operator Tisch Orifice I.D. - 0993 Pa (mm) - 750.57

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER	ORFICE
					DIFF Hg (mm)	DIFF H2O (in.)
1	NA	NA	1.00	1.3860	3.2	2.00
2	NA	NA	1.00	0.9910	6.4	4.00
3	NA	NA	1.00	0.8840	7.9	5.00
4	NA	NA	1.00	0.8430	8.7	5.50
5	NA	NA	1.00	0.6970	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9967	0.7191	1.4149	0.9957	0.7184	0.8851
0.9925	1.0015	2.0010	0.9915	1.0005	1.2517
0.9904	1.1204	2.2372	0.9894	1.1192	1.3995
0.9894	1.1737	2.3464	0.9884	1.1725	1.4678
0.9842	1.4120	2.8299	0.9832	1.4106	1.7702

Qstd slope (m) = 2.04055 Qa slope (m) = 1.27776
 intercept (b) = -0.04890 intercept (b) = -0.03059
 coefficient (r) = 0.99995 coefficient (r) = 0.99995

y axis = SQRT[H2O(Pa/760) (298/Ta)] y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
 Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760) (298/Ta))] - b}
 Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/170217
Date of Issue:	2017-02-20
Date Received:	2017-02-17
Date Tested:	2017-02-17
Date Completed:	2017-02-20
Next Due Date:	2017-08-19

ATTN: Miss Mei Ling Tang

Page: 1 of 2

Certificate of Calibration

Item for calibration:

Description : Weather Monitor II
Manufacturer : Davis Instruments
Model No. : 7440
Serial No. : MC01010A44

Test conditions:

Room Temperature : 21 degree Celsius
Relative Humidity : 60 %

Test Specifications:


1. Performance check of anemometer
2. Performance check of wind direction sensor

Methodology:

In-house method with reference anemometer (RS232 Integral Vane Digital Anemometer)

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

Test Report No.:	C/170217
Date of Issue:	2017-02-20
Date Received:	2017-02-17
Date Tested:	2017-02-17
Date Completed:	2017-02-20
Next Due Date:	2017-08-19

Page: 2 of 2

Results:

1. Performance check of anemometer

Air Velocity, m/s		Difference D (m/s)
Instrument Reading (V1)	Reference Value (V1)	D = V1 - V2
2.00	2.00	0.00

2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0	0	0
45.1	45	0.1
90.3	90	0.3
135	135	0
180.1	180	0.1
224.8	225	-0.2
270.1	270	0.1
315	315	0
360	360	0

*****END OF REPORT*****

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/A/170303C
Date of Issue:	2017-03-06
Date Received:	2017-03-03
Date Tested:	2017-03-03
Date Completed:	2017-03-06
Next Due Date:	2017-05-05

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
 Manufacturer : Sibata
 Model No. : LD-3B
 Serial No. : 541146
 Sensitivity (K) 1 CPM : 0.001 mg/m³
 Sen. Adjustment Scale Setting : 625 CPM
 Equipment No. : A-02-07

Test Conditions:

Room Temperature : 23 degree Celsius
 Relative Humidity : 64 %

Test Specifications & Methodology:


1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0034
-------------------------	--------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/170502
Date of Issue:	2017-05-04
Date Received:	2017-05-02
Date Tested:	2017-05-02
Date Completed:	2017-05-04
Next Due Date:	2017-07-03

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m ³
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 63 %

Test Specifications & Methodology:


1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0037
-------------------------	--------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/170419C
Date of Issue:	2017-04-22
Date Received:	2017-04-19
Date Tested:	2017-04-19
Date Completed:	2017-04-22
Next Due Date:	2017-06-21

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Handheld Particle Counter
 Manufacturer : Hal Technology
 Model No. : Hal-HPC300
 Serial No. : 3020410
 Flow rate : 0.1 cfm
 Zero Count Test : 0 count per 5 minutes
 Equipment No. : A-26-03

Test Conditions:

Room Temperature : 22 degree Celsius
 Relative Humidity : 62 %

Test Specifications & Methodology:


1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.153
-------------------------	-------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
 Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/170407K
Date of Issue:	2017-04-10
Date Received:	2017-04-07
Date Tested:	2017-04-07
Date Completed:	2017-04-10
Next Due Date:	2017-06-09

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Handheld Particle Counter
 Manufacturer : Hal Technology
 Model No. : Hal-HPC300
 Serial No. : 3020411
 Flow rate : 0.1 cfm
 Zero Count Test : 0 count per 5 minutes
 Equipment No. : A-26-04

Test Conditions:

Room Temperature : 22 degree Celsius
 Relative Humidity : 61 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.334
-------------------------	-------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
 Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/170407
Date of Issue:	2017-04-10
Date Received:	2017-04-07
Date Tested:	2017-04-07
Date Completed:	2017-04-10
Next Due Date:	2017-06-09

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC301
Serial No.	: 3011701019
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-27-01

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.187
-------------------------	-------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/170407A
Date of Issue:	2017-04-10
Date Received:	2017-04-07
Date Tested:	2017-04-07
Date Completed:	2017-04-10
Next Due Date:	2017-06-09

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC301
Serial No.	: 3011701011
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-27-02

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.170
-------------------------	-------

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/170407F
Date of Issue:	2017-04-10
Date Received:	2017-04-07
Date Tested:	2017-04-07
Date Completed:	2017-04-10
Next Due Date:	2017-06-09

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC301
Serial No.	: 3011701012
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-27-07

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.263
-------------------------	-------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/170407J
Date of Issue:	2017-04-10
Date Received:	2017-04-07
Date Tested:	2017-04-07
Date Completed:	2017-04-10
Next Due Date:	2017-06-09

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Handheld Particle Counter
 Manufacturer : Hal Technology
 Model No. : Hal-HPC301
 Serial No. : 3011701010
 Flow rate : 0.1 cfm
 Zero Count Test : 0 count per 5 minutes
 Equipment No. : A-27-10

Test Conditions:

Room Temperature : 22 degree Celsius
 Relative Humidity : 61 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.204
-------------------------	-------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
 Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160917B
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 955
Serial No. : 12553
Microphone No. : 35222
Equipment No. : N-08-02

Test conditions:

Room Temperature : 24 degree Celsius
Relative Humidity : 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160917C
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12563
Microphone No.	: 34377
Equipment No.	: N-08-03

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/161230
Date of Issue:	2017-01-03
Date Received:	2016-12-30
Date Tested:	2016-12-30
Date Completed:	2017-01-03
Next Due Date:	2018-01-02

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 14303
Microphone No.	: 35222
Equipment No.	: N-08-05

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 62 %

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

Remark: 1) This report supersedes the one dated 2012/01/21 with certificate number C/N/120120/1.

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160826A
Date of Issue:	2016-08-29
Date Received:	2016-08-26
Date Tested:	2016-08-26
Date Completed:	2016-08-29
Next Due Date:	2017-08-28

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160819C
Date of Issue:	2016-08-22
Date Received:	2016-08-19
Date Tested:	2016-08-19
Date Completed:	2016-08-22
Next Due Date:	2017-08-21

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 957
Serial No. : 21460
Microphone No. : 43679
Equipment No. : N-08-09

Test conditions:

Room Temperature : 24 degree Celsius
Relative Humidity : 58%

Test Specifications:

Performance checking at 94 and 114 dB


Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/161128
Date of Issue:	2016-11-30
Date Received:	2016-11-28
Date Tested:	2016-11-28
Date Completed:	2016-11-30
Next Due Date:	2017-11-29

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
 Manufacturer : SVANTEK
 Model No. : SVAN 957
 Serial No. : 23853
 Microphone No. : 48530
 Equipment No. : N-08-10

Test conditions:

Room Temperature : 21 degree Celsius
 Relative Humidity : 66%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160919
Date of Issue:	2016-09-21
Date Received:	2016-09-19
Date Tested:	2016-09-19
Date Completed:	2016-09-21
Next Due Date:	2017-09-20

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 977
Serial No.	: 45467
Microphone No.	: 62838
Equipment No.	: N-08-13

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/161216A
Date of Issue:	2016-12-19
Date Received:	2016-12-16
Date Tested:	2016-12-16
Date Completed:	2016-12-19
Next Due Date:	2017-12-15

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35921
Equipment No.	: N-13-02

Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 56%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160930A
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160930B
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/161104/1
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-11-06

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Equipment No.	: N-02-01

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 62 %

Methodology:


The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Test Report No.:	C/W/170410
Date of Issue:	2017-04-10
Date Received:	2017-04-10
Date Tested:	2017-04-10
Date Completed:	2017-04-10
Next Due Date:	2017-07-09

ATTN: Miss Mei Ling Tang

Page: 1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	: 122251620
Equipment No.	: W.18.09

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 59 %

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

Test Report No.:	C/W/170410
Date of Issue:	2017-04-10
Date Received:	2017-04-10
Date Tested:	2017-04-10
Date Completed:	2017-04-10
Next Due Date:	2017-07-09

Page: 2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.01	4.05	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.88	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.19	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Acceptance Criteria	Comment
Zobell Solution	228.7	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.40	8.43	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Acceptance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.3	30.0		

Conductivity performance checking

	Instrument Readings (mV)	Acceptance Criteria	Comment
KCl stock solution (2570 µs/cm)	2668	2442-2698	Pass

Temperature performance checking

Reference thermometer- E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.2	-0.1	N/A

*****END OF REPORT*****

TEST REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Test Report No.:	C/W/170410A
Date of Issue:	2017-04-10
Date Received:	2017-04-10
Date Tested:	2017-04-10
Date Completed:	2017-04-10
Next Due Date:	2017-07-09

ATTN: Miss Mei Ling Tang

Page: 1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	: 122251520
Equipment No.	: W.18.12

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 59 %

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

Test Report No.:	C/W/170410A
Date of Issue:	2017-04-10
Date Received:	2017-04-10
Date Tested:	2017-04-10
Date Completed:	2017-04-10
Next Due Date:	2017-07-09

Page: 2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.01	4.03	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.89	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.15	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Acceptance Criteria	Comment
Zobell Solution	228.3	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.40	8.42	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Acceptance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.9	30.0		

Conductivity performance checking

	Instrument Readings (mV)	Acceptance Criteria	Comment
KCl stock solution (2570 µs/cm)	2644	2442-2698	Pass

Temperature performance checking

Reference thermometer- E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.2	-0.1	N/A

*****END OF REPORT*****



Calibration Certificate

Number: CCP/66453

Customer Name: Far East Metal & Hardware Company
Contact Person: Ms. Cherry Yiu
Detector Model: Crowcon Tetra Portable Gas Detector
Serial Number: 100486262/01-020

Sensor Type	Measuring Range	Alarm Level Settings				Test Gas	Result
		Alarm 1	Alarm 2	STEL	LTEL		
CH4	0 to 100%LEL	20	40	NA	NA	50%LEL	Passed
H2S	0 to 100ppm	5	10	10	5	25ppm	Passed
O2	0 to 25%v/v	19.0	23.5	NA	NA	18.0%v/v	Passed
CO	0 to 500ppm	30	100	200	30	100ppm	Passed

Next Calibration Date: 5th January 2018

Remarks:

1. "Passed" refers to the detector has been successfully calibrated to meet with manufacturer tolerance of the instrument & sensor specification and repeatability $\pm 5\%$ FSD.
2. The above equipment has been tested and calibrated in accordance with procedures referred to in Crowcon's BSI validated ISO9001 quality manual. Test equipment used has been factory calibrated and is traceable to national standards. Canned calibration gas has been prepared in accordance with BS4559 and original gas mixture has been prepared using NPL (UK) certified Gravimetric Standard. Gas generator has been tested to meet with: Mil Std 45662A / ANSI/NCSL Z540-1

Mark Chan

Technical Service Manager

6th January 2017



FireMark Hong Kong Limited
Flat A, 11/F., Hop Hing Industrial Building, 704 Castle Peak Road, Lai Chi Kok,
Kowloon, Hong Kong.
Tel : (852) 2751 8871 Fax : (852) 2751 880

- when it has to be **right**



Leica Geosystems Calibration Certificate **Blue**

Calibration Certificate Blue without measurement values issued by Authorised Service Centre

Product	DNA03 digital level	Certificate No.	347062-18012017
Article No.	723289	Inspection Date	18.01.2017
Serial No.	347062	Order No.	501047397
Equipment No.	5937807	PO No.	PO
Issued by	Authorised Service Centre Leica Geosystems Ltd. Kowloon, Hong Kong Hongkong	Ordered by	LEIGHTON - CHINA STATE J.V. HONG KONG Hongkong
		Customer	LEIGHTON - CHINA STATE J.V. HONG KONG Hongkong

Compliance

The Calibration Certificate Blue without measurement values issued by Authorised Service Centre corresponds to the Producer Inspection Certificate O in accordance with DIN 55 350 Part 18-4.2.1.

Certificate

We hereby certify that the product described has been tested and complies with the specifications of the product. The test equipment used is traceable to national standards or to recognized procedures. This is established by our Quality Management System, audited and certified to ISO 9001 by an independent national accredited certification body.




Leica Geosystems Ltd.

18.01.2017




Stella Kam
Operations Manager


Jacky Ng
Service Manager

Certificate No. 347062-18012017

Article No. 5003367

This Certificate may not be reproduced other than in full except with prior written approval of the issuing authority.

Leica Geosystems AG
Heinrich-Wild-Strasse
9435 Heerbrugg
Switzerland
Telephone +41 71 / 727 31 31
www.leica-geosystems.com

CALIBRATION CERTIFICATE

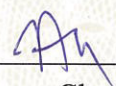
Calibration Item: Minimate Plus Unit (Calibration with Geophone
BG16957)
Model No.: 716A0403
Serial No.: BE17505
Calibration Date: 5 April 2017
Next Calibration Date: 5 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 5 April 2017

CALIBRATION CERTIFICATE

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE17505)

Part Number: 714A9701

Serial No.: BG16957

Calibration Date: 5 April 2017

Next Calibration Date: 5 April 2018

Method Used: In-house Method B3-001


In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 5 April 2017

CALIBRATION CERTIFICATE


Calibration Item: Minimate Plus Unit (Calibration with Geophone
BG14847)
Model No.: 716A0403
Serial No.: BE17904
Calibration Date: 6 April 2017
Next Calibration Date: 6 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 6 April 2017

CALIBRATION CERTIFICATE

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE17904)

Part Number: 714A9701

Serial No.: BG14847

Calibration Date: 6 April 2017

Next Calibration Date: 6 April 2018

Method Used: In-house Method B3-001


In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 6 April 2017

CALIBRATION CERTIFICATE


Calibration Item: Minimate Plus Unit (Calibration with Geophone BG16512)
Model No.: 716A0403
Serial No.: BE13853
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE13853)
Part Number: 714A9701
Serial No.: BG16512
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: Minimate Plus Unit (Calibration with Geophone
BG16515)
Model No.: 716A0403
Serial No.: BE16354
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE16354)
Part Number: 714A9701
Serial No.: BG16515
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: Minimate Plus Unit (Calibration with Geophone BG16959)
Model No.: 716A0403
Serial No.: BE17506
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE17506)
Part Number: 714A9701
Serial No.: BG16959
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: Minimate Plus Unit (Calibration with Geophone BG14848)
Model No.: 716A0403
Serial No.: BE15897
Calibration Date: 10 April 2017
Next Calibration Date: 10 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 10 April 2017

CALIBRATION CERTIFICATE

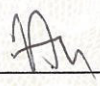
Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE15897)
Part Number: 714A9701
Serial No.: BG14848
Calibration Date: 10 April 2017
Next Calibration Date: 10 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 10 April 2017

CALIBRATION CERTIFICATE

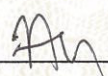
Calibration Item: Minimate Plus Unit (Calibration with Geophone
BG14849)
Model No.: 716A0403
Serial No.: BE15892
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE15892)
Part Number: 714A9701
Serial No.: BG14849
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: Minimate Plus Unit (Calibration with Geophone
BG16514)
Model No.: 716A0403
Serial No.: BE17905
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE17905)
Part Number: 714A9701
Serial No.: BG16514
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHZ*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE


Calibration Item: Minimate Plus Unit (Calibration with Geophone
BG14851)
Model No.: 716A0403
Serial No.: BE17907
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

CALIBRATION CERTIFICATE

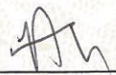
Calibration Item: TRIAXIAL GEOPHONE (Calibration with main unit BE17907)
Part Number: 714A9701
Serial No.: BG14851
Calibration Date: 11 April 2017
Next Calibration Date: 11 April 2018
Method Used: In-house Method B3-001
In-house Testing Procedure No.: B3-001

<u>Test References</u>	<u>Model</u>	<u>Serial No.</u>
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
GLOBAL SPECIALISTS 3MHz*	2030	256812
Stanford Spectrum Analyzer	SR760	41550
Aglient Multimeter*	34410A	MY47011119
HP Distortion Meter*	339A	810699
Bruel & Kjaer Accelerometer*	4370	30323
Bruel & Kjaer Charge Amplifier*	2647	2518810
Bruel & Kjaer Conditional Amplifier*	269	2152173
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____


(Au Yeung Hang Chuen, Isaac)

Date: 11 April 2017

APPENDIX C
WEATHER INFORMATION

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 May 2017	22.6 – 29.5	81	0.0
2 May 2017	24.3 – 26.1	85	0.0
3 May 2017	25.6 – 31.3	82	Trace
4 May 2017	22.9 – 27.6	90	42.5
5 May 2017	23.4 – 29.8	81	0.0
6 May 2017	25.3 – 31.1	79	Trace
7 May 2017	24.8 – 27.7	86	1.8
8 May 2017	23.1 – 28.6	83	9.2
9 May 2017	22.6 – 29.3	81	10.8
10 May 2017	25.3 – 29.6	81	0.0
11 May 2017	25.7 – 31.6	81	0.0
12 May 2017	26.0 – 30.7	76	Trace
13 May 2017	24.5 – 26.6	80	4.7
14 May 2017	24.8 – 29.5	85	Trace
15 May 2017	24.6 – 27.0	94	38.5
16 May 2017	23.6 – 26.6	85	3.0
17 May 2017	23.8 – 29.9	77	0.0
18 May 2017	24.3 – 27.4	74	0.1
19 May 2017	23.7 – 26.0	80	0.7

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 May 2017	22.7 – 24.8	88	0.3
21 May 2017	23.0 – 24.9	90	4.4
22 May 2017	23.8 – 25.2	93	5.6
23 May 2017	24.6 – 28.5	93	4.1
24 May 2017	24.2 – 26.2	95	273.6
25 May 2017	23.9 – 28.5	79	0.0
26 May 2017	23.9 – 26.8	76	0.0
27 May 2017	24.0 – 30.4	65	Trace
28 May 2017	24.8 – 30.5	68	0.0
29 May 2017	21.4 – 30.3	74	0.0
30 May 2017	25.1 – 30.9	80	Trace
31 May 2017	25.6 – 31.3	79	0.0

* The above information was extracted from the daily weather summary by Hong Kong Observatory.

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-May-2017	0:00	3.6	SE
1-May-2017	1:00	3.5	NE
1-May-2017	2:00	3.6	NNE
1-May-2017	3:00	3.6	NE
1-May-2017	4:00	3.6	ENE
1-May-2017	5:00	4.5	E
1-May-2017	6:00	3.6	ESE
1-May-2017	7:00	4.5	SSW
1-May-2017	8:00	4.1	WNW
1-May-2017	9:00	4.5	SW
1-May-2017	10:00	4.1	WSW
1-May-2017	11:00	4.5	SSW
1-May-2017	12:00	4.5	WNW
1-May-2017	13:00	4.5	SE
1-May-2017	14:00	3.6	NE
1-May-2017	15:00	3.9	ESE
1-May-2017	16:00	3.7	N
1-May-2017	17:00	3.5	NNE
1-May-2017	18:00	2.9	ENE
1-May-2017	19:00	3.6	ENE
1-May-2017	20:00	3.3	SE
1-May-2017	21:00	3.8	S
1-May-2017	22:00	3.7	SE
1-May-2017	23:00	3.6	SSE
2-May-2017	0:00	3.8	SSE
2-May-2017	1:00	3.8	S
2-May-2017	2:00	4.1	NE
2-May-2017	3:00	4.1	ESE
2-May-2017	4:00	3.5	SE
2-May-2017	5:00	3.9	E
2-May-2017	6:00	3.8	N
2-May-2017	7:00	4.3	N
2-May-2017	8:00	4	NE
2-May-2017	9:00	3.1	NE

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

2-May-2017	10:00	3.6	SE
2-May-2017	11:00	3.9	NE
2-May-2017	12:00	3.2	SE
2-May-2017	13:00	4.1	ENE
2-May-2017	14:00	4.2	NE
2-May-2017	15:00	2.5	S
2-May-2017	16:00	3.2	W
2-May-2017	17:00	2.7	NE
2-May-2017	18:00	2.7	NE
2-May-2017	19:00	2.5	ESE
2-May-2017	20:00	2.6	E
2-May-2017	21:00	2.5	NE
2-May-2017	22:00	2.8	E
2-May-2017	23:00	2.8	E
3-May-2017	0:00	2.8	NE
3-May-2017	1:00	2.8	SE
3-May-2017	2:00	2.5	ENE
3-May-2017	3:00	2.6	NNE
3-May-2017	4:00	2.1	WSW
3-May-2017	5:00	2	SW
3-May-2017	6:00	2.5	E
3-May-2017	7:00	1.6	SSW
3-May-2017	8:00	2.6	ENE
3-May-2017	9:00	2.8	WNW
3-May-2017	10:00	2.7	WNW
3-May-2017	11:00	3	NE
3-May-2017	12:00	3.6	ENE
3-May-2017	13:00	3.8	ENE
3-May-2017	14:00	3.8	SE
3-May-2017	15:00	3.6	N
3-May-2017	16:00	3.9	ENE
3-May-2017	17:00	2.8	NNE
3-May-2017	18:00	2.5	N
3-May-2017	19:00	1.8	ENE
3-May-2017	20:00	1.6	ENE

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

3-May-2017	21:00	2.5	ENE
3-May-2017	22:00	1.6	SW
3-May-2017	23:00	2.5	W
4-May-2017	0:00	2	ESE
4-May-2017	1:00	3.3	WSW
4-May-2017	2:00	2.8	W
4-May-2017	3:00	3.3	W
4-May-2017	4:00	2	W
4-May-2017	5:00	2	SW
4-May-2017	6:00	2	W
4-May-2017	7:00	2.5	W
4-May-2017	8:00	2.4	SSW
4-May-2017	9:00	3.3	ENE
4-May-2017	10:00	3.9	N
4-May-2017	11:00	3.3	ENE
4-May-2017	12:00	4.1	E
4-May-2017	13:00	3.9	ESE
4-May-2017	14:00	3.4	NNE
4-May-2017	15:00	3.3	ENE
4-May-2017	16:00	3.4	N
4-May-2017	17:00	3	ENE
4-May-2017	18:00	3.3	NNE
4-May-2017	19:00	2.7	NE
4-May-2017	20:00	2.2	NE
4-May-2017	21:00	3.2	ENE
4-May-2017	22:00	3.2	W
4-May-2017	23:00	2.2	WSW
5-May-2017	0:00	3.1	WNW
5-May-2017	1:00	3	NE
5-May-2017	2:00	2.2	WNW
5-May-2017	3:00	2.6	ESE
5-May-2017	4:00	2.5	ENE
5-May-2017	5:00	3	ENE
5-May-2017	6:00	2.7	ENE
5-May-2017	7:00	3.4	NE

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

5-May-2017	8:00	3.2	ESE
5-May-2017	9:00	3.2	ESE
5-May-2017	10:00	3.6	ENE
5-May-2017	11:00	4	ENE
5-May-2017	12:00	4.1	NE
5-May-2017	13:00	4.1	ENE
5-May-2017	14:00	4	NNE
5-May-2017	15:00	4.3	NE
5-May-2017	16:00	4.2	SSW
5-May-2017	17:00	4.1	N
5-May-2017	18:00	3.5	SSE
5-May-2017	19:00	2.9	ENE
5-May-2017	20:00	3.3	ENE
5-May-2017	21:00	3.2	NNE
5-May-2017	22:00	3.5	NE
5-May-2017	23:00	3.9	ENE
6-May-2017	0:00	2.6	SW
6-May-2017	1:00	3.2	SW
6-May-2017	2:00	2.6	WNW
6-May-2017	3:00	2.5	NW
6-May-2017	4:00	3	ENE
6-May-2017	5:00	2.9	NNE
6-May-2017	6:00	2.9	ESE
6-May-2017	7:00	2.7	ESE
6-May-2017	8:00	3	SW
6-May-2017	9:00	3	SSW
6-May-2017	10:00	2.8	SW
6-May-2017	11:00	2.8	WSW
6-May-2017	12:00	3.6	WNW
6-May-2017	13:00	3.2	WNW
6-May-2017	14:00	3	SW
6-May-2017	15:00	3.1	WSW
6-May-2017	16:00	2.9	SSW
6-May-2017	17:00	2.2	WNW
6-May-2017	18:00	1.7	W

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

6-May-2017	19:00	1.5	SSW
6-May-2017	20:00	1.6	N
6-May-2017	21:00	2.1	NNE
6-May-2017	22:00	2.5	WNW
6-May-2017	23:00	2.6	NE
7-May-2017	0:00	3	N
7-May-2017	1:00	2.7	NNE
7-May-2017	2:00	2.6	NE
7-May-2017	3:00	2.2	NE
7-May-2017	4:00	1.7	NE
7-May-2017	5:00	1.6	NE
7-May-2017	6:00	2.1	NE
7-May-2017	7:00	2.4	NNE
7-May-2017	8:00	2.3	E
7-May-2017	9:00	2.6	N
7-May-2017	10:00	2.3	NNE
7-May-2017	11:00	2.3	W
7-May-2017	12:00	2.6	W
7-May-2017	13:00	2.4	W
7-May-2017	14:00	2.8	WNW
7-May-2017	15:00	2.5	W
7-May-2017	16:00	2.4	W
7-May-2017	17:00	2.3	WNW
7-May-2017	18:00	2.6	WNW
7-May-2017	19:00	2.5	WNW
7-May-2017	20:00	2.6	W
7-May-2017	21:00	2	WSW
7-May-2017	22:00	3.3	WNW
7-May-2017	23:00	2.6	WNW
8-May-2017	0:00	2.6	WNW
8-May-2017	1:00	2.6	WNW
8-May-2017	2:00	2.6	NE
8-May-2017	3:00	2.5	NE
8-May-2017	4:00	2.8	NE
8-May-2017	5:00	2.7	NNE

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

8-May-2017	6:00	2.6	NNE
8-May-2017	7:00	2.6	N
8-May-2017	8:00	2.7	ENE
8-May-2017	9:00	2.8	W
8-May-2017	10:00	2.7	W
8-May-2017	11:00	3.6	ENE
8-May-2017	12:00	3.5	SE
8-May-2017	13:00	3.6	ENE
8-May-2017	14:00	3.4	ENE
8-May-2017	15:00	3.6	NE
8-May-2017	16:00	3	WNW
8-May-2017	17:00	2.6	WNW
8-May-2017	18:00	2.8	NNE
8-May-2017	19:00	3.3	ENE
8-May-2017	20:00	2.8	S
8-May-2017	21:00	2	S
8-May-2017	22:00	2	NE
8-May-2017	23:00	1.6	ESE
9-May-2017	0:00	1.6	E
9-May-2017	1:00	1.6	NNE
9-May-2017	2:00	2	ENE
9-May-2017	3:00	2.5	WNW
9-May-2017	4:00	2	WNW
9-May-2017	5:00	1.5	WNW
9-May-2017	6:00	1.6	W
9-May-2017	7:00	2	WNW
9-May-2017	8:00	2	WNW
9-May-2017	9:00	2	W
9-May-2017	10:00	2.8	WNW
9-May-2017	11:00	3.3	WNW
9-May-2017	12:00	3.3	NNW
9-May-2017	13:00	3.5	NW
9-May-2017	14:00	3.1	SSW
9-May-2017	15:00	2.8	WSW
9-May-2017	16:00	3.3	WSW

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

9-May-2017	17:00	2.8	WSW
9-May-2017	18:00	2.2	WSW
9-May-2017	19:00	1.2	W
9-May-2017	20:00	2.8	SSW
9-May-2017	21:00	2.5	WSW
9-May-2017	22:00	2.8	W
9-May-2017	23:00	2.5	SW
10-May-2017	0:00	2	SSW
10-May-2017	1:00	2	SW
10-May-2017	2:00	2	SW
10-May-2017	3:00	2.8	NE
10-May-2017	4:00	2.8	ESE
10-May-2017	5:00	2	NNE
10-May-2017	6:00	2	NE
10-May-2017	7:00	2.5	SSE
10-May-2017	8:00	2.5	SSE
10-May-2017	9:00	3.6	SSE
10-May-2017	10:00	3.6	SE
10-May-2017	11:00	3.3	SSE
10-May-2017	12:00	4.1	SW
10-May-2017	13:00	4.1	NE
10-May-2017	14:00	4.1	N
10-May-2017	15:00	3.3	NE
10-May-2017	16:00	3.6	N
10-May-2017	17:00	2.5	NNE
10-May-2017	18:00	2.5	NE
10-May-2017	19:00	2	ENE
10-May-2017	20:00	1	ENE
10-May-2017	21:00	0.9	NE
10-May-2017	22:00	1.2	E
10-May-2017	23:00	1.4	NE
11-May-2017	0:00	1.2	NE
11-May-2017	1:00	1.2	NE
11-May-2017	2:00	1.5	ENE
11-May-2017	3:00	1.6	ENE

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

11-May-2017	4:00	1.4	ENE
11-May-2017	5:00	1.1	NE
11-May-2017	6:00	1.1	NE
11-May-2017	7:00	1.2	WNW
11-May-2017	8:00	2	SE
11-May-2017	9:00	2.5	NE
11-May-2017	10:00	2	ENE
11-May-2017	11:00	1.7	NE
11-May-2017	12:00	1.6	NNE
11-May-2017	13:00	2.5	ENE
11-May-2017	14:00	2.5	SSE
11-May-2017	15:00	2.3	SE
11-May-2017	16:00	2.1	ESE
11-May-2017	17:00	2.2	W
11-May-2017	18:00	1.3	ENE
11-May-2017	19:00	0.5	ENE
11-May-2017	20:00	0.9	ENE
11-May-2017	21:00	1	NE
11-May-2017	22:00	1	ENE
11-May-2017	23:00	1.1	WNW
12-May-2017	0:00	0.5	SW
12-May-2017	1:00	0.5	WSW
12-May-2017	2:00	0.5	ENE
12-May-2017	3:00	0.5	ENE
12-May-2017	4:00	0.5	ENE
12-May-2017	5:00	0.5	NE
12-May-2017	6:00	0.8	NNE
12-May-2017	7:00	0.8	N
12-May-2017	8:00	0.8	NE
12-May-2017	9:00	1.6	NE
12-May-2017	10:00	1.6	NE
12-May-2017	11:00	2.1	ENE
12-May-2017	12:00	2.3	ENE
12-May-2017	13:00	2.3	NE
12-May-2017	14:00	2.2	ENE

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

12-May-2017	15:00	2.6	N
12-May-2017	16:00	2.1	SE
12-May-2017	17:00	1.9	NE
12-May-2017	18:00	1.3	ENE
12-May-2017	19:00	1	NE
12-May-2017	20:00	0.8	NE
12-May-2017	21:00	0.6	ENE
12-May-2017	22:00	0.7	SSE
12-May-2017	23:00	0.7	NE
13-May-2017	0:00	1.2	NE
13-May-2017	1:00	0.8	NE
13-May-2017	2:00	1.2	NE
13-May-2017	3:00	0.5	N
13-May-2017	4:00	1.6	NNE
13-May-2017	5:00	1.6	ENE
13-May-2017	6:00	1.2	NE
13-May-2017	7:00	1.6	SE
13-May-2017	8:00	1.6	ESE
13-May-2017	9:00	2.5	SSE
13-May-2017	10:00	2.8	NE
13-May-2017	11:00	2.7	ESE
13-May-2017	12:00	2.8	ENE
13-May-2017	13:00	3.3	ENE
13-May-2017	14:00	4.1	W
13-May-2017	15:00	2.8	WNW
13-May-2017	16:00	2.5	SSW
13-May-2017	17:00	3.3	WNW
13-May-2017	18:00	2.5	W
13-May-2017	19:00	2.5	SSW
13-May-2017	20:00	2	SSW
13-May-2017	21:00	1.6	WNW
13-May-2017	22:00	1.6	WNW
13-May-2017	23:00	2	WNW
14-May-2017	0:00	1.6	WSW
14-May-2017	1:00	2	S

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

14-May-2017	2:00	2	SSW
14-May-2017	3:00	2.8	SSW
14-May-2017	4:00	2.5	W
14-May-2017	5:00	2.5	W
14-May-2017	6:00	2.5	W
14-May-2017	7:00	2.8	W
14-May-2017	8:00	3.6	W
14-May-2017	9:00	3.3	SW
14-May-2017	10:00	3.3	W
14-May-2017	11:00	2.8	W
14-May-2017	12:00	3.3	WNW
14-May-2017	13:00	3.3	WNW
14-May-2017	14:00	2.8	WNW
14-May-2017	15:00	2.8	WNW
14-May-2017	16:00	3.6	WSW
14-May-2017	17:00	2.5	W
14-May-2017	18:00	1.6	W
14-May-2017	19:00	1.6	W
14-May-2017	20:00	2	WNW
14-May-2017	21:00	2	WNW
14-May-2017	22:00	2.6	W
14-May-2017	23:00	3.3	WNW
15-May-2017	0:00	3.3	WNW
15-May-2017	1:00	4.1	NW
15-May-2017	2:00	3.6	W
15-May-2017	3:00	2.8	SSW
15-May-2017	4:00	2.5	SSW
15-May-2017	5:00	2.8	WNW
15-May-2017	6:00	2.8	WNW
15-May-2017	7:00	2.8	W
15-May-2017	8:00	2.8	NNE
15-May-2017	9:00	2.5	WNW
15-May-2017	10:00	2.9	W
15-May-2017	11:00	2.8	W
15-May-2017	12:00	3.6	WSW

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

15-May-2017	13:00	3.3	ENE
15-May-2017	14:00	2.5	WNW
15-May-2017	15:00	2.5	WNW
15-May-2017	16:00	2.8	W
15-May-2017	17:00	2.6	W
15-May-2017	18:00	2.4	WNW
15-May-2017	19:00	2.1	WNW
15-May-2017	20:00	2.5	WNW
15-May-2017	21:00	2	W
15-May-2017	22:00	2	WNW
15-May-2017	23:00	2.5	WNW
16-May-2017	0:00	2.5	WNW
16-May-2017	1:00	2.8	SW
16-May-2017	2:00	1.7	WNW
16-May-2017	3:00	1.8	WNW
16-May-2017	4:00	1.6	WNW
16-May-2017	5:00	1.8	WNW
16-May-2017	6:00	1.6	W
16-May-2017	7:00	1.6	W
16-May-2017	8:00	2	SW
16-May-2017	9:00	2	WSW
16-May-2017	10:00	1.8	SW
16-May-2017	11:00	2	SW
16-May-2017	12:00	2.1	WNW
16-May-2017	13:00	2.5	WNW
16-May-2017	14:00	2.3	WNW
16-May-2017	15:00	2.3	WNW
16-May-2017	16:00	2.1	W
16-May-2017	17:00	2	WNW
16-May-2017	18:00	1.2	WNW
16-May-2017	19:00	1.1	WNW
16-May-2017	20:00	0.8	WNW
16-May-2017	21:00	1.4	WSW
16-May-2017	22:00	1.6	SW
16-May-2017	23:00	1.2	WNW

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

17-May-2017	0:00	1.6	WNW
17-May-2017	1:00	1.2	WNW
17-May-2017	2:00	1.1	WNW
17-May-2017	3:00	1.1	W
17-May-2017	4:00	0.8	SSW
17-May-2017	5:00	0.9	SW
17-May-2017	6:00	1.2	NNE
17-May-2017	7:00	1.1	WNW
17-May-2017	8:00	1.2	WNW
17-May-2017	9:00	1.2	W
17-May-2017	10:00	1.3	W
17-May-2017	11:00	2	W
17-May-2017	12:00	2.5	SSW
17-May-2017	13:00	2.1	SW
17-May-2017	14:00	2.5	SSW
17-May-2017	15:00	2	SW
17-May-2017	16:00	2	WSW
17-May-2017	17:00	1.6	W
17-May-2017	18:00	1.7	WNW
17-May-2017	19:00	1.3	WNW
17-May-2017	20:00	1.1	SW
17-May-2017	21:00	1.2	W
17-May-2017	22:00	1.2	SW
17-May-2017	23:00	1.1	SSW
18-May-2017	0:00	1.4	SW
18-May-2017	1:00	1.3	WSW
18-May-2017	2:00	1.3	WNW
18-May-2017	3:00	1.2	SW
18-May-2017	4:00	1.2	WSW
18-May-2017	5:00	1.1	SW
18-May-2017	6:00	1.2	WNW
18-May-2017	7:00	1.1	WNW
18-May-2017	8:00	1.6	WNW
18-May-2017	9:00	1.6	W
18-May-2017	10:00	2.6	WNW

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

18-May-2017	11:00	2.9	SW
18-May-2017	12:00	3.2	SSW
18-May-2017	13:00	3.6	SSW
18-May-2017	14:00	3.1	WSW
18-May-2017	15:00	3.3	SSW
18-May-2017	16:00	3.4	SSW
18-May-2017	17:00	3.6	SSW
18-May-2017	18:00	3.6	SW
18-May-2017	19:00	3.3	SW
18-May-2017	20:00	3.6	WNW
18-May-2017	21:00	3.3	WNW
18-May-2017	22:00	4.5	WNW
18-May-2017	23:00	3.6	WNW
19-May-2017	0:00	4.1	WNW
19-May-2017	1:00	3.6	SW
19-May-2017	2:00	4.1	WSW
19-May-2017	3:00	2.8	WSW
19-May-2017	4:00	3.6	W
19-May-2017	5:00	3.6	WNW
19-May-2017	6:00	4.1	W
19-May-2017	7:00	3.6	W
19-May-2017	8:00	3.3	W
19-May-2017	9:00	4.1	WSW
19-May-2017	10:00	3.6	WSW
19-May-2017	11:00	4.1	WSW
19-May-2017	12:00	3.6	SW
19-May-2017	13:00	3.6	W
19-May-2017	14:00	3.6	W
19-May-2017	15:00	2.5	W
19-May-2017	16:00	2.4	N
19-May-2017	17:00	2.2	N
19-May-2017	18:00	1.9	W
19-May-2017	19:00	1.6	W
19-May-2017	20:00	1.5	W
19-May-2017	21:00	1.3	W

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

19-May-2017	22:00	1.4	W
19-May-2017	23:00	1.2	W
20-May-2017	0:00	1.2	NNE
20-May-2017	1:00	1.5	SW
20-May-2017	2:00	1.7	S
20-May-2017	3:00	1	N
20-May-2017	4:00	1.1	N
20-May-2017	5:00	0.9	N
20-May-2017	6:00	0.8	W
20-May-2017	7:00	0.8	SW
20-May-2017	8:00	0.7	W
20-May-2017	9:00	1.6	SW
20-May-2017	10:00	1.6	W
20-May-2017	11:00	2.1	SW
20-May-2017	12:00	1.6	N
20-May-2017	13:00	2.5	W
20-May-2017	14:00	2.3	W
20-May-2017	15:00	2.8	W
20-May-2017	16:00	2.6	W
20-May-2017	17:00	2.4	W
20-May-2017	18:00	2.2	SSW
20-May-2017	19:00	1.9	WSW
20-May-2017	20:00	1.6	WSW
20-May-2017	21:00	1.3	WSW
20-May-2017	22:00	1.4	WNW
20-May-2017	23:00	1.7	W
21-May-2017	0:00	1.5	W
21-May-2017	1:00	1.7	W
21-May-2017	2:00	1.5	W
21-May-2017	3:00	1.5	W
21-May-2017	4:00	1.5	W
21-May-2017	5:00	1.8	WSW
21-May-2017	6:00	3.5	W
21-May-2017	7:00	2.9	WNW
21-May-2017	8:00	2.2	W

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

21-May-2017	9:00	3.6	W
21-May-2017	10:00	4.5	W
21-May-2017	11:00	2.8	W
21-May-2017	12:00	3.3	SW
21-May-2017	13:00	3.3	SW
21-May-2017	14:00	3	WSW
21-May-2017	15:00	2.7	SW
21-May-2017	16:00	2.6	SW
21-May-2017	17:00	2.8	W
21-May-2017	18:00	3.4	SW
21-May-2017	19:00	3.9	SW
21-May-2017	20:00	3.2	SW
21-May-2017	21:00	3.6	W
21-May-2017	22:00	3.1	SW
21-May-2017	23:00	2.8	WSW
22-May-2017	0:00	3.1	WSW
22-May-2017	1:00	4.1	SW
22-May-2017	2:00	2.9	SW
22-May-2017	3:00	2.8	SW
22-May-2017	4:00	3.1	SW
22-May-2017	5:00	2.8	WSW
22-May-2017	6:00	2.5	W
22-May-2017	7:00	3.3	W
22-May-2017	8:00	3.5	W
22-May-2017	9:00	3.6	SW
22-May-2017	10:00	3.5	W
22-May-2017	11:00	3.8	SW
22-May-2017	12:00	3.8	WSW
22-May-2017	13:00	3.6	SW
22-May-2017	14:00	3.4	SW
22-May-2017	15:00	3.8	WSW
22-May-2017	16:00	4	SW
22-May-2017	17:00	3.7	WSW
22-May-2017	18:00	3.4	SW
22-May-2017	19:00	3.4	SW

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

22-May-2017	20:00	2.7	WSW
22-May-2017	21:00	3.5	WSW
22-May-2017	22:00	3.6	SSW
22-May-2017	23:00	2.5	SW
23-May-2017	0:00	2.1	WNW
23-May-2017	1:00	2.5	WNW
23-May-2017	2:00	2.2	WNW
23-May-2017	3:00	2	W
23-May-2017	4:00	2	SSE
23-May-2017	5:00	1.7	SSW
23-May-2017	6:00	2	SSW
23-May-2017	7:00	1.5	SSW
23-May-2017	8:00	2.1	SSW
23-May-2017	9:00	2.5	SSW
23-May-2017	10:00	2.6	W
23-May-2017	11:00	2.9	W
23-May-2017	12:00	3.3	W
23-May-2017	13:00	2.8	WSW
23-May-2017	14:00	2.5	WSW
23-May-2017	15:00	3	SW
23-May-2017	16:00	2.6	W
23-May-2017	17:00	2.4	W
23-May-2017	18:00	2	W
23-May-2017	19:00	1.2	WSW
23-May-2017	20:00	1.6	WSW
23-May-2017	21:00	1.6	WSW
23-May-2017	22:00	3.3	WSW
23-May-2017	23:00	3.3	W
24-May-2017	0:00	4.1	SW
24-May-2017	1:00	2.8	WSW
24-May-2017	2:00	2.8	W
24-May-2017	3:00	3.3	WNW
24-May-2017	4:00	2.8	W
24-May-2017	5:00	3.3	W
24-May-2017	6:00	2.8	N

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

24-May-2017	7:00	2.4	N
24-May-2017	8:00	2.9	N
24-May-2017	9:00	3.3	NE
24-May-2017	10:00	4.1	N
24-May-2017	11:00	4.1	W
24-May-2017	12:00	3.3	W
24-May-2017	13:00	3.3	W
24-May-2017	14:00	3.6	W
24-May-2017	15:00	3.6	WSW
24-May-2017	16:00	2.8	W
24-May-2017	17:00	2.3	SW
24-May-2017	18:00	2.4	W
24-May-2017	19:00	2.5	WSW
24-May-2017	20:00	2.5	WSW
24-May-2017	21:00	2.2	W
24-May-2017	22:00	2.3	WSW
24-May-2017	23:00	2.4	WNW
25-May-2017	0:00	2.2	WSW
25-May-2017	1:00	1.6	WSW
25-May-2017	2:00	1.3	SW
25-May-2017	3:00	1.3	W
25-May-2017	4:00	1.4	WNW
25-May-2017	5:00	1.5	WNW
25-May-2017	6:00	1.6	W
25-May-2017	7:00	1.4	W
25-May-2017	8:00	1.6	WSW
25-May-2017	9:00	2.8	W
25-May-2017	10:00	3.6	WSW
25-May-2017	11:00	3.3	SW
25-May-2017	12:00	3.2	SW
25-May-2017	13:00	2.7	W
25-May-2017	14:00	2.3	WNW
25-May-2017	15:00	2.5	W
25-May-2017	16:00	2.3	W
25-May-2017	17:00	2	NNE

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

25-May-2017	18:00	1.7	NNE
25-May-2017	19:00	1.5	W
25-May-2017	20:00	1.6	W
25-May-2017	21:00	1.3	WNW
25-May-2017	22:00	1.2	W
25-May-2017	23:00	1	WNW
26-May-2017	0:00	1.5	WNW
26-May-2017	1:00	1.5	WNW
26-May-2017	2:00	1.5	WSW
26-May-2017	3:00	1.5	SW
26-May-2017	4:00	1.5	W
26-May-2017	5:00	1.4	WNW
26-May-2017	6:00	1.1	W
26-May-2017	7:00	1.6	W
26-May-2017	8:00	2.6	WSW
26-May-2017	9:00	3	SW
26-May-2017	10:00	3.9	WSW
26-May-2017	11:00	3.9	W
26-May-2017	12:00	4.1	WSW
26-May-2017	13:00	4.1	SSW
26-May-2017	14:00	3.7	S
26-May-2017	15:00	3.8	NE
26-May-2017	16:00	2.9	W
26-May-2017	17:00	2	NNE
26-May-2017	18:00	1.8	W
26-May-2017	19:00	1.5	W
26-May-2017	20:00	1.5	SSW
26-May-2017	21:00	1.3	W
26-May-2017	22:00	2	WSW
26-May-2017	23:00	2.2	SW
27-May-2017	0:00	2.7	SSW
27-May-2017	1:00	2.4	W
27-May-2017	2:00	2.3	S
27-May-2017	3:00	2.5	SSW
27-May-2017	4:00	2.4	W

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

27-May-2017	5:00	2	W
27-May-2017	6:00	2	W
27-May-2017	7:00	1.5	W
27-May-2017	8:00	2	N
27-May-2017	9:00	2.4	W
27-May-2017	10:00	2.9	SSW
27-May-2017	11:00	3.4	W
27-May-2017	12:00	4.1	W
27-May-2017	13:00	4.1	N
27-May-2017	14:00	3.7	N
27-May-2017	15:00	3.4	N
27-May-2017	16:00	3.1	NNE
27-May-2017	17:00	2.8	N
27-May-2017	18:00	1.9	NNE
27-May-2017	19:00	1.5	NNE
27-May-2017	20:00	1.6	NNE
27-May-2017	21:00	1.7	NNE
27-May-2017	22:00	1.4	NNE
27-May-2017	23:00	1.7	NNE
28-May-2017	0:00	1.5	NNE
28-May-2017	1:00	2	NE
28-May-2017	2:00	1.4	ENE
28-May-2017	3:00	2	NE
28-May-2017	4:00	2.2	NNE
28-May-2017	5:00	2	NE
28-May-2017	6:00	2.2	NE
28-May-2017	7:00	2.5	NNE
28-May-2017	8:00	3.1	ENE
28-May-2017	9:00	2.7	ENE
28-May-2017	10:00	3.3	W
28-May-2017	11:00	3.3	SSW
28-May-2017	12:00	2.8	W
28-May-2017	13:00	3	W
28-May-2017	14:00	2.8	W
28-May-2017	15:00	2.5	W

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

28-May-2017	16:00	2.4	W
28-May-2017	17:00	1.9	W
28-May-2017	18:00	1.9	W
28-May-2017	19:00	1.4	N
28-May-2017	20:00	1.2	N
28-May-2017	21:00	1.5	N
28-May-2017	22:00	1.6	N
28-May-2017	23:00	1.7	N
29-May-2017	0:00	1.5	NNE
29-May-2017	1:00	1.7	NNE
29-May-2017	2:00	1.5	NNE
29-May-2017	3:00	1.7	NNE
29-May-2017	4:00	1.6	NE
29-May-2017	5:00	2.2	NE
29-May-2017	6:00	1.5	NE
29-May-2017	7:00	1.2	NE
29-May-2017	8:00	1.6	NNE
29-May-2017	9:00	2.5	NE
29-May-2017	10:00	2.8	NNE
29-May-2017	11:00	2.6	ENE
29-May-2017	12:00	2.8	NE
29-May-2017	13:00	2.5	ENE
29-May-2017	14:00	2.2	W
29-May-2017	15:00	2.5	W
29-May-2017	16:00	2.1	W
29-May-2017	17:00	1.6	W
29-May-2017	18:00	1.5	W
29-May-2017	19:00	1.1	SSW
29-May-2017	20:00	1.1	WSW
29-May-2017	21:00	1.1	SW
29-May-2017	22:00	1.1	SW
29-May-2017	23:00	1.1	W
30-May-2017	0:00	1.6	W
30-May-2017	1:00	1.3	WSW
30-May-2017	2:00	1.3	SW

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

30-May-2017	3:00	1.3	SW
30-May-2017	4:00	1.6	SW
30-May-2017	5:00	1.8	WSW
30-May-2017	6:00	1.7	WSW
30-May-2017	7:00	1.7	SW
30-May-2017	8:00	3.3	WSW
30-May-2017	9:00	2.8	W
30-May-2017	10:00	4.1	W
30-May-2017	11:00	3.6	WNW
30-May-2017	12:00	3.3	W
30-May-2017	13:00	3.3	SW
30-May-2017	14:00	2.8	SSW
30-May-2017	15:00	2.2	SW
30-May-2017	16:00	2.5	WSW
30-May-2017	17:00	2	SW
30-May-2017	18:00	2	SSW
30-May-2017	19:00	1.5	SW
30-May-2017	20:00	1.5	WSW
30-May-2017	21:00	1.3	W
30-May-2017	22:00	1.3	W
30-May-2017	23:00	2.4	SW
31-May-2017	0:00	2.1	SSW
31-May-2017	1:00	2	SW
31-May-2017	2:00	2	SW
31-May-2017	3:00	1.4	W
31-May-2017	4:00	1.8	SW
31-May-2017	5:00	1.7	SW
31-May-2017	6:00	1.8	WSW
31-May-2017	7:00	1.9	SW
31-May-2017	8:00	1.9	WSW
31-May-2017	9:00	2	WNW
31-May-2017	10:00	1.8	W
31-May-2017	11:00	2.2	SW
31-May-2017	12:00	2.3	SSW
31-May-2017	13:00	2	SW

**APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

31-May-2017	14:00	2.2	WSW
31-May-2017	15:00	2.3	SW
31-May-2017	16:00	2.4	SW
31-May-2017	17:00	2.2	SW
31-May-2017	18:00	2.3	SW
31-May-2017	19:00	2.1	WNW
31-May-2017	20:00	2.1	WSW
31-May-2017	21:00	2.2	SW
31-May-2017	22:00	1.9	SW
31-May-2017	23:00	1.9	WNW

**APPENDIX D
ENVIRONMENTAL MONITORING
SCHEDULES**

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Air Quality and Noise Monitoring Schedule (May 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-May	2-May	3-May	4-May	5-May	6-May
		24 hr TSP		1 hr TSP X3 [AM1, AM2, AM3, AM4, AM5(A) & AM6(A)] Noise [CM2, CM4, CM6(A), CM7(A), CM8(A)]	Noise [CM1, CM3, CM5]	
7-May	8-May	9-May	10-May	11-May	12-May	13-May
	24 hr TSP [AM1, AM2, AM3, AM5(A) & AM6(A)]	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]	1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM2, CM4] 24 hr TSP [AM4(A)]	Noise [CM1, CM3, CM5]	24 hr TSP [AM1, AM2, AM3, AM5(A) & AM6(A)]	
14-May	15-May	16-May	17-May	18-May	19-May	20-May
	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]	1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM4]		Noise [CM1, CM3, CM5, CM6(A), CM7(A)] 24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)]	
21-May	22-May	23-May	24-May	25-May	26-May	27-May
	1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM4] 24 hr TSP [AM4(A)]	Noise [CM1, CM3, CM5, CM6(A), CM7(A)]	24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]	1 hr TSP X3 [AM1, AM2, AM3, AM4]	
28-May	29-May	30-May	31-May			
	24 hr TSP [AM1, AM2, AM3, AM5(A) & AM6(A)]		1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]			

Air Quality Monitoring Station

AM1 - Tin Hau Temple
AM2 - Sai Tso Wan Recreation Ground
AM3 - Yau Lai Estate Bik Lai House
AM4⁽¹⁾ - Sitting-out Area at Cha Kwo Ling Village
AM4(A)⁽²⁾ - Cha Kwo Ling Public Cargo Working Area Administrative Office
AM5(A) - Tseung Kwan O DSD Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area

Noise Monitoring Station

CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong
CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong
CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong
CM4 - Tin Hau Temple, Cha Kwo Ling
CM5 - CCC Kei Faat Primary School, Yau Tong
CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores
CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores
CM8(A) - Park Central, L1/F Open Space Area

Note (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Water Quality Monitoring Schedule (May 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-May	2-May	3-May	4-May	5-May	6-May
		Mid-Flood 10:06 Mid-Ebb 17:27		Mid-Flood 12:43 Mid-Ebb 19:55		Mid-Ebb 9:52 Mid-Flood 15:35
7-May	8-May	9-May	10-May	11-May	12-May	13-May
	Mid-Ebb 11:07 Mid-Flood 17:18		Mid-Ebb 12:10 Mid-Flood 18:42		Mid-Ebb 13:11 Mid-Flood 19:58	
14-May	15-May	16-May	17-May	18-May	19-May	20-May
	Mid-Flood 7:44 Mid-Ebb 14:39		Mid-Flood 8:50 Mid-Ebb 16:15		Mid-Flood 11:12 Mid-Ebb 18:17	
21-May	22-May	23-May	24-May	25-May	26-May	27-May
	Mid-Ebb 9:50 Mid-Flood 15:35		Mid-Ebb 11:12 Mid-Flood 17:33		Mid-Ebb 12:40 Mid-Flood 19:20	
28-May	29-May	30-May	31-May			
	Mid-Flood 8:11 Mid-Ebb 15:09		Mid-Flood 9:53 Mid-Ebb 17:05			

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Groundwater Quality Monitoring Schedule (May 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-May	2-May	3-May	4-May	5-May	6-May
7-May	8-May	9-May	10-May	11-May	12-May	13-May
				Groundwater Quality Monitoring		
14-May	15-May	16-May	17-May	18-May	19-May	20-May
21-May	22-May	23-May	24-May	25-May	26-May	27-May
		Groundwater Quality Monitoring				
28-May	29-May	30-May	31-May			

Monitoring Location:
Stream 1, Stream 2, Stream 3

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Post-Translocation Coral Monitoring Schedule (May 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-May	2-May	3-May	4-May	5-May	6-May
7-May	8-May	9-May	10-May	11-May	12-May	13-May
					Post-Translocation Coral Monitoring	
14-May	15-May	16-May	17-May	18-May	19-May	20-May
21-May	22-May	23-May	24-May	25-May	26-May	27-May
28-May	29-May	30-May	31-May			

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Tentative Impact Air Quality and Noise Monitoring Schedule (June 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Jun	2-Jun	3-Jun
				1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM4] 24 hr TSP [AM4(A)]	Noise [CM1, CM3, CM5, CM6(A), CM7(A)] 24 hr TSP	
4-Jun	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun	10-Jun
	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]		1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM4]	Noise [CM1, CM3, CM5, CM6(A), CM7(A)] 24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)]	
11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun
		1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM4]	Noise [CM1, CM3, CM5, CM6(A), CM7(A)] 24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]		
18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun
	1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM4]	Noise [CM1, CM3, CM5, CM6(A), CM7(A)] 24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]		1 hr TSP X3 [AM1, AM2, AM3, AM4]	
25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	
	24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]		1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM4]	Noise [CM1, CM3, CM5, CM6(A), CM7(A)] 24 hr TSP	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station

AM1 - Tin Hau Temple
AM2 - Sai Tso Wan Recreation Ground
AM3 - Yau Lai Estate Bik Lai House
AM4⁽¹⁾ - Sitting-out Area at Cha Kwo Ling Village
AM4(A)⁽²⁾ - Cha Kwo Ling Public Cargo Working Area Administrative Office
AM5(A) - Tseung Kwan O DSD Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area

Note (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

Noise Monitoring Station

CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong
CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong
CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong
CM4 - Tin Hau Temple, Cha Kwo Ling
CM5 - CCC Kei Faat Primary School, Yau Tong
CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores
CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores
CM8(A) - Park Central, L1/F Open Space Area

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Tentative Impact Water Quality Monitoring Schedule (June 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Jun	2-Jun	3-Jun
					Mid-Flood 12:24 Mid-Ebb 19:16	
4-Jun	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun	10-Jun
	Mid-Ebb 10:09 Mid-Flood 16:19		Mid-Ebb 11:19 Mid-Flood 17:55		Mid-Ebb 12:20 Mid-Flood 19:16	
11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun
	Mid-Flood 7:01 Mid-Ebb 13:56		Mid-Flood 8:11 Mid-Ebb 15:10		Mid-Flood 9:50 Mid-Ebb 16:41	
18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun
	Mid-Ebb 8:24 Mid-Flood 14:05		Mid-Ebb 10:05 Mid-Flood 16:27		Mid-Ebb 11:39 Mid-Flood 18:25	
25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	
	Mid-Flood 7:10 Mid-Ebb 14:06		Mid-Flood 8:47 Mid-Ebb 15:44		Mid-Flood 10:38 Mid-Ebb 17:26	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Tentative Impact Groundwater Quality Monitoring Schedule (June 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Jun	2-Jun	3-Jun
4-Jun	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun	10-Jun
				Groundwater Quality Monitoring		
11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun
18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun
			Groundwater Quality Monitoring			
25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Monitoring Location:
Stream 1, Stream 2, Stream 3

**APPENDIX E
1-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-May-17	13:00	Cloudy	165.5
4-May-17	14:00	Cloudy	150.7
4-May-17	15:00	Cloudy	185.4
10-May-17	9:00	Cloudy	232.4
10-May-17	10:00	Cloudy	247.0
10-May-17	11:00	Cloudy	256.1
16-May-17	13:00	Cloudy	152.4
16-May-17	14:00	Cloudy	127.2
16-May-17	15:00	Cloudy	135.6
22-May-17	9:00	Cloudy	116.1
22-May-17	10:00	Cloudy	145.4
22-May-17	11:00	Cloudy	110.7
26-May-17	9:00	Cloudy	182.4
26-May-17	10:00	Cloudy	177.3
26-May-17	11:00	Cloudy	168.6
		Average	170.2
		Maximum	256.1
		Minimum	110.7

Location AM2 - Sai Tso Wan Recreation Ground			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-May-17	9:00	Cloudy	108.7
4-May-17	10:00	Cloudy	112.0
4-May-17	11:00	Cloudy	103.4
10-May-17	13:00	Cloudy	172.8
10-May-17	14:00	Cloudy	164.7
10-May-17	15:00	Cloudy	162.2
16-May-17	9:00	Cloudy	60.1
16-May-17	10:00	Cloudy	69.5
16-May-17	11:00	Cloudy	62.6
22-May-17	14:14	Cloudy	65.4
22-May-17	15:14	Cloudy	60.0
22-May-17	16:14	Cloudy	53.4
26-May-17	9:00	Cloudy	173.7
26-May-17	10:00	Cloudy	213.1
26-May-17	11:00	Cloudy	172.9
		Average	117.0
		Maximum	213.1
		Minimum	53.4

Appendix E - 1-hour TSP Monitoring Results

Location AM3 - Yau Lai Estate Bik Lai House			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-May-17	13:00	Cloudy	168.0
4-May-17	14:00	Cloudy	157.4
4-May-17	15:00	Cloudy	133.6
10-May-17	13:00	Cloudy	268.5
10-May-17	14:00	Cloudy	238.6
10-May-17	15:00	Cloudy	235.5
16-May-17	14:00	Cloudy	79.1
16-May-17	15:00	Cloudy	83.8
16-May-17	16:00	Cloudy	73.6
22-May-17	13:00	Cloudy	54.2
22-May-17	14:00	Cloudy	55.3
22-May-17	15:00	Cloudy	53.0
26-May-17	13:00	Cloudy	118.5
26-May-17	14:00	Cloudy	126.4
26-May-17	15:00	Cloudy	137.7
		Average	132.2
		Maximum	268.5
		Minimum	53.0

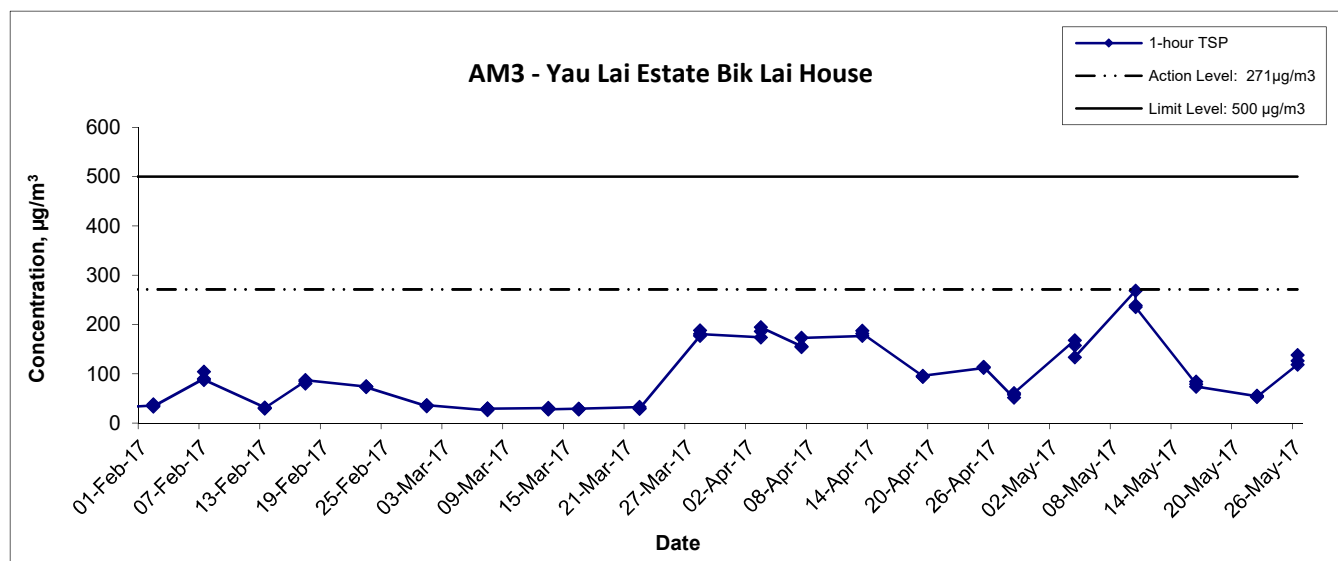
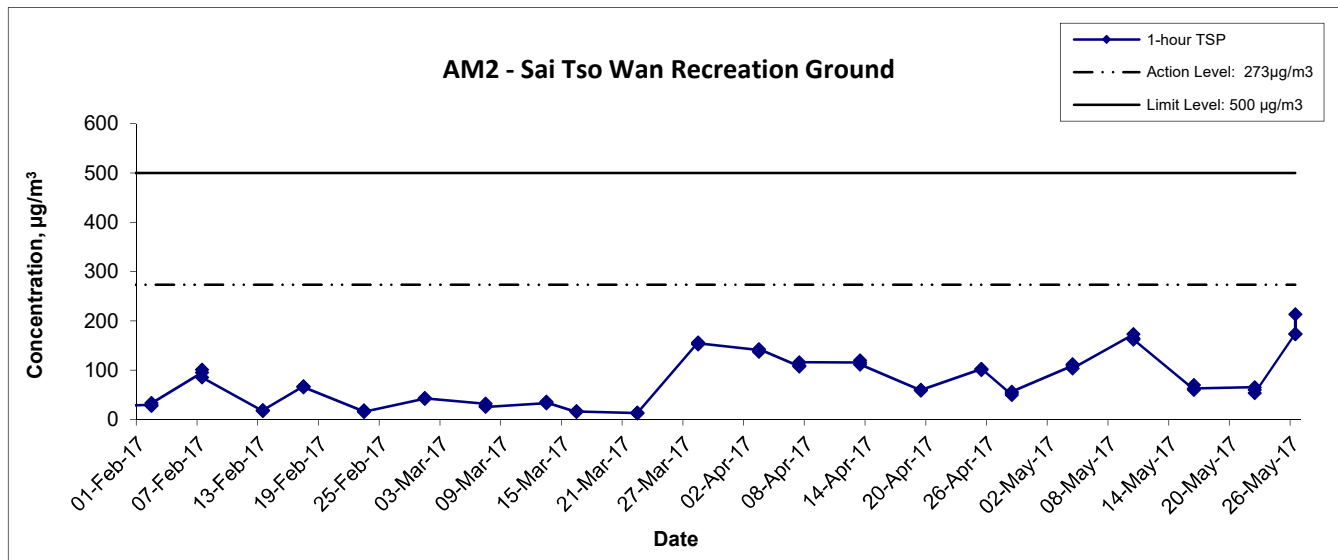
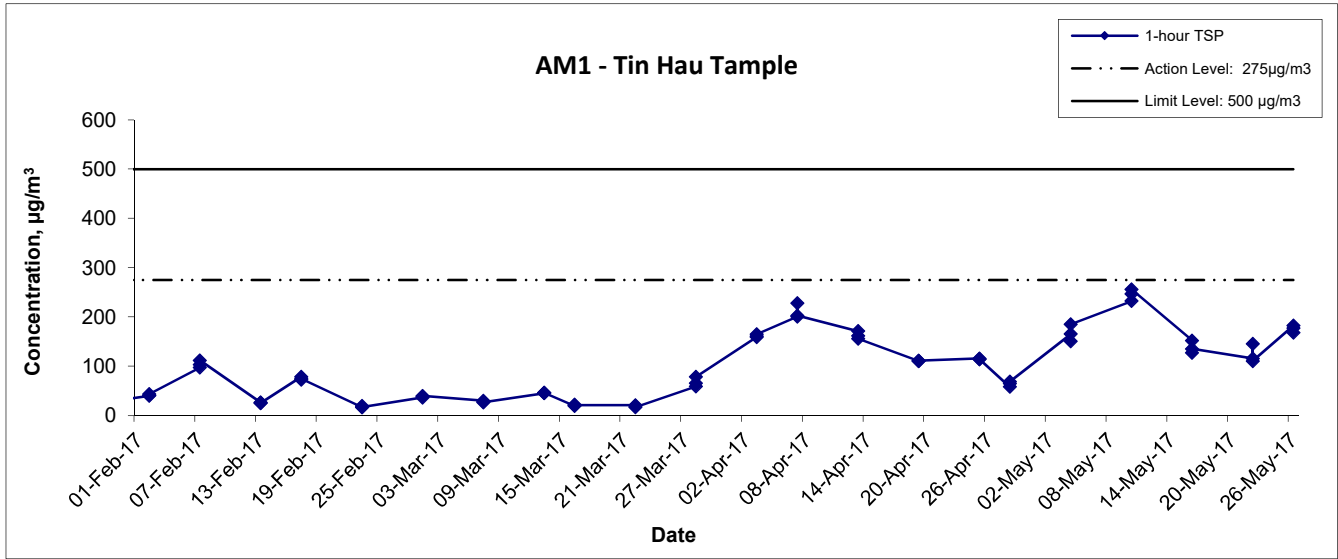
Location AM4 - Sitting-out Area at Cha Kwo Ling Village			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-May-17	9:00	Cloudy	253.1
4-May-17	10:00	Cloudy	225.4
4-May-17	11:00	Cloudy	186.2
10-May-17	9:00	Cloudy	177.2
10-May-17	10:00	Cloudy	156.1
10-May-17	11:00	Cloudy	136.3
16-May-17	9:00	Cloudy	100.1
16-May-17	10:00	Cloudy	119.1
16-May-17	11:00	Cloudy	111.6
22-May-17	9:00	Cloudy	45.0
22-May-17	10:00	Cloudy	46.1
22-May-17	11:00	Cloudy	48.4
26-May-17	13:00	Cloudy	148.4
26-May-17	14:00	Cloudy	155.2
26-May-17	15:00	Cloudy	148.5
		Average	137.1
		Maximum	253.1
		Minimum	45.0

Appendix E - 1-hour TSP Monitoring Results

Location AM5(A) - Tseung Kwan O DSD Desilting Compound			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-May-17	13:00	Cloudy	125.2
4-May-17	14:00	Cloudy	135.4
4-May-17	15:00	Cloudy	118.9
9-May-17	9:00	Sunny	23.5
9-May-17	10:00	Sunny	31.3
9-May-17	11:00	Sunny	27.9
15-May-17	9:00	Rainy	177.0
15-May-17	10:00	Rainy	143.7
15-May-17	11:00	Rainy	247.6
19-May-17	9:00	Cloudy	199.1
19-May-17	10:00	Cloudy	194.4
19-May-17	11:00	Cloudy	190.0
25-May-17	9:00	Sunny	264.7
25-May-17	10:00	Sunny	262.1
25-May-17	11:00	Sunny	264.8
31-May-17	14:00	Sunny	119.5
31-May-17	15:00	Sunny	112.9
31-May-17	16:00	Sunny	133.7
Average			154.0
Maximum			264.8
Minimum			23.5

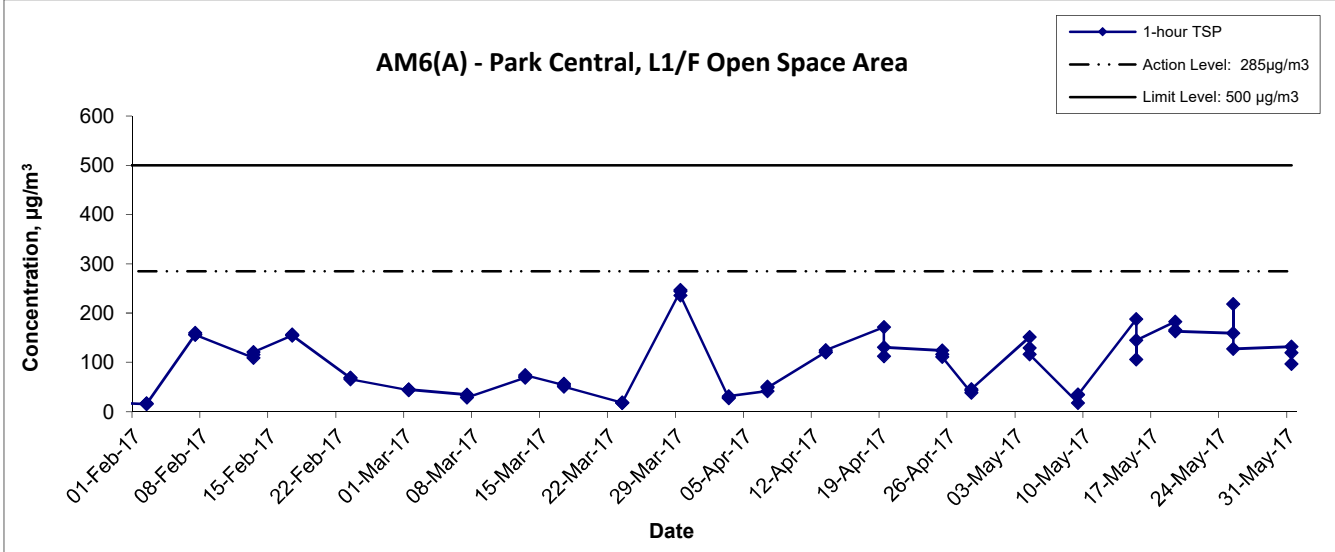
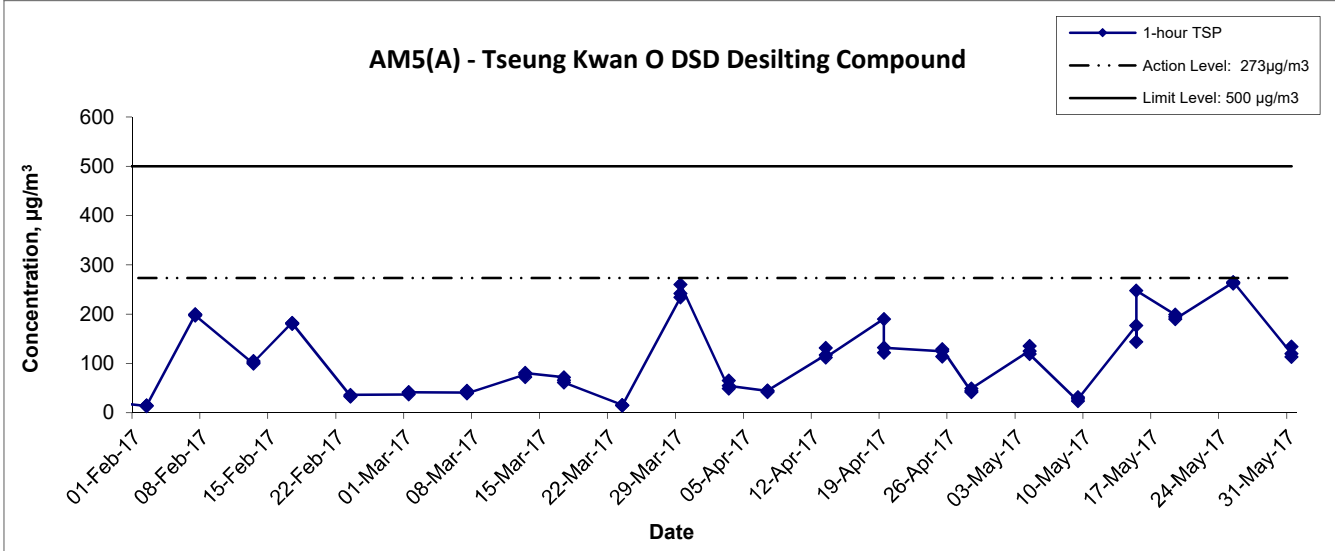
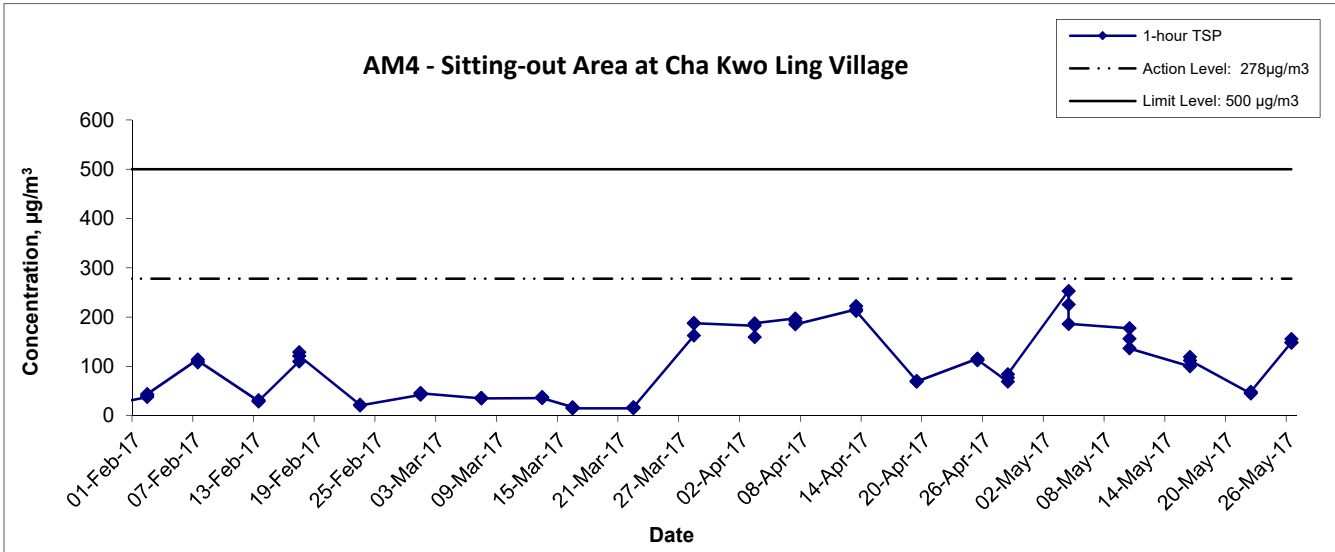
Location AM6(A) - Park Central, L1/F Open Space Area			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-May-17	9:00	Cloudy	151.3
4-May-17	10:00	Cloudy	129.3
4-May-17	11:00	Cloudy	116.5
9-May-17	13:00	Sunny	17.9
9-May-17	14:00	Sunny	34.6
9-May-17	15:00	Sunny	34.6
15-May-17	13:05	Rainy	188.2
15-May-17	14:05	Rainy	106.2
15-May-17	15:05	Rainy	145.3
19-May-17	9:00	Cloudy	182.4
19-May-17	10:00	Cloudy	165.8
19-May-17	11:00	Cloudy	163.3
25-May-17	13:00	Cloudy	159.1
25-May-17	14:00	Cloudy	218.4
25-May-17	15:00	Cloudy	127.6
31-May-17	9:00	Sunny	131.8
31-May-17	10:00	Sunny	119.4
31-May-17	11:00	Sunny	97.0
Average			127.2
Maximum			218.4
Minimum			17.9

1-hr TSP Concentration Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
	Date May 17	Appendix E	

1-hr TSP Concentration Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 17	Appendix E	

**APPENDIX F
24-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

Appendix F - 24-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
2-May-17	Cloudy	300.0	761.0	2.8686	3.0006	0.1320	1859.0	1883.0	24.0	1.19	1.19	1.19	1711.5	77.1
8-May-17	Cloudy	299.3	759.9	3.5452	3.6998	0.1546	1883.0	1907.0	24.0	1.19	1.19	1.19	1712.4	90.3
12-May-17	Cloudy	303.1	761.2	3.3418	3.5186	0.1768	1907.0	1931.0	24.0	1.18	1.18	1.18	1701.9	103.9
18-May-17	Cloudy	299.2	761.1	3.2836	3.5187	0.2351	1931.0	1955.0	24.0	1.22	1.22	1.22	1758.7	133.7
24-May-17	Cloudy	297.6	757.3	3.3005	3.3850	0.0845	1955.0	1979.0	24.0	1.22	1.22	1.22	1759.1	48.0
29-May-17	Sunny	299.0	760.8	3.2796	3.4325	0.1529	1979.0	2003.0	24.0	1.22	1.22	1.22	1759.0	86.9
													Min	48.0
													Max	133.7
													Average	90.0

Location AM2 - Sai Tso Wan Recreation Ground

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
2-May-17	Cloudy	300.5	760.6	2.8772	3.0316	0.1544	22823.3	22847.3	24.0	1.19	1.19	1.19	1709.7	90.3
8-May-17	Cloudy	299.8	761.4	3.6111	3.8007	0.1896	22847.3	22871.3	24.0	1.19	1.19	1.19	1712.7	110.7
12-May-17	Cloudy	302.6	760.7	3.2951	3.4917	0.1966	22871.3	22895.3	24.0	1.48	1.48	1.48	2125.1	92.5
18-May-17	Cloudy	299.7	760.8	3.2611	3.4352	0.1741	22895.3	22919.3	24.0	1.48	1.48	1.48	2136.1	81.5
24-May-17	Cloudy	297.5	756.9	3.2918	3.3578	0.0660	22919.3	22943.3	24.0	1.49	1.48	1.49	2138.6	30.9
29-May-17	Sunny	299.4	760.3	3.3269	3.4246	0.0977	22943.3	22967.3	24.0	1.48	1.48	1.48	2136.5	45.7
													Min	30.9
													Max	110.7
													Average	75.3

Location AM3 - Yau Lai Estate, Bik Lai House

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
2-May-17	Cloudy	301.0	761.3	2.8513	2.9209	0.0696	11390.7	11414.7	24.0	1.20	1.20	1.20	1723.0	40.4
8-May-17	Cloudy	300.3	761.2	3.5888	3.6798	0.0910	11414.7	11438.7	24.0	1.20	1.20	1.20	1731.3	52.6
12-May-17	Cloudy	301.7	760.1	3.2866	3.4052	0.1186	11438.7	11462.7	24.0	1.20	1.20	1.20	1725.7	68.7
18-May-17	Cloudy	300.3	761.5	3.3042	3.4117	0.1075	11462.7	11486.7	24.0	1.20	1.20	1.20	1731.7	62.1
24-May-17	Cloudy	297.4	757.8	3.2681	3.3201	0.0520	11486.7	11510.7	24.0	1.21	1.21	1.21	1736.2	30.0
29-May-17	Sunny	299.6	418.7	3.2926	3.3891	0.0965	11510.7	11534.7	24.0	1.20	0.33	0.77	1102.7	87.5
													Min	30.0
													Max	87.5
													Average	56.9

Appendix F - 24-hour TSP Monitoring Results

Location AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
2-May-17	Cloudy	301.7	760.1	2.8616	2.9898	0.1282	8377.2	8401.2	24.0	1.20	1.20	1.20	1724.0	74.4
10-May-17	Cloudy	301.5	762.2	3.5316	3.8318	0.3002	8401.2	8425.2	24.0	1.20	1.20	1.20	1727.2	173.8
18-May-17	Cloudy	300.5	761.7	3.5897	3.8933	0.3036	8425.2	8449.2	24.0	1.20	1.20	1.20	1733.6	175.1
22-May-17	Cloudy	297.9	758.0	3.6448	3.8406	0.1958	8449.2	8473.2	24.0	1.21	1.21	1.21	1737.3	112.7
24-May-17	Cloudy	298.4	757.7	3.2960	3.4980	0.2020	8473.2	8497.2	24.0	1.20	1.21	1.21	1735.3	116.4
													Min	74.4
													Max	175.1
													Average	130.5

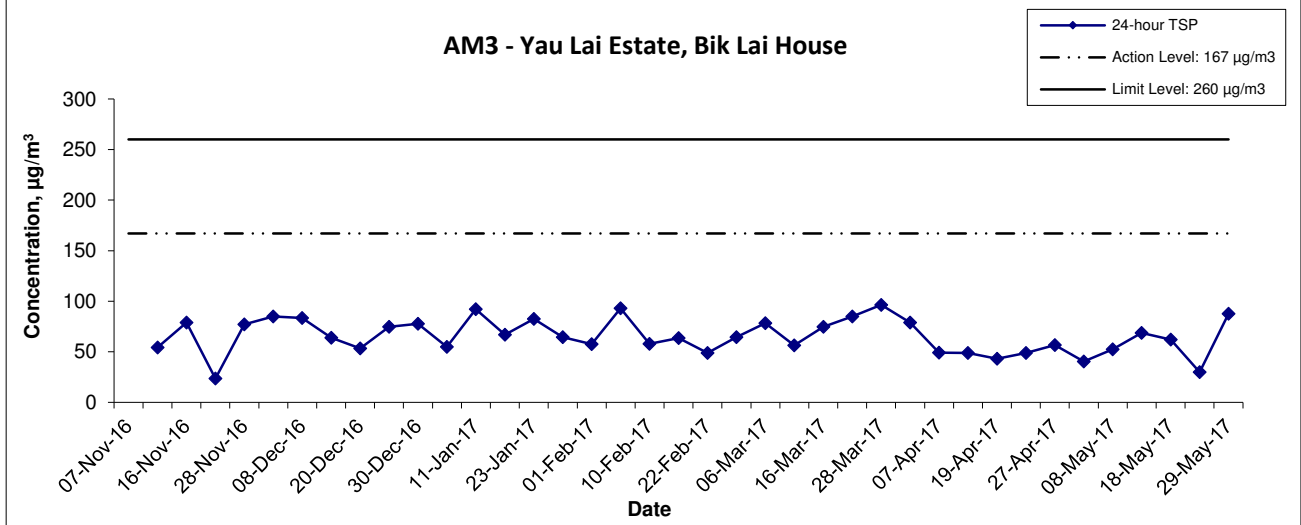
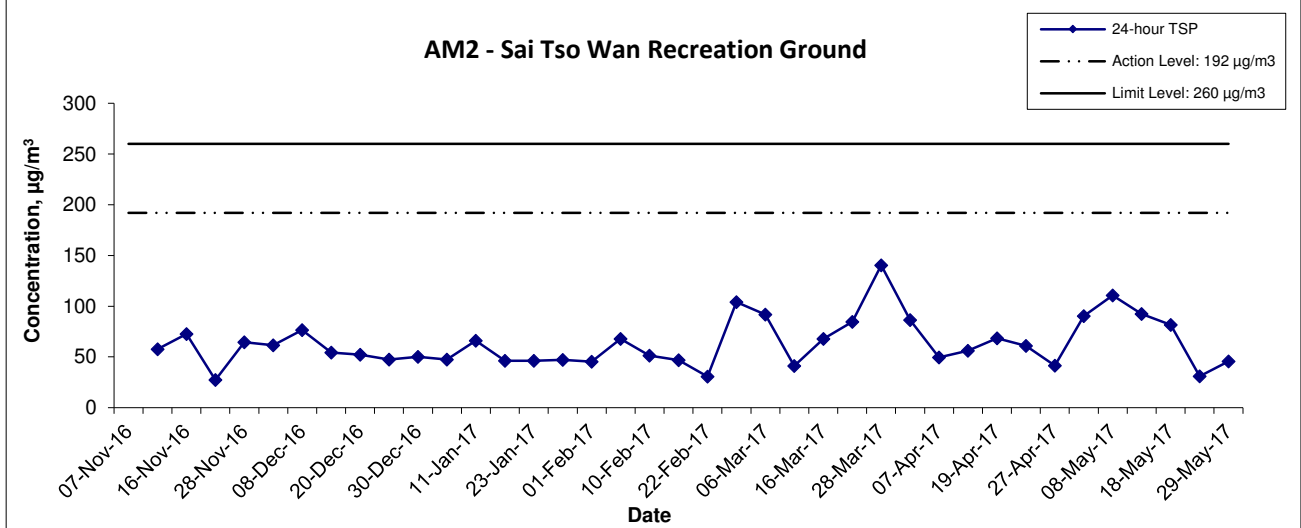
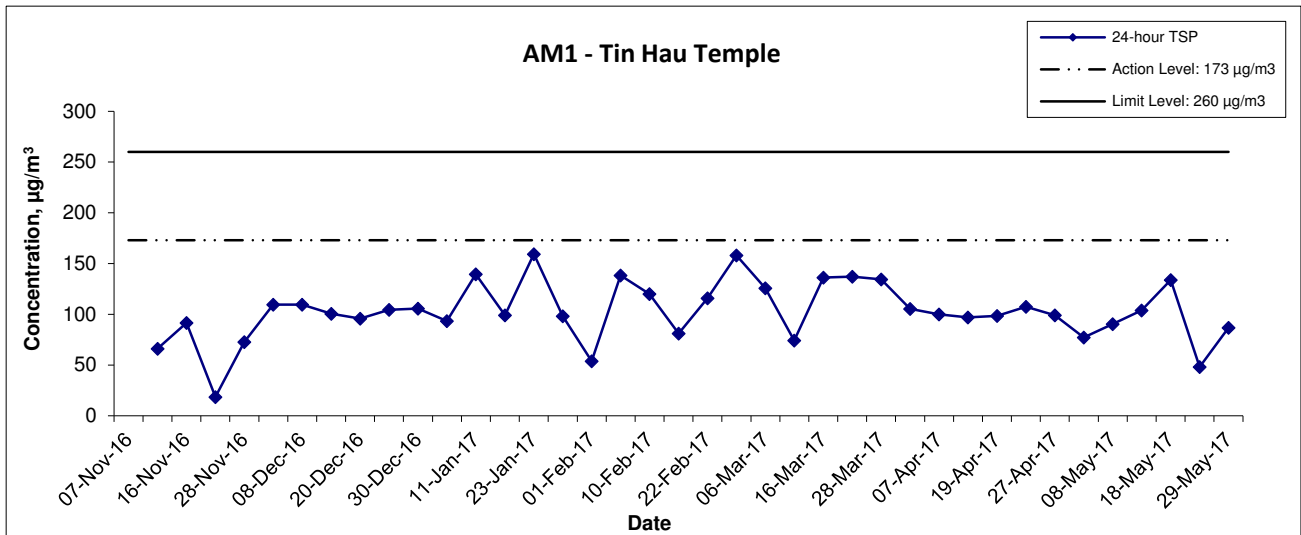
Location AM5(A) - Tseung Kwan O DSD Desilting Compound

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
2-May-17	Cloudy	302.3	761.1	3.6149	3.7131	0.0982	22119.5	22143.5	24.0	1.19	1.19	1.19	1709.2	57.5
8-May-17	Cloludy	301.0	760.3	3.5760	3.6952	0.1192	22143.5	22167.5	24.0	1.19	1.19	1.19	1712.0	69.6
12-May-17	Cloudy	301.3	761.8	3.6189	3.7164	0.0975	22167.5	22191.5	24.0	1.21	1.21	1.21	1743.2	55.9
18-May-17	Cloudy	300.6	762.4	3.5884	3.6605	0.0721	22191.5	22215.5	24.0	1.21	1.21	1.21	1746.0	41.3
24-May-17	Cloudy	298.7	767.0	3.3316	3.3966	0.0650	22215.5	22239.5	24.0	1.22	1.22	1.22	1757.0	37.0
29-May-17	Sunny	298.8	760.3	3.5943	3.6745	0.0802	22239.5	22263.5	24.0	1.21	1.21	1.21	1748.9	45.9
													Min	37.0
													Max	69.6
													Average	51.2

Location AM6(A) - Park Central, L1/F Open Space Area

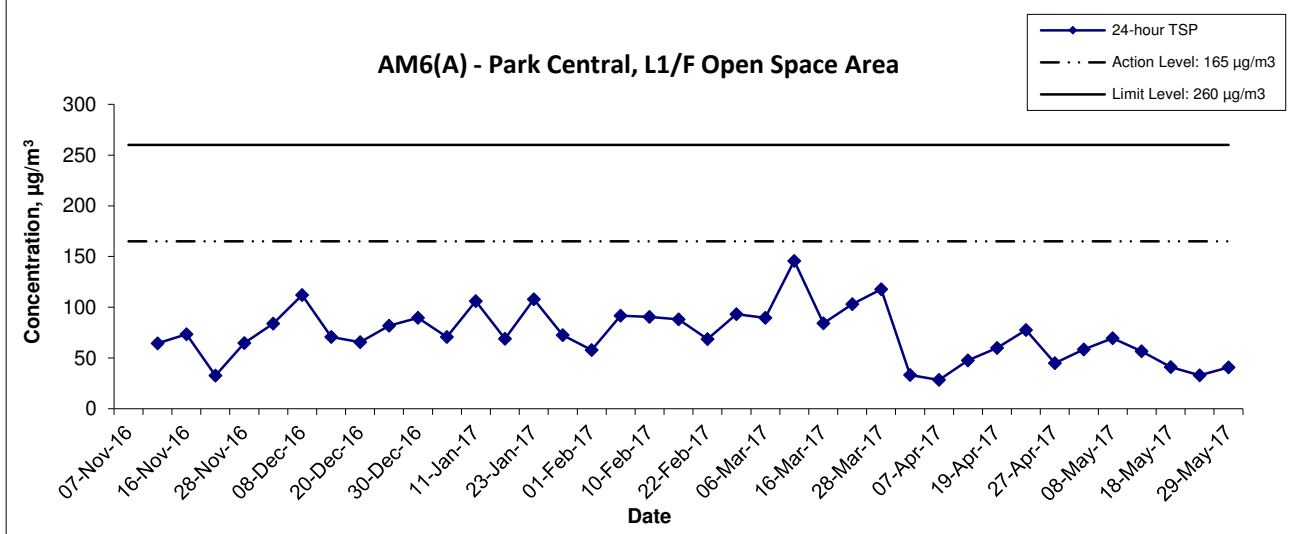
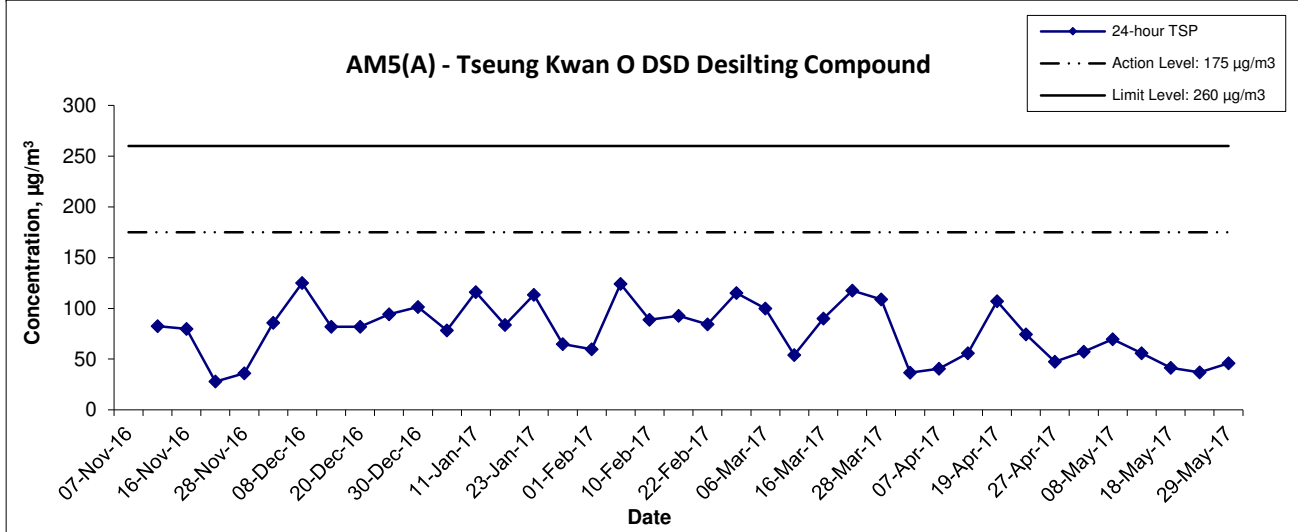
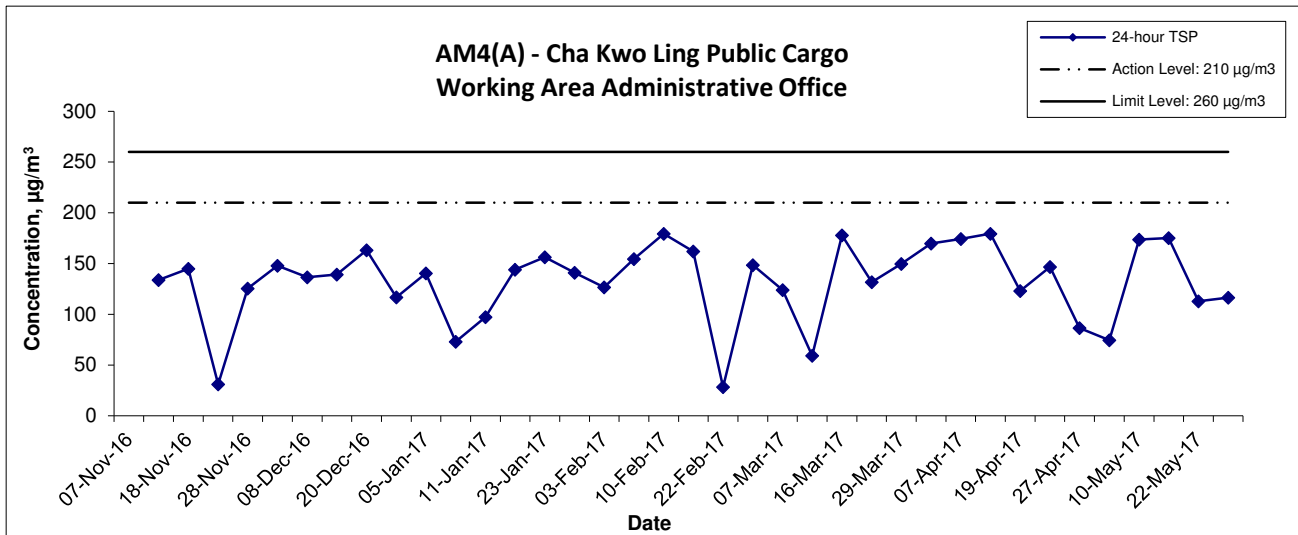
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
2-May-17	Cloudy	301.8	761.7	2.8076	2.9092	0.1016	15179.8	15203.8	24.0	1.20	1.20	1.20	1734.7	58.6
8-May-17	Cloludy	301.3	759.9	3.5800	3.7007	0.1207	15203.8	15227.8	24.0	1.20	1.20	1.20	1734.1	69.6
12-May-17	Cloudy	302.4	760.4	3.6368	3.7350	0.0982	15227.8	15251.8	24.0	1.20	1.20	1.20	1731.5	56.7
18-May-17	Cloudy	301.5	761.6	3.6174	3.6884	0.0710	15251.8	15275.8	24.0	1.21	1.20	1.21	1735.4	40.9
24-May-17	Cloudy	299.2	767.3	3.3505	3.4084	0.0579	15275.8	15299.8	24.0	1.21	1.21	1.21	1748.5	33.1
29-May-17	Sunny	298.6	761.2	3.5897	3.6610	0.0713	15299.8	15323.8	24.0	1.21	1.21	1.21	1743.3	40.9
													Min	33.1
													Max	69.6
													Average	50.0

24-hr TSP Concentration Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
	Date May 17	Appendix F	

24-hr TSP Concentration Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
	Date May 17	Appendix F	

**APPENDIX G
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix G - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
5-May-17	11:30	Cloudy	69.6	73.7	65.1	65.5	67.5
11-May-17	11:30	Cloudy	67.4	69.5	66.3		62.9
16-May-17	11:30	Cloudy	71.6	72.5	67.3		70.4
18-May-17	14:45	Cloudy	71.7	73.3	70.5		70.5
22-May-17	14:30	Cloudy	68.9	71.1	66.0		66.2
23-May-17	14:15	Cloudy	70.0	72.2	67.5		68.1

Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-May-17	16:00	Cloudy	72.1	74.6	68.7	63.6	71.4
10-May-17	13:05	Cloudy	66.4	67.8	64.3		63.2
16-May-17	10:15	Cloudy	72.0	73.5	70.1		71.3
22-May-17	13:30	Cloudy	72.1	74.0	70.2		71.4

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
5-May-17	10:50	Cloudy	71.1	74.6	68.9	65.6	69.7
11-May-17	10:15	Sunny	67.8	69.2	66.3		63.8
18-May-17	15:30	Cloudy	69.9	70.3	68.3		67.9
23-May-17	14:55	Cloudy	72.2	74.8	69.2		71.1

Location CM4 - Tin Hau Temple, Cha Kwo Ling							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-May-17	13:00	Cloudy	66.4	68.8	61.3	62.0	64.4
10-May-17	9:10	Cloudy	69.6	71.3	63.4		68.8
16-May-17	13:10	Cloudy	68.6	70.4	60.4		67.5
22-May-17	9:30	Cloudy	56.2	58.4	54.5		56.2 Measured ≤ Baseline

Location CM5 - CCC Kei Faat Primary School, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
5-May-17	10:00	Cloudy	70.5	73.8	68.6	68.2	66.6
11-May-17	9:30	Sunny	69.5	72.4	66.3		63.6
18-May-17	16:15	Cloudy	69.4	72.4	64.8		63.2
23-May-17	13:30	Cloudy	69.0	71.1	65.3		61.3

