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 July 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 9th 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 July 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	2	0	2	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	16	20	0	0	N/A
Groundwater Level Monitoring (Piezometer Monitoring)	N/A	N/A	N/A	N/A	N/A
Ecological	N/A	N/A	N/A	N/A	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. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

7. All noise monitoring was conducted as scheduled in the reporting month. Two 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. According to the information provided by the Contractor, tunnel boring and tunnel construction works were carried out in Lam Tin side during July 2017. Action and Limit Level for groundwater monitoring is under review with consideration of monitoring results obtained from November 2016 to June 2017.

9. All marine water monitoring was conducted as scheduled in the reporting month. Action and Limit Level exceedance was recorded on 17 and 19 July 2017 but considered to be due to other external factors. The details should be referred to **Appendix K**.

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. Post-translocation coral monitoring survey shall be conducted once every 3 months for a period of 12 months after completion of coral translocation. The 3rd post-translocation coral monitoring survey is scheduled in August 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 for NE/2015/01, NE/2015/02 and NE/2015/03 on 26, 26, 20 July 2017 respectively. 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 (July 2017)	3	Construction dust and noise nuisance	Under investigation	On-going	Details refer to App O
Complaint received / Complaint referred by EPD (June 2017)	8	Waste/Chemical Management, Construction dust and noise nuisance	Investigations completed	Closed	
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 9th Monthly EM&A report summarizing the EM&A works for the Project in July 2017.

Purpose of the Report

1.2 This is the 9th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in July 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 (July 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 1G2, Area 2, Area 3, Area 4 & Area 5 4) Temp Steel Bridge across Cha Kwo Ling Road & Barging Facility 5) Pipe Pile wall – Area 2A 6) Ground Investigation
		Main Tunnel	1) Construction of Tunnel Adit
		TKO Interchange	1) Haul Road Construction, Site Formation and Slope Works 2) Temporary Barging Facilities & Temporary Works 3) Temporary Cut Slope For BMCPC
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Site Clearance 2) Hoarding Erection 3) Advance Works for Construction of Steel Cofferdam for Road P2 and Road SR2 4) Installation and rectification of Temporary Steel Cofferdam and Double Water Gate 5) Dredging and Reclamation works 6) Construction of Retaining Wall 7) E&M Works of DSD transformation room 8) Site Clearance at Portion IV 9) Ground Investigation at Portion VI	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	1) Construction of Lagging Wall 2) Soldier Pier 3) Foundation Pile	

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	• 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/2015/02	Account No. 7025654	16/08/2016	N/A	Valid
NE/2015/03	Account No. 7026805	30/12/2016	N/A	Valid
Vessel Billing Account under construction waste disposal charging scheme				
NE/2015/01	CEDD00860	10/05/2017	10/08/2017	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	23/08/2016	N/A	Valid
NE/2015/03	Waste Producer No. 5213-265-W3435-04	19/07/2017	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance				

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
NE/2015/01	WT00025806-2016	22/11/2016	30/11/2021	Valid
	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-RE0154-17	08/03/2017	05/09/2017	Valid
	GW-RE0191-17	20/03/2017	19/09/2017	Valid
	GW-RE0455-17	07/06/2017	30/07/2017	Expired on 30 July 2017
	GW-RE0458-17	10/06/2017	07/07/2017	Expired on 7 July 2017
	GW-RE0496-17	27/06/2017	26/08/2017	Valid
	GW-RE0501-17	27/06/2017	26/08/2017	Valid
	GW-RE0508-17	27/06/2017	22/12/2017	Valid
	GW-RE0534-17	06/07/2017	23/09/2017	Valid
	GW-RE0571-17	24/07/2017	23/09/2017	Valid
NE/2015/02	GW-RE0049-17	01/02/2017	31/07/2017	Expired on 31 July 2017
	GW-RE0097-17	15/02/2017	14/08/2017	Valid
	GW-RE0281-17	13/04/2017	02/10/2017	Valid
	GW-RE0414-17	02/06/2017	01/12/2017	Valid
	GW-RE0510-17	29/06/2017	27/08/2017	Valid
	GW-RE0516-17	29/06/2017	22/12/2017	Valid
Marine Dumping Permit				
NE/2015/02	EP/MD/17-174	31/05/2017	30/09/2017	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
	EP/MD/18-014	15/06/2017	14/12/2017	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 July 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	4
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 0.5μm and 5μm channels will show the cumulative counts of particles larger than 0.5μm and 5μm 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 m^3/min. and 1.4 m^3/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. 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	5
	BSWA 801	0
Calibrator	SV30A	2
	Brüel & Kjær 4231	2