Appendix G - Noise Monitoring Results

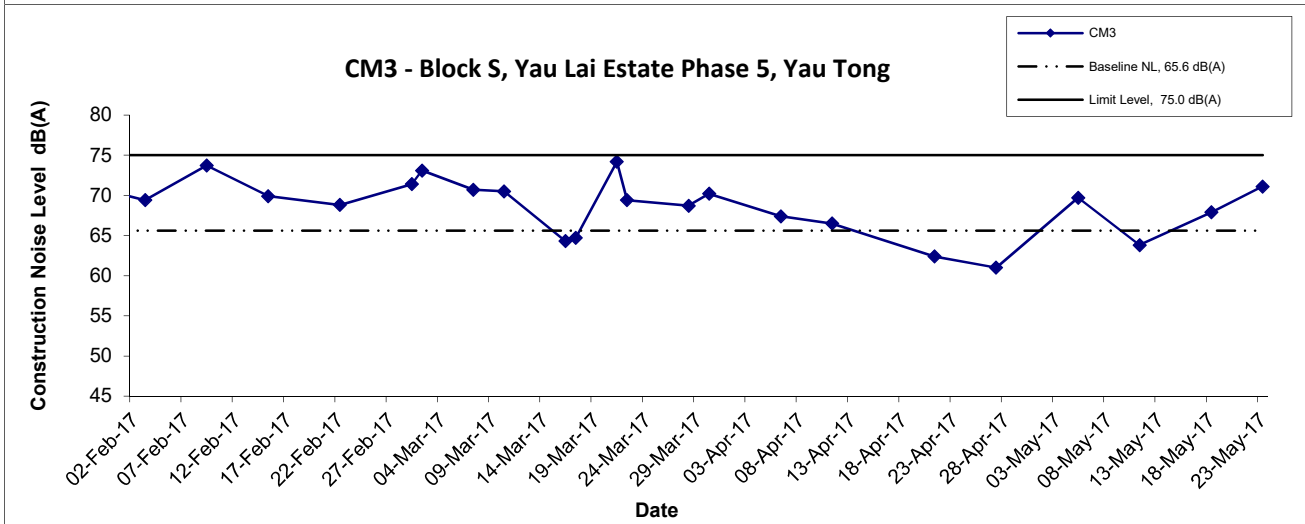
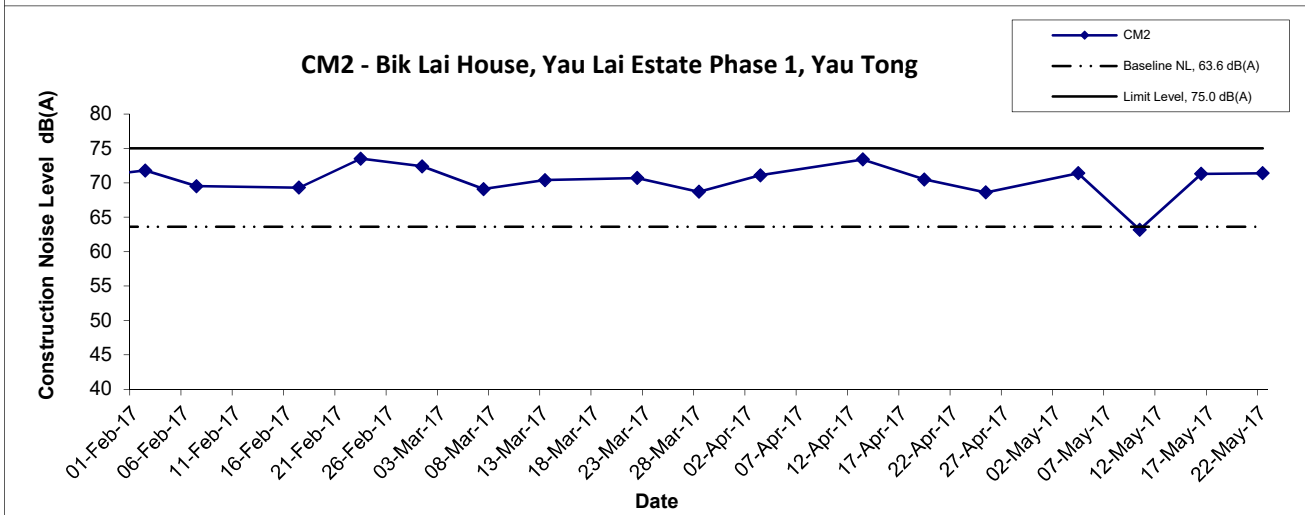
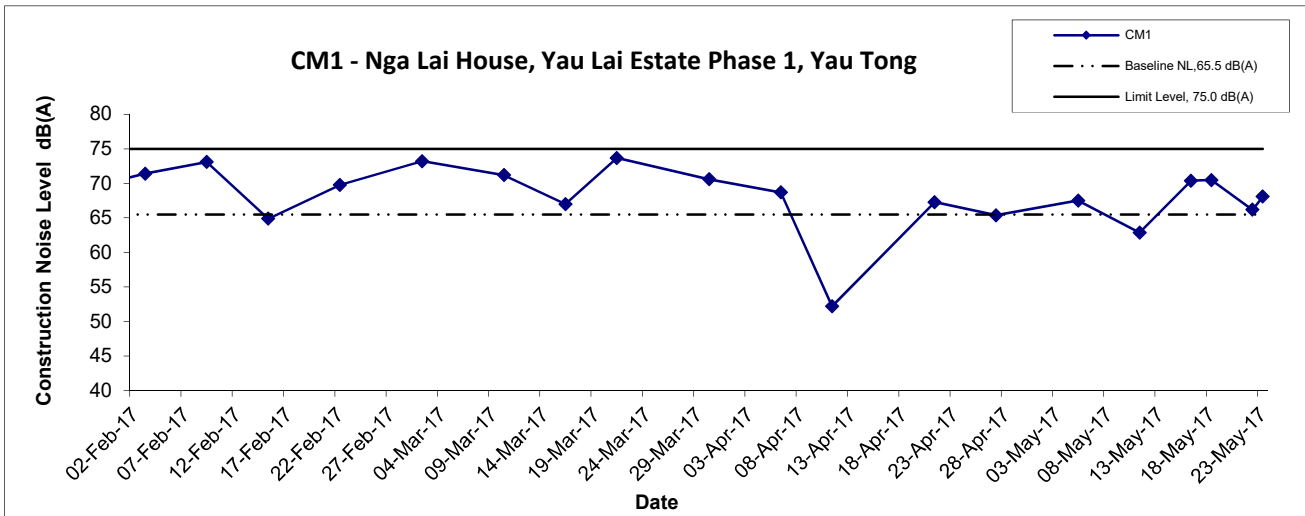
(0700-1900 hrs on Normal Weekdays)

Location CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-May-17	13:00	Cloudy	67.4	69.2	63.6	61.9	66.0
9-May-17	10:00	Sunny	62.3	64.0	53.4		51.7
15-May-17	9:20	Cloudy	68.8	70.6	63.1		67.8
18-May-17	14:30	Cloudy	61.8	64.6	56.2		61.8 Measured ≤ Baseline
23-May-17	11:30	Cloudy	63.1	66.7	54.2		56.9
25-May-17	10:00	Sunny	72.6	75.7	65.5		72.2
31-May-17	14:00	Sunny	67.8	70.1	58.4		66.5

Location CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-May-17	13:50	Cloudy	69.1	73.2	63.5	58.3	68.7
9-May-17	10:52	Sunny	57.8	59.3	54.0		57.8 Measured ≤ Baseline
15-May-17	10:10	Cloudy	70.7	74.8	58.6		70.4
18-May-17	15:15	Cloudy	65.1	68.5	59.9		64.1
23-May-17	10:15	Cloudy	65.6	68.8	59.4		64.7
25-May-17	9:00	Sunny	68.0	71.9	59.4		67.5
31-May-17	13:20	Sunny	68.1	70.5	62.5		67.6

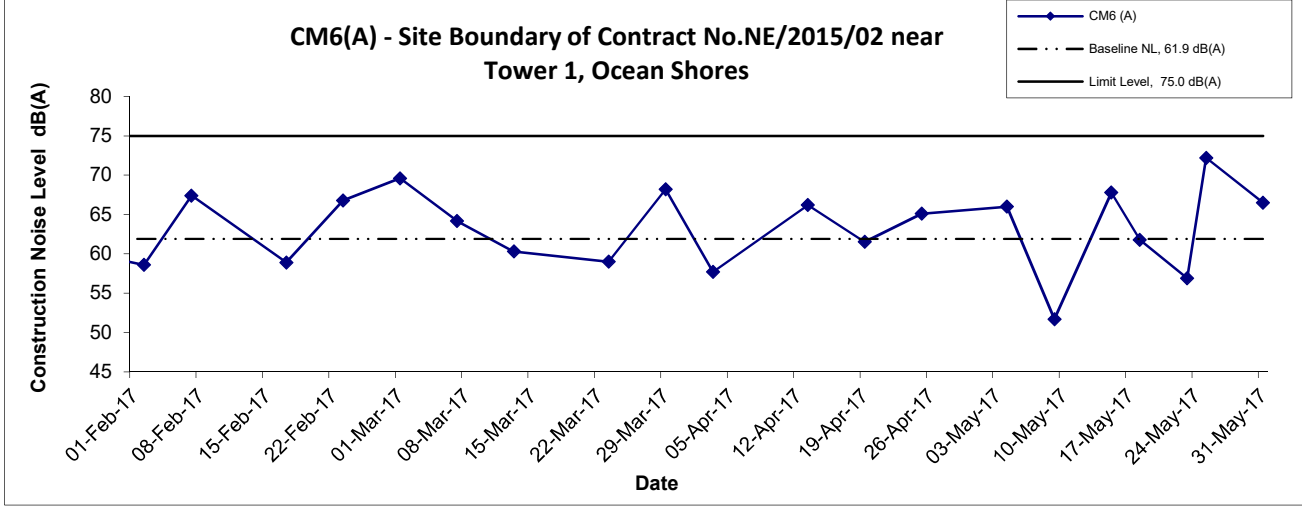
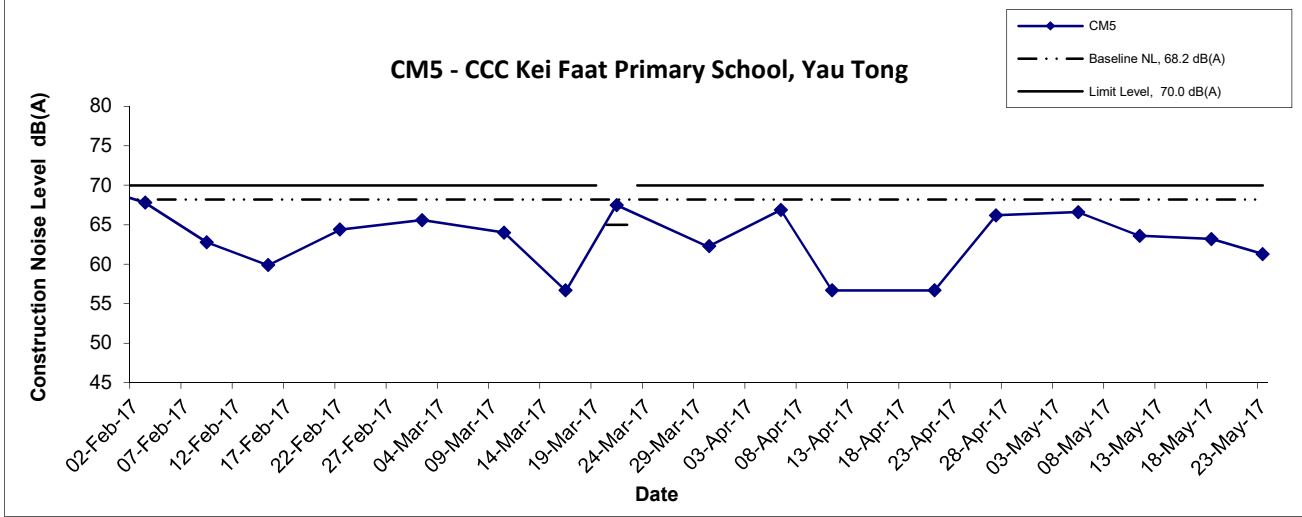
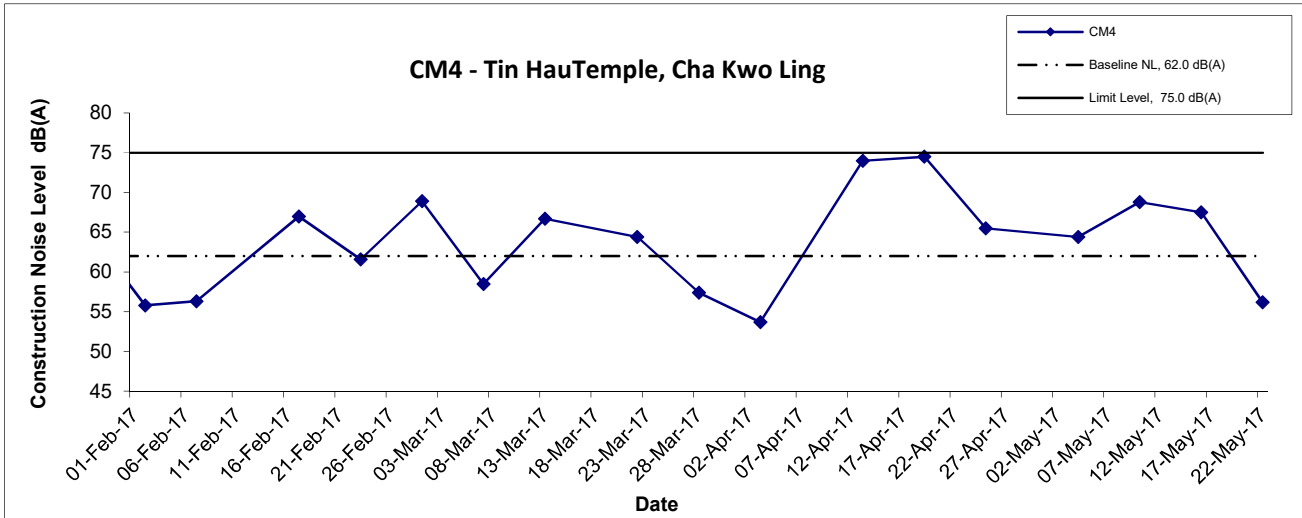
Location CM8(A) - Park Central, L1/F Open Space Area							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-May-17	9:30	Cloudy	65.8	67.0	61.4	69.1	65.8 Measured ≤ Baseline
9-May-17	13:00	Sunny	62.5	64.7	57.7		62.5 Measured ≤ Baseline
15-May-17	13:04	Cloudy	63.9	66.4	59.7		63.9 Measured ≤ Baseline
25-May-17	13:00	Sunny	66.7	67.5	60.0		66.7 Measured ≤ Baseline
31-May-17	9:00	Sunny	64.9	66.8	60.5		64.9 Measured ≤ Baseline

Noise Levels



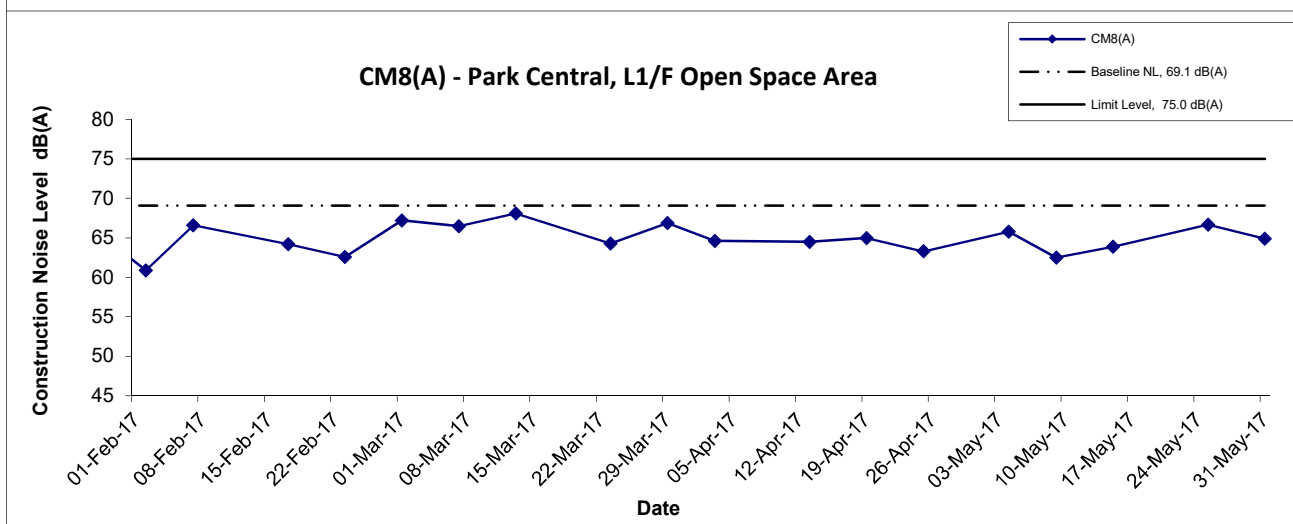
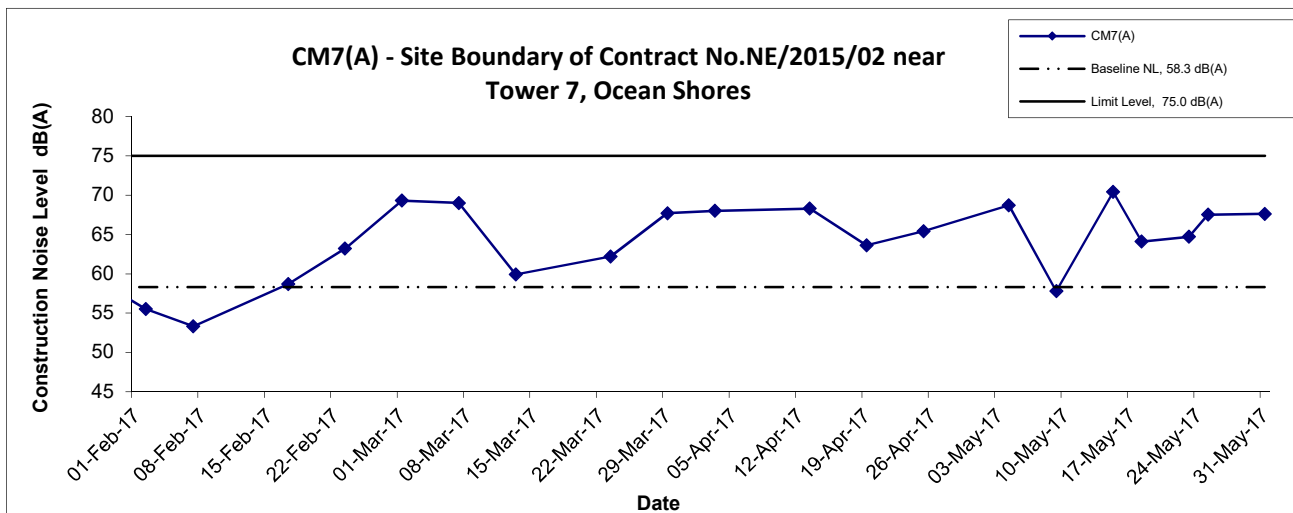
Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 17	Appendix G	

Noise Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 17	Appendix G	

Noise Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 17	Appendix G	

**APPENDIX H
GROUNDWATER QUALITY
MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Agreement No. CE/59/2015 (EP)**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction****Groundwater Quality Monitoring Results at Stream 1**

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
11-May-17	Sunny	12:00	Middle	29.4	29.4	7.1	7.1	0.6	0.6	103.2	103.3	8.0	8.0	0.7	0.7
				29.4		7.1		0.6		103.3		8.0			
23-May-17	Cloudy	11:25	Middle	25.2	25.2	7.7	7.8	0.8	0.9	102.8	102.8	8.0	8.0	0.7	0.7
				25.1		7.8		0.9		102.8		8.0			

Groundwater Quality Monitoring Results at Stream 2

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
11-May-17	Sunny	12:45	Middle	28.5	28.5	7.3	7.3	0.1	0.1	101.2	101.4	7.9	7.9	0.6	0.6
				28.4		7.2		0.1		101.5		7.9			
23-May-17	Cloudy	12:16	Middle	26.1	26.1	7.8	7.9	0.8	0.8	103.0	103.0	7.9	7.9	0.7	0.7
				26.1		7.9		0.8		103.0		7.9			

Groundwater Quality Monitoring Results at Stream 3

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
11-May-17	Sunny	13:12	Middle	28.2	28.2	7.3	7.3	0.1	0.1	101.8	101.8	8.0	8.0	1.2	1.3
				28.2		7.3		0.1		101.7		8.0			
23-May-17	Cloudy	12:26	Middle	26.2	26.2	8.0	8.0	0.8	0.8	103.1	103.1	8.0	8.0	1.1	1.1
				26.2		8.0		0.8		103.0		8.0			

TEST REPORT

APPLICANT: Cinotech Consultants Limited
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

Report No.:	26913
Date of Issue:	2017-05-22
Date Received:	2017-05-11
Date Tested:	2017-05-11
Date Completed:	2017-05-22

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Sample Description : 3 liquid samples as received from client said to be groundwater
Laboratory No. : 26913
Project No. : MA16034 (Groundwater)
Project Name : Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O –
 Lam Tin Tunnel – Design and Construction
Custody No. : MA16034(Groundwater)/20170511
Sampling Date : 2017-05-11

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	*0.5 mg/L
2	Biochemical Oxygen Demand	APHA 19ed 5210B	2 mg O ₂ /L
3	Total Organic Carbon	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L
4	Nitrogen (Total Kjeldahl + nitrate + nitrite)	In-house method SOP063 (FIA)	0.6 mg N/L
5	Ammonia	In-house method SOP057 (FIA)	0.05 mg NH ₃ -N/L
6	Total Phosphorus	In-house method SOP055 (FIA)	0.05 mg-P/L

Results:


Sample ID	Stream 1	Stream 2	Stream 3
Sampling Depth	S	S	S
Sample No.	26913-1	26913-2	26913-3
Total Suspended Solids (mg/L)	0.5	0.8	<0.5
Biochemical Oxygen Demand (mg O ₂ /L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	4	4	4
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	<0.6	1.1	0.9
Ammonia (mg NH ₃ -N/L)	<0.05	0.41	0.35
Total Phosphorus (mg-P/L)	<0.05	<0.05	<0.05

Remarks: 1) < = less than
 2) S = Surface, M = Middle, B = Bottom
 3) * Limit of Reporting is reported as Detection Limit

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
 Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

Report No.:	26955
Date of Issue:	2017-06-01
Date Received:	2017-05-23
Date Tested:	2017-05-23
Date Completed:	2017-06-01

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Sample Description : 3 liquid samples as received from client said to be groundwater
Laboratory No. : 26955
Project No. : MA16034 (Groundwater)
Project Name : Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O –
 Lam Tin Tunnel – Design and Construction
Custody No. : MA16034(Groundwater)/170523
Sampling Date : 2017-05-23

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	*0.5 mg/L
2	Biochemical Oxygen Demand	APHA 19ed 5210B	2 mg O ₂ /L
3	Total Organic Carbon	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L
4	Nitrogen (Total Kjeldahl + nitrate + nitrite)	In-house method SOP063 (FIA)	0.6 mg N/L
5	Ammonia	In-house method SOP057 (FIA)	0.05 mg NH ₃ -N/L
6	Total Phosphorus	In-house method SOP055 (FIA)	0.05 mg-P/L

Results:

Sample ID	Stream 1	Stream 2	Stream 3
Sampling Depth	S	S	S
Sample No.	26955-1	26955-2	26955-3
Total Suspended Solids (mg/L)	1.8	2.0	2.4
Biochemical Oxygen Demand (mg O ₂ /L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	3	3	3
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	1.7	1.7	1.7
Ammonia (mg NH ₃ -N/L)	<0.05	<0.05	<0.05
Total Phosphorus (mg-P/L)	<0.05	<0.05	<0.05

Remarks: 1) <= less than
 2) S = Surface, M = Middle, B = Bottom
 3) * Limit of Reporting is reported as Detection Limit

*****END OF REPORT*****

PREPARED AND CHECKED BY:

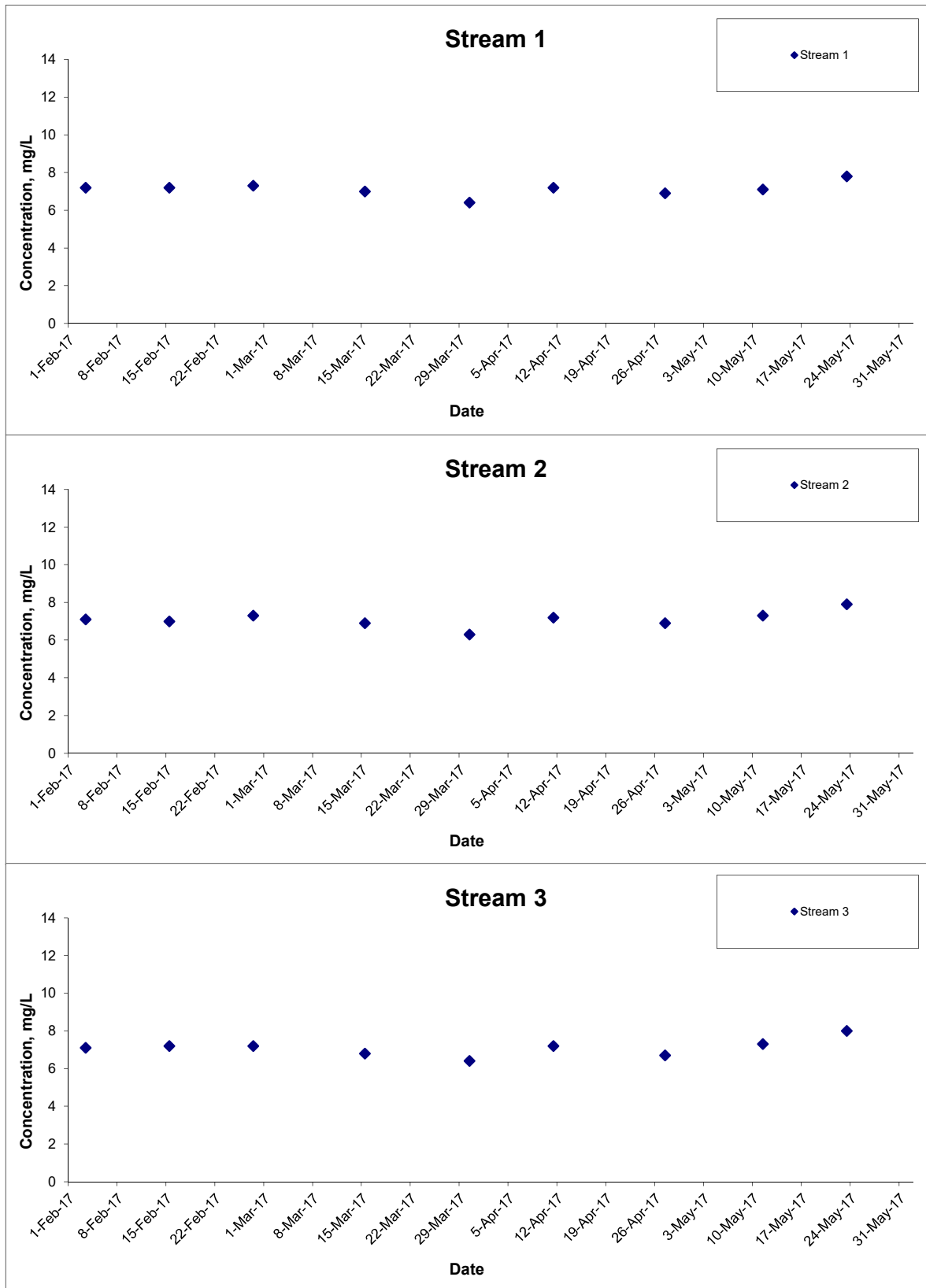
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
 Laboratory Manager

Agreement No. CE/59/2015 (EP)**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction****Summary of Groundwater Quality Monitoring Results**

Location	Date	Parameters (unit)								
		pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	SS (mg/L)	BOD ₅ (mg O ₂ /L)	TOC (mg-TOC/L)	Total Nitrogen (mg/L)	NH ₃ -N (mg NH ₃ -N/L)	Total Phosphorus (mg-P/L)
Stream 1	11-May-17	7.1	8	0.7	0.5	<2	4	<0.6	<0.05	<0.05
	23-May-17	7.8	8	0.7	1.8	<2	3	1.7	<0.05	<0.05
Stream 2	11-May-17	7.3	7.9	0.6	0.8	<2	4	1.1	0.41	<0.05
	23-May-17	7.9	7.9	0.7	2	<2	3	1.7	<0.05	<0.05
Stream 3	11-May-17	7.3	8	1.3	<0.5	<2	4	0.9	0.35	<0.05
	23-May-17	8	8	1.1	2.4	<2	3	1.7	<0.05	<0.05

pH



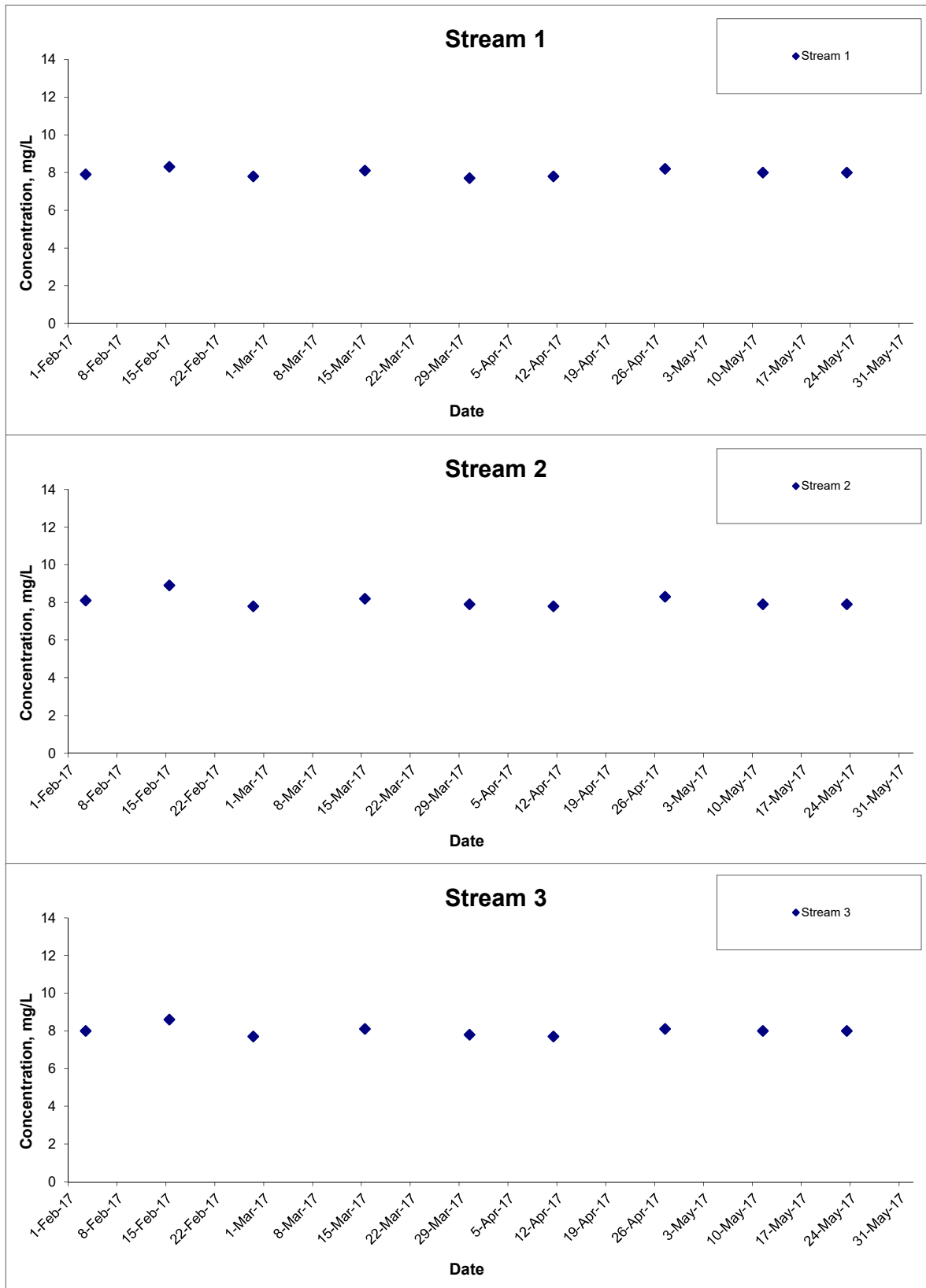
Title Agreement No. CE 59/2015(EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel
 Design and Construction
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 Monitoring Result

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Dissolved Oxygen



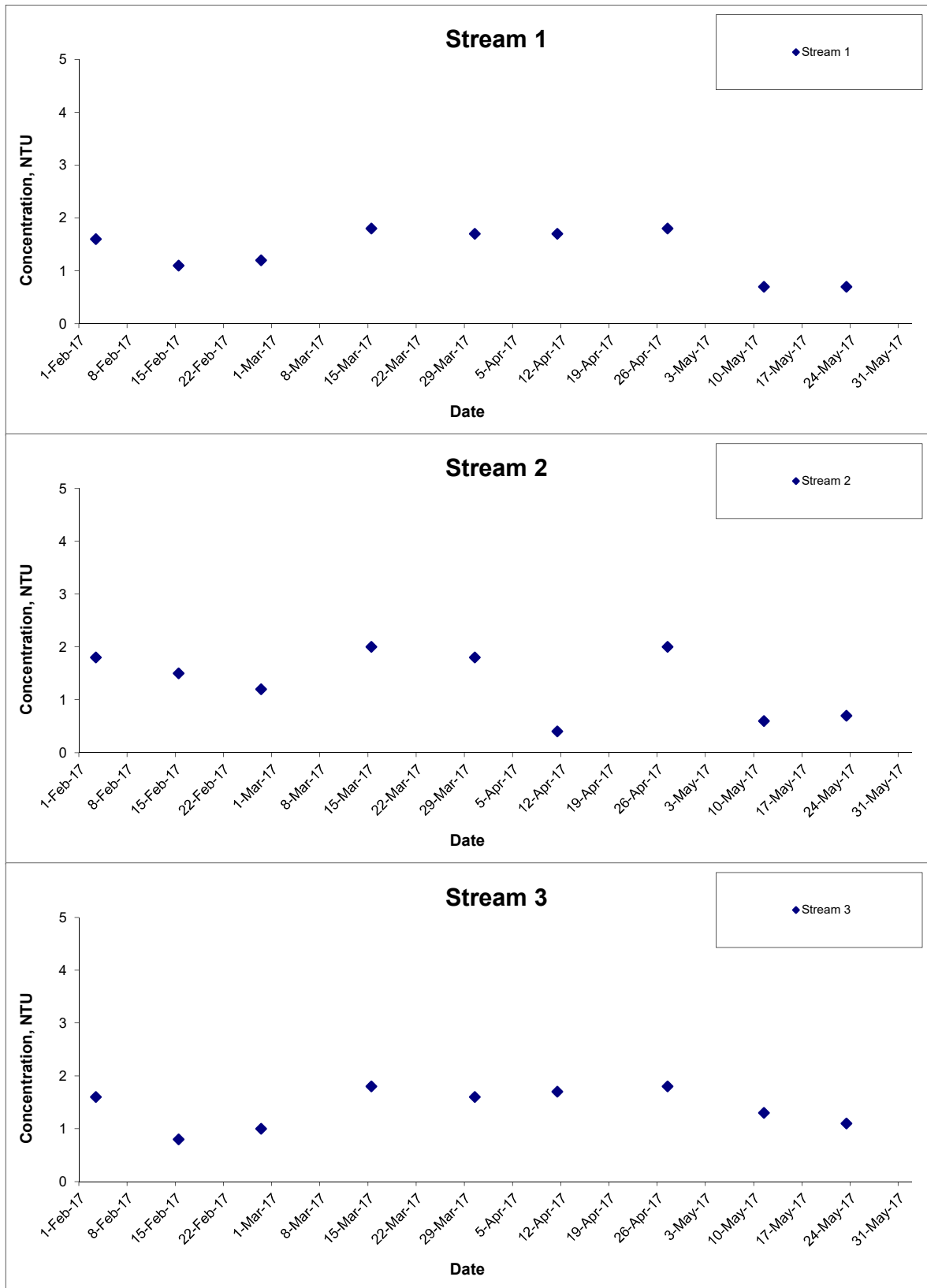
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Turbidity



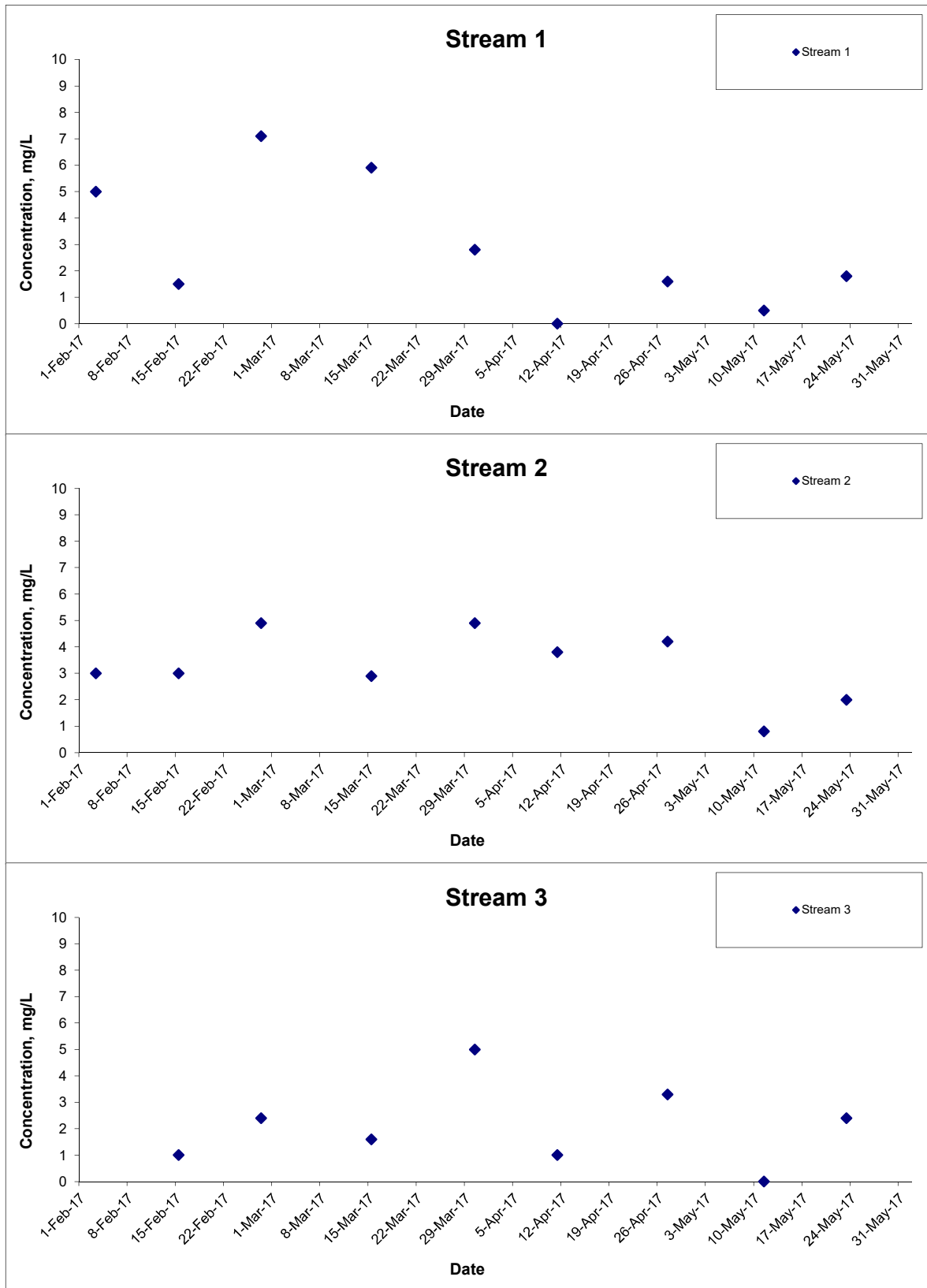
Title Agreement No. CE 59/2015(EP)
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Suspended Solids



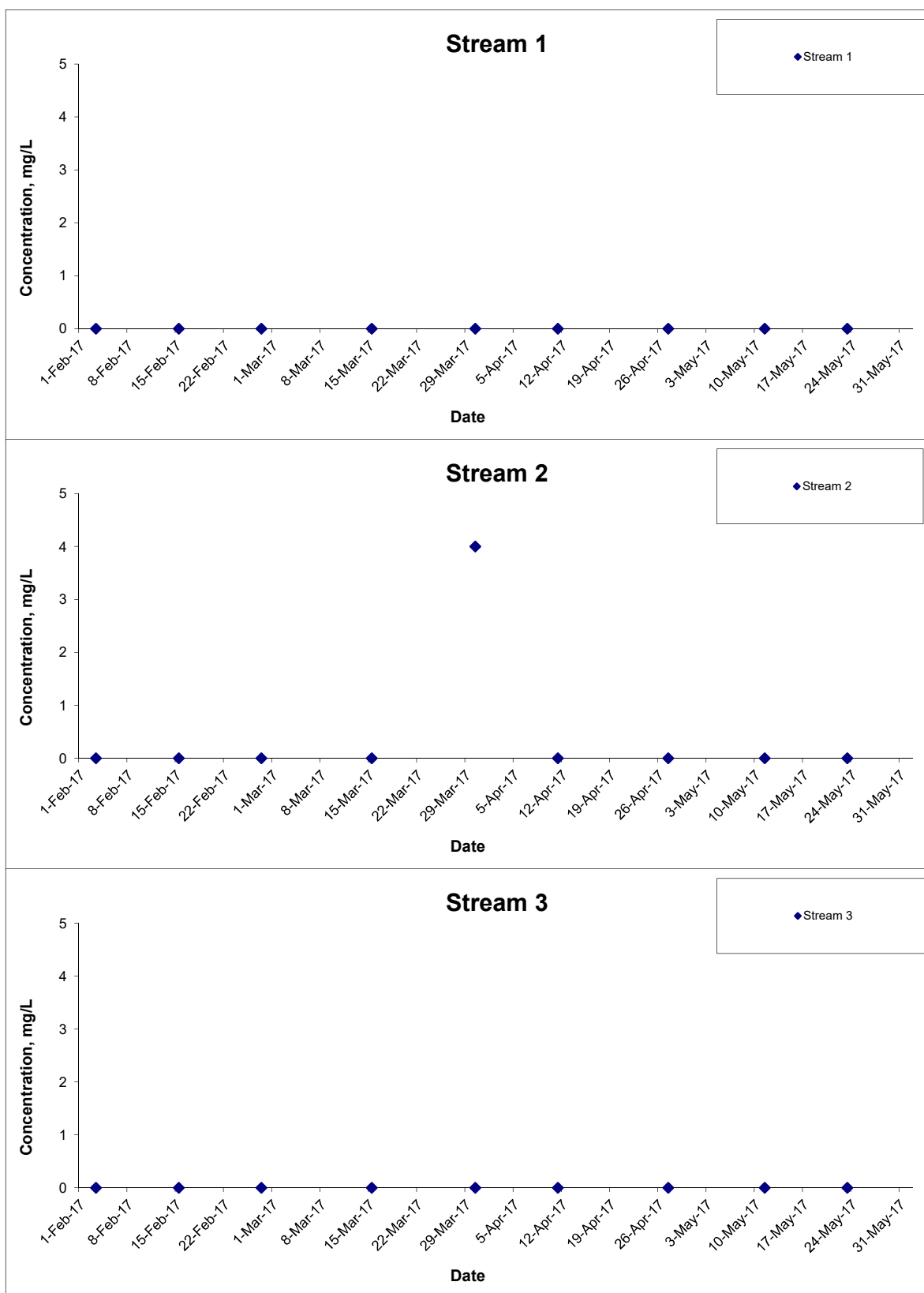
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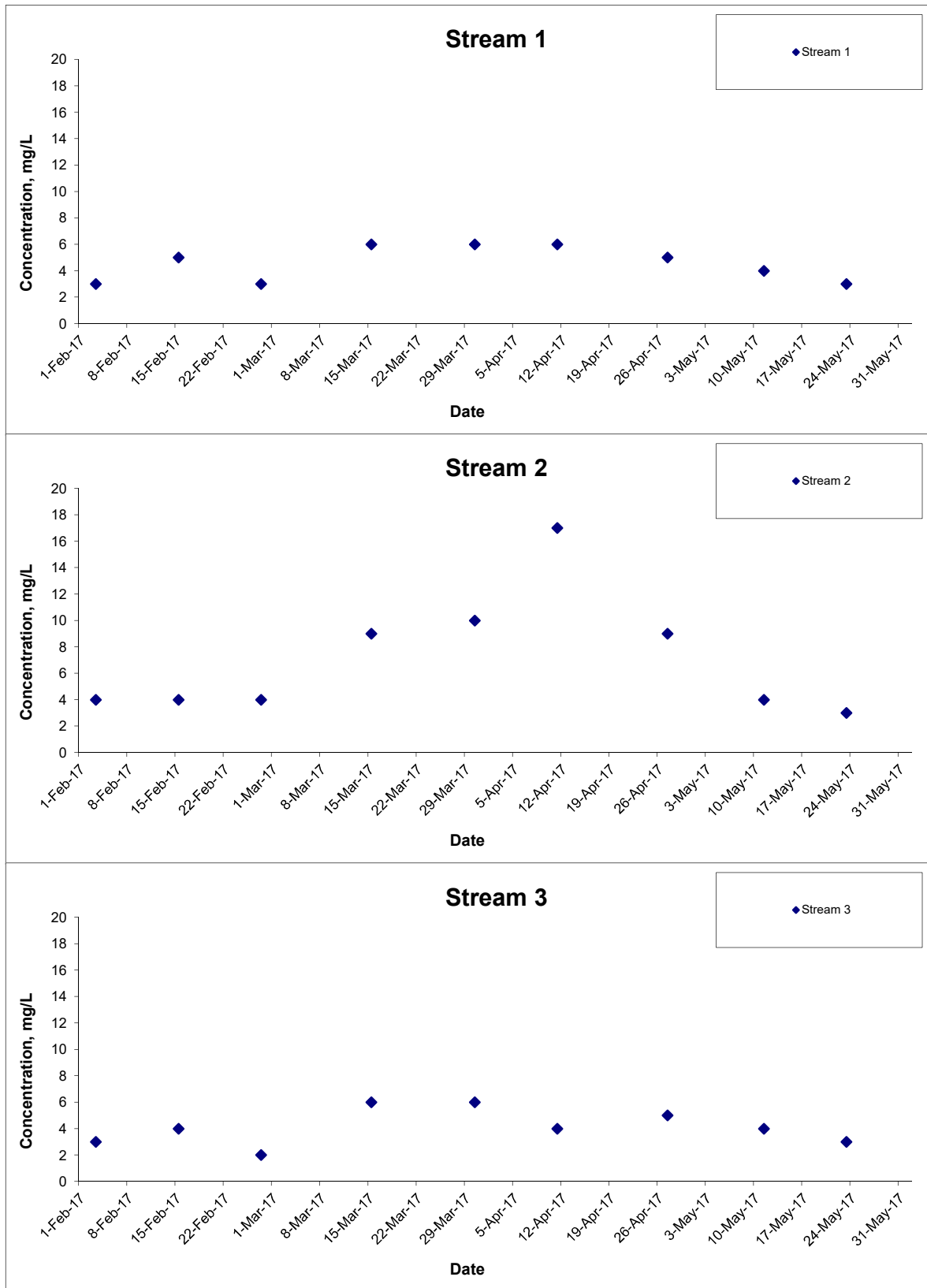
5-day Biochemical Oxygen Demand (BOD₅)



Remarks: The graphical point at zero concentration is presented as <2 mg/L

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Total Organic Carbon (TOC)



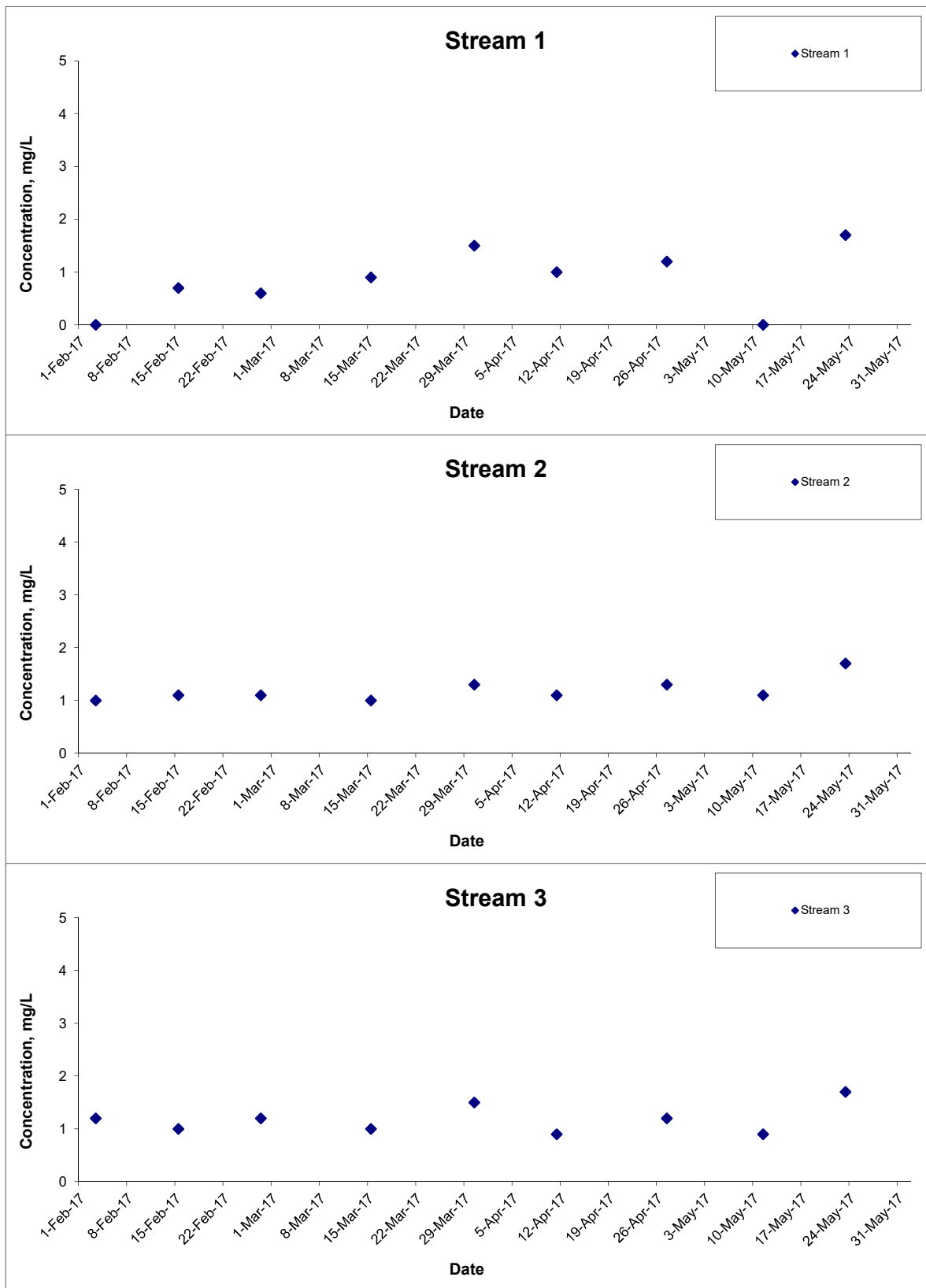
Title
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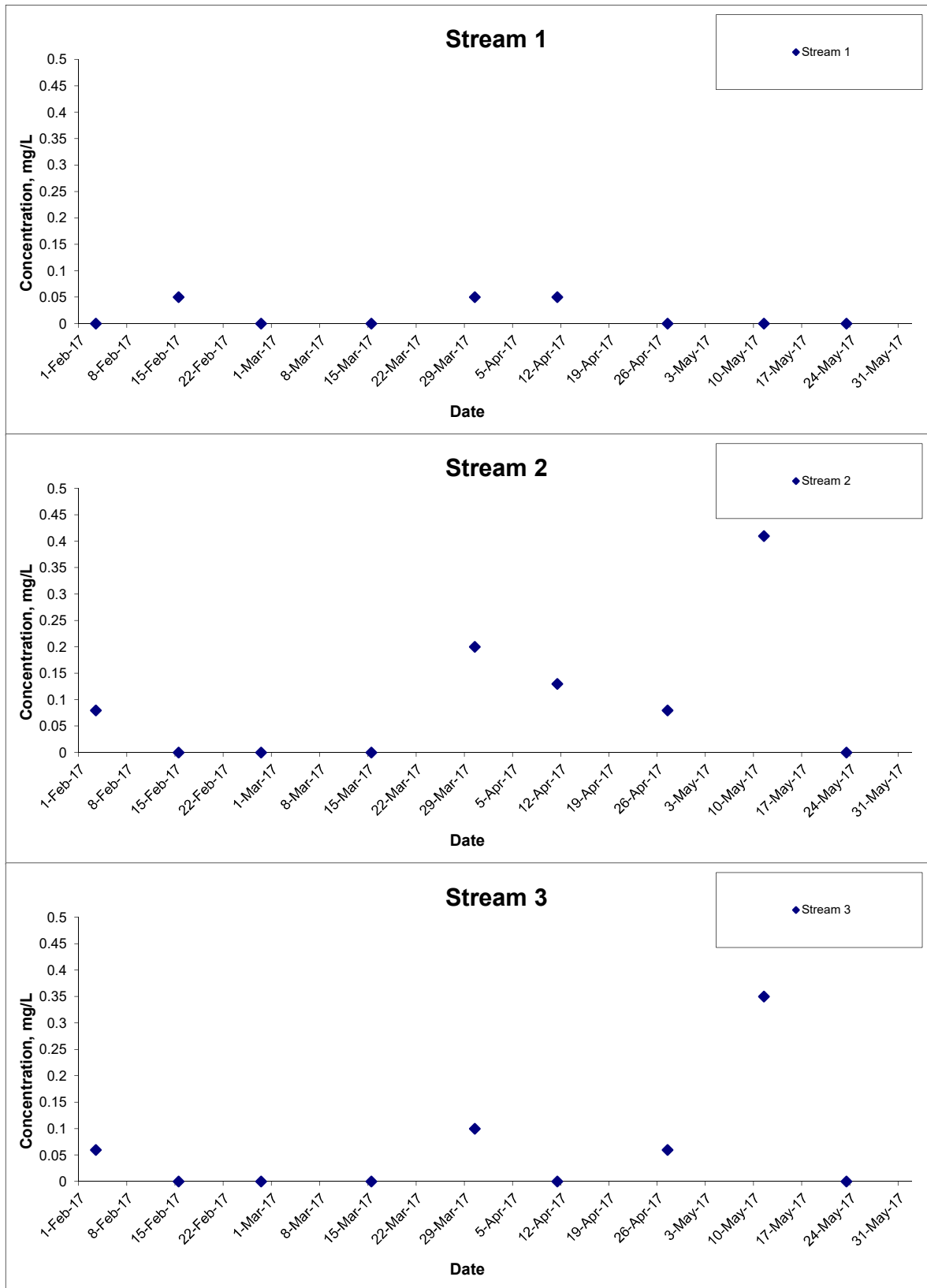
Total Nitrogen



Remarks: The graphical point at zero concentration is presented as <0.6 mg/L

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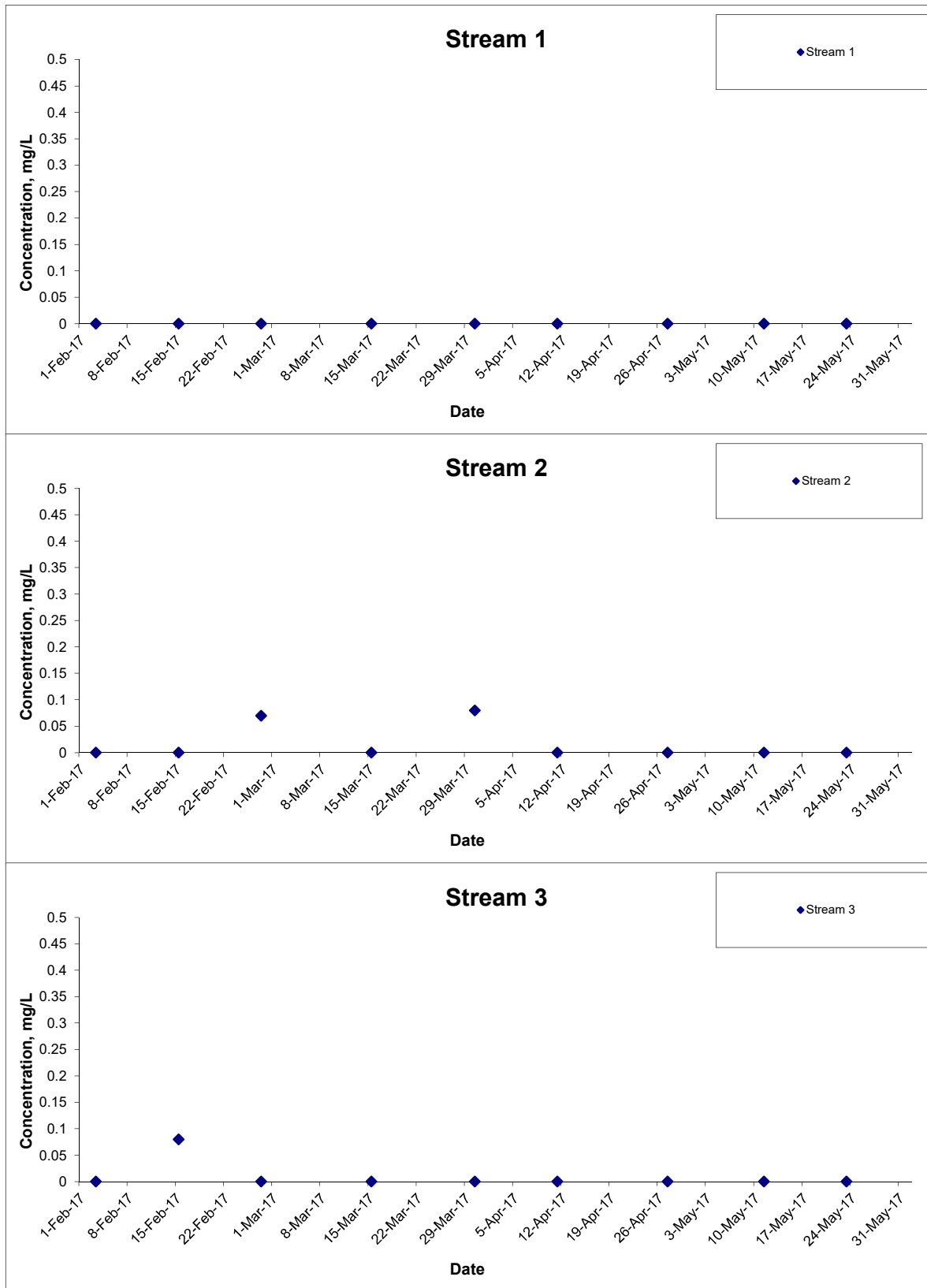
Ammonia-Nitrogen



Remarks: The graphical point at zero concentration is presented as <0.05 mg/L

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Total Phosphate



Remarks: The graphical point at zero concentration is presented as <0.05 mg/L

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	Date Jun 17	Appendix H	

**APPENDIX I
MARINE WATER QUALITY
MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix I - Action and Limit Levels for Marine Water Quality on 2 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 5.5 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 6.0 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.2 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.2 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.2 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>
<u>Station M6</u>			
Intake Level		<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 02 May 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Moderate	17:47	Surface	1	24.0 24.8	24.4	8.2 8.2	8.2	32.3 31.0	31.7	88.0 101.0	94.5	6.2 7.0	6.6	6.6	4.3 4.3	4.3	4.3	2.9 2.8	2.9	3.0
				Middle	10	23.9 24.8	24.4	8.2 8.2	8.2	32.4 31.0	31.7	87.7 101.0	94.4	6.1 7.0	6.6	6.6	4.6 4.4	4.5	4.5	3.0 3.0	3.1	
				Bottom	19	23.9 24.7	24.3	8.3 8.2	8.3	32.4 31.2	31.8	87.5 100.5	94.0	6.1 7.0	6.6	6.6	4.9 4.7	4.8	4.8	3.0 3.1	3.1	
C2	Sunny	Moderate	16:09	Surface	1	24.8 24.3	24.6	8.0 8.0	8.0	31.1 30.4	30.8	102.3 94.7	98.5	7.1 6.7	6.9	6.9	4.3 3.6	4.0	4.0	4.2 4.3	4.3	3.9
				Middle	18	24.7 24.1	24.4	8.0 8.2	8.1	31.3 31.2	31.3	102.5 91.0	96.8	7.1 6.4	6.8	6.8	3.5 3.5	3.5	3.5	3.0 3.0	3.0	
				Bottom	35	24.2 23.9	24.1	8.2 8.3	8.3	30.4 31.7	31.1	94.6 89.7	92.2	6.7 6.3	6.5	6.5	4.5 4.6	4.6	4.6	4.4 4.2	4.3	
G1	Sunny	Moderate	16:51	Surface	1	24.1 25.0	24.6	8.3 8.3	8.3	31.0 30.3	30.7	90.7 109.6	100.2	6.4 7.6	7.0	6.8	5.0 5.1	5.1	5.1	2.8 2.9	2.9	3.3
				Middle	4	24.0 24.6	24.3	8.3 8.3	8.3	31.3 30.6	31.0	90.7 97.7	94.2	6.4 6.8	6.6	6.6	4.0 4.2	4.1	4.1	4.0 4.0	4.0	
				Bottom	7	25.0 24.4	24.7	8.3 8.3	8.3	30.3 30.8	30.6	109.5 95.0	102.3	7.6 6.7	7.2	7.2	4.3 4.6	4.5	4.5	2.9 2.8	2.9	
G2	Sunny	Moderate	16:33	Surface	1	24.0 24.9	24.5	8.1 8.3	8.2	33.3 32.4	32.9	88.7 108.1	98.4	6.2 7.4	6.8	6.7	4.7 4.6	4.7	4.7	4.7 4.8	4.8	4.0
				Middle	5	23.9 24.7	24.3	8.2 8.2	8.2	33.4 32.5	33.0	89.3 101.8	95.6	6.2 7.0	6.6	6.6	4.9 4.7	4.8	4.8	4.0 3.9	4.0	
				Bottom	9	25.1 24.6	24.9	8.5 8.4	8.5	31.8 32.8	32.3	106.6 97.3	102.0	7.3 6.7	7.0	7.0	4.7 4.5	4.6	4.6	3.4 3.2	3.3	
G3	Sunny	Moderate	17:02	Surface	1	24.1 25.0	24.6	8.2 8.2	8.2	31.6 30.5	31.1	91.0 108.1	99.6	6.4 7.5	7.0	6.9	4.1 4.2	4.2	4.2	2.7 2.7	2.7	3.3
				Middle	4.5	24.0 24.8	24.4	8.2 8.2	8.2	31.7 30.7	31.2	90.8 103.1	97.0	6.4 7.2	6.8	6.8	4.6 4.0	4.3	4.3	3.5 3.5	3.5	
				Bottom	8	25.0 24.7	24.9	7.3 8.3	7.8	30.4 30.8	30.6	107.5 103.0	105.3	7.5 7.2	7.4	7.4	4.1 4.3	4.2	4.2	3.5 3.6	3.6	
G4	Sunny	Moderate	17:20	Surface	1	24.6 25.4	25.0	8.3 8.3	8.3	31.2 30.0	30.6	97.5 110.7	104.1	6.8 7.7	7.3	7.5	4.7 4.4	4.6	4.6	2.6 2.5	2.6	3.1
				Middle	4	25.4 25.4	25.4	8.3 8.2	8.3	29.9 30.1	30.0	110.0 110.9	110.5	7.6 7.7	7.7	7.7	4.8 3.9	4.4	4.4	3.0 3.0	3.0	
				Bottom	7	25.4 25.2	25.3	8.2 8.1	8.2	30.0 30.4	30.2	110.4 104.1	107.3	7.6 7.2	7.4	7.4	4.1 4.2	4.2	4.2	3.7 3.8	3.8	
M1	Sunny	Moderate	16:42	Surface	1	24.2 25.0	24.6	8.1 8.1	8.1	30.2 33.0	31.6	90.1 109.9	100.0	6.4 7.5	7.0	6.8	4.7 3.9	4.3	4.3	2.6 2.6	2.6	2.6
				Middle	5	24.1 24.5	24.3	8.1 8.2	8.2	30.3 30.1	30.2	89.4 95.2	92.3	6.3 6.7	6.5	6.5	4.6 3.7	4.2	4.2	2.6 2.7	2.7	
				Bottom	9	25.0 24.5	24.8	8.0 8.2	8.1	32.9 30.1	31.5	109.9 94.1	102.0	7.5 6.6	7.1	7.1	4.3 3.9	4.1	4.1	2.6 2.6	2.6	
M2	Sunny	Moderate	16:27	Surface	1	23.9 24.4	24.2	8.0 8.3	8.2	32.9 32.2	32.6	90.0 94.3	92.2	6.3 6.6	6.5	6.7	3.6 3.9	3.8	3.8	3.1 3.1	3.1	2.7
				Middle	5	24.9 24.1	24.5	8.1 8.1	8.1	31.4 32.6	32.0	101.8 91.6	96.7	7.1 6.4	6.8	6.8	3.8 4.0	3.9	3.9	2.5 2.5	2.5	
				Bottom	9	24.8 24.5	24.4	8.2 8.3	8.3	31.7 33.0	32.4	103.0 91.0	97.0	7.1 6.3	6.7	6.7	3.6 4.3	4.0	4.0	2.6 2.5	2.6	
M3	Sunny	Moderate	17:13	Surface	1	24.5 24.9	24.7	8.3 8.2	8.3	31.2 30.8	31.0	95.8 105.1	100.5	6.7 7.3	7.0	7.0	3.9 4.7	4.3	4.3	2.3 2.2	2.3	2.6
				Middle	4	24.4 24.8	24.6	8.3 8.3	8.3	31.3 30.9	31.1	94.3 101.6	98.0	6.6 7.1	6.9	6.9	4.3 4.6	4.5	4.5	2.6 2.6	2.6	
				Bottom	7	25.1 24.7	24.9	8.2 8.2	8.2	30.3 31.0	30.7	103.2 101.4	102.3	7.2 7.1	7.2	7.2	4.4 4.8	4.6	4.6	2.9 2.9	2.9	
M4	Sunny	Moderate	16:18	Surface	1	23.9 24.4	24.2	8.3 8.2	8.3	31.8 31.5	31.7	89.2 94.1	91.7	6.3 6.6	6.5	6.7	3.6 3.7	3.7	3.7	3.3 3.3	3.3	3.4
				Middle	4	24.8 24.2	24.5	8.6 8.3	8.5	30.7 31.9	31.3	102.0 91.6	96.8	7.1 6.4	6.8	6.8	3.3 3.2	3.3	3.3	3.3 3.2	3.3	
				Bottom	7	24.8 24.0	24.4	8.3 8.2	8.3	30.9 32.7	31.8	102.1 90.0	96.1	7.1 6.3	6.7	6.7	4.0 3.6	3.8	3.8	3.6 3.6	3.6	
M5	Sunny	Moderate	17:40	Surface	1	25.0 24.1	24.6	8.2 8.2	8.2	30.7 32.0	31.4	101.2 90.3	95.8	7.0 6.3	6.7	6.6	4.4 4.4	4.4	4.4	2.0 1.9	2.0	3.0
				Middle	5.5	24.2 24.1	24.2	8.2 8.2	8.2	31.9 32.0	32.0	90.8 89.9	90.4	6.4 6.3	6.4	6.4	4.6 4.2	4.4	4.4	3.4 3.5	3.5	
				Bottom	10	24.2 24.0	24.1	8.3 8.3	8.3	31.9 32.3	32.1	90.6 88.0	89.3	6.3 6.2	6.3	6.3	4.6 4.3	4.5	4.5	3.4 3.4	3.4	
M6	Sunny	Moderate	17:27	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9
				Middle	3	25.1 25.0	25.1	8.4 8.4	8.4	30.6 30.7	30.7	102.8 102.3	102.6	7.1 7.1	7.1	7.1	4.6 4.1	4.4	4.4	3.9 3.9	3.9	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 2 May 2017 (Mid-Flood Tide)

<u>Parameter</u> <u>(unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 5.5 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 6.0 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.4 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.9 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.4 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.9 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.3 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.9 mg/L</u>
<u>Station M6</u>			
Intake Level		<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 02 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
C1	Sunny	Moderate	11:05	Surface	1	25.0 24.9	25.0	8.1 8.1	8.1	32.4 32.6	32.5	106.5 107.6	107.1	7.3 7.4	7.4	7.4	4.2	3.4 3.4	3.4	5.0	5.2 5.4	5.3	
				Middle	10	25.0 24.8	24.9	8.1 8.1	8.1	32.4 32.8	32.6	107.0 104.0	105.5	7.4 7.2	7.3	4.4 4.6		4.5	4.6 4.6		4.6	6.0 6.1	6.1
				Bottom	19	24.9 24.7	24.8	8.1 8.1	8.1	32.6 32.8	32.7	107.6 99.8	103.7	7.4 6.9	7.2	4.6 4.6		4.6	4.6 4.6		4.6	6.0 6.1	6.1
C2	Sunny	Moderate	09:05	Surface	1	24.9 24.6	24.8	8.2 8.2	8.2	30.4 31.7	31.1	97.2 95.5	96.4	6.8 6.6	6.7	6.6	3.7 4.3	4.0	3.8	2.9 2.9	2.9		
				Middle	18	24.7 24.0	24.4	8.2 8.2	8.2	30.6 33.6	32.1	97.4 89.5	93.5	6.8 6.2	6.5		4.0 3.3	3.7		4.3 3.3	3.7	2.7 2.7	2.7
				Bottom	35	24.6 24.0	24.3	8.3 8.2	8.3	31.4 33.7	32.6	95.4 89.4	92.4	6.6 6.2	6.4		3.9 3.6	3.8		3.9 3.6	3.8	4.3 4.3	4.3
G1	Sunny	Moderate	09:48	Surface	1	24.7 24.2	24.5	8.0 8.2	8.1	30.3 31.6	31.0	97.0 90.4	93.7	6.8 6.3	6.6	6.7	4.9 4.0	4.5	4.4	3.5 3.4	3.5		
				Middle	4	24.7 25.0	24.9	8.2 8.2	8.2	30.5 29.4	30.0	96.2 99.3	97.8	6.7 6.9	6.8		4.9 4.3	4.6		4.9 4.3	4.6	6.4 6.5	6.5
				Bottom	7	24.3 25.0	24.7	8.0 8.2	8.1	31.4 29.6	30.5	90.6 99.5	95.1	6.3 7.0	6.7		3.6 4.3	4.0		3.6 4.3	4.0	4.2 4.3	4.3
G2	Sunny	Moderate	09:32	Surface	1	24.6 24.0	24.3	8.1 8.1	8.1	31.1 32.5	31.8	94.2 88.6	91.4	6.6 6.2	6.4	6.6	4.3 4.6	4.5	4.3	4.5 4.4	4.5		
				Middle	5	24.6 24.8	24.7	8.0 8.2	8.1	31.3 29.7	30.5	94.2 97.4	95.8	6.6 6.8	6.7		4.2 4.6	4.4		4.2 4.6	4.4	3.2 3.1	3.2
				Bottom	9	24.1 24.8	24.5	8.1 8.1	8.1	32.2 30.1	31.2	89.4 97.4	93.4	6.3 6.8	6.6		3.7 4.2	4.0		3.7 4.2	4.0	4.3 4.2	4.3
G3	Sunny	Moderate	10:01	Surface	1	24.9 24.3	24.6	8.3 8.3	8.3	30.1 31.3	30.7	99.4 90.3	94.9	6.9 6.3	6.6	6.8	4.6 4.4	4.5	4.2	2.3 2.2	2.3		
				Middle	4	24.9 25.1	25.0	8.3 8.2	8.3	30.2 29.9	30.1	99.1 100.4	99.8	6.9 7.0	7.0		4.3 4.4	4.4		4.3 4.4	4.4	2.6 2.6	2.6
				Bottom	7	24.4 25.1	24.8	8.2 8.1	8.2	31.2 30.1	30.7	90.8 100.4	95.6	6.4 7.0	6.7		3.7 3.6	3.7		3.7 3.6	3.7	2.8 2.9	2.9
G4	Sunny	Moderate	10:32	Surface	1	25.5 25.1	25.3	8.2 8.3	8.3	27.6 31.8	29.7	108.0 105.0	106.5	7.6 7.2	7.4	7.3	3.9 3.7	3.8	3.8	2.9 3.0	3.0		
				Middle	4	24.8 25.0	24.9	8.0 8.2	8.1	32.4 32.1	32.3	101.2 105.6	103.4	7.0 7.3	7.2		4.0 3.3	3.7		4.0 3.3	3.7	3.7 3.6	3.7
				Bottom	7	25.1 25.0	25.1	8.2 8.2	8.2	31.8 32.1	32.0	104.7 105.9	105.3	7.2 7.3	7.3		4.1 3.7	3.9		4.1 3.7	3.9	4.0 3.9	4.0
M1	Sunny	Moderate	09:40	Surface	1	24.7 24.3	24.5	8.4 8.2	8.3	30.3 31.4	30.9	95.2 91.0	93.1	6.7 6.4	6.6	6.7	4.6 3.8	4.2	4.4	3.9 3.9	3.9		
				Middle	5	24.6 24.8	24.7	8.2 8.1	8.2	30.6 29.7	30.2	94.2 97.6	95.9	6.6 6.8	6.7		4.6 4.5	4.6		4.6 4.5	4.6	3.5 3.6	3.6
				Bottom	9	24.3 24.8	24.6	8.1 8.3	8.2	31.4 29.9	30.7	91.0 97.5	94.3	6.4 6.8	6.6		4.6 4.3	4.5		4.6 4.3	4.5	3.6 3.6	3.6
M2	Sunny	Moderate	09:25	Surface	1	24.8 24.2	24.5	8.1 8.2	8.2	32.5 33.9	33.2	98.1 89.7	93.9	6.8 6.2	6.5	6.6	4.6 4.4	4.5	4.3	3.4 3.5	3.5		
				Middle	5.5	24.6 24.7	24.7	8.2 8.2	8.2	32.9 32.5	32.7	95.4 97.5	96.5	6.6 6.7	6.7		4.2 4.5	4.4		4.2 4.5	4.4	2.8 2.9	2.9
				Bottom	10	24.2 24.7	24.5	8.2 8.1	8.2	33.8 32.8	33.3	89.8 97.8	93.8	6.2 6.7	6.5		3.7 4.3	4.0		3.7 4.3	4.0	3.2 3.2	3.2
M3	Sunny	Moderate	10:21	Surface	1	24.9 24.4	24.7	8.1 8.1	8.1	30.6 31.7	31.2	96.3 89.9	93.1	6.7 6.3	6.5	6.7	4.4 4.6	4.5	4.3	3.2 3.2	3.2		
				Middle	4	24.7 25.1	24.9	8.2 8.2	8.2	30.9 30.1	30.5	94.0 101.3	97.7	6.6 7.0	6.8		4.4 3.8	4.1		4.4 3.8	4.1	3.0 2.9	3.0
				Bottom	7	24.4 25.2	24.8	8.1 8.2	8.2	31.6 30.5	31.1	90.7 102.1	96.4	6.3 7.1	6.7		4.2 4.1	4.2		4.2 4.1	4.2	3.9 3.8	3.9
M4	Sunny	Moderate	09:17	Surface	1	24.8 24.3	24.6	8.2 8.3	8.3	31.6 33.4	32.5	97.8 92.4	95.1	6.8 6.4	6.6	6.6	3.2 3.7	3.5	4.1	2.8 2.8	2.8		
				Middle	4	24.4 24.4	24.4	8.3 8.2	8.3	32.9 33.3	33.1	92.4 94.9	93.7	6.4 6.6	6.5		4.9 4.5	4.7		4.9 4.5	4.7	2.6 2.6	2.6
				Bottom	7	24.4 24.8	24.6	8.3 8.2	8.3	33.0 32.2	32.6	92.2 98.0	95.1	6.4 6.8	6.6		4.1 4.1	4.1		4.1 4.1	4.1	3.1 3.0	3.1
M5	Sunny	Moderate	10:57	Surface	1	24.9 24.2	24.6	8.2 8.2	8.2	32.4 33.4	32.9	106.6 92.4	99.5	7.3 6.4	6.9	6.9	3.6 4.3	4.0	4.2	2.9 3.0	3.0		
				Middle	6	24.9 24.2	24.6	8.2 8.1	8.2	32.4 33.4	32.9	106.4 91.9	99.2	7.3 6.4	6.9		4.2 4.1	4.2		4.2 4.1	4.2	2.6 2.5	2.6
				Bottom	11	24.2 24.2	24.2	8.2 8.2	8.2	33.4 33.4	33.4	92.7 91.5	92.1	6.4 6.3	6.4		4.6 4.2	4.4		4.6 4.2	4.4	6.0 6.0	6.0
M6	Sunny	Moderate	10:43	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	4.0	-	-		
				Middle	3.6	24.9 24.9	24.9	8.3 8.3	8.3	32.3 32.4	32.4	106.6 106.6	106.6	7.3 7.3	7.3		4.4 3.6	4.0		4.4 3.6	4.0	3.5 3.4	3.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	-	-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 4 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 6.7 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.3 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.2 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.2 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.5 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.0 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 04 May 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Rainy	Moderate	19:36	Surface	1	23.2 23.0	23.1	8.0 7.8	7.9	29.9 29.9	29.9	99.2 99.7	99.5	7.1 7.2	7.2	7.2	7.2	5.6 4.5	5.1	6.4	4.1 4.1	4.1	4.2
				Middle	10	22.7 23.2	23.0	7.7 7.7	7.7	29.9 29.9	29.9	97.8 98.0	97.9	7.1 7.1	7.1	7.1	7.6 7.5	7.6	4.5 4.5		4.5		
				Bottom	19	23.1 23.0	23.1	7.6 7.5	7.6	29.9 30.0	30.0	96.6 96.5	96.6	7.0 7.0	7.0	7.0	6.5 6.7	6.6	4.1 4.1		4.1		
C2	Rainy	Moderate	18:25	Surface	1	23.6 23.0	23.3	7.6 7.7	7.7	29.4 29.4	29.4	91.8 91.4	91.6	6.6 6.6	6.6	6.6	6.6	3.4 3.9	3.7	4.5	4.4 6.0	5.2	4.7
				Middle	18	22.5 23.3	22.9	7.5 7.6	7.6	29.6 29.6	29.6	90.5 90.9	90.7	6.6 6.5	6.6	6.6	4.1 4.2	4.2	3.5 4.8		4.2		
				Bottom	35	23.3 22.9	23.1	7.5 7.6	7.6	29.7 29.6	29.7	92.0 90.1	91.1	6.6 6.5	6.6	6.6	5.6 5.6	5.6	3.7 5.4		4.6		
G1	Rainy	Moderate	18:57	Surface	1	23.9 22.9	23.4	8.0 8.0	8.0	29.6 29.7	29.7	95.9 94.0	95.0	6.8 6.8	6.8	6.9	6.9	3.5 3.8	3.7	5.0	3.5 3.6	3.6	3.9
				Middle	4	23.1 22.8	23.0	7.9 7.9	7.9	29.9 30.0	30.0	95.7 96.4	96.1	6.9 7.0	7.0	6.9	4.9 5.8	5.4	3.7 3.8		3.8		
				Bottom	7	23.3 22.6	23.0	7.8 7.9	7.9	30.0 30.1	30.1	97.4 96.0	96.7	7.0 7.0	7.0	7.0	6.0 6.0	6.0	4.1 4.2		4.2		
G2	Rainy	Moderate	18:44	Surface	1	22.8 23.6	23.2	8.0 8.0	8.0	30.2 30.2	30.2	95.3 96.6	96.0	6.9 6.9	6.9	6.9	6.9	3.3 3.3	3.3	4.5	3.8 3.7	3.8	4.1
				Middle	5	22.7 23.3	23.0	7.9 7.9	7.9	30.2 30.1	30.2	95.4 94.1	94.8	6.9 6.8	6.9	6.9	4.0 4.6	4.3	3.5 3.5		3.5		
				Bottom	9	22.5 23.4	23.0	7.8 7.8	7.8	30.4 30.4	30.4	94.1 95.4	94.8	6.8 6.8	6.8	6.8	5.3 6.5	5.9	4.9 4.9		4.9		
G3	Rainy	Moderate	19:04	Surface	1	22.6 23.2	22.9	8.1 8.1	8.1	30.0 29.8	29.9	95.9 95.3	95.6	7.0 6.9	7.0	6.9	6.9	5.1 5.7	5.4	5.4	4.4 4.3	4.4	3.8
				Middle	4	23.5 23.2	23.4	7.9 8.0	8.0	29.8 29.8	29.8	95.4 95.0	95.2	6.8 6.8	6.8	6.8	6.1 5.4	5.8	3.6 3.6		3.6		
				Bottom	7	23.0 23.0	23.0	7.9 7.8	7.9	30.0 30.0	30.0	95.0 93.0	94.0	6.9 6.7	6.8	6.8	5.2 4.8	5.0	3.2 3.3		3.3		
G4	Rainy	Moderate	19:17	Surface	1	23.0 23.2	23.1	8.0 8.0	8.0	29.4 29.4	29.4	96.7 96.2	96.5	7.0 6.9	7.0	7.0	7.0	3.8 3.7	3.8	4.6	2.8 2.9	2.9	3.4
				Middle	4	22.7 23.6	23.2	7.9 7.8	7.9	29.6 29.6	29.6	95.6 96.4	96.0	7.0 6.9	7.0	6.9	4.6 4.7	4.7	3.6 3.8		3.7		
				Bottom	7	23.5 23.1	23.3	7.7 7.7	7.7	30.0 29.9	30.0	94.3 93.5	93.9	6.8 6.7	6.8	6.8	5.2 5.3	5.3	3.7 3.5		3.6		
M1	Rainy	Moderate	18:51	Surface	1	23.9 23.5	23.7	8.0 8.0	8.0	30.0 29.9	30.0	95.2 94.4	94.8	6.8 6.8	6.8	6.8	6.8	4.1 3.9	4.0	5.1	4.4 4.5	4.5	3.9
				Middle	3	23.3 23.3	23.3	7.9 7.9	7.9	29.9 30.1	30.0	93.9 94.5	94.2	6.7 6.8	6.8	6.8	6.0 6.2	6.1	3.5 3.5		3.5		
				Bottom	5	22.7 23.3	23.0	7.8 7.9	7.9	30.2 30.4	30.3	92.5 94.4	93.5	6.7 6.8	6.8	6.8	4.5 5.6	5.1	3.7 3.7		3.7		
M2	Rainy	Moderate	18:38	Surface	1	23.2 23.7	23.5	7.9 7.9	7.9	29.4 29.5	29.5	94.0 96.4	95.2	6.8 6.9	6.9	6.9	6.9	3.1 3.4	3.3	3.6	4.7 4.8	4.8	4.6
				Middle	5	22.4 23.6	23.0	7.9 7.9	7.9	29.6 29.6	29.6	93.5 96.1	94.9	6.8 6.9	6.9	6.9	3.8 3.6	3.7	4.0 4.0		4.0		
				Bottom	9	23.3 23.1	23.2	7.8 7.9	7.9	29.6 29.7	29.7	92.2 93.3	92.8	6.6 6.7	6.7	6.7	3.7 4.0	3.9	5.0 5.0		5.0		
M3	Rainy	Moderate	19:10	Surface	1	23.3 23.5	23.4	7.8 7.7	7.8	29.5 29.7	29.6	96.6 97.0	96.8	7.0 7.0	7.0	6.9	6.9	3.4 3.9	3.7	4.3	3.8 3.9	3.9	3.5
				Middle	4	23.1 23.4	23.3	7.7 7.7	7.7	29.7 29.8	29.8	94.7 94.5	94.6	6.8 6.8	6.8	6.8	3.8 3.6	3.7	3.8 3.8		3.8		
				Bottom	7	22.9 23.5	23.2	7.5 7.5	7.5	30.0 30.0	30.0	90.5 90.8	90.7	6.5 6.5	6.5	6.5	5.4 5.6	5.5	2.9 2.9		2.9		
M4	Rainy	Moderate	18:32	Surface	1	22.9 24.0	23.5	7.8 7.8	7.8	29.6 29.6	29.6	95.8 96.4	96.1	6.9 6.9	6.9	6.9	6.9	3.7 4.2	4.0	4.7	2.6 2.7	2.7	3.2
				Middle	4	22.9 22.9	22.9	7.7 7.8	7.8	29.7 29.8	29.8	93.5 93.5	93.5	6.8 6.8	6.8	6.8	4.1 4.8	4.5	3.4 3.3		3.4		
				Bottom	7	23.0 22.9	23.0	7.8 7.8	7.8	29.9 29.9	29.9	91.6 90.9	91.3	6.6 6.6	6.6	6.6	4.9 6.0	5.5	3.3 3.4		3.4		
M5	Rainy	Moderate	19:27	Surface	1	22.6 23.0	22.8	7.8 7.7	7.8	30.5 30.1	30.3	98.0 96.6	97.3	7.1 7.0	7.1	7.1	7.1	5.5 5.7	5.6	5.9	4.0 4.0	4.0	5.0
				Middle	5.5	22.8 22.9	22.9	7.6 7.6	7.6	29.9 29.8	29.9	96.2 95.9	96.1	7.0 6.9	7.0	6.9	6.2 6.8	6.5	7.0 7.3		7.2		
				Bottom	10	22.7 23.3	23.0	7.6 7.5	7.6	30.0 30.0	30.0	95.0 96.4	95.7	6.9 6.9	6.9	6.9	5.5 5.8	5.7	3.8 3.8		3.8		
M6	Rainy	Moderate	19:23	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-	4.4	
				Middle	3.6	22.8 23.2	23.0	7.9 7.8	7.9	30.1 29.9	30.0	95.7 93.7	94.7	6.9 6.7	6.8	6.8	5.9 5.9	5.9		4.3 4.4	4.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 4 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 6.7 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 7.3 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.2 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.6 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.2 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.6 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.9 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.3 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 04 May 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Rainy	Moderate	14:08	Surface	1	23.6 23.3	23.5	7.9 8.0	8.0	30.0 29.6	29.8	95.6 95.3	95.5	6.8 6.9	6.9	6.9	6.2 6.2	6.2	5.6	3.5 3.4	3.5	3.6
				Middle	10	23.9 23.4	23.7	7.8 7.7	7.8	30.3 30.0	30.2	96.2 94.1	95.2	6.8 6.7	6.8		5.1 4.7	4.9		4.1 3.3	3.3	
				Bottom	19	24.4 24.2	24.3	7.7 7.7	7.7	30.4 30.1	30.3	96.4 95.9	96.2	6.8 6.8	6.8		5.6 5.5	5.6		5.6 4.0	4.1	
C2	Rainy	Moderate	12:49	Surface	1	23.5 23.2	23.4	7.9 7.9	7.9	29.7 29.8	29.8	92.7 91.4	92.1	6.6 6.6	6.6	6.6	4.2 4.6	4.4	4.7	4.2 3.9	4.1	3.7
				Middle	18	23.6 24.3	24.0	7.5 7.4	7.5	29.7 29.8	29.8	91.2 93.1	92.2	6.5 6.6	6.6		4.5 4.2	4.4		3.8 3.8	3.8	
				Bottom	35	24.0 24.2	24.1	7.7 7.7	7.7	29.9 29.8	29.9	93.4 93.6	93.5	6.6 6.6	6.6		5.2 5.3	5.3		3.1 3.0	3.1	
G1	Rainy	Moderate	13:25	Surface	1	23.1 24.0	23.6	7.8 7.9	7.9	29.6 29.7	29.7	92.7 93.9	93.3	6.7 6.7	6.7	6.7	5.0 4.8	4.9	5.5	3.1 3.1	3.1	3.4
				Middle	4	23.7 24.0	23.9	7.9 7.9	7.9	29.7 29.7	29.7	94.7 93.4	94.1	6.8 6.6	6.7		5.8 5.4	5.6		3.3 3.2	3.3	
				Bottom	7	24.0 23.2	23.6	7.9 8.0	8.0	29.5 29.9	29.7	94.7 92.8	93.8	6.7 6.7	6.7		6.0 6.2	6.1		3.8 3.8	3.8	
G2	Rainy	Moderate	13:11	Surface	1	23.4 23.9	23.7	7.8 7.8	7.8	29.8 29.9	29.9	96.3 97.8	97.1	6.9 7.0	7.0	7.0	4.9 4.0	4.5	5.3	2.9 2.8	2.9	3.3
				Middle	5	23.4 23.9	23.7	7.8 7.8	7.8	29.9 29.9	29.9	94.6 96.7	95.7	6.8 6.9	6.9		5.3 5.3	5.3		3.7 3.6	3.7	
				Bottom	9	23.5 23.3	23.4	7.6 7.7	7.7	29.8 29.8	29.8	94.5 93.2	93.9	6.8 6.7	6.8		6.2 6.1	6.2		3.4 3.3	3.4	
G3	Rainy	Moderate	13:33	Surface	1	24.1 23.7	23.9	7.9 7.9	7.9	29.8 29.8	29.8	95.7 94.4	95.1	6.8 6.7	6.8	6.9	3.8 4.6	4.2	5.1	3.5 3.4	3.5	3.5
				Middle	4	23.4 23.2	23.3	7.9 8.0	8.0	29.9 29.9	29.9	95.8 95.5	95.7	6.9 6.9	6.9		5.2 5.3	5.3		4.0 4.0	4.0	
				Bottom	7	22.9 24.0	23.5	8.0 7.9	8.0	29.8 30.1	30.0	93.8 93.7	93.8	6.8 6.6	6.7		5.8 5.5	5.7		3.0 3.0	3.0	
G4	Rainy	Moderate	13:47	Surface	1	23.9 23.3	23.6	7.9 7.9	7.9	30.0 30.0	30.0	96.2 93.7	95.0	6.8 6.7	6.8	6.7	5.3 4.8	5.1	5.0	3.6 3.6	3.6	3.8
				Middle	4	23.6 23.5	23.6	8.0 7.9	8.0	30.1 30.1	30.1	92.3 92.0	92.2	6.6 6.6	6.6		5.1 4.4	4.8		3.7 3.8	3.8	
				Bottom	7	24.2 23.5	23.9	8.0 8.0	8.0	29.9 29.7	29.8	92.9 91.7	92.3	6.6 6.6	6.6		4.9 5.1	5.0		3.8 3.9	3.9	
M1	Rainy	Moderate	13:19	Surface	1	23.7 23.5	23.6	7.8 7.8	7.8	29.8 29.8	29.8	95.7 95.6	95.7	6.8 6.9	6.9	6.9	5.0 4.9	5.0	5.4	4.1 3.9	4.0	3.8
				Middle	3	23.2 23.1	23.2	7.8 7.7	7.8	29.8 29.9	29.9	94.9 93.2	94.1	6.8 6.7	6.8		5.0 5.4	5.2		3.4 3.4	3.4	
				Bottom	5	23.7 23.6	23.7	7.7 7.8	7.8	29.8 29.6	29.7	94.3 93.5	93.9	6.7 6.7	6.7		5.7 6.0	5.9		3.8 3.9	3.9	
M2	Rainy	Moderate	13:03	Surface	1	23.7 23.5	23.6	7.9 7.8	7.9	29.6 29.6	29.6	94.5 93.4	94.0	6.8 6.7	6.8	6.8	4.5 4.2	4.4	5.3	4.0 4.1	4.1	4.4
				Middle	5	23.4 24.1	23.8	7.8 7.9	7.9	29.7 29.7	29.7	93.2 94.1	93.7	6.7 6.7	6.7		5.2 5.9	5.6		6.3 6.5	6.4	
				Bottom	9	23.9 23.8	23.9	7.7 7.7	7.7	29.7 29.7	29.7	95.3 95.5	95.4	6.8 6.8	6.8		5.9 6.0	6.0		2.6 2.6	2.6	
M3	Rainy	Moderate	13:39	Surface	1	23.8 23.9	23.9	7.9 7.9	7.9	29.9 29.9	29.9	95.4 94.4	94.9	6.8 6.7	6.8	6.7	4.5 4.6	4.6	4.4	3.0 3.1	3.1	3.1
				Middle	4	23.2 23.6	23.4	7.8 7.8	7.8	30.0 30.1	30.1	92.0 92.8	92.4	6.6 6.6	6.6		5.0 4.7	4.9		3.0 2.9	3.0	
				Bottom	7	23.5 23.9	23.7	7.7 7.9	7.8	30.0 30.1	30.1	90.9 90.0	90.5	6.5 6.4	6.5		3.6 3.9	3.8		3.3 3.3	3.3	
M4	Rainy	Moderate	12:56	Surface	1	23.9 23.0	23.5	7.7 7.7	7.7	29.8 29.8	29.8	94.1 92.6	93.4	6.7 6.7	6.7	6.7	4.1 3.6	3.9	4.6	3.6 3.5	3.6	2.9
				Middle	4	23.5 23.6	23.6	7.7 7.7	7.7	29.7 29.8	29.8	93.7 92.0	92.9	6.7 6.6	6.7		4.8 4.2	4.5		2.5 2.5	2.5	
				Bottom	7	23.9 23.7	23.8	7.7 7.7	7.7	29.8 29.9	29.9	93.5 91.4	92.5	6.7 6.5	6.6		5.0 5.5	5.3		2.7 2.7	2.7	
M5	Rainy	Moderate	14:01	Surface	1	23.4 23.5	23.5	8.0 8.0	8.0	29.7 30.0	29.9	96.6 96.3	96.5	6.9 6.9	6.9	6.9	4.2 5.2	4.7	5.4	2.5 2.4	2.5	2.7
				Middle	5.5	23.5 23.5	23.5	7.9 7.9	7.9	29.9 30.2	30.1	95.4 95.6	95.5	6.8 6.8	6.8		5.0 5.3	5.2		2.7 2.7	2.7	
				Bottom	10	23.5 23.9	23.7	7.9 7.9	7.9	30.1 30.4	30.3	92.6 95.3	94.0	6.6 6.8	6.7		6.3 6.3	6.3		2.9 2.8	2.9	
M6	Rainy	Moderate	13:56	Surface	-	-	-	-	-	-	-	-	-	-	6.5	-	-	6.6	-	-	3.3	
				Middle	3.8	23.4 23.4	23.4	8.0 7.9	8.0	29.9 30.0	30.0	90.9 90.7	90.8	6.5 6.5		6.5	6.5 6.6		6.6	3.3 3.2		3.3
				Bottom	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 6 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 6.7 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.3 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.9 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.3 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.9 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.3 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 3.6 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 3.9 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 06 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Cloudy	Moderate	10:13	Surface	1	26.0 25.8	25.9	8.0 8.0	8.0	32.7 32.6	32.7	99.2 98.2	98.7	6.7 6.7	6.7	6.7	3.8 3.9	3.9	4.8	1.5 1.5	1.5	2.0
				Middle	10	25.6 25.8	25.7	7.8 7.9	7.9	32.8 32.7	32.8	97.0 97.5	97.3	6.6 6.6	6.6		5.1 5.3	5.2		0.9 0.9	0.9	
				Bottom	19	25.4 25.6	25.5	7.8 7.8	7.8	32.9 32.9	32.9	94.3 94.6	94.5	6.4 6.4	6.4		5.3 5.1	5.2		3.6 3.4	3.5	
C2	Cloudy	Moderate	08:38	Surface	1	25.4 25.4	25.4	7.9 7.9	7.9	32.5 32.5	32.5	97.9 97.8	97.9	6.7 6.7	6.7	6.7	3.3 3.2	3.3	4.4	4.1 4.1	4.1	3.3
				Middle	18	25.3 25.5	25.4	7.8 7.8	7.8	32.5 32.5	32.5	96.7 96.5	96.6	6.6 6.6	6.6		4.2 4.3	4.3		2.9 2.9	2.9	
				Bottom	35	25.1 25.2	25.2	7.8 7.8	7.8	32.7 32.7	32.7	93.3 94.1	93.7	6.4 6.4	6.4		5.6 5.5	5.6		2.9 3.0	3.0	
G1	Cloudy	Moderate	09:23	Surface	1	25.7 25.9	25.8	7.9 7.8	7.9	32.5 32.4	32.5	96.8 97.7	97.3	6.6 6.6	6.6	6.6	2.6 2.4	2.5	4.1	2.7 2.6	2.7	2.3
				Middle	4	25.6 25.5	25.6	7.9 8.0	8.0	32.5 32.4	32.5	95.7 95.0	95.4	6.5 6.5	6.5		3.7 4.2	4.0		2.5 2.5	2.5	
				Bottom	7	25.2 25.3	25.3	7.9 7.9	7.9	32.4 32.3	32.4	91.7 93.4	92.6	6.3 6.4	6.4		6.2 5.6	5.9		1.6 1.5	1.6	
G2	Cloudy	Moderate	09:05	Surface	1	25.9 25.9	25.9	7.8 7.7	7.8	32.5 32.5	32.5	98.9 99.2	99.1	6.7 6.7	6.7	6.6	2.1 2.1	2.1	4.1	1.9 1.9	1.9	2.0
				Middle	5	25.7 25.5	25.6	7.9 7.8	7.9	32.8 32.7	32.8	96.3 95.7	96.0	6.5 6.5	6.5		4.4 4.3	4.4		2.5 2.5	2.5	
				Bottom	9	25.7 25.6	25.7	7.9 7.9	7.9	32.7 32.7	32.7	94.7 94.7	94.7	6.4 6.4	6.4		5.7 5.8	5.8		1.6 1.6	1.6	
G3	Cloudy	Moderate	09:32	Surface	1	25.7 25.6	25.7	7.9 7.9	7.9	32.6 32.6	32.6	99.6 98.4	99.0	6.8 6.7	6.8	6.7	1.8 2.2	2.0	2.8	2.6 2.5	2.6	3.3
				Middle	4	25.5 25.5	25.5	8.0 8.0	8.0	32.7 32.6	32.7	95.1 95.6	95.4	6.5 6.5	6.5		2.9 3.0	3.0		4.5 4.5	4.5	
				Bottom	7	25.5 25.5	25.5	8.0 8.0	8.0	32.7 32.6	32.7	94.8 94.5	94.7	6.5 6.4	6.5		3.5 3.4	3.5		2.7 2.6	2.7	
G4	Cloudy	Moderate	09:51	Surface	1	25.7 25.5	25.6	7.9 7.9	7.9	32.6 32.8	32.7	96.3 96.0	96.2	6.5 6.5	6.5	6.5	3.0 2.9	3.0	4.1	2.0 2.0	2.0	2.5
				Middle	4	25.8 25.6	25.7	8.0 8.0	8.0	32.6 32.6	32.6	94.4 93.7	94.1	6.4 6.4	6.4		4.2 4.4	4.3		2.8 2.8	2.8	
				Bottom	7	25.5 25.3	25.4	7.9 7.9	7.9	32.6 32.6	32.6	93.4 93.4	93.4	6.4 6.4	6.4		5.0 4.9	5.0		2.6 2.5	2.6	
M1	Cloudy	Moderate	09:15	Surface	1	25.6 25.5	25.6	7.8 7.8	7.8	32.6 32.5	32.6	98.3 98.5	98.4	6.7 6.7	6.7	6.7	2.6 3.2	2.9	3.8	2.8 2.8	2.8	3.1
				Middle	3	25.5 25.5	25.5	7.9 7.9	7.9	32.6 32.7	32.7	96.8 96.2	96.5	6.6 6.6	6.6		4.0 4.2	4.1		2.9 3.0	3.0	
				Bottom	5	25.5 25.4	25.5	7.8 7.9	7.9	32.5 32.6	32.6	94.4 94.9	94.7	6.4 6.5	6.5		4.3 4.4	4.4		3.5 3.5	3.5	
M2	Cloudy	Moderate	08:57	Surface	1	25.3 25.5	25.4	7.9 7.9	7.9	32.4 32.4	32.4	97.2 97.1	97.2	6.7 6.6	6.7	6.7	2.2 2.1	2.2	3.4	2.4 2.4	2.4	2.5
				Middle	5	25.7 25.6	25.7	7.8 7.8	7.8	32.5 32.4	32.5	97.1 97.0	97.1	6.6 6.6	6.6		4.0 3.9	4.0		2.4 2.4	2.4	
				Bottom	9	25.4 25.5	25.5	7.8 7.9	7.9	32.6 32.5	32.6	94.9 95.1	95.0	6.5 6.5	6.5		4.3 3.8	4.1		2.7 2.8	2.8	
M3	Cloudy	Moderate	09:41	Surface	1	25.6 25.8	25.7	7.9 7.9	7.9	32.5 32.6	32.6	97.4 97.7	97.6	6.6 6.6	6.6	6.6	2.6 2.6	2.6	3.3	3.6 3.7	3.7	3.0
				Middle	4	25.6 25.5	25.6	7.9 7.9	7.9	32.6 32.7	32.7	95.1 95.7	95.4	6.5 6.5	6.5		3.4 3.5	3.5		2.6 2.7	2.7	
				Bottom	7	25.4 25.7	25.6	7.8 7.8	7.8	32.8 32.7	32.8	93.8 93.7	93.8	6.4 6.4	6.4		3.7 3.8	3.8		2.5 2.5	2.5	
M4	Cloudy	Moderate	08:47	Surface	1	25.5 25.7	25.6	7.8 7.8	7.8	32.6 32.5	32.6	98.0 98.6	98.3	6.7 6.7	6.7	6.7	2.1 2.3	2.2	3.8	4.3 4.5	4.4	3.0
				Middle	4	25.4 25.5	25.5	7.8 7.8	7.8	32.5 32.5	32.5	97.0 96.4	96.7	6.6 6.6	6.6		4.0 4.7	4.4		2.9 3.0	3.0	
				Bottom	7	25.2 25.4	25.3	7.7 7.8	7.8	32.6 32.6	32.6	95.1 95.2	95.2	6.5 6.5	6.5		4.8 5.0	4.9		1.7 1.7	1.7	
M5	Cloudy	Moderate	10:05	Surface	1	25.6 25.7	25.7	8.0 8.0	8.0	32.5 32.5	32.5	95.3 95.0	95.2	6.5 6.5	6.5	6.5	3.6 3.1	3.4	4.5	2.7 2.7	2.7	3.5
				Middle	5.5	25.5 25.5	25.5	7.9 7.9	7.9	32.8 32.8	32.8	93.8 94.4	94.1	6.4 6.4	6.4		4.6 4.0	4.3		5.3 5.3	5.3	
				Bottom	10	25.4 25.3	25.4	8.0 8.0	8.0	32.9 32.9	32.9	93.0 92.2	92.6	6.3 6.3	6.3		5.8 5.7	5.8		2.5 2.5	2.5	
M6	Cloudy	Moderate	10:00	Surface	-	-	-	-	-	-	-	-	-	-	6.6	-	-	4.3	0.0 0.0	0.0	1.9	
				Middle	3.7	25.6 25.0	25.3	8.0 8.0	8.0	32.7 32.7	32.7	97.0 96.3	96.7	6.6 6.6		6.6	4.0 4.6		4.3	1.9 1.9		1.9
				Bottom	-	-	-	-	-	-	-	-	-	-		-	-		-	0.0 0.0		0.0

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 6 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 8.6 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 9.0 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.3 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.7 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.3 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.7 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.8 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.2 mg/L</u>
<u>Station M6</u>			
Intake Level		<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 06 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Cloudy	Moderate	15:49	Surface	1	25.7 25.9	25.8	8.0 7.9	8.0	32.7 32.7	32.7	97.3 97.0	97.2	6.6 6.6	6.6	6.6	5.6 5.4	5.5	6.5	4.4 4.4	4.4	3.8
				Middle	10	25.6 25.6	25.6	7.8 7.8	7.8	32.7 32.7	32.7	95.0 95.7	95.4	6.5 6.5	6.5		6.9 6.9	6.9		3.1 3.1	3.1	
				Bottom	19	25.5 25.6	25.6	7.9 7.9	7.9	32.7 32.8	32.8	94.2 94.6	94.4	6.4 6.4	6.4		7.1 7.2	7.2		3.9 4.0	4.0	
C2	Cloudy	Moderate	14:07	Surface	1	25.7 25.6	25.7	7.9 7.8	7.9	32.2 32.3	32.3	97.8 98.3	98.1	6.7 6.7	6.7	6.6	3.5 3.4	3.5	4.6	3.6 3.6	3.6	2.7
				Middle	18	25.3 25.1	25.2	7.7 7.7	7.7	32.4 32.4	32.4	95.0 94.4	94.7	6.5 6.5	6.5		4.4 4.9	4.7		1.7 1.8	1.8	
				Bottom	35	25.1 25.2	25.2	7.7 7.6	7.7	32.5 32.5	32.5	92.5 93.3	93.0	6.4 6.4	6.4		5.6 5.5	5.6		2.6 2.6	2.6	
G1	Cloudy	Moderate	14:56	Surface	1	25.7 25.8	25.8	8.0 8.0	8.0	32.3 32.4	32.4	97.4 97.7	97.6	6.6 6.6	6.6	6.6	3.3 3.3	3.3	4.6	5.1 5.2	5.2	3.4
				Middle	4	25.4 25.3	25.4	7.9 7.9	7.9	32.7 32.7	32.7	96.2 96.4	96.3	6.6 6.6	6.6		4.8 5.0	4.9		2.6 2.6	2.6	
				Bottom	7	25.3 25.3	25.3	8.0 7.9	8.0	32.8 32.9	32.9	96.3 95.7	96.0	6.6 6.5	6.6		5.8 5.6	5.7		2.5 2.5	2.5	
G2	Cloudy	Moderate	14:37	Surface	1	25.7 25.8	25.8	7.9 8.0	8.0	33.0 32.9	33.0	96.3 95.9	96.1	6.5 6.5	6.5	6.6	3.5 3.5	3.5	4.2	3.4 3.3	3.4	2.5
				Middle	5	25.7 25.8	25.8	7.9 7.9	7.9	33.0 32.9	33.0	96.9 97.2	97.1	6.6 6.6	6.6		3.8 3.6	3.7		2.5 2.5	2.5	
				Bottom	9	25.5 25.5	25.5	7.8 7.8	7.8	33.3 33.2	33.3	97.2 97.6	97.4	6.6 6.6	6.6		5.3 5.3	5.3		1.6 1.5	1.6	
G3	Cloudy	Moderate	15:05	Surface	1	25.7 25.7	25.7	7.9 7.9	7.9	32.8 32.9	32.9	96.7 97.6	97.2	6.6 6.6	6.6	6.6	3.7 4.1	3.9	5.6	4.8 4.9	4.9	3.5
				Middle	4	25.5 25.7	25.6	7.8 7.8	7.8	32.6 32.6	32.6	95.9 95.6	95.8	6.5 6.5	6.5		6.1 6.2	6.2		3.1 2.9	3.0	
				Bottom	7	25.6 25.5	25.6	7.9 7.9	7.9	32.8 32.8	32.8	94.0 93.6	93.8	6.4 6.4	6.4		6.5 6.6	6.6		2.6 2.7	2.7	
G4	Cloudy	Moderate	15:26	Surface	1	25.7 25.5	25.6	7.9 7.9	7.9	32.3 32.2	32.3	97.4 97.5	97.5	6.6 6.7	6.7	6.7	3.9 4.3	4.1	5.3	4.2 4.2	4.2	4.6
				Middle	4	25.6 25.8	25.7	8.0 7.9	8.0	32.5 32.6	32.6	96.6 95.9	96.3	6.6 6.5	6.6		4.7 4.4	4.6		5.3 5.3	5.3	
				Bottom	7	25.6 25.5	25.6	7.9 7.9	7.9	32.8 32.8	32.8	94.6 94.0	94.3	6.4 6.4	6.4		6.9 7.3	7.1		4.2 4.5	4.4	
M1	Cloudy	Moderate	14:46	Surface	1	25.8 25.7	25.8	7.9 7.8	7.9	32.9 32.9	32.9	95.0 94.3	94.7	6.4 6.4	6.4	6.4	4.3 4.1	4.2	5.6	2.7 2.6	2.7	3.1
				Middle	3	25.6 25.5	25.6	7.8 7.7	7.8	32.7 32.7	32.7	93.6 93.2	93.4	6.4 6.3	6.4		5.4 5.5	5.5		3.0 3.0	3.0	
				Bottom	5	25.5 25.5	25.5	7.8 7.8	7.8	33.0 32.9	33.0	94.7 94.3	94.5	6.4 6.4	6.4		7.1 6.9	7.0		3.5 3.7	3.6	
M2	Cloudy	Moderate	14:27	Surface	1	25.7 25.8	25.8	7.9 7.9	7.9	32.1 32.2	32.2	97.3 96.6	97.0	6.6 6.6	6.6	6.6	3.1 2.9	3.0	3.8	3.4 3.4	3.4	2.5
				Middle	5	25.5 25.4	25.5	7.8 7.8	7.8	32.5 32.4	32.5	95.1 94.6	94.9	6.5 6.5	6.5		3.6 3.5	3.6		1.9 1.9	1.9	
				Bottom	9	25.3 25.3	25.3	7.8 7.7	7.8	32.4 32.5	32.5	92.3 92.8	92.6	6.3 6.3	6.3		4.6 5.1	4.9		2.2 2.3	2.3	
M3	Cloudy	Moderate	15:15	Surface	1	25.7 25.8	25.8	7.9 8.0	8.0	32.3 32.4	32.4	96.5 97.2	96.9	6.6 6.6	6.6	6.6	3.8 3.4	3.6	5.1	3.1 3.1	3.1	3.4
				Middle	4	25.6 25.7	25.7	7.8 7.7	7.8	32.4 32.5	32.5	95.6 96.1	95.9	6.5 6.5	6.5		4.8 4.6	4.7		2.8 2.8	2.8	
				Bottom	7	25.3 25.5	25.4	7.7 7.7	7.7	32.7 32.6	32.7	92.6 92.4	92.5	6.3 6.3	6.3		7.0 6.8	6.9		4.2 4.2	4.2	
M4	Cloudy	Moderate	14:18	Surface	1	25.5 25.7	25.6	7.9 7.9	7.9	32.5 32.5	32.5	96.6 97.0	96.8	6.6 6.6	6.6	6.5	3.9 4.0	4.0	4.6	4.1 4.2	4.2	3.5
				Middle	4	25.4 25.3	25.4	7.8 7.7	7.8	32.5 32.5	32.5	93.7 92.9	93.3	6.4 6.4	6.4		4.1 4.4	4.3		2.6 2.7	2.7	
				Bottom	7	25.5 25.4	25.5	7.8 7.8	7.8	32.7 32.8	32.8	91.9 91.5	91.7	6.3 6.2	6.3		5.8 4.9	5.4		3.5 3.5	3.5	
M5	Cloudy	Moderate	15:40	Surface	1	25.6 25.5	25.6	7.7 7.8	7.8	32.3 32.3	32.3	97.8 98.1	98.0	6.7 6.7	6.7	6.7	5.5 5.9	5.7	6.2	3.5 3.7	3.6	2.8
				Middle	5.5	25.5 25.3	25.4	7.8 7.8	7.8	32.6 32.6	32.6	96.2 96.5	96.4	6.6 6.6	6.6		6.2 6.4	6.3		3.2 3.2	3.2	
				Bottom	10	25.4 25.3	25.4	7.9 7.9	7.9	32.8 32.8	32.8	95.3 95.7	95.5	6.5 6.5	6.5		6.5 6.9	6.7		1.6 1.6	1.6	
M6	Cloudy	Moderate	15:36	Surface	-	-	-	-	-	-	-	-	-	-	6.6	-	-	6.1	-	-	3.0	
				Middle	3.9	25.6 25.9	25.8	8.0 8.0	8.0	32.9 32.9	32.9	95.9 97.0	96.5	6.5 6.6		6.6	5.9 6.2		6.1	3.0 3.0		3.0
				Bottom	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 8 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 8.1 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.1 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.1 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.4 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.9 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 08 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Cloudy	Moderate	12:24	Surface	1	24.5 24.3	24.4	8.1 8.1	8.1	31.7 31.7	31.7	110.6 111.2	110.9	7.7 7.8	7.8	7.4	3.7 4.0	3.9	5.6	3.7 4.0	3.9	4.0
				Middle	10	24.5 23.9	24.2	8.2 8.2	8.2	32.2 32.2	32.2	99.8 99.0	99.4	6.9 6.9	6.9		6.0	3.3 3.2		3.3		
				Bottom	19	24.3 23.9	24.1	8.2 8.2	8.2	32.1 32.2	32.2	97.6 96.9	97.3	6.8 6.8	6.8		6.9	4.8 4.5		4.7		
C2	Cloudy	Moderate	10:07	Surface	1	23.8 23.8	23.8	8.1 8.0	8.1	32.4 32.4	32.4	104.2 104.4	104.3	7.3 7.3	7.3	7.2	3.8 3.7	3.8	4.8	4.7 4.6	4.7	4.5
				Middle	18	23.8 23.7	23.8	8.0 8.0	8.0	32.2 32.1	32.2	98.8 98.7	98.8	6.9 7.0	7.0		4.4 4.5	4.5		4.3 4.3	4.3	
				Bottom	35	23.8 23.7	23.8	8.1 8.1	8.1	32.1 32.1	32.1	94.2 93.1	93.7	6.6 6.6	6.6		6.1 6.3	6.2		4.3 4.6	4.5	
G1	Cloudy	Moderate	11:04	Surface	1	24.5 24.3	24.4	8.2 8.2	8.2	31.9 32.1	32.0	100.4 100.4	100.4	7.0 7.0	7.0	6.9	3.5 3.6	3.6	4.2	2.5 2.6	2.6	4.4
				Middle	4	24.5 24.3	24.4	8.2 8.1	8.2	32.0 32.1	32.1	98.4 98.0	98.2	6.8 6.8	6.8		4.3 4.9	4.6		6.1 6.3	6.2	
				Bottom	7	24.4 24.3	24.4	8.1 8.2	8.2	32.4 32.3	32.4	98.9 98.3	98.6	6.9 6.8	6.9		4.3 4.4	4.4		4.4 4.5	4.5	
G2	Cloudy	Moderate	10:40	Surface	1	24.4 24.4	24.4	8.2 8.2	8.2	32.7 32.5	32.6	105.3 104.0	104.7	7.3 7.2	7.3	7.1	3.2 2.7	3.0	5.5	4.2 4.1	4.2	3.4
				Middle	5	24.4 24.3	24.4	8.1 8.1	8.1	32.6 32.6	32.6	99.7 99.4	99.6	6.9 6.9	6.9		5.9 6.9	6.4		2.7 2.8	2.8	
				Bottom	9	24.4 24.2	24.3	8.2 8.1	8.2	32.9 32.8	32.9	95.9 95.2	95.6	6.6 6.6	6.6		7.6 6.7	7.2		3.1 3.3	3.2	
G3	Cloudy	Moderate	11:16	Surface	1	24.5 24.4	24.5	8.2 8.2	8.2	32.0 32.0	32.0	109.7 108.9	109.3	7.6 7.6	7.6	7.5	3.4 3.8	3.6	4.4	3.4 3.4	3.4	3.6
				Middle	4	24.5 24.4	24.5	8.2 8.2	8.2	32.2 32.3	32.3	106.3 107.0	106.7	7.4 7.4	7.4		4.5 4.9	4.7		3.4 3.6	3.5	
				Bottom	7	24.4 24.4	24.4	8.2 8.2	8.2	32.5 32.6	32.6	102.5 102.4	102.5	7.1 7.1	7.1		5.2 4.4	4.8		3.9 4.1	4.0	
G4	Cloudy	Moderate	11:40	Surface	1	24.4 24.5	24.5	8.1 8.1	8.1	32.0 32.1	32.1	92.9 93.9	93.4	6.5 6.5	6.5	6.4	3.3 3.4	3.4	5.5	3.5 3.6	3.6	3.4
				Middle	4	24.4 24.5	24.5	8.2 8.2	8.2	32.1 32.2	32.2	89.6 89.3	89.5	6.2 6.2	6.2		5.4 6.7	6.1		2.7 2.8	2.8	
				Bottom	7	24.4 24.4	24.4	8.2 8.2	8.2	32.5 32.5	32.5	89.2 88.6	88.9	6.2 6.2	6.2		7.1 7.0	7.1		3.9 3.8	3.9	
M1	Cloudy	Moderate	10:53	Surface	1	24.3 24.4	24.4	8.1 8.1	8.1	32.4 32.1	32.3	98.4 98.6	98.5	6.9 6.9	6.9	7.0	4.6 4.1	4.4	5.1	2.6 2.6	2.6	2.9
				Middle	3	24.3 24.4	24.4	8.2 8.1	8.2	32.3 32.3	32.3	102.1 102.7	102.4	7.1 7.1	7.1		5.3 4.6	5.0		3.2 3.4	3.3	
				Bottom	5	24.4 24.4	24.4	8.2 8.2	8.2	32.1 32.5	32.3	108.1 107.7	107.9	7.5 7.5	7.5		5.5 6.1	5.8		2.6 2.8	2.7	
M2	Cloudy	Moderate	10:28	Surface	1	24.1 24.2	24.2	8.2 8.1	8.2	32.6 32.5	32.6	98.1 97.1	97.6	6.8 6.8	6.8	7.0	4.2 4.4	4.3	4.7	3.7 3.7	3.7	3.6
				Middle	5.5	24.2 24.0	24.1	8.1 8.2	8.2	32.5 32.5	32.5	101.4 100.9	101.2	7.1 7.1	7.1		5.3 4.4	4.9		3.2 4.5	3.9	
				Bottom	10	24.2 23.9	24.1	8.2 8.1	8.2	32.5 32.5	32.5	94.8 94.3	94.6	6.6 6.6	6.6		4.9 5.0	5.0		3.0 3.2	3.1	
M3	Cloudy	Moderate	11:30	Surface	1	24.6 24.6	24.6	8.2 8.2	8.2	32.6 32.5	32.6	96.6 96.3	96.5	6.7 6.7	6.7	6.5	3.0 2.8	2.9	4.8	4.3 4.3	4.3	3.8
				Middle	4.5	24.6 24.5	24.6	8.1 8.2	8.2	32.8 32.5	32.7	91.5 91.4	91.5	6.3 6.3	6.3		5.5 5.5	5.5		3.1 3.1	3.1	
				Bottom	8	24.6 24.4	24.5	8.1 8.2	8.2	33.2 32.8	33.0	94.5 93.5	94.0	6.5 6.5	6.5		5.5 6.3	5.9		3.9 4.1	4.0	
M4	Cloudy	Moderate	10:16	Surface	1	24.0 24.0	24.0	8.1 8.1	8.1	32.4 32.3	32.4	106.8 106.0	106.4	7.5 7.4	7.5	7.4	3.5 3.6	3.6	5.4	4.1 4.3	4.2	4.3
				Middle	4	24.0 23.9	24.0	8.1 8.1	8.1	32.2 32.1	32.2	102.8 103.6	103.2	7.2 7.3	7.3		5.6 5.7	5.7		4.3 4.5	4.4	
				Bottom	7	24.0 23.9	24.0	8.2 8.2	8.2	32.2 32.2	32.2	103.0 103.0	103.0	7.2 7.2	7.2		6.9 6.8	6.9		4.1 4.3	4.2	
M5	Cloudy	Moderate	12:10	Surface	1	24.4 24.2	24.3	8.2 8.2	8.2	32.0 32.0	32.0	101.6 101.1	101.4	7.1 7.1	7.1	7.0	3.8 3.7	3.8	4.8	3.1 4.1	3.6	3.6
				Middle	5.5	24.3 24.0	24.2	8.2 8.2	8.2	32.4 32.4	32.4	97.8 97.0	97.4	6.8 6.8	6.8		5.3 4.7	5.0		4.3 3.2	3.8	
				Bottom	10	24.2 24.0	24.1	8.2 8.2	8.2	32.3 32.3	32.3	92.6 92.3	92.5	6.5 6.5	6.5		5.5 5.5	5.5		3.2 3.6	3.4	
M6	Cloudy	Moderate	11:51	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	4.6	-	-	5.0
				Middle	2.1	24.2 24.2	24.2	8.1 8.2	8.2	32.0 32.1	32.1	103.5 104.0	103.8	7.2 7.3	7.3		4.8 4.4	4.6		4.7 5.2	5.0	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 8 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 8.3 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 9.0 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.4 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.8 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.4 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.8 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.8 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.0 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 08 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Cloudy	Moderate	18:31	Surface	1	27.2 25.1	26.2	8.2 8.2	8.2	31.4 31.1	31.3	112.0 108.3	7.5 7.5	7.5	7.3	4.5 4.8	4.7	5.9	3.6 3.8	3.7	4.6	
				Middle	10	26.9 24.5	25.7	8.2 8.2	8.2	32.4 32.4	32.4	104.6 100.3	102.5	7.0 7.0		7.0	6.0 6.3		6.2	6.6 6.5		3.6
				Bottom	19	25.3 24.4	24.9	8.2 8.2	8.2	32.9 32.8	32.9	99.2 98.5	98.9	6.8 6.8		6.8	6.4 7.3		6.9	6.4 6.4		6.5
C2	Cloudy	Moderate	16:21	Surface	1	25.3 24.8	25.1	8.2 8.2	8.2	31.6 31.6	31.6	106.3 104.8	105.6	7.3 7.3	7.3	7.2	2.7 3.0	2.9	3.7	3.2 3.2	3.2	2.6
				Middle	18	25.2 24.6	24.9	8.2 8.2	8.2	32.7 32.7	32.7	102.4 101.0	101.7	7.0 7.0	7.0		2.7 2.6	2.7		2.0 2.0	2.0	
				Bottom	35	24.9 24.6	24.8	8.2 8.2	8.2	32.7 32.8	32.8	100.2 100.3	100.3	6.9 6.9	6.9		5.3 5.4	5.4		2.4 2.5	2.5	
G1	Cloudy	Moderate	17:14	Surface	1	26.4 25.3	25.9	8.2 8.2	8.2	32.8 32.9	32.9	107.7 106.3	107.0	7.2 7.3	7.3	7.1	2.6 3.0	2.8	3.8	3.4 3.1	3.3	2.7
				Middle	4	26.3 25.0	25.7	8.2 8.2	8.2	33.0 33.1	33.1	102.8 99.6	101.2	6.9 6.8	6.9		3.2 2.6	2.9		2.8 2.9	2.9	
				Bottom	7	25.4 24.9	25.2	8.2 8.2	8.2	32.6 32.6	32.6	99.6 98.8	99.2	6.8 6.8	6.8		6.0 5.5	5.8		2.0 2.0	2.0	
G2	Cloudy	Moderate	16:50	Surface	1	26.7 25.3	26.0	8.2 8.2	8.2	32.2 32.1	32.2	106.5 103.4	105.0	7.1 7.1	7.1	7.0	4.0 3.8	3.9	4.5	3.6 3.8	3.7	3.5
				Middle	5	26.4 24.8	25.6	8.2 8.2	8.2	32.2 32.1	32.2	102.7 100.0	101.4	6.9 6.9	6.9		4.7 4.5	4.6		3.0 3.3	3.2	
				Bottom	9	25.4 24.7	25.1	8.3 8.2	8.3	32.9 32.6	32.8	95.9 95.2	95.6	6.5 6.6	6.6		4.7 5.1	4.9		3.7 3.4	3.6	
G3	Cloudy	Moderate	17:24	Surface	1	26.1 25.5	25.8	8.1 8.2	8.2	32.2 32.3	32.3	108.5 107.6	108.1	7.3 7.3	7.3	7.1	3.4 3.5	3.5	4.4	3.8 3.6	3.7	3.6
				Middle	4	26.0 25.0	25.5	8.1 8.2	8.2	32.2 32.2	32.2	102.3 100.9	101.6	6.9 6.9	6.9		4.5 3.7	4.1		4.6 5.0	4.8	
				Bottom	7	25.6 24.9	25.3	8.1 8.2	8.2	32.6 32.4	32.5	98.1 96.9	97.5	6.7 6.7	6.7		5.9 5.5	5.7		2.2 2.1	2.2	
G4	Cloudy	Moderate	17:47	Surface	1	25.1 24.7	24.9	8.1 8.1	8.1	31.3 31.4	31.4	104.4 103.0	103.7	7.2 7.2	7.2	7.0	3.3 3.9	3.6	4.4	3.1 3.4	3.3	3.0
				Middle	4	25.7 24.6	25.2	8.1 8.1	8.1	32.2 32.3	32.3	100.3 98.8	99.6	6.8 6.8	6.8		3.8 3.5	3.7		2.4 2.5	2.5	
				Bottom	7	24.8 24.5	24.7	8.2 8.2	8.2	33.2 33.0	33.1	102.7 101.0	101.9	7.1 7.0	7.1		5.8 6.2	6.0		3.1 3.2	3.2	
M1	Cloudy	Moderate	17:03	Surface	1	26.9 25.9	26.4	8.2 8.1	8.2	33.5 33.1	33.3	108.7 105.6	107.2	7.2 7.1	7.2	7.1	3.3 3.6	3.5	4.0	2.5 2.6	2.6	2.7
				Middle	3	26.6 25.5	26.1	8.2 8.1	8.2	33.4 33.6	33.5	103.9 102.2	103.1	6.9 6.9	6.9		2.9 3.4	3.2		2.8 2.7	2.8	
				Bottom	5	26.0 25.4	25.7	8.2 8.2	8.2	33.2 33.1	33.2	101.7 99.7	100.7	6.8 6.8	6.8		5.8 4.8	5.3		2.6 2.6	2.6	
M2	Cloudy	Moderate	16:39	Surface	1	27.7 25.5	26.6	8.2 8.2	8.2	31.8 31.8	31.8	105.3 102.1	103.7	6.9 7.0	7.0	6.8	3.9 3.7	3.8	4.2	3.0 3.2	3.1	3.6
				Middle	5.5	27.1 24.6	25.9	8.1 8.2	8.2	32.8 32.8	32.8	99.4 95.2	97.3	6.6 6.6	6.6		4.0 4.6	4.3		3.1 3.4	3.3	
				Bottom	10	25.7 24.5	25.1	8.2 8.2	8.2	32.8 32.9	32.9	95.3 93.6	94.5	6.5 6.5	6.5		4.6 4.3	4.5		4.1 4.6	4.4	
M3	Cloudy	Moderate	17:38	Surface	1	26.0 25.5	25.8	8.2 8.2	8.2	31.1 31.0	31.1	117.7 116.6	117.2	8.0 8.0	8.0	7.5	3.2 3.4	3.3	4.2	1.7 1.7	1.7	2.2
				Middle	4.5	25.9 24.9	25.4	8.2 8.2	8.2	31.6 31.6	31.6	102.0 100.8	101.4	6.9 7.0	7.0		4.3 3.5	3.9		2.1 2.0	2.1	
				Bottom	8	25.6 24.9	25.3	8.1 8.2	8.2	32.2 32.1	32.2	92.9 92.5	92.7	6.3 6.4	6.4		5.1 5.4	5.3		2.9 2.9	2.9	
M4	Cloudy	Moderate	16:29	Surface	1	26.7 25.7	26.2	8.1 8.2	8.2	32.5 32.4	32.5	109.8 107.1	108.5	7.3 7.3	7.3	7.2	3.7 4.2	4.0	4.9	3.0 3.2	3.1	2.9
				Middle	4	26.6 25.4	26.0	8.1 8.2	8.2	32.5 32.2	32.4	104.3 101.3	102.8	7.0 6.9	7.0		5.0 4.7	4.9		2.3 2.3	2.3	
				Bottom	7	25.8 25.3	25.6	8.2 8.2	8.2	32.5 32.2	32.4	98.3 96.8	97.6	6.7 6.6	6.7		6.0 5.8	5.9		2.9 3.7	3.3	
M5	Cloudy	Moderate	18:19	Surface	1	24.4 24.1	24.3	8.2 8.2	8.2	31.2 31.3	31.3	102.6 101.6	102.1	7.2 7.1	7.2	7.1	3.5 3.4	3.5	4.8	3.2 3.5	3.4	3.6
				Middle	5.5	24.4 24.0	24.2	8.2 8.2	8.2	32.4 32.5	32.5	98.8 97.7	98.3	6.9 6.8	6.9		4.6 4.5	4.6		4.0 4.3	4.2	
				Bottom	10	24.2 24.0	24.1	8.2 8.2	8.2	32.1 32.1	32.1	94.2 94.2	94.2	6.6 6.6	6.6		6.0 6.6	6.3		3.0 3.4	3.2	
M6	Cloudy	Moderate	17:59	Surface	-	-	-	-	-	-	-	-	-	-	7.4	-	-	4.0	-	-	5.6	
				Middle	2	26.6 26.2	26.4	8.2 8.2	8.2	31.1 31.9	31.5	109.5 110.1	109.8	7.4 7.4		7.4	4.1 3.9		4.0	5.6 5.6		5.6
				Bottom	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 10 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.2 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.8 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.9 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.9 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.5 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 10 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	12:54	Surface	1	24.5 24.3	24.4	8.1 8.2	8.2	29.1 28.8	29.0	109.2 109.8	109.5	7.7 7.8	7.8	7.4	3.4 3.7	3.6	4.7	2.5 2.7	2.6	2.9
				Middle	10	24.5 23.9	24.2	8.2 8.2	8.2	30.1 30.1	30.1	98.8 97.8	98.3	6.9 6.9	6.9		5.2 5.1	5.2		3.4 3.4	3.4	
				Bottom	19	24.3 23.9	24.1	8.2 8.2	8.2	30.5 30.5	30.5	97.0 96.3	96.7	6.8 6.8	6.8		5.4 5.3	5.4		2.9 2.7	2.8	
C2	Sunny	Moderate	10:53	Surface	1	23.8 23.8	23.8	8.1 8.1	8.1	29.3 29.3	29.3	102.3 102.8	102.6	7.3 7.3	7.3	7.1	3.0 2.7	2.9	4.3	5.2 5.4	5.3	4.7
				Middle	18	23.8 23.7	23.8	8.1 8.1	8.1	30.4 30.4	30.4	97.4 97.5	97.5	6.9 6.9	6.9		4.1 4.0	4.1		3.5 3.3	3.4	
				Bottom	35	23.8 23.7	23.8	8.1 8.1	8.1	30.4 30.5	30.5	93.0 92.7	92.9	6.6 6.6	6.6		6.0 5.9	6.0		5.3 5.4	5.4	
G1	Sunny	Moderate	11:43	Surface	1	24.5 24.3	24.4	8.2 8.2	8.2	30.5 30.6	30.6	100.2 99.4	99.8	7.0 7.0	7.0	7.0	3.3 3.3	3.3	3.7	2.9 2.7	2.8	3.3
				Middle	4	24.5 24.3	24.4	8.2 8.2	8.2	30.7 30.7	30.7	98.2 98.0	98.1	6.9 6.9	6.9		3.7 3.6	3.7		3.3 3.2	3.3	
				Bottom	7	24.4 24.3	24.4	8.2 8.2	8.2	31.3 31.2	31.3	98.6 97.4	98.0	6.9 6.8	6.9		3.8 4.1	4.0		3.7 3.8	3.8	
G2	Sunny	Moderate	11:21	Surface	1	24.4 24.4	24.4	8.2 8.2	8.2	30.9 30.8	30.9	104.9 103.3	104.1	7.4 7.2	7.3	7.2	2.4 2.5	2.5	4.5	2.6 2.6	2.6	3.7
				Middle	5	24.4 24.3	24.4	8.1 8.1	8.1	30.9 30.8	30.9	99.5 98.7	99.1	7.0 6.9	7.0		4.7 4.9	4.8		3.7 3.9	3.8	
				Bottom	9	24.4 24.2	24.3	8.2 8.2	8.2	31.6 31.3	31.5	95.3 95.1	95.2	6.7 6.7	6.7		6.5 5.7	6.1		4.6 4.9	4.8	
G3	Sunny	Moderate	11:53	Surface	1	24.5 24.5	24.5	8.2 8.2	8.2	30.9 31.0	31.0	109.6 108.2	108.9	7.7 7.6	7.7	7.6	2.0 2.1	2.1	3.0	3.3 3.5	3.4	3.3
				Middle	4	24.5 24.5	24.5	8.2 8.2	8.2	30.9 30.9	30.9	105.9 107.0	106.5	7.4 7.5	7.5		3.7 3.5	3.6		3.4 3.8	3.6	
				Bottom	7	24.5 24.5	24.5	8.2 8.2	8.2	31.3 31.1	31.2	102.2 102.2	102.2	7.1 7.1	7.1		3.0 3.3	3.2		2.7 2.8	2.8	
G4	Sunny	Moderate	12:14	Surface	1	24.4 24.5	24.5	8.1 8.2	8.2	29.0 29.1	29.1	91.2 92.5	91.9	6.5 6.5	6.5	6.4	2.4 2.0	2.2	3.8	3.3 3.5	3.4	5.0
				Middle	4	24.4 24.5	24.5	8.2 8.2	8.2	29.9 30.0	30.0	88.1 88.1	88.1	6.2 6.2	6.2		4.6 5.1	4.9		7.7 7.8	7.8	
				Bottom	7	24.4 24.4	24.4	8.3 8.3	8.3	30.8 30.7	30.8	88.0 87.4	87.7	6.2 6.1	6.2		4.4 4.2	4.3		3.6 3.9	3.8	
M1	Sunny	Moderate	11:32	Surface	1	24.3 24.4	24.4	8.1 8.2	8.2	31.1 30.8	31.0	97.8 97.9	97.9	6.9 6.9	6.9	7.1	3.8 3.6	3.7	4.1	4.0 3.8	3.9	4.5
				Middle	3	24.3 24.4	24.4	8.2 8.1	8.2	31.1 31.3	31.2	102.0 102.6	102.3	7.2 7.2	7.2		4.2 4.1	4.2		3.8 3.7	3.8	
				Bottom	5	24.4 24.4	24.4	8.2 8.2	8.2	30.8 30.8	30.8	107.5 106.8	107.2	7.5 7.5	7.5		4.3 4.7	4.5		6.0 5.8	5.9	
M2	Sunny	Moderate	11:10	Surface	1	24.1 24.2	24.2	8.2 8.1	8.2	29.5 29.5	29.5	96.6 95.1	95.9	6.9 6.7	6.8	7.0	2.5 2.7	2.6	3.7	2.5 2.4	2.5	3.2
				Middle	5.5	24.2 24.0	24.1	8.1 8.2	8.2	30.5 30.5	30.5	100.5 100.3	100.4	7.1 7.1	7.1		4.5 4.1	4.3		3.3 3.6	3.5	
				Bottom	10	24.2 23.9	24.1	8.2 8.1	8.2	30.5 30.6	30.6	93.7 93.4	93.6	6.6 6.6	6.6		4.0 4.1	4.1		3.4 3.8	3.6	
M3	Sunny	Moderate	12:05	Surface	1	24.6 24.6	24.6	8.2 8.2	8.2	28.8 28.7	28.8	95.3 94.7	95.0	6.7 6.7	6.7	6.6	1.9 2.1	2.0	3.6	4.1 4.3	4.2	4.6
				Middle	4.5	24.6 24.5	24.6	8.2 8.2	8.2	29.2 29.3	29.3	90.0 90.1	90.1	6.3 6.4	6.4		4.1 4.3	4.2		5.6 5.5	5.6	
				Bottom	8	24.6 24.4	24.5	8.2 8.2	8.2	29.9 29.8	29.9	92.8 91.6	92.2	6.5 6.5	6.5		4.1 4.8	4.5		4.0 3.8	4.0	
M4	Sunny	Moderate	11:01	Surface	1	24.0 24.0	24.0	8.1 8.1	8.1	31.2 31.1	31.2	106.2 105.2	105.7	7.5 7.4	7.5	7.4	2.5 2.8	2.7	4.3	4.4 4.2	4.3	4.2
				Middle	4	24.0 23.9	24.0	8.2 8.2	8.2	31.2 30.9	31.1	102.1 102.8	102.5	7.2 7.3	7.3		4.3 4.5	4.4		3.1 3.1	3.0	
				Bottom	7	24.0 23.9	24.0	8.2 8.2	8.2	32.2 31.9	32.1	103.3 102.6	103.0	7.2 7.2	7.2		5.7 5.7	5.7		5.2 5.3	5.3	
M5	Sunny	Moderate	12:41	Surface	1	24.4 24.2	24.3	8.2 8.2	8.2	28.9 29.0	29.0	100.5 99.7	100.1	7.1 7.1	7.1	7.0	3.3 2.9	3.1	4.3	3.9 3.7	3.8	3.6
				Middle	5.5	24.3 24.0	24.2	8.2 8.2	8.2	30.1 30.2	30.2	96.3 95.7	96.0	6.8 6.8	6.8		3.9 3.7	3.8		3.6 3.5	3.6	
				Bottom	10	24.2 24.0	24.1	8.3 8.3	8.3	30.8 30.8	30.8	91.7 91.5	91.6	6.5 6.5	6.5		6.7 5.4	6.1		3.3 3.7	3.5	
M6	Sunny	Moderate	12:23	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	4.5	-	-	7.4
				Middle	2.3	24.2 24.2	24.2	8.2 8.2	8.2	28.8 29.6	29.2	101.4 103.2	102.3	7.2 7.3	7.3		4.5 4.5	4.5		7.2 7.5	7.4	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 10 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 6.6 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 7.2 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.3 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.7 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.3 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.7 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.6 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.2 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 10 May 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Moderate	19:23	Surface	1	27.2 25.1	26.2	8.2 8.2	8.2	29.3 29.4	29.4	110.7 107.3	109.0	7.5 7.5	7.5	7.3	4.5 3.9	4.2	4.9	4.5 4.2	4.4	4.8
				Middle	10	26.9 24.5	25.7	8.2 8.2	8.2	29.9 29.9	29.9	103.4 98.8	101.1	7.0 7.0	7.0		5.2 4.9	5.1		4.7 4.2	4.5	
				Bottom	19	25.3 24.0	24.7	8.2 8.2	8.2	29.8 29.9	29.9	97.6 96.3	97.0	6.8 6.8	6.8		5.0 5.9	5.5		5.3 5.6	5.5	
C2	Sunny	Moderate	17:21	Surface	1	25.3 24.8	25.1	8.2 8.2	8.2	30.1 30.1	30.1	105.4 103.7	104.6	7.3 7.3	7.3	7.2	2.3 2.2	2.3	2.4	4.6 4.8	4.7	3.9
				Middle	18	25.2 24.6	24.9	8.2 8.2	8.2	29.9 29.8	29.9	100.7 100.1	100.4	7.0 7.0	7.0		1.3 1.2	1.3		3.4 3.4	3.4	
				Bottom	35	24.9 24.6	24.8	8.2 8.2	8.2	29.8 29.8	29.8	99.2 99.1	99.2	6.9 7.0	7.0		3.7 3.7	3.7		3.3 3.6	3.5	
G1	Sunny	Moderate	18:09	Surface	1	26.4 25.3	25.9	8.2 8.2	8.2	29.6 29.8	29.7	105.7 104.7	105.2	7.2 7.3	7.3	7.1	1.9 1.9	1.9	3.8	2.6 2.7	2.7	3.4
				Middle	4	26.3 25.0	25.7	8.2 8.2	8.2	29.7 29.8	29.8	100.9 97.5	99.2	6.9 6.8	6.9		3.2 3.1	3.2		4.2 4.1	4.2	
				Bottom	7	25.4 24.9	25.2	8.2 8.2	8.2	30.1 30.0	30.1	98.4 97.4	97.9	6.8 6.8	6.8		6.1 6.4	6.3		3.2 3.6	3.4	
G2	Sunny	Moderate	17:47	Surface	1	26.7 25.3	26.0	8.2 8.2	8.2	30.4 30.2	30.3	106.0 101.9	104.0	7.2 7.1	7.2	7.1	3.9 3.8	3.9	3.6	2.6 2.9	2.8	2.7
				Middle	5	26.4 24.8	25.6	8.2 8.2	8.2	30.3 30.3	30.3	101.7 98.7	100.2	6.9 6.9	6.9		3.6 3.7	3.7		2.7 2.8	2.8	
				Bottom	9	25.4 24.7	25.1	8.3 8.3	8.3	30.6 30.5	30.6	95.5 94.5	95.0	6.6 6.6	6.6		3.1 3.1	3.1		2.6 2.6	2.6	
G3	Sunny	Moderate	18:19	Surface	1	26.1 25.5	25.8	8.2 8.2	8.2	29.7 29.7	29.7	107.2 106.8	107.0	7.3 7.4	7.4	7.2	3.5 3.5	3.5	4.4	3.9 3.7	3.8	3.5
				Middle	4	26.0 25.0	25.5	8.2 8.2	8.2	29.9 29.9	29.9	100.5 99.7	100.1	6.9 7.0	7.0		4.4 4.2	4.3		3.7 3.8	3.8	
				Bottom	7	25.6 24.9	25.3	8.1 8.2	8.2	30.2 30.3	30.3	96.8 95.9	96.4	6.7 6.7	6.7		5.2 5.4	5.3		2.8 3.1	3.0	
G4	Sunny	Moderate	18:41	Surface	1	24.9 24.7	24.8	8.1 8.1	8.1	29.7 29.7	29.7	103.8 102.2	103.0	7.3 7.2	7.3	7.1	2.0 2.3	2.2	3.1	3.2 3.1	3.2	3.8
				Middle	4	25.7 24.6	25.2	8.1 8.2	8.2	29.8 29.9	29.9	98.7 97.6	98.2	6.8 6.9	6.9		2.5 2.6	2.6		5.1 5.3	5.2	
				Bottom	7	24.8 24.5	24.7	8.2 8.2	8.2	30.2 30.2	30.2	101.4 99.9	100.7	7.1 7.0	7.1		4.6 4.6	4.6		3.0 2.8	2.9	
M1	Sunny	Moderate	18:00	Surface	1	26.9 25.9	26.4	8.2 8.1	8.2	30.0 29.8	29.9	106.6 103.5	105.1	7.2 7.1	7.2	7.1	2.0 1.8	1.9	2.7	3.0 3.2	3.1	3.8
				Middle	3	26.6 25.5	26.1	8.2 8.2	8.2	30.0 30.0	30.0	102.6 100.6	101.6	7.0 7.0	7.0		2.4 2.1	2.3		2.8 2.9	2.9	
				Bottom	5	26.0 25.4	25.7	8.2 8.2	8.2	29.8 30.2	30.0	99.9 98.5	99.2	6.9 6.8	6.9		4.0 4.0	4.0		5.3 5.7	5.5	
M2	Sunny	Moderate	17:37	Surface	1	27.7 25.5	26.6	8.2 8.2	8.2	30.3 30.2	30.3	105.0 101.0	103.0	7.0 7.0	7.0	6.8	3.3 3.3	3.3	3.3	3.8 3.9	3.9	3.4
				Middle	5.5	27.1 24.6	25.9	8.2 8.2	8.2	30.2 30.2	30.2	98.1 94.2	96.2	6.6 6.6	6.6		3.4 4.0	3.7		3.1 3.5	3.3	
				Bottom	10	25.7 24.5	25.1	8.2 8.2	8.2	30.2 30.2	30.2	93.9 92.0	93.0	6.5 6.5	6.5		2.8 2.7	2.8		3.0 3.2	3.1	
M3	Sunny	Moderate	18:32	Surface	1	26.0 25.5	25.8	8.2 8.2	8.2	30.3 30.2	30.3	117.7 116.5	117.1	8.1 8.0	8.1	7.6	2.9 2.9	2.9	3.6	2.9 3.2	3.1	3.5
				Middle	4.5	25.9 24.9	25.4	8.2 8.2	8.2	30.5 30.2	30.4	101.0 100.3	100.7	6.9 7.0	7.0		3.1 2.5	2.8		2.7 4.2	3.0	
				Bottom	8	25.6 24.9	25.3	8.2 8.2	8.2	30.9 30.5	30.7	92.5 92.2	92.4	6.4 6.4	6.4		5.0 5.4	5.2		4.2 4.5	4.4	
M4	Sunny	Moderate	17:29	Surface	1	26.7 25.7	26.2	8.2 8.2	8.2	30.1 30.0	30.1	108.5 105.7	107.1	7.3 7.3	7.3	7.2	2.9 2.4	2.7	3.9	3.2 3.3	3.3	3.6
				Middle	4	26.6 25.4	26.0	8.2 8.2	8.2	29.9 29.8	29.9	102.6 100.0	101.3	7.0 6.9	7.0		4.0 3.7	3.9		3.2 3.1	3.2	
				Bottom	7	25.8 25.3	25.6	8.2 8.2	8.2	29.9 29.9	29.9	97.7 96.0	96.9	6.7 6.7	6.7		5.6 4.7	5.2		4.3 4.0	4.2	
M5	Sunny	Moderate	19:11	Surface	1	24.4 24.1	24.3	8.2 8.2	8.2	29.7 29.7	29.7	101.9 100.7	101.3	7.2 7.1	7.2	7.1	2.1 2.5	2.3	3.6	3.5 3.6	3.6	4.1
				Middle	5.5	24.4 24.0	24.2	8.2 8.2	8.2	30.1 30.1	30.1	97.5 96.5	97.0	6.9 6.8	6.9		3.5 3.3	3.4		3.5 2.2	2.3	
				Bottom	10	24.2 24.0	24.1	8.2 8.2	8.2	30.0 30.0	30.0	93.0 92.8	92.9	6.6 6.6	6.6		5.2 5.2	5.2		6.2 6.5	6.4	
M6	Sunny	Moderate	18:52	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	3.4	-	-	5.2
				Middle	2.4	26.6 26.2	26.4	8.2 8.2	8.2	29.7 29.8	29.8	109.2 109.4	109.3	7.4 7.5	7.5		3.3 3.5	3.4		5.2 5.1	5.2	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 12 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.3 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.9 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.5 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.5 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.2 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 12 May 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Moderate	14:17	Surface	1	24.7 24.7	24.7	8.1 8.2	8.2	29.9 29.6	29.8	111.7 112.8	112.3	7.8 7.9	7.9	7.5	3.6 4.4	4.0	4.9	4.2 4.2	4.2	3.8
				Middle	10	24.5 24.5	24.5	8.2 8.2	8.2	31.0 30.9	31.0	101.4 101.0	101.2	7.1 7.1	7.1		5.6 5.8	5.7		4.1 4.1	4.1	
				Bottom	19	24.1 24.1	24.1	8.2 8.2	8.2	31.4 31.3	31.4	99.0 98.8	98.9	7.0 6.9	7.0		4.7 5.0	4.9		3.1 3.1	3.1	
C2	Sunny	Moderate	12:11	Surface	1	24.1 24.3	24.2	8.1 8.2	8.2	30.1 30.2	30.2	105.1 106.2	105.7	7.4 7.5	7.5	7.3	3.1 3.0	3.1	4.5	5.7 5.8	5.8	5.1
				Middle	18	24.2 23.9	24.1	8.2 8.2	8.2	31.3 31.3	31.3	100.1 100.0	100.1	7.0 7.1	7.1		4.6 4.1	4.4		4.1 4.2	4.2	
				Bottom	35	24.0 23.9	24.0	8.1 8.2	8.2	31.2 31.3	31.3	96.3 95.6	96.0	6.8 6.7	6.8		6.2 6.0	6.1		5.1 5.2	5.2	
G1	Sunny	Moderate	13:03	Surface	1	24.7 24.6	24.7	8.1 8.2	8.2	31.3 31.4	31.4	103.3 102.4	102.9	7.2 7.1	7.2	7.1	2.7 2.9	2.8	3.5	4.9 4.9	4.9	4.4
				Middle	4	24.7 24.5	24.6	8.1 8.1	8.1	31.5 31.6	31.6	101.1 100.6	100.9	7.0 7.0	7.0		4.3 4.0	4.2		4.2 4.2	4.2	
				Bottom	7	24.6 24.5	24.6	8.1 8.2	8.2	32.1 32.1	32.1	101.7 100.5	101.1	7.1 7.0	7.1		3.5 3.5	3.5		4.1 4.1	4.1	
G2	Sunny	Moderate	12:40	Surface	1	24.6 24.6	24.6	8.2 8.1	8.2	31.7 31.6	31.7	107.4 105.6	106.5	7.5 7.3	7.4	7.3	2.5 2.5	2.5	4.3	5.7 5.7	5.7	5.2
				Middle	5	24.6 24.5	24.6	8.1 8.1	8.1	31.7 31.6	31.7	102.5 101.4	102.0	7.1 7.1	7.1		4.4 4.6	4.5		5.3 5.3	5.3	
				Bottom	9	24.5 24.4	24.5	8.1 8.1	8.1	32.4 32.1	32.3	98.4 97.5	98.0	6.8 6.8	6.8		5.8 5.7	5.8		4.5 4.6	4.6	
G3	Sunny	Moderate	13:13	Surface	1	24.7 24.7	24.7	8.2 8.2	8.2	31.7 31.8	31.8	112.2 111.2	111.7	7.8 7.7	7.8	7.7	2.0 2.3	2.2	2.8	5.8 5.9	5.9	3.9
				Middle	4	24.7 24.7	24.7	8.1 8.2	8.2	31.7 31.7	31.7	109.1 109.2	109.2	7.6 7.6	7.6		3.5 3.0	3.3		1.8 1.9	1.9	
				Bottom	7	24.7 24.7	24.7	8.2 8.2	8.2	32.1 31.9	32.0	104.7 104.9	104.8	7.3 7.3	7.3		2.7 3.3	3.0		4.0 3.9	4.0	
G4	Sunny	Moderate	13:35	Surface	1	24.6 24.6	24.6	8.2 8.2	8.2	29.8 29.9	29.9	94.1 95.1	94.6	6.6 6.7	6.7	6.5	2.1 2.0	2.1	3.7	4.3 4.4	4.4	5.7
				Middle	4	24.6 24.4	24.5	8.1 8.2	8.2	30.7 30.8	30.8	90.3 90.2	90.3	6.3 6.3	6.3		4.2 4.4	4.3		7.2 7.3	7.3	
				Bottom	7	24.4 24.3	24.4	8.2 8.2	8.2	31.7 31.5	31.6	90.3 89.6	90.0	6.3 6.3	6.3		4.8 4.4	4.6		5.2 5.4	5.3	
M1	Sunny	Moderate	12:52	Surface	1	24.5 24.5	24.5	8.1 8.1	8.1	32.0 31.6	31.8	100.4 101.1	100.8	7.0 7.0	7.0	7.2	3.0 3.3	3.2	4.1	5.4 5.5	5.5	5.7
				Middle	3	24.5 24.6	24.6	8.1 8.1	8.1	32.0 32.1	32.1	104.4 105.4	104.9	7.3 7.3	7.3		4.0 4.5	4.3		7.2 7.2	7.2	
				Bottom	5	24.6 24.6	24.6	8.2 8.2	8.2	31.7 31.6	31.7	110.1 109.3	109.7	7.7 7.6	7.7		4.4 4.9	4.7		4.2 4.3	4.3	
M2	Sunny	Moderate	12:28	Surface	1	24.3 24.4	24.4	8.2 8.1	8.2	30.3 30.3	30.3	99.0 97.6	98.3	7.0 6.9	7.0	7.1	2.5 2.7	2.6	3.6	4.7 4.7	4.7	3.8
				Middle	5.5	24.4 24.2	24.3	8.1 8.1	8.1	31.3 31.4	31.4	103.5 103.3	103.4	7.2 7.2	7.2		4.0 4.5	4.3		2.6 2.7	2.7	
				Bottom	10	24.1 24.1	24.1	8.2 8.1	8.2	31.3 31.4	31.4	95.7 96.0	95.9	6.7 6.7	6.7		3.6 4.2	3.9		3.9 4.0	4.0	
M3	Sunny	Moderate	13:26	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	29.7 29.6	29.7	97.9 97.7	97.8	6.9 6.9	6.9	6.7	2.0 2.3	2.2	3.4	3.2 3.1	3.2	2.6
				Middle	4.5	24.6 24.5	24.6	8.2 8.2	8.2	30.1 30.1	30.1	92.1 92.5	92.3	6.5 6.5	6.5		3.9 4.0	4.0		3.6 3.6	3.6	
				Bottom	8	24.3 24.3	24.3	8.1 8.1	8.1	30.7 30.6	30.7	94.9 94.1	94.5	6.7 6.6	6.7		4.0 4.1	4.1		0.9 0.9	0.9	
M4	Sunny	Moderate	12:19	Surface	1	24.2 24.2	24.2	8.2 8.1	8.2	32.0 32.0	32.0	109.1 107.9	108.5	7.6 7.5	7.6	7.5	2.5 2.6	2.6	4.1	3.4 3.3	3.4	2.5
				Middle	4	24.2 24.1	24.2	8.2 8.2	8.2	32.0 31.8	31.9	104.4 106.0	105.2	7.3 7.4	7.4		4.5 4.8	4.7		3.0 3.1	3.1	
				Bottom	7	24.1 24.1	24.1	8.1 8.1	8.1	33.0 32.7	32.9	105.2 105.3	105.3	7.3 7.3	7.3		5.1 5.1	5.1		1.0 1.0	1.0	
M5	Sunny	Moderate	14:04	Surface	1	24.6 24.6	24.6	8.2 8.2	8.2	29.8 29.9	29.9	103.2 102.8	103.0	7.3 7.2	7.3	7.1	3.0 3.0	3.0	4.1	3.8 3.9	3.9	4.4
				Middle	5.5	24.5 24.4	24.5	8.2 8.2	8.2	30.9 31.0	31.0	99.0 99.0	99.0	6.9 6.9	6.9		3.4 3.9	3.7		4.7 4.6	4.7	
				Bottom	10	24.4 24.2	24.3	8.2 8.2	8.2	31.6 31.6	31.6	94.3 93.9	94.1	6.6 6.6	6.6		5.6 5.7	5.7		4.4 4.5	4.5	
M6	Sunny	Moderate	13:46	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	4.3	0.0 0.0	0.0	3.5
				Middle	2.4	24.4 24.4	24.4	8.2 8.2	8.2	29.6 30.4	30.0	104.2 106.3	105.3	7.4 7.5	7.5		4.2 4.3	4.3		3.5 3.5	3.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		0.0 0.0	0.0	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 12 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 5.5 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 6.0 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.4 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.9 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.4 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.9 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.2 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.8 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 12 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	20:33	Surface	1	27.4 25.3	26.4	8.2 8.1	8.2	30.2 30.2	30.2	113.1 109.9	111.5	7.6 7.6	7.6	7.4	4.5 4.6	4.6	5.2	4.9 4.6	4.8	4.7
				Middle	10	25.5 24.7	25.1	8.2 8.2	8.2	30.7 30.7	30.7	103.2 101.5	102.4	7.1 7.1	7.1		5.2 5.0	5.1		4.7 4.7	4.7	
				Bottom	19	25.5 24.2	24.9	8.1 8.2	8.2	30.7 30.7	30.7	100.7 98.5	99.6	6.9 6.9	6.9		5.7 5.8	5.8		4.5 4.6	4.6	
C2	Sunny	Moderate	18:31	Surface	1	25.5 25.0	25.3	8.2 8.2	8.2	31.0 30.9	31.0	108.3 106.3	107.3	7.4 7.4	7.4	7.3	2.3 2.4	2.4	2.7	3.9 3.9	3.9	3.8
				Middle	18	25.4 24.5	25.0	8.2 8.1	8.2	30.7 30.7	30.7	103.9 101.5	102.7	7.2 7.1	7.2		1.3 1.4	1.4		3.8 3.9	3.9	
				Bottom	35	25.3 24.5	24.9	8.2 8.2	8.2	30.6 30.6	30.6	101.8 100.9	101.4	7.0 7.1	7.1		4.3 4.1	4.2		3.7 3.6	3.7	
G1	Sunny	Moderate	19:20	Surface	1	26.6 25.5	26.1	8.1 8.2	8.2	30.4 30.6	30.5	108.1 107.2	107.7	7.3 7.4	7.4	7.2	2.1 2.1	2.1	3.5	3.9 3.9	3.9	3.7
				Middle	4	26.5 25.2	25.9	8.2 8.2	8.2	30.5 30.6	30.6	103.0 100.6	101.8	7.0 7.0	7.0		1.7 1.8	1.8		3.3 3.3	3.3	
				Bottom	7	25.6 25.3	25.5	8.2 8.2	8.2	30.9 30.9	30.9	101.1 100.0	100.6	6.9 6.9	6.9		6.4 6.5	6.5		3.9 3.9	3.9	
G2	Sunny	Moderate	18:58	Surface	1	26.9 25.5	26.2	8.2 8.2	8.2	31.2 31.0	31.1	108.2 105.4	106.8	7.3 7.2	7.3	7.2	3.8 4.2	4.0	3.7	4.1 4.2	4.2	3.4
				Middle	5	26.6 25.0	25.8	8.1 8.2	8.2	31.1 31.1	31.1	103.9 102.1	103.0	7.0 7.1	7.1		4.3 3.9	4.1		2.9 3.0	3.0	
				Bottom	9	25.6 24.9	25.3	8.2 8.2	8.2	31.4 31.3	31.4	97.3 96.9	97.1	6.7 6.7	6.7		2.8 2.9	2.9		3.1 3.0	3.1	
G3	Sunny	Moderate	19:30	Surface	1	26.3 25.7	26.0	8.1 8.1	8.1	30.6 30.5	30.6	110.4 109.1	109.8	7.5 7.5	7.5	7.3	2.7 2.8	2.8	4.0	3.8 3.8	3.8	4.3
				Middle	4	26.2 25.2	25.7	8.1 8.1	8.1	30.8 30.8	30.8	103.7 102.3	103.0	7.1 7.1	7.1		3.4 3.5	3.5		4.5 4.5	4.5	
				Bottom	7	25.5 25.3	25.4	8.2 8.1	8.2	31.1 31.2	31.2	99.0 99.7	99.4	6.8 6.9	6.9		6.3 5.2	5.8		4.4 4.5	4.5	
G4	Sunny	Moderate	19:51	Surface	1	25.3 24.9	25.1	8.2 8.2	8.2	30.5 30.6	30.6	105.7 104.2	105.0	7.3 7.3	7.3	7.2	2.3 2.4	2.4	3.3	4.4 4.4	4.4	4.9
				Middle	4	25.9 24.5	25.2	8.1 8.1	8.1	30.6 30.8	30.7	101.5 99.7	100.6	6.9 7.0	7.0		3.1 3.1	3.1		5.0 5.1	5.1	
				Bottom	7	25.0 24.7	24.9	8.1 8.2	8.2	31.0 31.1	31.1	103.3 102.0	102.7	7.2 7.1	7.2		3.8 4.7	4.3		5.1 5.3	5.2	
M1	Sunny	Moderate	19:10	Surface	1	27.3 26.3	26.8	8.2 8.2	8.2	30.9 30.7	30.8	109.3 107.1	108.2	7.3 7.3	7.3	7.2	2.0 2.1	2.1	2.8	3.0 3.1	3.1	3.4
				Middle	3	26.5 25.7	26.1	8.1 8.2	8.2	30.8 30.8	30.8	103.7 103.4	103.6	7.0 7.1	7.1		2.4 2.5	2.5		3.3 3.4	3.4	
				Bottom	5	26.2 25.6	25.9	8.2 8.2	8.2	30.7 31.0	30.9	102.0 100.7	101.4	6.9 6.9	6.9		3.7 3.8	3.8		3.7 3.8	3.8	
M2	Sunny	Moderate	18:48	Surface	1	27.9 25.7	26.8	8.2 8.2	8.2	31.1 31.0	31.1	107.4 103.3	105.4	7.1 7.1	7.1	6.9	3.4 3.0	3.2	3.1	4.4 4.5	4.5	5.3
				Middle	5.5	27.3 24.5	25.9	8.2 8.2	8.2	31.0 31.0	31.0	100.7 96.3	98.5	6.7 6.7	6.7		3.5 3.6	3.6		6.4 6.3	6.4	
				Bottom	10	25.9 24.7	25.3	8.1 8.2	8.2	31.1 31.0	31.1	96.6 94.5	95.6	6.6 6.6	6.6		2.4 2.5	2.5		5.0 4.9	5.0	
M3	Sunny	Moderate	19:43	Surface	1	26.2 25.7	26.0	8.1 8.2	8.2	31.1 31.0	31.1	119.1 118.3	118.7	8.1 8.1	8.1	7.6	2.6 2.5	2.6	3.7	3.7 3.8	3.8	3.4
				Middle	4.5	26.3 25.3	25.8	8.1 8.1	8.1	31.3 31.1	31.2	104.4 103.5	104.0	7.1 7.1	7.1		2.9 2.6	2.8		3.1 3.1	3.1	
				Bottom	8	25.5 25.3	25.4	8.2 8.1	8.2	31.7 31.3	31.5	94.1 94.2	94.2	6.4 6.5	6.5		5.9 5.2	5.6		3.4 3.4	3.4	
M4	Sunny	Moderate	18:40	Surface	1	26.9 25.9	26.4	8.1 8.1	8.1	30.9 30.8	30.9	111.0 108.6	109.8	7.5 7.4	7.5	7.3	2.6 2.5	2.6	3.8	4.2 4.3	4.3	4.0
				Middle	4	26.5 25.6	26.1	8.1 8.1	8.1	30.7 30.7	30.7	104.3 101.9	103.1	7.1 7.0	7.1		3.9 4.0	4.0		3.7 3.8	3.8	
				Bottom	7	26.0 25.5	25.8	8.2 8.2	8.2	30.8 30.8	30.8	100.1 98.9	99.5	6.8 6.8	6.8		5.2 4.3	4.8		3.9 3.8	3.9	
M5	Sunny	Moderate	20:20	Surface	1	24.6 24.3	24.5	8.2 8.2	8.2	30.5 30.5	30.5	104.9 103.6	104.3	7.3 7.3	7.3	7.2	2.4 2.5	2.5	3.7	3.7 3.7	3.7	4.6
				Middle	5.5	24.6 24.2	24.4	8.2 8.2	8.2	30.9 30.9	30.9	100.3 99.9	100.1	7.0 7.0	7.0		3.7 3.8	3.8		4.7 4.7	4.7	
				Bottom	10	24.4 24.2	24.3	8.2 8.2	8.2	30.8 30.8	30.8	95.6 95.8	95.7	6.7 6.7	6.7		4.7 4.8	4.8		5.5 5.5	5.5	
M6	Sunny	Moderate	20:02	Surface	-	-	-	-	-	-	-	-	-	-	7.6	-	-	3.3	-	-	7.0	
				Middle	2.3	26.8 26.4	26.6	8.2 8.2	8.2	30.5 30.6	30.6	112.5 110.9	111.7	7.6 7.5		7.6	3.3 3.2		3.3	7.0 7.0		7.0
				Bottom	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 15 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.6 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 8.2 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.6 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.6 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.5 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 15 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Rainy	Moderate	15:28	Surface	1	25.5 25.3	25.4	7.9 7.9	7.9	30.5 30.6	30.6	102.9 101.3	102.1	7.1 7.0	7.1	6.9	3.4 3.7	3.6	4.9	4.9 5.0	5.0	4.0
				Middle	9.5	25.2 25.2	25.2	7.9 7.9	7.9	31.2 31.0	31.1	96.6 94.1	95.4	6.7 6.5	6.6		4.2 4.1	4.2		3.7 3.7	3.7	
				Bottom	18	25.1 25.1	25.1	7.9 7.9	7.9	31.1 31.1	31.1	92.8 93.0	92.9	6.4 6.4	6.4		6.8 7.0	6.9		6.8 3.2	6.9	
C2	Rainy	Moderate	13:20	Surface	1	25.5 25.5	25.5	7.9 7.9	7.9	31.2 31.3	31.3	101.2 100.0	100.6	6.9 6.9	6.9	6.8	2.8 2.6	2.7	3.8	5.0 5.1	5.1	5.0
				Middle	17.5	25.4 25.3	25.4	7.9 7.9	7.9	31.2 31.1	31.2	95.4 95.4	95.4	6.6 6.6	6.6		2.6 2.4	2.5		4.4 4.5	4.5	
				Bottom	34	25.1 25.0	25.1	7.8 7.9	7.9	30.9 31.0	31.0	92.4 92.6	92.5	6.4 6.4	6.4		6.2 6.3	6.3		5.4 5.4	5.4	
G1	Rainy	Moderate	14:11	Surface	1	25.6 25.6	25.6	7.9 7.9	7.9	30.9 31.0	31.0	99.5 100.3	99.9	6.8 6.9	6.9	6.7	3.1 3.3	3.2	3.9	3.2 3.2	3.2	3.9
				Middle	4	25.5 25.5	25.5	7.9 7.9	7.9	31.0 31.0	31.0	94.3 95.2	94.8	6.5 6.5	6.5		3.5 3.6	3.6		2.2 2.2	2.2	
				Bottom	7	25.5 25.4	25.5	7.9 7.9	7.9	31.2 31.4	31.3	95.2 94.8	95.0	6.5 6.5	6.5		4.8 4.9	4.9		6.1 6.2	6.2	
G2	Rainy	Moderate	13:48	Surface	1	25.9 25.9	25.9	7.8 7.9	7.9	31.5 31.4	31.5	99.5 98.1	98.8	6.8 6.7	6.8	6.7	4.7 4.6	4.7	4.9	5.6 5.6	5.6	6.4
				Middle	5	25.6 25.6	25.6	7.9 7.9	7.9	31.5 31.5	31.5	94.8 95.6	95.2	6.5 6.5	6.5		4.3 4.4	4.4		7.0 7.1	7.1	
				Bottom	9	25.2 25.2	25.2	8.0 7.9	8.0	31.7 31.7	31.7	89.7 90.7	90.2	6.2 6.2	6.2		5.7 5.7	5.7		6.4 6.4	6.4	
G3	Rainy	Moderate	14:21	Surface	1	25.8 25.8	25.8	7.8 7.9	7.9	31.0 30.9	31.0	101.5 103.3	102.4	6.9 7.1	7.0	6.8	3.5 3.4	3.5	4.7	2.1 2.1	2.1	4.2
				Middle	4	25.6 25.6	25.6	7.9 7.8	7.9	31.2 31.2	31.2	96.0 95.2	95.6	6.6 6.5	6.6		4.1 4.2	4.2		4.2 4.2	4.2	
				Bottom	7	25.5 25.5	25.5	7.8 7.9	7.9	31.5 31.6	31.6	93.6 92.3	93.0	6.4 6.3	6.4		6.3 6.5	6.4		6.3 6.4	6.4	
G4	Rainy	Moderate	14:44	Surface	1	25.1 25.2	25.2	7.8 7.8	7.8	31.0 30.9	31.0	99.2 98.2	98.7	6.9 6.8	6.9	6.8	2.9 3.0	3.0	4.1	4.4 4.4	4.4	3.8
				Middle	4	25.0 25.0	25.0	7.8 7.8	7.8	30.9 31.3	31.1	96.1 96.6	96.4	6.7 6.7	6.7		3.5 3.6	3.6		4.2 4.2	4.2	
				Bottom	7	25.0 24.9	25.0	7.9 7.8	7.9	31.4 31.5	31.5	95.2 96.1	95.7	6.6 6.7	6.7		5.6 5.5	5.6		2.7 2.7	2.7	
M1	Rainy	Moderate	14:01	Surface	1	25.8 25.8	25.8	7.9 7.8	7.9	31.3 31.0	31.2	99.8 98.9	99.4	6.8 6.8	6.8	6.7	2.5 2.6	2.6	3.4	4.3 4.2	4.3	4.4
				Middle	3	25.6 25.6	25.6	7.9 7.9	7.9	31.2 31.1	31.2	96.3 95.6	96.0	6.6 6.6	6.6		2.9 2.5	2.7		4.8 4.7	4.8	
				Bottom	5	25.3 25.2	25.3	7.8 7.9	7.9	31.1 31.4	31.3	92.6 92.6	92.6	6.4 6.4	6.4		4.8 4.8	4.8		3.9 4.0	4.0	
M2	Rainy	Moderate	13:37	Surface	1	25.7 25.7	25.7	7.9 7.9	7.9	31.5 31.5	31.5	97.5 96.4	97.0	6.7 6.6	6.7	6.5	4.0 3.9	4.0	5.0	3.6 3.6	3.6	3.8
				Middle	5.5	25.4 25.3	25.4	7.8 7.9	7.9	31.4 31.3	31.4	91.8 91.0	91.4	6.3 6.3	6.3		4.1 4.8	4.5		3.7 3.7	3.7	
				Bottom	10	25.0 25.0	25.0	7.8 7.9	7.9	31.5 31.4	31.5	88.3 88.4	88.4	6.1 6.1	6.1		6.4 6.6	6.5		4.2 4.1	4.2	
M3	Rainy	Moderate	14:35	Surface	1	25.7 25.7	25.7	7.8 7.8	7.8	31.4 31.3	31.4	105.1 103.5	104.3	7.2 7.1	7.2	6.9	3.1 3.2	3.2	4.3	3.9 4.0	4.0	3.7
				Middle	4.5	25.5 25.5	25.5	7.9 7.8	7.9	31.8 31.5	31.7	96.2 96.3	96.3	6.6 6.6	6.6		3.4 3.5	3.5		3.2 3.1	3.2	
				Bottom	8	25.3 25.4	25.4	7.8 7.9	7.9	32.1 31.8	32.0	90.6 92.1	91.4	6.2 6.3	6.3		6.0 6.5	6.3		4.0 4.0	4.0	
M4	Rainy	Moderate	13:28	Surface	1	25.9 25.8	25.9	7.8 7.9	7.9	31.4 31.1	31.3	102.1 100.0	101.1	7.0 6.8	6.9	6.8	3.5 2.9	3.2	4.7	3.5 3.5	3.5	4.8
				Middle	4	25.8 25.8	25.8	7.8 7.9	7.9	31.2 31.1	31.2	97.1 96.6	96.9	6.6 6.6	6.6		4.8 4.4	4.6		5.1 5.1	5.1	
				Bottom	7	25.6 25.5	25.6	7.9 7.9	7.9	31.1 31.1	31.1	91.8 90.4	91.1	6.3 6.2	6.3		6.7 5.7	6.2		5.7 5.8	5.8	
M5	Rainy	Moderate	15:16	Surface	1	24.9 24.9	24.9	7.9 7.9	7.9	30.9 30.9	30.9	96.8 95.9	96.4	6.7 6.7	6.7	6.6	3.5 3.3	3.4	5.3	5.7 5.7	5.7	5.3
				Middle	5.5	24.7 24.7	24.7	7.9 7.9	7.9	31.4 31.4	31.4	93.0 93.7	93.4	6.5 6.5	6.5		5.4 5.2	5.3		4.8 4.8	4.8	
				Bottom	10	24.7 24.7	24.7	7.9 7.9	7.9	31.3 31.1	31.2	91.7 91.7	91.7	6.4 6.4	6.4		7.3 7.1	7.2		5.4 5.3	5.4	
M6	Rainy	Moderate	14:55	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	5.0	-	-	7.8
				Middle	2.3	25.6 25.6	25.6	7.8 7.9	7.9	31.0 31.1	31.1	101.1 104.0	102.6	6.9 7.1	7.0		4.9 5.1	5.0		7.8 7.7	7.8	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 15 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 7.7 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 8.3 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.2 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.6 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.2 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.6 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.0 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.5 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 15 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Rainy	Moderate	08:33	Surface	1	25.5 25.2	25.4	8.0 8.0	8.0	30.4 30.0	30.2	104.4 103.2	103.8	7.2 7.2	7.2	6.9	4.1 4.4	4.3	5.6	3.5 3.5	3.5	4.1
				Middle	9.5	25.5 24.8	25.2	8.1 8.0	8.1	31.3 31.4	31.4	96.2 94.4	95.3	6.6 6.6	6.6	6.5 6.1	6.2	6.2		3.0 3.0	3.0	
				Bottom	18	25.2 24.8	25.0	8.1 8.0	8.1	31.8 31.7	31.8	94.4 92.0	93.2	6.5 6.4	6.5	6.5 6.3	6.4	6.4		5.7 5.8	5.8	
C2	Rainy	Moderate	06:25	Surface	1	25.0 25.0	25.0	7.9 7.9	7.9	30.6 30.5	30.6	98.0 100.2	99.1	6.8 7.0	6.9	6.7	3.7 3.3	3.5	4.9	2.9 3.0	3.0	3.6
				Middle	17	24.9 24.8	24.9	7.9 7.9	7.9	31.7 31.6	31.7	93.1 93.5	93.3	6.4 6.5	6.5	6.5	4.9 4.8	4.9		4.3 4.3	4.3	
				Bottom	33	24.7 24.6	24.7	8.0 7.9	8.0	31.7 31.7	31.7	89.1 91.1	90.1	6.2 6.3	6.3	6.3	6.2 6.1	6.2		3.5 3.5	3.5	
G1	Rainy	Moderate	07:18	Surface	1	25.5 25.2	25.4	8.0 8.0	8.0	31.7 31.8	31.8	97.0 96.3	96.7	6.6 6.6	6.6	6.6	4.0 4.0	4.0	4.4	3.8 3.8	3.8	3.6
				Middle	4	25.5 25.2	25.4	8.0 8.0	8.0	31.9 31.9	31.9	95.3 94.2	94.8	6.5 6.5	6.5	6.5	4.5 4.3	4.4		3.8 3.8	3.8	
				Bottom	7	25.4 25.2	25.3	8.0 8.1	8.1	32.6 32.4	32.5	93.4 92.8	93.1	6.4 6.4	6.4	6.4	4.6 4.9	4.8		3.3 3.3	3.3	
G2	Rainy	Moderate	06:55	Surface	1	25.4 25.4	25.4	8.0 8.0	8.0	32.2 32.1	32.2	102.6 100.4	101.5	7.0 6.9	7.0	6.9	2.9 3.0	3.0	5.4	2.8 2.8	2.8	3.1
				Middle	5	25.4 25.2	25.3	8.0 8.0	8.0	32.1 32.0	32.1	97.4 96.6	97.0	6.7 6.6	6.7	6.7	5.6 5.9	5.8		3.0 3.0	3.0	
				Bottom	9	25.4 25.1	25.3	8.0 8.0	8.0	32.9 32.5	32.7	93.7 93.6	93.7	6.4 6.4	6.4	6.4	7.8 6.8	7.3		3.6 3.6	3.6	
G3	Rainy	Moderate	07:29	Surface	1	25.5 25.5	25.5	8.1 8.1	8.1	32.1 32.3	32.2	103.3 103.7	103.5	7.1 7.1	7.1	7.1	2.4 2.5	2.5	3.5	2.8 2.8	2.8	3.9
				Middle	4	25.5 25.5	25.5	8.0 8.0	8.0	32.1 32.2	32.2	102.0 101.3	101.7	7.0 6.9	7.0	7.0	4.4 4.2	4.3		4.0 4.0	4.0	
				Bottom	7	25.5 25.5	25.5	8.1 8.1	8.1	32.6 32.2	32.4	97.8 97.8	97.8	6.7 6.7	6.7	6.7	3.6 4.0	3.8		4.8 4.8	4.8	
G4	Rainy	Moderate	07:50	Surface	1	25.4 25.5	25.5	8.0 8.0	8.0	30.1 30.4	30.3	91.9 92.7	92.3	6.4 6.4	6.4	6.4	2.9 2.4	2.7	4.6	3.1 3.1	3.1	4.4
				Middle	4	25.4 25.5	25.5	8.1 8.0	8.1	31.2 31.2	31.2	90.3 91.1	90.7	6.2 6.3	6.3	6.3	5.6 6.1	5.9		4.7 4.7	4.7	
				Bottom	7	25.4 25.4	25.4	8.1 8.1	8.1	32.0 31.9	32.0	90.0 88.8	89.4	6.2 6.1	6.2	6.2	5.3 5.1	5.2		5.3 5.4	5.4	
M1	Rainy	Moderate	07:07	Surface	1	25.2 25.4	25.3	8.0 8.0	8.0	32.3 31.9	32.1	101.3 101.5	101.4	6.9 7.0	7.0	6.9	4.5 4.3	4.4	4.9	3.9 3.9	3.9	3.2
				Middle	3	25.2 25.4	25.3	8.0 8.0	8.0	32.5 32.6	32.6	98.6 98.7	98.7	6.8 6.7	6.8	6.8	5.1 4.9	5.0		2.4 2.4	2.4	
				Bottom	5	25.4 25.4	25.4	8.0 8.0	8.0	32.2 32.0	32.1	94.1 94.4	94.3	6.4 6.5	6.5	6.5	5.1 5.6	5.4		3.2 3.1	3.2	
M2	Rainy	Moderate	06:43	Surface	1	25.0 25.1	25.1	7.9 8.0	8.0	30.7 30.8	30.8	94.2 95.3	94.8	6.5 6.6	6.6	6.6	3.0 3.3	3.2	4.4	3.4 3.5	3.5	5.0
				Middle	5.5	25.1 24.9	25.0	7.9 8.0	8.0	31.8 31.7	31.8	93.4 93.3	93.4	6.4 6.5	6.5	6.5	5.4 4.9	5.2		6.4 6.4	6.4	
				Bottom	10	25.1 24.8	25.0	8.0 8.1	8.1	31.8 31.8	31.8	90.8 90.9	90.9	6.3 6.3	6.3	6.3	4.8 4.9	4.9		5.1 5.2	5.2	
M3	Rainy	Moderate	07:42	Surface	1	25.6 25.6	25.6	8.0 8.1	8.1	30.0 30.0	30.0	95.4 95.1	95.3	6.6 6.6	6.6	6.6	2.3 2.5	2.4	4.3	3.9 4.0	4.0	3.1
				Middle	4.5	25.6 25.5	25.6	8.0 8.1	8.1	30.5 30.4	30.5	91.2 90.5	90.9	6.3 6.2	6.3	6.3	4.9 5.2	5.1		3.2 3.2	3.2	
				Bottom	8	25.6 25.4	25.5	8.0 8.0	8.0	31.1 31.0	31.1	90.0 89.4	89.7	6.2 6.2	6.2	6.2	4.9 5.7	5.3		2.2 2.2	2.2	
M4	Rainy	Moderate	06:34	Surface	1	25.1 25.0	25.1	8.0 8.0	8.0	30.4 30.4	30.4	101.4 99.8	100.6	7.0 6.9	7.0	6.9	3.0 3.4	3.2	5.1	3.5 3.5	3.5	3.1
				Middle	4	24.9 24.8	24.9	8.0 8.0	8.0	30.5 30.6	30.6	97.9 98.0	98.0	6.8 6.8	6.8	6.8	5.2 5.4	5.3		3.2 3.2	3.2	
				Bottom	7	24.9 24.8	24.9	8.0 8.1	8.1	31.3 31.3	31.3	97.1 97.4	97.3	6.7 6.8	6.8	6.8	6.9 6.9	6.9		2.7 2.7	2.7	
M5	Rainy	Moderate	08:19	Surface	1	24.9 25.1	25.0	8.1 8.0	8.1	30.1 30.1	30.1	96.2 97.0	96.6	6.7 6.7	6.7	6.6	3.9 3.5	3.7	5.2	3.7 3.1	3.1	3.7
				Middle	5.5	25.2 24.9	25.1	8.0 8.1	8.1	31.3 31.4	31.4	92.5 92.1	92.3	6.4 6.4	6.4	6.4	4.7 4.4	4.6		4.2 4.3	4.3	
				Bottom	10	25.1 24.9	25.0	8.1 8.1	8.1	32.0 32.0	32.0	88.0 88.4	88.2	6.1 6.1	6.1	6.1	8.0 6.5	7.3		3.6 3.6	3.6	
M6	Rainy	Moderate	08:00	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9	0.0 0.0	0.0	7.9
				Middle	2.2	25.8 24.9	25.4	8.0 8.1	8.1	30.0 30.8	30.4	100.2 99.7	100.0	6.9 6.9	6.9	6.9	4.8 4.9	4.9		7.8 7.9	7.9	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	0.0 0.0	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 17 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.0 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.5 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.6 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 4.9 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.6 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 4.9 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.6 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 4.9 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 17 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	17:38	Surface	1	25.3 25.3	25.3	8.2 8.2	8.2	32.3 32.3	32.3	97.5 97.9	97.7	7.3 7.3	7.3	7.2	5.6 5.4	5.5	5.7	2.1 2.1	2.1	2.0
				Middle	10	25.1 25.1	25.1	8.2 8.2	8.2	32.9 33.0	33.0	93.3 94.0	93.7	7.0 7.1	7.1		5.5 5.7	5.6		2.2 2.2	2.2	
				Bottom	19	24.9 24.9	24.9	8.2 8.3	8.3	32.9 32.8	32.9	95.4 94.1	94.8	7.2 7.1	7.2		6.6 5.6	6.1		1.6 1.6	1.6	
C2	Sunny	Moderate	14:47	Surface	1	25.1 25.0	25.1	8.2 8.2	8.2	32.7 32.7	32.7	99.0 97.9	98.5	7.4 7.3	7.4	7.4	4.2 4.4	4.3	5.3	3.8 3.8	3.8	3.9
				Middle	18	24.7 24.7	24.7	8.2 8.2	8.2	32.5 32.6	32.6	97.3 97.0	97.2	7.3 7.3	7.3		6.0 5.8	5.9		4.0 4.1	4.1	
				Bottom	35	24.3 24.3	24.3	8.3 8.3	8.3	32.8 32.8	32.8	99.9 99.9	99.9	7.5 7.5	7.5		5.7 5.9	5.8		3.8 3.8	3.8	
G1	Sunny	Moderate	16:26	Surface	1	26.0 26.0	26.0	8.2 8.2	8.2	33.0 33.0	33.0	106.5 106.4	106.5	8.0 8.0	8.0	7.8	5.2 4.7	5.0	5.1	1.9 1.9	1.9	2.4
				Middle	4	25.6 25.5	25.6	8.3 8.3	8.3	32.9 32.7	32.8	99.6 99.7	99.7	7.5 7.5	7.5		5.6 4.6	5.1		3.9 3.9	3.9	
				Bottom	7	25.1 25.1	25.1	8.3 8.3	8.3	30.9 31.0	31.0	99.3 99.1	99.2	7.5 7.4	7.5		5.0 5.2	5.1		1.4 1.4	1.4	
G2	Sunny	Moderate	16:06	Surface	1	25.9 25.9	25.9	8.3 8.2	8.3	32.4 32.4	32.4	99.9 99.7	99.8	7.5 7.5	7.5	7.3	1.2 1.2	1.2	3.0	3.2 3.3	3.3	3.3
				Middle	5	25.8 25.7	25.8	8.2 8.3	8.3	32.3 32.2	32.3	94.9 93.1	94.0	7.1 7.0	7.1		1.3 1.3	1.3		3.9 3.9	3.9	
				Bottom	9	25.1 25.1	25.1	8.3 8.3	8.3	30.5 30.6	30.6	91.5 91.5	91.5	6.9 6.9	6.9		6.5 6.5	6.5		2.8 2.8	2.8	
G3	Sunny	Moderate	16:36	Surface	1	25.8 25.8	25.8	8.2 8.2	8.2	32.5 32.5	32.5	106.7 106.6	106.7	8.0 8.0	8.0	7.9	5.1 5.7	5.4	5.1	2.2 2.2	2.2	2.4
				Middle	4	25.8 25.7	25.8	8.2 8.2	8.2	32.4 32.4	32.4	102.9 102.5	102.7	7.7 7.7	7.7		4.6 4.5	4.6		2.8 2.9	2.9	
				Bottom	7	25.6 25.6	25.6	8.2 8.2	8.2	33.1 32.1	32.6	100.4 101.2	100.8	7.5 7.6	7.6		5.2 5.3	5.3		2.0 2.0	2.0	
G4	Sunny	Moderate	16:57	Surface	1	25.7 25.7	25.7	8.2 8.2	8.2	33.1 33.1	33.1	105.1 105.1	105.1	7.9 7.9	7.9	7.8	5.4 5.5	5.5	4.9	3.9 3.8	3.9	4.5
				Middle	4	25.6 25.6	25.6	8.2 8.2	8.2	33.0 33.0	33.0	103.2 102.9	103.1	7.7 7.7	7.7		4.8 4.4	4.6		5.2 5.1	5.2	
				Bottom	7	25.4 25.4	25.4	8.2 8.2	8.2	32.4 32.7	32.6	97.0 99.9	98.5	7.3 7.5	7.4		4.7 4.5	4.6		4.2 4.3	4.3	
M1	Sunny	Moderate	16:17	Surface	1	25.5 25.5	25.5	8.3 8.2	8.3	32.8 32.7	32.8	99.5 99.3	99.4	7.5 7.5	7.5	7.5	0.5 0.4	0.5	0.9	3.9 3.9	3.9	2.6
				Middle	3	25.7 25.7	25.7	8.2 8.2	8.2	32.7 32.7	32.7	99.6 99.7	99.7	7.5 7.5	7.5		1.1 1.0	1.1		2.1 2.2	2.2	
				Bottom	5	25.4 25.5	25.5	8.2 8.2	8.2	32.3 32.4	32.4	99.4 99.0	99.2	7.5 7.4	7.5		1.2 1.2	1.2		1.8 1.8	1.8	
M2	Sunny	Moderate	15:04	Surface	1	26.0 25.8	25.9	8.3 8.3	8.3	32.1 32.8	32.5	106.9 107.1	107.0	8.0 8.0	8.0	7.8	5.0 4.7	4.9	5.5	1.4 1.4	1.4	1.6
				Middle	5.5	25.6 25.2	25.4	8.2 8.3	8.3	32.8 32.5	32.7	100.0 99.7	99.9	7.5 7.5	7.5		5.3 5.5	5.4		1.7 1.7	1.7	
				Bottom	10	24.7 24.6	24.7	8.2 8.2	8.2	32.8 32.7	32.8	92.7 92.6	92.7	7.0 7.0	7.0		5.6 6.9	6.3		1.6 1.6	1.6	
M3	Sunny	Moderate	16:49	Surface	1	25.7 25.7	25.7	8.2 8.2	8.2	32.2 32.3	32.3	103.9 104.0	104.0	7.8 7.8	7.8	7.8	1.6 1.7	1.7	4.4	2.1 2.1	2.1	2.1
				Middle	4.5	25.6 25.7	25.7	8.2 8.2	8.2	32.3 32.3	32.3	102.1 102.7	102.4	7.7 7.7	7.7		4.8 5.1	5.0		2.2 2.2	2.2	
				Bottom	8	25.3 25.3	25.3	8.3 8.2	8.3	31.0 30.9	31.0	94.5 92.9	93.7	7.1 7.0	7.1		6.4 6.6	6.5		1.9 1.9	1.9	
M4	Sunny	Moderate	14:55	Surface	1	25.8 25.8	25.8	8.2 8.2	8.2	32.5 32.6	32.6	100.3 100.4	100.4	7.5 7.5	7.5	7.5	2.1 2.2	2.2	2.2	1.4 1.4	1.4	2.1
				Middle	4	25.6 25.6	25.6	8.2 8.2	8.2	32.5 32.5	32.5	99.5 99.1	99.3	7.5 7.4	7.5		1.2 1.3	1.3		2.3 2.3	2.3	
				Bottom	7	25.0 25.0	25.0	8.2 8.2	8.2	32.1 33.0	32.6	91.3 99.5	95.4	6.9 7.5	7.2		3.0 3.0	3.0		2.6 2.6	2.6	
M5	Sunny	Moderate	17:26	Surface	1	25.1 25.1	25.1	8.2 8.2	8.2	32.7 32.8	32.8	97.2 97.2	97.2	7.3 7.3	7.3	7.3	2.8 2.8	2.8	4.7	2.6 2.6	2.6	2.2
				Middle	5.5	25.0 25.0	25.0	8.3 8.2	8.3	32.6 32.5	32.6	96.2 96.0	96.1	7.2 7.2	7.2		4.5 4.6	4.6		2.0 2.0	2.0	
				Bottom	10	24.9 24.9	24.9	8.3 8.2	8.3	32.3 32.3	32.3	91.9 90.6	91.3	6.9 6.8	6.9		6.9 6.3	6.6		2.0 2.0	2.0	
M6	Sunny	Moderate	17:08	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	3.4	-	-	3.1
				Middle	2.3	25.5 25.5	25.5	8.2 8.2	8.2	33.0 33.0	33.0	100.4 100.5	100.5	7.5 7.5	7.5		3.4 3.3	3.4		3.1 3.1	3.1	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 17 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 3.1 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 3.4 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.4 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.4 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 2.8 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 3.0 mg/L</u>
<u>Station M6</u>			
Intake Level		<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 17 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Moderate	10:11	Surface	1	25.4 25.4	25.4	8.2 8.2	8.2	32.3 32.3	32.3	99.9 100.2	100.1	7.5 7.5	7.5	7.6	1.2 1.2	1.2	1.8	3.4 3.4	3.4	2.5
				Middle	10.5	25.2 25.3	25.3	8.2 8.2	8.2	32.3 32.3	32.3	101.0 100.9	101.0	7.6 7.6	7.6		1.6 1.7	1.7		1.9 1.9	1.9	
				Bottom	20	25.1 25.0	25.1	8.3 8.3	8.3	32.3 32.5	32.4	97.6 96.0	96.8	7.3 7.2	7.3		2.5 2.6	2.6		2.3 2.3	2.3	
C2	Sunny	Moderate	08:09	Surface	1	24.6 24.6	24.6	8.2 8.3	8.3	32.5 32.5	32.8	95.2 94.6	94.9	7.1 7.1	7.1	7.2	3.1 3.2	3.2	2.6	1.7 1.7	1.7	1.4
				Middle	18	24.6 24.6	24.6	8.3 8.3	8.3	32.6 32.8	32.7	96.3 96.2	96.3	7.2 7.2	7.2		2.6 2.4	2.5		0.9 0.9	0.9	
				Bottom	35	24.5 24.5	24.5	8.2 8.2	8.2	32.2 33.1	32.7	93.9 93.6	93.8	7.0 7.0	7.0		2.1 1.9	2.0		1.6 1.6	1.6	
G1	Sunny	Moderate	08:58	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	32.4 32.4	32.4	101.2 101.0	101.1	7.6 7.6	7.6	7.6	1.6 1.7	1.7	2.4	2.9 2.9	2.9	2.1
				Middle	4	24.8 24.8	24.8	8.2 8.2	8.2	32.7 32.7	32.7	100.1 99.6	99.9	7.5 7.5	7.5		3.0 3.0	3.0		2.1 2.1	2.1	
				Bottom	7	24.7 24.8	24.8	8.2 8.2	8.2	32.6 32.5	32.6	94.5 95.7	95.1	7.1 7.2	7.2		2.5 2.5	2.5		1.2 1.2	1.2	
G2	Sunny	Moderate	08:36	Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	33.1 32.1	32.6	99.9 99.7	99.8	7.5 7.5	7.5	7.4	1.3 1.4	1.4	2.1	3.8 3.8	3.8	2.3
				Middle	5	24.8 24.8	24.8	8.2 8.2	8.2	32.1 32.1	32.1	97.4 96.9	97.2	7.3 7.3	7.3		2.7 2.9	2.8		1.6 1.6	1.6	
				Bottom	9	24.7 24.8	24.8	8.2 8.2	8.2	32.2 32.1	32.2	93.9 94.7	94.3	7.0 7.1	7.1		1.9 2.0	2.0		1.5 1.6	1.6	
G3	Sunny	Moderate	09:07	Surface	1	24.8 24.8	24.8	8.3 8.3	8.3	32.3 32.3	32.3	97.9 97.7	97.8	7.3 7.3	7.3	7.3	3.2 3.8	3.5	3.3	2.2 2.2	2.2	1.4
				Middle	4	24.8 24.8	24.8	8.2 8.2	8.2	32.6 32.6	32.6	96.5 95.1	95.8	7.2 7.1	7.2		3.4 3.5	3.5		1.0 1.0	1.0	
				Bottom	7	24.7 24.7	24.7	8.2 8.3	8.3	32.6 32.6	32.6	99.9 90.5	95.2	7.5 6.8	7.2		3.0 2.6	2.8		1.1 1.0	1.1	
G4	Sunny	Moderate	09:29	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	32.3 32.3	32.3	91.6 91.3	91.5	6.9 6.9	6.9	6.9	4.3 3.9	4.1	3.1	3.9 3.9	3.9	2.8
				Middle	4	24.7 24.7	24.7	8.2 8.2	8.2	32.3 32.3	32.3	91.1 90.9	91.0	6.8 6.8	6.8		2.4 2.5	2.5		2.5 2.5	2.5	
				Bottom	7	24.6 24.6	24.6	8.3 8.3	8.3	32.5 32.5	32.5	94.4 95.3	94.9	7.1 7.2	7.2		2.6 2.7	2.7		2.0 2.0	2.0	
M1	Sunny	Moderate	08:48	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	32.4 32.4	32.4	101.2 101.1	101.2	7.6 7.6	7.6	7.6	2.6 2.7	2.7	2.6	1.7 1.7	1.7	2.0
				Middle	3	24.8 24.8	24.8	8.2 8.2	8.2	32.4 32.4	32.4	99.6 99.0	99.3	7.5 7.4	7.5		2.8 2.3	2.6		2.0 2.0	2.0	
				Bottom	5	24.7 24.7	24.7	8.2 8.2	8.2	32.5 32.5	32.5	92.2 93.5	92.9	6.9 7.0	7.0		2.3 2.4	2.4		2.2 2.3	2.3	
M2	Sunny	Moderate	08:26	Surface	1	24.7 24.7	24.7	8.2 8.2	8.2	32.7 32.8	32.8	90.9 91.7	91.3	6.8 6.9	6.9	7.1	1.4 1.6	1.5	3.7	2.2 2.2	2.2	2.9
				Middle	5.5	24.6 24.6	24.6	8.2 8.2	8.2	33.1 33.1	33.1	97.7 97.9	97.8	7.3 7.3	7.3		8.0 7.7	7.9		3.9 4.0	4.0	
				Bottom	10	24.6 24.6	24.6	8.3 8.2	8.3	32.1 32.1	32.1	97.2 97.2	97.2	7.3 7.3	7.3		1.9 1.7	1.8		2.6 2.6	2.6	
M3	Sunny	Moderate	09:21	Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	32.4 32.3	32.4	99.9 99.9	99.9	7.5 7.5	7.5	7.5	3.1 2.9	3.0	2.8	1.1 1.1	1.1	1.3
				Middle	4.5	24.8 24.8	24.8	8.3 8.2	8.3	32.4 32.5	32.5	99.0 97.3	98.2	7.4 7.3	7.4		2.6 2.5	2.6		1.6 1.6	1.6	
				Bottom	8	24.5 24.5	24.5	8.2 8.2	8.2	33.0 33.0	33.0	96.9 97.0	97.0	7.3 7.3	7.3		2.7 2.8	2.8		1.3 1.3	1.3	
M4	Sunny	Moderate	08:18	Surface	1	24.7 24.7	24.7	8.2 8.2	8.2	32.2 32.2	32.2	90.9 90.9	90.9	6.8 6.8	6.8	6.9	3.5 3.5	3.5	2.6	3.7 3.7	3.7	3.2
				Middle	4	24.7 24.7	24.7	8.2 8.2	8.2	32.2 32.3	32.3	92.0 92.2	92.1	6.9 6.9	6.9		2.2 2.2	2.2		3.6 3.5	3.6	
				Bottom	7	24.6 24.6	24.6	8.2 8.2	8.2	32.7 32.6	32.7	90.7 90.9	90.8	6.8 6.8	6.8		2.0 2.1	2.1		2.5 2.2	2.2	
M5	Sunny	Moderate	09:58	Surface	1	25.0 25.0	25.0	8.3 8.3	8.3	32.7 32.6	32.7	99.6 99.5	99.6	7.5 7.5	7.5	7.5	1.4 1.4	1.4	1.9	1.6 1.7	1.7	2.2
				Middle	5.5	25.0 25.0	25.0	8.2 8.3	8.3	32.6 32.6	32.6	99.5 99.5	99.5	7.5 7.5	7.5		1.6 1.5	1.6		2.6 2.6	2.6	
				Bottom	10	25.0 25.0	25.0	8.2 8.3	8.3	32.9 32.9	32.9	97.5 97.9	97.7	7.3 7.3	7.3		2.3 2.8	2.6		2.2 2.2	2.2	
M6	Sunny	Moderate	09:40	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	2.2	-	-	1.4
				Middle	2.5	24.9 24.9	24.9	8.3 8.2	8.3	30.9 30.9	30.9	96.6 95.4	96.0	7.3 7.2	7.3		2.2 2.2	2.2		1.4 1.4	1.4	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 19 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 6.7 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.3 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.0 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.0 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 2.5 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 2.7 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 19 May 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
C1	Cloudy	Moderate	18:27	Surface	1	23.5 22.7	23.1	7.9 7.8	7.9	29.9 29.9	29.9	100.0 99.6	99.8	7.2 7.2	7.2	7.2	7.2	4.9 5.0	5.0	6.2	2.5 2.6	2.6	1.9
				Middle	10	22.8 23.2	23.0	7.8 7.6	7.7	29.8 29.8	29.8	97.5 98.1	97.8	7.1 7.1	7.1	7.1	6.7 7.3	7.0	6.2	1.6 1.4	1.4	1.9	
				Bottom	19	22.7 23.3	23.0	7.6 7.5	7.6	29.9 29.9	29.9	95.6 96.4	96.0	6.9 6.9	6.9	6.9	7.1 5.8	6.5	6.9	1.6 1.6	1.6		
C2	Cloudy	Moderate	16:49	Surface	1	23.7 23.0	23.4	7.5 7.6	7.6	29.3 29.4	29.4	92.4 92.1	92.3	6.6 6.7	6.7	6.6	3.4 3.9	3.7	4.4	4.6 4.5	4.6	2.8	
				Middle	18	22.5 23.0	22.8	7.5 7.5	7.5	29.7 29.6	29.7	89.1 90.4	89.8	6.5 6.5	6.5	6.5	4.1 3.4	3.8	4.4	1.6 1.6	1.6		2.8
				Bottom	35	23.4 22.8	23.1	7.4 7.5	7.5	29.7 29.5	29.6	92.1 90.1	91.1	6.6 6.5	6.6	6.6	5.5 5.6	5.6	6.6	2.0 2.1	2.1		
G1	Cloudy	Moderate	17:34	Surface	1	23.3 23.1	23.2	7.9 8.0	8.0	29.6 29.6	29.6	94.8 94.6	94.7	6.8 6.8	6.8	6.9	3.8 3.5	3.7	4.9	1.8 1.8	1.8	1.8	
				Middle	4	23.3 23.1	23.2	7.8 7.9	7.9	29.9 30.0	30.0	96.3 96.9	96.6	6.9 7.0	7.0	7.0	4.6 5.2	4.9	4.9	2.5 2.5	2.5		1.8
				Bottom	7	23.4 23.0	23.2	7.8 7.8	7.8	29.9 30.1	30.0	97.8 95.8	96.8	7.0 6.9	7.0	7.0	5.9 6.1	6.0	7.0	1.2 1.2	1.2		
G2	Cloudy	Moderate	17:18	Surface	1	22.7 23.5	23.1	8.0 8.0	8.0	30.2 30.1	30.2	95.2 96.1	95.7	6.9 6.9	6.9	6.9	3.2 3.4	3.3	4.4	5.2 5.4	5.3	3.1	
				Middle	5	22.9 23.0	23.0	7.8 7.8	7.8	30.2 30.0	30.1	95.0 94.4	94.7	6.9 6.8	6.9	6.9	4.3 4.2	4.3	4.4	2.3 2.3	2.3		3.1
				Bottom	9	22.7 23.2	23.0	7.8 7.8	7.8	30.4 30.3	30.4	94.8 95.0	94.9	6.9 6.8	6.9	6.9	5.5 5.6	5.6	6.9	1.6 1.6	1.6		
G3	Cloudy	Moderate	17:43	Surface	1	22.6 23.4	23.0	8.1 8.0	8.1	29.9 29.8	29.9	95.0 95.6	95.3	6.9 6.9	6.9	6.9	4.6 5.6	5.1	5.2	1.2 1.2	1.2	1.4	
				Middle	4	23.5 22.9	23.2	7.9 7.9	7.9	29.9 29.7	29.8	94.9 94.1	94.5	6.8 6.8	6.8	6.8	5.8 5.1	5.5	5.2	1.6 1.7	1.7		1.4
				Bottom	7	23.2 23.0	23.1	7.9 7.7	7.8	30.0 30.0	30.0	95.1 93.0	94.1	6.8 6.7	6.8	6.8	5.1 4.9	5.0	6.8	1.3 1.3	1.3		
G4	Cloudy	Moderate	18:02	Surface	1	22.9 22.8	22.9	8.0 7.9	8.0	29.5 29.4	29.5	95.6 95.0	95.3	6.9 6.9	6.9	6.9	3.9 4.0	4.0	5.1	1.6 1.6	1.6	1.8	
				Middle	4	22.4 23.3	22.9	7.8 7.8	7.8	29.6 29.5	29.6	95.8 95.7	95.8	7.0 6.9	7.0	7.0	4.5 4.8	4.7	5.1	1.7 1.7	1.7		1.8
				Bottom	7	23.0 23.3	23.2	7.7 7.6	7.7	30.0 29.9	30.0	93.4 95.1	94.3	6.7 6.8	6.8	6.8	6.5 6.6	6.6	6.8	2.0 2.1	2.1		
M1	Cloudy	Moderate	17:25	Surface	1	23.7 23.8	23.8	8.0 8.0	8.0	30.0 29.8	29.9	93.1 94.4	93.8	6.6 6.7	6.7	6.7	3.7 4.3	4.0	5.0	2.4 2.5	2.5	2.2	
				Middle	3	23.4 23.3	23.4	7.9 7.9	7.9	30.0 30.2	30.1	94.2 94.5	94.4	6.8 6.8	6.8	6.8	5.8 6.4	6.1	6.1	2.0 2.1	2.1		2.2
				Bottom	5	22.4 23.4	22.9	7.7 7.8	7.8	30.3 30.2	30.3	90.8 93.5	92.2	6.6 6.7	6.7	6.7	4.6 5.4	5.0	6.7	2.0 2.2	2.1		
M2	Cloudy	Moderate	17:08	Surface	1	23.4 23.6	23.5	7.9 7.9	7.9	29.4 29.4	29.4	94.4 95.6	95.0	6.8 6.9	6.9	6.9	3.4 3.3	3.4	3.6	2.5 2.5	2.5	1.7	
				Middle	5	22.3 23.6	23.0	7.8 7.8	7.8	29.6 29.6	29.6	94.4 95.0	94.7	6.9 6.8	6.9	6.9	3.8 3.7	3.8	3.6	1.3 1.3	1.3		1.7
				Bottom	9	23.3 23.1	23.2	7.8 7.8	7.8	29.6 29.6	29.6	91.9 93.6	92.8	6.6 6.8	6.7	6.7	3.3 3.9	3.6	6.7	1.3 1.3	1.3		
M3	Cloudy	Moderate	17:53	Surface	1	23.0 23.3	23.2	7.8 7.6	7.7	29.5 29.7	29.6	95.9 96.5	96.2	6.9 6.9	6.9	6.9	3.7 3.8	3.8	4.4	2.6 2.6	2.6	2.1	
				Middle	4	23.4 23.7	23.6	7.6 7.7	7.7	29.6 29.7	29.7	94.6 94.7	94.7	6.8 6.8	6.8	6.8	3.6 3.7	3.7	6.9	2.1 2.1	2.1		2.1
				Bottom	7	23.2 23.7	23.5	7.5 7.5	7.5	30.0 30.0	30.0	90.5 91.5	91.0	6.5 6.5	6.5	6.5	5.5 5.8	5.7	6.5	1.6 1.6	1.6		
M4	Cloudy	Moderate	16:59	Surface	1	23.1 24.2	23.7	7.9 7.9	7.9	29.6 29.5	29.6	96.7 96.1	96.4	7.0 6.8	6.9	6.9	3.4 4.2	3.8	4.4	5.2 5.3	5.3	3.2	
				Middle	4	22.9 22.7	22.8	7.7 7.7	7.7	29.7 29.8	29.8	93.7 93.3	93.5	6.8 6.8	6.8	6.8	3.8 4.7	4.3	4.4	2.5 2.6	2.6		3.2
				Bottom	7	23.3 22.9	23.1	7.7 7.7	7.7	29.9 30.0	30.0	92.0 91.0	91.5	6.6 6.6	6.6	6.6	4.8 5.6	5.2	6.6	1.7 1.7	1.7		
M5	Cloudy	Moderate	18:19	Surface	1	22.4 23.1	22.8	7.7 7.7	7.7	30.5 30.0	30.3	96.3 97.3	96.8	7.0 7.0	7.0	7.0	5.2 5.2	5.2	5.6	1.4 1.4	1.4	1.9	
				Middle	5.5	22.9 22.8	22.9	7.6 7.5	7.6	29.8 29.9	29.9	96.0 95.7	95.9	7.0 6.9	7.0	7.0	5.4 6.3	5.9	6.9	2.6 2.6	2.6		1.9
				Bottom	10	22.6 23.1	22.9	7.5 7.5	7.5	29.9 30.0	30.0	94.6 96.2	95.4	6.9 6.9	6.9	6.9	5.4 5.9	5.7	6.9	1.8 1.8	1.8		
M6	Cloudy	Moderate	18:11	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	
				Middle	3.7	22.7 23.1	22.9	7.9 7.8	7.9	30.1 29.9	30.0	96.1 94.3	95.2	7.0 6.8	6.9	6.9	6.0 5.4	5.7	6.9	1.4 1.6	1.5		1.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 19 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 5.9 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 6,4 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 3.7 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.0 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 3.7 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.0 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.4 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.8 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 19 May 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	11:20	Surface	1	22.9	22.9	8.0	8.0	29.7	29.7	93.2	94.0	6.8	6.9	6.9	6.1	5.9	5.0	3.1	3.1	2.8
				Middle	10	23.5	23.3	7.7	7.7	29.8	29.8	95.5	94.2	6.8	6.8		4.5	4.3		1.7	1.7	
				Bottom	19	23.7	23.6	7.7	7.7	30.0	30.0	94.2	94.2	6.7	6.7		5.1	4.9		3.7	3.7	
C2	Cloudy	Moderate	09:52	Surface	1	22.6	22.6	7.8	7.9	29.7	29.7	90.8	90.5	6.6	6.6	6.6	3.7	3.8	3.9	2.5	2.5	2.0
				Middle	18	22.7	23.1	7.5	7.5	29.7	29.8	88.9	89.8	6.5	6.5		4.2	4.2		1.3	1.3	
				Bottom	35	23.2	23.5	7.7	7.7	29.8	29.8	92.1	92.0	6.6	6.6		3.8	3.8		2.3	2.3	
G1	Cloudy	Moderate	10:37	Surface	1	22.5	22.8	7.8	7.9	30.1	30.0	92.3	92.3	6.7	6.7	6.7	4.1	4.3	5.0	2.9	2.9	2.7
				Middle	4	23.3	23.3	7.7	7.8	30.0	30.0	94.3	92.1	6.8	6.7		5.1	5.3		3.6	3.6	
				Bottom	7	23.3	23.2	7.8	7.9	30.0	30.0	93.4	93.0	6.7	6.7		5.4	5.5		1.6	1.6	
G2	Cloudy	Moderate	10:20	Surface	1	22.8	22.8	7.8	7.8	29.8	29.8	94.6	94.7	6.9	6.9	6.9	4.1	4.1	4.7	3.4	3.5	2.2
				Middle	5	23.0	23.0	7.7	7.7	29.7	29.8	93.2	94.5	6.7	6.8		4.4	4.6		1.4	1.4	
				Bottom	9	22.9	22.7	7.6	7.7	29.8	29.8	93.0	91.2	6.7	6.6		5.2	5.3		1.6	1.7	
G3	Cloudy	Moderate	10:45	Surface	1	23.4	23.3	7.8	7.9	29.7	29.7	95.1	94.3	6.8	6.8	6.9	3.6	3.9	4.6	1.4	1.4	1.8
				Middle	4	22.4	22.4	7.9	8.0	29.7	29.8	93.4	94.1	6.8	6.9		4.9	4.9		2.6	2.6	
				Bottom	7	22.5	22.9	7.9	7.9	30.0	30.0	93.0	93.2	6.8	6.8		4.9	5.0		1.5	1.5	
G4	Cloudy	Moderate	10:59	Surface	1	23.5	23.0	8.0	8.0	29.5	29.5	93.8	92.8	6.7	6.7	6.7	4.3	4.4	4.4	2.7	2.7	2.5
				Middle	4	23.3	23.0	8.0	8.0	30.0	30.1	92.0	91.2	6.6	6.6		4.2	4.1		1.6	1.7	
				Bottom	7	23.4	23.2	7.9	8.0	30.0	30.1	92.3	91.0	6.6	6.6		4.6	4.6		2.9	3.0	
M1	Cloudy	Moderate	10:28	Surface	1	22.7	22.9	7.8	7.8	30.1	30.0	94.4	94.6	6.8	6.8	6.8	4.2	4.3	4.6	1.6	1.7	1.2
				Middle	3	22.4	22.4	7.8	7.8	29.8	29.8	92.2	92.0	6.7	6.7		4.5	4.6		1.1	1.1	
				Bottom	5	23.3	23.1	7.7	7.7	29.9	30.0	92.6	91.6	6.7	6.7		5.0	5.0		0.7	0.8	
M2	Cloudy	Moderate	10:12	Surface	1	23.0	22.9	7.7	7.8	29.6	29.6	93.0	91.8	6.7	6.7	6.7	3.8	3.9	4.7	1.1	1.1	1.9
				Middle	5	23.0	23.2	7.7	7.8	29.7	29.7	92.4	92.5	6.7	6.7		4.4	4.7		1.9	1.9	
				Bottom	9	23.5	23.3	7.7	7.7	29.7	29.7	93.5	94.0	6.7	6.8		5.5	5.5		2.6	2.6	
M3	Cloudy	Moderate	10:51	Surface	1	23.4	23.3	7.9	7.9	30.0	30.0	94.2	93.5	6.8	6.8	6.7	4.5	4.5	4.2	2.2	2.2	2.0
				Middle	4	22.7	22.9	7.7	7.7	30.2	30.2	91.2	92.2	6.6	6.6		4.6	4.7		2.0	2.1	
				Bottom	7	22.7	23.1	7.7	7.8	30.3	30.4	89.9	89.2	6.5	6.5		3.4	3.5		1.7	1.7	
M4	Cloudy	Moderate	10:03	Surface	1	23.0	22.7	7.7	7.7	29.8	29.8	93.0	92.2	6.7	6.7	6.7	3.5	3.6	4.2	1.9	1.9	2.1
				Middle	4	22.8	22.8	7.7	7.7	29.7	29.7	92.6	91.3	6.7	6.7		4.0	3.9		1.6	1.6	
				Bottom	7	23.5	23.4	7.7	7.7	29.7	29.8	92.0	90.8	6.6	6.6		4.9	5.0		2.9	2.9	
M5	Cloudy	Moderate	11:13	Surface	1	23.1	23.0	8.0	8.0	29.8	29.8	95.7	95.2	6.9	6.9	6.9	3.9	4.3	4.9	3.3	3.4	3.9
				Middle	5.5	23.2	22.9	7.9	7.9	29.7	29.7	94.4	92.4	6.8	6.8		4.5	4.6		4.6	4.7	
				Bottom	10	22.9	23.0	7.9	7.9	29.8	29.8	91.5	94.0	6.6	6.7		6.1	5.8		3.5	3.5	
M6	Cloudy	Moderate	11:08	Surface	-	-	-	-	-	-	-	-	-	-	6.5	-	-	6.5	-	-	2.4	
				Middle	3.8	23.1	22.7	8.0	7.9	29.9	30.0	90.6	88.8	6.5		6.5	6.5		6.5	2.3		2.4
				Bottom	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 22 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 5.0 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 5.5 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 4.4 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 4.4 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.0 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 4.3 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 22 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Rainy	Moderate	11:16	Surface	1	24.5 24.5	24.5	8.2 8.1	8.2	31.4 31.4	31.4	107.8 107.4	107.6	7.5 7.5	7.5	7.6	4.1 1.2	1.2	2.2	1.0 0.9	1.0	0.8
				Middle	10	24.3 24.4	24.4	8.2 8.2	8.2	31.4 31.4	31.4	108.5 108.2	108.4	7.6 7.6	7.6		2.7 2.8	2.8		0.7 0.8	0.8	
				Bottom	19	24.2 24.1	24.2	8.2 8.3	8.3	31.4 31.6	31.5	104.6 102.4	103.5	7.3 7.2	7.3		2.4 2.6	2.5		0.7 0.7	0.7	
C2	Rainy	Moderate	08:21	Surface	1	23.7 23.7	23.7	8.1 8.2	8.2	31.6 32.1	31.9	101.4 100.9	101.2	7.2 7.1	7.2	7.2	4.1 4.3	4.2	4.0	3.4 3.4	3.4	2.6
				Middle	18	23.7 23.7	23.7	8.2 8.2	8.2	31.9 31.7	31.8	102.4 102.4	102.4	7.2 7.2	7.2		3.3 3.6	3.5		1.2 1.2	1.2	
				Bottom	35	23.6 23.6	23.6	8.2 8.1	8.2	31.2 31.2	31.2	99.0 99.2	99.1	7.0 7.0	7.0		4.2 4.2	4.2		3.2 3.3	3.3	
G1	Rainy	Moderate	10:02	Surface	1	23.9 23.9	23.9	8.1 8.2	8.2	31.5 31.4	31.5	107.8 107.5	107.7	7.6 7.6	7.6	7.6	2.5 2.5	2.5	3.3	1.3 1.3	1.3	0.9
				Middle	4	23.9 23.9	23.9	8.2 8.2	8.2	31.7 31.8	31.8	106.2 107.0	106.6	7.5 7.5	7.5		3.9 4.0	4.0		0.9 0.9	0.9	
				Bottom	7	23.8 23.9	23.9	8.1 8.2	8.2	31.7 31.6	31.7	100.7 102.2	101.5	7.1 7.2	7.2		3.2 3.3	3.3		0.6 0.6	0.6	
G2	Rainy	Moderate	09:44	Surface	1	24.0 24.0	24.0	8.1 8.2	8.2	32.2 32.2	32.2	107.0 106.7	106.9	7.5 7.5	7.5	7.5	1.7 1.8	1.8	2.8	1.2 1.1	1.2	2.1
				Middle	5	23.9 23.9	23.9	8.1 8.1	8.1	31.2 31.2	31.2	104.2 102.9	103.6	7.4 7.3	7.4		3.5 4.0	3.8		2.3 2.2	2.3	
				Bottom	9	23.8 23.9	23.9	8.1 8.2	8.2	31.3 31.2	31.3	99.7 100.8	100.3	7.0 7.1	7.1		2.7 3.0	2.9		2.9 2.8	2.9	
G3	Rainy	Moderate	10:12	Surface	1	23.9 23.9	23.9	8.2 8.2	8.2	31.4 31.4	31.4	104.3 103.7	104.0	7.4 7.3	7.4	7.3	3.9 4.0	4.0	4.0	2.2 2.2	2.2	1.7
				Middle	4	23.9 23.9	23.9	8.1 8.2	8.2	31.7 31.7	31.7	102.5 101.7	102.1	7.2 7.2	7.2		4.6 4.7	4.7		1.3 1.3	1.3	
				Bottom	7	23.8 23.8	23.8	8.2 8.2	8.2	31.7 31.7	31.7	95.8 106.0	100.9	6.8 7.5	7.2		3.2 3.3	3.3		1.5 1.5	1.5	
G4	Rainy	Moderate	10:33	Surface	1	23.9 23.9	23.9	8.2 8.2	8.2	31.4 31.4	31.4	97.1 97.2	97.2	6.8 6.9	6.9	6.9	5.2 5.3	5.3	4.3	2.5 2.5	2.5	2.4
				Middle	4	23.8 23.8	23.8	8.2 8.2	8.2	31.4 31.4	31.4	97.0 96.6	96.8	6.9 6.8	6.9		3.3 3.4	3.4		1.9 1.9	1.9	
				Bottom	7	23.7 23.7	23.7	8.2 8.2	8.2	31.6 31.6	31.6	100.7 101.4	101.1	7.1 7.2	7.2		4.2 4.3	4.3		2.9 2.8	2.9	
M1	Rainy	Moderate	09:55	Surface	1	23.9 23.9	23.9	8.1 8.1	8.1	31.5 31.5	31.5	108.1 108.2	108.2	7.6 7.6	7.6	7.6	2.9 3.0	3.0	3.3	1.7 1.6	1.7	1.8
				Middle	3	23.9 23.9	23.9	8.2 8.1	8.2	31.5 31.5	31.5	105.8 106.0	105.9	7.5 7.5	7.5		3.1 3.2	3.2		1.5 1.5	1.5	
				Bottom	5	23.8 23.8	23.8	8.2 8.2	8.2	31.6 31.6	31.6	97.7 99.1	98.4	6.9 7.0	7.0		3.7 3.8	3.8		2.0 2.1	2.1	
M2	Rainy	Moderate	08:39	Surface	1	23.8 23.8	23.8	8.2 8.1	8.2	31.8 31.8	31.8	96.9 97.9	97.4	6.8 6.9	6.9	7.1	2.1 2.3	2.2	3.2	1.3 1.3	1.3	1.5
				Middle	5.5	23.7 23.7	23.7	8.1 8.2	8.2	32.2 32.2	32.2	103.8 104.3	104.1	7.3 7.3	7.3		4.5 4.6	4.6		1.4 1.4	1.4	
				Bottom	10	23.7 23.7	23.7	8.1 8.2	8.2	31.2 31.2	31.2	102.9 103.0	103.0	7.3 7.3	7.3		2.6 2.7	2.7		1.8 1.6	1.7	
M3	Rainy	Moderate	10:27	Surface	1	24.0 24.0	24.0	8.2 8.2	8.2	31.4 31.5	31.5	106.5 106.4	106.5	7.5 7.5	7.5	7.5	3.4 3.5	3.5	3.6	1.8 1.7	1.8	2.0
				Middle	4.5	23.9 23.9	23.9	8.2 8.2	8.2	31.6 31.5	31.6	103.6 106.1	104.9	7.3 7.5	7.4		3.4 3.5	3.5		1.6 1.6	1.6	
				Bottom	8	23.6 23.6	23.6	8.1 8.1	8.1	32.1 32.1	32.1	103.0 103.6	103.3	7.3 7.3	7.3		3.7 3.7	3.7		2.6 2.5	2.6	
M4	Rainy	Moderate	08:32	Surface	1	23.8 23.8	23.8	8.1 8.2	8.2	31.2 31.3	31.3	96.8 96.7	96.8	6.8 6.8	6.8	6.9	3.7 4.0	3.9	3.8	1.1 1.1	1.1	1.4
				Middle	4	23.8 23.8	23.8	8.2 8.2	8.2	31.3 31.4	31.4	97.9 98.0	98.0	6.9 6.9	6.9		4.5 4.1	4.3		1.1 1.2	1.2	
				Bottom	7	23.7 23.7	23.7	8.2 8.2	8.2	31.7 31.7	31.7	96.5 96.3	96.4	6.8 6.8	6.8		2.8 3.4	3.1		1.9 1.8	1.9	
M5	Rainy	Moderate	11:02	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	31.7 31.7	31.7	106.7 106.2	106.5	7.5 7.4	7.5	7.5	2.1 2.2	2.2	2.6	1.7 1.6	1.7	1.1
				Middle	5.5	24.1 24.1	24.1	8.2 8.2	8.2	31.7 31.7	31.7	106.6 106.6	106.6	7.5 7.5	7.5		2.6 2.7	2.7		0.6 0.6	0.6	
				Bottom	10	24.1 24.1	24.1	8.2 8.2	8.2	32.0 32.0	32.0	104.2 105.2	104.7	7.3 7.4	7.4		2.6 3.1	2.9		1.1 1.1	1.1	
M6	Rainy	Moderate	10:43	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	2.9	-	-	1.1
				Middle	2.4	24.0 24.0	24.0	8.2 8.2	8.2	29.9 30.0	30.0	102.2 100.8	101.5	7.3 7.2	7.3		2.8 3.0	2.9		1.1 1.1	1.1	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 22 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 8.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 9.1 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 3.8 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.2 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 3.8 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.2 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.9 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.3 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 22 May 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Rainy	Moderate	16:51	Surface	1	24.5 24.5	24.5	8.2 8.1	8.2	31.4 31.4	31.4	104.4 105.4	104.9	7.3 7.4	7.4	7.3	5.9 5.9	5.9	6.7	3.2 3.1	3.2	3.0	
				Middle	10	24.3 24.3	24.3	8.2 8.2	8.2	32.1 31.9	32.0	101.4 100.1	100.8	7.1 7.0	7.1		7.1 7.1	7.1		7.1	1.7 1.7		1.7
				Bottom	19	24.1 24.1	24.1	8.2 8.2	8.2	31.9 32.0	32.0	101.2 102.3	101.8	7.1 7.2	7.2		7.2	7.0		7.0	6.5 7.5		7.0
C2	Rainy	Moderate	14:11	Surface	1	24.3 24.2	24.3	8.2 8.2	8.2	31.7 31.8	31.8	106.5 105.0	105.8	7.4 7.3	7.4	7.4	5.6 5.8	5.7	6.2	3.0 3.1	3.1	2.1	
				Middle	18	23.9 23.9	23.9	8.2 8.1	8.2	31.6 31.7	31.7	103.7 103.5	103.6	7.3 7.3	7.3		6.8 6.7	6.8		1.6 1.6	1.6		
				Bottom	35	23.5 23.5	23.5	8.2 8.2	8.2	31.9 31.9	31.9	106.2 105.9	106.1	7.5 7.5	7.5		7.5	6.0		6.0	5.5 6.4		6.0
G1	Rainy	Moderate	15:51	Surface	1	25.2 25.2	25.2	8.1 8.2	8.2	32.1 32.1	32.1	116.7 116.6	116.7	8.0 8.0	8.0	7.8	5.3 5.4	5.4	5.9	2.1 2.1	2.1	2.5	
				Middle	4	24.8 24.7	24.8	8.2 8.2	8.2	32.0 31.8	31.9	107.7 107.9	107.8	7.5 7.5	7.5		6.1 6.1	6.1		4.3 4.1	4.2		
				Bottom	7	24.3 24.3	24.3	8.2 8.2	8.2	31.0 31.0	31.0	106.1 105.7	105.9	7.4 7.4	7.4		7.4	6.1 6.2		6.2	1.1 1.1		1.1
G2	Rainy	Moderate	15:30	Surface	1	25.1 25.1	25.1	8.2 8.2	8.2	31.5 31.4	31.5	108.6 108.4	108.5	7.5 7.5	7.5	7.3	2.6 2.7	2.7	4.1	2.6 2.5	2.6	2.8	
				Middle	5	25.0 24.9	25.0	8.2 8.2	8.2	31.3 31.3	31.3	102.8 100.7	101.8	7.1 7.0	7.1		2.4 2.5	2.5		2.7 2.7	2.7		
				Bottom	9	24.3 24.3	24.3	8.2 8.3	8.3	30.7 30.6	30.7	97.6 97.2	97.4	6.9 6.8	6.9		6.9	7.1		6.8 7.4	7.1		3.0 2.9
G3	Rainy	Moderate	16:01	Surface	1	25.0 25.0	25.0	8.1 8.2	8.2	31.6 31.6	31.6	115.7 115.8	115.8	8.0 8.0	8.0	7.9	5.6 6.2	5.9	6.5	2.6 2.6	2.6	3.6	
				Middle	4	24.9 25.0	25.0	8.1 8.1	8.1	31.5 31.5	31.5	111.3 111.7	111.5	7.7 7.7	7.7		5.4 5.6	5.5		6.0 5.8	5.9		
				Bottom	7	24.8 24.8	24.8	8.2 8.1	8.2	32.1 31.2	31.7	109.4 109.6	109.5	7.6 7.6	7.6		7.6	8.0 8.3		8.2	2.3 2.3		2.3
G4	Rainy	Moderate	16:24	Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	32.1 32.1	32.1	114.4 114.0	114.2	7.9 7.9	7.9	7.8	6.3 7.4	6.9	5.8	2.5 2.4	2.5	2.2	
				Middle	4	24.8 24.8	24.8	8.1 8.1	8.1	32.1 32.1	32.1	111.1 111.9	111.5	7.7 7.7	7.7		4.9 6.0	5.5		2.2 2.2	2.2		
				Bottom	7	24.6 24.6	24.6	8.1 8.2	8.2	31.5 31.7	31.6	104.8 108.2	106.5	7.3 7.5	7.4		7.4	4.6 5.4		5.0	1.8 1.8		1.8
M1	Rainy	Moderate	15:41	Surface	1	24.7 24.7	24.7	8.2 8.2	8.2	31.9 31.8	31.9	108.0 107.3	107.7	7.5 7.4	7.5	7.5	1.0 1.2	1.1	1.6	2.4 2.5	2.5	1.9	
				Middle	3	24.9 24.9	24.9	8.2 8.2	8.2	31.8 31.7	31.8	108.4 107.9	108.2	7.5 7.5	7.5		1.6 1.7	1.7		2.1 2.1	2.1		
				Bottom	5	24.7 24.6	24.7	8.2 8.2	8.2	31.5 31.4	31.5	107.0 107.5	107.3	7.4 7.5	7.5		7.5	2.0		2.0	1.2 1.2		1.2
M2	Rainy	Moderate	14:30	Surface	1	25.0 25.2	25.1	8.2 8.2	8.2	31.8 31.2	31.5	116.2 116.3	116.3	8.0 8.0	8.0	7.8	5.9 6.0	6.0	6.5	1.0 1.0	1.0	1.1	
				Middle	5.5	24.4 24.8	24.6	8.2 8.2	8.2	31.6 31.8	31.7	107.1 108.2	107.7	7.5 7.5	7.5		6.7 6.8	6.8		1.2 1.1	1.2		
				Bottom	10	23.8 23.9	23.9	8.2 8.2	8.2	31.8 31.8	31.8	98.4 98.9	98.7	6.9 7.0	7.0		7.0	6.5 7.1		6.8	1.2 1.2		1.2
M3	Rainy	Moderate	16:13	Surface	1	24.9 24.9	24.9	8.1 8.2	8.2	31.3 31.4	31.4	112.9 112.9	112.9	7.8 7.8	7.8	7.8	2.8 2.7	2.8	5.0	1.1 1.1	1.1	1.6	
				Middle	4.5	24.8 24.9	24.9	8.1 8.2	8.2	31.4 31.3	31.4	110.9 111.4	111.2	7.7 7.7	7.7		4.5 5.6	5.1		2.0 2.0	2.0		
				Bottom	8	24.5 24.5	24.5	8.2 8.2	8.2	30.1 30.0	30.1	101.2 99.3	100.3	7.1 7.0	7.1		7.1	6.9 7.1		7.0	1.7 1.6		1.7
M4	Rainy	Moderate	14:22	Surface	1	25.0 25.0	25.0	8.1 8.1	8.1	31.6 31.6	31.6	108.8 108.9	108.9	7.5 7.5	7.5	7.5	2.9 3.5	3.2	3.0	1.6 1.6	1.6	1.4	
				Middle	4	24.8 24.8	24.8	8.2 8.2	8.2	31.6 31.6	31.6	107.5 107.7	107.6	7.5 7.5	7.5		1.9 2.0	2.0		1.5 1.5	1.5		
				Bottom	7	24.2 24.2	24.2	8.2 8.2	8.2	31.2 32.1	31.7	97.8 107.2	102.5	6.9 7.5	7.2		7.2	3.3 4.0		3.7	1.2 1.2		1.2
M5	Rainy	Moderate	16:40	Surface	1	24.3 24.3	24.3	8.2 8.2	8.2	31.8 31.8	31.8	104.4 104.7	104.6	7.3 7.3	7.3	7.3	3.2 3.3	3.3	5.2	1.3 1.3	1.3	1.4	
				Middle	5.5	24.2 24.2	24.2	8.2 8.2	8.2	31.7 31.6	31.7	102.8 103.1	103.0	7.2 7.2	7.2		5.8 5.9	5.9		1.8 1.8	1.8		
				Bottom	10	24.1 24.1	24.1	8.1 8.2	8.2	31.4 31.4	31.4	96.8 98.3	97.6	6.8 6.9	6.9		6.9	6.5 6.5		6.5	1.1 1.1		1.1
M6	Rainy	Moderate	16:32	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	4.9	-	-	1.5	
				Middle	2.4	24.7 24.7	24.7	8.2 8.2	8.2	32.0 32.0	32.0	108.9 108.6	108.8	7.5 7.5	7.5		4.8 4.9	4.9		1.5 1.5	1.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 24 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 11.6 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 12.6 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.7 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.7 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.9 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 24 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Rainy	Moderate	11:40	Surface	1	23.7 23.7	23.7	7.8 7.8	7.9	32.9 32.9	32.9	92.9 92.0	92.5	7.7 7.6	7.7	7.7	8.0	8.0	8.9	4.9 5.1	5.0	5.2
				Middle	10.5	23.5 23.6	23.6	7.9 7.9	7.9	32.9 32.9	32.9	93.0 93.6	93.3	7.7 7.7	7.7	9.0 9.4	9.2	5.1 5.3		5.2		
				Bottom	20	23.3 23.4	23.4	8.0 7.9	8.0	33.1 32.9	33.0	88.3 89.6	89.0	7.3 7.4	7.4	9.3 9.4	9.4	5.3 5.4		5.4		
				Surface	1	22.9 22.9	22.9	8.0 7.9	8.0	33.3 33.6	33.5	87.9 87.1	87.5	7.3 7.2	7.3	9.8 10.4	10.1	10.2		5.9 5.8	5.9	
Middle	18.5	22.9 22.9	22.9	7.9 7.9	7.9	33.4 33.2	33.3	89.5 88.7	89.1	7.4 7.3	7.4	10.1 11.5	10.8	6.0 6.2	6.1							
Bottom	36	22.8 22.8	22.8	7.9 7.8	7.9	32.7 32.7	32.7	85.8 87.0	86.4	7.1 7.2	7.2	9.0 10.4	9.7	4.8 5.0	4.9							
G1	Rainy	Moderate	10:39	Surface	1	23.0 23.0	23.0	7.9 7.9	7.9	33.0 32.9	33.0	93.6 93.1	93.4	7.7 7.7	7.7	6.6 6.7	6.7	7.6	4.0 4.1	4.1	4.6	
				Middle	4	23.0 23.0	23.0	7.9 7.9	7.9	33.3 33.2	33.3	92.7 91.9	92.3	7.7 7.6	7.7	8.3 9.0	8.7		5.4 5.6	5.5		
				Bottom	7	23.0 22.9	23.0	7.9 7.8	7.9	33.1 33.1	33.1	87.5 87.4	87.5	7.2 7.2	7.2	7.1 7.4	7.3		4.1 4.3	4.2		
G2	Rainy	Moderate	10:18	Surface	1	23.2 23.2	23.2	7.9 7.9	7.9	33.7 33.7	33.7	91.2 91.4	91.3	7.5 7.5	7.5	5.0 5.9	5.5	7.1	4.2 4.5	4.4	4.2	
				Middle	5	23.1 23.1	23.1	7.8 7.8	7.8	32.7 32.7	32.7	90.2 88.7	89.5	7.4 7.3	7.4	7.9 9.5	8.7		4.2 4.4	4.3		
				Bottom	9	23.0 23.1	23.1	7.9 7.9	7.9	32.8 32.7	32.8	86.5 87.3	86.9	7.1 7.2	7.2	6.6 7.6	7.1		3.9 4.1	4.0		
G3	Rainy	Moderate	10:48	Surface	1	23.0 23.0	23.0	7.9 7.9	7.9	32.9 32.9	32.9	90.1 89.8	90.0	7.4 7.4	7.4	7.2 8.6	7.9	7.8	4.4 4.6	4.5	3.9	
				Middle	4	23.0 23.0	23.0	7.8 7.9	7.9	33.2 33.2	33.2	88.3 87.5	87.9	7.3 7.2	7.3	7.2 7.7	7.5		4.1 4.0	4.1		
				Bottom	7	22.9 22.9	22.9	7.9 7.9	7.9	33.2 33.1	33.2	91.7 82.2	87.0	7.6 6.8	7.2	7.8 7.9	7.9		3.2 3.0	3.1		
G4	Rainy	Moderate	11:09	Surface	1	23.1 23.1	23.1	7.9 7.9	7.9	32.9 32.8	32.9	84.1 83.9	84.0	6.9 6.9	6.9	8.7 9.7	9.2	9.0	3.9 3.6	3.8	3.7	
				Middle	4.5	23.0 23.0	23.0	7.9 7.9	7.9	32.9 32.8	32.9	84.1 84.2	84.2	6.9 7.0	7.0	8.5 8.5	8.5		4.2 4.0	4.1		
				Bottom	8	22.9 22.9	22.9	8.0 7.9	8.0	33.1 33.1	33.1	87.6 86.9	87.3	7.2 7.2	7.2	9.1 9.2	9.2		3.4 3.2	3.3		
M1	Rainy	Moderate	10:31	Surface	1	23.0 23.1	23.1	7.8 7.8	7.8	33.0 33.0	33.0	93.1 93.1	93.1	7.7 7.7	7.7	6.4 7.7	7.1	7.3	4.4 4.4	4.4	4.0	
				Middle	3	23.0 23.1	23.1	7.9 7.9	7.9	33.0 33.0	33.0	91.5 91.4	91.5	7.5 7.5	7.5	7.4 7.4	7.4		5.1 4.9	5.0		
				Bottom	5	23.0 22.9	23.0	7.9 7.8	7.9	33.1 33.1	33.1	84.7 85.3	85.0	7.0 7.0	7.0	6.7 8.2	7.5		2.7 2.7	2.7		
M2	Rainy	Moderate	10:08	Surface	1	23.0 23.0	23.0	7.9 7.8	7.9	33.3 33.3	33.3	83.8 84.9	84.4	6.9 7.0	7.0	6.9 7.0	7.0	9.2	5.3 5.4	5.4	4.8	
				Middle	5.5	22.9 22.9	22.9	7.9 7.9	7.9	33.6 33.7	33.7	90.1 89.7	89.9	7.4 7.4	7.4	11.9 12.0	12.0		4.9 5.0	5.0		
				Bottom	10	22.9 22.9	22.9	7.8 7.9	7.9	32.7 32.7	32.7	89.1 89.3	89.2	7.4 7.4	7.4	8.5 8.6	8.6		3.8 3.9	3.9		
M3	Rainy	Moderate	11:03	Surface	1	23.2 23.2	23.2	7.9 7.9	7.9	32.9 33.0	33.0	92.1 91.9	92.0	7.6 7.6	7.6	7.4 9.0	8.2	7.7	3.4 3.4	3.4	4.0	
				Middle	5	23.1 23.1	23.1	7.9 7.9	7.9	33.0 33.1	33.1	91.9 89.5	90.7	7.6 7.4	7.5	7.1 7.4	7.3		4.6 4.6	4.6		
				Bottom	9	22.8 22.8	22.8	7.8 7.9	7.9	33.6 33.5	33.6	89.4 90.0	89.7	7.4 7.4	7.4	7.4 7.8	7.6		3.9 3.8	3.9		
M4	Rainy	Moderate	10:02	Surface	1	23.0 23.0	23.0	7.8 7.9	7.9	32.7 32.8	32.8	83.8 83.5	83.7	6.9 6.9	6.9	8.1 9.3	8.7	7.7	3.4 3.3	3.4	4.5	
				Middle	4	23.0 23.0	23.0	7.9 7.9	7.9	32.8 32.8	32.8	85.3 85.1	85.2	7.0 7.0	7.0	6.9 7.6	7.3		4.9 4.8	4.9		
				Bottom	7	22.9 22.9	22.9	7.9 7.9	7.9	33.2 33.2	33.2	83.5 82.9	83.2	6.9 6.8	6.9	7.0 7.1	7.1		5.1 5.0	5.1		
M5	Rainy	Moderate	11:30	Surface	1	23.3 23.3	23.3	8.0 8.0	8.0	33.2 33.2	33.2	90.7 91.8	91.3	7.5 7.6	7.6	6.5 6.6	6.6	6.6	3.4 3.4	3.4	4.3	
				Middle	5.5	23.3 23.3	23.3	7.9 7.9	7.9	33.2 33.2	33.2	92.0 91.7	91.9	7.6 7.6	7.6	6.9 7.5	7.2		4.0 4.1	4.1		
				Bottom	10	23.3 23.3	23.3	7.9 7.9	7.9	33.5 33.5	33.5	89.6 90.1	89.9	7.4 7.4	7.4	5.7 6.2	6.0		5.3 5.5	5.4		
M6	Rainy	Moderate	11:19	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	4.5	
				Middle	2.6	23.2 23.2	23.2	7.9 7.9	7.9	31.4 31.4	31.4	89.0 87.8	88.4	7.3 7.3	7.3	6.2 6.3	6.3		4.4 4.6	4.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 24 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 12.2 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 13.3 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.4 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.9 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.4 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.9 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.2 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 5.6 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 24 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Rainy	Moderate	18:04	Surface	1	23.7 23.7	23.7	7.9 7.9	7.9	32.9 32.8	32.9	89.1 90.1	89.6	7.4 7.4	7.4	7.3	9.6 11.3	10.5	11.5	4.4 4.6	4.5	4.3	
				Middle	10	23.5 23.5	23.5	7.9 7.9	7.9	33.6 33.4	33.5	86.8 85.9	86.4	7.2 7.1	7.2		12.8 14.8			13.8			4.1 4.2
				Bottom	19	23.3 23.3	23.3	7.9 7.9	7.9	33.3 33.5	33.4	86.8 87.9	87.4	7.2 7.3	7.3		10.1 10.2			10.2			4.2 4.3
C2	Rainy	Moderate	16:16	Surface	1	23.5 23.4	23.5	7.9 7.9	7.9	33.2 33.3	33.3	91.7 89.7	90.7	7.6 7.4	7.5	7.5	9.5 11.7	10.6	10.4	4.5 4.5	4.5	4.1	
				Middle	18	23.1 23.1	23.1	7.9 7.9	7.9	33.1 33.1	33.1	90.1 89.8	90.0	7.4 7.4	7.4		10.2 10.7			10.5			3.7 3.8
				Bottom	35	22.7 22.7	22.7	7.9 7.9	7.9	33.4 33.4	33.4	92.3 91.9	92.1	7.6 7.6	7.6		10.0 10.0			10.0			3.8 3.9
G1	Rainy	Moderate	17:05	Surface	1	24.4 24.4	24.4	7.8 7.9	7.9	33.6 33.6	33.6	98.2 98.6	98.4	8.1 8.1	8.1	7.9	10.6 10.9	10.8	9.9	5.0 5.0	5.0	4.8	
				Middle	4	24.0 23.9	24.0	7.9 7.9	7.9	33.5 33.2	33.4	91.6 91.9	91.8	7.6 7.6	7.6		8.8 9.2			9.0			5.4 5.0
				Bottom	7	23.5 23.5	23.5	7.9 7.9	7.9	32.5 32.5	32.5	91.1 90.6	90.9	7.5 7.5	7.5		8.9 10.8			9.9			4.4 4.1
G2	Rainy	Moderate	16:44	Surface	1	24.3 24.3	24.3	7.9 7.9	7.9	32.9 32.9	32.9	91.3 91.4	91.4	7.5 7.5	7.5	7.4	6.5 7.9	7.2	7.9	5.0 4.8	4.9	4.8	
				Middle	5	24.2 24.1	24.2	7.9 7.9	7.9	32.8 32.8	32.8	87.5 85.7	86.6	7.2 7.1	7.2		6.0 7.5			6.8			4.6 4.6
				Bottom	9	23.5 23.5	23.5	8.0 7.9	8.0	32.1 32.2	32.2	83.5 84.1	83.8	6.9 6.9	6.9		8.9 10.7			9.8			4.9 5.0
G3	Rainy	Moderate	17:15	Surface	1	24.2 24.2	24.2	7.8 7.9	7.9	33.0 33.0	33.0	97.9 98.3	98.1	8.1 8.1	8.1	8.0	9.4 9.5	9.5	10.2	3.7 3.6	3.7	4.9	
				Middle	4	24.1 24.2	24.2	7.8 7.9	7.9	33.0 32.9	33.0	94.3 95.0	94.7	7.8 7.8	7.8		10.0 11.3			10.7			5.9 5.9
				Bottom	7	24.0 24.0	24.0	7.8 7.8	7.8	33.6 32.7	33.2	92.9 93.2	93.1	7.7 7.7	7.7		10.3 10.4			10.4			5.0 4.9
G4	Rainy	Moderate	17:37	Surface	1	24.1 24.1	24.1	7.9 7.9	7.9	33.6 33.6	33.6	97.0 95.6	96.3	8.0 7.9	8.0	7.9	11.5 12.5	12.0	9.7	4.3 4.4	4.4	4.7	
				Middle	4	24.0 24.0	24.0	7.8 7.8	7.8	33.6 33.5	33.6	95.1 94.6	94.9	7.8 7.8	7.8		7.6 8.0			7.8			5.2 5.5
				Bottom	7	23.8 23.8	23.8	7.9 7.8	7.9	33.2 33.0	33.1	92.5 89.8	91.2	7.6 7.4	7.5		8.6 9.7			9.2			4.4 4.3
M1	Rainy	Moderate	16:57	Surface	1	23.9 23.9	23.9	7.9 7.9	7.9	33.3 33.4	33.4	91.7 91.6	91.7	7.6 7.6	7.6	7.6	5.0 5.9	5.5	5.7	2.9 3.1	3.0	3.7	
				Middle	3	24.1 24.1	24.1	7.9 7.9	7.9	33.3 33.2	33.3	91.6 91.4	91.5	7.6 7.5	7.6		6.2 6.3			6.3			4.6 4.3
				Bottom	5	23.8 23.9	23.9	7.9 7.9	7.9	32.9 32.9	32.9	91.9 91.4	91.7	7.6 7.5	7.6		5.2 5.4			5.3			3.7 3.6
M2	Rainy	Moderate	16:36	Surface	1	24.2 24.4	24.3	7.9 7.9	7.9	33.3 32.7	33.0	98.9 98.4	98.7	8.2 8.1	8.2	7.9	10.2 10.3	10.3	10.8	3.6 3.4	3.5	4.6	
				Middle	5.5	23.6 24.0	23.8	7.9 7.9	7.9	33.1 33.3	33.2	91.3 91.8	91.6	7.5 7.6	7.6		12.0 12.1			12.1			6.0 6.1
				Bottom	10	23.0 23.1	23.1	7.9 7.9	7.9	33.3 33.3	33.3	85.8 84.7	85.3	7.1 7.0	7.1		9.6 10.2			9.9			4.2 4.4
M3	Rainy	Moderate	17:26	Surface	1	24.1 24.1	24.1	7.9 7.9	7.9	32.8 32.8	32.8	96.4 96.0	96.2	8.0 7.9	8.0	7.9	8.0 8.2	8.1	9.6	4.2 4.2	4.2	4.3	
				Middle	4.5	24.0 24.1	24.1	7.8 7.9	7.9	32.9 32.8	32.9	94.4 94.3	94.4	7.8 7.8	7.8		9.7 9.8			9.8			4.6 4.7
				Bottom	8	23.7 23.7	23.7	7.9 7.9	7.9	31.5 31.6	31.6	85.5 87.0	86.3	7.1 7.2	7.2		10.8 11.0			10.9			4.0 4.1
M4	Rainy	Moderate	16:25	Surface	1	24.2 24.2	24.2	7.9 7.8	7.9	33.1 33.1	33.1	92.0 92.3	92.2	7.6 7.6	7.6	7.6	7.1 8.4	7.8	7.5	3.8 3.7	3.8	3.9	
				Middle	4	24.0 24.0	24.0	7.9 7.9	7.9	33.1 33.1	33.1	91.2 92.1	91.7	7.5 7.6	7.6		6.7 6.8			6.8			3.5 3.6
				Bottom	7	23.4 23.4	23.4	7.9 7.9	7.9	32.7 33.6	33.2	83.8 92.4	88.1	6.9 7.6	7.3		7.1 8.4			7.8			4.3 4.4
M5	Rainy	Moderate	17:56	Surface	1	23.5 23.5	23.5	7.9 7.9	7.9	33.3 33.3	33.3	89.6 89.9	89.8	7.4 7.4	7.4	7.4	8.6 9.1	8.9	10.3	3.9 4.0	4.0	3.7	
				Middle	5.5	23.4 23.4	23.4	7.9 7.9	7.9	33.2 33.0	33.1	88.3 88.5	88.4	7.3 7.3	7.3		9.5 11.6			10.6			3.8 4.0
				Bottom	10	23.3 23.3	23.3	7.9 7.9	7.9	32.9 32.9	32.9	84.8 83.5	84.2	7.0 6.9	7.0		11.3 11.2			11.3			3.1 3.0
M6	Rainy	Moderate	17:45	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-	10.3	-	-	4.1	
				Middle	2.4	23.9 23.9	23.9	7.9 7.9	7.9	33.5 33.5	33.5	92.9 92.3	92.6	7.7 7.6	7.7		10.2 10.3			10.3			4.0 4.1
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-			-			-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 26 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 5.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 5.9 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.9 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.9 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.0 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.5 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 26 May 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Cloudy	Moderate	13:07	Surface	1	25.5 25.5	25.5	8.1 8.2	8.2	31.8 31.8	31.8	111.3 111.6	111.5	7.6 7.6	7.6	7.7	1.3 1.3	1.3	2.2	5.5 5.4	5.5	3.4
				Middle	10.5	25.3 25.4	25.4	8.2 8.2	8.2	31.8 31.8	31.8	111.9 112.2	112.1	7.7 7.7	7.7		2.7 3.0	2.9		3.1 3.0	3.1	
				Bottom	20	25.2 25.1	25.2	8.3 8.3	8.3	31.8 32.0	31.9	108.0 105.8	106.9	7.4 7.3	7.4		2.0 2.5	2.3		1.5 1.6	1.6	
C2	Cloudy	Moderate	11:20	Surface	1	24.7 24.7	24.7	8.1 8.2	8.2	32.2 32.5	32.4	105.4 104.2	104.8	7.3 7.2	7.3	7.4	4.0 3.7	3.9	3.8	4.9 4.9	4.9	4.2
				Middle	18.5	24.7 24.7	24.7	8.2 8.2	8.2	32.1 32.3	32.2	106.2 106.3	106.3	7.4 7.4	7.4		3.1 3.1	3.1		2.6 2.5	2.6	
				Bottom	36	24.6 24.6	24.6	8.1 8.2	8.2	31.6 31.6	31.6	102.9 102.0	102.5	7.2 7.1	7.2		4.5 4.5	4.5		5.0 4.9	5.0	
G1	Cloudy	Moderate	12:09	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	31.9 31.8	31.9	111.5 111.1	111.3	7.7 7.7	7.7	7.7	2.4 2.4	2.4	3.5	1.7 1.7	1.7	1.7
				Middle	4.5	24.8 24.8	24.8	8.2 8.2	8.2	32.2 32.1	32.2	110.6 109.9	110.3	7.6 7.6	7.6		4.4 4.6	4.5		1.5 1.6	1.6	
				Bottom	8	24.7 24.8	24.8	8.1 8.2	8.2	32.1 32.0	32.1	104.1 105.2	104.7	7.2 7.3	7.3		3.4 3.6	3.5		1.9 1.8	1.9	
G2	Cloudy	Moderate	11:48	Surface	1	25.0 25.0	25.0	8.2 8.2	8.2	32.6 32.6	32.6	110.1 110.1	110.1	7.6 7.6	7.6	7.5	1.7 1.8	1.8	2.9	1.4 1.4	1.4	2.1
				Middle	5	24.9 24.9	24.9	8.1 8.2	8.2	31.6 31.6	31.6	107.6 106.2	106.9	7.4 7.4	7.4		4.2 4.1	4.2		1.6 1.7	1.7	
				Bottom	9	24.8 24.9	24.9	8.2 8.2	8.2	31.7 31.6	31.7	103.1 103.9	103.5	7.1 7.2	7.2		3.0 2.6	2.8		3.1 3.1	3.1	
G3	Cloudy	Moderate	12:19	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	31.8 31.8	31.8	107.3 107.0	107.2	7.4 7.4	7.4	7.4	4.2 4.4	4.3	4.0	0.8 0.8	0.8	1.3
				Middle	4.5	24.8 24.8	24.8	8.2 8.2	8.2	32.1 32.1	32.1	105.5 104.8	105.2	7.3 7.2	7.3		4.5 4.0	4.3		1.4 1.3	1.4	
				Bottom	8	24.7 24.7	24.7	8.2 8.2	8.2	32.1 32.1	32.1	109.4 98.7	104.1	7.6 6.8	7.2		3.4 3.5	3.5		1.8 1.8	1.8	
G4	Cloudy	Moderate	12:39	Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	31.8 31.7	31.8	100.4 100.4	100.4	6.9 6.9	6.9	7.0	5.7 5.8	5.8	4.6	1.4 1.5	1.5	2.2
				Middle	4.5	24.8 24.8	24.8	8.2 8.2	8.2	31.8 31.7	31.8	100.6 100.1	100.4	7.0 6.9	7.0		3.2 3.3	3.3		2.9 2.8	2.9	
				Bottom	8	24.7 24.7	24.7	8.2 8.3	8.3	32.0 32.0	32.0	103.7 105.0	104.4	7.2 7.3	7.3		4.5 4.6	4.6		2.2 2.2	2.2	
M1	Cloudy	Moderate	11:59	Surface	1	24.9 24.8	24.9	8.1 8.2	8.2	31.9 31.9	31.9	111.4 111.2	111.3	7.7 7.7	7.7	7.7	3.0 3.1	3.1	3.5	3.2 3.4	3.3	3.1
				Middle	3	24.9 24.8	24.9	8.2 8.2	8.2	31.9 31.9	31.9	109.4 109.3	109.4	7.6 7.6	7.6		3.1 3.2	3.2		2.1 2.1	2.1	
				Bottom	5	24.8 24.7	24.8	8.2 8.2	8.2	32.0 32.0	32.0	101.3 102.2	101.8	7.0 7.1	7.1		4.2 4.1	4.2		3.7 3.8	3.8	
M2	Cloudy	Moderate	11:38	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	32.2 32.2	32.2	99.9 101.5	100.7	6.9 7.0	7.0	7.2	2.2 2.5	2.4	3.0	2.6 2.5	2.6	1.9
				Middle	5.5	24.7 24.7	24.7	8.2 8.2	8.2	32.6 32.5	32.6	107.5 107.6	107.6	7.4 7.4	7.4		2.7 2.9	2.8		1.5 1.4	1.5	
				Bottom	10	24.7 24.7	24.7	8.2 8.1	8.2	31.6 31.6	31.6	106.6 106.5	106.6	7.4 7.4	7.4		3.7 3.6	3.7		1.7 1.7	1.7	
M3	Cloudy	Moderate	12:30	Surface	1	25.0 25.0	25.0	8.2 8.2	8.2	31.9 31.8	31.9	110.1 110.3	110.2	7.6 7.6	7.6	7.6	3.6 3.7	3.7	3.6	2.6 2.7	2.7	2.5
				Middle	5	24.9 24.9	24.9	8.2 8.2	8.2	31.9 32.0	32.0	109.6 106.9	108.3	7.6 7.4	7.5		3.3 3.0	3.2		3.0 2.9	3.0	
				Bottom	9	24.6 24.6	24.6	8.2 8.2	8.2	32.5 32.5	32.5	106.8 107.1	107.0	7.4 7.4	7.4		3.7 3.8	3.8		1.8 1.8	1.8	
M4	Cloudy	Moderate	11:29	Surface	1	24.8 24.8	24.8	8.2 8.1	8.2	31.7 31.6	31.7	99.9 99.7	99.8	6.9 6.9	6.9	7.0	3.5 3.6	3.6	3.3	5.0 4.8	4.9	4.3
				Middle	4	24.8 24.8	24.8	8.2 8.2	8.2	31.7 31.7	31.7	101.2 101.7	101.5	7.0 7.0	7.0		3.2 3.3	3.3		5.1 5.3	5.2	
				Bottom	7	24.7 24.7	24.7	8.2 8.2	8.2	32.1 32.1	32.1	99.7 99.3	99.5	6.9 6.9	6.9		2.6 3.1	2.9		2.7 2.6	2.7	
M5	Cloudy	Moderate	12:57	Surface	1	25.1 25.1	25.1	8.3 8.3	8.3	32.2 32.1	32.2	110.3 109.5	109.9	7.6 7.5	7.6	7.6	2.1 2.3	2.2	2.6	2.6 2.5	2.6	3.1
				Middle	5.5	25.1 25.1	25.1	8.2 8.2	8.2	32.1 32.1	32.1	110.3 110.3	110.3	7.6 7.6	7.6		2.4 2.3	2.4		2.9 3.0	3.0	
				Bottom	10	25.1 25.1	25.1	8.2 8.2	8.2	32.4 32.4	32.4	107.5 108.6	108.1	7.4 7.5	7.5		3.0 3.1	3.1		3.5 3.6	3.6	
M6	Cloudy	Moderate	12:49	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	3.1	-	-	2.5
				Middle	2.6	25.0 25.0	25.0	8.2 8.2	8.2	30.3 30.4	30.4	105.5 104.3	104.9	7.3 7.3	7.3		3.1 3.0	3.1		2.5 2.5	2.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 26 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 8.5 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 9.2 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.7 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.3 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.7 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.3 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 4.2 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 4.6 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 26 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Cloudy	Moderate	19:35	Surface	1	25.5 25.5	25.5	8.2 8.2	8.2	31.8 31.8	31.8	107.6 108.5	108.1	7.4 7.4	7.4	7.3	6.8 6.1	6.5	7.3	5.5 5.6	5.6	3.5
				Middle	9.5	25.3 25.3	25.3	8.2 8.2	8.2	32.3 32.5	32.4	103.8 105.0	104.4	7.1 7.2	7.2		8.6 7.8	8.2		1.3 1.2	1.3	
				Bottom	18	25.1 25.1	25.1	8.2 8.2	8.2	32.4 32.3	32.4	105.8 104.4	105.1	7.3 7.2	7.3		7.2 7.0	7.1		3.5 3.5	3.5	
C2	Cloudy	Moderate	17:51	Surface	1	25.3 25.2	25.3	8.2 8.2	8.2	32.1 32.2	32.2	110.5 108.5	109.5	7.6 7.4	7.5	7.5	5.6 5.5	5.6	5.8	1.8 1.8	1.8	2.5
				Middle	17.5	24.9 24.9	24.9	8.2 8.2	8.2	32.0 32.1	32.1	107.4 107.3	107.4	7.4 7.4	7.4		5.6 5.6	5.6		2.7 2.6	2.7	
				Bottom	34	24.5 24.5	24.5	8.2 8.2	8.2	32.3 32.3	32.3	109.6 109.7	109.7	7.6 7.6	7.6		6.2 6.2	6.2		2.9 3.0	3.0	
G1	Cloudy	Moderate	18:40	Surface	1	26.2 26.2	26.2	8.2 8.2	8.2	32.5 32.5	32.5	120.3 120.6	120.5	8.1 8.1	8.1	7.9	5.3 6.6	6.0	5.6	3.7 3.7	3.7	2.5
				Middle	3.5	25.8 25.7	25.8	8.2 8.2	8.2	32.4 32.2	32.3	111.5 111.3	111.4	7.6 7.6	7.6		5.7 5.1	5.4		2.5 2.5	2.5	
				Bottom	6	25.3 25.3	25.3	8.2 8.2	8.2	31.4 31.4	31.4	109.2 108.8	109.0	7.5 7.5	7.5		5.0 6.0	5.5		1.2 1.2	1.2	
G2	Cloudy	Moderate	18:19	Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	31.8 31.8	31.8	111.6 111.6	111.6	7.6 7.6	7.6	7.4	2.6 2.5	2.6	3.8	3.7 3.7	3.7	2.6
				Middle	4	26.0 25.9	26.0	8.2 8.2	8.2	31.7 31.7	31.7	106.6 104.2	105.4	7.2 7.1	7.2		2.2 2.2	2.2		1.6 1.5	1.6	
				Bottom	7	25.3 25.3	25.3	8.3 8.2	8.3	31.0 31.1	31.1	100.4 101.0	100.7	6.9 7.0	7.0		6.5 6.8	6.7		2.6 2.6	2.6	
G3	Cloudy	Moderate	18:49	Surface	1	26.0 26.0	26.0	8.2 8.2	8.2	32.0 32.0	32.0	119.7 119.7	119.7	8.1 8.1	8.1	8.0	6.3 5.7	6.0	6.5	1.6 1.6	1.6	1.6
				Middle	3.5	26.0 25.9	26.0	8.2 8.2	8.2	31.8 31.9	31.9	115.6 114.9	115.3	7.8 7.8	7.8		6.6 5.7	6.2		2.0 2.1	2.1	
				Bottom	6	25.8 25.8	25.8	8.2 8.2	8.2	32.5 31.6	32.1	112.9 113.3	113.1	7.7 7.7	7.7		7.4 7.0	7.2		1.1 1.1	1.1	
G4	Cloudy	Moderate	19:09	Surface	1	25.9 25.9	25.9	8.2 8.2	8.2	32.5 32.5	32.5	117.4 118.1	117.8	7.9 8.0	8.0	7.9	7.0 7.1	7.1	6.0	1.2 1.2	1.2	1.9
				Middle	3	25.8 25.8	25.8	8.1 8.2	8.2	32.5 32.5	32.5	115.7 114.9	115.3	7.8 7.8	7.8		5.1 5.6	5.4		1.1 1.2	1.2	
				Bottom	5	25.6 25.6	25.6	8.2 8.2	8.2	31.9 32.1	32.0	108.6 111.8	110.2	7.4 7.6	7.5		5.6 5.5	5.6		3.3 3.4	3.4	
M1	Cloudy	Moderate	18:30	Surface	1	25.7 25.7	25.7	8.2 8.2	8.2	32.3 32.2	32.3	111.5 111.3	111.4	7.6 7.6	7.6	7.6	1.0 1.2	1.1	1.6	4.1 4.1	4.1	3.4
				Middle	2.5	25.9 25.9	25.9	8.2 8.2	8.2	32.2 32.1	32.2	112.1 111.5	111.8	7.6 7.6	7.6		1.4 1.4	1.4		2.6 2.6	2.6	
				Bottom	4	25.6 25.7	25.7	8.2 8.2	8.2	31.8 31.9	31.9	111.5 110.8	111.2	7.6 7.6	7.6		2.1 2.2	2.2		3.4 3.5	3.5	
M2	Cloudy	Moderate	18:09	Surface	1	26.2 26.0	26.1	8.2 8.2	8.2	31.6 32.2	31.9	120.3 120.5	120.4	8.1 8.2	8.2	7.9	3.4 3.5	3.5	5.7	1.8 1.9	1.9	2.5
				Middle	4.5	25.8 25.4	25.6	8.2 8.2	8.2	32.2 32.0	32.1	111.7 110.6	111.2	7.6 7.6	7.6		7.1 6.6	6.9		2.9 2.8	2.9	
				Bottom	8	24.9 24.8	24.9	8.2 8.2	8.2	32.2 32.2	32.2	102.0 102.2	102.1	7.0 7.1	7.1		7.3 6.3	6.8		2.7 2.6	2.7	
M3	Cloudy	Moderate	19:01	Surface	1	25.9 25.9	25.9	8.2 8.2	8.2	31.7 31.8	31.8	117.1 116.7	116.9	8.0 7.9	8.0	7.9	2.8 2.9	2.9	5.1	3.1 3.0	3.1	3.1
				Middle	3.5	25.8 25.9	25.9	8.2 8.2	8.2	31.8 31.7	31.8	114.3 114.9	114.6	7.8 7.8	7.8		5.0 6.1	5.6		2.9 3.0	3.0	
				Bottom	6	25.5 25.5	25.5	8.2 8.2	8.2	30.5 30.4	30.5	104.4 102.6	103.5	7.2 7.1	7.2		7.2 6.2	6.7		3.3 3.2	3.3	
M4	Cloudy	Moderate	18:00	Surface	1	26.0 26.0	26.0	8.2 8.2	8.2	32.0 32.0	32.0	112.5 112.2	112.4	7.6 7.6	7.6	7.6	3.5 3.1	3.3	2.7	1.9 1.8	1.9	1.9
				Middle	3.5	25.8 25.8	25.8	8.2 8.2	8.2	32.0 32.0	32.0	111.7 110.8	111.3	7.6 7.5	7.6		2.1 2.0	2.1		1.9 1.9	1.9	
				Bottom	6	25.2 25.2	25.2	8.2 8.2	8.2	31.6 32.5	32.1	101.0 111.2	106.1	7.0 7.6	7.3		2.6 2.6	2.6		1.8 1.8	1.8	
M5	Cloudy	Moderate	19:26	Surface	1	25.3 25.3	25.3	8.2 8.2	8.2	32.2 32.2	32.2	108.4 108.3	108.4	7.4 7.4	7.4	7.4	3.4 3.5	3.5	5.8	1.9 1.8	1.9	2.1
				Middle	5	25.2 25.2	25.2	8.2 8.2	8.2	32.1 31.9	32.0	106.5 106.3	106.4	7.3 7.3	7.3		5.4 6.7	6.1		2.7 2.8	2.8	
				Bottom	9	25.1 25.1	25.1	8.3 8.2	8.3	31.8 31.8	31.8	101.9 100.5	101.2	7.0 6.9	7.0		7.3 8.1	7.7		1.6 1.6	1.6	
M6	Cloudy	Moderate	19:18	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-	6.7	-	-	1.7
				Middle	1.9	25.7 25.7	25.7	8.2 8.2	8.2	32.4 32.4	32.4	112.2 112.5	112.4	7.6 7.6	7.6		6.7 6.6	6.7		1.6 1.7	1.7	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 29 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 8.9 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 9.6 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.9 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.9 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.1 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.7 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 29 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	15:30	Surface	1	25.3 25.3	25.3	8.2 8.2	8.2	30.8 30.8	30.8	104.2 104.3	104.3	7.2 7.2	7.2	7.1	4.7 4.8	4.8	6.4	4.2 4.1	4.2	5.6
				Middle	10	25.1 25.1	25.1	8.2 8.2	8.2	31.4 31.5	31.5	99.7 100.2	100.0	6.9 6.9	6.9		7.1 6.8	7.0		6.1 6.3	6.2	
				Bottom	19	24.9 24.9	24.9	8.2 8.3	8.3	31.4 31.3	31.4	101.7 100.0	100.9	7.0 6.9	7.0		7.7 7.0	7.4		6.5 6.5	6.5	
C2	Sunny	Moderate	13:49	Surface	1	24.9 24.8	24.9	8.2 8.2	8.2	31.2 31.2	31.2	105.3 103.8	104.6	7.3 7.2	7.3	7.3	3.5 3.8	3.7	5.3	4.9 4.9	4.9	5.6
				Middle	18	24.6 24.5	24.6	8.2 8.2	8.2	31.0 31.1	31.1	102.8 102.2	102.5	7.2 7.1	7.2		4.8 4.8	4.8		6.0 5.9	6.0	
				Bottom	35	24.1 24.1	24.1	8.3 8.2	8.3	31.3 31.3	31.3	104.6 104.8	104.7	7.4 7.4	7.4		7.3 7.4	7.4		5.8 5.9	5.9	
G1	Sunny	Moderate	14:36	Surface	1	26.0 26.0	26.0	8.2 8.2	8.2	31.5 31.5	31.5	116.6 115.6	116.1	7.9 7.9	7.9	7.7	6.5 6.4	6.5	6.5	4.8 4.6	4.7	4.3
				Middle	4	25.6 25.5	25.6	8.2 8.3	8.3	31.4 31.2	31.3	107.1 107.3	107.2	7.3 7.4	7.4		6.5 6.6	6.6		4.3 4.6	4.5	
				Bottom	7	25.1 25.1	25.1	8.2 8.3	8.3	29.4 29.5	29.5	104.9 104.9	104.9	7.3 7.3	7.3		5.9 6.8	6.4		3.7 3.5	3.6	
G2	Sunny	Moderate	14:16	Surface	1	25.6 25.7	25.7	8.2 8.2	8.2	30.9 30.8	30.9	107.7 106.8	107.3	7.4 7.3	7.4	7.2	7.9 6.4	7.2	5.2	2.7 2.8	2.8	3.6
				Middle	5	25.7 25.5	25.6	8.2 8.2	8.2	30.8 30.7	30.8	102.1 99.9	101.0	7.0 6.9	7.0		3.7 4.0	3.9		4.5 4.5	4.5	
				Bottom	9	24.9 25.0	25.0	8.3 8.3	8.3	29.0 29.1	29.1	96.2 95.8	96.0	6.8 6.7	6.8		4.5 4.6	4.6		3.8 3.4	3.6	
G3	Sunny	Moderate	14:45	Surface	1	25.8 25.8	25.8	8.2 8.2	8.2	31.0 31.0	31.0	114.9 114.8	114.9	7.9 7.9	7.9	7.8	5.4 6.2	5.8	6.7	5.8 5.6	5.7	4.2
				Middle	4	25.8 25.7	25.8	8.2 8.2	8.2	30.9 30.9	30.9	110.7 110.7	110.7	7.6 7.6	7.6		5.5 5.7	5.6		4.2 4.2	4.2	
				Bottom	7	25.6 25.6	25.6	8.2 8.2	8.2	31.6 30.6	31.1	108.7 108.5	108.6	7.4 7.5	7.5		8.6 8.7	8.7		2.9 2.7	2.8	
G4	Sunny	Moderate	15:04	Surface	1	25.7 25.7	25.7	8.2 8.2	8.2	31.6 31.5	31.6	113.1 113.5	113.3	7.7 7.8	7.8	7.7	6.8 6.4	6.6	5.6	4.8 4.2	4.5	5.1
				Middle	4	25.6 25.6	25.6	8.2 8.2	8.2	31.5 31.5	31.5	111.4 111.5	111.5	7.6 7.6	7.6		5.2 4.4	4.8		5.9 5.6	5.8	
				Bottom	7	25.4 25.4	25.4	8.2 8.2	8.2	30.9 31.2	31.1	104.0 107.9	106.0	7.2 7.4	7.3		5.1 5.4	5.3		4.9 4.8	4.9	
M1	Sunny	Moderate	14:27	Surface	1	25.4 25.3	25.4	8.2 8.2	8.2	31.3 31.2	31.3	106.7 106.0	106.4	7.3 7.3	7.3	7.4	6.9 6.6	6.8	6.4	2.7 2.5	2.6	3.8
				Middle	3	25.5 25.7	25.6	8.2 8.2	8.2	31.2 31.2	31.2	107.1 107.0	107.1	7.4 7.3	7.4		5.8 5.9	5.9		4.4 4.8	4.6	
				Bottom	5	25.2 25.5	25.4	8.2 8.2	8.2	30.8 30.9	30.9	106.5 106.3	106.4	7.4 7.3	7.4		6.7 6.0	6.4		4.1 4.3	4.2	
M2	Sunny	Moderate	14:07	Surface	1	25.8 25.6	25.7	8.3 8.2	8.3	30.6 31.3	31.0	115.5 115.5	115.5	7.9 7.9	7.9	7.7	8.1 8.5	8.3	6.0	4.2 4.6	4.4	4.9
				Middle	5.5	25.4 25.0	25.2	8.2 8.2	8.2	31.3 31.0	31.2	107.5 106.2	106.9	7.4 7.4	7.4		3.4 3.3	3.4		6.3 5.9	6.1	
				Bottom	10	24.5 24.5	24.5	8.2 8.2	8.2	31.2 31.2	31.2	97.6 97.8	97.7	6.8 6.8	6.8		6.2 6.3	6.3		4.3 4.0	4.2	
M3	Sunny	Moderate	14:56	Surface	1	25.7 25.7	25.7	8.2 8.2	8.2	30.7 30.8	30.8	111.7 111.6	111.7	7.7 7.7	7.7	7.6	2.1 2.6	2.4	4.6	4.8 4.7	4.8	5.0
				Middle	4.5	25.6 25.7	25.7	8.2 8.2	8.2	30.8 30.8	30.8	109.7 110.0	109.9	7.5 7.5	7.5		4.0 4.6	4.3		4.3 4.1	4.2	
				Bottom	8	25.3 25.3	25.3	8.3 8.2	8.3	29.5 29.4	29.5	100.3 98.3	99.3	7.0 6.8	6.9		6.9 7.3	7.1		6.3 5.9	6.1	
M4	Sunny	Moderate	13:58	Surface	1	25.6 25.6	25.6	8.2 8.2	8.2	31.0 31.1	31.1	107.9 107.8	107.9	7.4 7.4	7.4	7.4	7.0 8.7	7.9	5.7	5.1 5.4	5.3	4.4
				Middle	4	25.5 25.4	25.5	8.2 8.2	8.2	31.0 31.0	31.0	107.0 105.8	106.4	7.4 7.3	7.4		3.5 3.6	3.6		3.9 3.7	3.8	
				Bottom	7	24.8 24.8	24.8	8.2 8.2	8.2	30.6 31.6	31.1	96.0 105.8	100.9	6.7 7.3	7.0		5.7 5.6	5.7		4.2 4.2	4.2	
M5	Sunny	Moderate	15:20	Surface	1	25.1 25.1	25.1	8.2 8.2	8.2	31.2 31.3	31.3	103.5 103.7	103.6	7.2 7.2	7.2	7.2	3.0 3.6	3.3	5.8	3.9 4.0	4.0	3.7
				Middle	5.5	25.0 25.0	25.0	8.3 8.2	8.3	31.1 31.0	31.1	102.5 101.7	102.1	7.1 7.1	7.1		6.8 7.6	7.2		4.6 4.2	4.4	
				Bottom	10	24.9 24.9	24.9	8.3 8.2	8.3	30.8 30.8	30.8	97.4 95.8	96.6	6.8 6.7	6.8		6.4 7.4	6.9		2.6 2.9	2.8	
M6	Sunny	Moderate	15:13	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	6.0	-	-	4.1
				Middle	2.1	25.5 25.5	25.5	8.2 8.2	8.2	31.5 31.5	31.5	108.3 108.3	108.3	7.4 7.4	7.4		6.5 5.4	6.0		3.9 4.2	4.1	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 29 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 8.3 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 9.0 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.8 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.4 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.8 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.4 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.0 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.5 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 29 May 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	09:32	Surface	1	25.2	25.2	8.1	8.2	30.8	30.8	106.6	106.8	7.4	7.4	7.5	4.4	4.4	5.5	5.9	5.7	6.0
				Middle	10	25.1	25.2	8.2	8.2	30.8	30.8	107.7	108.1	7.5	7.5		5.2	5.2		7.3	7.3	
				Bottom	19	25.0	24.9	8.3	8.3	30.8	30.9	103.8	102.6	7.2	7.2		6.3	6.9		5.0	5.0	
C2	Sunny	Moderate	07:49	Surface	1	24.5	24.5	8.2	8.2	31.0	31.3	99.7	99.9	7.0	7.0	7.1	3.9	3.8	3.6	3.6	3.6	3.9
				Middle	18	24.4	24.5	8.2	8.2	31.1	31.2	101.1	101.4	7.1	7.1		6.0	6.1		4.8	4.7	
				Bottom	35	24.3	24.4	8.2	8.2	30.7	31.2	98.3	98.2	6.9	6.9		7.2	7.0		3.4	3.3	
G1	Sunny	Moderate	08:37	Surface	1	24.6	24.7	8.2	8.2	31.0	31.0	106.6	106.9	7.4	7.5	7.5	4.8	4.5	3.4	3.3	3.4	3.8
				Middle	4	24.6	24.6	8.2	8.2	31.2	31.2	105.3	105.7	7.3	7.4		7.1	7.1		4.5	4.3	
				Bottom	7	24.5	24.6	8.2	8.2	31.1	31.1	100.1	100.8	7.0	7.1		7.0	6.5		3.5	3.6	
G2	Sunny	Moderate	08:16	Surface	1	24.7	24.8	8.2	8.2	31.6	31.1	106.2	106.1	7.4	7.4	7.3	5.7	5.5	4.4	4.3	4.4	4.6
				Middle	5	24.7	24.7	8.2	8.2	30.6	30.6	102.7	102.7	7.2	7.2		7.2	7.1		4.4	4.3	
				Bottom	9	24.6	24.6	8.2	8.2	30.7	30.7	98.7	99.3	6.9	7.0		6.8	7.6		5.4	5.2	
G3	Sunny	Moderate	08:47	Surface	1	24.7	24.7	8.3	8.3	30.8	30.8	103.3	103.2	7.2	7.2	7.2	3.4	3.8	5.7	5.2	5.5	5.8
				Middle	4	24.6	24.6	8.2	8.2	31.1	31.1	101.7	101.1	7.1	7.1		5.1	5.1		7.7	8.0	
				Bottom	7	24.5	24.6	8.2	8.2	31.1	31.1	105.8	100.6	7.4	7.1		4.7	4.7		3.9	3.8	
G4	Sunny	Moderate	09:06	Surface	1	24.6	24.6	8.2	8.2	30.8	30.8	96.5	96.2	6.7	6.7	6.7	5.0	5.4	3.6	3.7	3.7	4.7
				Middle	4	24.5	24.6	8.2	8.2	30.8	30.8	95.8	95.5	6.7	6.7		4.7	4.6		4.7	4.8	
				Bottom	7	24.4	24.5	8.3	8.3	31.1	31.0	99.2	100.7	6.9	7.0		6.8	6.8		5.9	5.6	
M1	Sunny	Moderate	08:27	Surface	1	24.7	24.7	8.2	8.2	30.9	30.9	107.4	106.9	7.5	7.5	7.4	4.7	4.8	4.4	4.4	4.4	3.6
				Middle	3	24.6	24.6	8.2	8.2	30.9	30.9	105.2	105.1	7.3	7.3		5.4	5.4		3.4	3.4	
				Bottom	5	24.6	24.6	8.2	8.2	31.0	31.0	97.1	97.8	6.8	6.9		6.3	5.8		3.1	3.1	
M2	Sunny	Moderate	08:06	Surface	1	24.5	24.5	8.2	8.2	31.2	31.3	95.6	96.2	6.7	6.8	7.0	4.0	3.9	3.3	3.5	3.5	3.9
				Middle	5.5	24.4	24.4	8.2	8.2	31.6	31.6	102.8	103.2	7.2	7.2		5.2	5.3		3.4	3.4	
				Bottom	10	24.4	24.3	8.3	8.3	30.6	30.6	102.6	101.9	7.2	7.2		7.4	8.1		4.5	4.7	
M3	Sunny	Moderate	08:58	Surface	1	24.7	24.7	8.2	8.2	30.9	30.9	105.4	105.8	7.3	7.4	7.4	4.8	4.8	3.0	3.1	3.1	3.9
				Middle	4.5	24.6	24.7	8.3	8.3	30.9	31.0	104.9	103.9	7.3	7.3		7.7	7.7		4.2	4.5	
				Bottom	8	24.3	24.3	8.2	8.2	31.5	31.5	101.5	102.5	7.1	7.2		7.4	7.7		4.6	4.2	
M4	Sunny	Moderate	07:58	Surface	1	24.6	24.6	8.2	8.2	30.7	30.7	95.6	95.7	6.7	6.7	6.8	2.9	3.1	4.3	3.2	3.2	3.5
				Middle	4	24.5	24.6	8.2	8.2	30.7	30.8	96.2	96.7	6.7	6.8		3.2	3.8		3.1	3.1	
				Bottom	7	24.5	24.4	8.2	8.2	31.2	31.2	95.8	95.5	6.7	6.7		4.0	5.0		4.2	2.8	
M5	Sunny	Moderate	09:22	Surface	1	24.9	24.8	8.3	8.3	31.2	31.2	105.9	105.8	7.3	7.3	7.3	6.1	5.8	3.4	3.6	3.5	3.2
				Middle	5.5	24.8	24.8	8.2	8.2	31.1	31.1	105.1	105.2	7.3	7.3		6.8	6.9		3.6	3.6	
				Bottom	10	24.8	24.9	8.2	8.2	31.4	31.4	103.9	104.0	7.2	7.2		3.6	3.4		2.8	2.6	
M6	Sunny	Moderate	09:14	Surface	-	-	-	-	-	-	-	-	-	-	7.1	-	-	-	-	-	6.7	
				Middle	2.3	24.7	24.7	8.2	8.2	29.4	29.4	101.9	101.0	7.2		7.1	6.9		6.9	7.0		6.7
				Bottom	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 31 May 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 9.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 10.1 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.3 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 4.7 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.3 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 4.7 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 4.9 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.3 mg/L</u>
<u>Station M6</u>			
Intake Level		<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 31 May 2017**