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) L_{90}(30 min) dB(A) L_{eq}(30 min) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade
CM2				Façade
CM3				Façade
CM4				Façade
CM5				Façade
CM6(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}, L_{90} and L_{10} 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. Two Action Level exceedance was recorded due to the documented complaints received in the reporting month. No 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 (BOD_5), 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, BOD_5, 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	1
	Aquaread AP-2000-D	0
	YSI EXO1 Multiparameter Sondes	3
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	• DO, mg/L • DO Saturation, % • pH • Water Temperature (°C) • Turbidity, NTU • SS, mg/L • BOD_5, mg O_2/L • TOC, mg-TOC/L • Total Nitrogen, mg/L • Ammonia-N, mg NH_3-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	*In-situ*: Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity Laboratory Testing: Suspended Solids (SS)	M1-M5, C1-C2, G1-G4 • 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. M6 • at the vertical level where the water abstraction point of the intake is located(i.e. approximately mid-depth level)	3 days per week / 2 per monitoring day (1 for mid-ebb and 1 for mid-flood)

Monitoring Methodology

Groundwater 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, BOD_5, 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 H_2SO_4 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)
7 July 2017	Stream 1	7.4	7.8	0.4	0.8	<2	3	1.5	<0.05	<0.05
	Stream 2	7.5	7.8	0.9	2.7	<2	4	1.5	0.05	<0.05
	Stream 3	7.3	7.9	1.5	0.9	<2	2	1.5	<0.05	<0.05
18 July 2017	Stream 1	7.6	8.0	1.5	1.9	<2	7	1.0	<0.05	<0.05
	Stream 2	7.6	8.0	1.5	6.5	<2	6	1.4	<0.05	<0.05
	Stream 3	7.6	8.0	1.6	10	<2	5	1.9	<0.05	<0.05

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

5.34 According to the information provided by the Contractor, tunnel boring and tunnel construction works were carried out in Lam Tin side during July 2017. Action and Limit Level for groundwater monitoring is under review with consideration of monitoring results obtained from November 2016 to June 2017.

5.35 Relatively higher levels of Suspended Solids (SS) was observed at Stream 3 on 18 July 2017. It is considered that such high levels of SS were due to heavy rainfall between 17 and 18 July 2017 which led to the issuance of the Amber Rainstorm Warning Signal both days.

Marine Water Quality Monitoring

5.36 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.

5.37 Calculated Action and Limit Levels for Marine Water Quality is presented in **Appendix I**. Exceedances on the Dissolved Oxygen parameter were recorded on 17 and 19 July 2017. The exceedances are considered to be non-project related as they were due to other external factors (such as adverse weather) rather than the contract works. As they were non-project related, no additional monitoring for marine water quality was needed to be carried out. The summary of the exceedance can be referred to **Appendix K**.

Groundwater Level Monitoring (Piezometer Monitoring)

5.38 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.

5.39 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.

6.4 The third post-translocation coral monitoring is scheduled to be carried out in August 2017 tentatively. Location of post-translocation coral monitoring is shown in **Figure 7**.

Event and Action Plan

6.5 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.

6.6 If the defined Action Level or Limit Level for coral monitoring is exceeded, the actions as set out in **Appendix M** will be implemented.