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Moderate	17:48	Surface	1	26.3 26.4	26.4	7.9 8.0	8.0	32.0 32.1	32.1	97.6 97.9	97.8	6.6 6.6	6.6	6.6	6.6	4.7 4.8	4.8	6.1	2.7 2.8	2.8	3.3
				Middle	10	26.1 26.1	26.1	8.0 8.0	8.0	32.2 32.3	32.3	96.3 96.6	96.5	6.5 6.5	6.5	5.4 5.7		5.6	3.8 3.9		3.9		
				Bottom	19	25.7 25.7	25.7	8.1 8.0	8.1	32.4 32.4	32.4	93.2 93.5	93.4	6.3 6.4	6.4	7.7 7.9		7.8	3.2 3.3		3.3		
C2	Sunny	Moderate	15:52	Surface	1	26.4 26.2	26.3	8.0 8.0	8.0	31.9 31.8	31.9	99.1 98.4	98.8	6.7 6.7	6.7	6.7	4.6 4.6	4.6	5.9	3.5 3.6	3.6	3.3	
				Middle	18	25.9 25.9	25.9	7.9 7.9	7.9	32.5 32.5	32.5	96.8 96.2	96.5	6.6 6.5	6.6		5.2 5.3	5.3		2.1 2.1	2.1		
				Bottom	35	25.5 25.7	25.6	7.8 7.8	7.8	32.7 32.7	32.7	93.6 94.1	93.9	6.4 6.4	6.4		7.8 7.8	7.8		4.1 4.1	4.1		
G1	Sunny	Moderate	16:46	Surface	1	26.5 26.3	26.4	8.0 8.0	8.0	32.2 32.3	32.3	98.5 97.6	98.1	6.6 6.6	6.6	6.6	3.6 3.7	3.7	5.3	3.8 3.7	3.8	4.5	
				Middle	4	26.1 25.9	26.0	8.1 8.1	8.1	32.4 32.4	32.4	96.2 96.0	96.1	6.5 6.5	6.5		5.5 5.7	5.6		6.6 6.5	6.6		
				Bottom	7	26.1 25.8	26.0	8.1 8.1	8.1	32.5 32.6	32.6	95.4 94.6	95.0	6.4 6.4	6.4		6.6 6.5	6.6		2.9 3.0	3.0		
G2	Sunny	Moderate	16:25	Surface	1	26.3 26.3	26.3	8.0 8.0	8.0	32.6 32.5	32.6	97.5 97.0	97.3	6.6 6.5	6.6	6.5	4.2 4.3	4.3	5.1	2.3 2.4	2.4	2.4	
				Middle	5	26.3 26.2	26.3	8.0 8.0	8.0	32.7 32.7	32.7	95.2 95.0	95.1	6.4 6.4	6.4		4.6 4.7	4.7		3.3 3.4	3.4		
				Bottom	9	25.8 25.7	25.8	8.1 8.1	8.1	32.9 32.8	32.9	93.7 93.4	93.6	6.3 6.3	6.3		6.3 6.2	6.3		1.5 1.5	1.5		
G3	Sunny	Moderate	16:58	Surface	1	26.4 26.4	26.4	8.0 8.0	8.0	32.3 32.3	32.3	98.1 98.7	98.4	6.6 6.6	6.6	6.6	4.4 4.3	4.4	6.4	2.2 2.2	2.2	3.4	
				Middle	4	26.2 26.1	26.2	7.9 7.9	7.9	32.4 32.5	32.5	97.1 96.4	96.8	6.5 6.5	6.5		6.7 6.8	6.8		6.2 6.1	6.2		
				Bottom	7	25.8 25.8	25.8	7.9 7.9	7.9	32.7 32.7	32.7	94.1 93.4	93.8	6.4 6.3	6.4		7.8 7.9	7.9		1.8 1.9	1.9		
G4	Sunny	Moderate	17:21	Surface	1	26.1 26.2	26.2	8.0 8.0	8.0	32.4 32.4	32.4	99.0 99.9	99.5	6.7 6.7	6.7	6.6	4.3 4.2	4.3	5.9	2.0 2.0	2.0	2.2	
				Middle	4	25.9 25.9	25.9	8.1 8.1	8.1	32.6 32.7	32.7	95.7 96.6	96.2	6.5 6.5	6.5		5.4 5.5	5.5		2.2 2.2	2.2		
				Bottom	7	25.9 25.8	25.9	8.1 8.1	8.1	32.9 33.0	33.0	95.1 95.0	95.1	6.4 6.4	6.4		7.9 7.8	7.9		2.4 2.4	2.4		
M1	Sunny	Moderate	16:36	Surface	1	26.4 26.3	26.4	8.0 7.9	8.0	32.4 32.4	32.4	98.0 98.0	98.0	6.6 6.6	6.6	6.6	4.6 4.6	4.6	6.1	2.0 2.0	2.0	2.4	
				Middle	3	26.2 26.2	26.2	8.0 8.0	8.0	32.5 32.6	32.6	96.6 97.0	96.8	6.5 6.5	6.5		5.8 6.3	6.1		2.5 2.6	2.6		
				Bottom	5	25.8 25.9	25.9	8.0 8.0	8.0	32.6 32.6	32.6	95.1 96.1	95.6	6.4 6.5	6.5		7.8 7.5	7.7		2.7 2.5	2.6		
M2	Sunny	Moderate	16:13	Surface	1	26.5 26.4	26.5	7.9 7.9	7.9	31.8 31.8	31.8	98.6 98.3	98.5	6.6 6.6	6.6	6.6	4.2 4.7	4.5	4.9	2.4 2.3	2.4	2.4	
				Middle	5.5	26.3 25.9	26.1	8.0 8.0	8.0	32.4 32.5	32.5	97.5 97.1	97.3	6.6 6.6	6.6		4.6 4.5	4.6		1.6 1.6	1.6		
				Bottom	10	25.8 25.7	25.8	8.1 8.0	8.1	32.2 32.2	32.2	94.1 94.1	94.1	6.4 6.4	6.4		5.5 5.6	5.6		3.3 3.1	3.2		
M3	Sunny	Moderate	17:09	Surface	1	26.4 26.3	26.4	7.8 7.8	7.8	32.5 32.5	32.5	98.1 98.2	98.2	6.6 6.6	6.6	6.6	4.3 4.4	4.4	5.9	3.5 3.4	3.5	3.2	
				Middle	4.5	26.2 26.2	26.2	7.8 7.8	7.8	32.7 32.6	32.7	97.1 96.6	96.9	6.5 6.5	6.5		5.8 5.8	5.8		3.1 3.2	3.2		
				Bottom	8	26.1 25.9	26.0	8.0 8.1	8.1	32.8 32.7	32.8	94.2 94.4	94.3	6.3 6.4	6.4		7.7 7.2	7.5		2.9 2.9	2.9		
M4	Sunny	Moderate	16:02	Surface	1	26.5 26.4	26.5	8.0 7.9	8.0	32.4 32.5	32.5	99.0 99.1	99.1	6.6 6.7	6.7	6.6	4.4 4.3	4.4	5.5	2.7 2.7	2.7	2.7	
				Middle	4	26.3 26.3	26.3	7.9 7.9	7.9	32.8 32.8	32.8	96.1 95.7	95.9	6.5 6.4	6.5		5.5 5.7	5.6		2.6 2.6	2.7		
				Bottom	7	25.9 25.8	25.9	7.8 7.9	7.9	32.8 32.9	32.9	92.1 91.2	91.7	6.2 6.2	6.2		6.4 6.3	6.4		2.7 2.6	2.7		
M5	Sunny	Moderate	17:38	Surface	1	26.2 26.2	26.2	7.8 7.8	7.8	32.4 32.4	32.4	98.6 98.9	98.8	6.6 6.7	6.7	6.7	4.8 5.1	5.0	6.4	4.0 3.9	4.0	3.3	
				Middle	5.5	26.2 26.0	26.1	8.0 7.9	8.0	32.5 32.5	32.5	98.5 98.2	98.4	6.6 6.6	6.6		6.8 6.5	6.7		3.8 3.8	3.8		
				Bottom	10	25.8 25.7	25.8	8.0 8.1	8.1	32.5 32.6	32.6	95.9 96.5	96.2	6.5 6.6	6.6		7.4 7.5	7.5		2.2 2.2	2.2		
M6	Sunny	Moderate	17:31	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	5.3	-	-	2.6	
				Middle	3.1	26.2 26.3	26.3	8.0 8.1	8.1	32.3 32.3	32.3	97.5 96.9	97.2	6.6 6.5	6.6		5.2 5.4	5.3		2.5 2.6	2.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 31 May 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 10.3 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 11.2 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.7 mg/L</u>
<u>Stations M1-M5</u>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.7 mg/L</u>
<u>Stations G1-G4, M1-M5</u>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.5 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.0 mg/L</u>
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

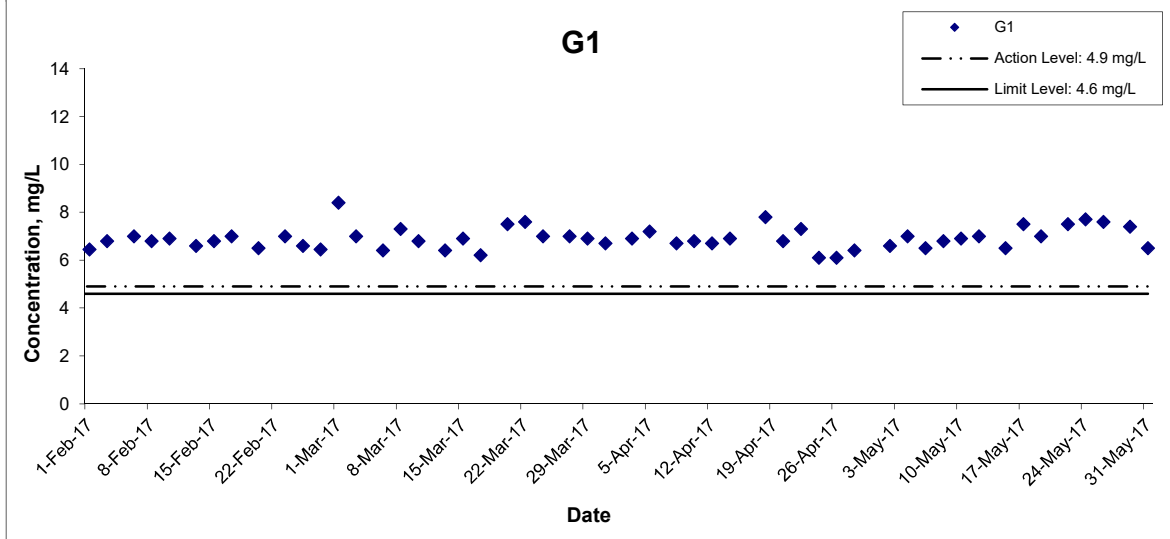
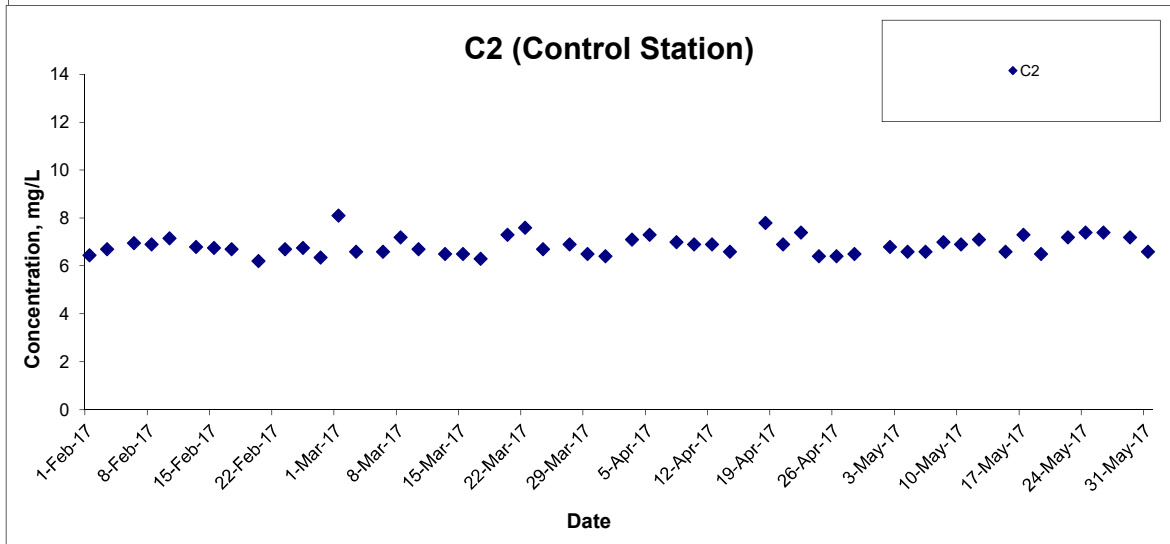
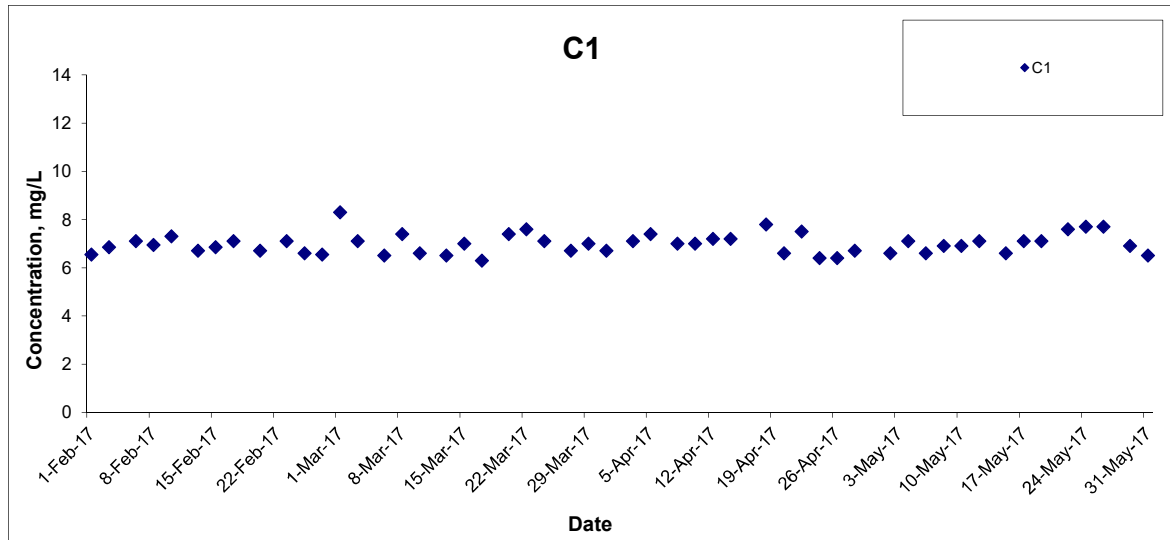
**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 31 May 2017**

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Moderate	10:32	Surface	1	26.2 26.3	26.3	7.9 7.9	7.9	32.3 32.3	32.3	99.4 99.7	99.6	6.7 6.7	6.7	6.7	6.7	4.7 4.8	4.8	6.7	5.9 5.8	5.9	4.9
				Middle	10	26.1 26.3	26.2	7.9 7.8	7.9	32.3 32.4	32.4	97.1 98.3	97.7	6.6 6.6	6.6	6.6		6.8	6.8		4.1 4.0	4.1	
				Bottom	19	25.8 25.7	25.8	8.0 7.9	8.0	32.5 32.6	32.6	94.2 94.6	94.4	6.4 6.4	6.4	6.4		8.6 8.6	8.6		4.5 4.6	4.6	
C2	Sunny	Moderate	08:36	Surface	1	25.8 25.8	25.8	8.1 8.1	8.1	32.2 32.1	32.2	97.8 97.3	97.6	6.6 6.6	6.6	6.6	4.6 4.4	4.5	5.9	5.8 5.7	5.8	3.4	
				Middle	18	25.6 25.8	25.7	8.1 8.0	8.1	32.4 32.5	32.5	96.7 97.0	96.9	6.6 6.6	6.6		6.6	6.3		6.3	2.5 2.5		2.5
				Bottom	35	25.6 25.7	25.7	8.1 8.1	8.1	32.6 32.5	32.6	92.7 92.4	92.6	6.3 6.3	6.3		6.3	6.7 7.0		6.9	2.0 2.0		2.0
G1	Sunny	Moderate	09:28	Surface	1	26.3 26.1	26.2	8.0 8.0	8.0	32.0 32.0	32.0	97.0 96.7	96.9	6.5 6.5	6.5	6.5	4.9 5.1	5.0	6.3	2.2 2.2	2.2	2.4	
				Middle	4	25.7 25.8	25.8	8.0 8.0	8.0	32.1 32.2	32.2	95.7 96.2	96.0	6.5 6.5	6.5		6.5	6.3		6.3	2.5 2.5		2.5
				Bottom	7	25.6 25.6	25.6	8.0 8.1	8.1	32.2 32.3	32.3	92.4 92.7	92.6	6.3 6.3	6.3		6.3	7.4 7.6		7.5	2.4 2.4		2.4
G2	Sunny	Moderate	09:07	Surface	1	26.2 26.2	26.2	7.9 7.9	7.9	32.5 32.5	32.5	99.7 100.1	99.9	6.7 6.7	6.7	6.6	4.7 4.9	4.8	5.9	1.7 1.7	1.7	1.9	
				Middle	5	25.9 26.1	26.0	8.0 7.9	8.0	32.5 32.5	32.5	96.2 96.2	96.2	6.5 6.5	6.5		6.5	5.7		5.7	1.8 1.8		1.8
				Bottom	9	25.5 25.6	25.6	8.0 8.0	8.0	32.7 32.8	32.8	94.2 94.0	94.1	6.4 6.4	6.4		6.4	7.1 7.2		7.2	2.1 2.1		2.1
G3	Sunny	Moderate	09:39	Surface	1	26.2 26.3	26.3	8.1 8.0	8.1	32.3 32.3	32.3	98.4 97.6	98.0	6.6 6.6	6.6	6.6	3.8 3.5	3.7	4.6	2.0 2.0	2.0	2.3	
				Middle	4	25.9 25.8	25.9	8.1 8.1	8.1	32.4 32.6	32.5	95.2 95.5	95.4	6.4 6.5	6.5		6.5	4.5		4.5	2.3 2.4		2.4
				Bottom	7	25.7 25.8	25.8	8.2 8.1	8.2	32.7 32.8	32.8	94.2 94.9	94.6	6.4 6.4	6.4		6.4	5.7 5.2		5.5	2.4 2.5		2.5
G4	Sunny	Moderate	10:03	Surface	1	26.1 26.2	26.2	8.0 8.0	8.0	32.0 32.0	32.0	97.2 95.4	96.3	6.6 6.4	6.5	6.5	4.4 4.6	4.5	5.4	2.3 2.2	2.3	2.8	
				Middle	4	25.7 25.7	25.7	8.1 8.0	8.1	32.1 32.2	32.2	94.7 94.2	94.5	6.4 6.4	6.4		6.4	4.9		4.9	3.1 3.0		3.1
				Bottom	7	25.7 25.6	25.7	8.1 8.1	8.1	32.3 32.3	32.3	91.5 92.0	91.8	6.2 6.3	6.3		6.3	6.6 6.8		6.7	2.8 2.9		2.9
M1	Sunny	Moderate	09:19	Surface	1	26.5 26.3	26.4	7.9 8.0	8.0	32.0 32.1	32.1	99.2 99.2	99.2	6.7 6.7	6.7	6.6	3.5 3.1	3.3	5.3	1.8 1.8	1.8	3.2	
				Middle	3	25.9 26.2	26.1	8.0 8.0	8.0	32.3 32.3	32.3	95.8 96.0	95.9	6.5 6.5	6.5		6.5	5.9		5.9	4.1 4.0		4.1
				Bottom	5	25.8 25.8	25.8	8.0 8.0	8.0	32.2 32.1	32.2	93.7 94.4	94.1	6.4 6.4	6.4		6.4	6.7 6.5		6.6	3.9 3.7		3.8
M2	Sunny	Moderate	08:55	Surface	1	25.8 26.0	25.9	8.0 8.0	8.0	32.2 32.3	32.3	97.7 98.2	98.0	6.6 6.6	6.6	6.6	3.7 3.7	3.7	5.4	3.4 3.5	3.5	4.0	
				Middle	5.5	25.6 25.8	25.7	7.9 7.9	7.9	32.3 32.2	32.3	96.5 96.9	96.7	6.6 6.6	6.6		6.6	5.5		5.4	3.4 3.5		3.5
				Bottom	10	25.6 25.6	25.6	8.0 8.0	8.0	32.5 32.5	32.5	95.3 94.6	95.0	6.5 6.4	6.5		6.5	7.2 7.2		7.2	5.0 4.9		5.0
M3	Sunny	Moderate	09:51	Surface	1	26.1 26.0	26.1	8.0 8.0	8.0	32.1 32.1	32.1	96.4 96.3	96.4	6.5 6.5	6.5	6.5	4.9 4.5	4.7	6.5	1.8 1.8	1.8	2.3	
				Middle	4.5	25.9 25.8	25.9	8.0 8.0	8.0	32.3 32.4	32.4	94.2 94.8	94.5	6.4 6.4	6.4		6.4	6.8		6.8	1.6 1.7		1.7
				Bottom	8	25.7 25.7	25.7	8.1 8.1	8.1	32.5 32.5	32.5	93.1 92.7	92.9	6.3 6.3	6.3		6.3	8.2 7.9		8.1	3.4 3.3		3.4
M4	Sunny	Moderate	08:46	Surface	1	26.1 26.3	26.2	8.0 8.0	8.0	32.0 32.0	32.0	98.5 98.4	98.5	6.7 6.6	6.7	6.7	3.5 3.7	3.6	4.3	2.5 2.5	2.5	3.6	
				Middle	4	25.7 25.8	25.8	8.0 8.0	8.0	32.1 32.1	32.1	97.4 97.3	97.4	6.6 6.6	6.6		6.6	3.9 3.9		3.9	5.2 5.2		5.2
				Bottom	7	25.5 25.5	25.5	8.1 8.1	8.1	32.2 32.2	32.2	95.4 95.0	95.2	6.5 6.5	6.5		6.5	5.2 5.8		5.5	3.1 3.0		3.1
M5	Sunny	Moderate	10:22	Surface	1	26.3 26.9	26.6	7.9 8.0	8.0	31.8 31.9	31.9	98.3 99.2	98.8	6.6 6.6	6.6	6.5	4.7 5.1	4.9	6.7	5.9 5.7	5.8	3.4	
				Middle	5.5	25.9 25.8	25.9	7.9 7.9	7.9	32.4 32.6	32.5	94.9 94.5	94.7	6.4 6.4	6.4		6.4	6.6		6.6	1.8 1.9		1.9
				Bottom	10	25.7 25.6	25.7	8.1 8.1	8.1	32.4 32.4	32.4	93.8 93.9	93.9	6.4 6.4	6.4		6.4	8.4 8.4		8.7	2.4 2.5		2.5
M6	Sunny	Moderate	10:14	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	5.8	0.0 0.0	0.0	3.1	
				Middle	3.1	26.3 26.2	26.3	8.0 8.1	8.1	32.3 32.3	32.3	97.2 97.6	97.4	6.5 6.6	6.6		6.6	5.8		5.8	3.0 3.1		3.1
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		0.0 0.0