6.7 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

6.8 No post-translocation coral monitoring was conducted in the reporting month.

6.9 Photographs of the coral colonies of coming post-translocation coral monitoring will be shown in **Appendix T**.

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 aplied 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	7

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	Tilting	Settlement (mm)	Vibration (mm/s)		
				Measurement Direction		
				Tran	Vertical	Longitudinal
3-Jul-17	09:12	+3	-3	0.635	0.381	0.635
4-Jul-17	10:40	+1	-1	0.127	0.254	0.635
5-Jul-17	09:22	+1	+0	0.254	0.254	0.254
6-Jul-17	15:27	+2	-1	0.254	0.254	0.254
7-Jul-17	17:42	+0	-1	0.254	0.254	0.254
8-Jul-17	11:29	+1	-1	0.254	0.254	0.254
10-Jul-17	17:34	+0	-1	0.127	0.254	0.254
11-Jul-17	13:56	+0	+0	0.254	0.381	0.254
12-Jul-17	10:09	-1	-1	0.254	0.254	0.254
13-Jul-17	10:26	+0	+0	0.254	0.254	0.254
14-Jul-17	16:39	+0	+0	0.381	0.254	0.127
15-Jul-17	13:37	+0	+0	0.254	0.254	0.254
17-Jul-17	Cancelled due to adverse weather (Amber Rainstorm Warning Signals)					
18-Jul-17	13:30	+0	-1	Cancelled due to adverse weather (Amber Rainstorm Warning Signals)		
19-Jul-17	15:38	+0	+0	0.381	0.762	0.254
20-Jul-17	13:56	+0	-1	0.508	0.762	0.254
21-Jul-17	15:43	+0	+0	0.254	0.635	0.254
22-Jul-17	10:27	+0	+0	0.254	0.381	0.254
24-Jul-17	16:46	+1	+0	0.254	0.635	0.127

Date	Time	Tilting	Settlement (mm)	Vibration (mm/s)		
				Measurement Direction		
				Tran	Vertical	Longitudinal
25-Jul-17	13:31	+0	+0	0.635	1.016	1.524
26-Jul-17	11:17	+1	+0	0.254	0.254	0.254
27-Jul-17	10:52	+1	+0	0.381	0.508	0.254
28-Jul-17	09:13	+1	+0	0.254	0.381	0.127
29-Jul-17	11:14	+0	-1	0.254	0.254	0.254
31-Jul-17	16:56	+2	+1	0.381	1.270	0.254

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 50 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: 5, 12, 19 and 26 July 2017
- Contract No. NE/2015/02: 6, 11, 20, 26 July 2017
- Contract No. NE/2015/03: 6, 10, 20 and 27 July 2017

Monthly joint site inspection with the representative of IEC was conducted for NE/2015/01, NE/2015/02 and NE/2015/03 on 26, 26 and 20 July 2017 respectively.

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 **Appendix L**.

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 Two 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 Three environmental complaint was 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 (August 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 1G2, Area 2, Area 3, Area 4 & Area 5 4) Pipe Pile Wall – Area 2A 5) Ground Investigation
		Main Tunnel	1) Construction of Tunnel Adit 2) Main Tunnel Excavation
		TKO Interchange	1) Haul Road Construction and Site Formation 2) Temporary Cut Slope For BMCPC 3) Temporary Barging Facilities & Temporary Works
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Construction and Backfilling of Retaining wall 2) Advance Works, Excavation and Structural works for Installation of Steel Cofferdams at Road P2 at Portion VIII 3) Preparation of Treatment work for Marine Sediment 4) E&M Works for DSD Transformer Room 5) Construction of outfall for diversion of existing drainpipe 6) Installation of 2100mm dia. Drainage at Portion IV 7) Construction of preboring socket H-piles 8) Site Monitoring System Set-up Works 9) Rectification of Marine Cofferdam	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	1) Foundation Pile 2) Construction of Lagging Wall 3) Socket H-pile	

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 9th Environmental Monitoring and Audit (EM&A) Report which presents the EM&A works undertaken during the period in July 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. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

14.4 All noise monitoring was conducted as scheduled in the reporting month. Two 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 Tunnel boring and tunnel construction works were carried out in both Lam Tin side during July 2017. Action and Limit Level for groundwater monitoring is under review with consideration of monitoring results obtained from November 2016 to June 2017.

14.6 All marine water monitoring was conducted as scheduled in the reporting month. Action and Limit Level exceedance was recorded on 17 and 19 July 2017 but considered to be non-Project related and due to other external factors.

Ecological Monitoring

14.7 Third post-translocation coral monitoring survey is scheduled in August 2017 tentatively.

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 Three environmental complaint, no successful prosecution or notification of summons were received during the reporting period.

Recommendations

14.13 The following recommendations were made to the Contractor for the coming reporting month:

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.
- Non-Road Mobile Machinery (NRMM) labels must be demonstrated on the registered equipment for inspection.

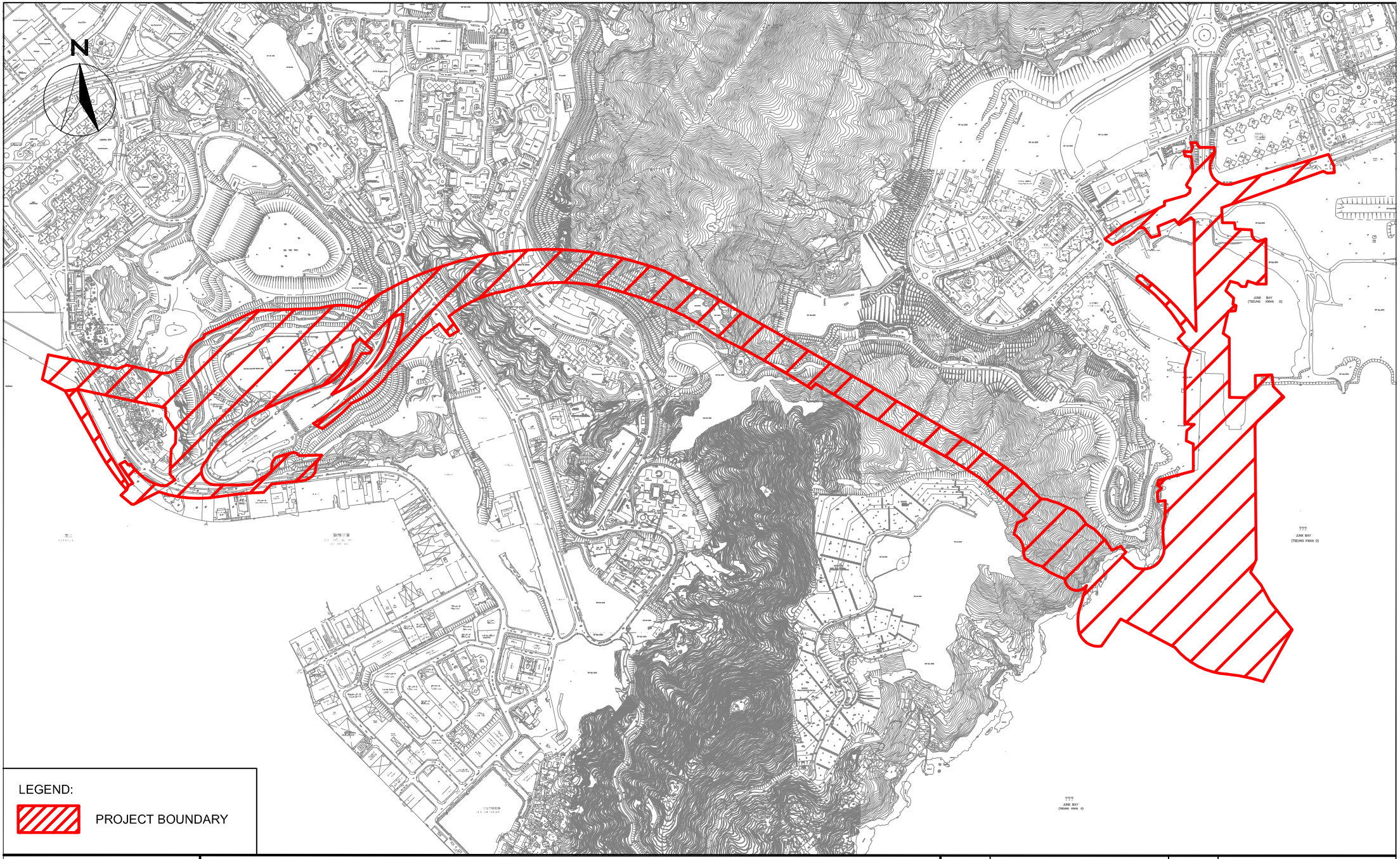
Construction Noise
- To provide noise mitigation measures (e.g. Temporary noise barrier or Full enclosure) to PME as proposed in the approved Noise Mitigation Plan.
- To repair the gaps between the noise barriers.