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



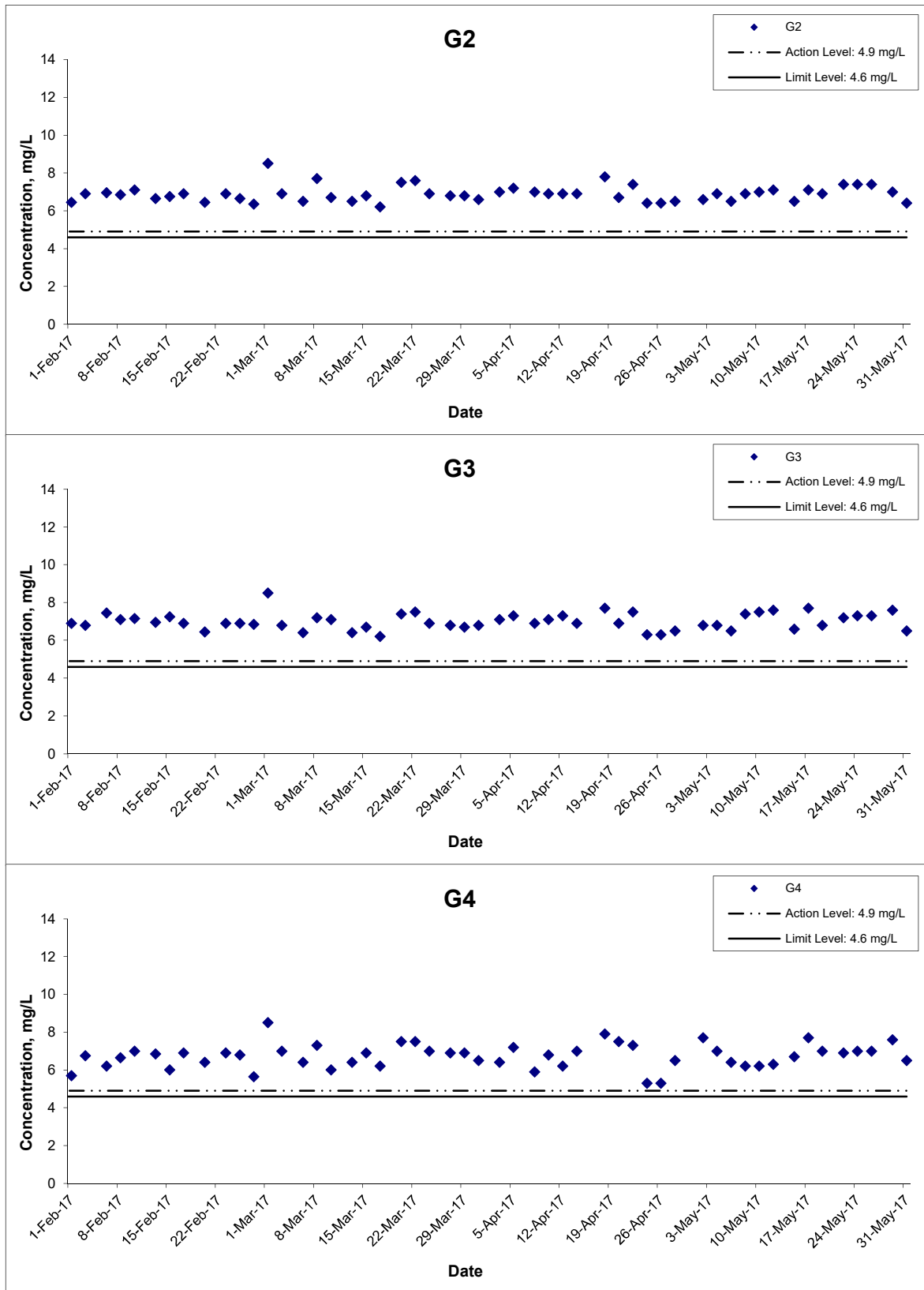
Title
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Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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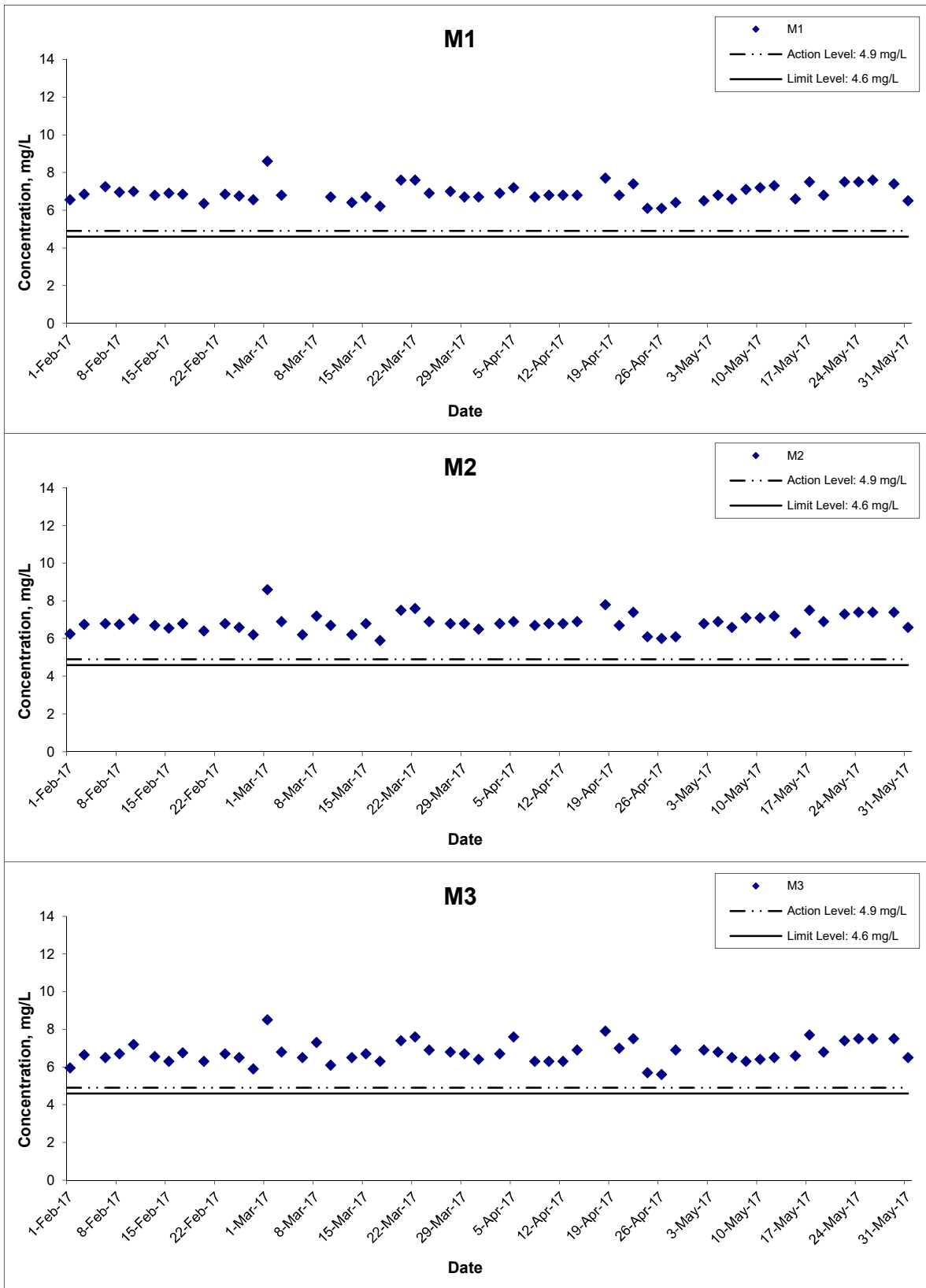
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Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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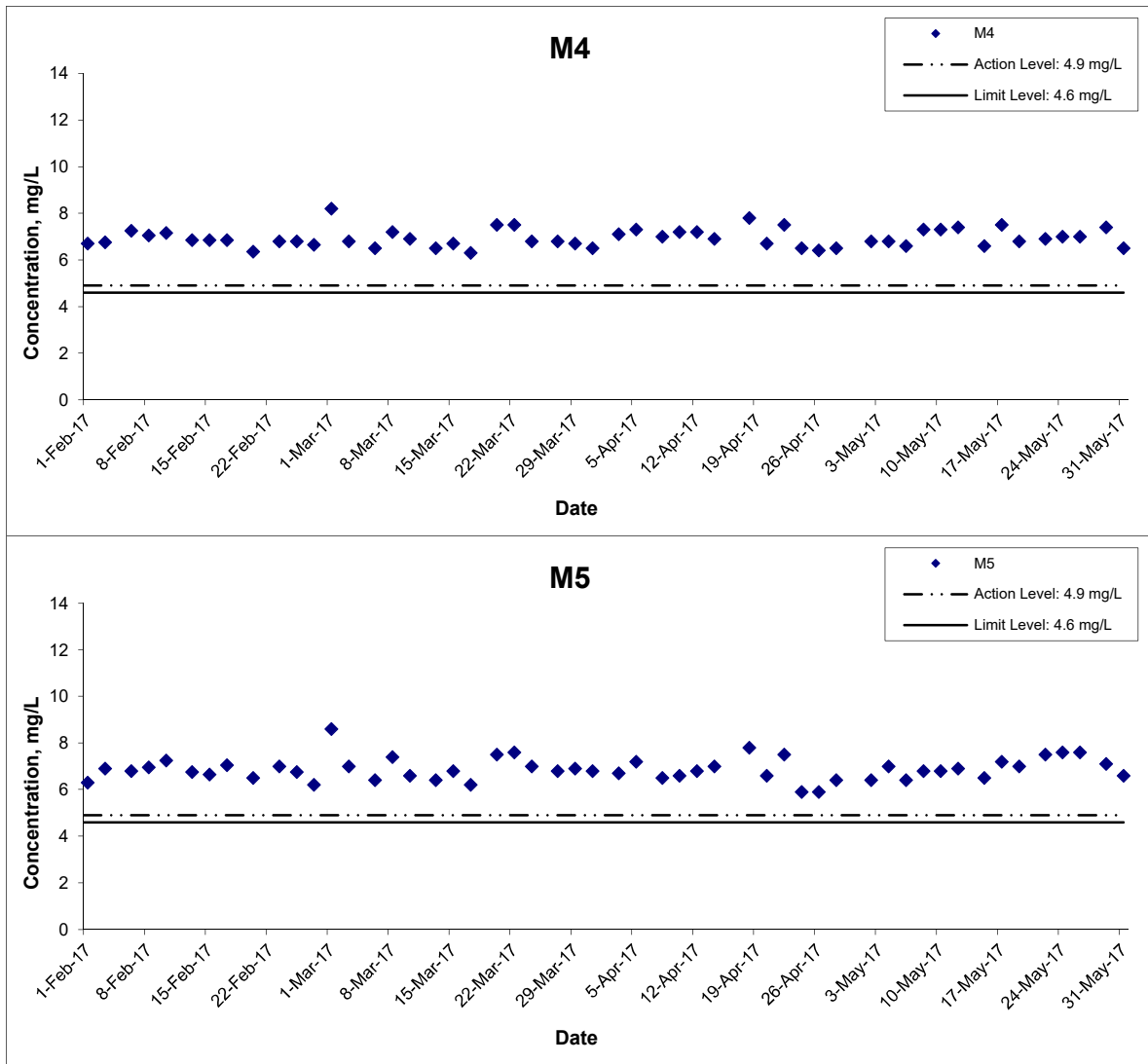
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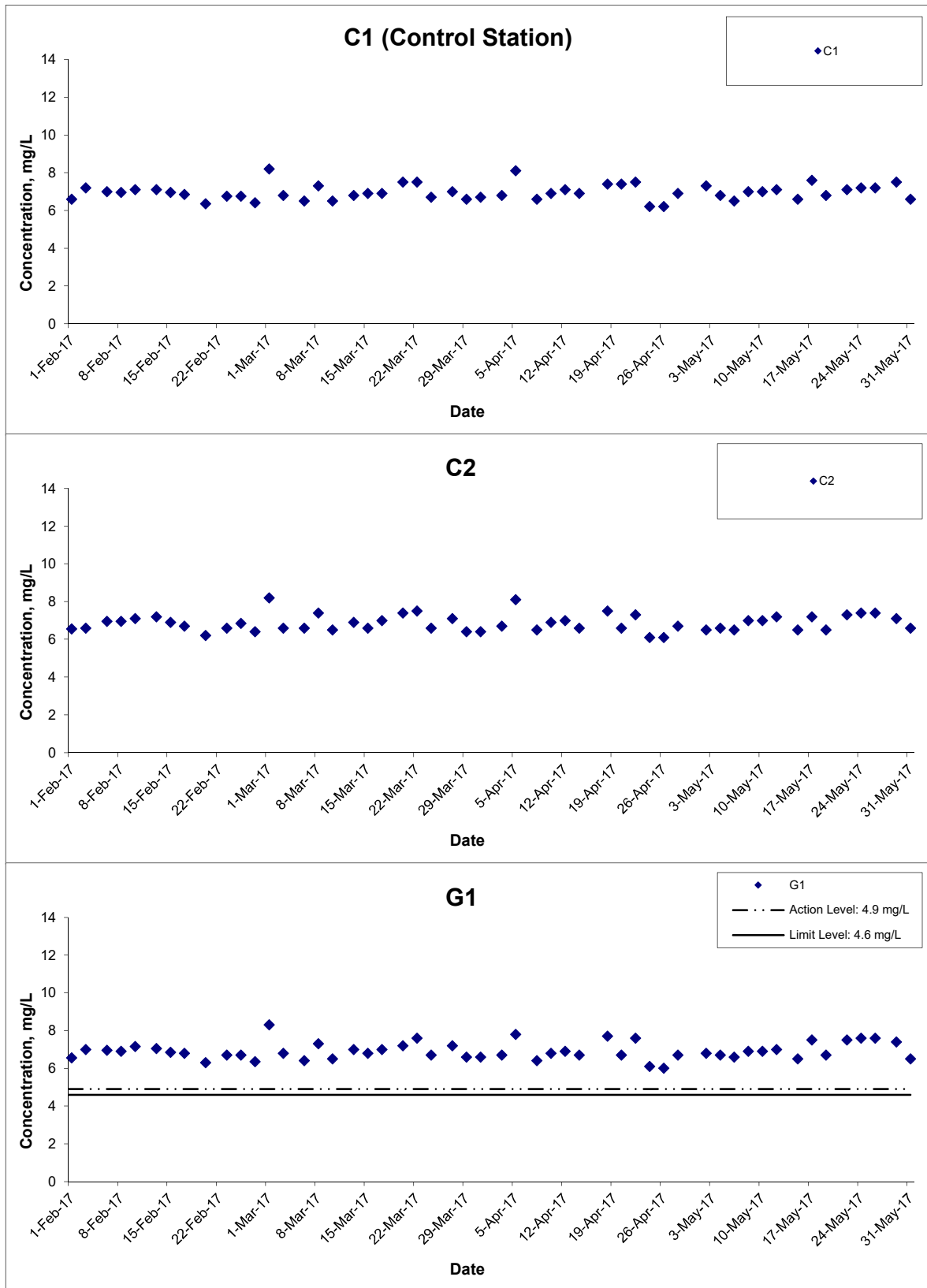


Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



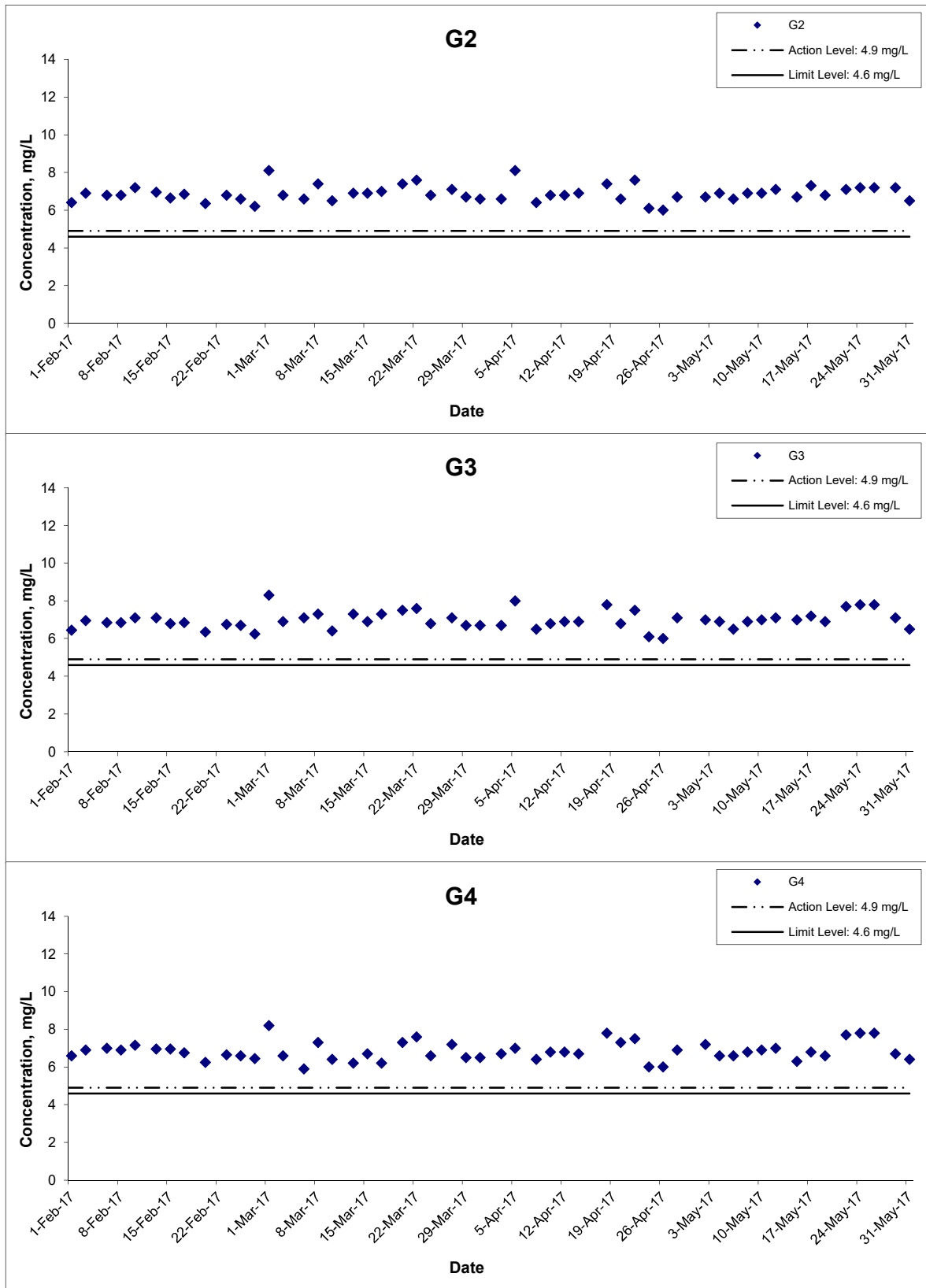
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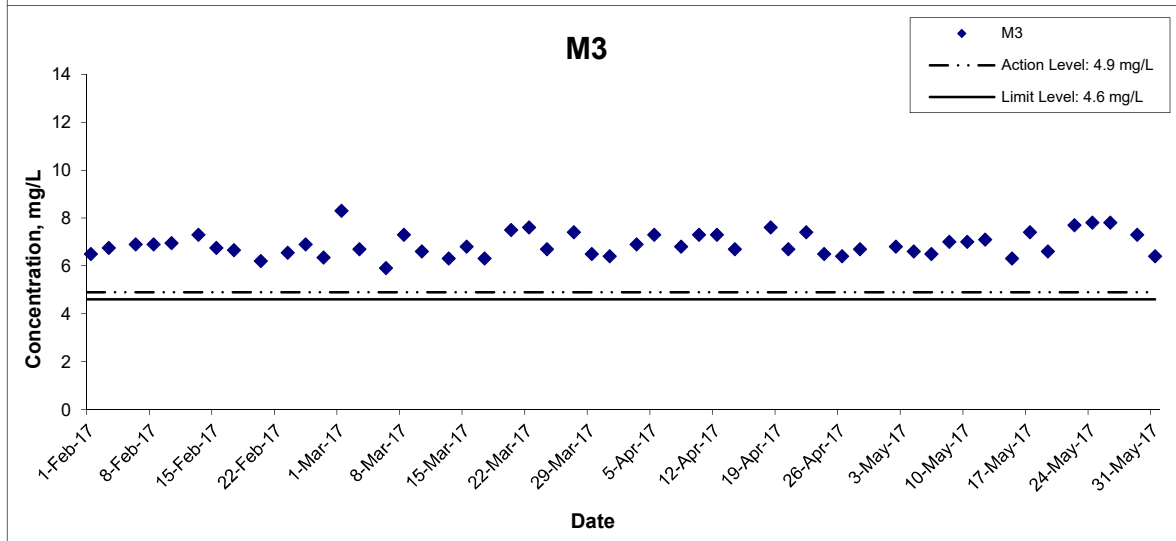
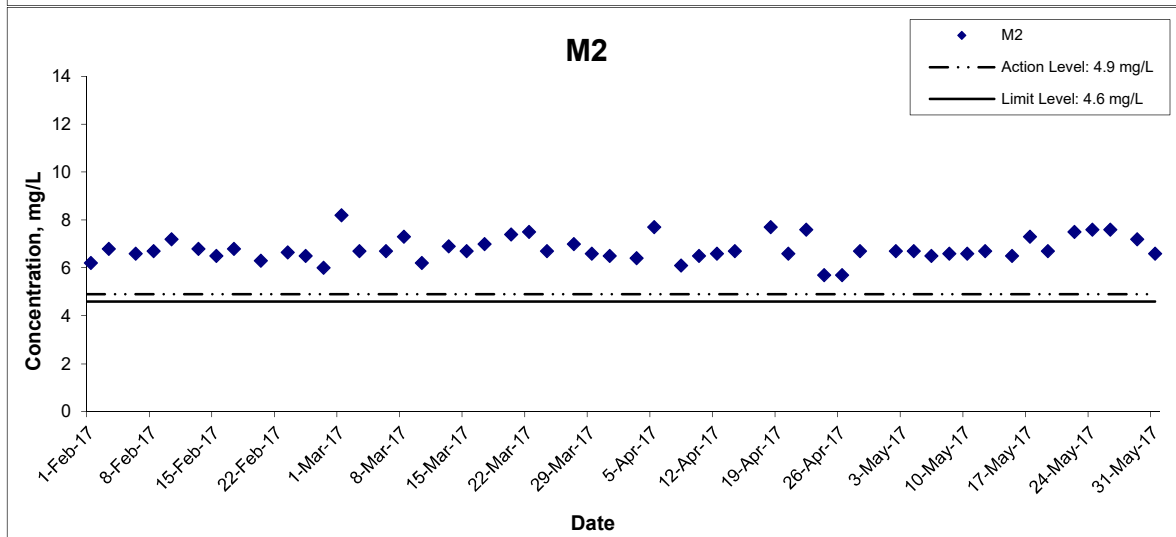
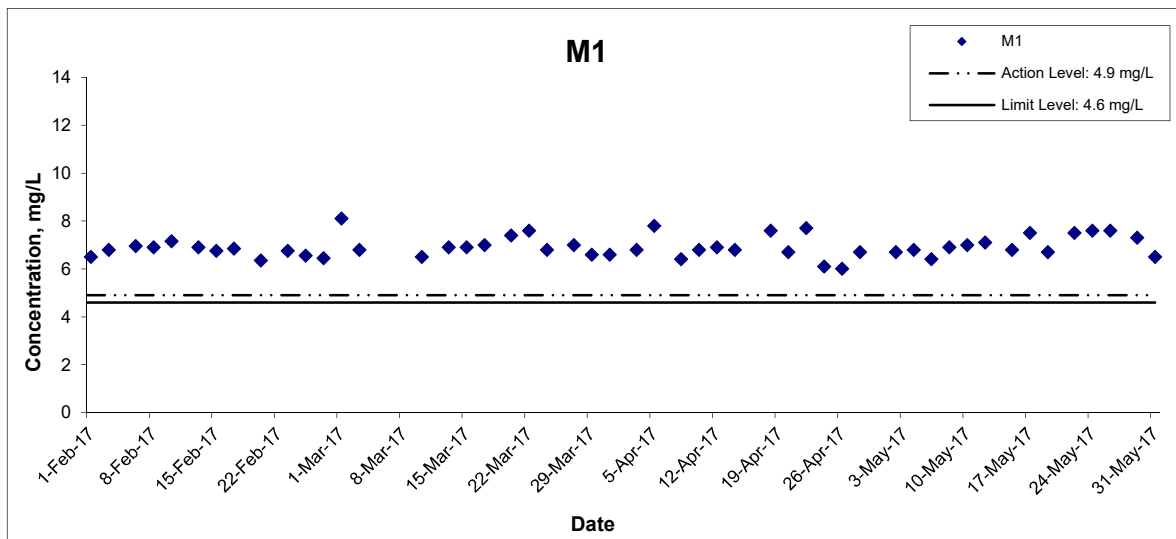
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Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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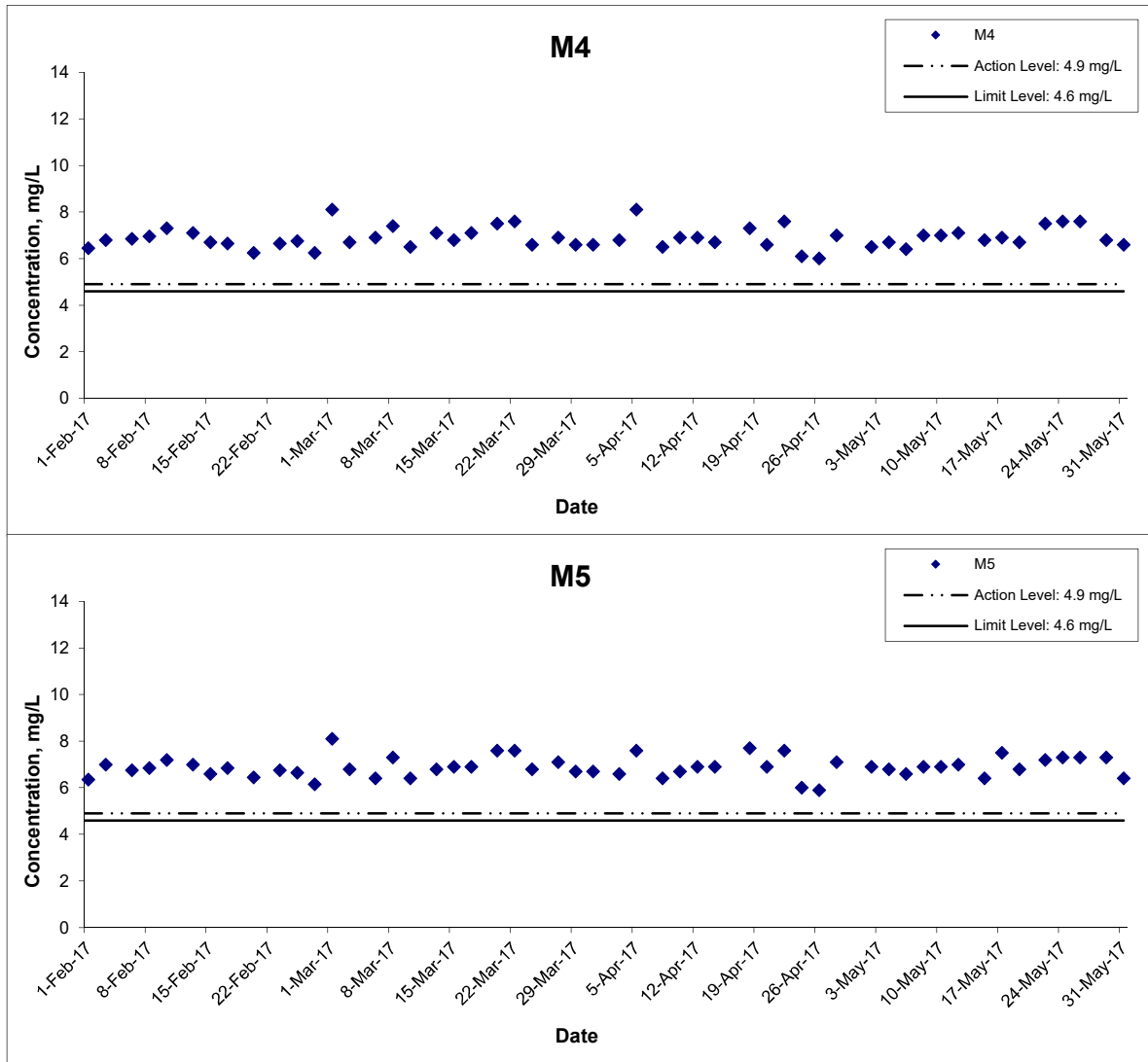
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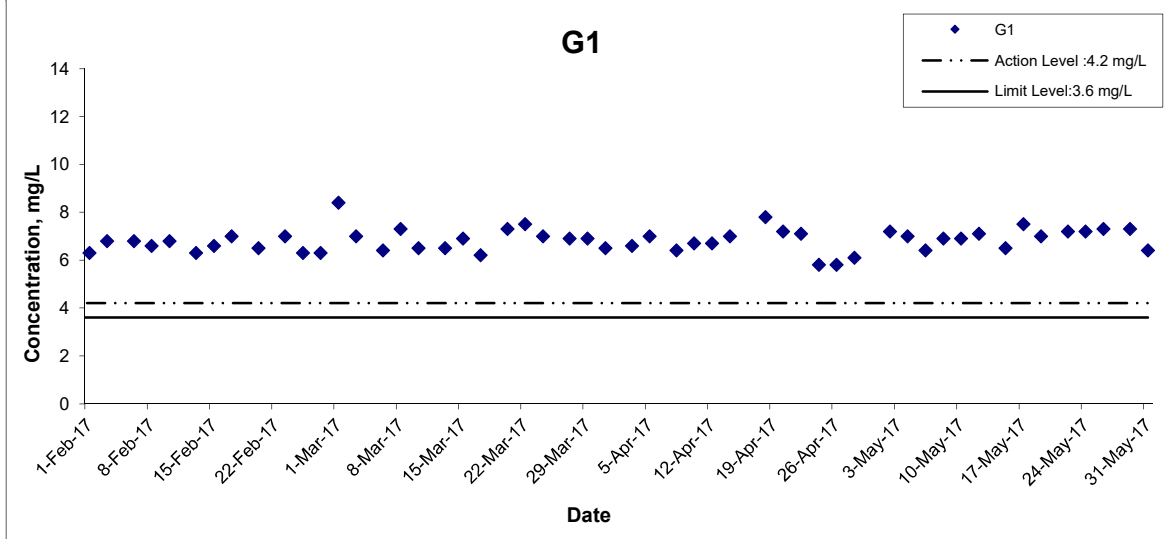
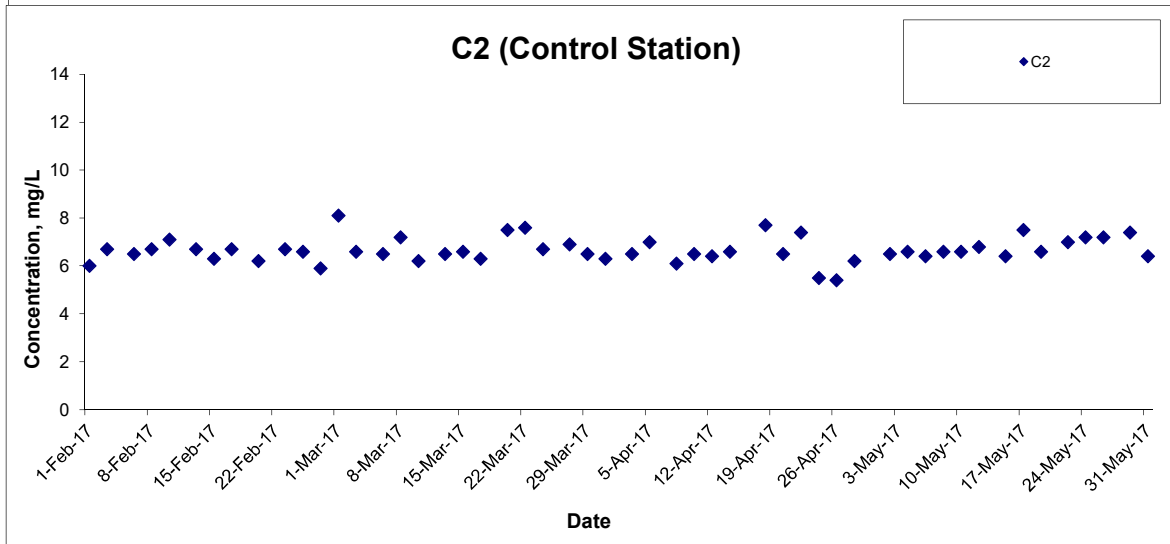
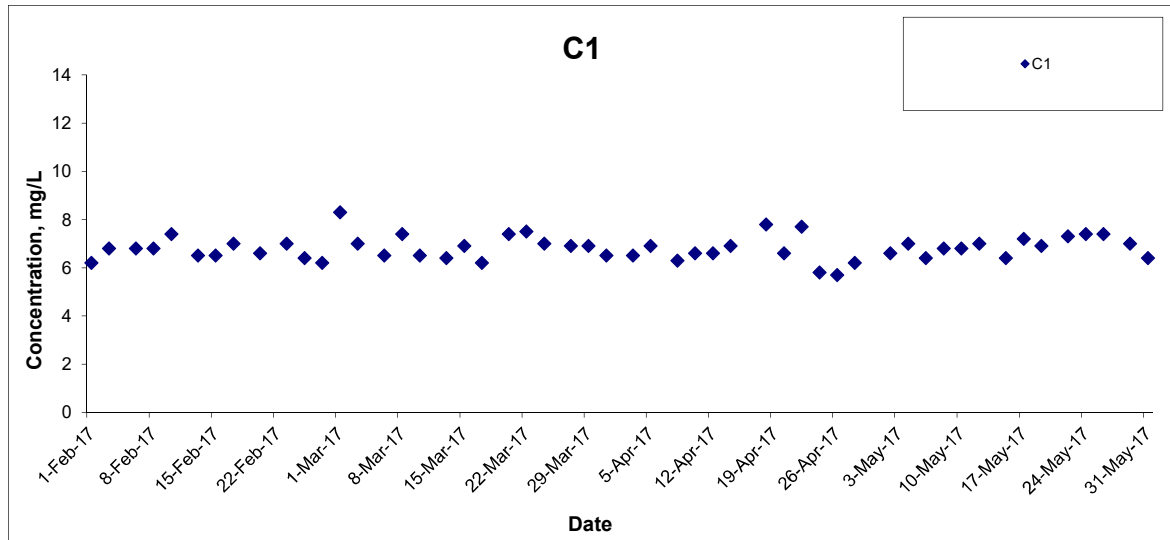


Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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Dissolved Oxygen (Bottom) at Mid-Ebb Tide



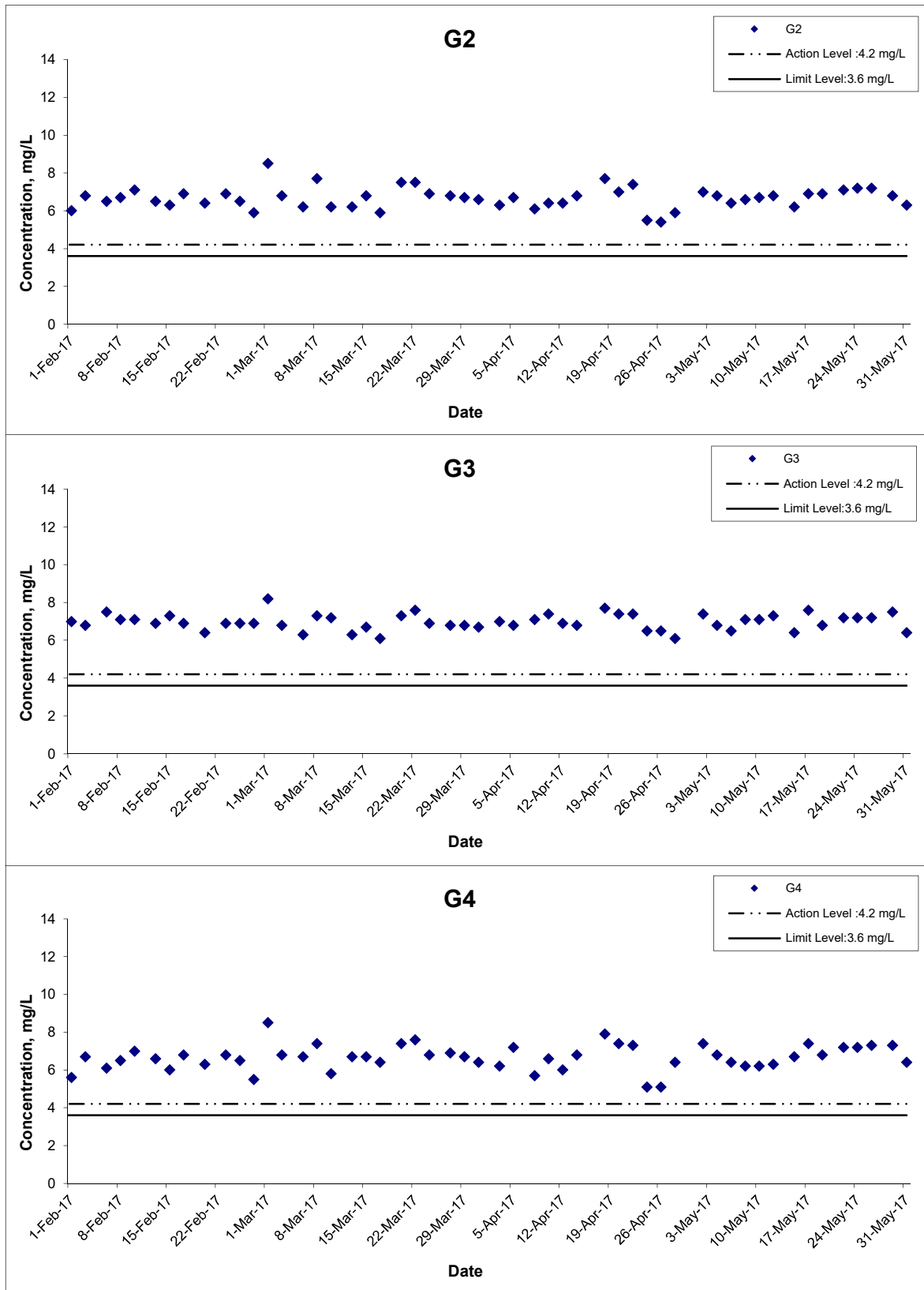
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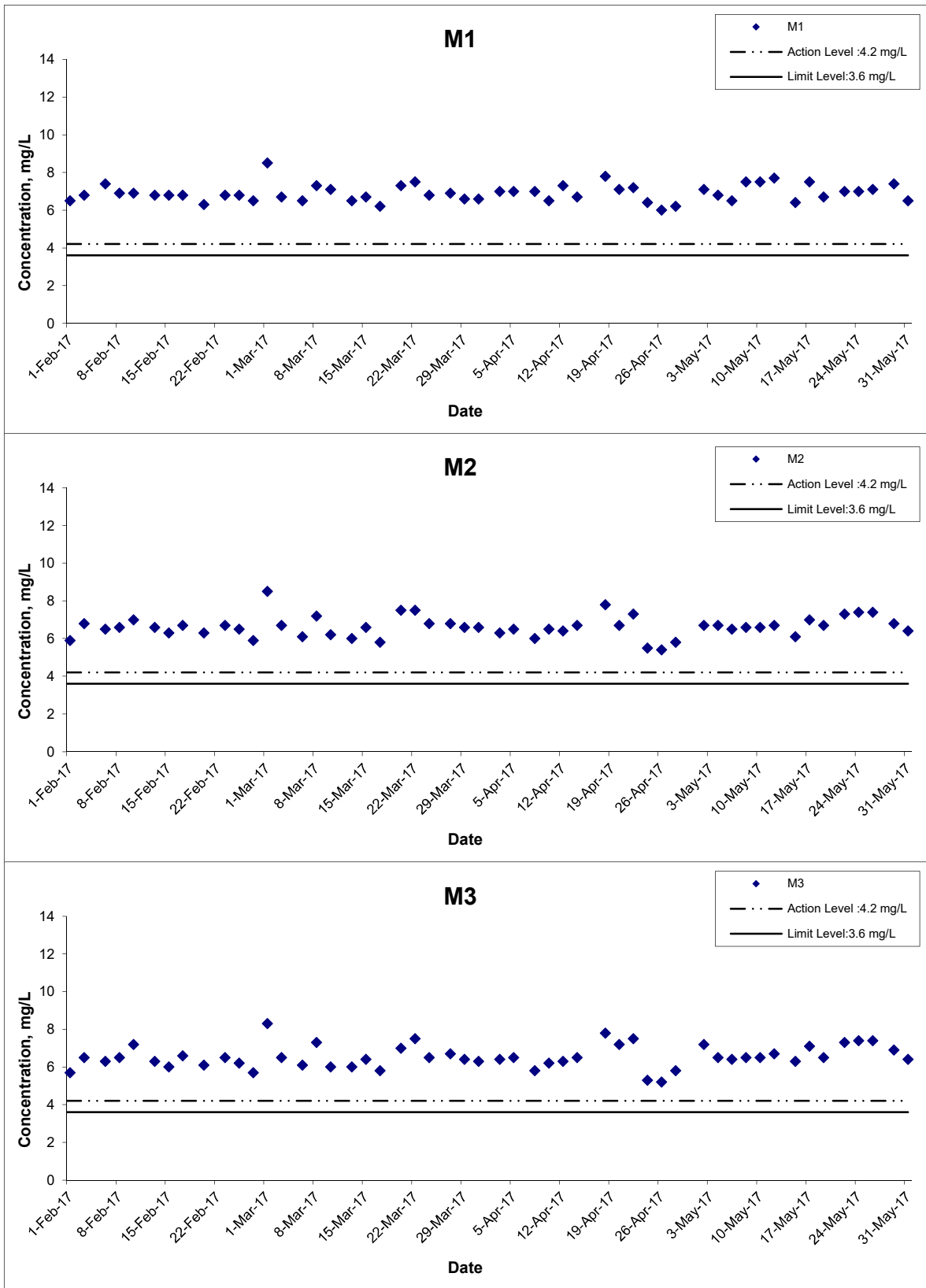
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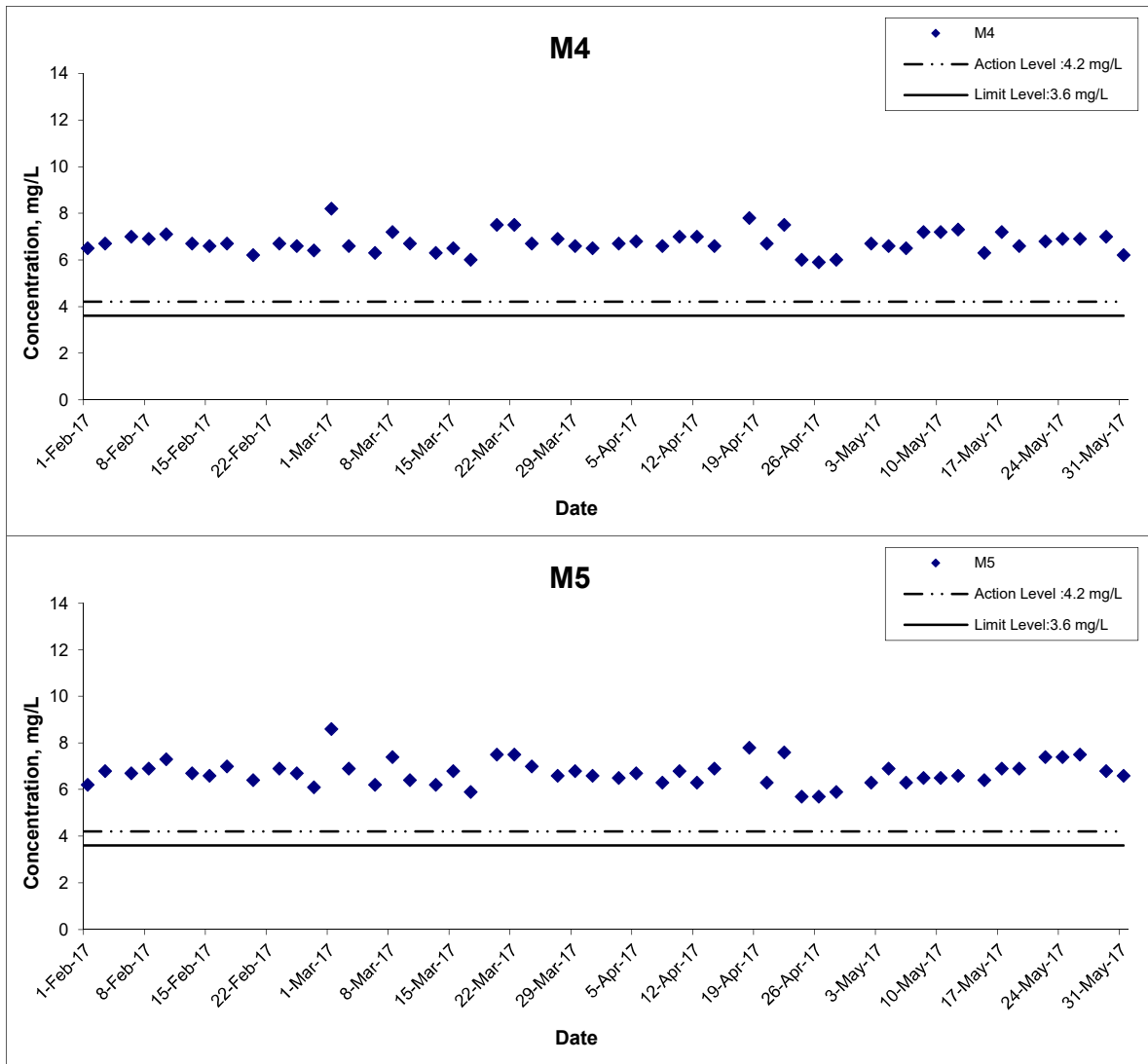
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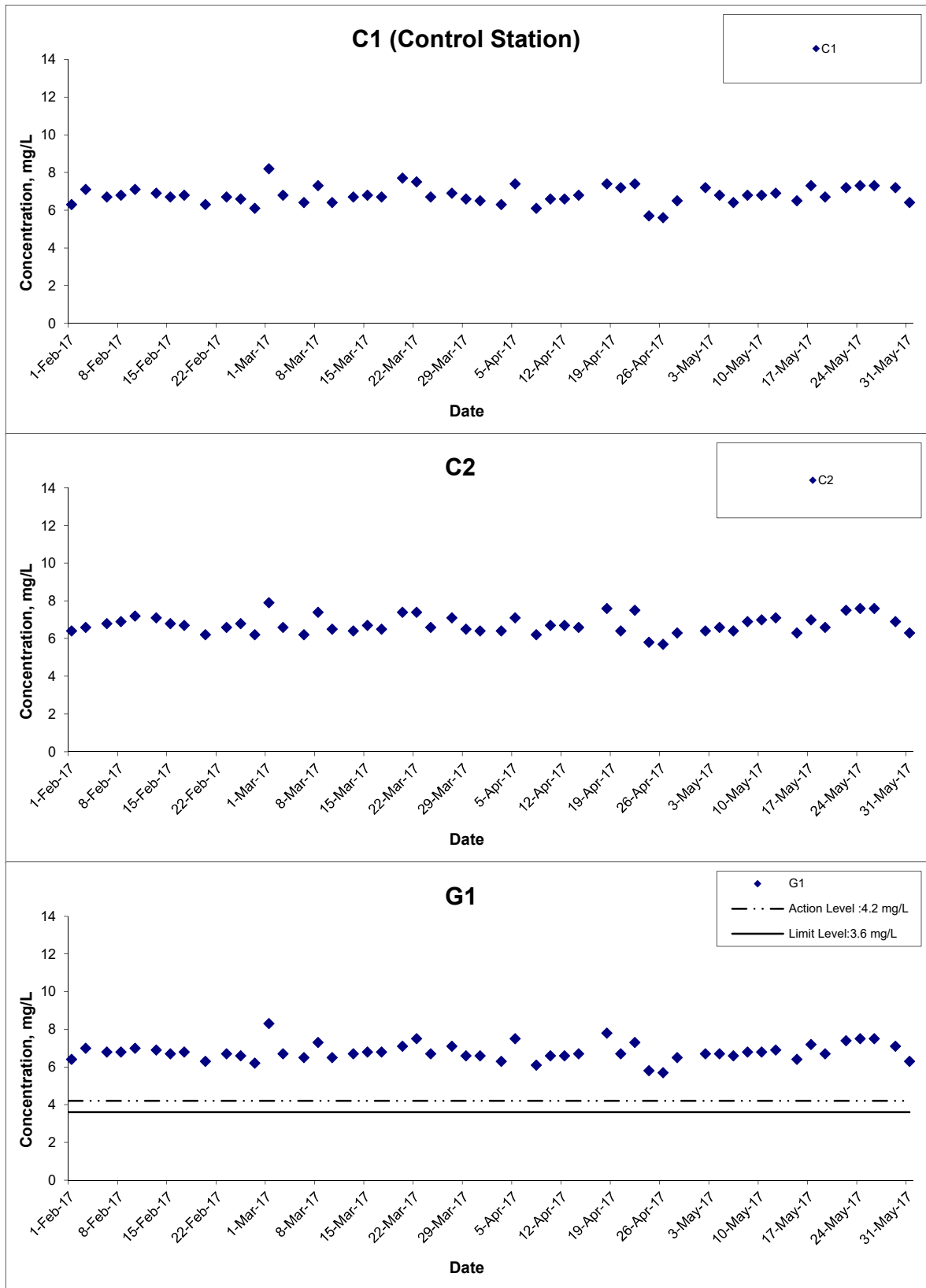


Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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Dissolved Oxygen (Bottom) at Mid-Flood Tide



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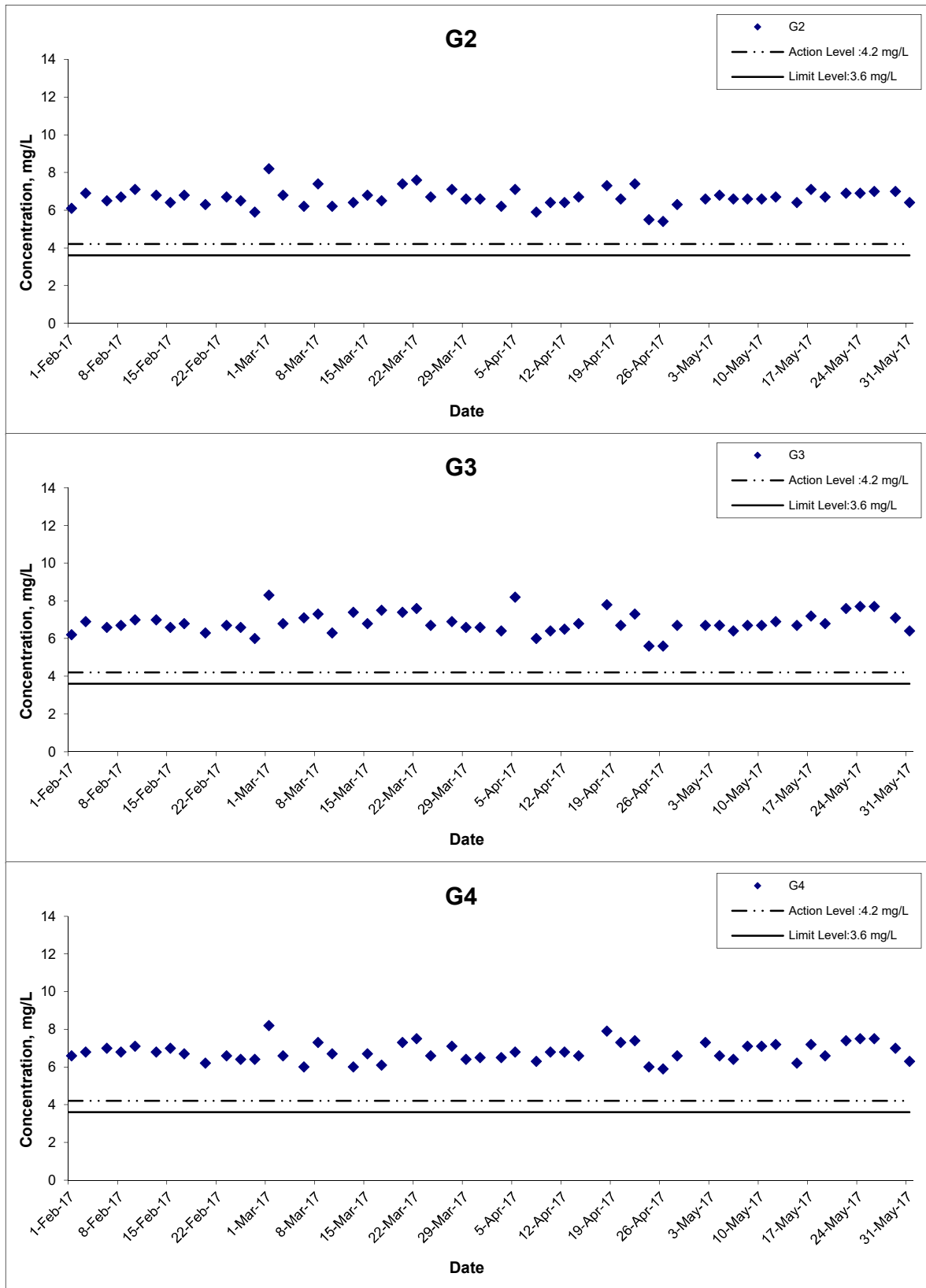
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Dissolved Oxygen (Bottom) at Mid-Flood Tide



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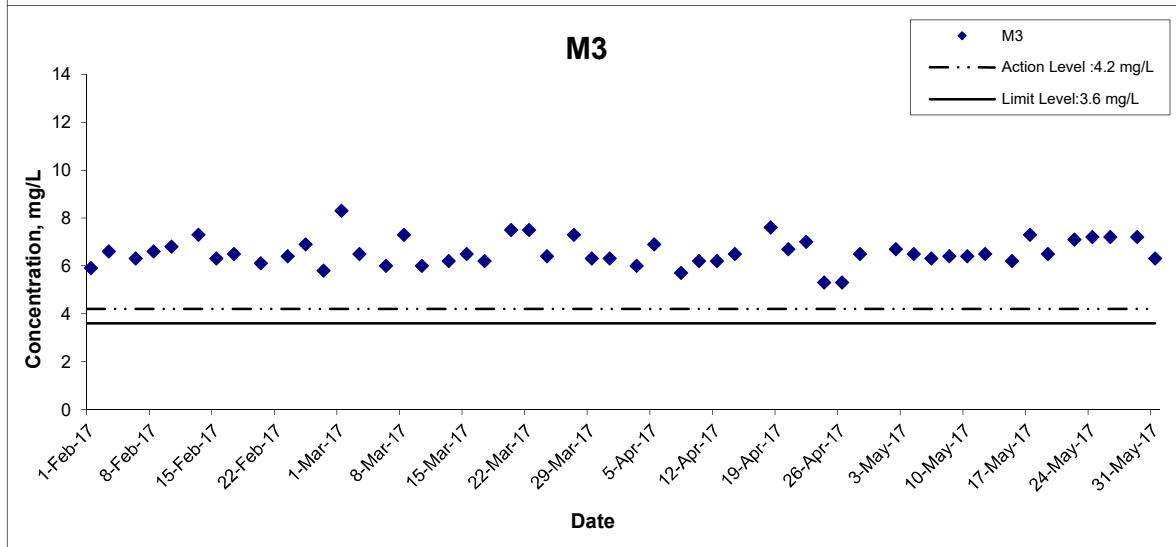
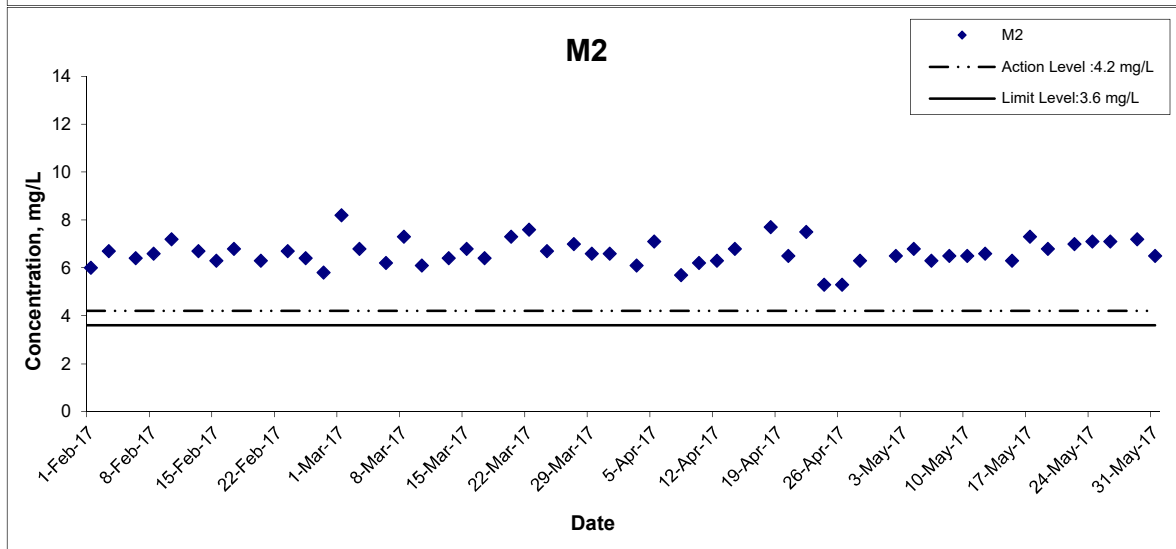
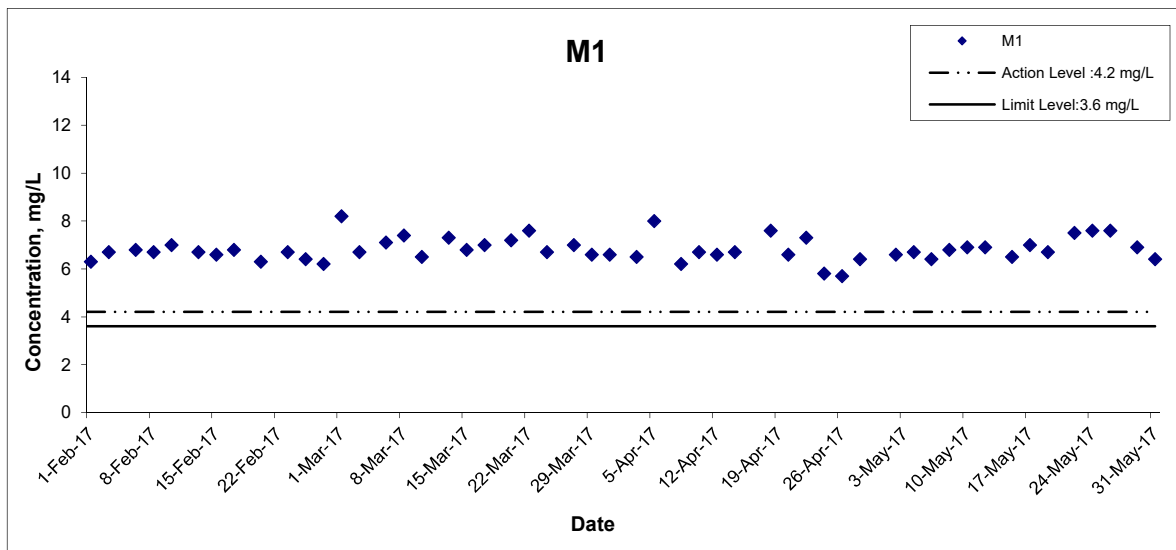
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Dissolved Oxygen (Bottom) at Mid-Flood Tide



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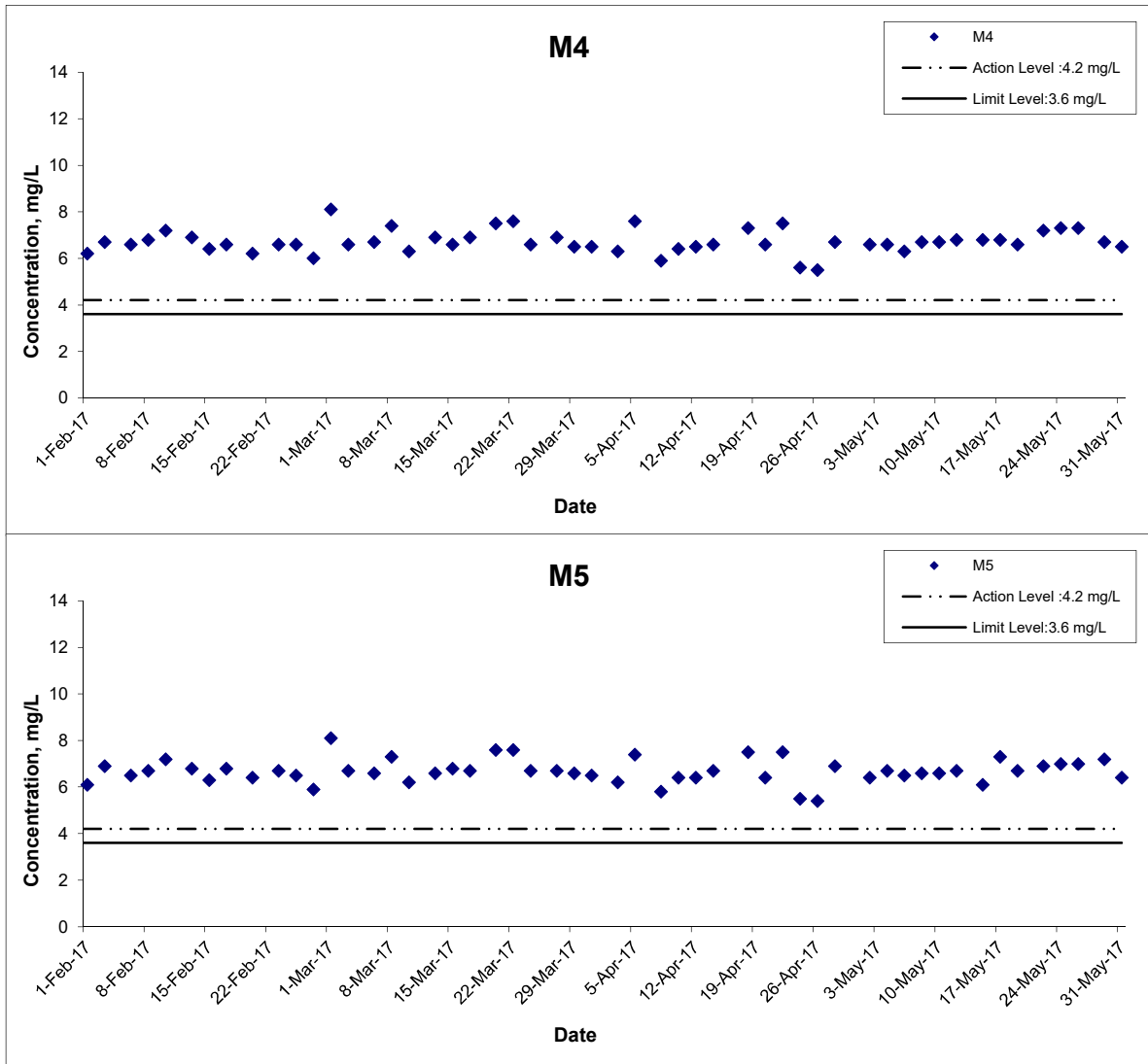
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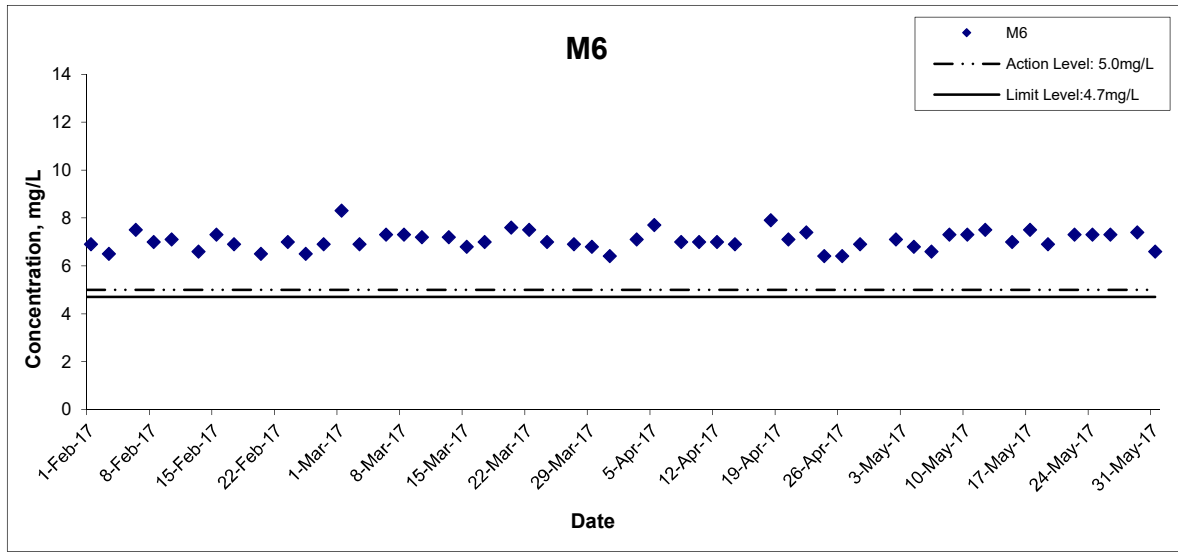


Dissolved Oxygen (Bottom) at Mid-Flood Tide



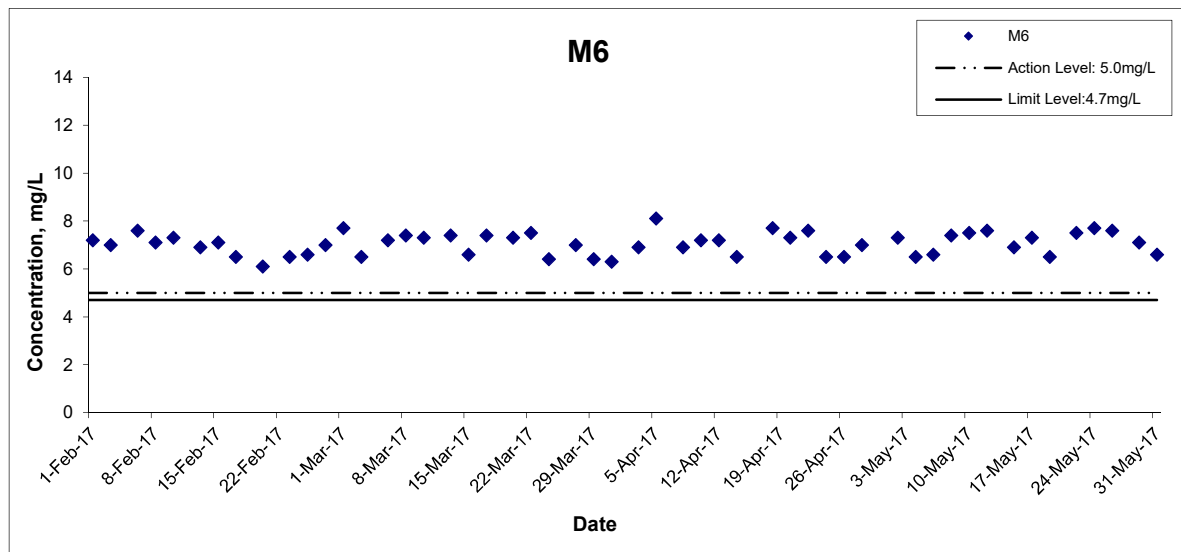
Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	
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Dissolved Oxygen (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



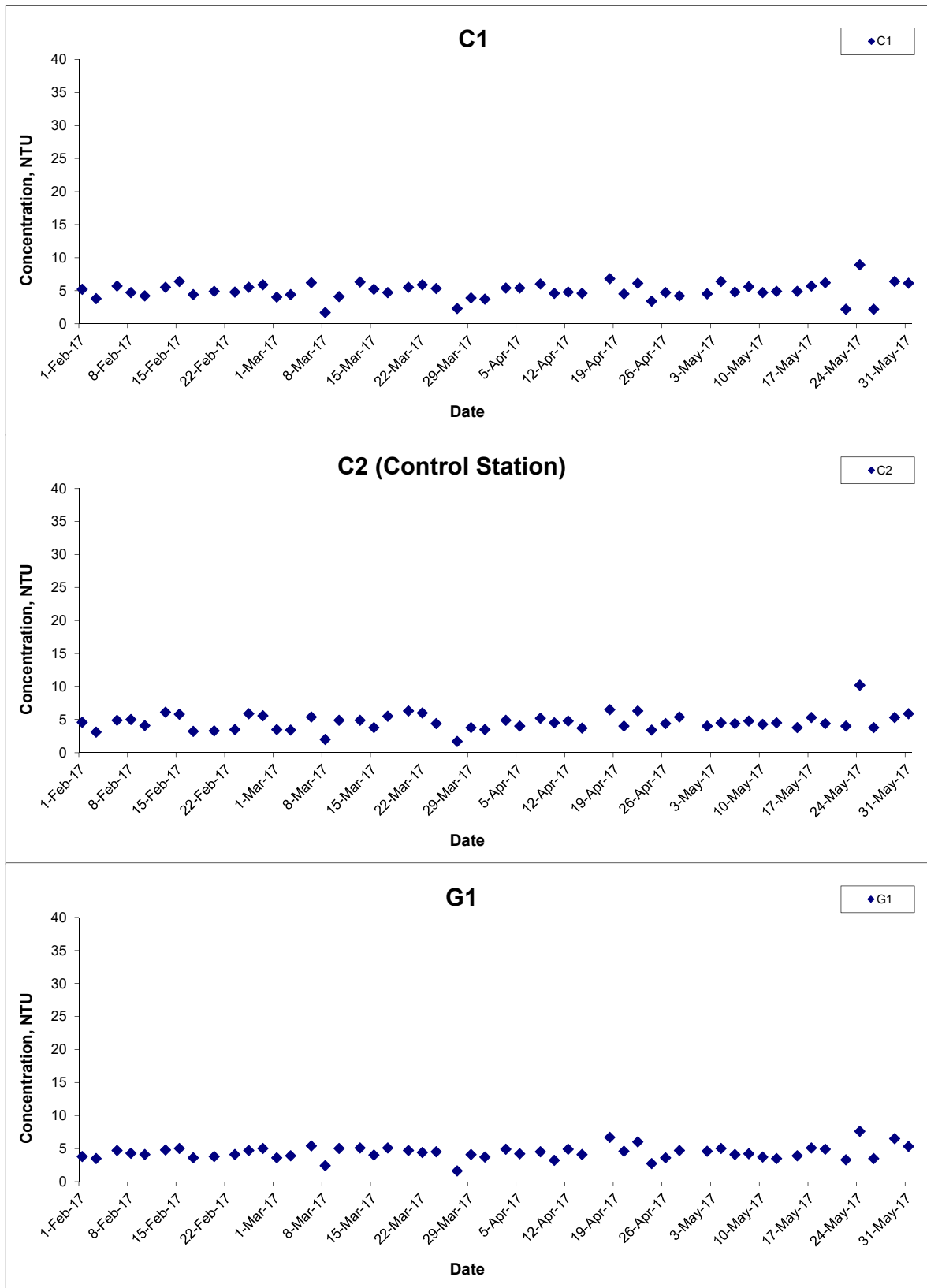
Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale	N.T.S	Project No.	MA16034	CINOTECH
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Dissolved Oxygen (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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Turbidity (Depth-averaged) at Mid-Ebb Tide



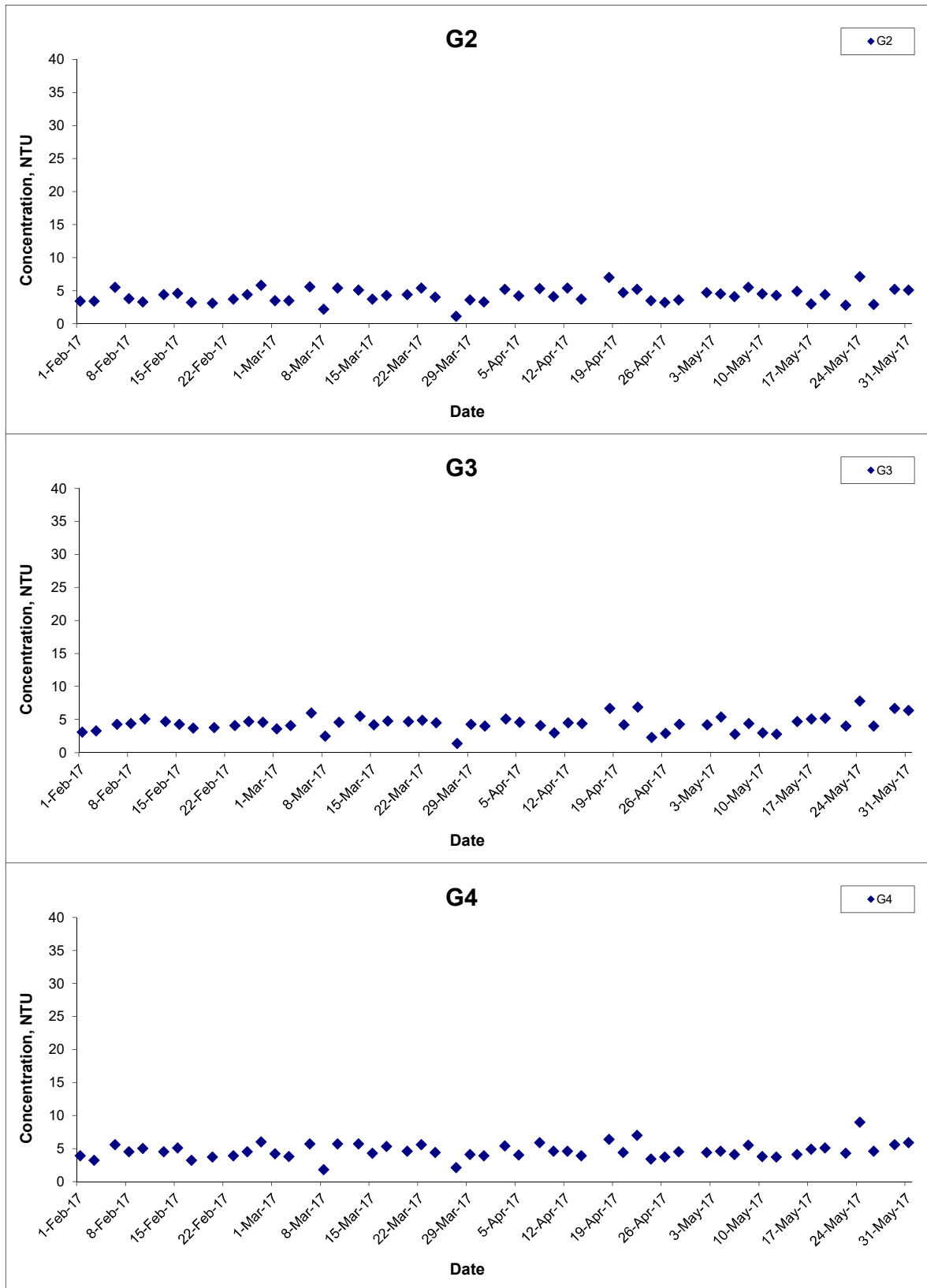
Title
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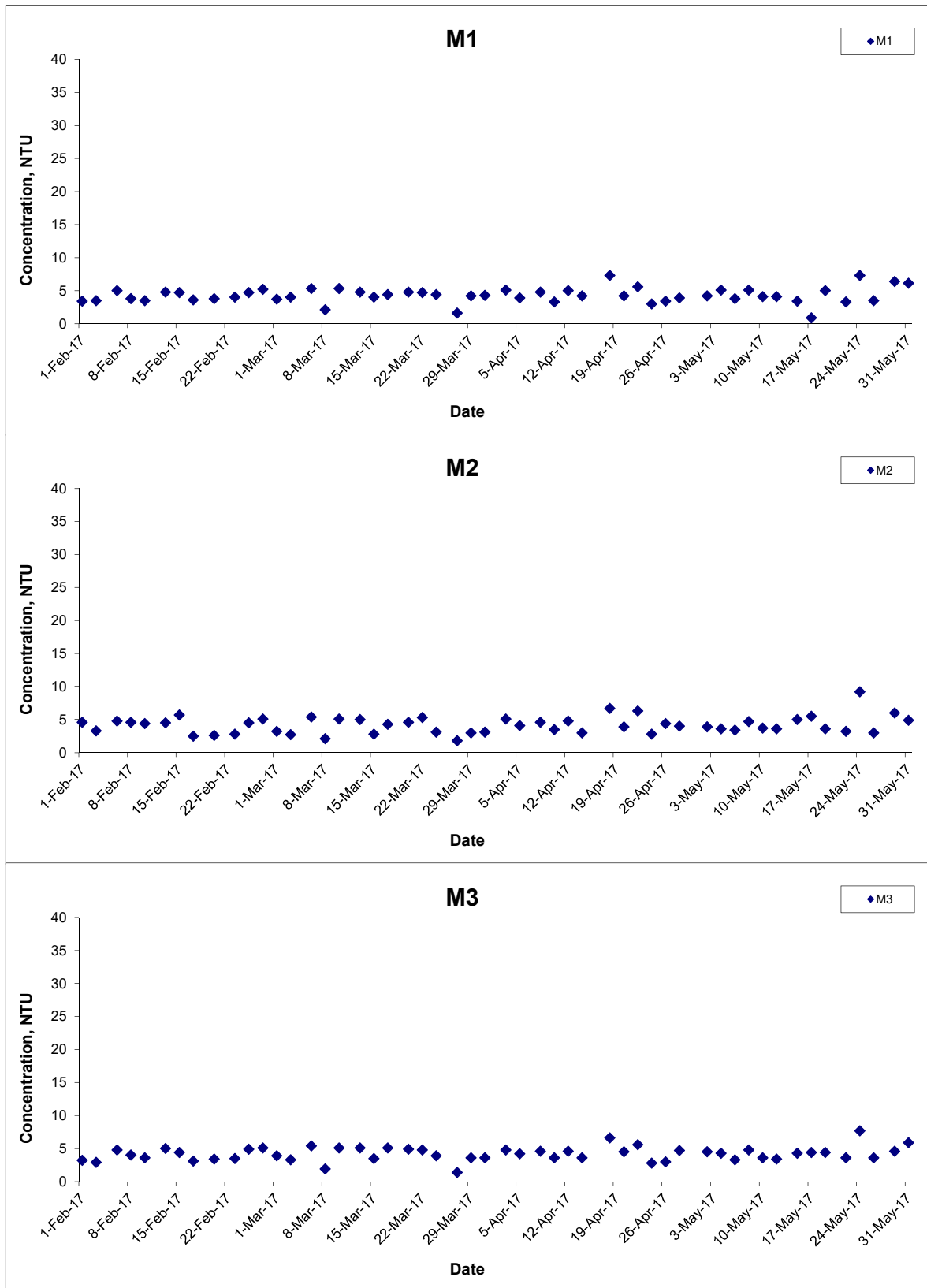


Turbidity (Depth-averaged) at Mid-Ebb Tide



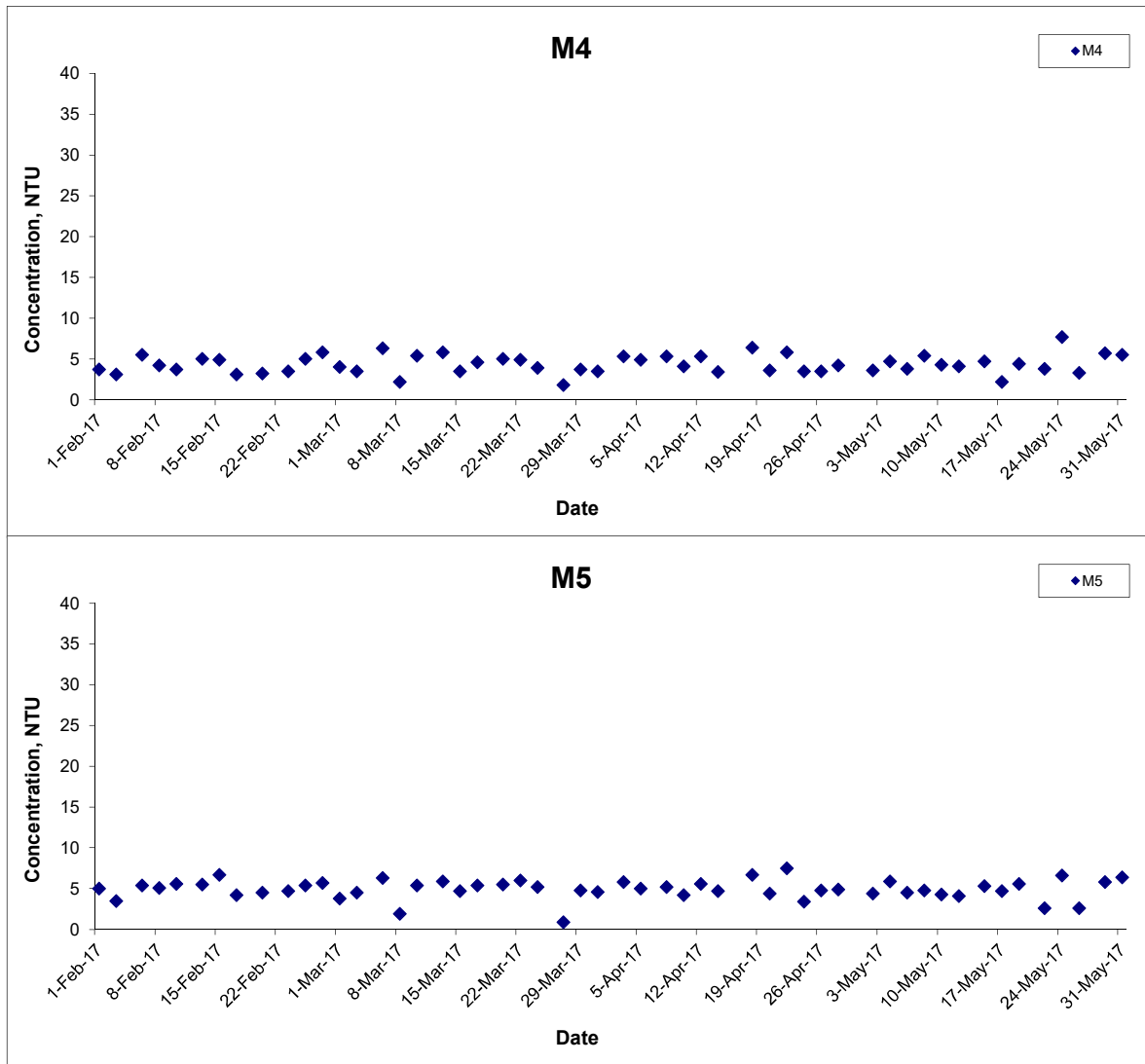
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	Graphical Presentation of Water Quality Monitoring Results	Date	May 17	Appendix	I	

Turbidity (Depth-averaged) at Mid-Ebb Tide



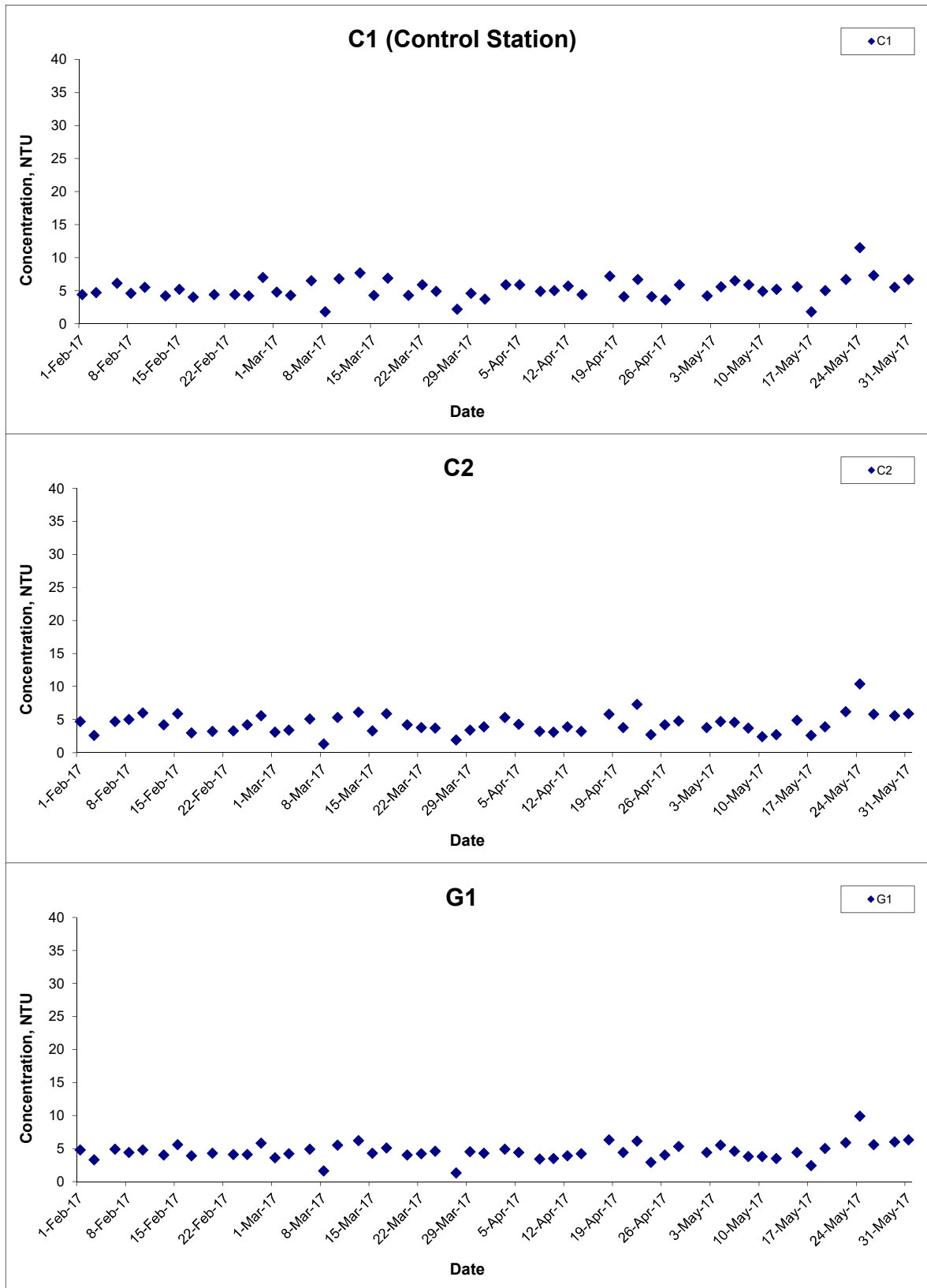
Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	CINOTECH
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Turbidity (Depth-averaged) at Mid-Ebb Tide



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Turbidity (Depth-averaged) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

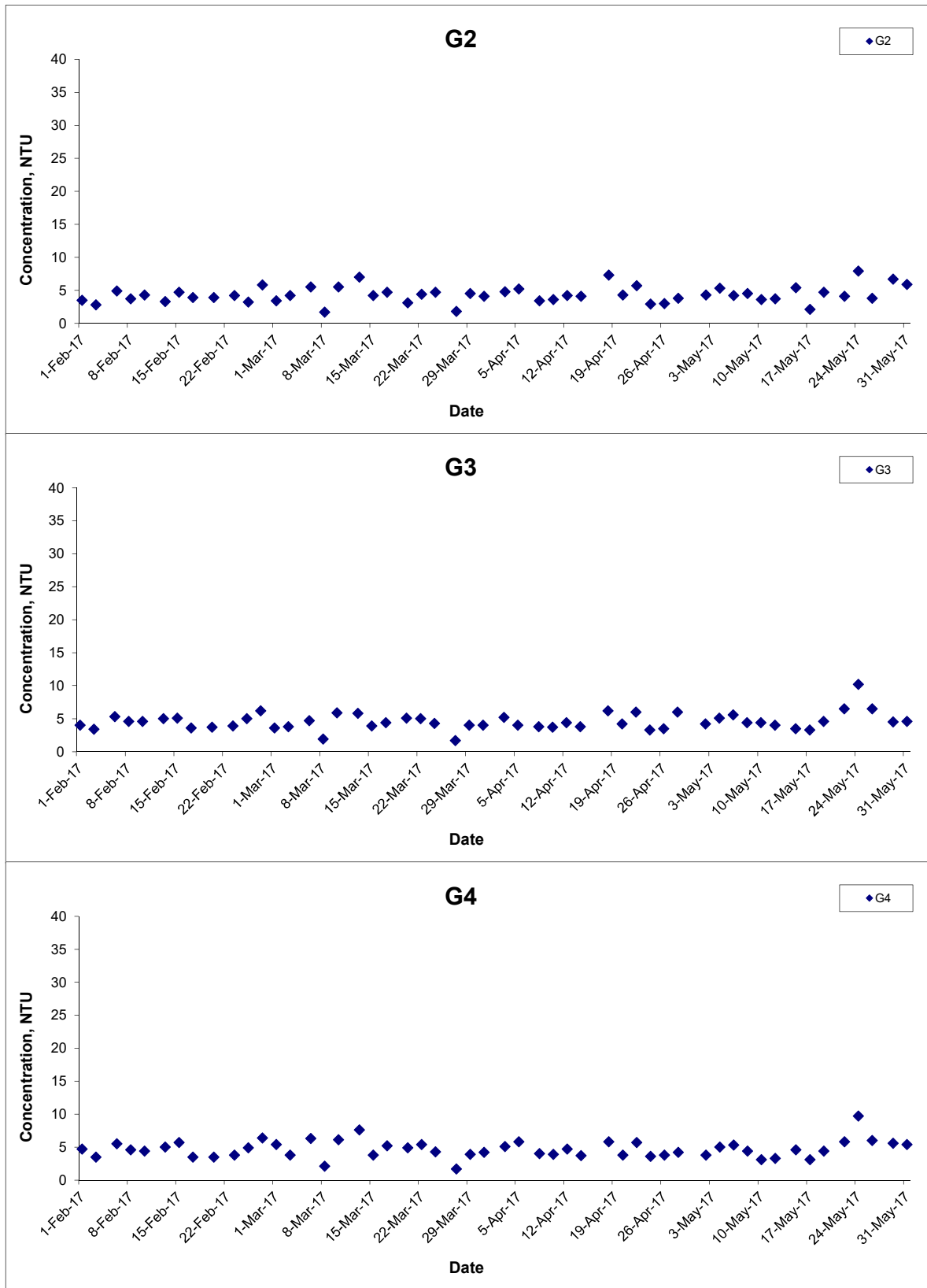
Date May 17

Project No. MA16034

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Turbidity (Depth-averaged) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

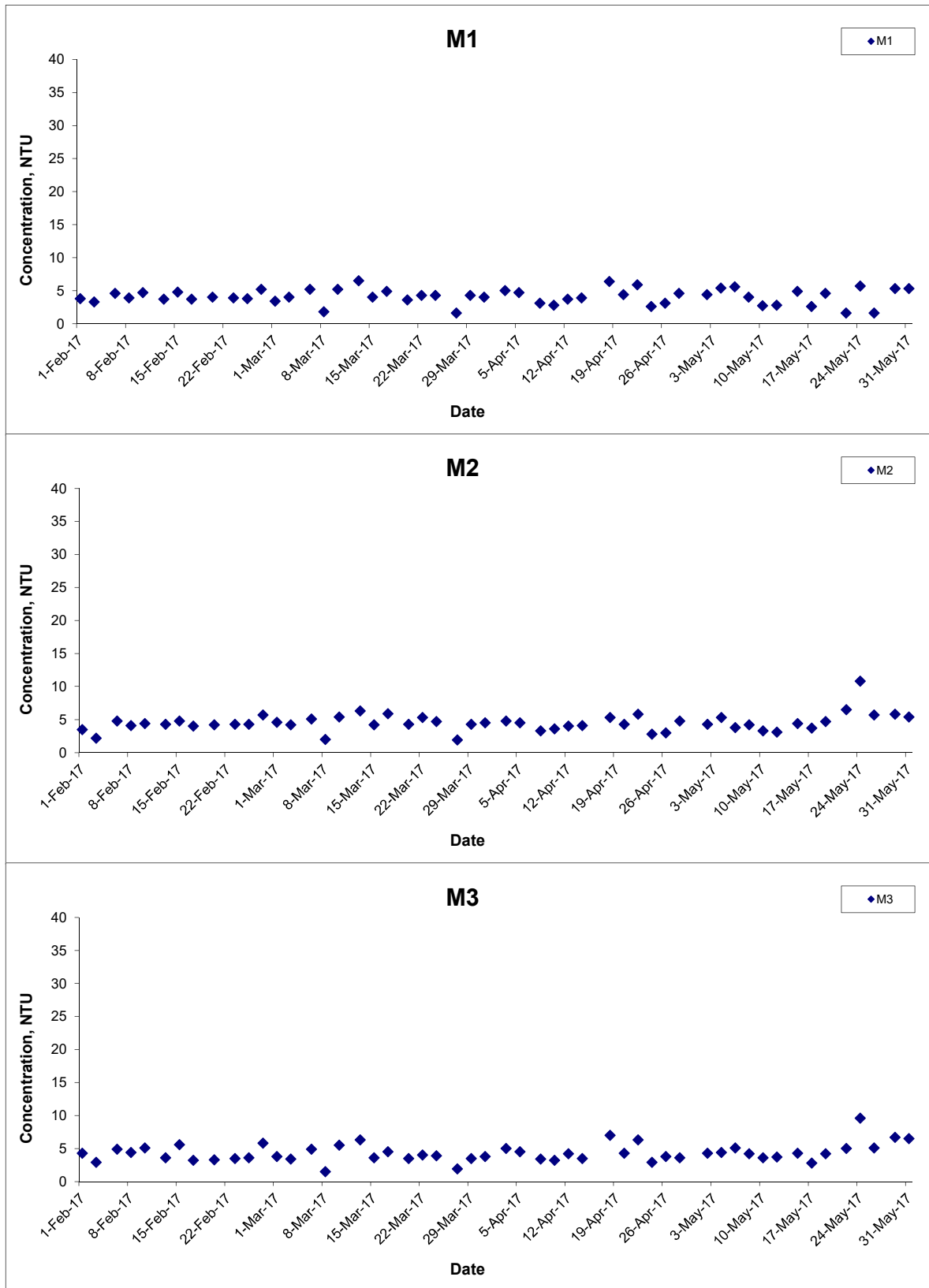
Date May 17

Project No. MA16034

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Turbidity (Depth-averaged) at Mid-Flood Tide



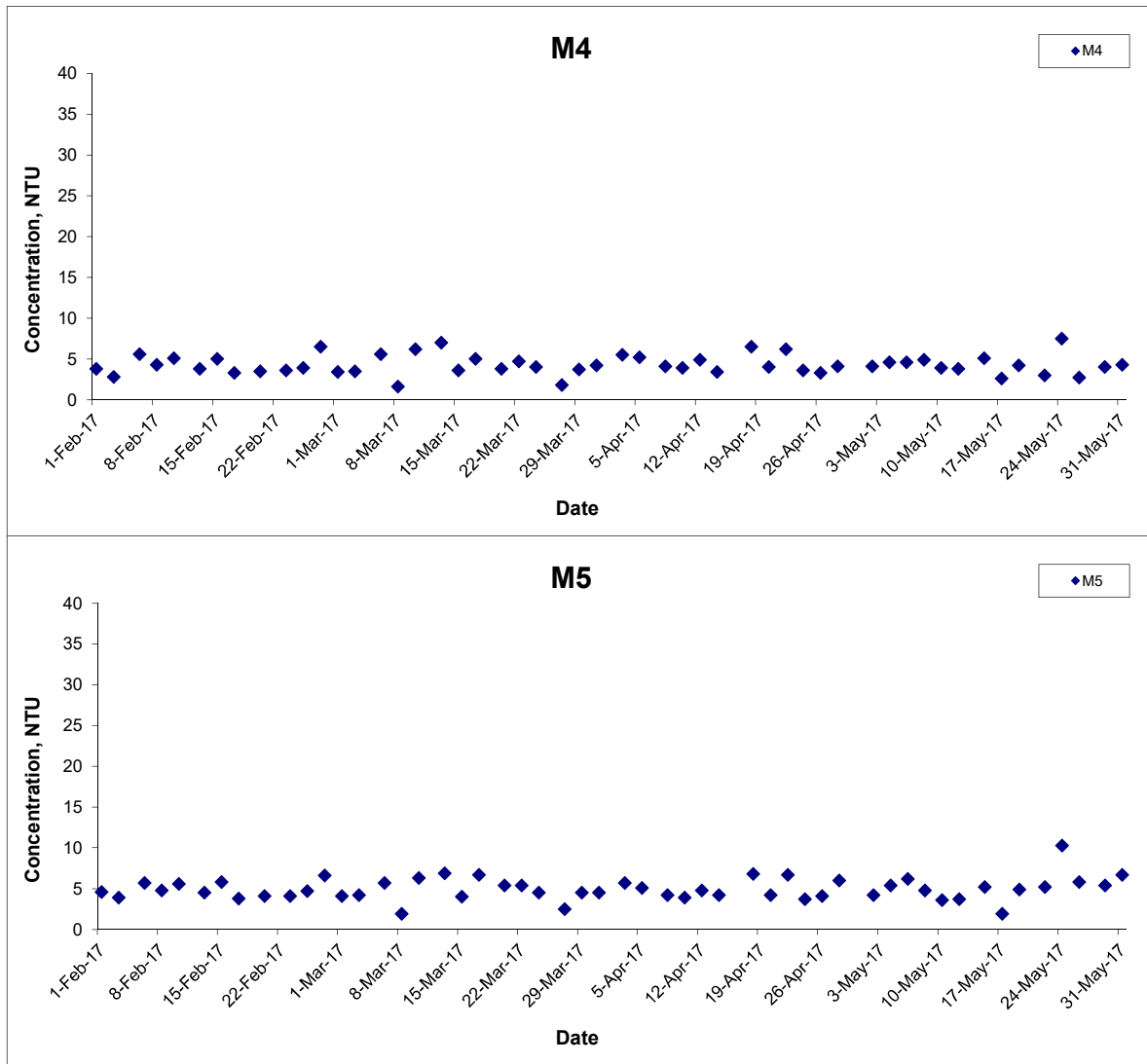
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 Agreement No. CE 59/2015(EP) Environmental Team for
 Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Graphical Presentation of Water Quality Monitoring
 Results