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.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment.

Landscape and Visual
- To set up proper tree protection area.
- To avoid placing any construction materials in the tree protection zone.

FIGURES



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

Site Layout Plan

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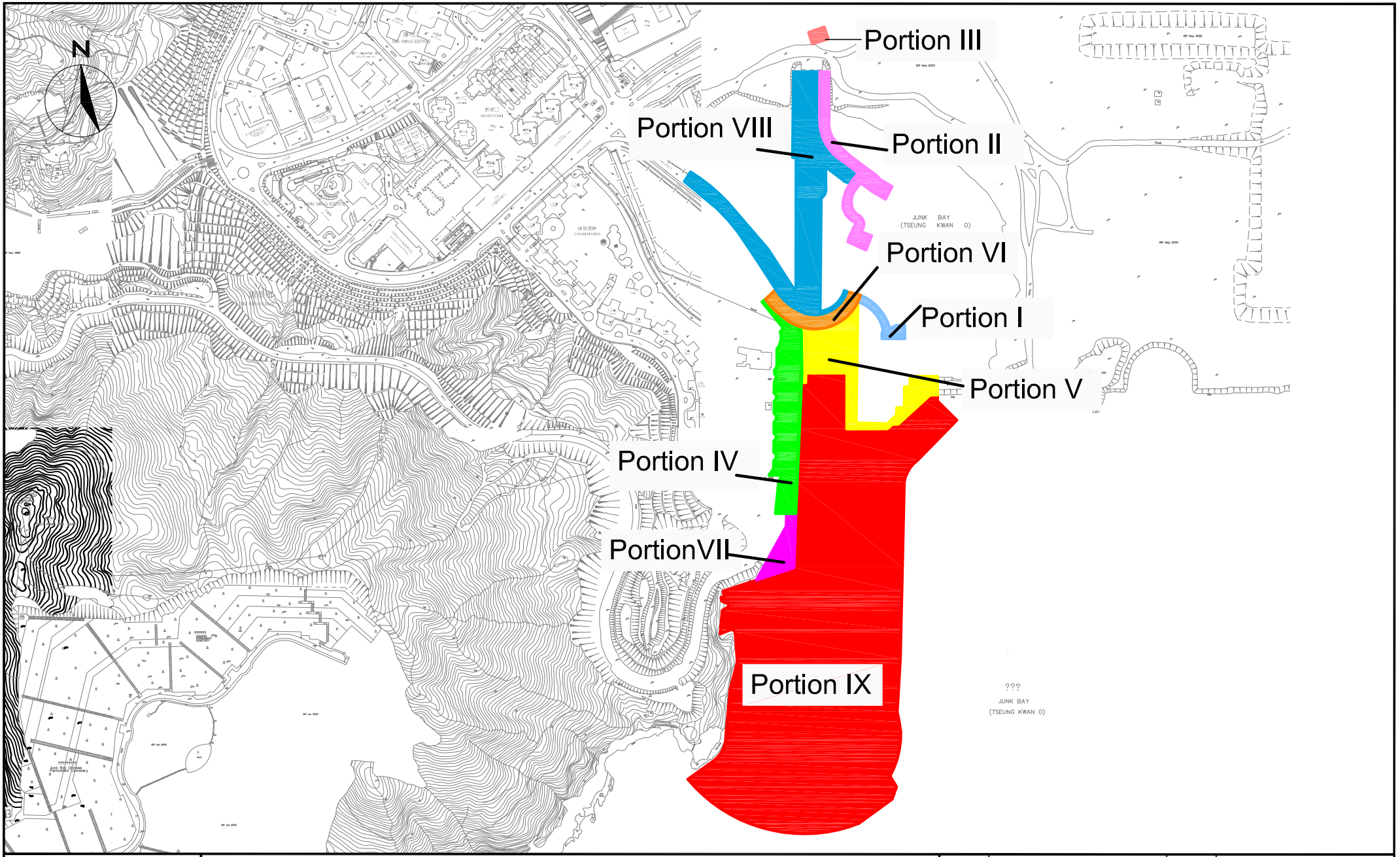
JOB No.	MA16034	FIGURE NO. 1	REV -