Scale
 N.T.S
Date
 May 17

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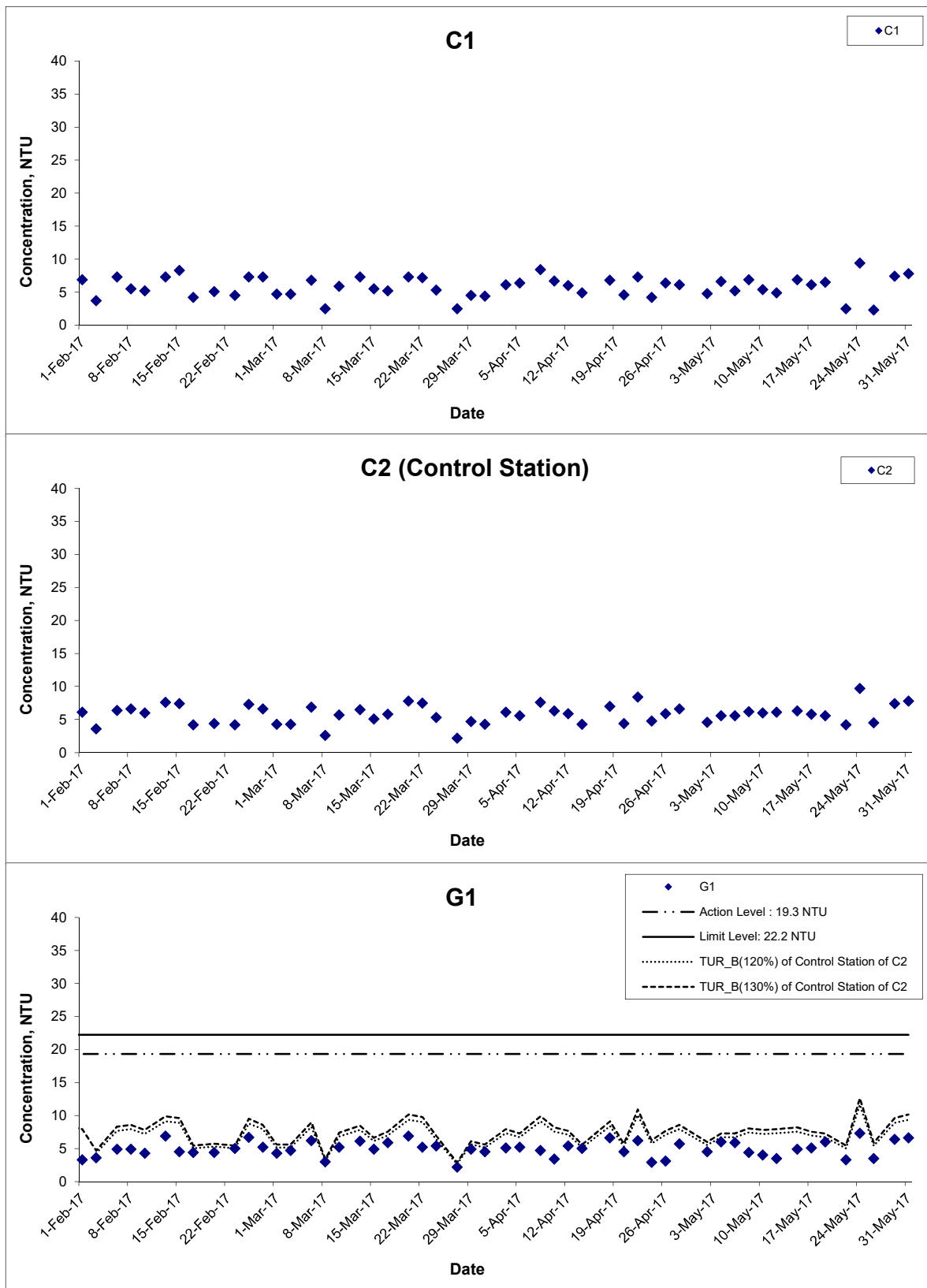


Turbidity (Depth-averaged) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
	Date May 17	Appendix I	

Turbidity (Bottom) at Mid-Ebb Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

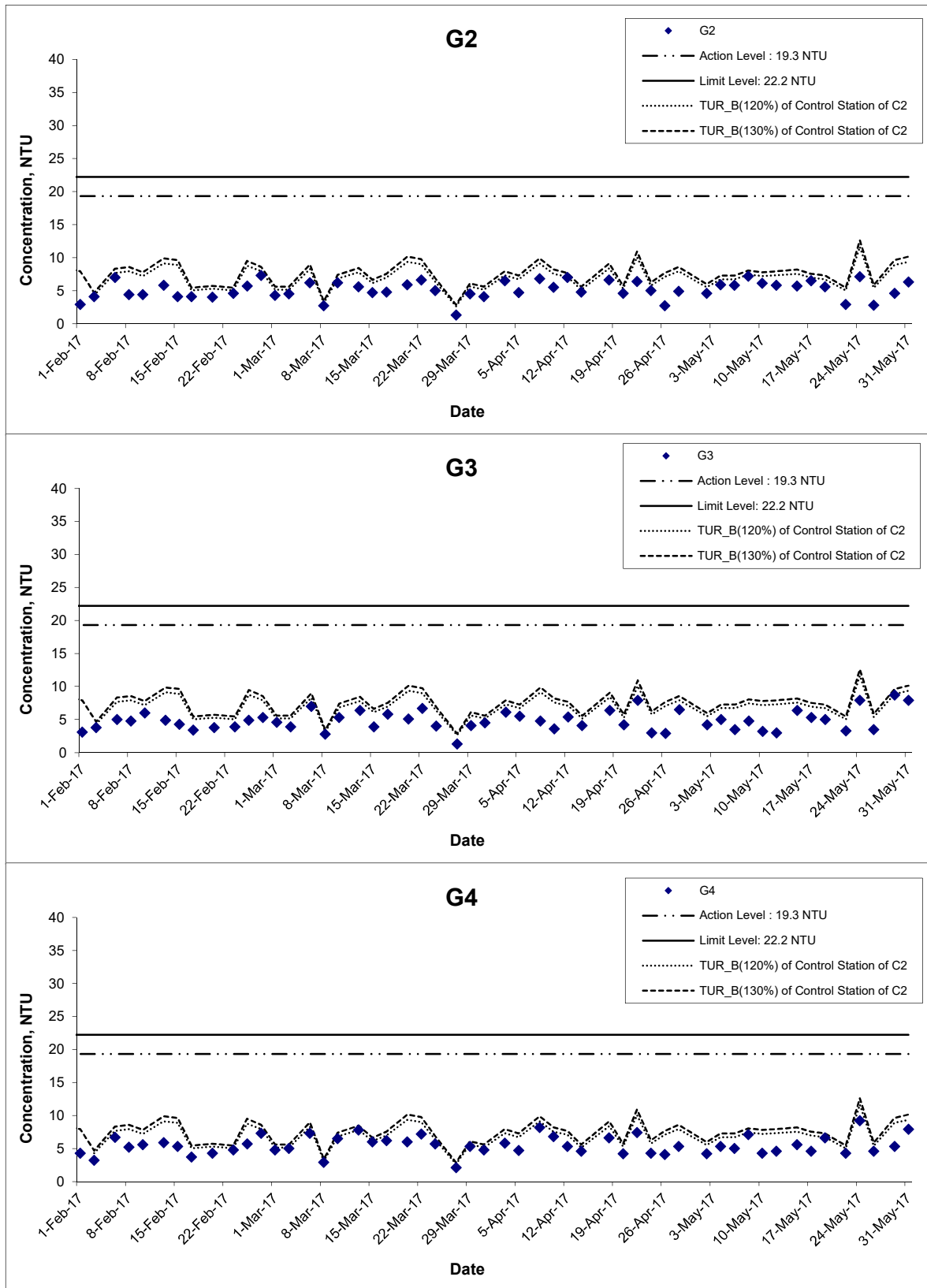
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Project No. MA16034

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Turbidity (Bottom) at Mid-Ebb Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

Graphical Presentation of Water Quality Monitoring Results

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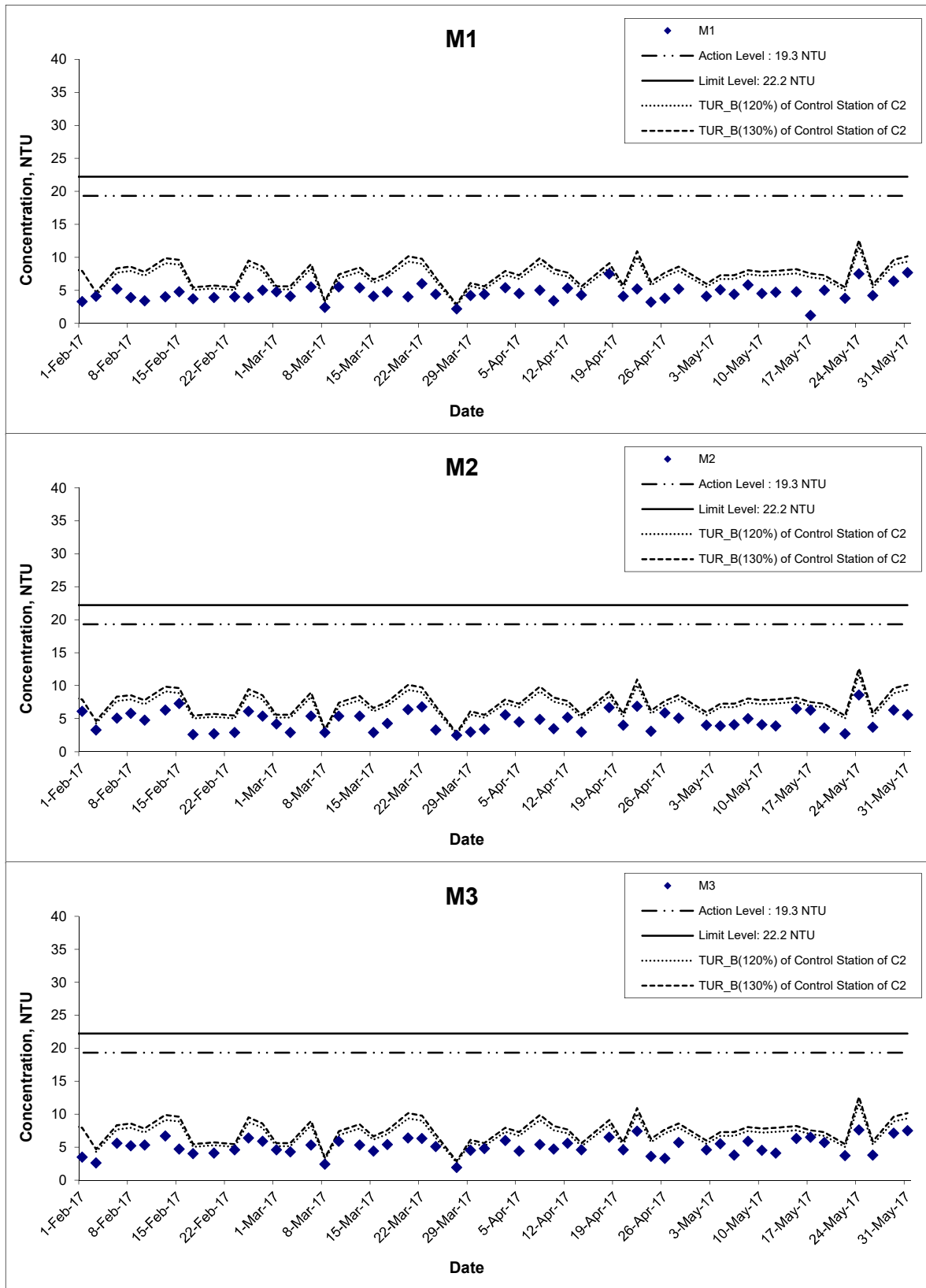
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Turbidity (Bottom) at Mid-Ebb Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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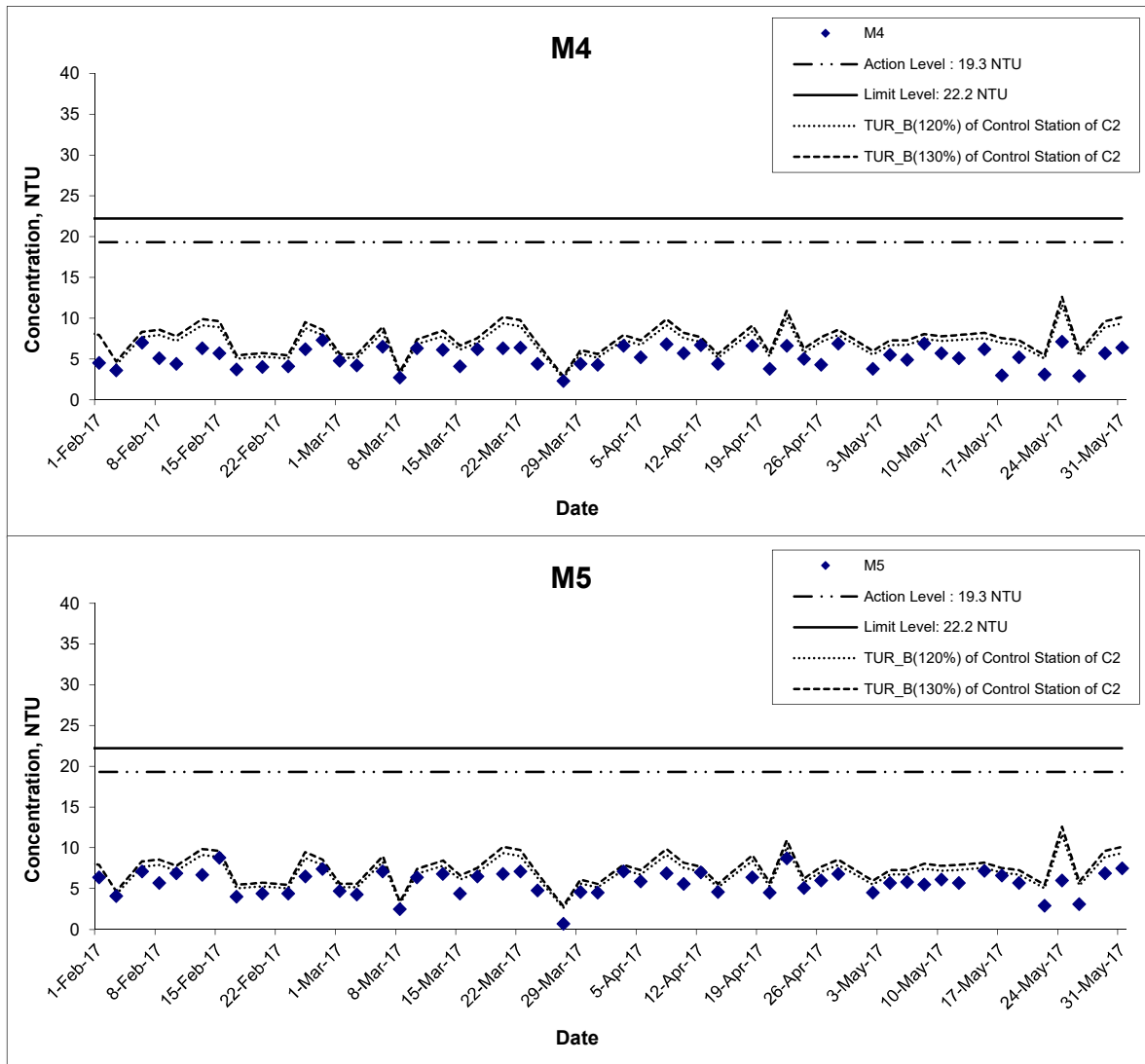
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Turbidity (Bottom) at Mid-Ebb Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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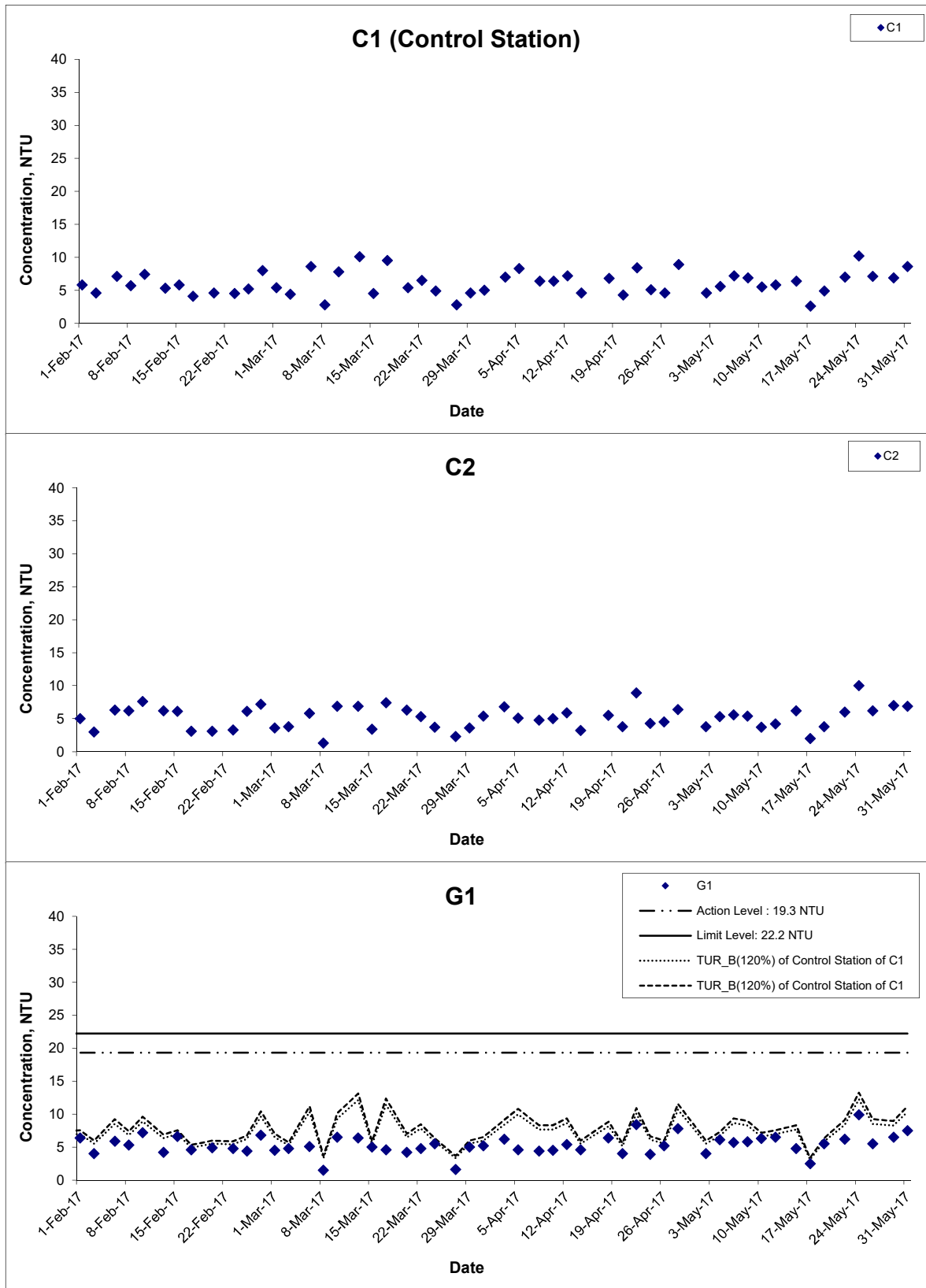
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Project No. MA16034

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Turbidity (Bottom) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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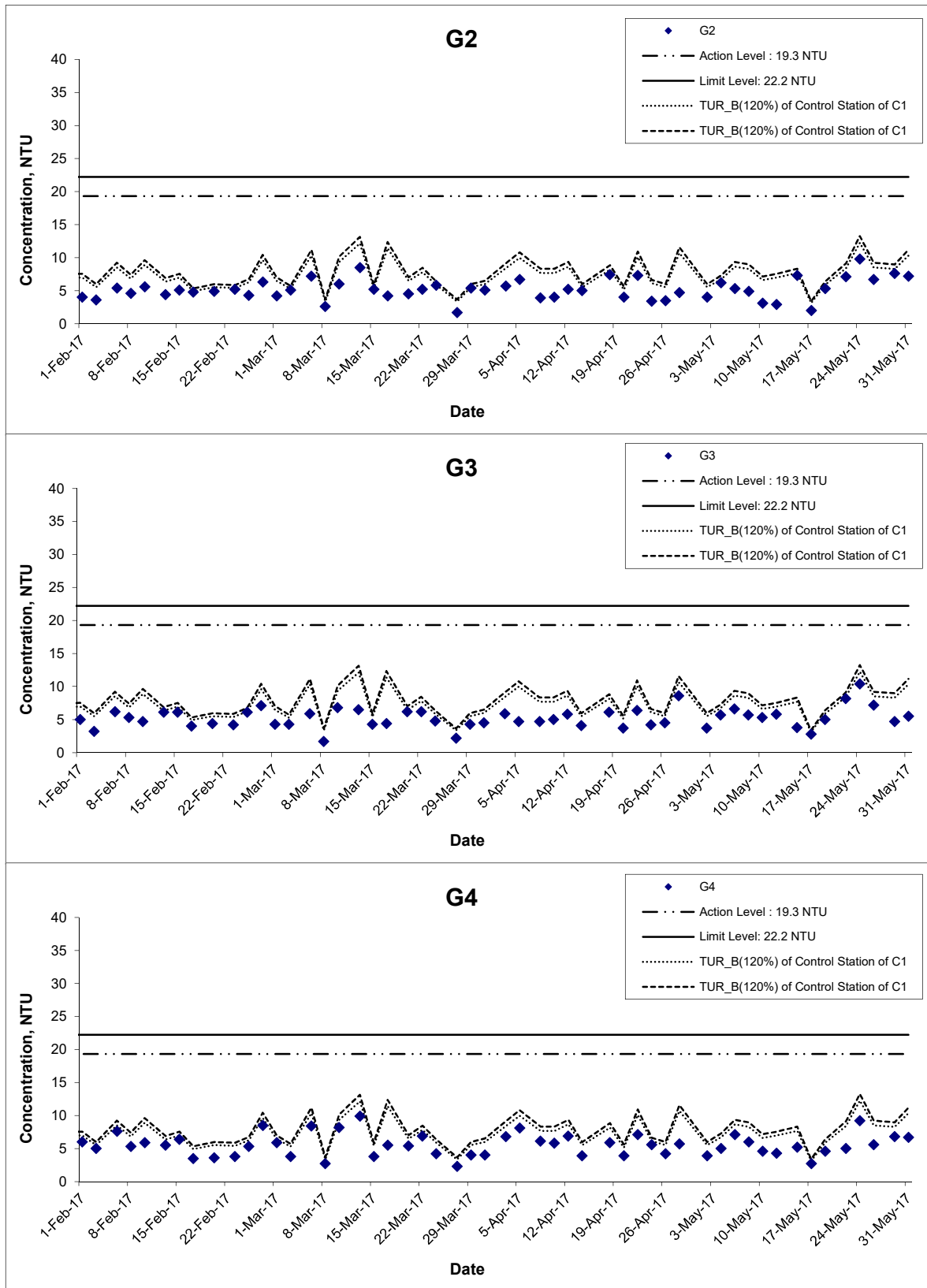
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Turbidity (Bottom) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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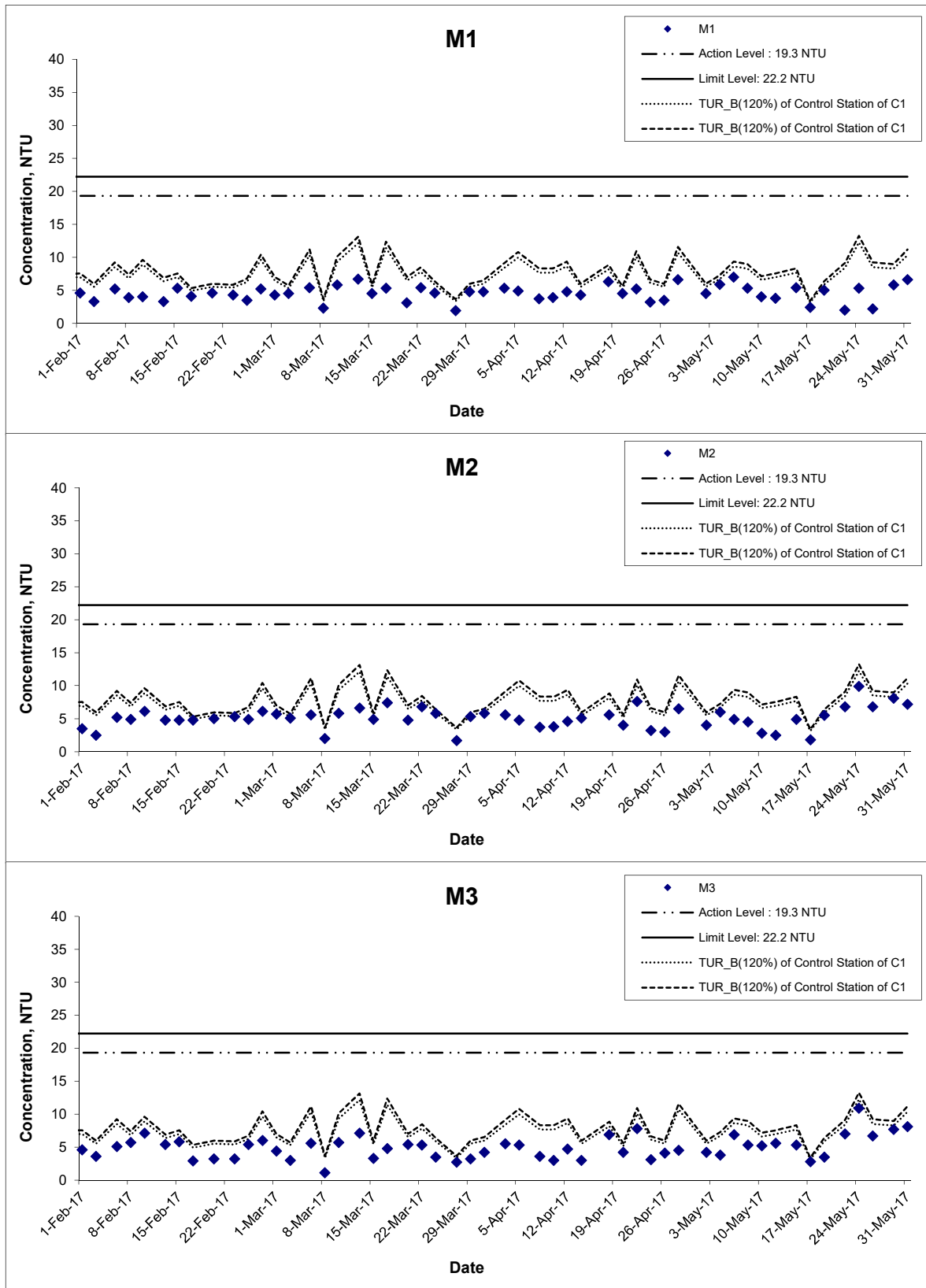
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Turbidity (Bottom) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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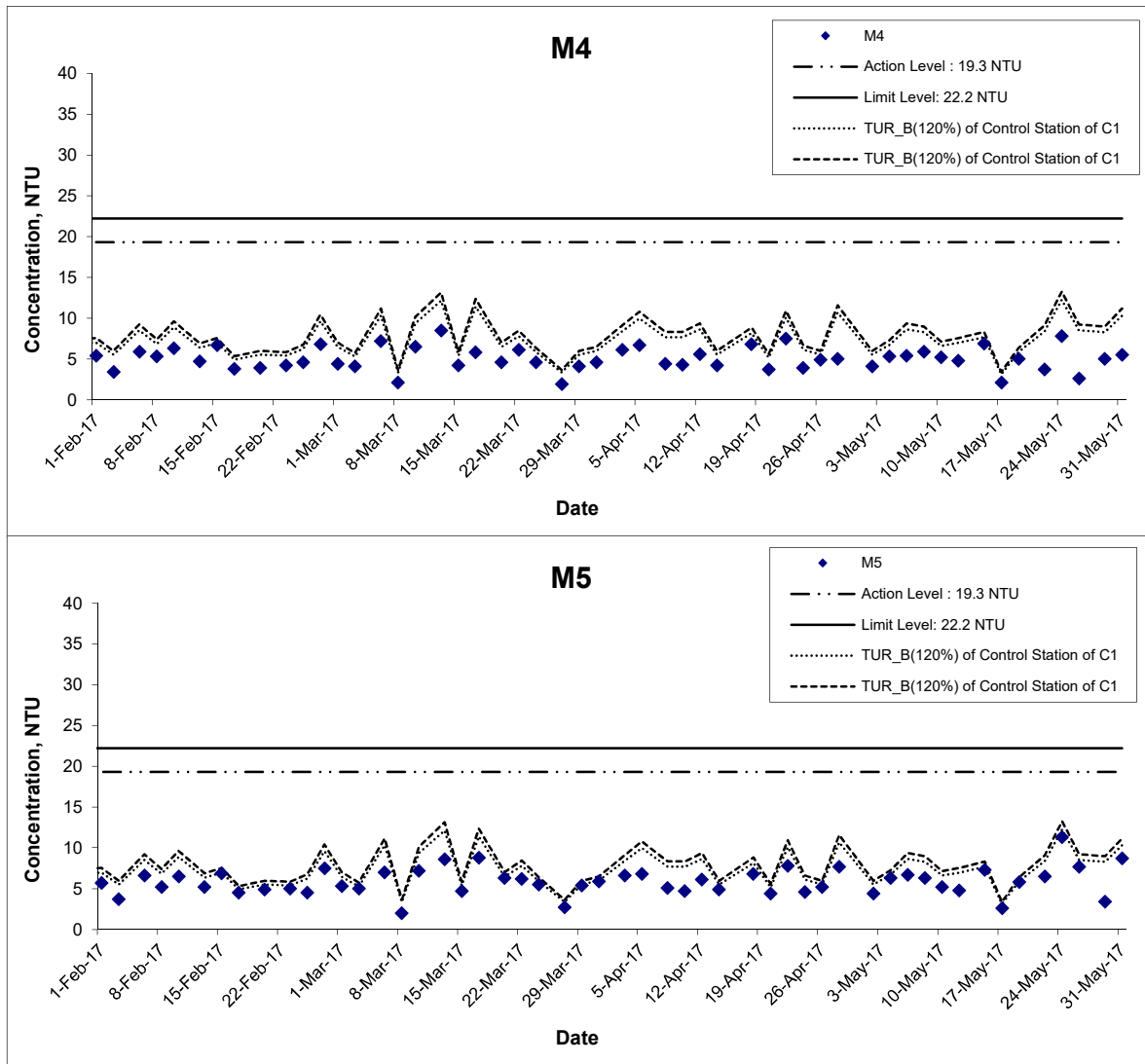
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Turbidity (Bottom) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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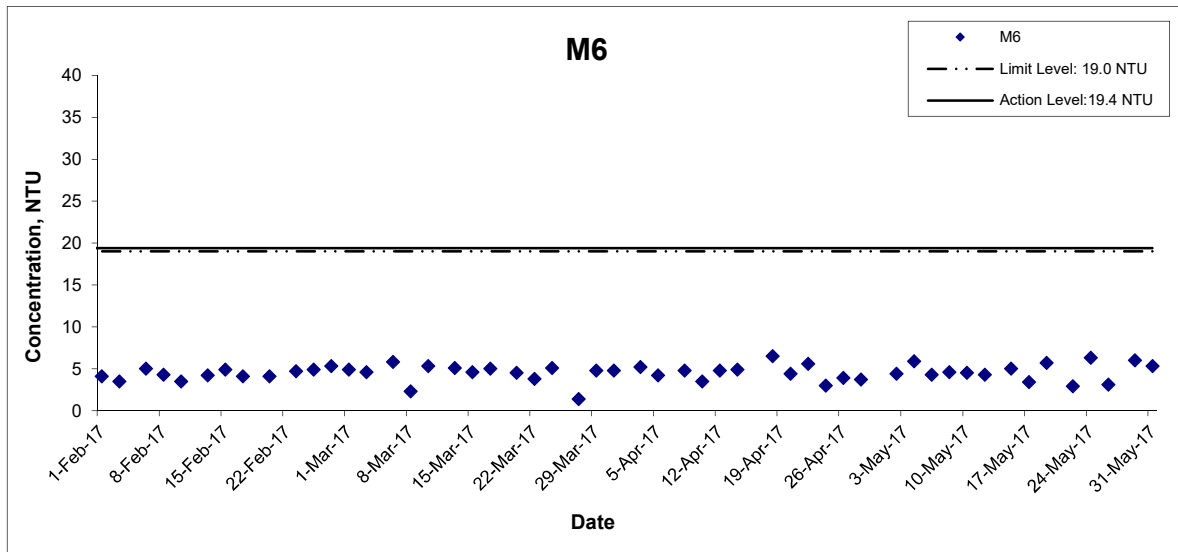
Date May 17

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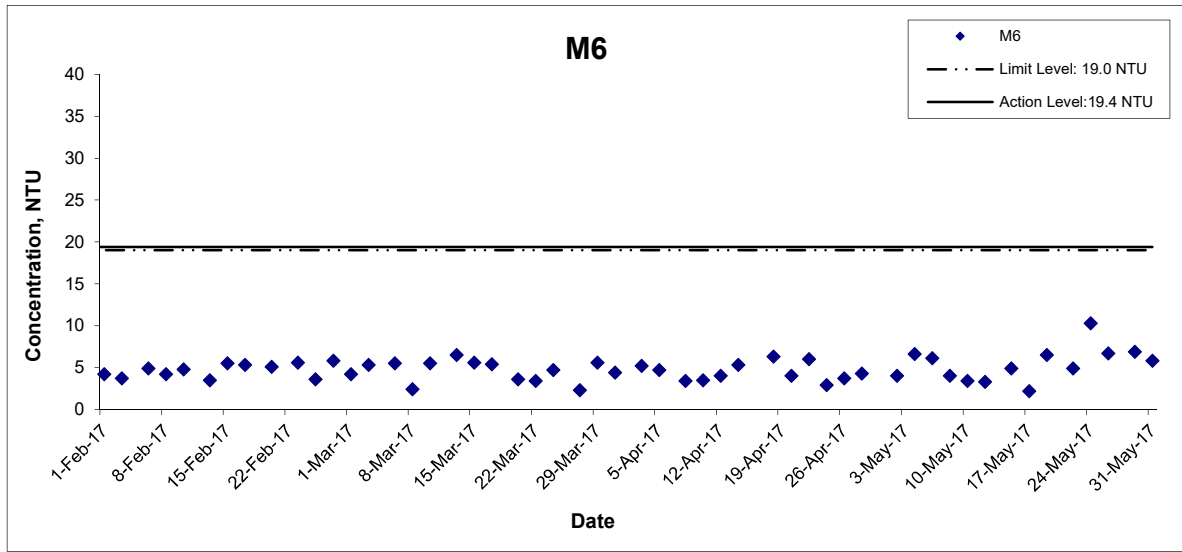


Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



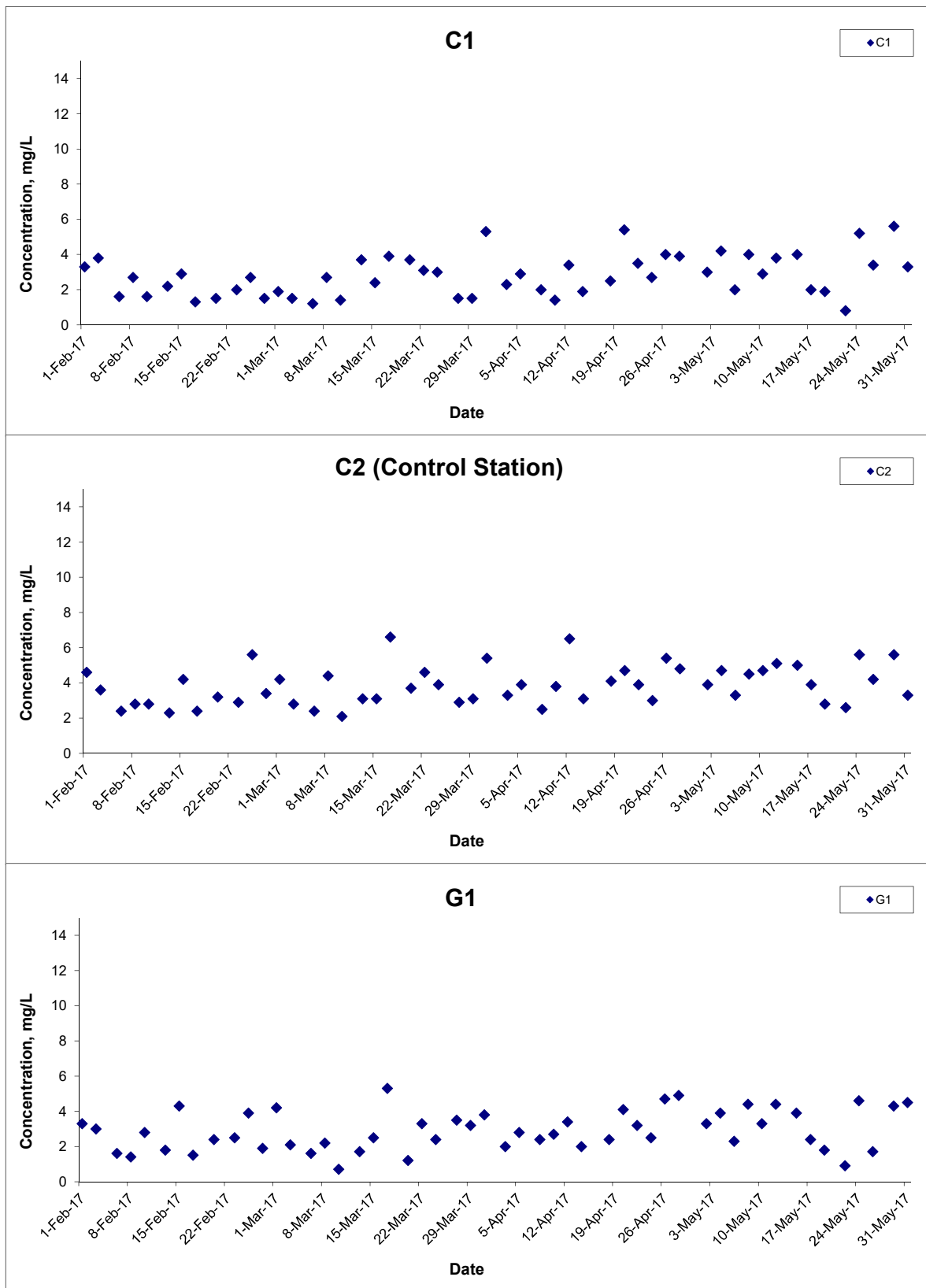
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Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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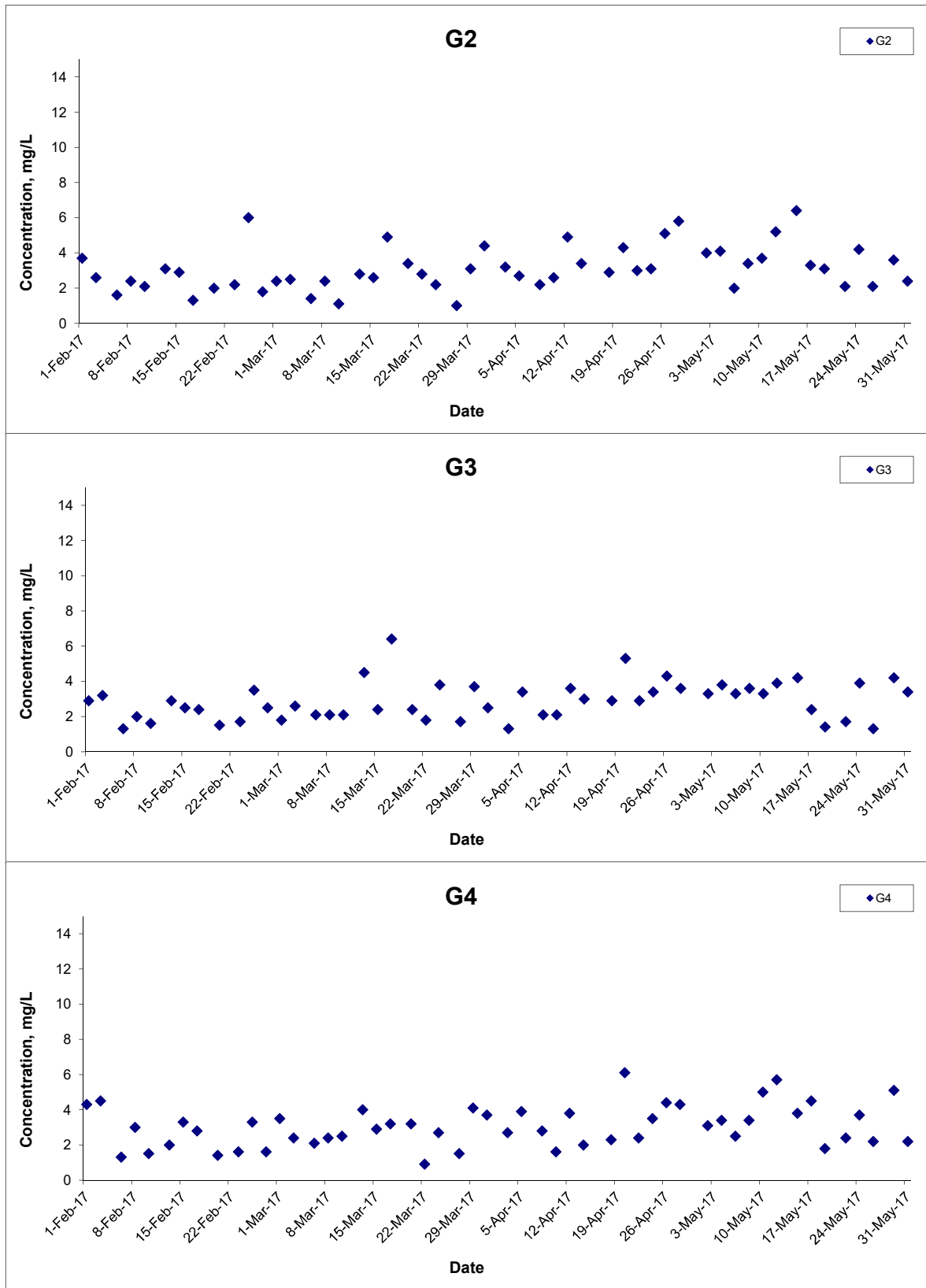
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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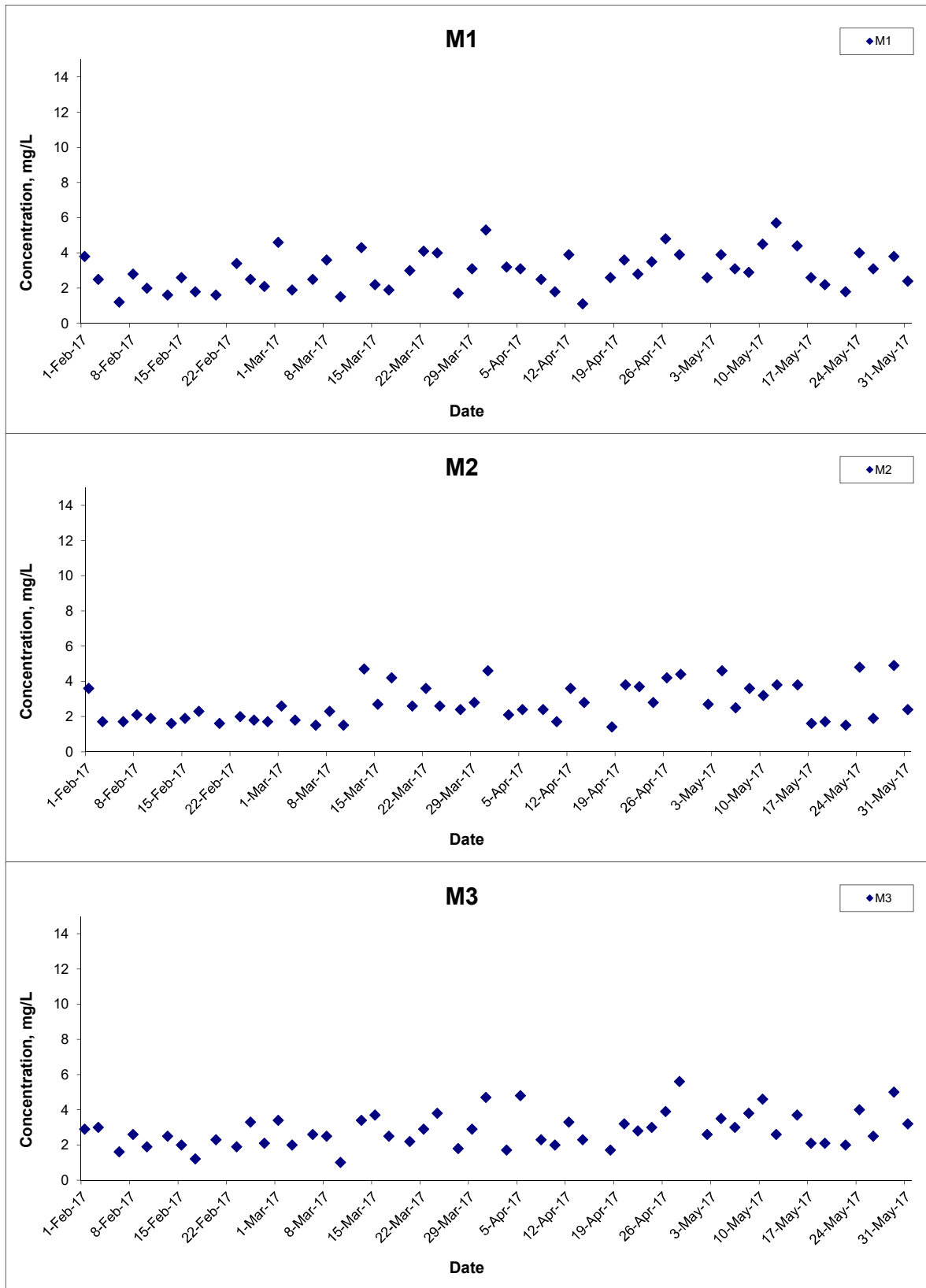
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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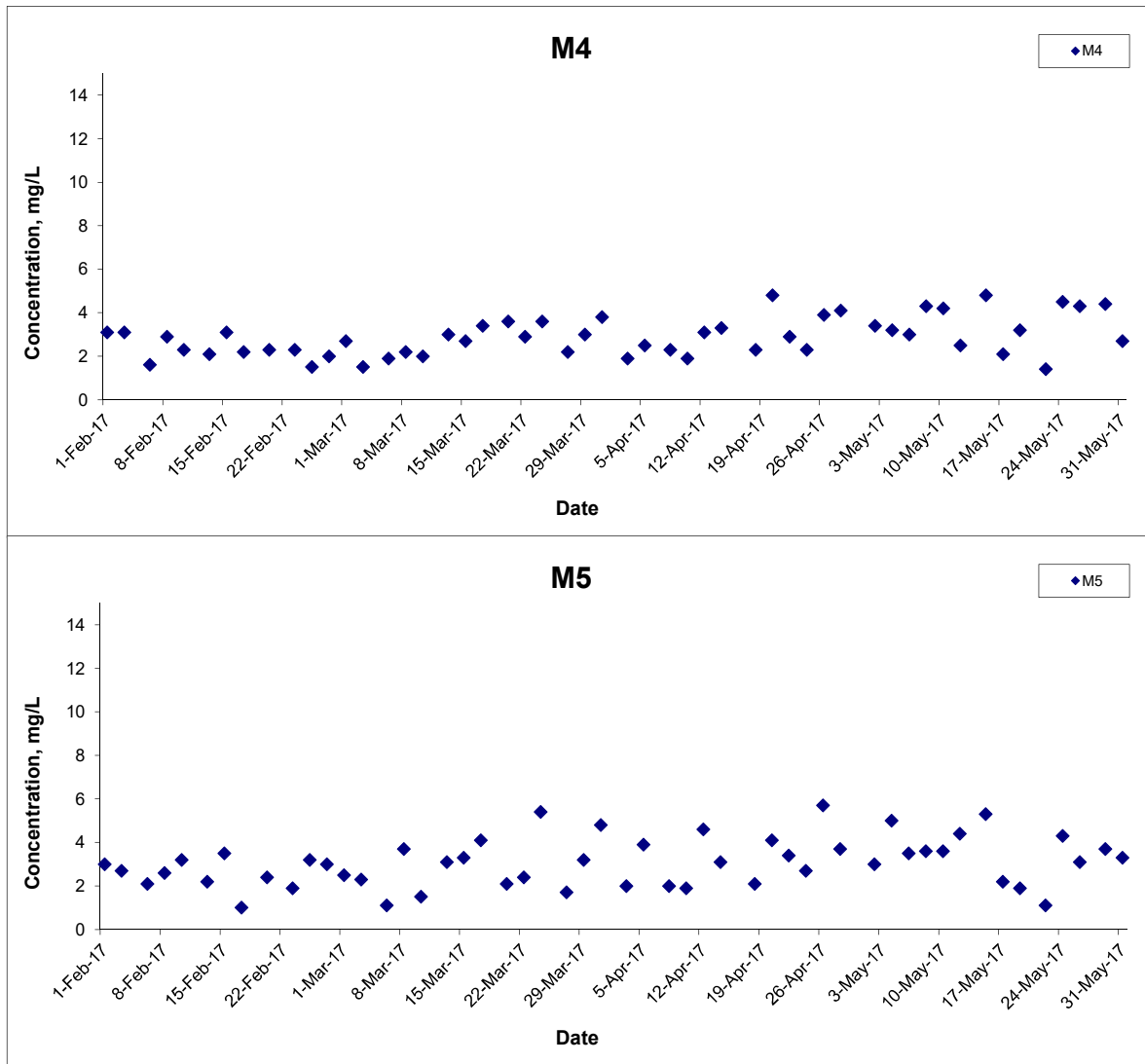
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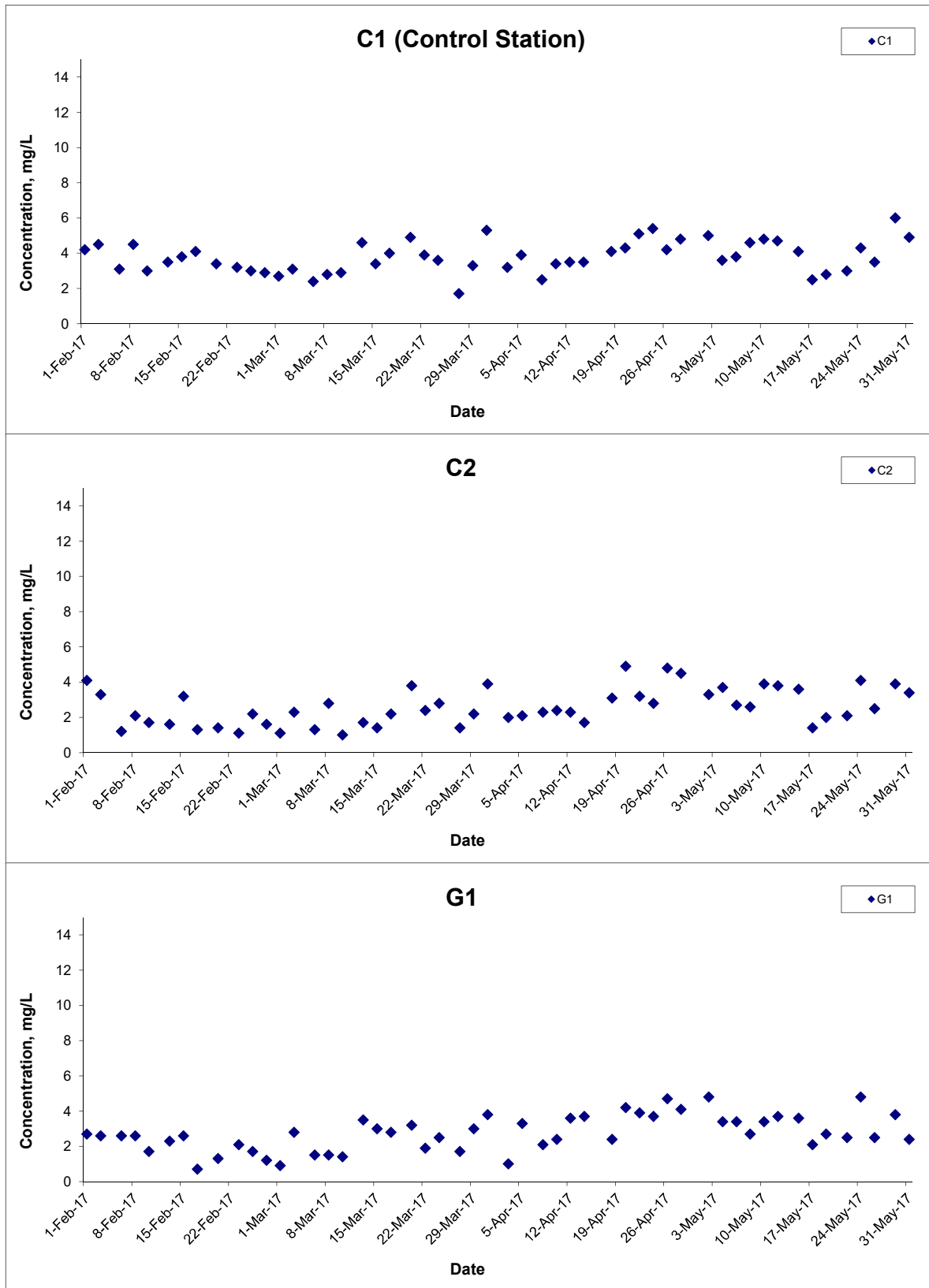


Suspended Solids (Depth-averaged) at Mid-Ebb Tide



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	CINOTECH
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Suspended Solids (Depth-averaged) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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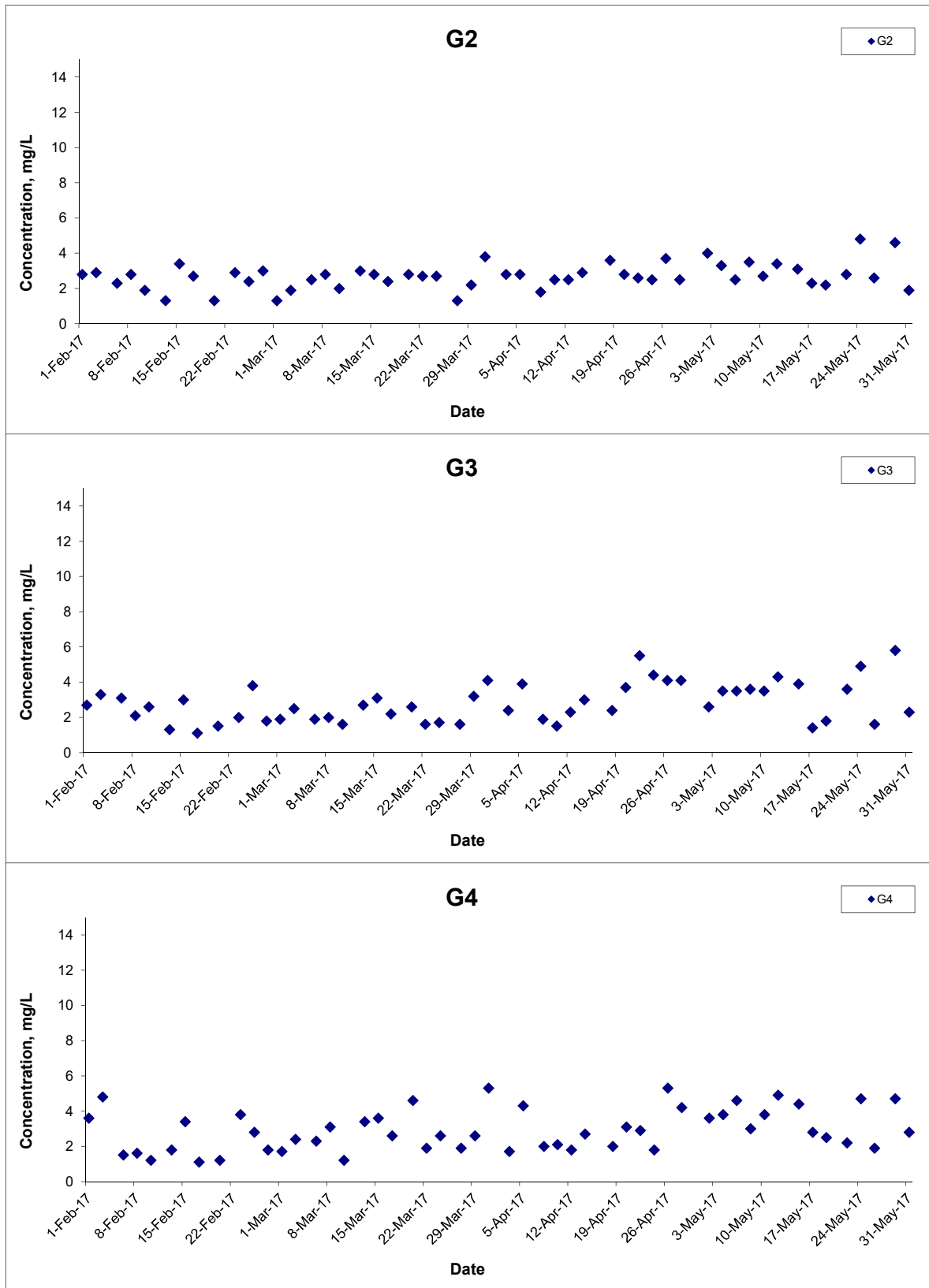
Date May 17

Project No. MA16034

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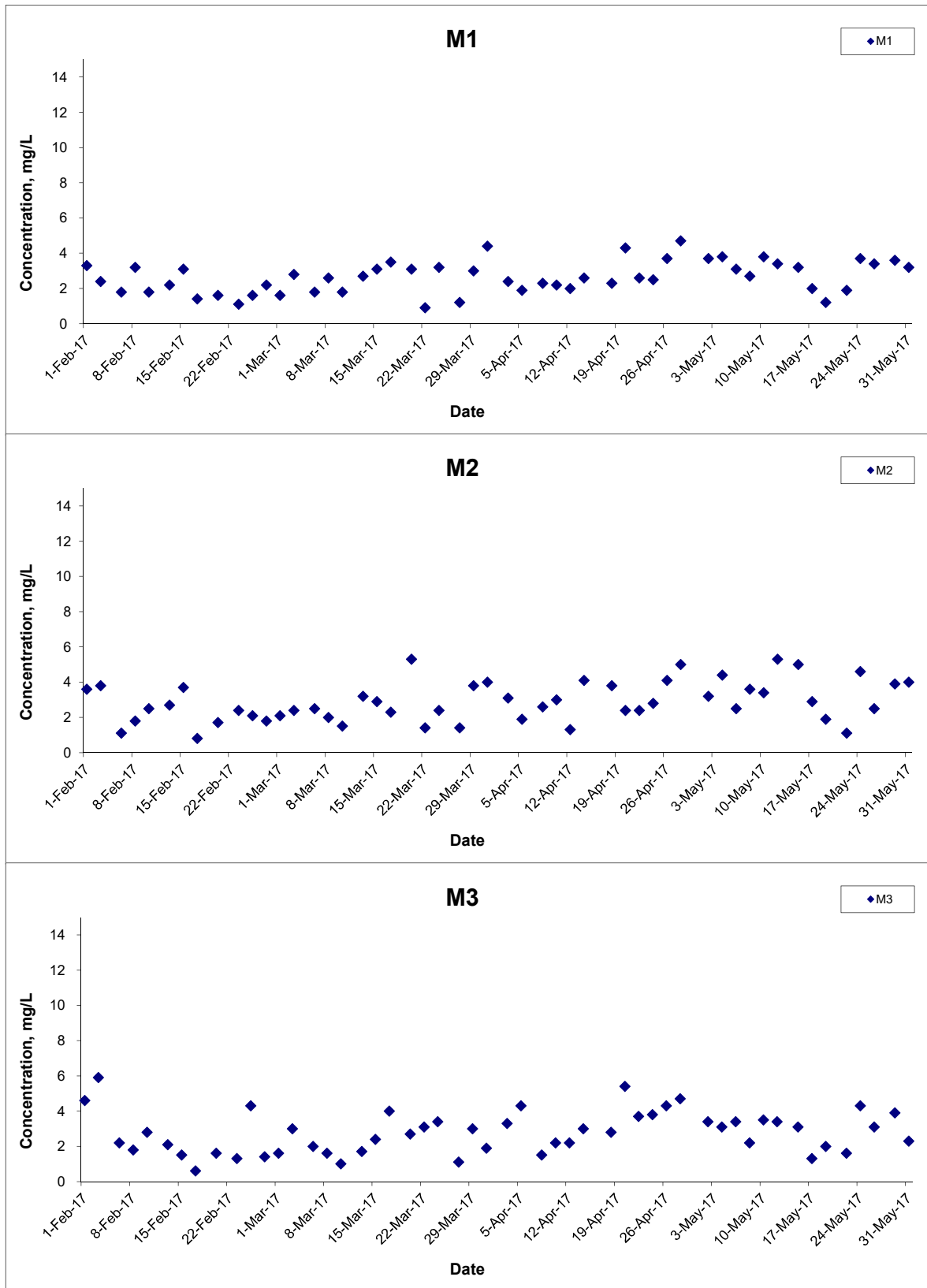


Suspended Solids (Depth-averaged) at Mid-Flood Tide



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale N.T.S	Project No. MA16034	CINOTECH
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Suspended Solids (Depth-averaged) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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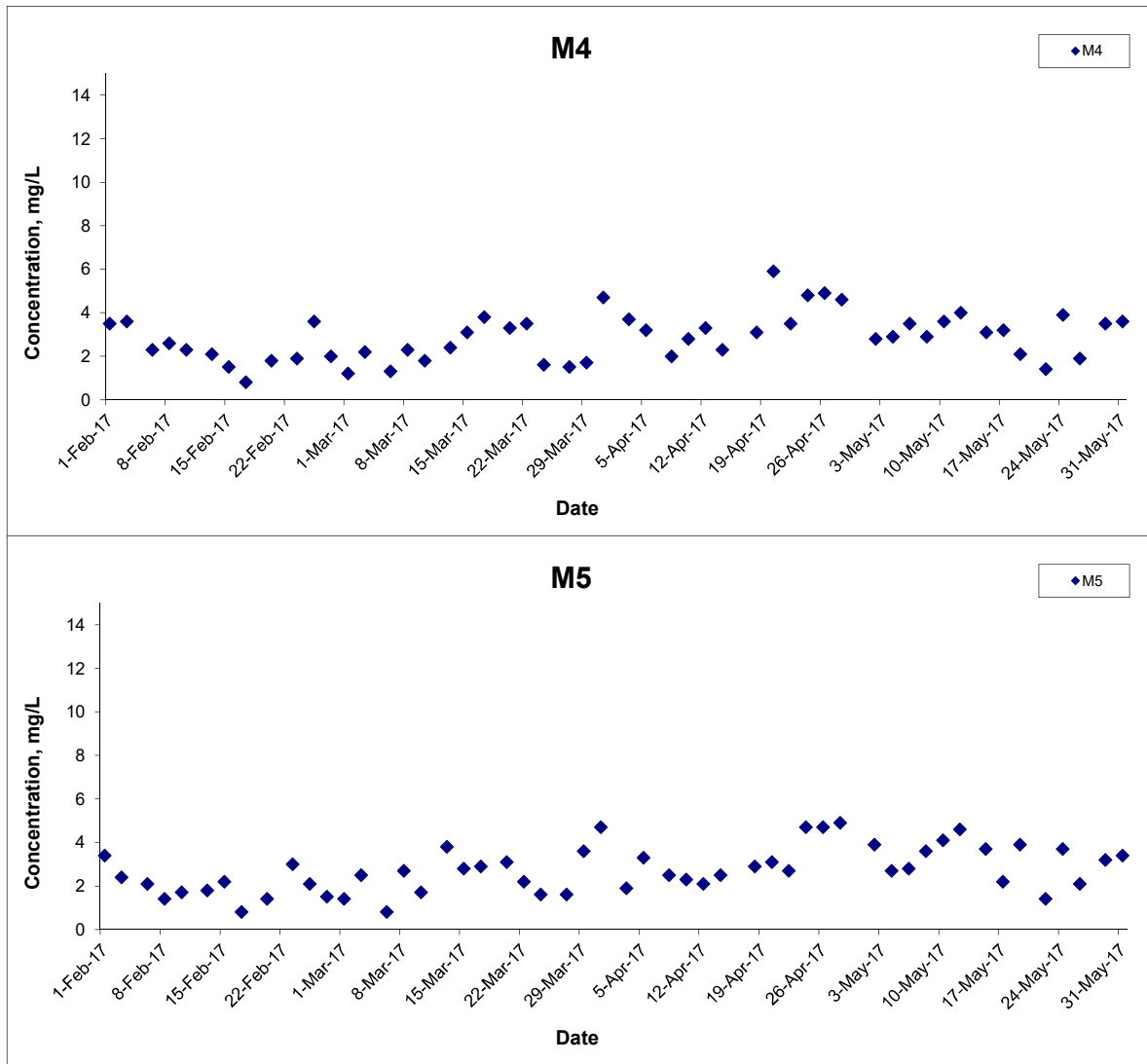
Date May 17

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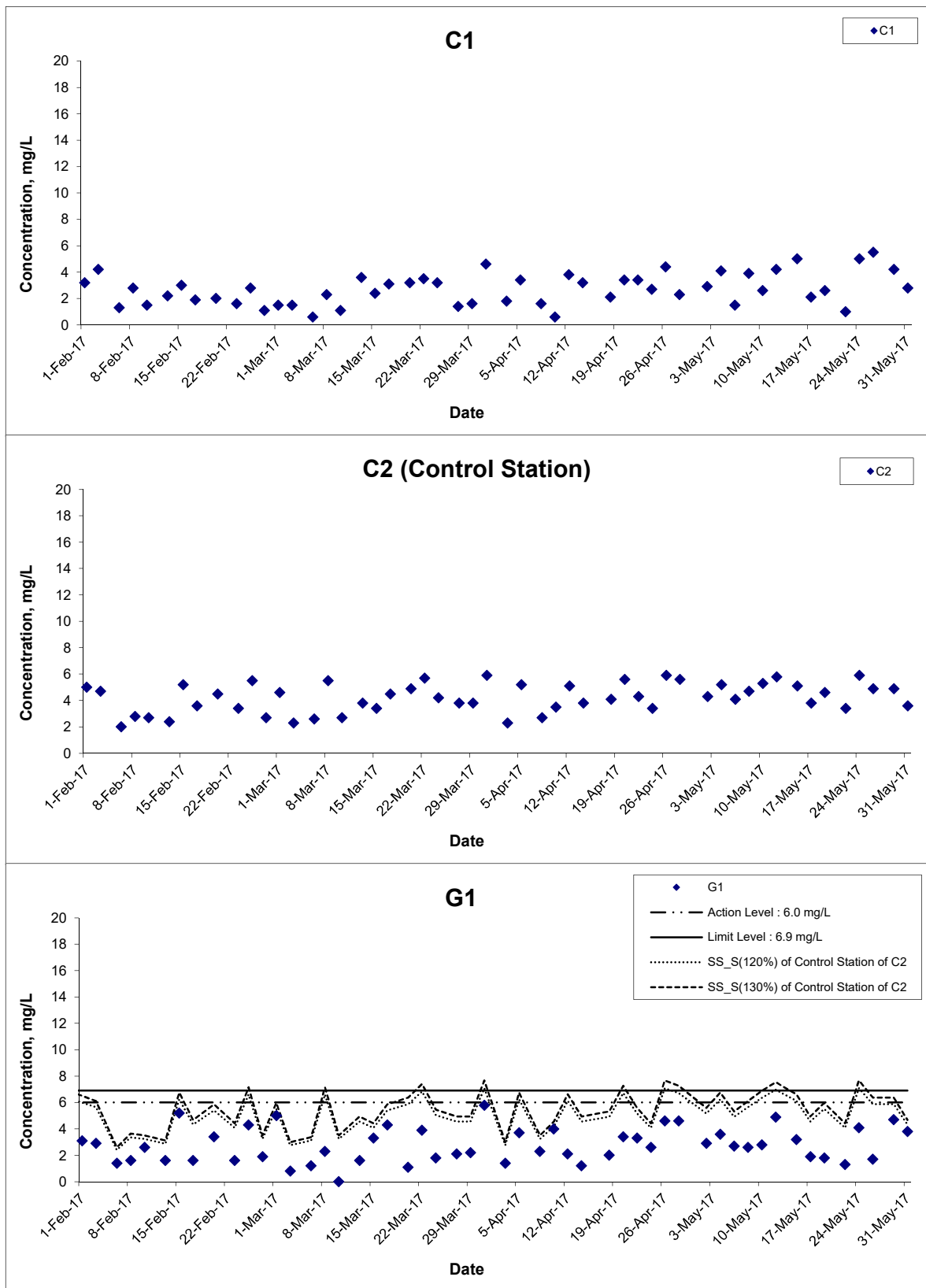


Suspended Solids (Depth-averaged) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	
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Suspended Solids (Surface) at Mid-Ebb Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

Graphical Presentation of Water Quality Monitoring Results

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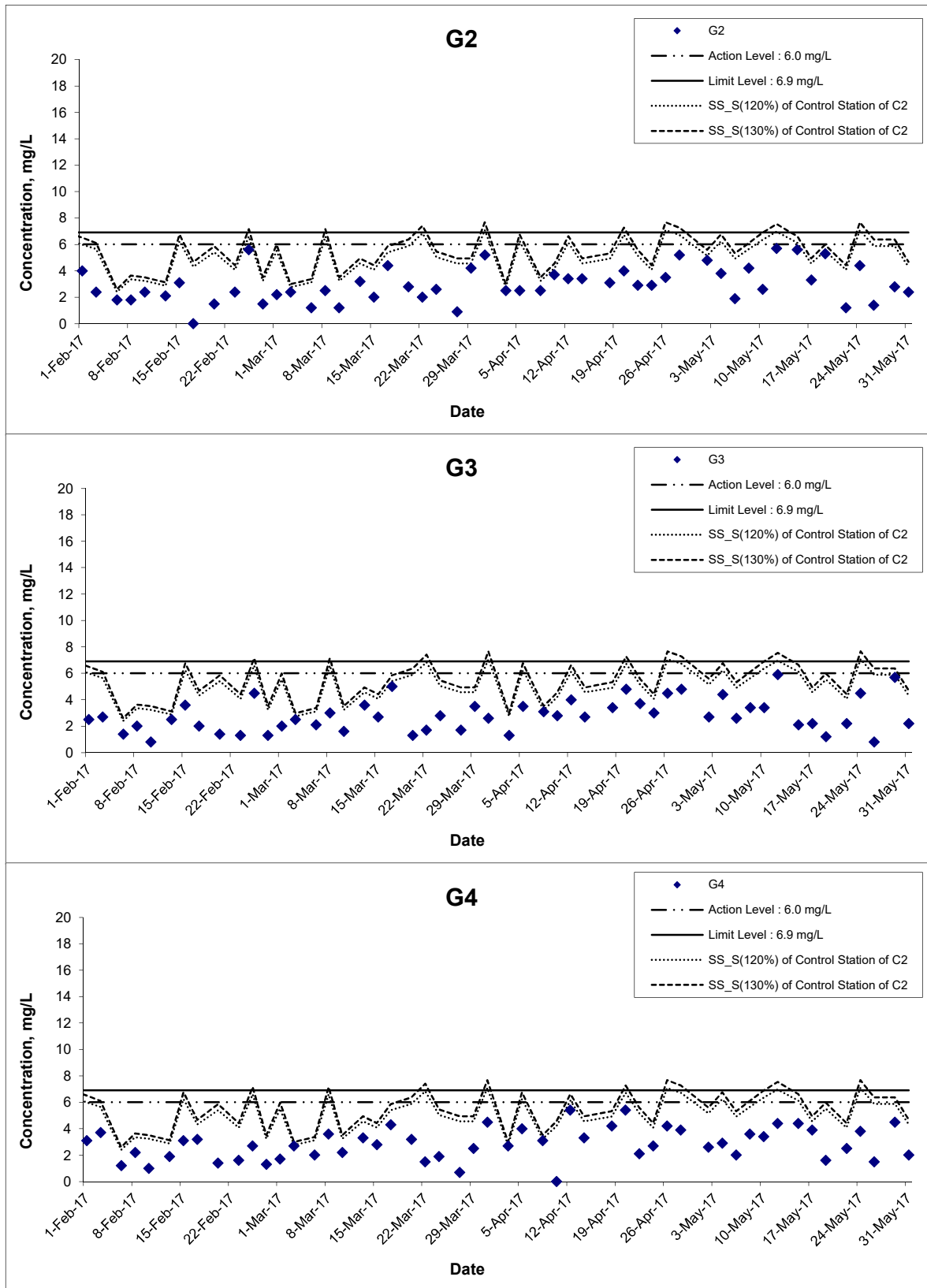
Date May 17

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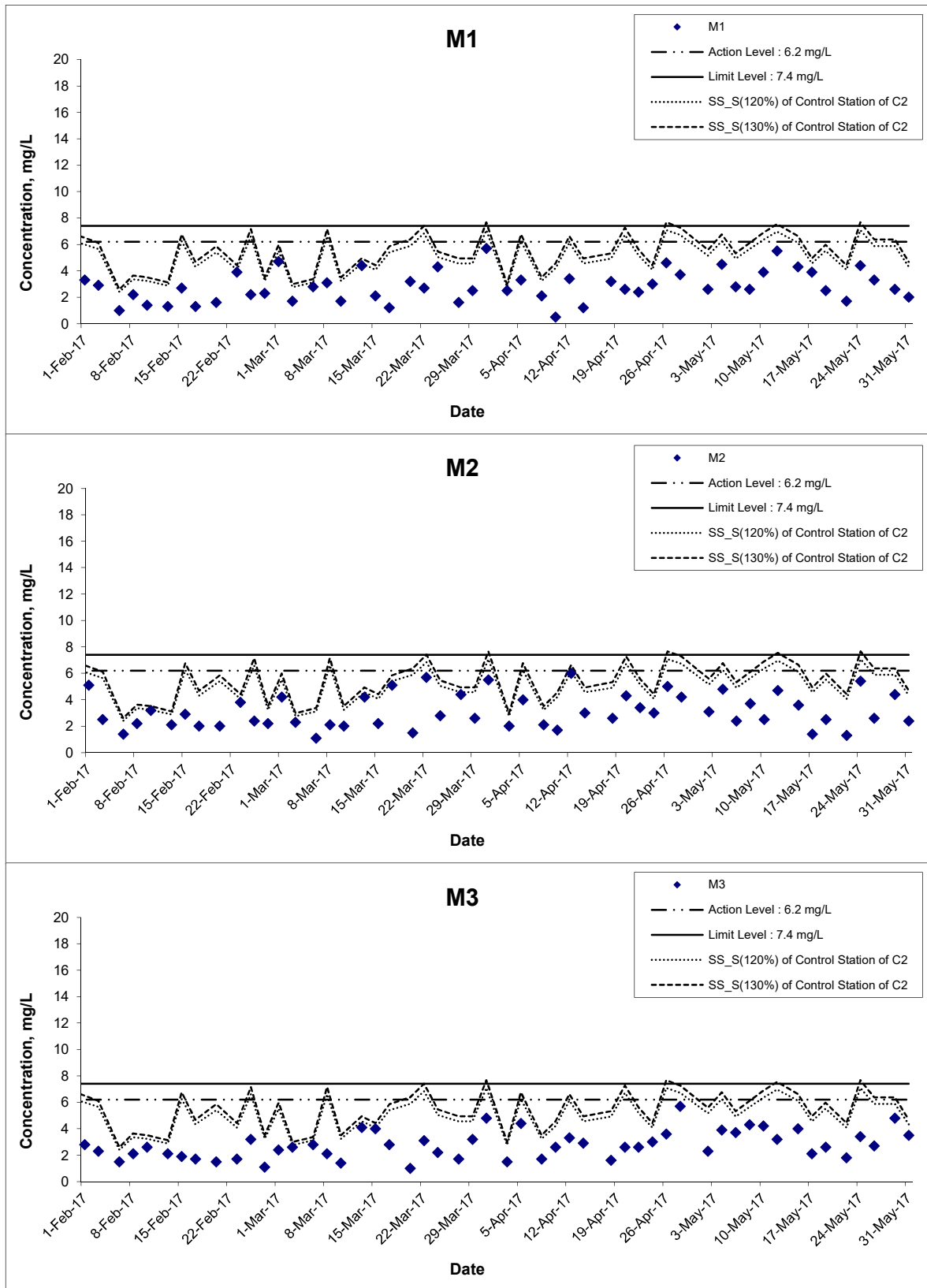
Suspended Solids (Surface) at Mid-Ebb Tide



ReMayks: The graphical point at zero concentration is presented as <2.5mg/L.

Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	CINOTECH
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Suspended Solids (Surface) at Mid-Ebb Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

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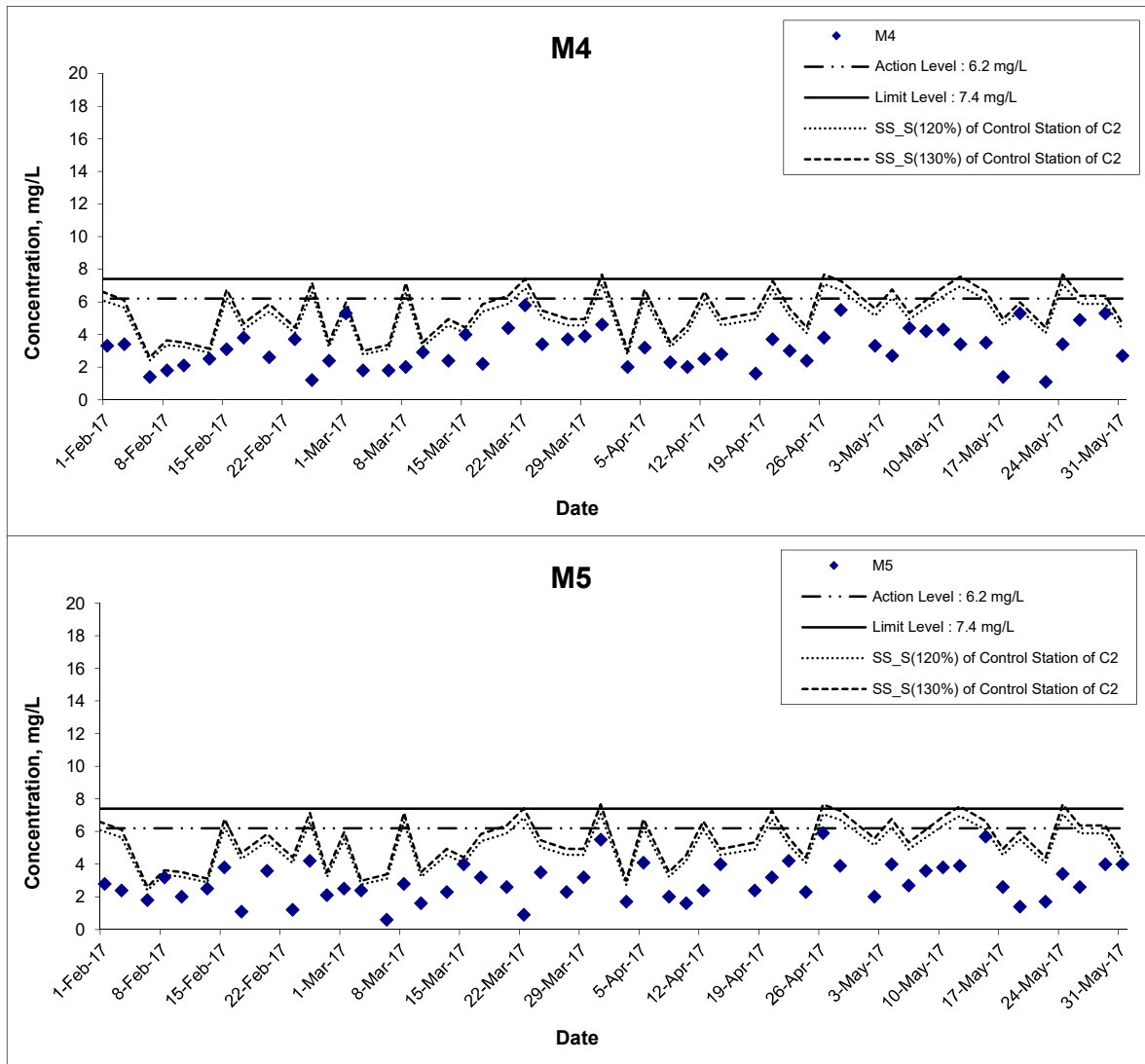
Date May 17

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Suspended Solids (Surface) at Mid-Ebb Tide



Title

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Tseung Kwan O - Lam Tin Tunnel Design and Construction

Graphical Presentation of Water Quality Monitoring
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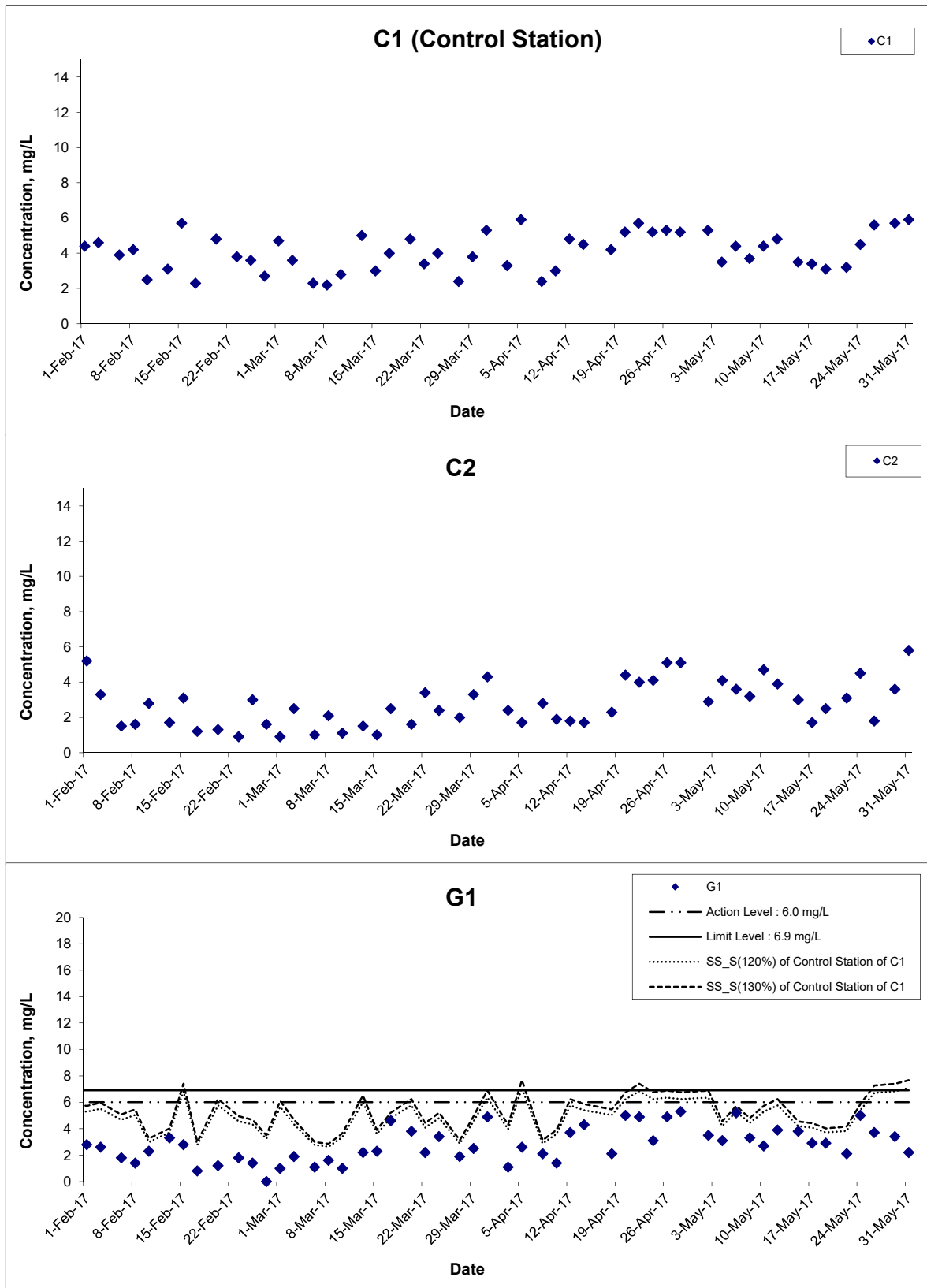
May 17

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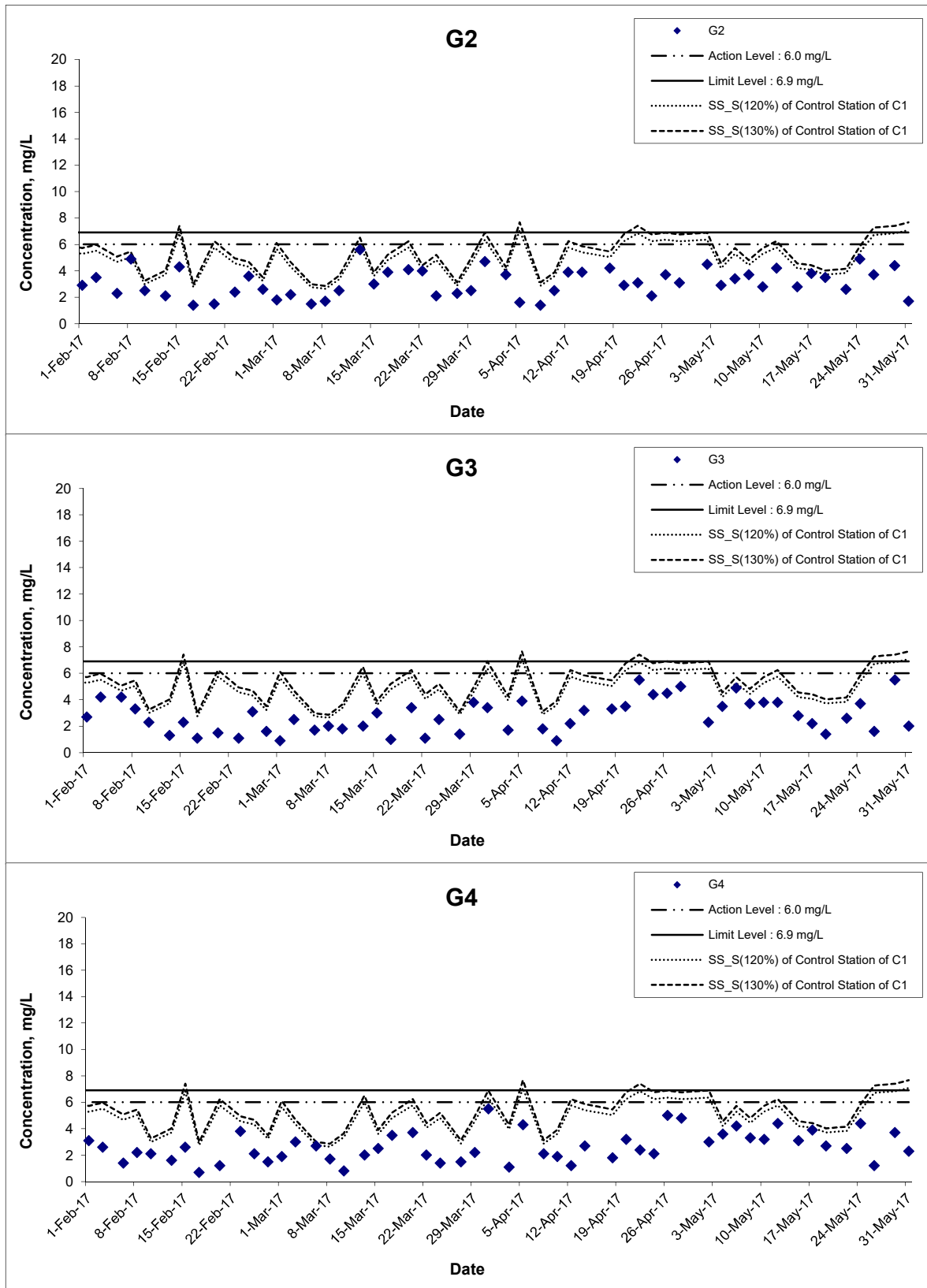
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	Graphical Presentation of Water Quality Monitoring Results	Date	May 17	Appendix	I	

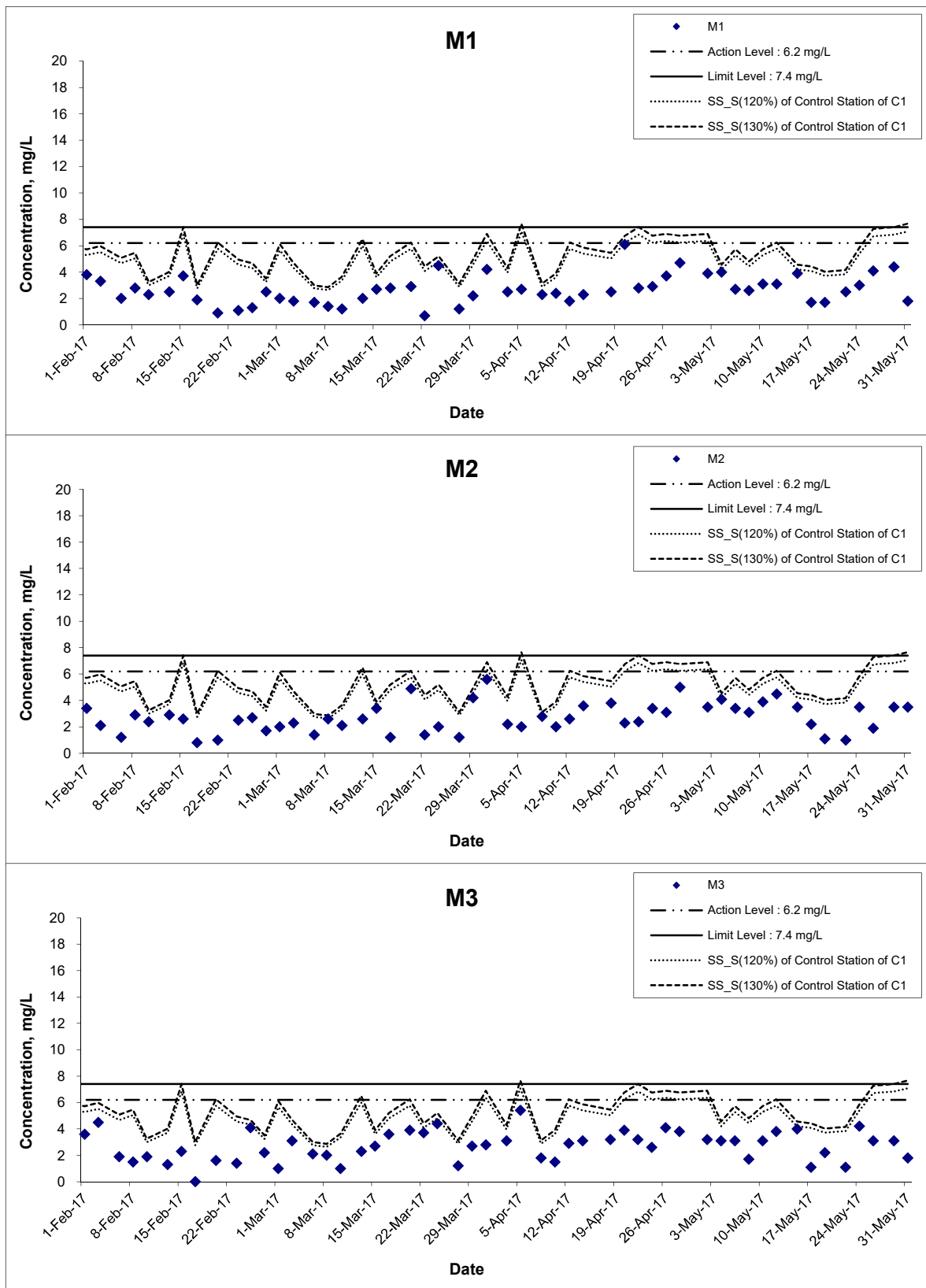
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	Graphical Presentation of Water Quality Monitoring Results	Date	May 17	Appendix	I	

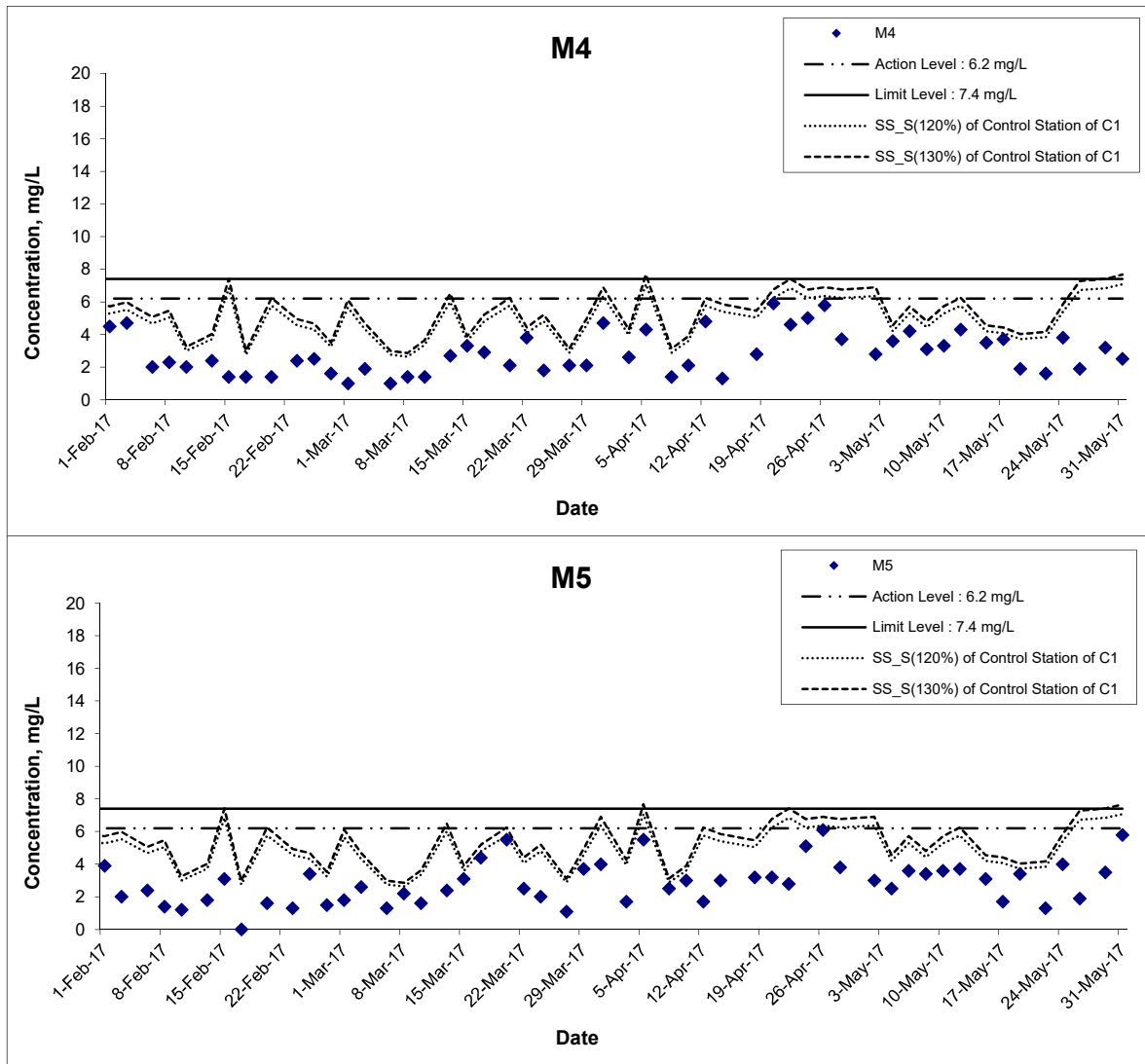
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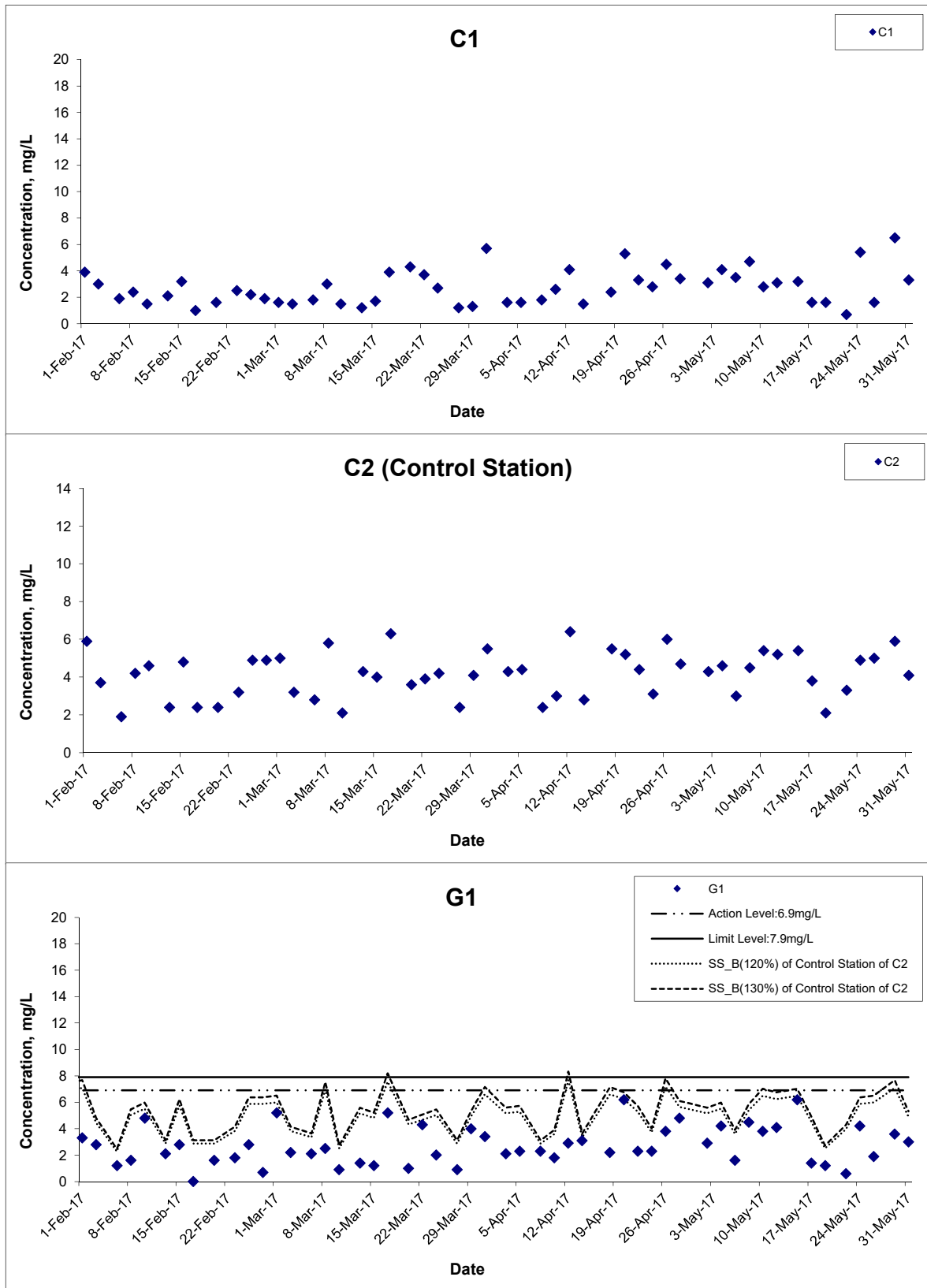
Suspended Solids (Surface) at Mid-Flood Tide



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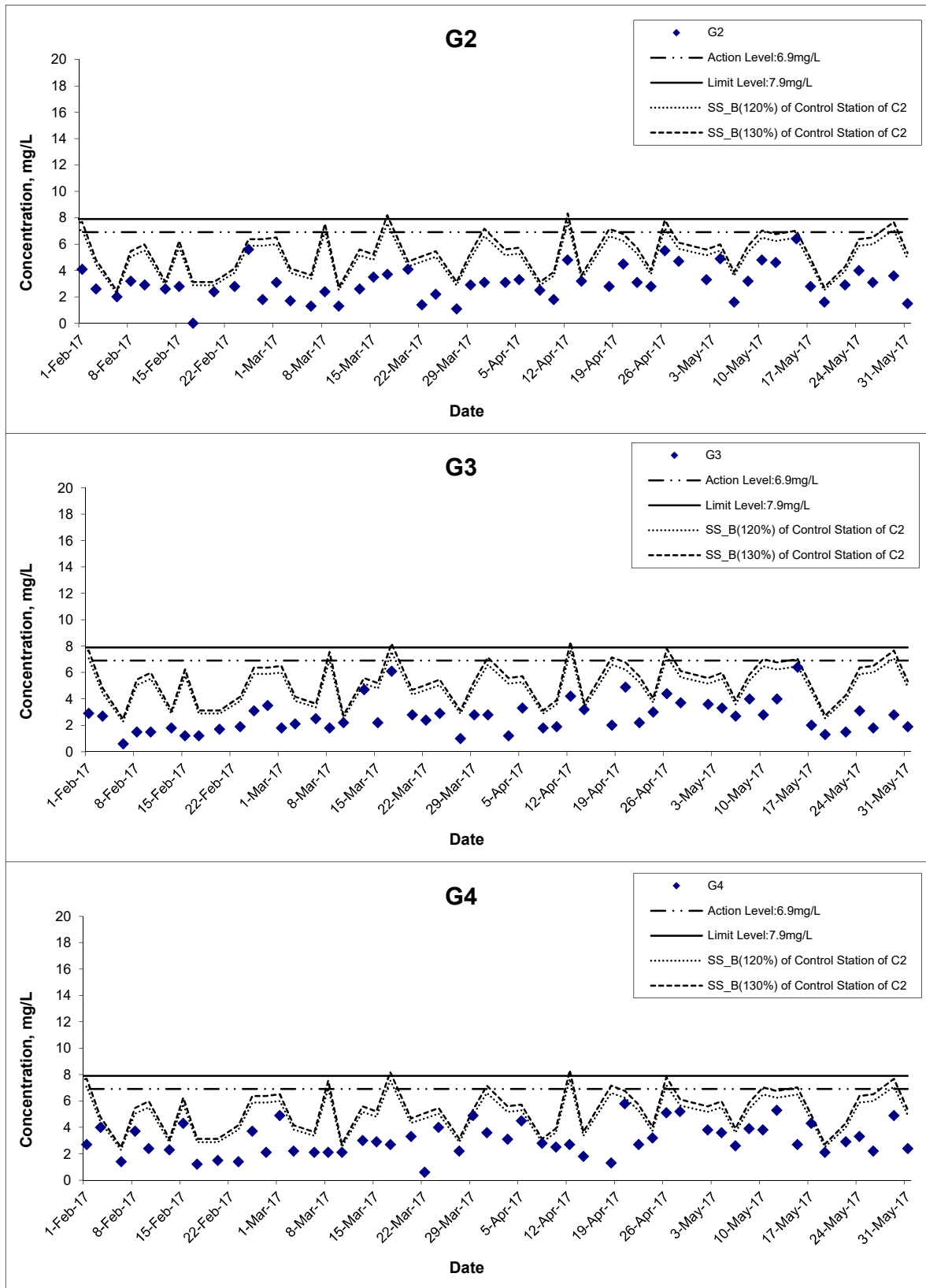
Suspended Solids (Bottom) at Mid-Ebb Tide



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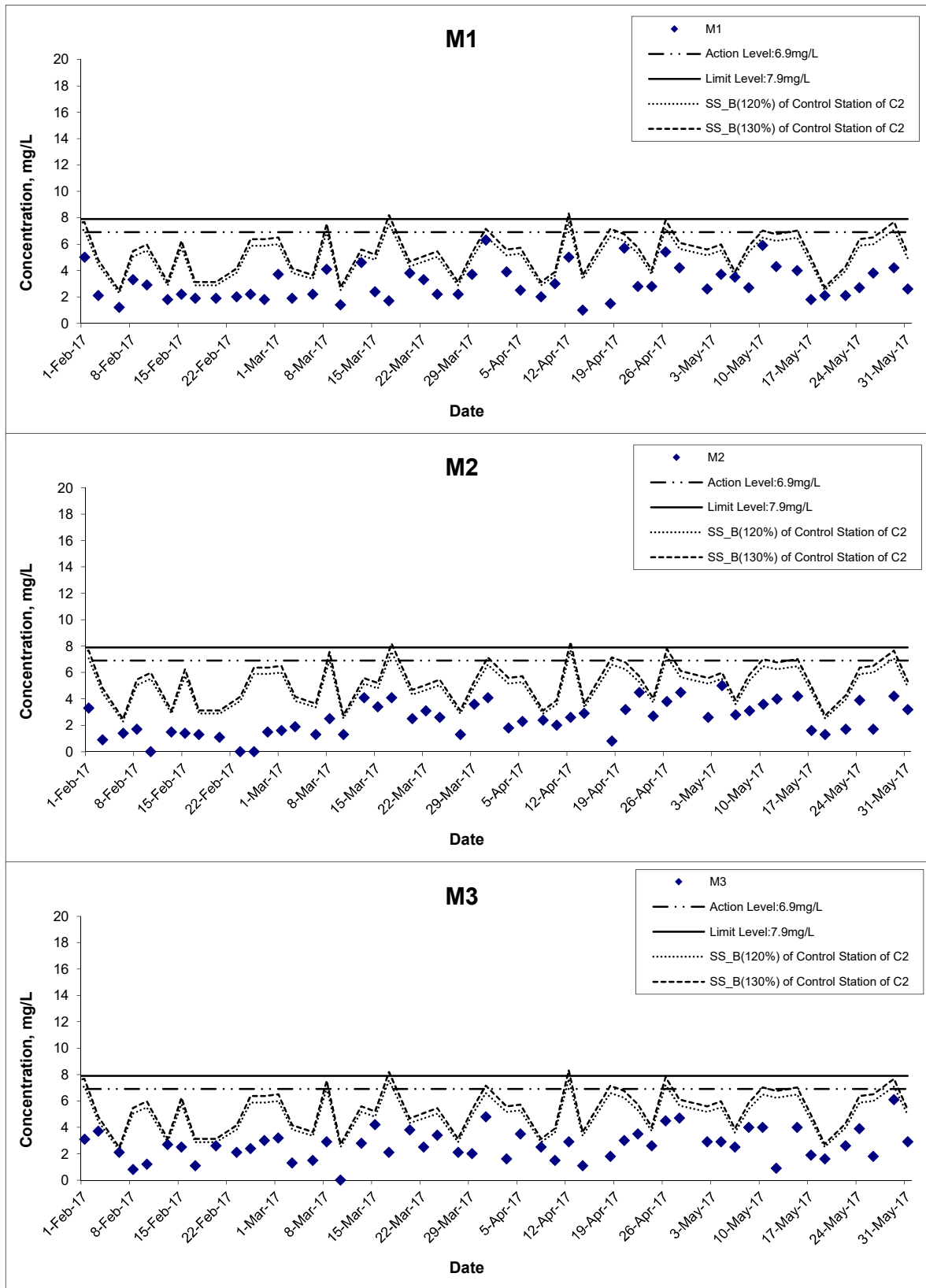
Suspended Solids (Bottom) at Mid-Ebb Tide



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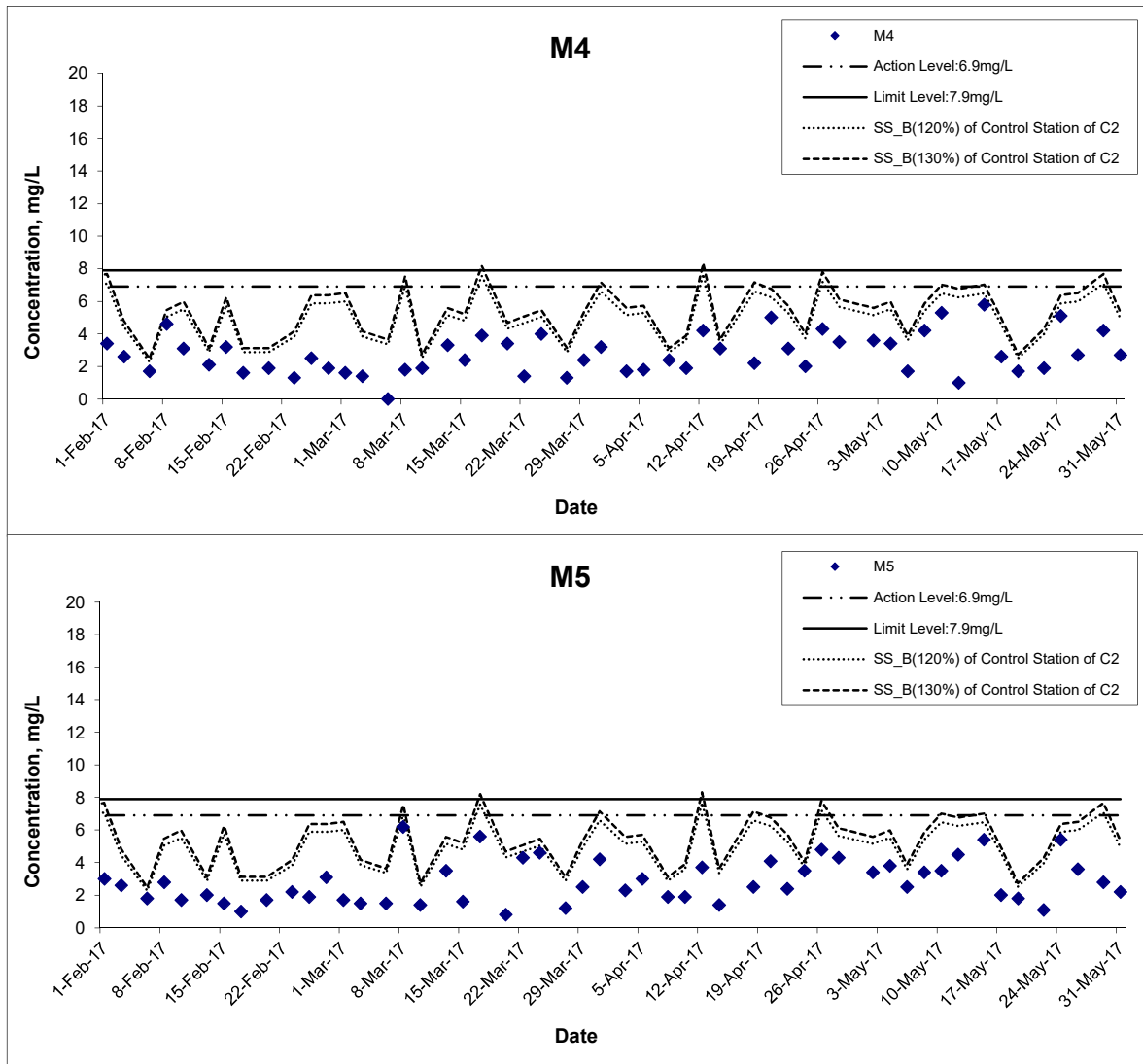
Suspended Solids (Bottom) at Mid-Ebb Tide



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Suspended Solids (Bottom) at Mid-Ebb Tide



Title

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Tseung Kwan O - Lam Tin Tunnel Design and Construction

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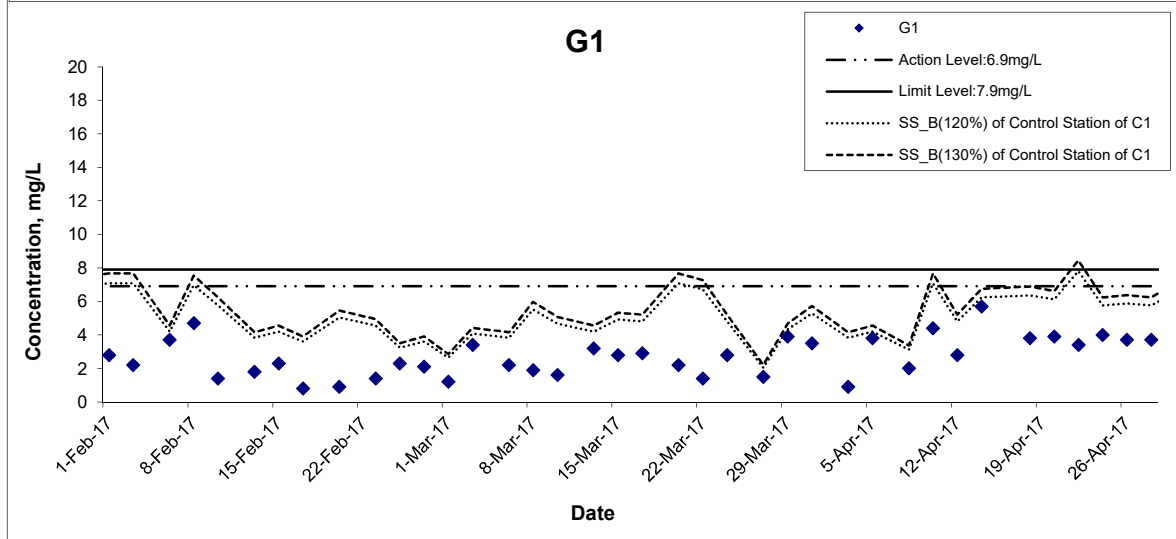
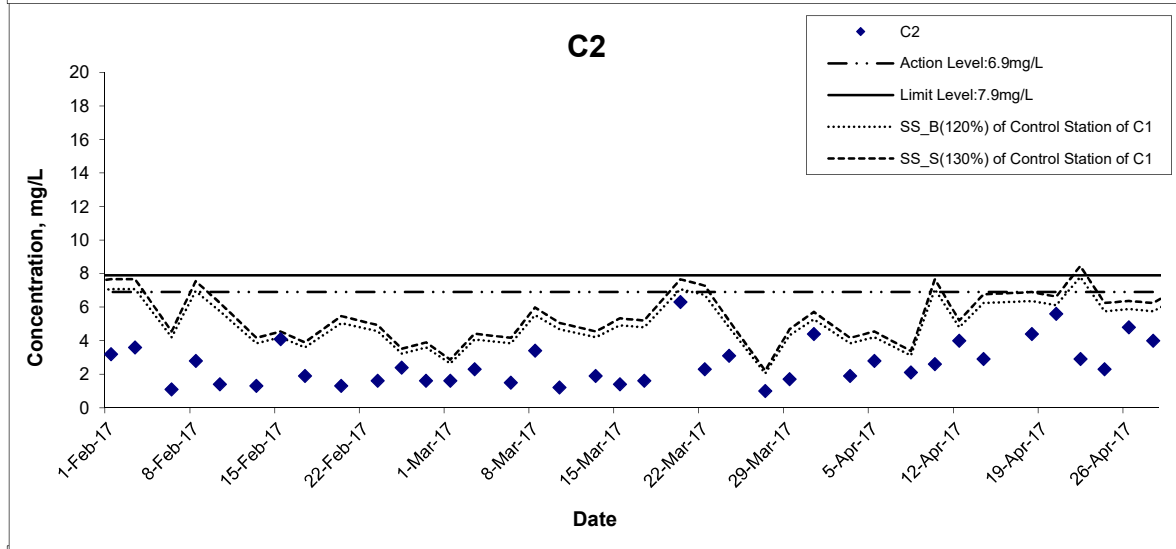
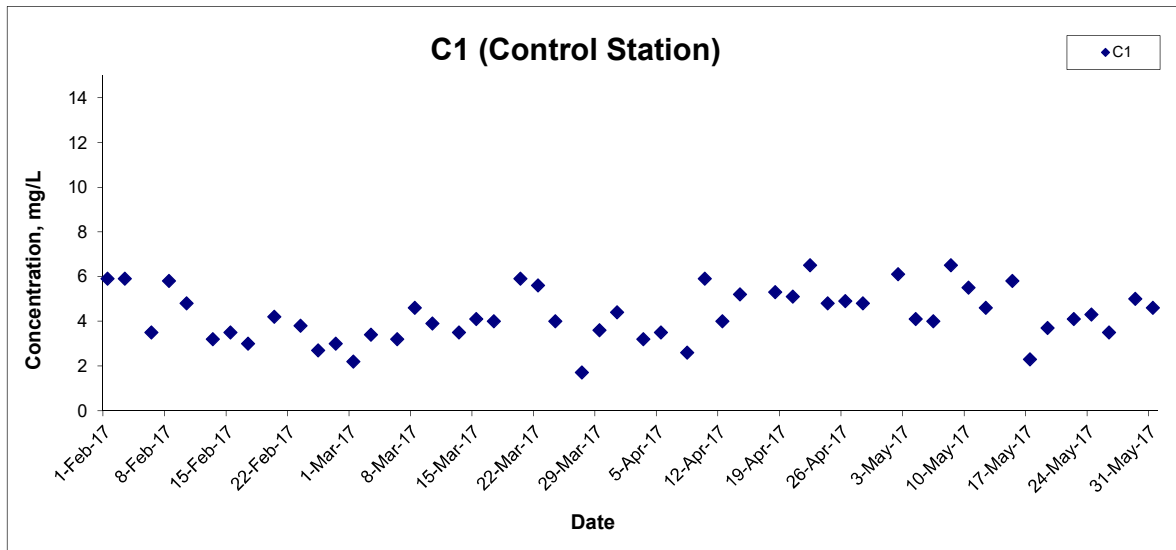
May 17

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Suspended Solids (Bottom) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

Graphical Presentation of Water Quality Monitoring Results

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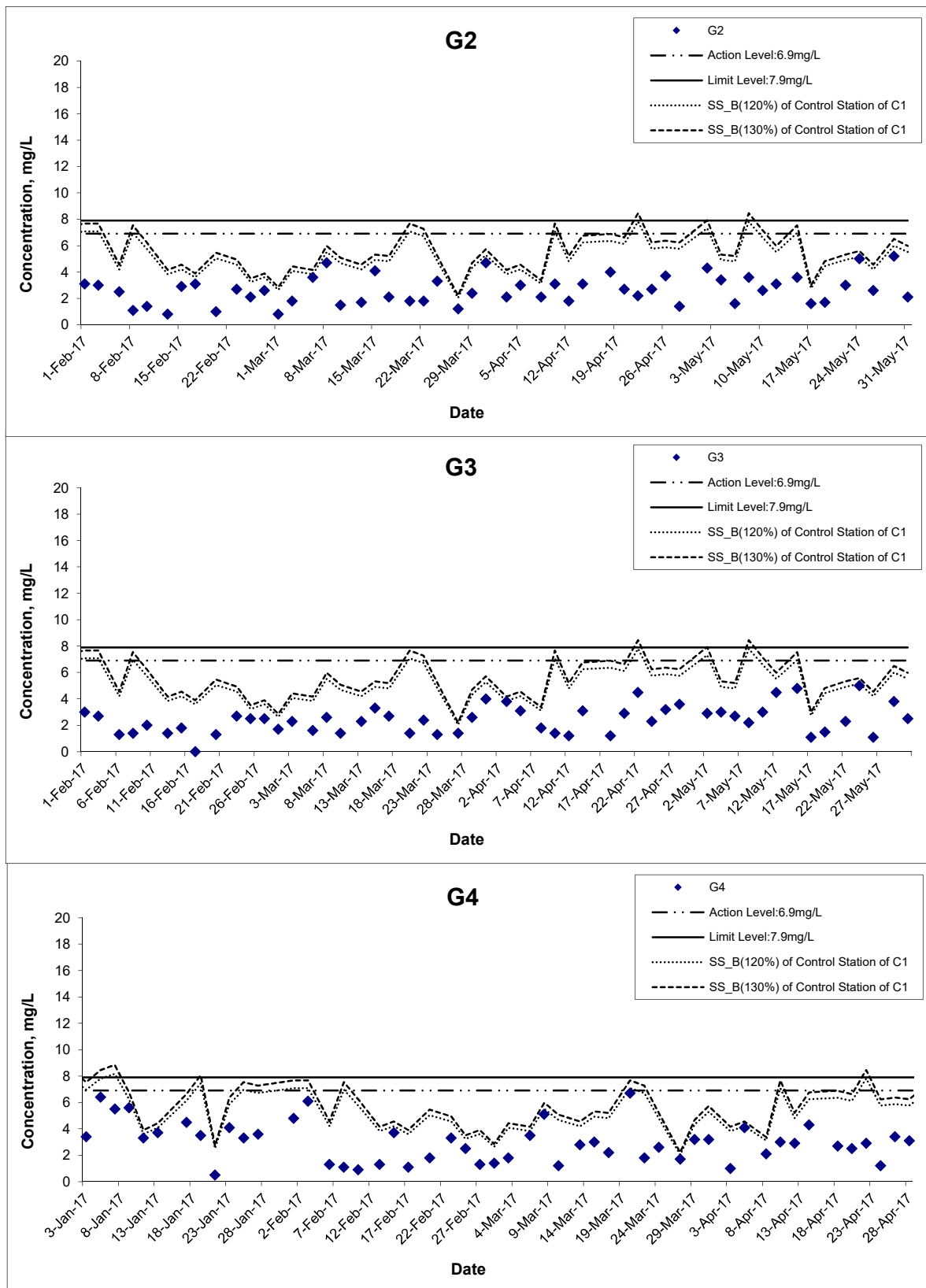
Date May 17

Project No. MA16034

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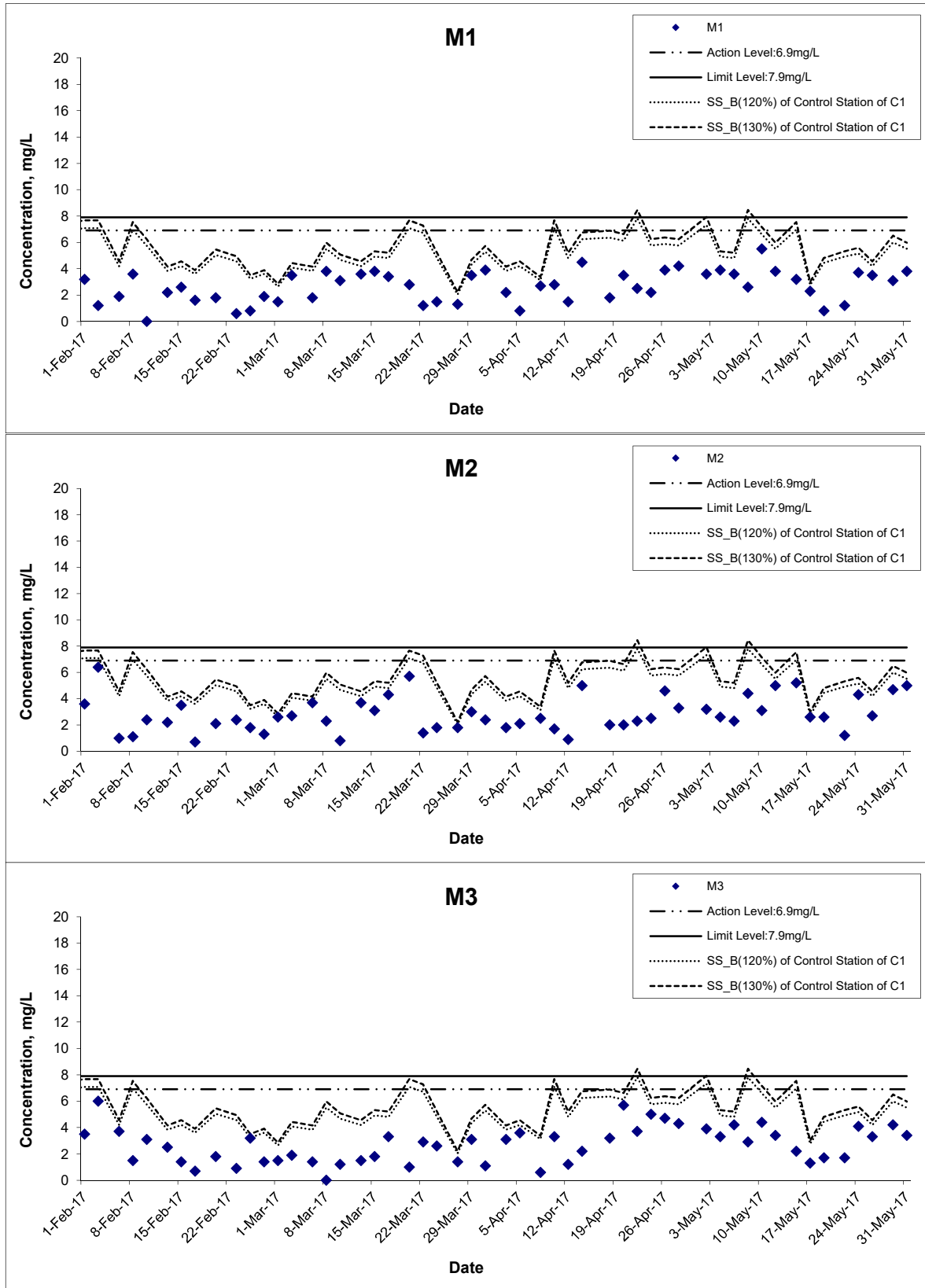
Suspended Solids (Bottom) at Mid-Flood Tide



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Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	CINOTECH
	Graphical Presentation of Water Quality Monitoring Results	Date	May 17	Appendix	I	

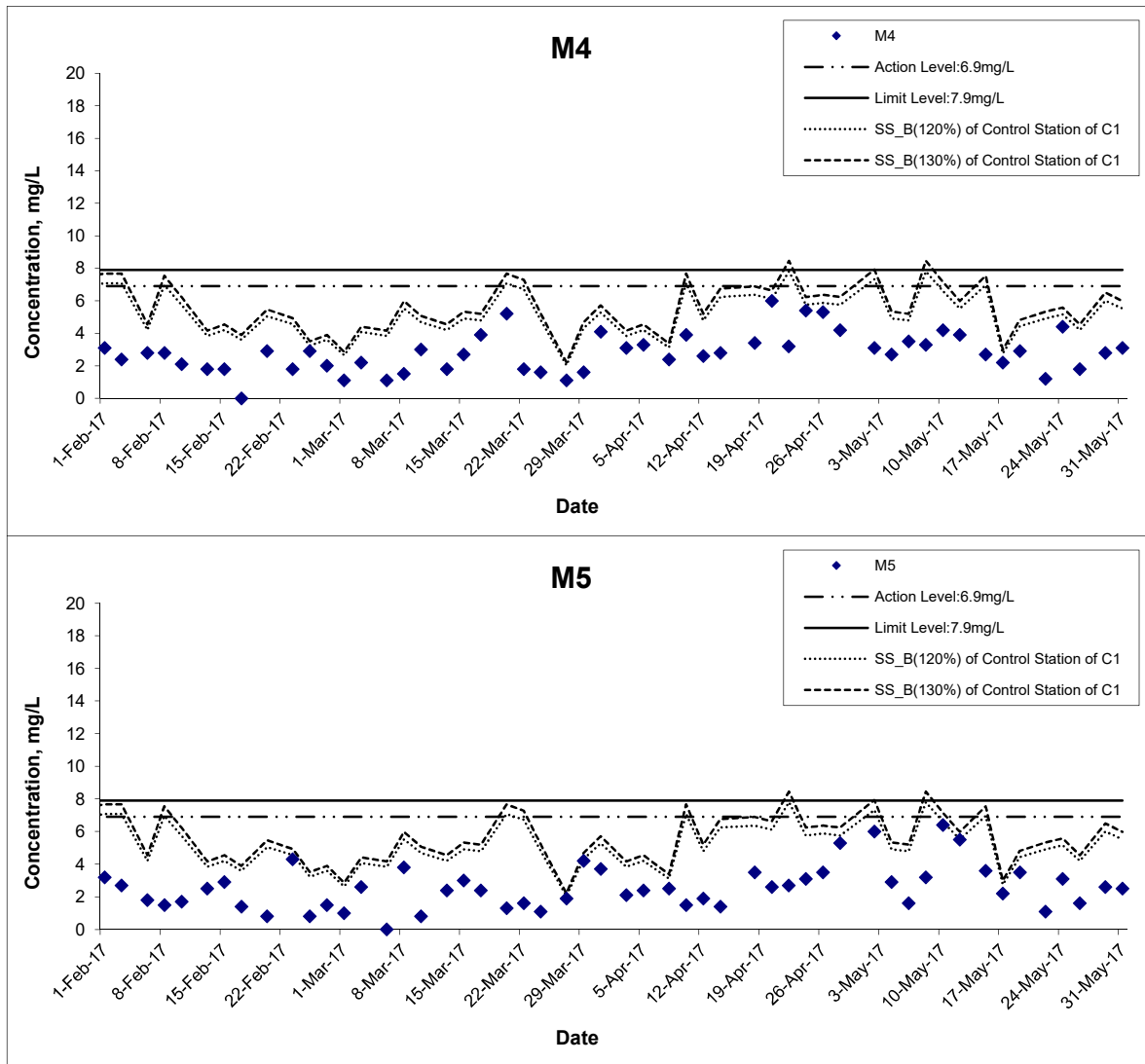
Suspended Solids (Bottom) at Mid-Flood Tide



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Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	CINOTECH
	Graphical Presentation of Water Quality Monitoring Results	Date	May 17	Appendix	I	

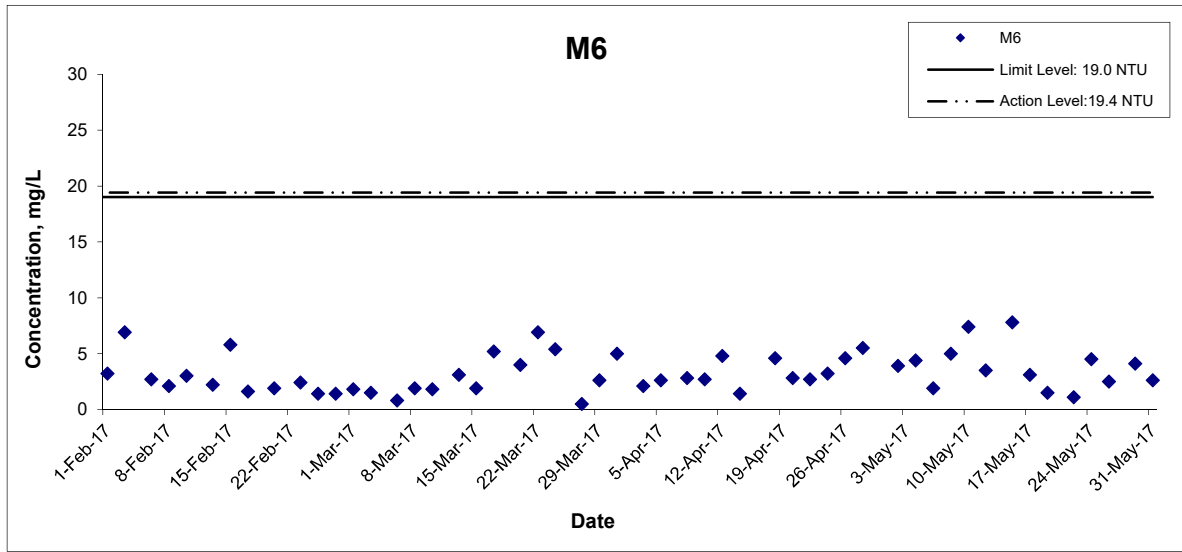
Suspended Solids (Bottom) at Mid-Flood Tide



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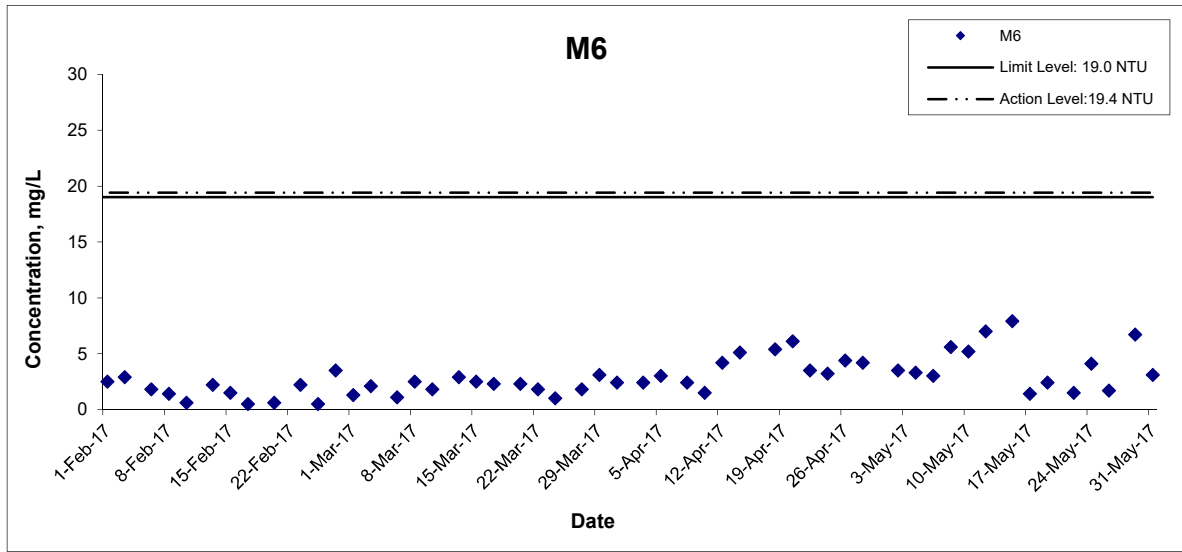
Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	CINOTECH
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Suspended Solids (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	CINOTECH
	Graphical Presentation of Water Quality Monitoring Results	Date	May 17	Appendix	I	

Suspended Solids (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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	Date	May 17	Appendix	I



**APPENDIX J
QUALITY CONTROL REPORTS FOR
LABORATORY ANALYSIS**

TEST REPORT

APPLICANT: Cinotech Consultants Limited
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

Report No.:	QC26913-V1
Date of Issue:	2017-06-14
Date Received:	2017-05-11
Date Tested:	2017-05-11
Date Completed:	2017-05-22

ATTN: Ms. Mei Ling Tang
QC report:

Page: 1 of 2

Method Blank

Parameter	MB 1	Acceptance
Suspended Solids (SS) (mg/L)	<0.5	<0.5
Biochemical Oxygen Demand	N/A	N/A
Total Organic Carbon (mg-TOC/L)	<0.2	<0.2
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (mg NH ₃ -N/L)	<0.01	<0.01
Total Phosphorus (mg-P/L)	<0.01	<0.01

Method QC

Parameter	MQC1	Acceptance
Suspended Solids (SS) (%)	97	80-120
Biochemical Oxygen Demand (mg O ₂ /L)	176	170-220
Total Organic Carbon (%)	100	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	100	80-120
Total Phosphorus (%)	97	80-120

Remarks: 1) <= less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 26913.

4) This report supersedes the one dated 2017-05-22 with certificate number QC26913

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


TINKY TING
Senior Chemist

TEST REPORT

Report No.:	QC26913-V1
Date of Issue:	2017-06-14
Date Received:	2017-05-11
Date Tested:	2017-05-11
Date Completed:	2017-05-22

Page: 2 of 2

QC report:

Sample Duplicate

Parameter	26913-3 chk	Acceptance
Suspended Solids (SS) (%)	N/A	RPD \leq 20%
Biochemical Oxygen Demand (%)	N/A	RPD \leq 20%
Total Organic Carbon (%)	3	RPD \leq 20%
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	0	RPD \leq 20%
Total Phosphorus (%)	N/A	RPD \leq 20%

Sample Spike

Parameter	26913-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	107	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	109	80-120
Total Phosphorus (%)	103	80-120

Remarks: 1) \leq = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 26913.

4) This report supersedes the one dated 2017-05-22 with certificate number QC26913

*****END OF REPORT*****

TEST REPORT

APPLICANT: Cinotech Consultants Limited
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

Report No.:	QC26955
Date of Issue:	2017-06-01
Date Received:	2017-05-23
Date Tested:	2017-05-23
Date Completed:	2017-06-01

ATTN: Ms. Mei Ling Tang
QC report:

Page: 1 of 2

Method Blank

Parameter	MB 1	Acceptance
Suspended Solids (SS) (mg/L)	<0.5	<0.5
Biochemical Oxygen Demand	N/A	N/A
Total Organic Carbon (mg-TOC/L)	<0.2	<0.2
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (mg NH ₃ -N/L)	<0.01	<0.01
Total Phosphorus (mg-P/L)	<0.01	<0.01

Method QC

Parameter	MQC1	Acceptance
Suspended Solids (SS) (%)	102	80-120
Biochemical Oxygen Demand (mg O ₂ /L)	173	170-220
Total Organic Carbon (%)	107	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	109	80-120
Total Phosphorus (%)	104	80-120

Remarks: 1) < = less than
2) N/A = Not applicable
3) This report is the summary of quality control data for report number 26955.

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

Report No.:	QC26955
Date of Issue:	2017-06-01
Date Received:	2017-05-23
Date Tested:	2017-05-23
Date Completed:	2017-06-01

Page: 2 of 2

QC report:

Sample Duplicate

Parameter	26955-3 chk	Acceptance
Suspended Solids (SS) (%)	N/A	RPD \leq 20%
Biochemical Oxygen Demand (%)	N/A	RPD \leq 20%
Total Organic Carbon (%)	3	RPD \leq 20%
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	N/A	RPD \leq 20%
Total Phosphorus (%)	N/A	RPD \leq 20%

Sample Spike

Parameter	26955-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	112	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	88	80-120
Total Phosphorus (%)	107	80-120

Remarks: 1) \leq less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 26955.

*****END OF REPORT*****

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26872
Date of Issue:	4/5/2017
Date Received:	2/5/2017
Date Tested:	2/5/2017
Date Completed:	4/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2/5/2017
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170502

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.3	3.4	4	99

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26879
Date of Issue:	5/5/2017
Date Received:	4/5/2017
Date Tested:	4/5/2017
Date Completed:	5/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 4/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170504

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	2.6	2.6	1	103

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26890
Date of Issue:	8/5/2017
Date Received:	6/5/2017
Date Tested:	6/5/2017
Date Completed:	8/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 6/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170506

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.3	4.2	3	100

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26891
Date of Issue:	9/5/2017
Date Received:	8/5/2017
Date Tested:	6/5/2017
Date Completed:	9/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 8/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170508

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.1	4.3	4	101

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26899
Date of Issue:	11/5/2017
Date Received:	10/5/2017
Date Tested:	10/5/2017
Date Completed:	11/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 10/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170510

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.4	4.2	5	99

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26908
Date of Issue:	15/5/2017
Date Received:	12/5/2017
Date Tested:	12/5/2017
Date Completed:	15/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 12/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170512

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.4	3.1	10	101

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26917
Date of Issue:	16/5/2017
Date Received:	15/5/2017
Date Tested:	15/5/2017
Date Completed:	16/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 15/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170515

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.5	3.3	5	100

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26930
Date of Issue:	18/5/2017
Date Received:	17/5/2017
Date Tested:	17/5/2017
Date Completed:	18/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 17/5/2017
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170517

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4be	2.6	2.6	1	101

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26938
Date of Issue:	23/5/2017
Date Received:	19/5/2017
Date Tested:	19/5/2017
Date Completed:	23/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 19/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170519

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.2	5.4	3	102

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26943
Date of Issue:	23/5/2017
Date Received:	22/5/2017
Date Tested:	22/5/2017
Date Completed:	23/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 22/5/2017
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170522

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
C2se	3.4	3.5	1	100

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26951
Date of Issue:	25/5/2017
Date Received:	24/5/2017
Date Tested:	24/5/2017
Date Completed:	25/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 24/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170524

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.4	3.4	1	104

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26961
Date of Issue:	29/5/2017
Date Received:	26/5/2017
Date Tested:	26/5/2017
Date Completed:	29/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)

Project No.: MA16034

Sampling Date: 26/5/2017

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)/170526

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.0	4.8	5	101

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26969
Date of Issue:	31/5/2017
Date Received:	29/5/2017
Date Tested:	29/5/2017
Date Completed:	31/5/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 29/5/2017
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170529

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.1	4.9	4	105

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26974
Date of Issue:	1/6/2017
Date Received:	31/5/2017
Date Tested:	31/5/2017
Date Completed:	1/6/2017

ATTN: Ms. Mei Ling Tang

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -
Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 31/5/2017
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170531

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	2.7	2.7	1	102

*****END OF REPORT*****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

**APPENDIX K
SUMMARY OF EXCEEDANCE**

**Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel –
Design and Construction**

Appendix K – Summary of Exceedance

Reporting Period: May 2017

- (A) Exceedance Report for Air Quality
(NIL in the reporting month)**
- (B) Exceedance Report for Construction Noise
(Nine Action Level exceedance was recorded due to the documented complaints received in the reporting month)**
- (C) Exceedance Report for Water Quality
(NIL in the reporting month)**
- (D) Exceedance Report for Ecology
(NIL in the reporting month)**
- (E) Exceedance Report for Cultural Heritage
(NIL in the reporting month)**
- (F) Exceedance Report for Landfill Gas
(NIL in the reporting month)**

**APPENDIX L
SITE AUDIT SUMMARY**

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O–Lam Tin Tunnel - Design and Construction

Contract NE/2015/01

Tseung Kwan O–Lam Tin Tunnel–Main Tunnel and Associated Works

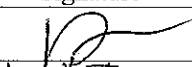
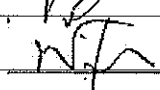
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170502
Date	2 May 2017 (Tuesday)
Time	08:45 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170502-O01	B. Water Quality <ul style="list-style-type: none">Stagnant water should be cleared at TKO site.	B12
	C. Ecology <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	D. Landscape & Visual <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	E. Air Quality <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
170502-O02	F. Construction Noise Impact <ul style="list-style-type: none">Mitigation measure for noise emission of the drill rig at CKL site should be applied where necessary.	F2,7
	G. Waste / Chemical Management <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	H. Permits/Licences <ul style="list-style-type: none">No environmental deficiency was identified during site inspection	
	I. Impact on Cultural Heritage <ul style="list-style-type: none">No environmental deficiency was identified during site inspection	
	J. Others <ul style="list-style-type: none">Follow-up on previous audit sessions (Ref. No.: 170419 and 170426), follow up action for item ref no. 170419-R02 and 170419-R03 is needed to be reviewed during the next site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		2 May 2017
Checked by	Dr. Priscilla Choy		2 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O-Lam Tin Tunnel - Design and Construction

Contract NE/2015/01

Tseung Kwan O-Lam Tin Tunnel-Main Tunnel and Associated Works

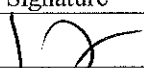
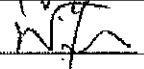
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170510
Date	10 May 2017 (Wednesday)
Time	09:00 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170510-R04	B. Water Quality <ul style="list-style-type: none">To repair silt curtain for marine works in TKO to ensure that geotextile is extended to seabed.	B 28
	C. Ecology <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	D. Landscape & Visual <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
170510-R03	E. Air Quality <ul style="list-style-type: none">To provide adequate water spray to drilling works in Portion 4c to avoid dust generation.	E 5
170510-R05	<ul style="list-style-type: none">To cover stockpile of sand in TKO to avoid dust generation.	E 6
170510-O01	F. Construction Noise Impact <ul style="list-style-type: none">Noise mitigation measure are not observed for drill rig in Portion 3. The Contractor is reminded to provide temporary noise barrier according to the updated NMP.	F 11
170510-R02	<ul style="list-style-type: none">To provide adequate noise barrier to drilling works and to repair the existing noise barrier to avoid gaps in Portion 4c.	F 5
	G. Waste / Chemical Management <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	H. Permits/Licences <ul style="list-style-type: none">No environmental deficiency was identified during site inspection	
	I. Impact on Cultural Heritage <ul style="list-style-type: none">No environmental deficiency was identified during site inspection	
	J. Others <ul style="list-style-type: none">Follow-up on previous audit sessions (Ref. No.: 170502), follow up action for item ref no. 170502-O02 is needed to be reviewed during the next site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		10 May 2017
checked by	Dr. Priscilla Choy		10 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O–Lam Tin Tunnel - Design and Construction

Contract NE/2015/01

Tseung Kwan O–Lam Tin Tunnel–Main Tunnel and Associated Works

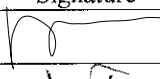
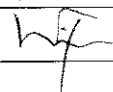
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170517
Date	17 May 2017 (Wednesday)
Time	09:00 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170517-R01 170517-R02 170517-R03	<p>B. Water Quality</p> <ul style="list-style-type: none">To repair the silt curtain in TKO that geotextile should be extended to seabed.To repair the holes at bottom of compartment of sedimentation tank in TKO.To remove the mud accumulated in U-channel near discharge point in TKO. <p>C. Ecology</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>D. Landscape & Visual</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>E. Air Quality</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	B 28 B 6i B 7
170517-R04 170517-R05	<p>F. Construction Noise Impact</p> <ul style="list-style-type: none">To repair the gaps of temporary noise barrier for drill rig in Portion 3.To repair the temporary noise enclosure for breaker in Portion 3. <p>G. Waste / Chemical Management</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>H. Permits/Licences</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection <p>I. Impact on Cultural Heritage</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection <p>J. Others</p> <ul style="list-style-type: none">Follow-up on previous audit sessions (Ref. No.: 170510), follow up action for item ref no. 170510-R04 is needed to be reviewed during the next site inspection.	F 7 F 7

	Name	Signature	Date
Recorded by	Johnny Fung		17 May 2017
Checked by	Dr. Priscilla Choy		17 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O–Lam Tin Tunnel - Design and Construction

Contract NE/2015/01

Tseung Kwan O–Lam Tin Tunnel–Main Tunnel and Associated Works


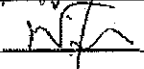
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170524
Date	24 May 2017 (Wednesday)
Time	09:00 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170524-O01	B. Water Quality <ul style="list-style-type: none">Muddy water observed near marine works in Tseung Kwan O. The Contractor is reminded to regularly maintain silt curtain on-site and ensure that geotextile is extended to seabed.	B 28
170524-O02	<ul style="list-style-type: none">Overflow of muddy water observed from sedimentation tank in Tseung Kwan O under Red Rainstorm Warning Signal. The Contractor is reminded to ensure that the tank is of adequate capacity for wastewater treatment. C. Ecology <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. D. Landscape & Visual <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. E. Air Quality <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. F. Construction Noise Impact <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. G. Waste / Chemical Management <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. H. Permits/Licences <ul style="list-style-type: none">No environmental deficiency was identified during site inspection I. Impact on Cultural Heritage <ul style="list-style-type: none">No environmental deficiency was identified during site inspection J. Others <ul style="list-style-type: none">Follow-up on previous audit sessions (Ref. No.: 170517), follow up action for item ref no. 170517-R01 and 170517-R02 is needed to be reviewed during the next site inspection.	B 6ii, 6iii

	Name	Signature	Date
Recorded by	Johnny Fung		24 May 2017
Checked by	Dr. Priscilla Choy		24 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O–Lam Tin Tunnel - Design and Construction

Contract NE/2015/01

Tseung Kwan O–Lam Tin Tunnel–Main Tunnel and Associated Works



Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170531
Date	31 May 2017 (Wednesday)
Time	08:45 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170531-R01	<p>B. Water Quality</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>C. Ecology</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>D. Landscape & Visual</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>E. Air Quality</p> <ul style="list-style-type: none">Dry unpaved area was observed. Contractor was advised to provide spraying regularly. <p>F. Construction Noise Impact</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	E 5
170531-R02	<p>G. Waste / Chemical Management</p> <ul style="list-style-type: none">Oil containers should be provided with drip tray. (Barging Point) <p>H. Permits/Licences</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection <p>I. Impact on Cultural Heritage</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection <p>J. Others</p> <ul style="list-style-type: none">Follow-up on previous audit sessions (Ref. No.: 170524), all identified environmental deficiency was observed improved/rectified by the Contractor.	G 10

	Name	Signature	Date
Recorded by	Johnny Fung		31 May 2017
Checked by	Dr. Priscilla Choy		31 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O-Lam Tin Tunnel - Design and Construction

Contract NE/2015/02

Tseung Kwan O-Lam Tin Tunnel-Road P2 and Associated Works

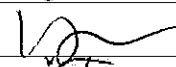
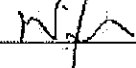
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170504
Date	4 May 2017 (Thursday)
Time	14:00-15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170504-R01 170504-R02	<p>B. Water Quality</p> <ul style="list-style-type: none">To repair the holes near the discharge point in Area A.To replace the broken sand bags near the gullies in Portion 1. <p>C. Ecology</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>D. Landscape & Visual</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>E. Air Quality</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>F. Construction Noise Impact</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>G. Waste / Chemical Management</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>H. Permits/Licences</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>I. Others</p> <ul style="list-style-type: none">Follow-up on previous audit section (Ref. No.: 170426), follow up action is needed to be reviewed for item no. 170426-R01.	B 21 B 20

	Name	Signature	Date
Recorded by	Johnny Fung		4 May 2017
Checked by	Dr. Priscilla Choy		4 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O-Lam Tin Tunnel - Design and Construction

Contract NE/2015/02

Tseung Kwan O-Lam Tin Tunnel-Road P2 and Associated Works

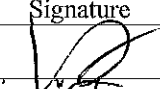
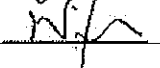
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170511
Date	11 May 2017 (Thursday)
Time	14:00-15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170511-R01 170511-R03 170511-R04	B. Water Quality <ul style="list-style-type: none">To remove muddy water / sediment accumulated in catchpits / U-channels in Area A.To replace broken sand bags deployed for gullies in Portion 1.To provide bunds to holes near discharge point in Area A.	B 7 B 20 B 21
	C. Ecology <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	D. Landscape & Visual <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
170511-R02	E. Air Quality <ul style="list-style-type: none">To cover stockpiles of dusty material in Area A after works.	E 6
	F. Construction Noise Impact <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	G. Waste / Chemical Management <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	H. Permits/Licences <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	I. Others <ul style="list-style-type: none">Follow-up on previous audit section (Ref. No.: 170504), follow up action for item ref no. 170504-R01 and 170504-R02 is needed to be reviewed during the next site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		11 May 2017
Checked by	Dr. Priscilla Choy		11 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O–Lam Tin Tunnel - Design and Construction

Contract NE/2015/02

Tseung Kwan O–Lam Tin Tunnel–Road P2 and Associated Works


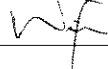
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170516
Date	16 May 2017 (Tuesday)
Time	9:00-10:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170516-001 170516-002	<p>B. Water Quality</p> <ul style="list-style-type: none"> To remove muddy water / sediment accumulated in catchpits / U-channels in Area A. Silt and sediments observed at footing of hoarding at Portion SR2B. The Contractor is reminded to remove the silt and sediment to avoid wastewater flow out of site. 	B 7 B 20
	<p>C. Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. 	
	<p>D. Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. 	
	<p>E. Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. 	
	<p>F. Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. 	
170516-R03	<p>G. Waste / Chemical Management</p> <ul style="list-style-type: none"> To remove construction waste accumulated near site office. 	G 4ii
	<p>H. Permits/Licences</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. 	
	<p>I. Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 170511), follow up action for item ref no. 170511-R01 is needed to be reviewed during the next site inspection. 	

	Name	Signature	Date
Recorded by	Johnny Fung		16 May 2017
Checked by	Dr. Priscilla Choy		16 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O-Lam Tin Tunnel - Design and Construction

Contract NE/2015/02

Tseung Kwan O-Lam Tin Tunnel-Road P2 and Associated Works



Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170525
Date	25 May 2017 (Thursday)
Time	14:00-15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170525-R01	<p>B. Water Quality</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>C. Ecology</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>D. Landscape & Visual</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>E. Air Quality</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>F. Construction Noise Impact</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>G. Waste / Chemical Management</p> <ul style="list-style-type: none">No environmental deficiency was identified during site inspection. <p>H. Permits/Licences</p> <ul style="list-style-type: none">To display valid Environmental Permit and Construction Noise Permit for marine works area. <p>I. Others</p> <ul style="list-style-type: none">Follow-up on previous audit section (Ref. No.: 170516), all identified environmental deficiency was observed improved/rectified by the Contractor	H1, 5

	Name	Signature	Date
Recorded by	Johnny Fung		25 May 2017
Checked by	Dr. Priscilla Choy		25 May 2017

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O–Lam Tin Tunnel - Design and Construction

Contract NE/2015/03

Tseung Kwan O–Lam Tin Tunnel–Northern Footbridge

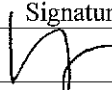
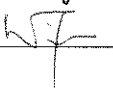
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170531
Date	31 May 2017 (Wednesday)
Time	14:00 – 14:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170531-R01	B. Water Quality <ul style="list-style-type: none">Contractor was reminded to place geotextile materials on all the manholes before commencing any construction works.	B 11
	C. Landscape & Visual <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	D. Air Quality <ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
170531-O03	E. Construction Noise Impact <ul style="list-style-type: none">Contractor was advised to place noise emission label on the air compressor.	E 8
170531-O01	F. Waste / Chemical Management <ul style="list-style-type: none">Contractor was advised to clean oil stains on the paved road.	F 9
170531-O02	<ul style="list-style-type: none">Contractor was advised to clean all muddy silt in the drip tray.	F 10
	G. Permits/Licences <ul style="list-style-type: none">No environmental deficiency was identified during site inspection	
	H. Others <ul style="list-style-type: none">N/A	

	Name	Signature	Date
Recorded by	Johnny Fung		31 May 2017
Checked by	Dr. Priscilla Choy		31 May 2017

**APPENDIX M
EVENT AND ACTION PLANS**

Event and Action Plan for Air Quality (Dust)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of complaint and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial actions to IEC within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	8. If exceedance stops, cease additional monitoring.			
Limit level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform Contractor ,IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals;

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	3. Supervise the implementation of remedial measures.	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.	4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	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.			

Event and Action Plan for Marine Water Quality

Event	Action			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day at water sensitive receiver(s)	<ul style="list-style-type: none"> Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; If exceedance is found to be caused by the reclamation activities, repeat <i>in-situ</i> measurement to confirm findings; Inform IEC and contractor; Check monitoring data, all plant, equipment and Contractor's working methods; If exceedance occurs at WSD salt water intake, inform WSD; Discuss mitigation measures with IEC and Contractor; Repeat measurement on next day of exceedance. 	<ul style="list-style-type: none"> Discuss with ET and Contractor on the mitigation measures; Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation proposal. 	<ul style="list-style-type: none"> Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Amend working methods if appropriate; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agree mitigation measures.
Action level being exceeded by two or more consecutive	<ul style="list-style-type: none"> Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; 	<ul style="list-style-type: none"> Discuss with ET and Contractor on the mitigation measures; 	<ul style="list-style-type: none"> Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation proposal; 	<ul style="list-style-type: none"> Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice;

Event	Action			
	ET	IEC	ER	CONTRACTOR
sampling days at water sensitive receiver(s)	<ul style="list-style-type: none"> • If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • 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; • If exceedance occurs at WSD salt water intake, inform WSD; • Repeat measurement on next day of exceedance. 	<ul style="list-style-type: none"> • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; • Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day at water sensitive receiver(s)	<ul style="list-style-type: none"> • Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; 	<ul style="list-style-type: none"> • Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; 	<ul style="list-style-type: none"> • Discuss with IEC, ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods; 	<ul style="list-style-type: none"> • Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	IEC	ER	CONTRACTOR
	<ul style="list-style-type: none"> • If exceedance is found to be caused by the reclamation activities, repeat <i>in-situ</i> measurement to confirm findings; • Inform IEC, contractor, AFCD and EPD • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC, ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level; • If exceedance occurs at WSD salt water intake, inform WSD. 	<ul style="list-style-type: none"> • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and submit proposal of mitigation measures to IEC and ER within 3 working days of notification; • Implement the agreed mitigation measures.
Limit level being exceeded by two or more consecutive sampling days at	<ul style="list-style-type: none"> • Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; 	<ul style="list-style-type: none"> • Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; 	<ul style="list-style-type: none"> • Discuss with IC(E), ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods; 	<ul style="list-style-type: none"> • Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	IEC	ER	CONTRACTOR
water sensitive receiver(s)	<ul style="list-style-type: none"> • If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IC(E), AFCD, contractor and EPD; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IC(E), ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days; • If exceedance occurs at WSD salt water intake, inform WSD. 	<ul style="list-style-type: none"> • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Check all plant and equipment and consider changes of working methods; • Discuss with ET, IC(E) and ER and submit proposal of mitigation measures to IC(E) and ER within 3 working days of notification; • Implement the agreed mitigation measures; • As directed by the Engineer, to slow down or to stop all or part of the construction activities.

Limit Levels and Action Plan for Landfill Gas

Parameter	Limit Level	Action
Oxygen	<19%	<ul style="list-style-type: none"> • Ventilate to restore oxygen to >19%
	<18%	<ul style="list-style-type: none"> • Stop works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%
Methane	>10% LEL (i.e. > 0.5% by volume)	<ul style="list-style-type: none"> • Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. > 1% by volume)	<ul style="list-style-type: none"> • Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore methane to <10% LEL
Carbon Dioxide	>0.5%	<ul style="list-style-type: none"> • Ventilate to restore carbon dioxide to < 0.5%
	>1.5%	<ul style="list-style-type: none"> • Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore carbon dioxide to < 0.5%

Event and Action Plan for Coral Post-Translocation Monitoring

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level Exceedance	1. Check monitoring data; 2. Inform the IEC, ER and Contractor of the findings; 3. Increase the monitoring to at least once a month to confirm findings; 4. Propose mitigation measures for consideration	1. Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.
Limit Level Exceedance	Undertake Steps 1-4 as in the Action Level Exceedance. If further exceedance of Limit Level, suspend construction works until an effective solution is identified.	1. Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.

Mitigation Measures for Vibration Monitoring

Level	Contingency Action
Alert Level	<ul style="list-style-type: none"> ● The Engineer shall be informed immediately. ● The Contractor shall submit an investigation report to describe works being undertaken. To review the instrument responses and to study the cause of undue response. ● The Contractor shall review and increase the instrumentation monitoring and reporting frequency, if applicable. ● The Contractor shall submit a detailed plan of action describing the measures to be taken should the concerned instrument reach the action level to the Engineer for approval.
Alarm Level	<ul style="list-style-type: none"> ● The Engineer shall be informed immediately. ● The active construction works may require to be suspended subject to the Engineer's review of monitoring data. ● The Contractor shall immediately implement the measures as defined in the detailed plan of action to prevent further ground movement and groundwater drawdown etc. ● The Contractor shall prepare a detailed investigation report to study the cause of the exceedance ● The Contractor shall propose a contingency plan for the Engineer's approval in the event that alarm value is reached or exceeded ● The Contractor shall develop an emergency plan for the Engineer's approval in the event the applied contingency measures cannot control the situation. ● The Contractor shall meet the Engineer to discuss the instrument response and review the effectiveness of the implemented measures. ● The Contractor shall carry out design review of the works

Action Level	<ul style="list-style-type: none">● Consideration shall be given to suspend all active construction works and the Engineer shall be informed immediately● The Contractor shall immediately implement the measures defined in the contingency plan● The Contractor shall implement the measures defined in the emergency plan in the event that the applied contingency measures are found inadequate● The Contractor shall provide a complete report to examine the construction method and review the response of the instruments with full history of the monitoring data and construction activities and necessary design update● To resume the suspended activities, the Contractor shall demonstrate to the Engineer's satisfaction that it is safe to do so with approval from the Engineer.
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**APPENDIX N
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

Table I – Recommended Mitigation Measures stipulated in EM&A Manual of the Project

(Further information on observations/reminders/non-compliance made during site audit should refer to Table II)

- Key:**
- ^ Mitigation measure was fully implemented.
 - * Observation/reminder was made during site audit but improved/rectified by the contractor.
 - # Observation/reminder was made during site audit but not yet improved/rectified by the contractor.
 - X Non-compliance of mitigation measure
 - Non-compliance but rectified by the contractor
 - N/A Not Applicable

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Air Quality Impact							
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	To minimize the dust impact	Contractor	All Active Work Sites	Construction phase	APCO	* (1) / # (1)
S3.8.1	Enclosing the unloading process at barging point by a 3-sided screen with top tipping hall, provision of water spraying and flexible dust curtains	To minimize the dust impact	Contractor	Barging Points	Construction phase	APCO	N/A
S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: <ul style="list-style-type: none"> - Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. - Use of frequent watering for particularly dusty construction areas and areas close to ASRs. - Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be 	To minimize the dust impact	Contractor	All Construction Work Sites	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation	^ * (1) / # (1) ^

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	<p>applied to aggregate fines.</p> <ul style="list-style-type: none"> - Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. - Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. - Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. - Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. - Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. - Imposition of speed controls for vehicles on site haul roads. - Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs - Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. - Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise. 						<p>* (2)</p> <p>^</p> <p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
/	Emission from Vehicles and Plants <ul style="list-style-type: none"> • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD) 	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	Valid No-road Mobile Machinery (NRMM) labels should be provided to regulated machines	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^
Noise Impact (Construction Phase)							
S4.8	- Use of quiet PME. Use of movable noise barriers for Excavator, Lorry, Dump Truck, Mobile Crane, Compactor, Concrete Mixer Truck, Concrete Lorry Mixer, Breaker, Mobile Crusher, Backhoe, Vibratory Poker, Saw, Asphalt Paver, Vibratory Roller, Vibrolance, Hydraulic Vibratory Lance and Piling (Vibration Hammer). Use of full enclosure for Air Compressor, Compressor, Bar Bender, Generator, Drilling Rig, Chisel, Large Diameter Bore Piling, Grout Mixer & Pump and Concrete Pump.	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO	N/A
Noise Mitigation Plan	Use of Temporary Noise Barriers or Full Enclosure for PME according to the approved Noise Mitigation Plan	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO	* (3)

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S4.9	<p>Good Site Practice</p> <ul style="list-style-type: none"> - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program - Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. - Mobile plant, if any, should be sited as far away from NSRs as possible. - Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. - Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	To minimize construction noise impact arising from the Project at the affected NSRs	Project Proponent	Work sites	Construction Period	EIAO-TM, NCO	# (13) ^ ^ ^ ^
S4.9	Scheduling of Construction Works during School Examination Period	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work site near school	Construction phase	EIAO-TM, NCO	N/A
Water Quality Impact (Construction Phase)							
S5.6.24	The dry density of filling material for the TKO-LT Tunnel reclamation should be 1,900kg/m ³ , with fine content of 25% or less	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A
S5.8.1	Non-dredged method by constructing steel cellular caisson structure with stone column shall be adopted for construction of seawall foundation. During the stone column installation (also	Control potential impacts from filling	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	including the installation of steel cellular caisson), silt curtain shall be employed around the active stone column installation points.	activities					
S5.8.2	Formation of seawall enclosing the reclamation for Road P2 (notwithstanding an opening of about 50m for marine access) shall be completed prior to the filling activities. The seawall opening of about 50m wide for marine access shall be selected at a location as indicatively shown in Appendix 5.10. No more than 3 filling barge trips per day shall be made with a maximum daily rate of 3,000m ³ (i.e. 1,000 m ³ per trip) for the filling operation at the reclamation area for Road P2. All filling works shall be carried out behind the seawall with the use of single silt curtain at the marine access.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A
S5.8.3	<p>Other good site practices should be undertaken during filling operations include:</p> <ul style="list-style-type: none"> - all marine works should adopt the environmental friendly construction methods as far as practically possible including the use of cofferdams to cover the construction area to separate the construction works from the sea; - floating single silt curtain shall be employed for all marine works; - all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; - all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; - excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved; - adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action; 	Control potential impacts from filling activities and marine-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, Waste Disposal Ordinance (WDO)	^ * (4) ^ ^ ^ ^

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	<ul style="list-style-type: none"> - loading of barges and hoppers should be controlled to prevent splashing of filling material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation; - any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes; - construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds; and - before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain. 						<p>^</p> <p>^</p> <p>^</p> <p>^</p>
S5.8.4	Site specific mitigation plan for reclamation areas using public fill materials should be submitted for EPD agreement before commencement of construction phase with due consideration of good site practices.	Control potential impacts from filling activities and marine based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
ERR S5.6.1	<p>To minimize water quality impact arising from the dredging and filling works for Reclamation for Road P2, the following mitigation measures shall be implemented:</p> <ul style="list-style-type: none"> - Before carrying out any dredging and underwater filling works, a temporary barrier shall first be constructed to a height above the high water mark to completely enclose the works site (without any opening at the barrier wall) - The temporary barrier fully enclosing the dredging and underwater filling works site shall not be removed before completion of all dredging and underwater filling works. - Water quality sampling and testing shall be carried out to demonstrate that the water 	Control potential impacts from dredging and filling works for Reclamation for Road P2	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	<p>^</p> <p>^</p> <p>N/A</p>

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	<p>quality inside the enclosed barrier is comparable to the ambient or baseline levels prior to the removal of the fully enclosed barrier.</p> <p>- Silt curtains shall be deployed for the installation and removal of the temporary barrier and at the double water gates marine access opening during its operation. The general of arrangement of silt curtain is shown in Figure 7 of the existing Environmental Permit (No. EP-458/2013/C).</p>						^
S5.8.5	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	* (5)
S5.8.6	Any practical options for the diversion and realignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM-DSS	^
S5.8.7	Construction site runoff and drainage should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). Good housekeeping and stormwater best management practices, as detailed in below, should be implemented to ensure that all construction runoff complies with WPCO standards and no unacceptable impact on the WSRs arises due to construction of the TKO-LT Tunnel. All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the corresponding WCZ	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM-DSS	^

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	under the TM-DSS.						
S5.8.8	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include: - use of sediment traps; and - adequate maintenance of drainage systems to prevent flooding and overflow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A ^
S5.8.9	Construction site should be provided with adequately designed perimeter channel and pretreatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	* (6)
S5.8.10	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m ³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and	Control potential impacts from construction site	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	* (7)

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	runoff and land-based construction				S5	
S5.8.12	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO S5	^
S5.8.13	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO S5	^
S5.8.14	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.15	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. Discharge of surface runoff into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	* (8) / # (8)

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S5.8.16	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.17	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.18	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and washwater should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheelwash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.19	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S5.8.20	It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There shall be no direct discharge of effluent from the site into the sea.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.21	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	# (9)
S5.8.23	Minimum distances of 100m shall be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes during construction and operational phases	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, TMDSS	^

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S5.8.24	Under normal circumstances, groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction should be discharged into storm drains after the removal of silt in silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.25 - S5.8.27 & Table 5.18	Grouting would be adopted as measure to reduce the groundwater inflow into the tunnel. During the tunnel excavation, the inflow rate of groundwater into the tunnel will be measured during the excavation. The groundwater levels above the tunnel will also be monitored by piezometers. If the inflow rate exceeds the pre-determined groundwater control criteria or the groundwater drawdown exceeds the required limit, pre-excavation grouting will be required to reduce the groundwater inflow. No significant change of groundwater levels would therefore be expected. Any chemicals/ foaming agents which would be entrained to the groundwater should be biodegradable and non-toxic throughout the tunnel construction. Potential groundwater quality impact would be minimal as the used material is non-toxic and biodegradable. No adverse groundwater quality would therefore be expected. Prescriptive measures in the form of an Action Plan with pre-emptive and re-active to preserve the groundwater levels at all times during the tunnel construction are set out in Table 5.18.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, Buildings Ordinance	N/A
S5.8.28	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phas	ProPECC PN 1/94, EIAOTM, WPCO	N/A

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S5.8.29 - S5.8.31	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an online standby pump of adequate capacity and with automatic alternating devices. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.32	All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.33	Bentonite slurries used in diaphragm wall and borepile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.34	If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.	Control potential impacts from construction site runoff and land-	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A

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		based construction					
S5.8.35	Water used in water testing to check leakage of structures and pipes should be reused for other purposes as far as practicable. Surplus unpolluted water could be discharged into storm drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.36	Sterilization is commonly accomplished by chlorination. Specific advice from EPD should be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water should be reused wherever practicable.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.37	Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.38	Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^

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S5.8.39	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater should be tinkered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.40	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul sewer via grease traps capable of providing at least 20 minutes retention during peak flow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.41	Drainage serving an open oil filling point should be connected to storm drains via a petrol interceptor with peak storm bypass.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.42	Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor. Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.43	Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system.	Control potential impacts from construction site	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^

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	Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	runoff and land-based construction					
S5.8.44	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO	^
S5.8.45	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	^
S5.8.46	<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes" published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> - suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; - chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and - storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO	# (10) ^ ^
S5.8.47	Collection and removal of floating refuse should be performed at regular intervals on a daily basis. The contractor should be responsible for keeping the water within the site boundary	Control potential impacts from	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO,	^

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	and the neighbouring water free from rubbish.	floating refuse and debris					
Ecological Impact							
S6.8.4	<p>Measures to Minimize Disturbance</p> <ul style="list-style-type: none"> - Use of Quiet Mechanical Plant during the construction phase should be adopted wherever possible. - Hoarding or fencing should be erected around the works area boundaries during the construction phase. The hoarding would screen adjacent habitats from construction phase activities, reduce noise disturbance to these habitats and also to restrict access to habitats adjacent to works areas by site workers; - Regular spraying of haul roads to minimize impacts of dust deposition on adjacent vegetation and habitats during the construction activities 	Minimize noise, human and traffic disturbance to terrestrial habitat and wildlife; and reduce dust generation	Design Team / Contractor	Land-based works are	Construction Phase	N/A	^ ^ ^
S6.8.5	<p>Standard Good Site Practice</p> <ul style="list-style-type: none"> - Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats. - Construction activities should be restricted to works areas that should be clearly demarcated. The works areas should be reinstated after completion of the works. - Waste skips should be provided to collect general refuse and construction wastes. The wastes should be properly disposed off-site in a timely manner. - General drainage arrangements should include sediment and oil traps to collect and control construction site run-off. - Open burning on works sites is illegal, and should be strictly prohibited. - Measures should also be put into place so that litter, fuel and solvents do not enter the 	Reduce disturbance to surrounding habitats	Contractor	Land-based works are	Construction Phase	N/A	^ ^ ^ ^ ^

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	nearby watercourses.						
S6.8.6	<p>Measure to Minimize Groundwater Inflow</p> <ul style="list-style-type: none"> - The drained tunnel construction method with groundwater inflow control measures would generally be adopted. - During the tunnel excavation, pre-excavation grouting could be adopted to reduce the groundwater inflow and ensure that the tunnel would meet the long term water tightness requirements. 	Minimize groundwater inflow	Contractor	Tunnel	Construction Phase	N/A	<p>N/A</p> <p>N/A</p>
S6.8.8	<p>Measure to Minimize Impact on Corals</p> <p><u>Coral translocation</u></p> <ul style="list-style-type: none"> - It is recommended to translocate the affected coral colonies, except the locally common <i>Oulastrea crispata</i>, within the reclamation area and bridge footprint to the other suitable locations as far as practicable. - The coral translocation should be conducted during the winter months (November-March) in order to avoid disturbance during their spawning period (i.e. July to October). - A detailed coral translocation plan with a description on the methodology for pretranslocation coral survey, translocation methodology, identification/proposal of coral recipient site, monitoring methodology for posttranslocation should be prepared during the detailed design stage. - The coral translocation plan should be subject to approval by relevant authorities (e.g. EPD and AFCD) before commencement of the coral translocation. All the translocation 	Minimize loss of coral	Design team, contractor, project operator	Within reclamation areas and pier footprint	Prior construction	N/A	<p>^</p> <p>^</p> <p>^</p> <p>^</p>

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	<p>exercises should be conducted by experienced marine ecologist(s) who is/are approved by AFCD prior to commencement of coral translocation.</p> <p><u>Post translocation Monitoring</u></p> <ul style="list-style-type: none"> - A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the translocated coral communities - Information gathered during each posttranslocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey. 						<p>^</p> <p>^</p>
<p>S6.8.9</p> <p>S6.8.10</p>	<p>Measure to Control Water Quality Impact</p> <ul style="list-style-type: none"> - Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area. - Diverting of the site runoff to silt trap facilities before discharging into storm drain; - Proper waste and dumping management; and - Standard good-site practice for land-based construction. 	<p>Control water quality impact, especially on suspended solid level; minimize the contamination of wastewater discharge, accidental chemical spillage and construction site runoff to the receiving water bodies</p>	<p>Design Team, contractor</p>	<p>Marine and landbased works area</p>	<p>Construction phase</p>	<p>WQO</p>	<p>N/A</p> <p>^</p> <p>^</p> <p>^</p>

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S6.8.11	<p>Compensation for Vegetation Loss</p> <ul style="list-style-type: none"> - Felling of mature trees should be compensated by planting of standard or heavy standard trees within or in vicinity of the affected area as far as practicable. Such compensatory planting for trees should be provided with at least a 1:1 ratio. In addition, vegetation at the temporarily affected area should be reinstated with species similar to the existing condition. 	Compensate for the vegetation loss	Design Team, contractor	Land-based works area	Construction phase	N/A	^
Fisheries Impact							
S7.7.3	<p>Measure to Control Water Quality Impact</p> <ul style="list-style-type: none"> - Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area. 	Control water quality impact, especially on suspended solid level	Design Team / Contractor	Marine work area	Construction phase	WQO	^
Waste Management (Construction Phase)							
S8.6.3	<p>Good Site Practices and Waste Reduction Measures</p> <ul style="list-style-type: none"> - Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; - Training of site personnel in site cleanliness, proper waste management and chemical handling procedures; - Provision of sufficient waste disposal points and regular collection of waste; - Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and - Regular cleaning and maintenance programme for drainage systems, sumps and oil 	To reduce waste management impacts	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)	^ ^ * (11) ^ * (5)

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	interceptors.						
S8.6.4	<p>Good Site Practices and Waste Reduction Measures (con't)</p> <ul style="list-style-type: none"> - Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; - Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce; - Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and - Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste. 	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)	^ ^ ^ ^
S8.6.5	<p>Good Site Practices and Waste Reduction Measures (con't)</p> <p>The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.</p>	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^
S8.6.6	<p>Good Site Practices and Waste Reduction Measures (con't)</p> <ul style="list-style-type: none"> - C&D materials would be reused in the project and other local concurrent projects as far as possible. 	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^

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S8.6.7	<p><i>Storage, Collection and Transportation of Waste</i></p> <p>Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include:</p> <ul style="list-style-type: none"> - Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; - Maintain and clean storage areas routinely; - Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and - Different locations should be designated to stockpile each material to enhance reuse. 	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	-	^ ^ ^ ^
S8.6.8	<p><i>Storage, Collection and Transportation of Waste (con't)</i></p> <ul style="list-style-type: none"> - Remove waste in timely manner; - Waste collectors should only collect wastes prescribed by their permits; - Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; - Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); - Waste should be disposed of at licensed waste disposal facilities; and - Maintain records of quantities of waste generated, recycled and disposed. 	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase		* (11) ^ ^ ^ ^ ^ ^
S8.6.9	<p><i>Storage, Collection and Transportation of Waste (con't)</i></p> <ul style="list-style-type: none"> - Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials, to monitor disposal of 	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010	^

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	waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) should be proposed.	impacts arising from waste collection and disposal					
S8.6.11 - S8.6.13	<p>Sorting of C&D Materials</p> <ul style="list-style-type: none"> - Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. - Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. - The C&D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled in the reclamation as far as practicable before delivery to PFRFs. While opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills 	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010 ETWB TCW No. 33/2002 ETWB TCW No. 19/2005	^ ^ ^
S8.6.15 – S8.6.16	<p>Sediments</p> <ul style="list-style-type: none"> - Sediment encountered may be reused as filling material on-site after cement stabilization. Cement-stabilization process is undertaken by mixing sediment and cement and will convert sediment to earth filling material. The treated sediment has to comply with Risk-Based Remediation Goals (RBRGs) before being reused in order not to raise any land contamination issue. The adoption of RBRGs to assess stabilized sediment has been proposed in the current C&DMMP. MFC has no adverse comment on the current C&DMMP. The sediment quality indicates that all sediments comply with most stringent RBRGs except for one sediment sample (TKO-EBH501 3-3.95m) with lead exceeding the RBRG. Except for the sediment sample (TKO-EBH501 3-3.95m), the chemical screening 	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	RBRG	N/A

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	<p>results do not indicate sediment as contaminated soil. It is anticipated that reuse of sediment except sediment sample (TKO-EBH501 3-3.95m) will not lead to land contamination.</p> <ul style="list-style-type: none"> - Despite exceedance of RBRG, onsite reuse of sediment under sample (TKO-EBH501 33.95m) as filling material after cement stabilization is also a suitable treatment. Sediment quality indicates the sediment sample (TKO-EBH501 3-3.95m) exceed RBRG for lead. While cement stabilization will immobilize metal contaminants, it is capable to treat the exceedance on lead. The stabilized material should comply with UTS of Lead and UCS. If the treated material do not comply with UTS or UCS, re-stabilization have to be undertaken to meet compliance of UTS and UCS before reusing the treated sediment as filling material. However, further agreement on final disposal/treatment on sediment under sample (TKO-EBH501 3-3.95m) has to be sought from DEP 						N/A
S8.6.17 – S8.6.20	<p>Sediments (con't)</p> <ul style="list-style-type: none"> - Requirements of the Air Pollution Control (Construction Dust) Regulation, where relevant, shall be adhered to during boring, excavation, transportation and disposal of sediments or cement stabilization of sediment. - A treatment area should be confined for carrying out the cement stabilization mixing and temporary stockpile. The area should be designed to prevent leachate from entering the ground. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). - In order to minimise the potential odour / dust emissions during boring, excavation and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges/trucks. 	To determine the best handling and treatment of sediment	Contractor	All works areas with sediments concern	Construction Phase		N/A N/A N/A

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	<p>Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.</p> <ul style="list-style-type: none"> - In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site. 						N/A
S8.6.21	<p>Sediments (con't)</p> <ul style="list-style-type: none"> - Alternatively, excavated sediment can be treated with marine disposal. The basic requirements and procedures for excavated sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. MFC is responsible for the provision and management of disposal capacity and facilities for the excavated sediment, while the permit of marine dumping is required under the Dumping at Sea Ordinance and is the responsibility of the DEP. 	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A
S8.6.23	<p>Sediments (con't)</p> <ul style="list-style-type: none"> - For allocation of sediment disposal sites and application of marine dumping permit, separate SSTP has to be submitted to EPD for agreement under DASO. Additional site investigation, based on the SSTP, maybe carried out in order to confirm the disposal arrangements for the proposed sediments removal. A Sediment Quality Report (SQR) shall then be required for EPD agreement under DASO prior to the tendering of the construction contract, discussing in details the site investigation, testing results as well as the delineation of each of the categories of excavated materials and the corresponding types of disposal. 	To determine the best handling and disposal option of sediment	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A
S8.6.24 -	Sediments (con't)	To ensure handling	Contractor	All works	Construction	ETWB TC(W) No.	

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S8.6.28	<ul style="list-style-type: none"> - The excavated sediments is expected to be loaded onto the barge and transported to the designated disposal sites allocated by the MFC. The excavated sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002. - Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). - In order to minimise the potential odour / dust emissions during boring and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. - The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. 	of sediments are in accordance to statutory requirements		areas with sediments concern	Phase	34/2002 & Dumping at Sea Ordinance	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>

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	<ul style="list-style-type: none"> - In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site. - Another possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal. 						<p>N/A</p> <p>N/A</p>
S8.6.26	<p>Chemical Wastes.</p> <ul style="list-style-type: none"> - If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	To ensure proper management of chemical waste	Contractor	All works sites	Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes Waste Disposal (Chemical Waste) (General) Regulation	^
S8.6.27	General Refuse	To ensure proper	Contractor	All works sites	Construction	Public Health and	

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	<ul style="list-style-type: none"> - General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material. 	management of general refuse			Phase	Municipal Services Ordinance (Cap. 132)	^
Impact on Cultural Heritage (Construction Phase)							
S9.6.4	Dust and visual impacts <ul style="list-style-type: none"> - Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided; - The open yard in front of the temple should be kept as usual for annual Tin Hau festival; - Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple. 	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO	^ ^ ^
S9.6.4	Indirect vibration impact <ul style="list-style-type: none"> - Vibration level is suggest to be controlled within a peak particle velocity (ppv) limit of 5mm/s measured inside the historical buildings; - Monitoring of vibration should be carried out during construction phase. - Tilting and settlement monitoring should will be applied on the Cha Kwo Ling Tin Hau Temple as well. - A proposal with details for the mitigation measures and monitoring of impacts on built heritage shall be submitted to AMO for comments before commencement of work. 	To prevent indirect vibration impact	Contractors	Work areas	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.	^ ^ ^ ^
Landscape and Visual Impact (Construction Phase)							
Table 10.8.1	CM1 - Construction area and contractor's temporary works areas to be minimised to avoid impacts on adjacent landscape.	Avoid impact on adjacent landscape areas	CEDD (via Contractor)	General	Construction planning and during	N/A	^

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
					construction period		
Table 10.8.1	CM2 - Reduction of construction period to practical minimum.	Minimise duration of impact	CEDD (via Contractor)	N/A	Construction planning	N/A	^
Table 10.8.1	CM3 - Topsoil, where the soil material meets acceptable criteria and where practical, to be stripped and stored for re-use in the construction of the soft landscape works. The Contract Specification shall include storage and reuse of topsoil as appropriate.	To allow re-use of topsoil	CEDD (via Contractor)	General	Site clearance	As per the Particular Specification	^
Table 10.8.1	CM4 - Existing trees at boundary of site and retained trees within site boundary to be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification, under which the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).	To minimize tree loss	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance and throughout construction period	ETWB TC 3/2006 and as per tree protection measures in Particular Specification	* (12)
Table 10.8.1	CM5 - Trees unavoidably affected by the works shall be transplanted where practicable. Where possible, trees should be transplanted direct to permanent locations rather than temporary holding nurseries. A detailed tree transplanting specification shall be provided in the Contract Specification and sufficient time for preparation shall be allowed in the construction programme.	To maximize preservation of existing trees	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance	ETWB TC 3/2006 and as per tree protection measures in Particular Specification	^
Table 10.8.1	CM6 - Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	To maximize screening of the works	CEDD (via Contractor)	At Lam Tin Interchange and edge of Road P2	Beginning of construction period	N/A	^

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				landscape deck, TKO			
Table 10.8.1	CM7 - Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	As per Particular Specification	N/A
Table 10.8.1	CM8 - Control of night-time lighting by hooding all lights and through minimisation of night working periods.	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	N/A	^
Table 10.8.1	CM9 - Screening of works areas with hoardings with appropriate colours compatible with the surrounding area	Reduction of visual intrusion	CEDD (via Contractor)	Project site Boundary	Excretion of site hoarding	N/A	^
Table 10.8.1	CM10 - Avoidance of excessive height and bulk of site buildings and structure	Reduction of visual intrusion and integration with environment	CEDD (via Contractor)	Built structures	Design and construction stage	N/A	^
Table 10.8.1	CM11 - Limitation of run-off into freshwater streams, ponds and sea areas	Avoidance of contamination of water courses and water bodie	CEDD (via Contractor)	TKO reclamation, TKO tunnel portal, Cha Kwo Ling roadworks	Throughout construction period	N/A	^
Table 10.8.1	CM12 - Minimise area of reclamation and design the edges sensitively to tie in with adjacent coastline characte	Minimise loss of Junk Bay and integration with	CEDD (via Contractor)	Temporary reclamation for barging	Construction planning and reclamation	N/A	N/A

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		existing coastlin		points at TKO and Lam Tin and permanent reclamation for TKO Interchange slip roads and Road P2	stages		
Landfill Gas Hazard (Design and Construction Phase)							
S11.5.9	<p>A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site throughout the groundworks phase. The Safety Officer should be provided with an intrinsically safe portable instrument, which is appropriately calibrated and able to measure the following gases in the ranges indicated below:</p> <p>Methane 0-100% LEL and 0100% v/v Carbon dioxide 0-100% Oxygen 0-21%</p>	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note	^
S11.5.10 S11.5.25	<p>Safety Measures</p> <p>- For staff who work in, or have responsibility for "at risk" area, such as all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards.</p>	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note Labour	^

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	<ul style="list-style-type: none"> - An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out. - No worker should be allowed to work alone at any time in or near to any excavation. At least one other worker should be available to assist with a rescue if needed. - Smoking, naked flames and all other sources of ignition should be prohibited within 15m of any excavation or ground-level confined space. "No smoking" and "No naked flame" notices should be posted prominently on the construction site and, if necessary, special areas should be designed for smoking. - Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation. - Welding, flame-cutting or other hot works may only be carried out in trenches or confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Officer (or, in the case of small developments, other appropriately qualified person). - The permit to work procedure should set down clearly the requirements for continuous monitoring for methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure should also require the presence of an appropriately qualified person, in attendance outside the 'confined area', who should be responsible for reviewing the gas measurements as they are made, and who should have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise should be permitted to carry out hot works in confined areas. 			Zone		Department's Code of Practice for Safety and Health at Work in Confined Space	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	<ul style="list-style-type: none"> - Where there are any temporary site offices, or any other buildings located within the Sai Tso Wan Landfill Consultation Zone which have enclosed spaces with the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas (by survey using portable gas detectors); or be raised clear of the ground by a minimum of 500mm. This aims to create a clear void under the structure which is ventilated by natural air movement such that emission of gas from the ground are mixed and diluted by air. - Any electrical equipment, such as motors and extension cords, should be intrinsically safe. During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed to prevent the migration of gases through the pipeline/conduit. All piping /conduiting should be capped at the end of each working day. - During construction, adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus (BA) sets should be made available on site. - Fire drills should be organized at not less than six monthly intervals. - The contractor should formulate a health and safety policy, standards and instructions for site personnel to follow. - All personnel who work on the site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices (in Chinese and English) should be posted at prominent position around the site warning danger of the potential hazards. - Service runs within the Consultation Zone should be designated as "special routes"; utilities companies should be informed of this and precautionary measures should be 						<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	<p>implemented. Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces such as manholes and service chambers, and that appropriate monitoring procedures are in place to prevent hazards due to asphyxiating atmospheres in confined spaces. Detailed guidance on entry into confined spaces is given in Code of Practice on Safety and Health at Work in Confined Spaces (Labour Department, Hong Kong).</p> <ul style="list-style-type: none"> - Periodically during ground-works construction within the 250m Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person. 						^
<p>S11.5.26 - S11.5.31</p>	<p>Monitoring</p> <ul style="list-style-type: none"> ● Routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters into the area. ● For excavations deeper than 1m, measurements should be carried out: <ul style="list-style-type: none"> - at the ground surface before excavation commences;- - immediately before any worker enters the excavation; - at the beginning of each working day for the entire period the excavation remains open; <p>and</p>	<p>Protect the workers from landfill gas hazards</p>	<p>Contractor</p>	<p>Project sites within the Sai Tso Wan Landfill Consultation Zone</p>	<p>Construction phase</p>	<p>EPD's Landfill Gas Hazard Assessment Guidance Note</p>	<p>^</p>

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	<ul style="list-style-type: none"> - periodically throughout the working day whilst workers are in the excavation. ● For excavations between 300mm and 1m deep, measurements should be carried out: <ul style="list-style-type: none"> - directly after the excavation has been completed; and - periodically whilst the excavation remains open. ● For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person. ● Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person. ● The exact frequency of monitoring should be determined prior to the commencement of works, but should be at least once per day, and be carried out by a suitably qualified or qualified person before starting the work of the day. Measurements shall be recorded and kept as a record of safe working conditions with copies of the site diary and submitted to the Engineer for approval. The Contractor may elect to carry out monitoring via an automated monitoring system. 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
S11.5.32	<p>The hazards from landfill gas during the construction stage within the Sai Tso Wan Landfill Consultation Zone should be minimized by suitable precautionary measures recommended in Chapter 8 of the Landfill Gas Hazard Assessment Guidance Note.</p>	<p>construction stage within the Sai Tso Wan</p> <p>Protect the workers from landfill gas hazards</p>	Contractor	<p>Project sites within the Sai Tso Wan Landfill Consultation Zone</p>	Construction phase	<p>EPD's Landfill Gas Hazard Assessment Guidance Note</p>	N/A

Table II - Observations/reminders/non-compliance made during Site Audit

- Key:**
- * Observation/reminder was made during site audit but improved/rectified by the contractor.
 - # Observation/reminder was made during site audit but not yet improved/rectified by the contractor.
 - X Non-compliance of mitigation measure
 - Non-compliance but rectified by the contractor

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
Air Quality Impact					
* (1)	S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	NE/2015/01	Construction of Emergency Egress Point	To provide adequate water spray to drilling works in Portion 4c to avoid dust generation.
# (1)	S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: <ul style="list-style-type: none"> - Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. - Use of frequent watering for particularly dusty construction areas and areas close to ASRs. 	NE/2015/01	Construction of Lam Tin Interchange	Dry unpaved area was observed. Contractor was advised to provide spraying regularly.
* (2)	S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: <ul style="list-style-type: none"> - Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. 	NE/2015/01	Site Formation of TKO Portal	To cover stockpile of sand in TKO to avoid dust generation.
			NE/2015/02	Construction of Road P2	To cover stockpiles of dusty material in Area A after works.
Noise Impact (Construction Phase)					
* (3)	Noise Mitigation Plan	Use of Temporary Noise Barriers or Full Enclosure for PME according to the approved Noise Mitigation Plan	NE/2015/01	Construction of Lam Tin Interchange	Mitigation measure for noise emission of the drill rig at CKL site should be applied where necessary.
			NE/2015/01	Construction of Emergency	To provide adequate noise barrier to drilling works and to repair the existing noise barrier to avoid gaps in Portion 4c.

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Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
				Egress Point	
			NE/2015/01	Construction of Lam Tin Interchange	To repair the gaps of temporary noise barrier for drill rig in Portion 3.
			NE/2015/01	Construction of Lam Tin Interchange	To repair the temporary noise enclosure for breaker in Portion 3.
# (13)	S4.9	Good Site Practice - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program	NE/2015/03	Construction of Northern Footbridge	Contractor was advised to place noise emission label on the air compressor
Water Quality Impact (Construction Phase)					
* (4)	S5.8.3	Other good site practices should be undertaken during filling operations include: - floating single silt curtain shall be employed for all marine works;	NE/2015/01	Construction of TKO Portal	To repair silt curtain for marine works in TKO to ensure that geotextile is extended to seabed. To repair the silt curtain in TKO that geotextile should be extended to seabed. Muddy water observed near marine works in Tseung Kwan O. The Contractor is reminded to regularly maintain silt curtain on-site and ensure that geotextile is extended to seabed.
* (5)	S5.8.5 / S8.6.3	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents. Good Site Practices and Waste Reduction Measures - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors	NE/2015/01	Construction of TKO Portal	To set up proper drainage system in CKL
			NE/2015/01	Construction of Lam Tin Interchange	To remove the mud accumulated in U-channel near discharge point in TKO.
			NE/2015/02	Construction of Road P2	To repair the holes near the discharge point in Area A to prevent surface runoff flow into the discharge point.
			NE/2015/02	Construction of Road P2	To remove muddy water / sediment accumulated in catchpits / U-channels in Area A.

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Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
* (6)	S5.8.9	Construction site should be provided with adequately designed perimeter channel and pretreatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	NE/2015/01	Site Formation of TKO Portal	Stagnant water should be cleared at TKO site.
			NE/2015/02	Construction of Road P2	Silt and sediments observed at footing of hoarding at Portion SR2B. The Contractor is reminded to remove the silt and sediment to avoid wastewater flow out of site.
* (7)	S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m ³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	NE/2015/01	Site Formation of TKO Portal	Overflow of muddy water observed from sedimentation tank in Tseung Kwan O under Red Rainstorm Warning Signal. The Contractor is reminded to ensure that the tank is of adequate capacity for wastewater treatment
* (8)	S5.8.15	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	NE/2015/02	Construction of Road P2	To replace the broken sand bags near the gullies in Portion 1.
# (8)			NE/2015/03	Construction of Northern Footbridge	Contractor was reminded to place geotextile materials on all the manholes before commencing any construction works.
# (9)	S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	NE/2015/01	Construction of Cha Kwo Ling Barging Point	Oil containers should be provided with drip tray.
			NE/2015/03	Construction of Northern Footbridge	Contractor was advised to clean all muddy silt in the drip tray.
# (10)	S5.8.46	Disposal of chemical wastes should be carried out in compliance with the Waste	NE/2015/03	Construction of	Contractor was advised to clean oil stains on the paved

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Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
		Disposal Ordinance. The "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes" published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: - suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;		Northern Footbridge	road.
Waste Management (Construction Phase)					
* (11)	S8.6.3 / S 8.6.8	Good Site Practices and Waste Reduction Measures - Provision of sufficient waste disposal points and regular collection of waste; Storage, Collection and Transportation of Waste (con't) Remove waste in timely manner;	NE/2015/02	Construction of Road P2	To remove construction waste accumulated near site office.
Landscape and Visual Impact (Construction Phase)					
* (12)	Table 10.8.1	CM4 - Existing trees at boundary of site and retained trees within site boundary to be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification, under which the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).	NE/2015/01	Construction of Lam Tin Interchange	To properly set-up tree protection area in Portion 3.