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Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Site Portions under Works Contract No. NE/2015/02

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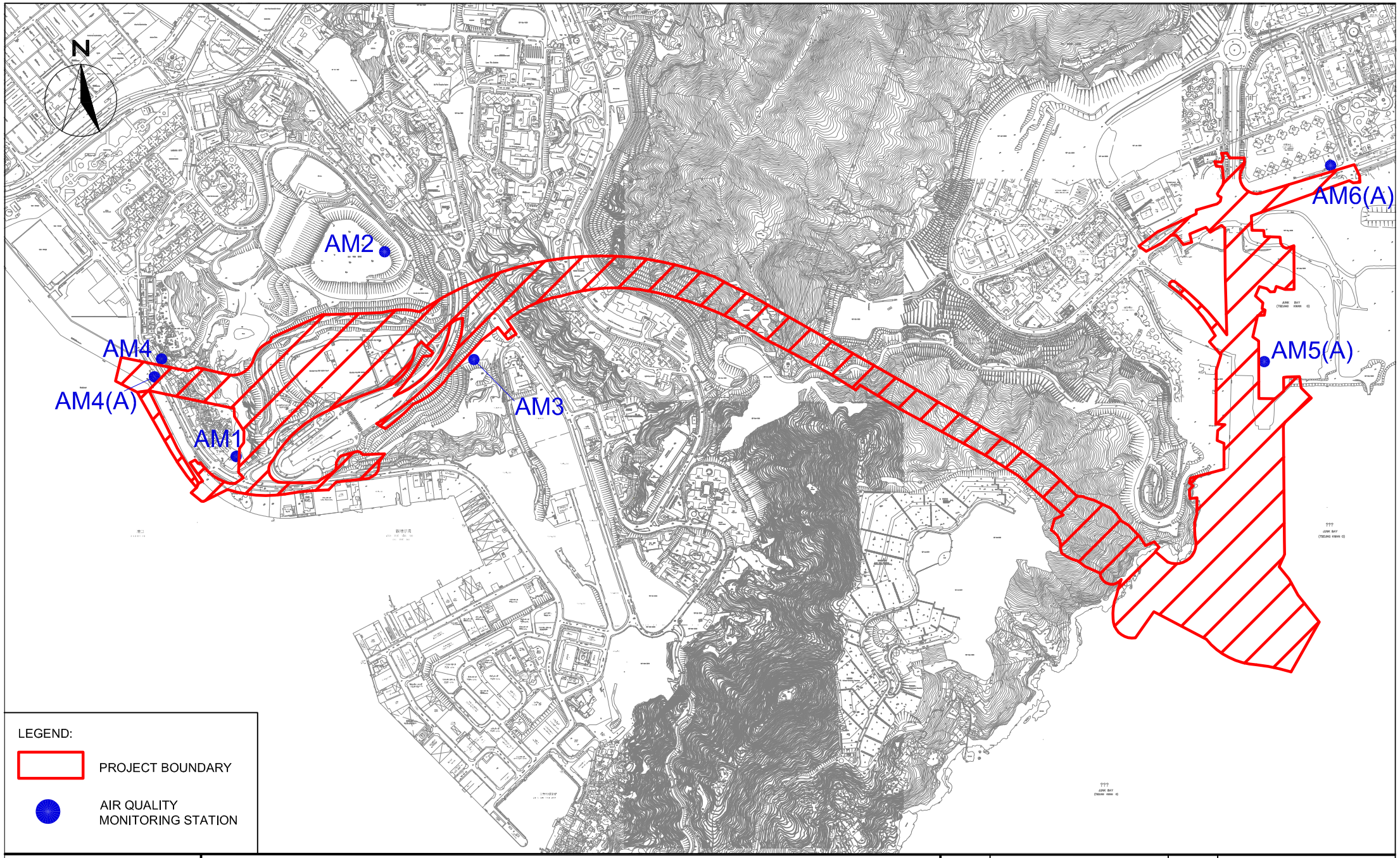