**APPENDIX O
SUMMARIES OF ENVIRONMENTAL
COMPLAINT, WARNING, SUMMON
AND NOTIFICATION OF SUCCESSFUL
PROSECUTION**

Appendix O - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log for Tseung Kwan O - Lam Tin Tunnel

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
1	7 th December 2016	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained about the construction noise and dust near Yau Lai Estate. (EPD Reference No.: K15/RE/00032001-16)	<p>According to information provided by the Contractor, powered Mechanical Equipment being operated for construction of Lam Tin Interchange on 7 and 9 December 2016 include breaker, dump truck, backhoes, drilling rig and small bulldozer. They were operated on and off with some idling time. It is considered that noise nuisance during the time of complaint was mainly due to high noise level emission during the use of breaker for rock breaking.</p> <p>The Contractors had implemented environmental mitigation measures in accordance with the “Implementation Schedule of Proposed Mitigation Measures” of EM&A Manual to reduce construction dust and noise nuisance to the vicinity.</p>	Closed
2	9 th December 2016	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Block A Nga Lai House	The complainant complained about the construction noise near Yau Lai Estate. (EPD Reference No.: K15/RE/00032317-16)	<p>According to the regular air quality monitoring conducted at Air Quality Monitoring Stations AM3, no Action or Limit Level Exceedance was recorded from 6 – 14 December 2016. Similarly, no Limit Level Exceedance was recorded at Noise Monitoring Station CM1, Station CM2 and Station CM3 from 6 – 16 December 2016. With the implementation of environmental mitigation measures by Contractor on site, it is considered that no adverse air quality and noise impact was brought to the nearby sensitive receivers by the works of this Project.</p>	Closed
3	9 th December 2016	Not Specified / Construction of Road P2	Sai Kung District Committee Member Mr. Chan Kai Wai	The complainant complained about the noise nuisance during transportation of construction materials on haul road and dust generation during construction activities.	<p>No construction activities were carried out for both construction of Road P2 and TKO portal during night time or at about 7am. Therefore, no construction noise nuisance were generated during night-time or at about 7am under this Project and it is considered that these noise nuisance is not project-related.</p> <p>The Contractors of this Project had implemented environmental mitigation measures for air quality, noise and visual impact (night-time lighting) in accordance with the “Implementation Schedule of Proposed Mitigation Measures” of EM&A Manual.</p>	Closed
4	20 th December 2016	Not Specified / Construction of Road P2	Resident of Ocean Shore	The complainant complained about the lighting and noise nuisance on construction vessels moored near Ocean Shores during night time.	<p>The Contractors had taken the initiative to provide additional noise</p>	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
5	22nd December 2016	21 Dec 2016 at night / Construction of TKO portal	Resident of Block 3, Ocean Shores	The complainant concerned the noise generated by the construction works at hillside near Block 3 of Ocean Shores in daytime.	mitigation measures to works since the complaints were received including: - Temporary noise barrier had been installed to reduce noise nuisance from piling works in construction of Road P2 Provision of noise enclosure to cover generators for reducing its noise nuisance in TKO portal; and - Provision of portable noise enclosures at breakers and generators to reduce noise emission from works in TKO portal	Closed
6	22nd December 2016	Not specified / Construction of TKO portal	Public	The complainant complained about the noise generated by the construction works at hillside in daytime.		Closed
7	22nd December 2016	Not specified / Construction of Road P2	Resident from Ocean Shore	The complainant complained about the noise nuisance of broadcast on construction vessel near Ocean Shores at 7am and the noise generated by the construction works outside Tseung Kwan O Chinese Permanent Cemetery.	According to the regular air quality and noise monitoring for this Project, no Action or Limit Level Exceedance was recorded in December 2016. With the implementation of environmental mitigation measures by Contractors on site, it is considered that no adverse air quality and noise impact was brought to the nearby sensitive receivers by the works of this Project.	Closed
8	22nd December 2016	Not specified / Construction of Road P2 and TKO portal	Resident from Ocean Shore	The complainant complained about the noise nuisance generated by construction works of Tseung Kwan O portal in daytime and noise nuisance of “loud speaker” on construction vessel near Ocean Shores.	According to the ET’s ad-hoc site inspection during night-time, no unacceptable noise nuisance from this Project was heard. No strong light emission from all the construction vessels near Ocean Shores was observed yet minimum lighting for marine safety purpose was observed from the construction vessel and anchors.	Closed
9	16 th December 2016	Not Specified / near Ocean Shores	DC member	The complainant complained that they noticed about 2 work vessels were being used at 00:00-01:00 and also moored there overnight which caused light pollution and affecting the residents.	According to the findings of investigation, minimum lighting on the construction vessel was required for guard watching the works site. Adverse night-time light and noise nuisance from the marine works area near Ocean Shores as alleged by the complainant are considered not caused by this Project.	Closed
10	17 th January 2017	5 January 2017 / near Ocean Shores	DC member	The complainant complained that marine vessels were used at about 22:00 and around 01:00 on 5 Jan 2017, again causing noise and light nuisance to the residents.	The Contractor had continuously implemented environmental mitigation measures in accordance with the “Implementation Schedule of Proposed Mitigation Measures” of EM&A Manual. To avoid strong light emission towards the sensitive receivers, night-time lighting is properly controlled by hooding all lights (except necessary lighting for safety purpose and guard watching); According to the ET’s ad-hoc site inspection during night-time, no unacceptable noise nuisance from this Project was heard. No strong light emission from all the construction vessels near Ocean Shores was observed yet minimum lighting for marine safety and guard watching	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
					purpose was observed from the construction vessel and anchors. The Contractor was recommended to continuously implement the following visual impact mitigation measures: <ul style="list-style-type: none"> necessary lighting on construction vessels should be oriented as much as possible such that direct strong lighting towards the sensitive receivers is avoided. Strong lighting that may be in intermittent use should be shut down between works periods 	
11	23 rd December 2016	Not Specified / near Cha Kwo Ling Tsuen	Cha Kwo Ling Tsuen	The complainant complaint about the Soil/muddy water from construction site near Cha Kwo Ling Tsuen. (EPD Reference No.: K15/RE/00033951-16)	No construction works were being carried out on 23 rd December 2016 at Portion WA1, which is the site portion near Cha Kwo Ling Tsuen. Despite, it was recorded that some muddy water was flowing from the Contractor's wheel washing facility to the gullies within the site boundary.	Closed
12	29 th December 2016	23 rd December 2016 / near Cha Kwo Ling Tsuen	Cha Kwo Ling Tsuen	The complainant complaint that some muddy water flowing from the wheel washing facility to the gullies within the site boundary.	For complaint of muddy water on 23 rd December 2016, the Contractor has fixed the clear water hose for wheel washing on 24 th December 2016 early morning. During the recent weekly site inspections to Site Portion WA1, no muddy water was observed leaked out of the Site Boundary.	Closed
13	6 th January 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Block A Nga Lai House	The complainant complained about the noise nuisance during rock breaking at the Eastern Harbour Crossing (EHC) portal and lack of noise mitigation measures during the construction works.	After investigation, it was found out that necessary rock breaking works by hydraulic or pneumatic breakers was conducted during excavation for tunnel adit at Lam Tin Interchange. Noise nuisance from the works area is considered due to the high noise level emission during use of hydraulic or pneumatic breakers. The Contractor had implemented environmental mitigation measures in accordance with the "Implementation Schedule of Proposed Mitigation Measures" of EM&A Manual as below:	Closed
14	6 th January 2017	Not Specified / Cha Kwo Ling Road	Resident of Yau Lai Estate	The complainant complained about the noise nuisance generated by the excavation works at Cha Kwo Ling Road on 6 January 2017 just after 7 a.m.	<u>Air Quality</u> Use of frequent watering during construction of Lam Tin Interchange, including watering of eight times a day on active work area, exposed area and paved haul roads to mitigate air quality impacts to the nearby Air Sensitive Receivers (ASRs)	Closed
15	6 th January 2017	Not Specified / Construction site near Yau Lai Estate	Resident of Yau Lai Estate Bik Lai House	The complainant complained about the noise nuisance during the construction works near Yau Lai Estate at 7:15am. He requested to erect noise barriers and set up water spraying	<u>Noise</u> <ul style="list-style-type: none"> Provision of portable noise enclosures to head of breakers to reduce noise emission during rock breaking works in Lam Tin Interchange; 	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
				system to minimize the noise and air nuisances to the nearby residents.	<ul style="list-style-type: none"> ● Provision of portable noise enclosures to reduce noise nuisance from drilling works and generator in Lam Tin Interchange; and ● Use of Quiet PME on-site including generator and hydraulic excavator. 	
16	6 th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Cheuk Lai House	The complainant complained the construction noise generated from this Project (EPD Reference No.: K15/RE/0000564-17)	<p>The Contractor has taken the initiative to implement additional noise mitigation measures in order to further minimize noise nuisance to the nearby sensitive receivers, including the followings:</p> <ul style="list-style-type: none"> ● Provision and installation of additional temporary noise barrier during rock breaking works for construction of Lam Tin Interchange; ● Commencement time of daily construction works for construction of Lam Tin Interchange has been postponed from 7am to 8am each day. <p>According to the regular air quality and noise monitoring for this Project, no Action or Limit Level Exceedance was recorded from 16 December 2016 to 19 January 2017. With the implementation of environmental mitigation measures by Contractors on site, it is considered that no adverse air quality and noise impact was brought to the nearby sensitive receivers by the works of this Project.</p> <p>Nevertheless, the Contractor was recommended to continue to properly implement and strictly follow the air quality and noise mitigation measures as recommended in the Environmental Monitoring & Audit Manual and approved Noise Mitigation Plan to minimize environmental impact on the construction site.</p>	Closed
17	6 th January 2017	Not Specified / Construction site near Yau Lai Estate	Resident of Yau Lai Estate Bik Lai House	The Yau Lai Estate Property Services Management Office mentioned that one of the resident of Yau Lai Estate had complained to Hong Kong Housing Authority (HKHA) about the noise generated by the construction works.		Closed
18	10 th January 2017	Not Specified	Unknown	The complainant complained the construction noise generated from this Project (EPD Reference No.: K15/RE/0000967-17)		Closed
19	12 th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	The complainant complained the noise generated from rock breaking at Lam Tin Interchange. He requested concrete actions to improve the situation.		Closed
20	12 th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained the noise generated from rock breaking at Lam Tin Interchange.		Closed
21	13 th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning.		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
22	13 th January 2017	Not Specified / Construction Works near Eastern Harbour Crossing tunnel portal	Anonymous	The complainant complained about the noise generated by the construction works near the toll plaza of the Eastern Harbour Crossing (EHC). The complainant complained again on 24 Jan 2017 and mentioned the noise problem still affected the daily life of residents		Closed
23	16 th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning.		Closed
24	17 th January 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained the construction noise generated at Lam Tin Interchange.		Closed
25	26 th January 2017	Not Specified / Construction Works near Eastern Harbour Crossing tunnel portal	黃國健議員及何啟明議員	LC members referred complaints about the noise generated by the construction works near the EHC tunnel portal. They mentioned that the noise generated by the construction works had greatly affected the daily life of nearby residents, especially occupants of Block 5 of Yau Lai Estate and those who lived at the upper floors.	<p>After investigation, it was found out that necessary rock breaking works by hydraulic or pneumatic breakers was conducted during excavation for tunnel adit at Lam Tin Interchange. Noise nuisance from the works area is considered due to the high noise level emission during use of hydraulic or pneumatic breakers.</p> <p>The Contractor had implemented environmental mitigation measures in accordance with the “Implementation Schedule of Proposed Mitigation Measures” of EM&A Manual.</p> <p>The Contractor has taken the initiative to implement additional noise mitigation measures in order to further minimize noise nuisance to the nearby sensitive receivers, including the followings:</p> <ul style="list-style-type: none"> ➤ Provision and installation of additional temporary noise barrier during rock breaking works for construction of Lam Tin Interchange; ➤ Commencement time of daily construction works for construction of Lam Tin Interchange has been postponed from 7am to 8am each day. 	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
26	27 th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning. (EPD Ref No. K15/RE/00002945-17)	According to information provided by the Contractor, powered Mechanical Equipment being operated on site during the time of complaint include breaker, dump truck, backhoes, drilling rig, mobile crane and small bulldozer. They were operated on and off with some idling time. It is considered that noise nuisance during the time of complaint was mainly due to high noise level emission during the use of breaker for rock breaking.	Closed
27	9 th February 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yat Lai House, Yau Lai Estate	The complainant complained about the noise nuisance during the construction works of Lam Tin Interchange at 8:10am. (EPD Reference No.: K15/RE/00003855-17)	In addition to the the “Implementation Schedule of Proposed Mitigation Measures” of EM&A Manual, the Contractor has implemented the following additional noise mitigation measures since late including: <ul style="list-style-type: none"> ● Provision and installation of additional temporary noise barrier during rock breaking works for construction of Lam Tin Interchange; ● Sound absorptive materials with 50mm thickness were hanged on rock mountain wall as well as temporary noise barrier containers; and ● Adoption of alternative rock breaking method such as partial rock breaking by rock splitter. 	Closed
28	13 th February 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yat Lai House, Yau Lai Estate	The complainant complained about the noise nuisance during the construction works of Lam tin Interchange.	In addition, the Contractor has taken the initiative to explore measures to further reduce construction noise nuisance such as: <ul style="list-style-type: none"> ● Installation of cantilever barrier on top of the containers; ● Installation of tuned mass dampers on breaker head; and ● Use of acoustic mat cover and a retractable noise barrier where feasible. <p>According to the regular noise monitoring no Limit Level Exceedance was recorded at Noise Monitoring Station CM1, Station CM2 and Station CM3 from 2 – 15 February 2017. With the implementation of environmental mitigation measures by Contractors on site, it is considered that no adverse air quality and noise impact was brought to the nearby sensitive receivers by the works of this Project.</p>	Closed
29	23 rd February 2017	18 Feb 2017 / Slope Works at Lei Yue Mun Road	Anonymous	The complainant complained about the dust generated by the slope works opposite to Lam Tin Ambulance Deport on 18 February 2017 afternoon. He mentioned that the dust greatly affected the pedestrian.	The major source of construction dust nuisance was construction of a temporary storage area. <p>As per investigation, the Contractor has provided environmental mitigation measures to prevent dust generation for the slope works. Water spray was prepared and provided next to the works for dust suppression during the use of handheld breaker.</p>	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
30	23 rd February 2017	Not Specified / BMCPC Footpath	陳繼偉議員	Mr. Chan complained that some of the excavated materials fell from the dump trucks on the BMCPC footpath affecting the safety of pedestrian and hikers.	The major source of construction dust nuisance was formation of temporary site haul road. As per investigation, the following environmental mitigation measures are implemented by the Contractor:	Closed
31	2 nd March 2017	Not Specified / Construction Works near BMCPC Footpath	A resident of Ocean Shores	The complainant complained about the dust generated by the construction works near the existing BMCPC footpath	<ul style="list-style-type: none"> ➤ Water truck was provided for dust suppression at least 8 times per day along the footpath within our site boundary; ➤ Wheel washing were provided for all dump trucks once loaded; ➤ All the dump trucks were covered properly with a mechanical cover once loaded. ➤ The dump trucks were loaded in a specific area (off the footpath) near the formation works area. 	Closed
32	8 th March 2017	7 Mar 2017 / Slope works near Sin Fat Road Tennis Court	Public	The complainant complained the dust and noise generated by the slope works near Sin Fat Road Tennis Court	The major source of construction dust and noise nuisance was shotcreting of slope surface, and drilling for soil nail. As per investigation, the following environmental mitigation measures are implemented by the Contractor:	Closed
33	10 th March 2017	4 Mar 2017 / Slope works near Sin Fat Road Tennis Court	Anonymous	The complainant complained the dust generated by the slope works near Sin Fat Road Tennis Court.	<ul style="list-style-type: none"> ➤ Tarpaulin sheets were provided along the slope adjacent to the tennis court during shotcreting; ➤ After the complaint was received, the dust screen for tennis court has been enhanced immediately with additional tarpaulin along the fencing of tennis court; ➤ Additional acoustic sheets were also provided to minimize construction noise nuisance to users of the tennis courts; ➤ At the location of shotcreting / drilling of slope works, additional tarpaulin sheet was placed at source to minimize dust generation due to the works 	Closed
34	13 th March 2017	27 Feb – 12 Mar 2017 / Barging point in front of Ocean Shore	Public	The complainant complained about noise from the loading / unloading activities at the barging point in front of Ocean Shore for material delivery to the LT-TKO Tunnel work site during 3:00 am and 4:00am over the past 2 weeks.	According to information provided by the Contractors, no works, including any loading / unloading works, was carried out during the restricted hours at site area near Ocean Shores in early March 2017. The complaint is concluded to be non-Project related. The Engineer and the Environmental Team have reminded the contractor(s) not to carry out any works, especially loading/unloading activities near the Ocean Shores during restricted hours to minimize noise nuisance to the nearby residents.	Closed
35	21 st March 2017	Not Specified / Construction Works	茶果嶺鄉民聯誼會書記鍾先生	The complainant stated that villagers concerned about the	In accordance with the information provided by the Contractor of the Project, vehicle wheel washing near Cha Kwo Ling Village was carried	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
		near Cha Kwo Ling Village		waste water produced by car washing in construction site will flow into the sea/ existing drainage system directly and requested the contractors to improve the situation.	<p>out site access of Portion 1 and Portion WAI. At Portion 1, a ‘WetSep’ wastewater treatment system was installed to treat wastewater from vehicle washing washing. For Portion WAI, surface runoff collection system is also installed near the site access. Also, concrete sand bag bunds are provided near seafront of Portion WAI to prevent wastewater flowing into the sea.</p> <p>Despite, the Contractor was reminded to fully implement the relevant water quality mitigation measures according to the EM&A Manual on site. The Contractor was also recommended to provide training for all workers again to increase awareness of their environmental responsibilities and properly collect and treat all wastewater generated due to construction works.</p>	
36	25 th March 2017	Not Specified / Construction Works of TKO Portal	Public	The complainant complaint about the construction dust impact due to marine works and construction of tunnel of this Project.	<p>The major source of construction dust and noise nuisance was site formation works for TKO Portal and marine works for construction of temporary barging facilities</p> <p>As per investigation, the following environmental mitigation measures are implemented by the Contractor:</p> <ul style="list-style-type: none"> ➤ Provision of frequent watering including watering of eight times a day on active work area, exposed area and paved haul roads; ➤ Installation of automatic sprinklers for water spray to minimize dust generation; ➤ Shotcreting or hydroseeding to surface of TKO Portal site formation; ➤ Provision of wheel washing to vehicles out of site; ➤ Covering of dusty slope surface by impervious material such tarpaulin sheets. <p>During the weekly site inspections by the Environmental Team (ET), no deficiencies about exhaust gas or black smoke generation was observed from the Powered Mechanical Equipment (PME) on site of construction of TKO Portal. Air quality impact due to exhaust gas or black smoke emission from PME is considered insignificant from the Project.</p>	Closed
37	6 th April 2017	1 Apr 2017 / Slope works near Sin Fat Road Tennis Court	Public	The complainant complained the smell and dust generated by the slope works near Sin Fat Road Tennis Court on 1 April 2017. He suspected that the	See Investigation / Mitigation Action for Complaint No. 32 and 33.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
				shotcrete may contain toxic substances and may affect the health.		
38	4 th May 2017	Not Specified / Construction site near Nga Lai House, Yau Lai Estate	黎樹濠議員	The complainant complained about construction noise nuisance near Nga Lai House, Yau Lai Estate and lack of noise mitigation measures during construction works.	According to information provided by the Contractor, necessary rock breaking work was carried out in May 2017 by excavator-mounted breakers and drill rig at Portion IVC, which is in close vicinity of the complainant. Also, 2 nos. of excavator / drill rig were operated in May 2017 for excavation and drilling and rock hill. Noise nuisance concerned by the complainant is considered due to the high noise level emission during use of these Powered Mechanical Equipment (PME).	Closed
39	8 th May 2017	Not Specified / Construction site near Yau Lai Estate	黎樹濠議員	The complainant complained about construction noise nuisance and air pollution generated by this Project.	The Contractors had implemented environmental mitigation measures on site according to the EM&A Manual to reduce air quality impact and noise nuisance to the vicinity. Weekly Environmental Site Inspection has been on-going in May 2017. Recommendations was made on site by the Engineer and the ET to increase the effectiveness of the noise mitigation measures. According to the regular air quality monitoring conducted at Air Quality Monitoring Stations AM3, no Action or Limit Level Exceedance was recorded from 4, 10 and 16 May 2017. Similarly, no Limit Level Exceedance was recorded in May 2017 at Noise Monitoring Station CM1 and CM2. With the implementation of environmental mitigation measures by Contractors on site, it is considered that no adverse air quality and noise impact was brought to the nearby sensitive receivers by the works of this Project.	Closed
40	9 th May 2017	Not Specified / Construction of Road P2 near Ocean Shores	Public	The complainant complained about noise and environmental nuisance resulting from the piling works.	Major construction activities near Ocean Shores in early May included sheetpiling works and pre-boring works for construction of Road P2. Powered Mechanical Equipments (PME) operated included drilling rigs and piling rigs (vibration hammer), which are considered to be the source of noise nuisance resulting from piling work. The Contractor had implemented environmental mitigation measures in accordance with the “Implementation Schedule of Proposed Mitigation Measures” of EM&A Manual and the approved Noise Mitigation Plan. Movable temporary noise barrier is erected on ground in vicinity of the piling areas to reduce noise emission during piling works. Acoustic material are also hanged on the piling rigs to shield noise from the Powered Mechanical Equipment (PME) to nearby noise sensitive receivers. According to the regular noise monitoring conducted at Noise Monitoring Stations CM6(A) and CM7(A), no Limit Level Exceedance was recorded	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
					from 1- 14 May 2017. With the implementation of environmental mitigation measures by Contractors on site, it is considered that no adverse noise impact was brought to the nearby sensitive receivers by the works of this Project.	
41	10 th May 2017	Not Specified / Construction of Road P2 near Ocean Shores	Public	The complainant complained about noise nuisance from the use of the generators until midnight.	During evening time, two generators were operated between 7pm - 11pm for site office use only. No generators were used until midnight according to the Contractor. Additional temporary noise barrier is installed by the Contractor to screen noise due to use of generators during evening time	Closed
42	10 th May 2017	Not Specified / Slope works near Sin Fat Road Tennis Court	Public	The complainant complained about the generation of construction dust from this Project	See Investigation / Mitigation Action for Complaint No. 32 and 33.	Closed
43	15 th May 2017	Not Specified / Construction site at Lei Yue Mun Road	黎樹濠議員	The complainant complained about construction noise nuisance during construction works at work site at Lei Yue Mun Road.	See Investigation / Mitigation Action for Complaint No. 38 and 39.	Closed
44	16 th May 2017	Not Specified / Construction site near Nga Lai House, Yau Lai Estate	Public	The complainant complained about construction noise nuisance during construction works at work site near Nga Lai House, Yau Lai Estate from 8 am to 7 pm.	See Investigation / Mitigation Action for Complaint No. 38 and 39.	Closed
45	17 th May 2017	3 rd May 2017 / Marine Works Area in TKO Side	Public	The complainant complained about the noisy ongoing construction works on a public holiday.	No marine works was carried out under Contract No. NE/2015/01 on public holidays on 30 April, 1 May and 3 May 2017. While marine construction works was carried out on public holiday under Contract No. NE/2015/02 on 3 May 2017 between 9am to 5pm. One derrick barge was operated for the marine works during this period.no violation of CNP (No. GW-RE0317-17) conditions is observed during the time of complaint. The Engineer and the Environmental Team have reminded the contractor(s) to minimize construction works during public holidays or restricted hours to minimize noise nuisance to the nearby residents.	Closed
46	25 th May 2017	Not Specified / Construction site near Tin Hau Temple	茶果嶺鄉民聯誼會主席羅悅屏	The complainant complaint about the noisy rock breaking works near Tin Hau Temple and poor efficiency of vehicle wheel washing on site.	According to information provided by the Contractor of the Project, excavation and rock breaking by 1 no. of excavator/excavator-mounted breaker was carried out intermittently during daytime of the time of complaint near Tin Hau Temple. The tip of the breaker is wrapped with acoustic blanket and followed by erection of noise barrier. A wheel washing bay had been installed at the site entrance on Cha Kwo	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
					Ling Road to construction of Lam Tin Interchange. A 'WetSep' wastewater treatment system was installed to treat wastewater from vehicle washing washing. The Contractor was reminded to fully implement on site the relevant noise and water quality mitigation measures according to the EM&A Manual and the approved Noise Mitigation Plan.	
47	27 th May 2017	Not Specified / Construction site at Lei Yue Mun Road	Public	The complainant complained about construction noise nuisance during construction works at work site at Lei Yue Mun Road.	See Investigation / Mitigation Action for Complaint No. 38 and 39.	Closed

Note (*): The complaints were received in this reporting period and yet to be included in the previous Monthly EM&A Reports.

Cumulative Complaint Log since commencement of Project

Reporting Month	Number of Complaints in Reporting Month	Number of Summons in Reporting Month	Number of Prosecutions in Reporting Month
November 2016	0	0	0
December 2016	11	0	0
January 2017	15	0	0
February 2017	4	0	0
March 2017	6	0	0
April 2017	1	0	0
May 2017	10	0	0
Total	47	0	0

Cumulative Log for Notifications of Summons

Contract No,	Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
NE/2015/01	--	--	--	--	--	--
NE/2015/02	--	--	--	--	--	--
NE/2015/03	--	--	--	--	--	--

Cumulative Log for Successful Prosecutions

Contract No,	Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
NE/2015/01	--	--	--	--	--	--
NE/2015/02	--	--	--	--	--	--
NE/2015/03	--	--	--	--	--	--

**APPENDIX P
WASTE GENERATION IN THE
REPORTING MONTH**

Monthly Summary Waste Flow Table for 2017



Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. 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)
January	40.484	1.350	22.688	5.063	12.733	0.000	0.000	0.257	0.000	0.000	0.292
February	23.357	5.159	12.911	3.874	6.572	0.000	0.000	0.000	0.000	1.000	0.488
March	20.078	2.885	6.359	11.713	2.006	0.000	0.000	0.120	0.000	0.000	0.284
April	13.516	0.070	4.862	7.751	0.903	0.000	0.000	0.151	0.000	0.000	0.396
May	49.156	0.380	12.420	36.168	0.568	0.000	0.000	0.000	0.000	0.000	0.189
June											
Sub-total	146.591	9.844	59.240	64.569	22.782	0.000	0.000	0.528	0.000	1.000	1.649
July											
August											
September											
October											
November											
December											
Total	146.591	9.844	59.240	64.569	22.782	0.000	0.000	0.528	0.000	1.000	1.649

Total inert C&D waste generated = c+d+e

Total inert C&D waste recycled = c+d

% of recycled inert C&D waste = Total C&D waste recycled / Total C&D waste generated

Monthly Summary Waste Flow Table for 2017 Year

Contract No. NE/2015/02

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity [in '000m ³]	Hard Rock and [in '000m ³]	Reused in the [in '000m ³]	Reused in other [in '000m ³]	Disposal as [in '000m ³]	Imported Fill [in '000m ³]	Metals [in '000kg]	Paper / [in '000kg]	Plastics [in '000kg]	Chemical Waste [in '000kg]	Other, e.g. [in '000m ³]
Jan	1.02115	0.00000	0.00000	0.00000	1.02115	0.00000	0.00000	0.00000	0.00000	0.00000	0.02306
Feb	1.04554	0.00000	0.00000	0.00000	1.04554	0.00000	0.00000	0.00000	0.00000	0.00000	0.01994
Mar	0.03860	0.00000	0.00000	0.00000	0.03860	0.00000	0.00000	0.00000	0.00000	0.00000	0.03012
Apr	0.02184	0.00000	0.00000	0.00000	0.02184	0.00000	0.00000	0.00000	0.00000	0.00000	0.18326
May	0.05099	0.00000	0.00000	0.00000	0.05099	0.00000	0.00000	0.00000	0.00000	0.00000	0.11508
June											
SUB-TOTAL											
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
TOTAL	2.17811	0.00000	0.00000	0.00000	2.17811	0.00000	0.00000	0.00000	0.00000	0.00000	0.37146

Note: Conversion to 1000m³ for general refuse is weight in 1000kg multiply by 0.002
 Conversion to 1000m³ for Inert C&D is weight in 1000kg multiply by 0.0005
 Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

Name of Department : CEDD

Contract No. : NE/2015/03

Monthly Summary Waste Flow Table for 2017 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock & 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)	Chemicals Waste	Others, e.g. general refuse
	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m ³)
Jan	0	0	0	0	0	0	0	0	0	0	0
Feb	0.001982	0	0	0	0	0	0	0	0	0	0.001982
Mar	0.00146	0	0	0	0.00146	0	0	0	0	0	0
Apr	0.008668	0	0	0	0.0075	0	0	0	0	0	0.001168
May	0.01052	0	0	0	0	0	0	0	0	0	0.01052
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	0.02263	0	0	0	0.00896	0	0	0	0	0	0.01367

- Notes:
- (1) The performance targets are given in PS Clause 6.14.
 - (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 materials.
 - (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 nature where the total amount of C&D materials expected to be generated from the *works* is equal to or exceeding 50,000 m³.

**APPENDIX Q
TENTATIVE CONSTRUCTION
PROGRAMME**

High Level 3 Months Look Ahead Programme

Activities	Jun-17	Jul-17	Aug-17
Lam Tin Interchange			
Haul Road Construction			
EHC2 U-Trough			
Site Formation - Area 1G1 & 1G2			
Site Formation - Area 2			
Site Formation - Area 3			
Site Formation - Area 4			
Temp Steel Bridge across CKL Road & Barging Facility			
Pipe Pile Wall - Area 2A			
Ground Investigation			
Main Tunnel			
Tunnel Team Mobilisation Works			
Construction Adit			
MT Excavation			
TKO Interchange			
Haul Road Construction, Site Formation & Slope Works			
Temporary Cut Slope For BMCPC			
Temporary Barging Facilities & Temporary Works			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date	2017					
										May	Jun	Jul	Aug	Sep	
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (M Preliminaries, Submission, Contractor's Design Submission and Approval															
Contractor's Design Submission and Approval															
Foundation Design															
AIP Submission for Foundation of Road P2 Structure (Reclaimed Section)															
S11250	Review and comment by GEO	P2-Cal.A	14	0	22-Apr-17 A	20-May-17	257	100%	-14						
S11260	Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	21	21	20-May-17	09-Jun-17	257	0%	0						
DDA Submission for Foundation of Road P2 Structure (Reclaimed Section)															
S11360	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	21	21	10-Jun-17	30-Jun-17	257	0%	0						
S11380	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	21	21	01-Jul-17	21-Jul-17	257	0%	0						
S11400	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	14	14	22-Jul-17	04-Aug-17	257	0%	0						
S11410	Review and comment by GEO	P2-Cal.A	14	14	05-Aug-17	18-Aug-17	257	0%	0						
S11420	Accept DDA Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	21	21	19-Aug-17	08-Sep-17	257	0%	0						
E&M Design															
Detail Design for E&M Works (Tunnel and associated)															
S11640	Accept Detail Design for E&M Works (Tunnel and associated)	P2-Cal.A	21	21	20-May-17	09-Jun-17	646	0%	0						
Design of Architectural Finishes for Internal Walls of U-Trough Structures															
S11660	Prepare and Submit Design of Architectural Finishes for Internal Walls of U-Trough Structures	P2-Cal.A	21	21	20-May-17	09-Jun-17	902	0%	0						
S11680	Review and Discuss Design of Architectural Finishes for Internal Walls of U-Trough Structures	P2-Cal.A	21	21	10-Jun-17	30-Jun-17	902	0%	0						
S11700	Resubmit Design of Architectural Finishes for Internal Walls of U-Trough Structures	P2-Cal.A	14	14	01-Jul-17	14-Jul-17	902	0%	0						
S11720	Accept Design of Architectural Finishes for Internal Walls of U-Trough Structures	P2-Cal.A	21	21	15-Jul-17	04-Aug-17	902	0%	0						
Contractor Cost Saving Design															
AIP Submission for CSD of Existing Land Section (P2 CH423 - CH500)															
S11880	Accept AIP Submission for CSD of Existing Land Section (P2 CH423 - CH500)	P2-Cal.A	21	21	20-May-17	09-Jun-17	548	0%	0						
DDA Submission for CSD of Existing Land Section (P2 CH423 - CH500)															
S11882	Prepare and Submit DDA Submission for CSD of Existing Land Section (P2 CH423 - CH500)	P2-Cal.A	21	21	10-Jun-17	30-Jun-17	548	0%	0						
S11884	Review and Discuss DDA Submission for CSD of Existing Land Section (P2 CH423 - CH500)	P2-Cal.A	21	21	01-Jul-17	21-Jul-17	548	0%	0						
S11886	Resubmit DDA Submission for CSD of Existing Land Section (P2 CH423 - CH500)	P2-Cal.A	14	14	22-Jul-17	04-Aug-17	548	0%	0						
S11888	Accept DDA Submission for CSD of Existing Land Section (P2 CH423 - CH500)	P2-Cal.A	21	21	05-Aug-17	25-Aug-17	548	0%	0						
AIP Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)															
S11960	Accept AIP Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	20-May-17	09-Jun-17	726	0%	0						
DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)															
S11962	Prepare and Submit DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	10-Jun-17	30-Jun-17	726	0%	0						
S11964	Review and Discuss DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	01-Jul-17	21-Jul-17	726	0%	0						
S11966	Resubmit DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	14	14	22-Jul-17	04-Aug-17	726	0%	0						
S11968	Accept DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	05-Aug-17	25-Aug-17	726	0%	0						
Major Temporary Works Design															
ELS Design for U-Trough A & B (P2 CH318 - CH363)															
S12500	Resubmit ELS Design for U-Trough A & B (P2 CH318 - CH363)	P2-Cal.A	14	5	11-May-17 A	24-May-17	149	64.29%	0						
S12520	Accept ELS Design for U-Trough A & B (P2 CH318 - CH363)	P2-Cal.A	21	21	25-May-17	14-Jun-17	149	0%	0						
ELS Design for U-Trough C															
S12780	Prepare and Submit ELS Design for U-Trough C	P2-Cal.A	18	18	24-Jul-17	10-Aug-17	592	0%	0						
S12800	Review and Discuss ELS Design for U-Trough C	P2-Cal.A	21	21	11-Aug-17	31-Aug-17	592	0%	0						
ELS Design for U-Trough A & B (P2 CH363 - CH411)															
S12940	Prepare and Submit ELS Design for U-Trough A & B (P2 CH363 - CH411)	P2-Cal.A	18	11	13-May-17 A	30-May-17	129	38.89%	0						
S12960	Review and Discuss ELS Design for U-Trough A & B (P2 CH363 - CH411)	P2-Cal.A	21	21	31-May-17	20-Jun-17	129	0%	0						
S12980	Resubmit ELS Design for U-Trough A & B (P2 CH363 - CH411)	P2-Cal.A	14	14	21-Jun-17	04-Jul-17	129	0%	0						

█ Pr █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▬ Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (May-17)

3 Months Rolling Programme
 (20 May 2017)
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Date	Revision	Checked	Approved
20-May-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1	Finish Date	2017					
											May	Jun	Jul	Aug	Sep	
S13000	Accept ELS Design for U-Trough A & B (P2 CH363 - CH411)	P2-Cal.A	21	21	05-Jul-17	25-Jul-17	129	0%	0						Accept ELS Design for U-Trough A & B (P2 CH363)	
Temporary Jetty Design												Temporary Jetty Design				
S13040	Review and Discuss Temporary Jetty Design	P2-Cal.A	21	7	06-May-17 A	26-May-17	18	66.67%	0						Review and Discuss Temporary Jetty Design	
S13060	Resubmit Temporary Jetty Design	P2-Cal.A	14	14	27-May-17	09-Jun-17	18	0%	0						Resubmit Temporary Jetty Design	
S13080	Accept Temporary Jetty Design	P2-Cal.A	21	21	10-Jun-17	30-Jun-17	18	0%	0						Accept Temporary Jetty Design	
Design of Marine Survey Tower												Design of Marine Survey Tower				
S13100	Prepare and Submit Marine Survey Tower	P2-Cal.A	18	18	01-Jul-17	18-Jul-17	205	0%	0						Prepare and Submit Marine Survey Tower	
S13120	Review and Discuss Marine Survey Tower	P2-Cal.A	21	21	19-Jul-17	08-Aug-17	205	0%	0						Review and Discuss Marine Survey Tower	
S13140	Resubmit Temporary Marine Survey Tower	P2-Cal.A	14	14	09-Aug-17	22-Aug-17	205	0%	0						Resubmit Temporary Marine Survey Tower	
Major Construction Works Method Statement												Major Construction Works Method Statement				
Construction Road P2 Underpass Structure												Construction Road P2 Underpass Structure				
S13180	Prepare and Submit Method Statement for Construction Road P2 Underpass Structure	P2-Cal.A	18	18	24-Jul-17	10-Aug-17	551	0%	0						Prepare and Submit Method Statement for Construction Road P2 Underpass Structure	
S13200	Review and Discuss Method Statement for Construction Road P2 Underpass Structure	P2-Cal.A	21	21	11-Aug-17	31-Aug-17	551	0%	0						Review and Discuss Method Statement for Construction Road P2 Underpass Structure	
Construction of Seawall Foundation for Road P2												Construction of Seawall Foundation for Road P2				
S13260	Prepare and Submit Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	18	18	20-May-17	06-Jun-17	-4	0%	0						Prepare and Submit Method Statement for Construction of Seawall Foundation for Road P2	
S13280	Review and Discuss Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	21	21	07-Jun-17	27-Jun-17	-4	0%	0						Review and Discuss Method Statement for Construction of Seawall Foundation for Road P2	
S13300	Resubmit Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	7	7	28-Jun-17	04-Jul-17	-4	0%	0						Resubmit Method Statement for Construction of Seawall Foundation for Road P2	
S13320	Accept Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	21	21	05-Jul-17	25-Jul-17	-4	0%	0						Accept Method Statement for Construction of Seawall Foundation for Road P2	
Reclamation Filing												Reclamation Filing				
S13340	Prepare and Submit Method Statement for Reclamation Filing	P2-Cal.A	18	18	20-May-17	06-Jun-17	69	0%	0						Prepare and Submit Method Statement for Reclamation Filing	
S13360	Review and Discuss Method Statement for Reclamation Filing	P2-Cal.A	21	21	07-Jun-17	27-Jun-17	69	0%	0						Review and Discuss Method Statement for Reclamation Filing	
S13380	Resubmit Method Statement for Reclamation Filing	P2-Cal.A	7	7	28-Jun-17	04-Jul-17	69	0%	0						Resubmit Method Statement for Reclamation Filing	
S13400	Accept Method Statement for Reclamation Filing	P2-Cal.A	21	21	05-Jul-17	25-Jul-17	69	0%	0						Accept Method Statement for Reclamation Filing	
Demolishing/ Removing Existing Seawall												Demolishing/ Removing Existing Seawall				
S13620	Resubmit Method Statement for Demolishing/ Removing Existing Seawall	P2-Cal.A	7	7	08-Apr-17 A	26-May-17	32	0%	9						Resubmit Method Statement for Demolishing/ Removing Existing Seawall	
S13640	Accept Method Statement for Demolishing/ Removing Existing Seawall	P2-Cal.A	21	21	27-May-17	16-Jun-17	32	0%	0						Accept Method Statement for Demolishing/ Removing Existing Seawall	
Excavation and ELS of U-Troughs												Excavation and ELS of U-Troughs				
S14060	Prepare and Submit Method Statement for Excavation and ELS of U-Troughs	P2-Cal.A	18	18	05-Jul-17	22-Jul-17	129	0%	0						Prepare and Submit Method Statement for Excavation and ELS of U-Troughs	
S14080	Review and Discuss Method Statement for Excavation and ELS of U-Troughs	P2-Cal.A	21	21	23-Jul-17	12-Aug-17	129	0%	0						Review and Discuss Method Statement for Excavation and ELS of U-Troughs	
S14100	Resubmit Method Statement for Excavation and ELS of U-Troughs	P2-Cal.A	7	7	13-Aug-17	19-Aug-17	129	0%	0						Resubmit Method Statement for Excavation and ELS of U-Troughs	
Construction of U-Troughs Structure												Construction of U-Troughs Structure				
S14140	Prepare and Submit Method Statement for Construction of U-Troughs Structure	P2-Cal.A	18	18	05-Jul-17	22-Jul-17	294	0%	0						Prepare and Submit Method Statement for Construction of U-Troughs Structure	
S14160	Review and Discuss Method Statement for Construction of U-Troughs Structure	P2-Cal.A	21	21	05-Jul-17	25-Jul-17	294	0%	0						Review and Discuss Method Statement for Construction of U-Troughs Structure	
S14180	Resubmit Method Statement for Construction of U-Troughs Structure	P2-Cal.A	14	14	26-Jul-17	08-Aug-17	294	0%	0						Resubmit Method Statement for Construction of U-Troughs Structure	
S14200	Accept Method Statement for Construction of U-Troughs Structure	P2-Cal.A	21	21	09-Aug-17	29-Aug-17	294	0%	0						Accept Method Statement for Construction of U-Troughs Structure	
Treatment of Dredged Marine Sediment of Type 1												Treatment of Dredged Marine Sediment of Type 1				
S17920	Accept Method Statement for Treatment of Dredging Marine Sediment of Type 1	P2-Cal.A	21	5	04-May-17 A	24-May-17	265	76.19%	0						Accept Method Statement for Treatment of Dredging Marine Sediment of Type 1	
Temporary Support for Excavation of Existing Seawall												Temporary Support for Excavation of Existing Seawall				
S14960	Review and Discuss Method Statement for Temporary Support for Excavation of Existing Seawall	P2-Cal.A	21	9	08-May-17 A	28-May-17	16	57.14%	0						Review and Discuss Method Statement for Temporary Support for Excavation of Existing Seawall	
S14980	Resubmit Method Statement for Temporary Support for Excavation of Existing Seawall	P2-Cal.A	14	14	29-May-17	11-Jun-17	16	0%	0						Resubmit Method Statement for Temporary Support for Excavation of Existing Seawall	
S15000	Accept Method Statement for Temporary Support for Excavation of Existing Seawall	P2-Cal.A	21	21	12-Jun-17	02-Jul-17	16	0%	0						Accept Method Statement for Temporary Support for Excavation of Existing Seawall	
Procurement of Major Material												Procurement of Major Material				
S15020	Procurement and Delivery of Steel H-Pile	P2-Cal.A	800	691	31-Jan-17 A	10-Apr-19	112	13.63%	0						Procurement and Delivery of Steel H-Pile	
S15040	Procurement and Delivery of ELS Waling & Struts Members	P2-Cal.A	1015	895	20-Jan-17 A	31-Oct-19	242	11.82%	0						Procurement and Delivery of ELS Waling & Struts Members	
S15080	Offsite Fabrication of Pre-cast Seawall blocks	P2-Cal.A	90	90	26-Jul-17	23-Oct-17	-4	0%	0						Offsite Fabrication of Pre-cast Seawall blocks	
S15100	Cast-in gantry for Road Works	P2-Cal.A	120	59	20-Mar-17 A	17-Jul-17	730	50.83%	0						Cast-in gantry for Road Works	
Subletting Package												Subletting Package				

— Primary Baseline — Critical Remaining Work
— Actual Work ◆ Milestone
— Remaining Work — Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (May-17)

3 Months Rolling Programme
 (20 May 2017)
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Date	Revision	Checked	Approved
20-May-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1	Finish Date	2017					
											May	Jun	Jul	Aug	Sep	
Road Works												Road Works				
S17200	Prepare Road Works Tender Document for PM Acceptance	P2-Cal.A	7	3	16-May-17 A	22-May-17	839	57.14%	0	0	Prepare Road Works Tender Document for PM Acceptance					
S17220	Submission and Opening of Tender for Road Works	P2-Cal.A	14	14	23-May-17	05-Jun-17	839	0%	0	0	Submission and Opening of Tender for Road Works					
S17240	Tender Interview and Recommendation to PM for Road Works	P2-Cal.A	21	21	06-Jun-17	26-Jun-17	839	0%	0	0	Tender Interview and Recommendation to PM for Road Works					
S17260	Road Works Award	P2-Cal.A	0	0		26-Jun-17	839	0%	0	0	Road Works Award					
Irrigation Works												Irrigation Works				
S17280	Prepare Irrigation Works Tender Document for PM Acceptance	P2-Cal.A	7	7	27-Jun-17	03-Jul-17	1004	0%	0	0	Prepare Irrigation Works Tender Document for PM Acceptance					
S17300	Submission and Opening of Tender for Irrigation Works	P2-Cal.A	14	14	04-Jul-17	17-Jul-17	1004	0%	0	0	Submission and Opening of Tender for Irrigation Works					
S17320	Tender Interview and Recommendation to PM for Irrigation Works	P2-Cal.A	21	21	18-Jul-17	07-Aug-17	1004	0%	0	0	Tender Interview and Recommendation to PM for Irrigation Works					
S17340	Irrigation Works Award	P2-Cal.A	0	0		07-Aug-17	1004	0%	0	0	Irrigation Works Award					
E & M Works												E & M Works				
S17360	Prepare E & M Works Tender Document for PM Acceptance	P2-Cal.A	7	7	29-Jul-17	04-Aug-17	730	0%	0	0	Prepare E & M Works Tender Document for PM Acceptance					
S17380	Submission and Opening of Tender for E & M Works	P2-Cal.A	14	14	05-Aug-17	18-Aug-17	730	0%	0	0	Submission and Opening of Tender for E & M Works					
S17400	Tender Interview and Recommendation to PM for E & M Works	P2-Cal.A	21	21	19-Aug-17	08-Sep-17	730	0%	0	0	Tender Interview and Recommendation to PM for E & M Works					
Section 1 of the Works												Section 1 of the Works				
Reprovisioning of DSD Transformer Room												Reprovisioning of DSD Transformer Room				
P2 DSD Tx Room BS Installation Programme												P2 DSD Tx Room BS Installation Programme				
Electrical												Electrical				
A1020	Installation of light fitting at Tx Room	P2-Cal.B	5	0	27-Apr-17 A	20-May-17	147	100%	-13	0	Installation of light fitting at Tx Room					
A1030	Delivery of cable tray	P2-Cal.B	0	0		20-May-17	147	0%	0	0	Delivery of cable tray					
A1040	Installation of cable tray at trench	P2-Cal.B	5	5	20-May-17	25-May-17	147	0%	0	0	Installation of cable tray at trench					
A1060	Installation of conduit at LV switch Room	P2-Cal.B	4	0	10-May-17 A	20-May-17	107	100%	-20	0	Installation of conduit at LV switch Room					
A1070	Cable wiring at LV switch room	P2-Cal.B	4	0	10-May-17 A	20-May-17	107	100%	-17	0	Cable wiring at LV switch room					
A1080	Installation of light fitting at LV switch Room	P2-Cal.B	3	3	20-May-17	23-May-17	106	0%	0	0	Installation of light fitting at LV switch Room					
A1100	Delivery and assembly of LV switchboard at LV switch room	P2-Cal.B	4	4	23-May-17	27-May-17	106	0%	0	0	Delivery and assembly of LV switchboard at LV switch room					
A1110	SAT LV Switchboard	P2-Cal.B	3	3	27-May-17	31-May-17	106	0%	0	0	SAT LV Switchboard					
A1120	Installation of MCB Board	P2-Cal.B	6	6	31-May-17	07-Jun-17	106	0%	0	0	Installation of MCB Board					
A1130	System T&C	P2-Cal.B	4	4	08-Jun-17	12-Jun-17	106	0%	0	0	System T&C					
A1140	Installation of Lighting down conductors	P2-Cal.B	4	4	25-May-17	31-May-17	147	0%	0	0	Installation of Lighting down conductors					
A1150	Installation of Lightning pits	P2-Cal.B	4	4	31-May-17	05-Jun-17	147	0%	0	0	Installation of Lightning pits					
A1160	Installation of Earthing Conductor	P2-Cal.B	4	4	05-Jun-17	09-Jun-17	147	0%	0	0	Installation of Earthing Conductor					
A1170	Installation of Earthing Pit	P2-Cal.B	4	4	09-Jun-17	14-Jun-17	147	0%	0	0	Installation of Earthing Pit					
A1180	Earthing and Lightning T&C	P2-Cal.B	2	2	14-Jun-17	16-Jun-17	147	0%	0	0	Earthing and Lightning T&C					
A1190	Cable Laying from LV Switch Board to pillar box	P2-Cal.B	1	1	16-Jun-17	17-Jun-17	147	0%	0	0	Cable Laying from LV Switch Board to pillar box					
A1203	1st Defect Rectification	P2-Cal.B	6	6	26-May-17	03-Jun-17	113	0%	0	0	1st Defect Rectification					
A1205	2nd Handover Inspection of CLP Tx Room	P2-Cal.B	0	0		03-Jun-17	113	0%	0	0	2nd Handover Inspection of CLP Tx Room					
A1210	Handover of CLP Tx Room	P2-Cal.B	0	0	03-Jun-17		113	0%	0	0	Handover of CLP Tx Room					
A1220	Submit WR1	P2-Cal.B	4	4	13-Jun-17	16-Jun-17	106	0%	0	0	Submit WR1					
A1225	CLP Working Period	P2-Cal.B	20	20	16-Jun-17	11-Jul-17	127	0%	0	0	CLP Working Period					
A1230	Energization of LV Switch Room	P2-Cal.B	1	1	11-Jul-17	12-Jul-17	127	0%	0	0	Energization of LV Switch Room					
A1240	Change over of power supply from existing to new Tx Room	P2-Cal.B	8	8	09-Aug-17	17-Aug-17	104	0%	0	0	Change over of power supply from existing to new Tx Room					
A1250	Submit O&M Manual with as-built drawings	P2-Cal.B	8	8	17-Aug-17	26-Aug-17	104	0%	0	0	Submit O&M Manual with as-built drawings					
MVAC												MVAC				
A1290	Installation of fan controller at Tx Room	P2-Cal.B	3	3	20-May-17	23-May-17	116	0%	0	0	Installation of fan controller at Tx Room					
A1300	Installation of fan and air duct at switch Room	P2-Cal.B	5	5	20-May-17	25-May-17	116	0%	0	0	Installation of fan and air duct at switch Room					
A1310	Installation of LMCP at LV switch Room	P2-Cal.B	5	5	23-May-17	29-May-17	116	0%	0	0	Installation of LMCP at LV switch Room					
A1320	System T&C	P2-Cal.B	3	3	27-May-17	31-May-17	116	0%	0	0	System T&C					

█ Primary Baseline █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▬ Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (May-17)

3 Months Rolling Programme (20 May 2017)
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Date	Revision	Checked	Approved
20-May-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date	2017				
										May	Jun	Jul	Aug	Sep
A1330	Submit WR1A	P2-Cal.B	4	4	13-Jun-17	16-Jun-17	106	0%	0			Submit WR1A		
A1350	Submit O&M Manual with as-built drawing	P2-Cal.B	8	8	17-Aug-17	26-Aug-17	104	0%	0				Submit O&M Manual with as-built drawing	
FS		P2-Cal.B	87	69	26-Apr-17 A	10-Aug-17	118		0					FS
A1530	Installation of heat detector at Tx Room	P2-Cal.B	4	0	26-Apr-17 A	20-May-17	95	100%	-15					Installation of heat detector at Tx Room
A1560	Installation of conduit at LV switch Room	P2-Cal.B	4	0	02-May-17 A	20-May-17	95	100%	-11					Installation of conduit at LV switch Room
A1570	Cable wiring at LV switch room	P2-Cal.B	13	2	08-May-17 A	22-May-17	95	86%	0					Cable wiring at LV switch room
A1580	Installation of heat detector at LV switch Room	P2-Cal.B	6	6	22-May-17	29-May-17	95	0%	0					Installation of heat detector at LV switch Room
A1590	Installation of AFA panel and visual/audio alarm equipment	P2-Cal.B	19	19	31-May-17	21-Jun-17	95	0%	0					Installation of AFA panel and visual/audio alarm equipment
A1620	System T&C	P2-Cal.B	3	3	21-Jun-17	24-Jun-17	95	0%	0					System T&C
A1640	Submit WR1A	P2-Cal.B	1	1	24-Jun-17	26-Jun-17	95	0%	0					Submit WR1A
A1650	Submit Form 314/501	P2-Cal.B	0	0		26-Jun-17	95	0%	0					Submit Form 314/501
A1660	FSD Inspection	P2-Cal.B	1	1	18-Jul-17	19-Jul-17	95	0%	0					FSD Inspection
A1670	Issue Fire Certificate	P2-Cal.B	0	0		09-Aug-17	95	0%	0					Issue Fire Certificate
A1680	Submit O&M Manual with as-built drawing	P2-Cal.B	1	1	09-Aug-17	10-Aug-17	118	0%	0					Submit O&M Manual with as-built drawing
Demolition of Existing DSD Transformer Room		P2-Cal.B	12	12	09-Aug-17	23-Aug-17	95		0					Demolition of Existing DSD
A1690	Handover to DSD	P2-Cal.B	0	0	09-Aug-17		95	0%	0					Handover to DSD
A1700	Decommission existing DSD Tx Room	P2-Cal.B	12	12	09-Aug-17	23-Aug-17	95	0%	0					Decommission existing DSD
Section 3 of the Works		P2-Cal.B	165	103	20-Dec-16 A	19-Sep-17	725		0					Section 3 of the Works
Existing Land Section		P2-Cal.B	150	103	20-Mar-17 A	19-Sep-17	725		0					Existing Land Section
Retaining Wall P2-A CH 500- 650		P2-Cal.B	85	85	20-May-17	29-Aug-17	528		0					Retaining Wall P2-A CH 500- 650
LC11940	Excavation to formation level (Bay 4 - 15) (Total: 2054m3 - 200m3/day)	P2-Cal.B	11	11	20-May-17	02-Jun-17	518	0%	0					Excavation to formation level (Bay 4 - 15) (Total: 2054m3 - 200m3/day)
LC11980	Laying Blinding (Bay 4 - 7)	P2-Cal.B	10	10	26-May-17	07-Jun-17	518	0%	0					Laying Blinding (Bay 4 - 7)
LC11985	Laying Blinding (Bay 8 - 11)	P2-Cal.B	10	10	08-Jun-17	19-Jun-17	548	0%	0					Laying Blinding (Bay 8 - 11)
LC11990	Laying Blinding (Bay 12 - 15)	P2-Cal.B	10	10	20-Jun-17	30-Jun-17	578	0%	0					Laying Blinding (Bay 12 - 15)
LC12000	Construction of RW P2-A Base Slab - Bay 4 (Team C)	P2-Cal.B	10	10	08-Jun-17	19-Jun-17	518	0%	0					Construction of RW P2-A Base Slab - Bay 4 (Team C)
LC12020	Construction of RW P2-A Wall Stem - Bay 4 (Team C)	P2-Cal.B	10	10	20-Jun-17	30-Jun-17	518	0%	0					Construction of RW P2-A Wall Stem - Bay 4 (Team C)
LC12040	Construction of RW P2-A Base Slab - Bay 5 (Team C)	P2-Cal.B	10	10	03-Jul-17	13-Jul-17	518	0%	0					Construction of RW P2-A Base Slab - Bay 5 (Team C)
LC12060	Construction of RW P2-A Wall Stem - Bay 5 (Team C)	P2-Cal.B	10	10	14-Jul-17	25-Jul-17	518	0%	0					Construction of RW P2-A Wall Stem - Bay 5 (Team C)
LC12080	Construction of RW P2-A Base Slab - Bay 6 (Team D)	P2-Cal.B	10	10	08-Jun-17	19-Jun-17	518	0%	0					Construction of RW P2-A Base Slab - Bay 6 (Team D)
LC12100	Construction of RW P2-A Wall Stem - Bay 6 (Team D)	P2-Cal.B	10	10	20-Jun-17	30-Jun-17	518	0%	0					Construction of RW P2-A Wall Stem - Bay 6 (Team D)
LC12120	Construction of RW P2-A Base Slab - Bay 7 (Team D)	P2-Cal.B	10	10	03-Jul-17	13-Jul-17	518	0%	0					Construction of RW P2-A Base Slab - Bay 7 (Team D)
LC12140	Construction of RW P2-A Wall Stem - Bay 7 (Team D)	P2-Cal.B	10	10	14-Jul-17	25-Jul-17	518	0%	0					Construction of RW P2-A Wall Stem - Bay 7 (Team D)
LC12160	Construction of RW P2-A Base Slab - Bay 8 (Team C)	P2-Cal.B	10	10	26-Jul-17	05-Aug-17	518	0%	0					Construction of RW P2-A Base Slab - Bay 8 (Team C)
LC12180	Construction of RW P2-A Wall Stem - Bay 8 (Team C)	P2-Cal.B	10	10	07-Aug-17	17-Aug-17	518	0%	0					Construction of RW P2-A Wall Stem - Bay 8 (Team C)
LC12200	Construction of RW P2-A Base Slab - Bay 9 (Team C)	P2-Cal.B	10	10	18-Aug-17	29-Aug-17	518	0%	0					Construction of RW P2-A Base Slab - Bay 9 (Team C)
LC12240	Construction of RW P2-A Base Slab - Bay 10 (Team D)	P2-Cal.B	10	10	26-Jul-17	05-Aug-17	518	0%	0					Construction of RW P2-A Base Slab - Bay 10 (Team D)
LC12260	Construction of RW P2-A Wall Stem - Bay 10 (Team D)	P2-Cal.B	10	10	07-Aug-17	17-Aug-17	518	0%	0					Construction of RW P2-A Wall Stem - Bay 10 (Team D)
LC12280	Construction of RW P2-A Base Slab - Bay 11 (Team D)	P2-Cal.B	10	10	18-Aug-17	29-Aug-17	518	0%	0					Construction of RW P2-A Base Slab - Bay 11 (Team D)
P2 Road		P2-Cal.B	100	94	13-May-17 A	08-Sep-17	431		0					P2 Road
P2 CH 318 - 375		P2-Cal.B	100	94	13-May-17 A	08-Sep-17	90		0					P2 CH 318 - 375
Ground Investigation		P2-Cal.B	10	4	13-May-17 A	24-May-17	90		0					Ground Investigation
LC12851	Predrilling (LPDH-017) (Rig A)	P2-Cal.B	4	0	13-May-17 A	16-May-17 A		100%	2					Predrilling (LPDH-017) (Rig A)
LC12853	Predrilling (LPDH-022) (Rig C)	P2-Cal.B	4	0	16-May-17 A	20-May-17 A		100%	-2					Predrilling (LPDH-022) (Rig C)
LC12854	Predrilling (LPDH-023) (Rig D)	P2-Cal.B	4	0	16-May-17 A	20-May-17	90	100%	-2					Predrilling (LPDH-023) (Rig D)
LC12855	Predrilling (LPDH-024) (Rig A)	P2-Cal.B	4	4	20-May-17	24-May-17	90	0%	0					Predrilling (LPDH-024) (Rig A)
LC12858	Predrilling (LPDH-036) (Rig D)	P2-Cal.B	4	0	16-May-17 A	20-May-17 A		100%	2					Predrilling (LPDH-036) (Rig D)
LC12859	Predrilling (LPDH-039) (Rig D)	P2-Cal.B	4	4	20-May-17	24-May-17	90	0%	0					Predrilling (LPDH-039) (Rig D)

— Primary Baseline — Critical Remaining Work
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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (May-17)

3 Months Rolling Programme
 (20 May 2017)
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Date	Revision	Checked	Approved
20-May-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1	Finish Date	2017										
											May	Jun	Jul	Aug	Sep						
Foundation																					
LC12871	Plant mobilization and set up for piling works	P2-Cal.B	90	90	25-May-17	08-Sep-17	90	0%	0	0											
LC12872	Installation of socketed H-Pile (A17) (Rig A)	P2-Cal.B	5	5	07-Jun-17	12-Jun-17	90	0%	0	0											
LC12873	Installation of socketed H-Pile (A16) (Rig A)	P2-Cal.B	5	5	13-Jun-17	17-Jun-17	90	0%	0	0											
LC12874	Installation of socketed H-Pile (A15) (Rig A)	P2-Cal.B	5	5	19-Jun-17	23-Jun-17	90	0%	0	0											
LC12875	Installation of socketed H-Pile (A14) (Rig A)	P2-Cal.B	5	5	24-Jun-17	29-Jun-17	90	0%	0	0											
LC12876	Installation of socketed H-Pile (A13) (Rig A)	P2-Cal.B	5	5	30-Jun-17	06-Jul-17	90	0%	0	0											
LC12877	Installation of socketed H-Pile (A12) (Rig A)	P2-Cal.B	5	5	07-Jul-17	12-Jul-17	90	0%	0	0											
LC12878	Installation of socketed H-Pile (A11) (Rig A)	P2-Cal.B	5	5	13-Jul-17	18-Jul-17	90	0%	0	0											
LC12879	Installation of socketed H-Pile (A10) (Rig A)	P2-Cal.B	5	5	19-Jul-17	24-Jul-17	90	0%	0	0											
LC12880	Installation of socketed H-Pile (A9) (Rig A)	P2-Cal.B	5	5	25-Jul-17	29-Jul-17	90	0%	0	0											
LC12881	Installation of socketed H-Pile (A8) (Rig A)	P2-Cal.B	5	5	31-Jul-17	04-Aug-17	90	0%	0	0											
LC12882	Installation of socketed H-Pile (A7) (Rig A)	P2-Cal.B	5	5	05-Aug-17	10-Aug-17	90	0%	0	0											
LC12883	Installation of socketed H-Pile (A6) (Rig A)	P2-Cal.B	5	5	11-Aug-17	16-Aug-17	90	0%	0	0											
LC12884	Installation of socketed H-Pile (B10) (Rig B)	P2-Cal.B	5	5	07-Jun-17	12-Jun-17	115	0%	0	0											
LC12885	Installation of socketed H-Pile (B11) (Rig B)	P2-Cal.B	5	5	13-Jun-17	17-Jun-17	115	0%	0	0											
LC12886	Installation of socketed H-Pile (B12) (Rig B)	P2-Cal.B	5	5	19-Jun-17	23-Jun-17	115	0%	0	0											
LC12887	Installation of socketed H-Pile (B13) (Rig B)	P2-Cal.B	5	5	24-Jun-17	29-Jun-17	115	0%	0	0											
LC12888	Installation of socketed H-Pile (B14) (Rig B)	P2-Cal.B	5	5	30-Jun-17	06-Jul-17	115	0%	0	0											
LC12889	Installation of socketed H-Pile (B15) (Rig B)	P2-Cal.B	5	5	07-Jul-17	12-Jul-17	115	0%	0	0											
LC12890	Installation of socketed H-Pile (B16) (Rig B)	P2-Cal.B	5	5	13-Jul-17	18-Jul-17	115	0%	0	0											
LC12891	Installation of socketed H-Pile (C10) (Rig C)	P2-Cal.B	5	5	07-Jun-17	12-Jun-17	105	0%	0	0											
LC12892	Installation of socketed H-Pile (C9) (Rig C)	P2-Cal.B	5	5	13-Jun-17	17-Jun-17	105	0%	0	0											
LC12893	Installation of socketed H-Pile (C8) (Rig C)	P2-Cal.B	5	5	19-Jun-17	23-Jun-17	105	0%	0	0											
LC12894	Installation of socketed H-Pile (C7) (Rig C)	P2-Cal.B	5	5	24-Jun-17	29-Jun-17	105	0%	0	0											
LC12895	Installation of socketed H-Pile (C6) (Rig C)	P2-Cal.B	5	5	30-Jun-17	06-Jul-17	105	0%	0	0											
LC12896	Installation of socketed H-Pile (C5) (Rig C)	P2-Cal.B	5	5	07-Jul-17	12-Jul-17	105	0%	0	0											
LC12897	Installation of socketed H-Pile (C4) (Rig C)	P2-Cal.B	5	5	13-Jul-17	18-Jul-17	105	0%	0	0											
LC12898	Installation of socketed H-Pile (C3) (Rig C)	P2-Cal.B	5	5	19-Jul-17	24-Jul-17	105	0%	0	0											
LC12899	Installation of socketed H-Pile (C2) (Rig C)	P2-Cal.B	5	5	25-Jul-17	29-Jul-17	105	0%	0	0											
LC12900	Installation of socketed H-Pile (D20) (Rig D)	P2-Cal.B	5	5	07-Jun-17	12-Jun-17	110	0%	0	0											
LC12901	Installation of socketed H-Pile (D19) (Rig D)	P2-Cal.B	5	5	13-Jun-17	17-Jun-17	110	0%	0	0											
LC12902	Installation of socketed H-Pile (D18) (Rig D)	P2-Cal.B	5	5	19-Jun-17	23-Jun-17	110	0%	0	0											
LC12903	Installation of socketed H-Pile (D17) (Rig D)	P2-Cal.B	5	5	24-Jun-17	29-Jun-17	110	0%	0	0											
LC12904	Installation of socketed H-Pile (D16) (Rig D)	P2-Cal.B	5	5	30-Jun-17	06-Jul-17	110	0%	0	0											
LC12905	Installation of socketed H-Pile (D15) (Rig D)	P2-Cal.B	5	5	07-Jul-17	12-Jul-17	110	0%	0	0											
LC12906	Installation of socketed H-Pile (D14) (Rig D)	P2-Cal.B	5	5	13-Jul-17	18-Jul-17	110	0%	0	0											
LC12909	Installation of socketed H-Pile (D13) (Rig D)	P2-Cal.B	5	5	19-Jul-17	24-Jul-17	110	0%	0	0											
LC12910	Loading Test for Socketed H-Pile	P2-Cal.B	20	20	17-Aug-17	08-Sep-17	90	0%	0	0											
P2 CH 399 - 500		P2-Cal.B	63	63	20-May-17	03-Aug-17	462		0	0											
ELS		P2-Cal.B	63	63	20-May-17	03-Aug-17	462		0	0											
LC14680	Excavation and shoring installation (Total: 25436m3 - 200m3/day)	P2-Cal.B	63	63	20-May-17	03-Aug-17	462	0%	0	0											
SR2		P2-Cal.B	110	103	12-May-17 A	19-Sep-17	725		0	0											
Retaining Wall SR2-A & B CH250 - 310		P2-Cal.B	110	103	12-May-17 A	19-Sep-17	725		0	0											
LC16640	Construction of Base Slab (SR2-A Bay 1) (Team E)	P2-Cal.B	10	10	12-Jul-17	22-Jul-17	725	0%	0	0											
LC16660	Construction of Wall Stem (SR2-A Bay 1) (Team E)	P2-Cal.B	10	10	24-Jul-17	03-Aug-17	735	0%	0	0											
LC16720	Construction of Base Slab (SR2-A Bay 3) (Team E)	P2-Cal.B	10	3	12-May-17 A	23-May-17	725	70%	0	0											

█ Primary Baseline █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (May-17)

3 Months Rolling Programme
 (20 May 2017)
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Date	Revision	Checked	Approved
20-May-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1	Finish Date	2017				
											May	Jun	Jul	Aug	Sep
LC16740	Construction of Wall Stem (SR2-A Bay 3) (Team E)	P2-Cal.B	10	10	24-May-17	05-Jun-17	725	0%	0						
LC16760	Construction of Base Slab (SR2-A Bay 4) (Team E)	P2-Cal.B	10	10	06-Jun-17	16-Jun-17	725	0%	0						
LC16780	Construction of Wall Stem (SR2-A Bay 4) (Team E)	P2-Cal.B	10	10	17-Jun-17	28-Jun-17	725	0%	0						
LC16820	Construction of Wall Stem (SR2-A Bay 5) (Team E)	P2-Cal.B	10	10	29-Jun-17	11-Jul-17	725	0%	0						
LC16880	Construction of Base Slab (SR2-B Bay 1) (Team F)	P2-Cal.B	10	10	24-Jul-17	03-Aug-17	725	0%	0						
LC16900	Construction of Wall Stem (SR2-B Bay 1) (Team F)	P2-Cal.B	10	10	04-Aug-17	15-Aug-17	725	0%	0						
LC17120	Utilities Works - Including WaterMains, Drainage (Bay 1 - 6)	P2-Cal.B	30	30	16-Aug-17	19-Sep-17	725	0%	0						
SR2 CH 170 - 250		P2-Cal.B	53	48	15-May-17 A	17-Jul-17	555		0						
ELS		P2-Cal.B	53	48	15-May-17 A	17-Jul-17	555		0						
LC17146	Construction of prebored ~ P1 Stage 1 at CH236 to CH251.5 and end wall (34 hole for 3 hole/days)	P2-Cal.B	12	7	15-May-17 A	27-May-17	555	41.67%	0						
LC17147	Construction of prebored ~ P1 Stage 2 at CH208 to CH236 (42 hole for 3 hole/days)	P2-Cal.B	15	15	29-May-17	15-Jun-17	555	0%	0						
LC17148	Construction of prebored ~ P1 Stage 3 at CH181 to CH208 (42 hole for 3 hole/days)	P2-Cal.B	15	15	16-Jun-17	04-Jul-17	555	0%	0						
LC17149	Construction of prebored ~ P1 Stage 4 at CH168.5 to CH181 and end wall (31 hole for 3 hole/days)	P2-Cal.B	11	11	05-Jul-17	17-Jul-17	555	0%	0						
LC17150	Construction of prebored ~ P2 Stage 1 at CH236 to CH251.5 and end wall (34 hole for 3 hole/days)	P2-Cal.B	12	7	15-May-17 A	27-May-17	555	41.67%	0						
LC17151	Construction of prebored ~ P2 Stage 2 at CH208 to CH236 (42 hole for 3 hole/days)	P2-Cal.B	15	15	29-May-17	15-Jun-17	555	0%	0						
LC17152	Construction of prebored ~ P2 Stage 3 at CH181 to CH208 (42 hole for 3 hole/days)	P2-Cal.B	15	15	16-Jun-17	04-Jul-17	555	0%	0						
LC17153	Construction of prebored ~ P2 Stage 4 at CH168.5 to CH181 and end wall (31 hole for 3 hole/days)	P2-Cal.B	11	11	05-Jul-17	17-Jul-17	555	0%	0						
Portion IV & VII		P2-Cal.B	129	82	20-Mar-17 A	25-Aug-17	-53		0						
LC17656	Breaking of existing concrete (190m for 7m/day)	P2-Cal.B	28	12	20-Mar-17 A	03-Jun-17	-53	57.14%	-31						
LC17660	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Phase 1 (SMH9108 to SMH9104)	P2-Cal.B	12	12	05-Jun-17	17-Jun-17	-53	0%	0						
LC17665	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Phase 2 (SMH9104 to SMH9103)	P2-Cal.B	12	12	19-Jun-17	03-Jul-17	-53	0%	0						
LC17666	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Stage 3 (SMH9108 to SMH9109)	P2-Cal.B	12	12	04-Jul-17	17-Jul-17	-53	0%	0						
LC17667	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Stage 4 (SMH9109 to SMH9110)	P2-Cal.B	12	12	18-Jul-17	31-Jul-17	-53	0%	0						
LC17668	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Stage 5 (SMH9110 to Outfall)	P2-Cal.B	12	12	01-Aug-17	14-Aug-17	-53	0%	0						
LC17680	Trench Excavation for Construction of Dia. 2100 Drain Pipe ~ Stage 1	P2-Cal.B	10	10	15-Aug-17	25-Aug-17	-53	0%	0						
New Reclaimed Section		P2-Cal.B	147	85	20-Dec-16 A	29-Aug-17	276		0						
Marine Works		P2-Cal.B	147	85	20-Dec-16 A	29-Aug-17	219		0						
Initial Works		P2-Cal.B	76	14	20-Dec-16 A	06-Jun-17	-25		0						
Steel Cofferdam and Water Gate		P2-Cal.B	76	14	20-Dec-16 A	06-Jun-17	-25		0						
MC10280	Installation of Temporary Steel Cofferdam (Type1 - 538 pcs)	P2-Cal.B	24	0	20-Dec-16 A	27-Feb-17 A		100%	27						
MC10300	Installation of Temporary Steel Cofferdam (Type 1A - 342 nos.)	P2-Cal.B	24	0	18-Feb-17 A	16-Mar-17 A		100%	34						
MC10310	Installation of Temporary Steel Cofferdam (Type 1B - 199 nos)	P2-Cal.B	12	0	10-Feb-17 A	25-Feb-17 A		100%	39						
MC10320	Installation of Temporary Steel Cofferdam (Phase 4 - 20 nos type 2B, 2C and 2D Steel Box)	P2-Cal.B	12	0	13-Apr-17 A	20-May-17	-25	100%	-15						
MC10360	Installation of Water Gate System	P2-Cal.B	7	0	08-May-17 A	12-May-17 A		100%	14						
MC10380	Installation of Pumping System (incl. pipeline)	P2-Cal.B	7	7	20-May-17	27-May-17	-25	0%	0						
MC10400	Testing of Water Gate System	P2-Cal.B	7	7	29-May-17	06-Jun-17	-25	0%	0						
Dredging Work		P2-Cal.B	64	64	07-Jun-17	21-Aug-17	-25		0						
MC10540	Dredge CH300-350 (31520m3)	P2-Cal.B	16	16	07-Jun-17	24-Jun-17	-25	0%	0						
MC10550	Dredge CH250-300 (31520m3)	P2-Cal.B	16	16	26-Jun-17	14-Jul-17	-25	0%	0						
MC10560	Dredge CH200-250 (27580m3)	P2-Cal.B	14	14	15-Jul-17	31-Jul-17	-25	0%	0						
MC10570	Dredge CH150-200 (27580m3)	P2-Cal.B	14	14	01-Aug-17	16-Aug-17	-25	0%	0						
MC10580	Dredge CH300-350 (7880m3)	P2-Cal.B	4	4	17-Aug-17	21-Aug-17	-25	0%	0						
MC10590	Removal of Existing Rock Armour CH0-71 (10488m3)	P2-Cal.B	4	4	17-Aug-17	21-Aug-17	-25	0%	0						
Full-scale Treatment of Cement S/S of Marine Sediment		P2-Cal.B	81	81	25-May-17	29-Aug-17	219		0						
MC14100	Set up Cement S/S Treatment Facility	P2-Cal.B	21	21	25-May-17	19-Jun-17	219	0%	0						
MC14120	Loading and unloading Point	P2-Cal.B	60	60	20-Jun-17	29-Aug-17	219	0%	0						
Land Works		P2-Cal.B	25	25	19-Jul-17	16-Aug-17	287		0						

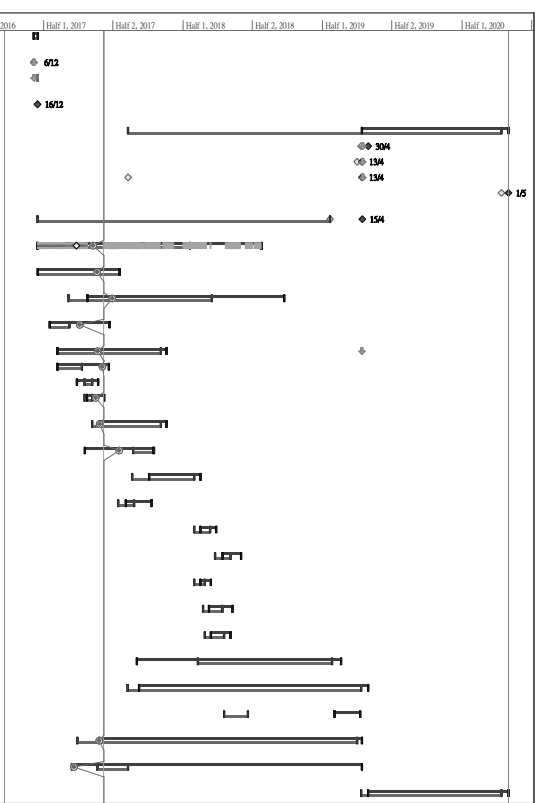
█ Primary Baseline █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (May-17)

3 Months Rolling Programme
 (20 May 2017)
 Page: 6 of 7

Date	Revision	Checked	Approved
20-May-17			

ID	Task Block	Activates LD	Task	Task Calendar	Remaining Duration	% Complete	Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	TRA	Half 2, 2016	Half 1, 2017	Half 2, 2017	Half 1, 2018	Half 2, 2018	Half 1, 2019	Half 2, 2019	Half 1, 2020	
1			General information	Cal A	0 days	100%	11 days	6/12/16	16/12/16	6/12/16	16/12/16	6/12/16	16/12/16			0 days										
2			Contract Date	Cal A	0 days	100%	0 days	6/12/16	6/12/16	6/12/16	6/12/16	6/12/16	6/12/16			0 days										
4		K00001	Project Start Date	Cal A	0 days	100%	1 day	16/12/16	16/12/16	16/12/16	16/12/16	16/12/16	16/12/16		4	0 days										
5		K00002	Project Start Date	Cal A	0 days	100%	1 day	16/12/16	16/12/16	16/12/16	16/12/16	16/12/16	16/12/16		3	0 days										
6			Site Access Date(Portion I,II,III,IV)	Cal A	0 days	100%	0 days	16/12/16	16/12/16	16/12/16	16/12/16	16/12/16	16/12/16			0 days										
11			Completion Date	Cal A	383.8 days	0%	383.8 days	13/4/19	1/5/20	13/4/19	1/5/20	NA	NA			0 days										
13		K00007	Completion date for Section 1	Cal A	0 days	0%	0 days	30/4/19	30/4/19	30/4/19	30/4/19	NA	NA	516-410,110,35-495,498,519,513		0 days										
14		K00008	Completion date for Section 2	Cal A	0 days	0%	0 days	13/4/19	13/4/19	13/4/19	13/4/19	NA	NA			0 days										
15		K00009	Completion date for Section 3	Cal A	0 days	0%	0 days	13/4/19	13/4/19	13/4/19	13/4/19	NA	NA			0 days										
16		K00010	Completion date for Section 4	Cal A	0 days	0%	0 days	1/5/20	1/5/20	1/5/20	1/5/20	NA	NA			0 days										
17				Cal A	0 days	0%	0 days	1/5/20	1/5/20	1/5/20	1/5/20	NA	NA			0 days										
18			Area Handover date for (Work Area A & B)	Cal A	0 days	0%	0 days	15/4/19	15/4/19	15/4/19	15/4/19	NA	NA			0 days										
21			Preliminary,General,Design Submission	Cal A	351.68 days	40%	586 days	16/12/16	24/7/18	16/12/16	24/7/18	16/12/16	NA			0 days										
208			Major subcontractor(s) award dates	Cal A	52.1 days	76%	214 days	17/12/16	18/7/17	17/12/16	18/7/17	17/12/16	NA			0 days										
209			Procurement of Major Materials	Cal A	494.52 days	4%	515 days	26/4/17	22/9/18	26/4/17	22/9/18	26/4/17	NA			0 days										
220			General works	Cal B	80.82 days	28%	112 days	17/1/17	22/6/17	17/1/17	22/6/17	17/1/17	NA			0 days										
227			Section 1	Cal B	145.37 days	31%	211.4 days	6/2/17	18/11/17	6/2/17	18/11/17	6/2/17	NA			0 days										
233			Predrilling works(approx. 4 nos.)	Cal B	12.06 days	88%	97.5 days	6/2/17	20/6/17	6/2/17	20/6/17	6/2/17	NA			0 days										
234			Discover uncharted utilities along soldier pile alignment	Cal B	0 days	100%	37.8 days	29/3/17	23/5/17	29/3/17	23/5/17	29/3/17	23/5/17			0 days										
253			Set up temporary working platform	Cal B	26.89 days	20%	33.8 days	25/4/17	8/6/17	25/4/17	8/6/17	25/4/17	NA			0 days										
257			Construction of soldier wall	Cal B	154.17 days	3%	159.2 days	27/5/17	18/11/17	27/5/17	18/11/17	NA	NA			0 days										
260			Construction of retaining wall(5 Bays)(25.8m)(Team B & C)	Cal B	120.35 days	10%	133.2 days	19/4/17	14/10/17	19/4/17	14/10/17	19/4/17	NA			0 days										
284			Piling works(West side)	Cal B	99 days	0%	99 days	4/10/17	15/2/18	4/10/17	15/2/18	NA	NA			0 days										
328			Piling works(East side)(Pier 3)(6 nos. H-pile)	Cal B	50 days	0%	50 days	4/8/17	10/10/17	4/8/17	10/10/17	NA	NA			0 days										
329			Pipe cap for Pier 1 / 2 (Team C & B) & Lift Shaft(Team C)	Cal B	29 days	0%	29 days	15/2/18	28/3/18	15/2/18	28/3/18	NA	NA			0 days										
345			Construction of FT-1 & FT-2(Team C)	Cal B	35 days	0%	35 days	14/4/18	1/6/18	14/4/18	1/6/18	NA	NA			0 days										
346			Pipe cap for Pier 3(Team A)	Cal B	18 days	0%	18 days	15/2/18	14/3/18	15/2/18	14/3/18	NA	NA			0 days										
353			Pier 1 / 2 (GL 1-2)(Team C) & (GL 2-3)(Team B)	Cal B	43 days	0%	43 days	9/3/18	10/5/18	9/3/18	10/5/18	NA	NA			0 days										
354			Construction of Pier 3(GL 4)(Team A)	Cal B	36 days	0%	36 days	14/3/18	5/5/18	14/3/18	5/5/18	NA	NA			0 days										
366			Bridge construction	Cal B	389 days	0%	389 days	2/9/17	18/2/19	2/9/17	18/2/19	NA	NA			0 days										
367			Main components on footbridge	Cal B	436 days	0%	436 days	8/9/17	30/4/19	8/9/17	30/4/19	NA	NA			0 days										
514			Others	Cal B	50 days	0%	50 days	1/2/19	9/4/19	1/2/19	9/4/19	NA	NA			0 days										
515			Section 2 - Preservation and Protection of Existing Trees	Cal B	504 days	0%	504 days	26/5/17	13/4/19	26/5/17	13/4/19	NA	NA			0 days										
520			Section 3 - Landscape Works	Cal B	550.8 days	1%	554.2 days	16/3/17	13/4/19	16/3/17	13/4/19	16/3/17	NA			0 days										
521			Section 4 - Establishment Works	Cal A	367 days	0%	367 days	30/4/19	1/5/20	30/4/19	1/5/20	NA	NA			0 days										

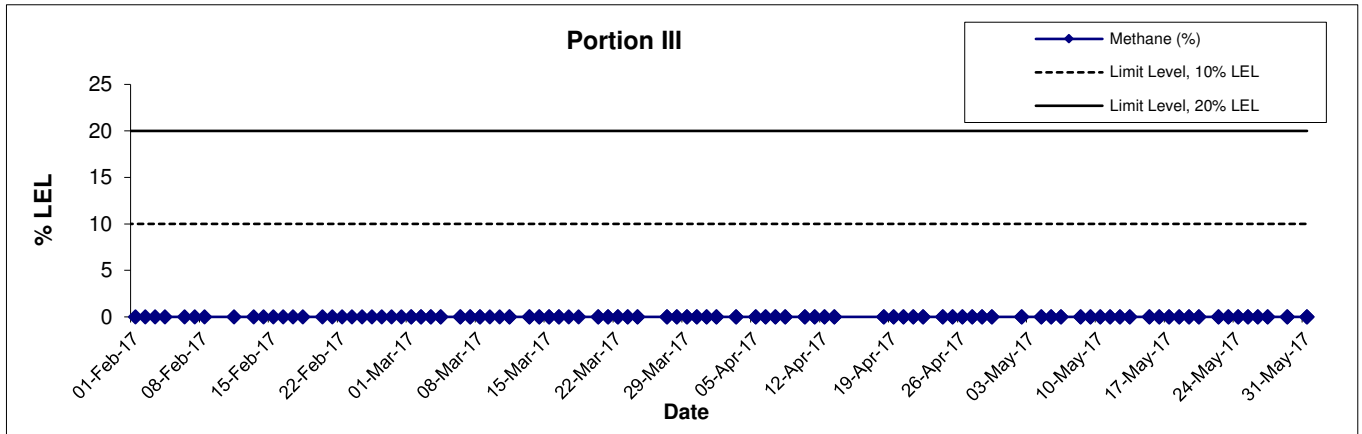


**APPENDIX R
RECORD OF LANDFILL GAS
MONITORING BY CONTRACTOR**

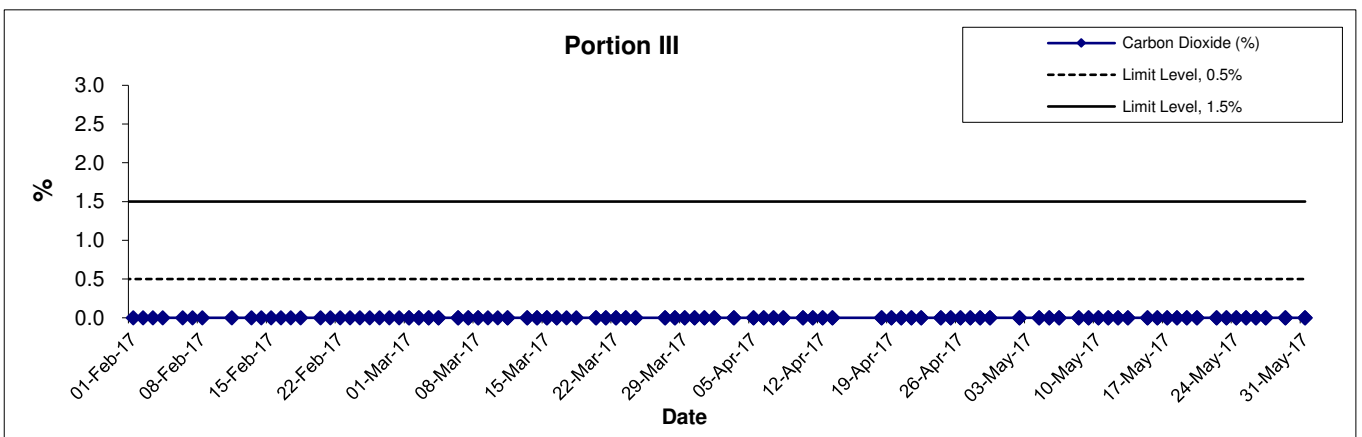
APPENDIX R - RECORD OF LANDFILL GAS MONITORING BY THE CONTRACTOR

Location	Date of Measurement	Sampling time	Weather Condition	Temperature (°C)	Methane (%)	Carbon dioxide (%)	Oxygen (%)
Portion III	2-May-17	8:29	Sunny	22	0	0	20.9
	2-May-17	13:03	Sunny	27	0	0	20.9
	4-May-17	8:28	Sunny	22	0	0	20.9
	4-May-17	13:05	Sunny	28	0	0	20.9
	5-May-17	8:31	Cloudy	23	0	0	20.9
	5-May-17	13:00	Cloudy	28	0	0	20.9
	6-May-17	8:29	Sunny	21	0	0	20.9
	6-May-17	13:07	Sunny	26	0	0	20.9
	8-May-17	8:30	Cloudy	23	0	0	20.9
	8-May-17	13:05	Cloudy	27	0	0	20.9
	9-May-17	8:28	Cloudy	22	0	0	20.9
	9-May-17	13:03	Cloudy	28	0	0	20.9
	10-May-17	8:30	Sunny	21	0	0	20.9
	10-May-17	13:02	Sunny	27	0	0	20.9
	11-May-17	8:30	Cloudy	22	0	0	20.9
	11-May-17	13:00	Cloudy	28	0	0	20.9
	12-May-17	8:30	Sunny	23	0	0	20.9
	12-May-17	13:01	Sunny	27	0	0	20.9
	13-May-17	8:28	Cloudy	22	0	0	20.9
	13-May-17	13:00	Cloudy	26	0	0	20.9
	15-May-17	8:30	Sunny	24	0	0	20.9
	15-May-17	13:02	Sunny	28	0	0	20.9
	16-May-17	8:28	Cloudy	26	0	0	20.9
	16-May-17	13:00	Cloudy	29	0	0	20.9
	17-May-17	8:30	Sunny	24	0	0	20.9
	17-May-17	13:05	Sunny	29	0	0	20.9
	18-May-17	8:30	Cloudy	25	0	0	20.9
	18-May-17	13:02	Cloudy	28	0	0	20.9
	19-May-17	8:30	Sunny	28	0	0	20.9
	19-May-17	13:30	Sunny	28	0	0	20.9
	20-May-17	8:30	Sunny	28	0	0	20.9
20-May-17	13:25	Sunny	28	0	0	20.9	
22-May-17	8:45	Sunny	28	0	0	20.9	
22-May-17	13:25	Sunny	28	0	0	20.9	
23-May-17	8:35	Cloudy	28	0	0	20.9	
23-May-17	13:15	Cloudy	29	0	0	20.9	
24-May-17	8:25	Rainy	29	0	0	20.9	
24-May-17	13:30	Rainy	30	0	0	20.9	
25-May-17	8:35	Cloudy	28	0	0	20.9	
25-May-17	13:25	Cloudy	30	0	0	20.9	
26-May-17	8:25	Sunny	28	0	0	20.9	
26-May-17	13:40	Sunny	30	0	0	20.9	
27-May-17	8:40	Sunny	29	0	0	20.9	
27-May-17	13:35	Sunny	31	0	0	20.9	
29-May-17	8:45	Sunny	29	0	0	20.9	
29-May-17	13:36	Sunny	31	0	0	20.9	
31-May-17	8:35	Sunny	29	0	0	20.9	
31-May-17	13:37	Sunny	31	0	0	20.9	

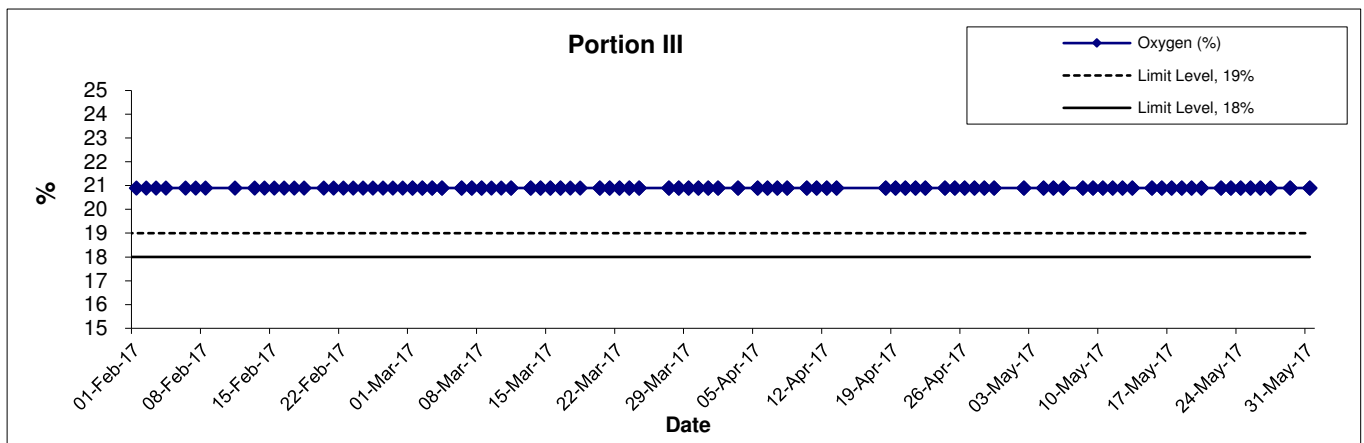
Methane



Carbon Dioxide



Oxygen



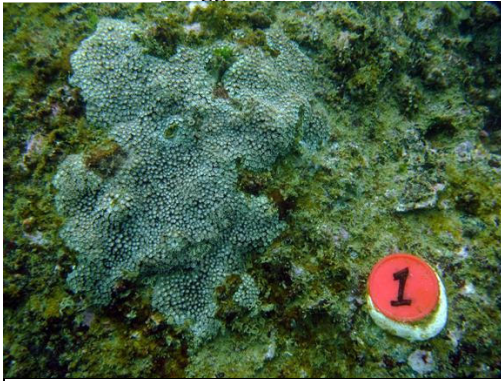
Title	Agreement No. CE 59/2015 (EP)	Scale	Project	CINOTECH
	Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction	N.T.S	No. MA16034	
Graphical Presentation of Landfill Gas Measurement	Date	May 17	Appendix R	

**APPENDIX S
UPDATED CONSTRUCTION NOISE
ASSESSMENT**

No update on Construction Noise Assessment in the reporting month

**APPENDIX T
PHOTO RECORD OF POST-
TRANSLOCATION CORAL
MONITORING SURVEY**

Tagged Coral Colonies at Recipient Site (under Contract NE2015/01).



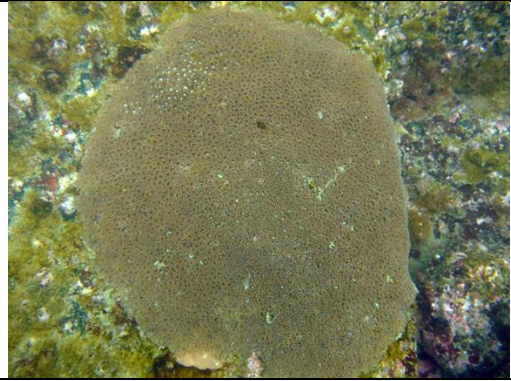
C01– *Gonipopra stutchburyi*



C01– *Gonipopra stutchburyi*



C02– *Cyphastrea serailia*



C02– *Cyphastrea serailia*



C03– *Gonipopra stutchburyi*



C03– *Gonipopra stutchburyi*



C04– *Cyphastrea serailia*



C04– *Cyphastrea serailia*



C05– *Cyphastrea serailia*



C05– *Cyphastrea serailia*

Continued.



C06- *Cyphastrea serailia*



C06- *Cyphastrea serailia*



C07- *Cyphastrea serailia*



C07- *Cyphastrea serailia*



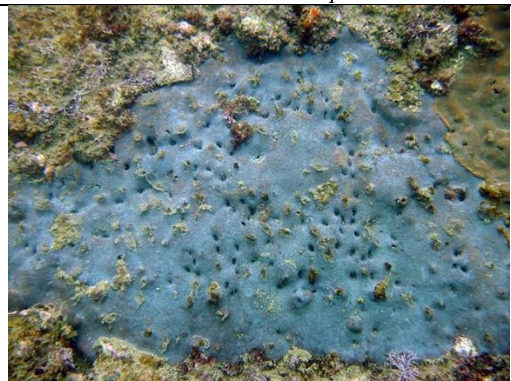
C08- *Turbinaria peltata*



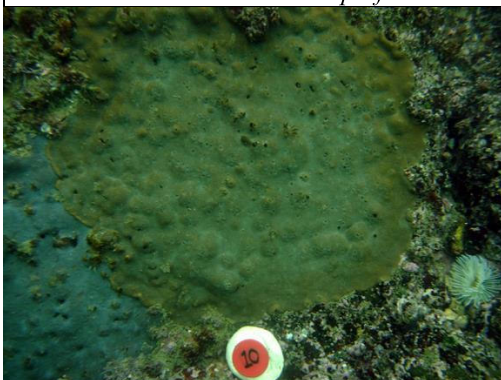
C08- *Turbinaria peltata*



C09- *Psammocora superficialis*



C09- *Psammocora superficialis*



C10- *Psammocora superficialis*



C10- *Psammocora superficialis*

Translocated Coral Colonies (under Contract NE2015/01).



01- *Turbinaria peltata*



01- *Turbinaria peltata*



02- *Cyphastrea serailia*



02- *Cyphastrea serailia*



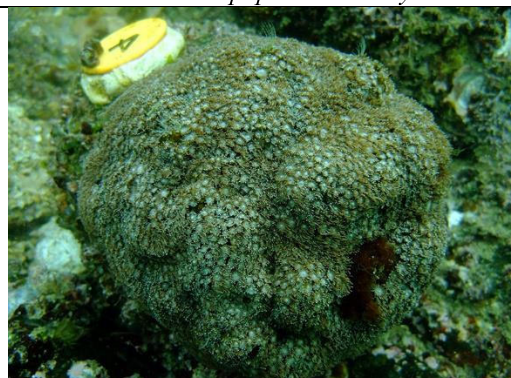
03- *Gonipopra stutchburyi*



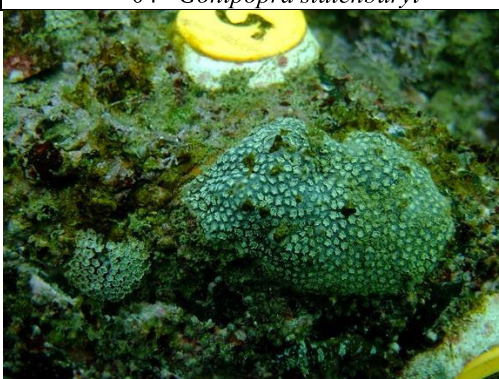
03- *Gonipopra stutchburyi*



04- *Gonipopra stutchburyi*



04- *Gonipopra stutchburyi*



05- *Gonipopra stutchburyi*



05- *Gonipopra stutchburyi*

Continued.



06– *Gonipopra stutchburyi*



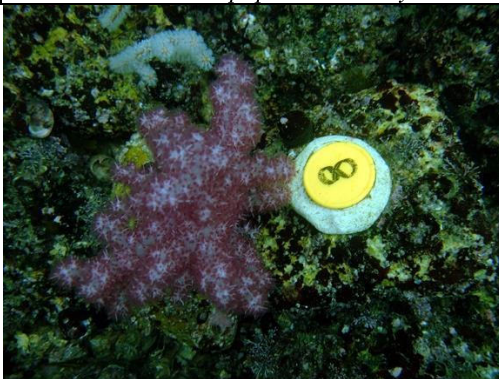
06– *Gonipopra stutchburyi*



07– *Gonipopra stutchburyi*



07– *Gonipopra stutchburyi*



08– *Dendronephthya* sp.



08– *Dendronephthya* sp.



09– *Menella* sp.



09– *Menella* sp.

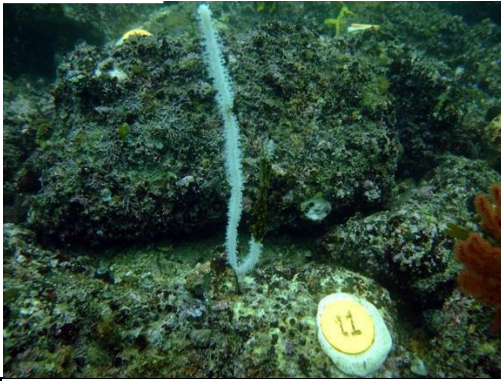


10– *Echinogorgia* sp.

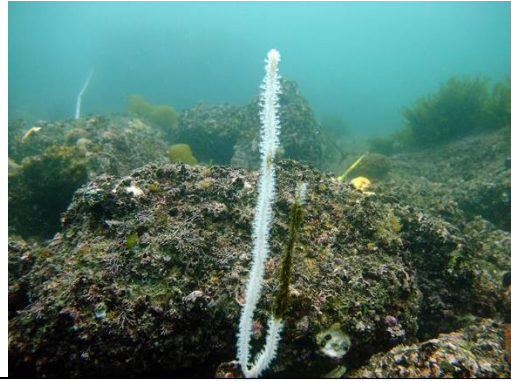


10– *Echinogorgia* sp.

Continued.



11- *Echinomuricea* sp.



11- *Echinomuricea* sp.



12- *Menella* sp.



12- *Menella* sp.



13- *Menella* sp.



13- *Menella* sp.



14- *Psammocora superficialis*



14- *Psammocora superficialis*



15- *Coscinaraea* sp.

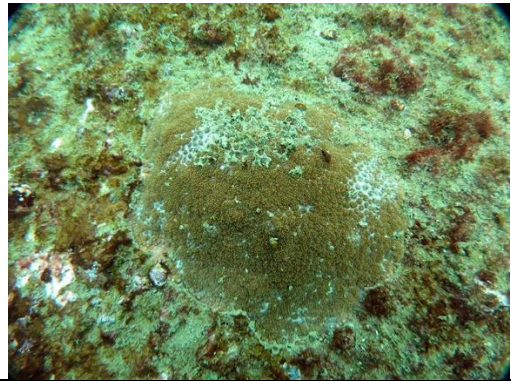


15- *Coscinaraea* sp.

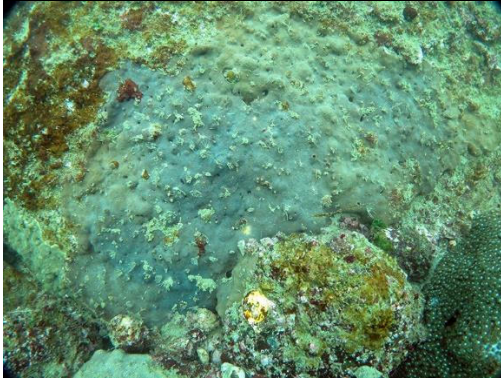
Tagged Coral Colonies at Recipient Site (under Contract NE2015/02).



SWJB1– *Plesiastrea versipora*



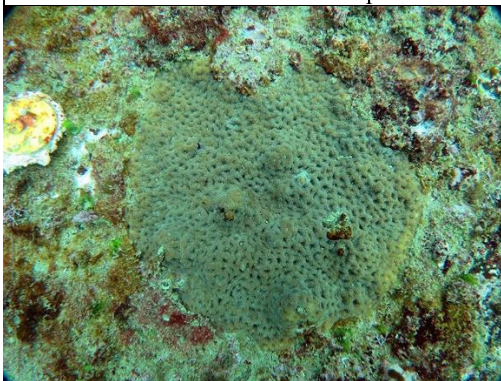
SWJB2– *Plesiastrea versipora*



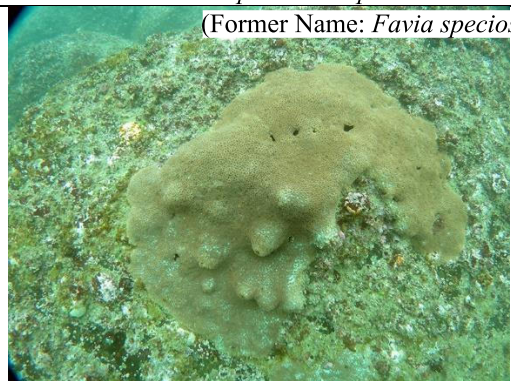
SWJB3– *Porites* sp.



SWJB4– *Dipsastraea speciosa*
(Former Name: *Favia speciosa*)



SWJB5– *Favites pentagona*



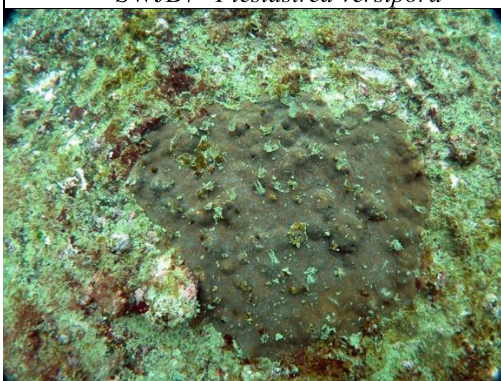
SWJB6– *Plesiastrea versipora*



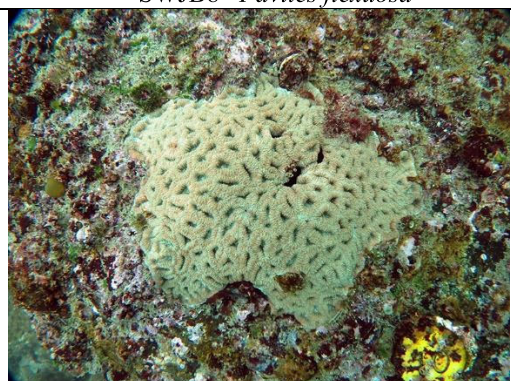
SWJB7– *Plesiastrea versipora*



SWJB8– *Favites flexuosa*



SWJB9– *Porites* sp.



SWJB10– *Favites chinensis*

Translocated Coral Colonies (under Contract NE2015/02).



TKW-T1 *Favites flexuosa*



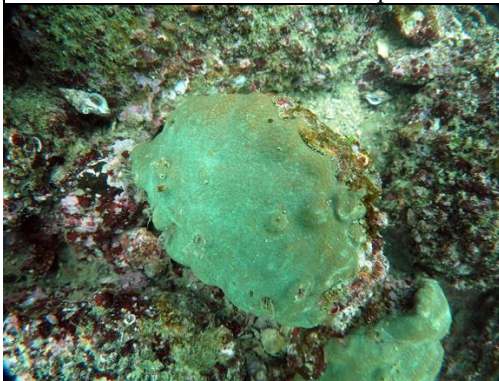
TKW-T2 *Gonipopra stutchburyi*



TKW-T3 *Porites* sp.



TKW-T4 *Porites* sp.



TKW-T5 *Porites* sp.



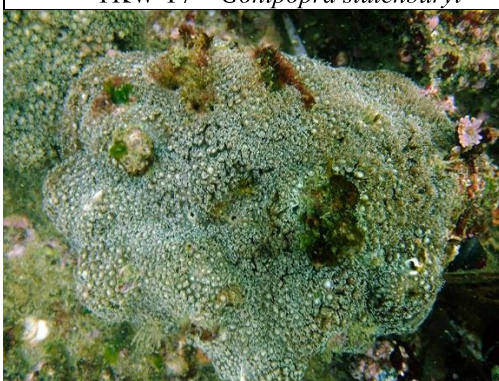
TKW-T6 *Gonipopra stutchburyi*



TKW-T7 *Gonipopra stutchburyi*



TKW-T8 *Gonipopra stutchburyi*



TKW-T9 *Gonipopra stutchburyi*



TKW-T10 *Gonipopra stutchburyi*

Continued.



TKW-T11 *Coscinarea* sp.



TKW-T12 *Plesiastrea versipora*



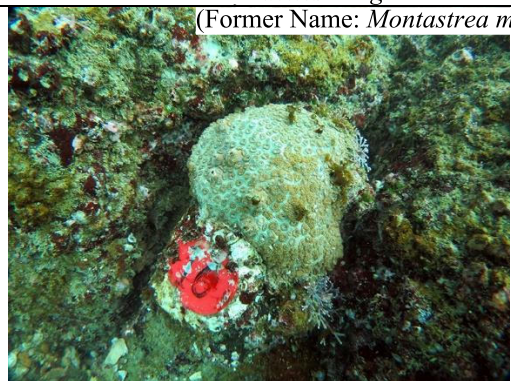
TKW-T13 *Gonipopra stutchburyi*



TKW-T14 *Favites magnistellata*
(Former Name: *Montastrea mangnistella*)



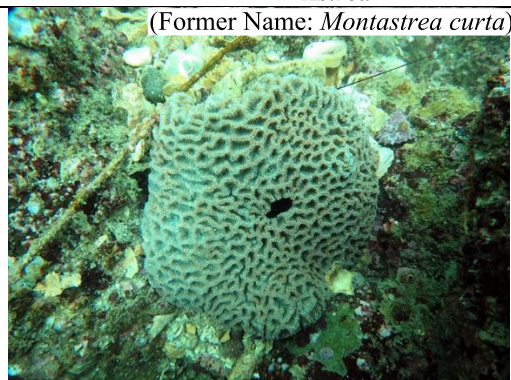
TKW-T15 *Porites* sp.



TKW-T16 *Astrea curta*
(Former Name: *Montastrea curta*)



TKW-T17 *Porites* sp.



TKW-T18 *Platygyra acuta*



TKW-T19 *Favites flexuosa*



TKW-T20 *Gonipopra stutchburyi*

Continued.



TKW-T21 *Favites magnistellata*
(Former Name: *Montastrea mangnistella*)



TKW-T22 *Turbinaria peltata*



TKW-T23 *Porites* sp.



TKW-T24 *Gonipopra stutchburyi*



TKW-T25 *Plesiastrea versipora*



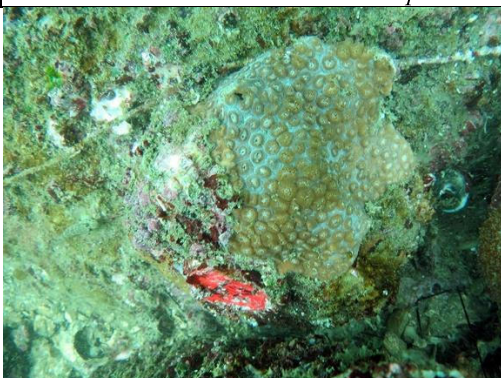
TKW-T26 *Gonipopra stutchburyi*



TKW-T27 *Plesiastrea versipora*



TKW-T28 *Porites* sp.



TKW-T29 *Astrea curta* (Former Name: *Montastrea curta*)