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Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Air Quality Monitoring Stations

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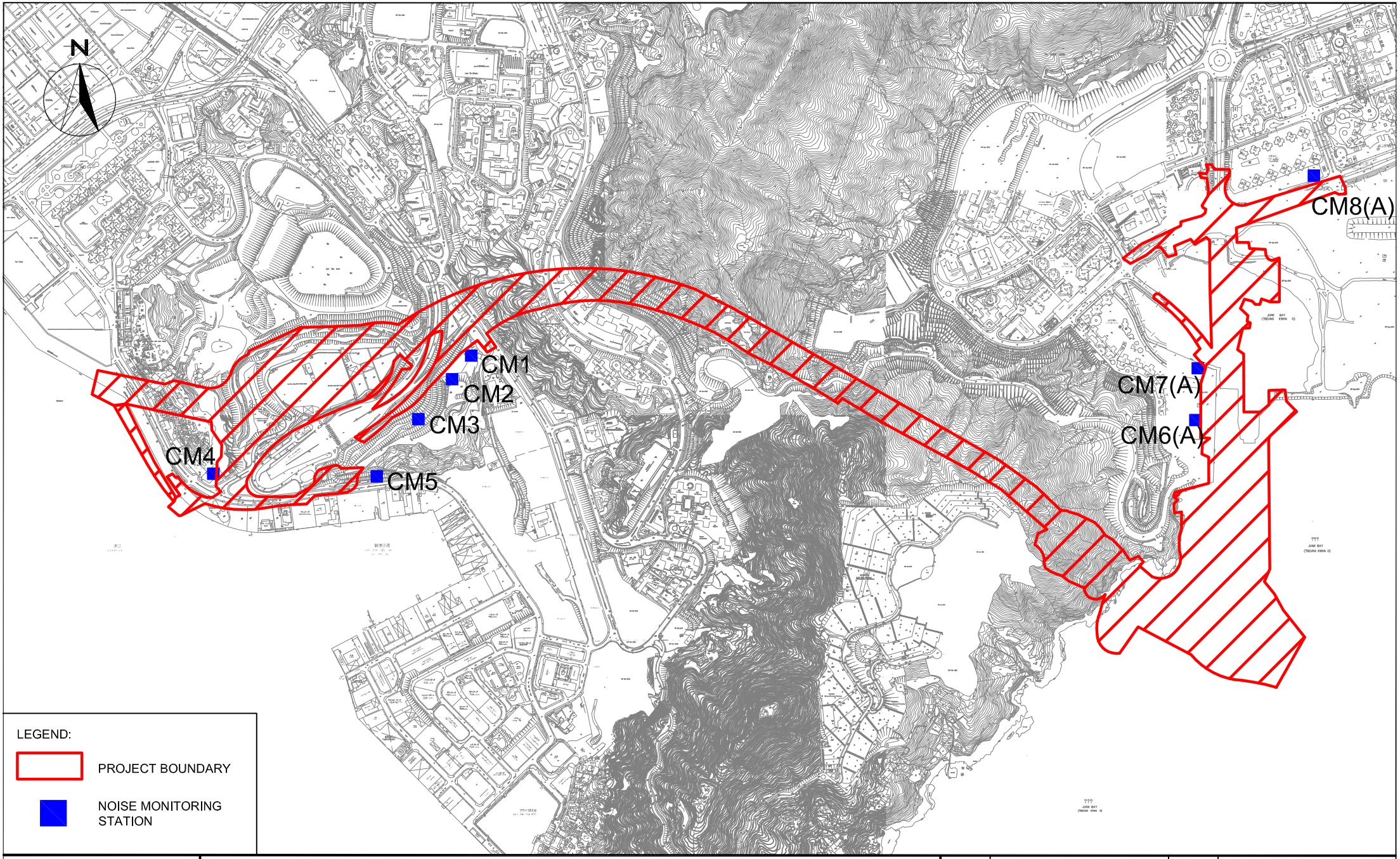
JOB No.	MA16034	FIGURE NO. 2	REV -



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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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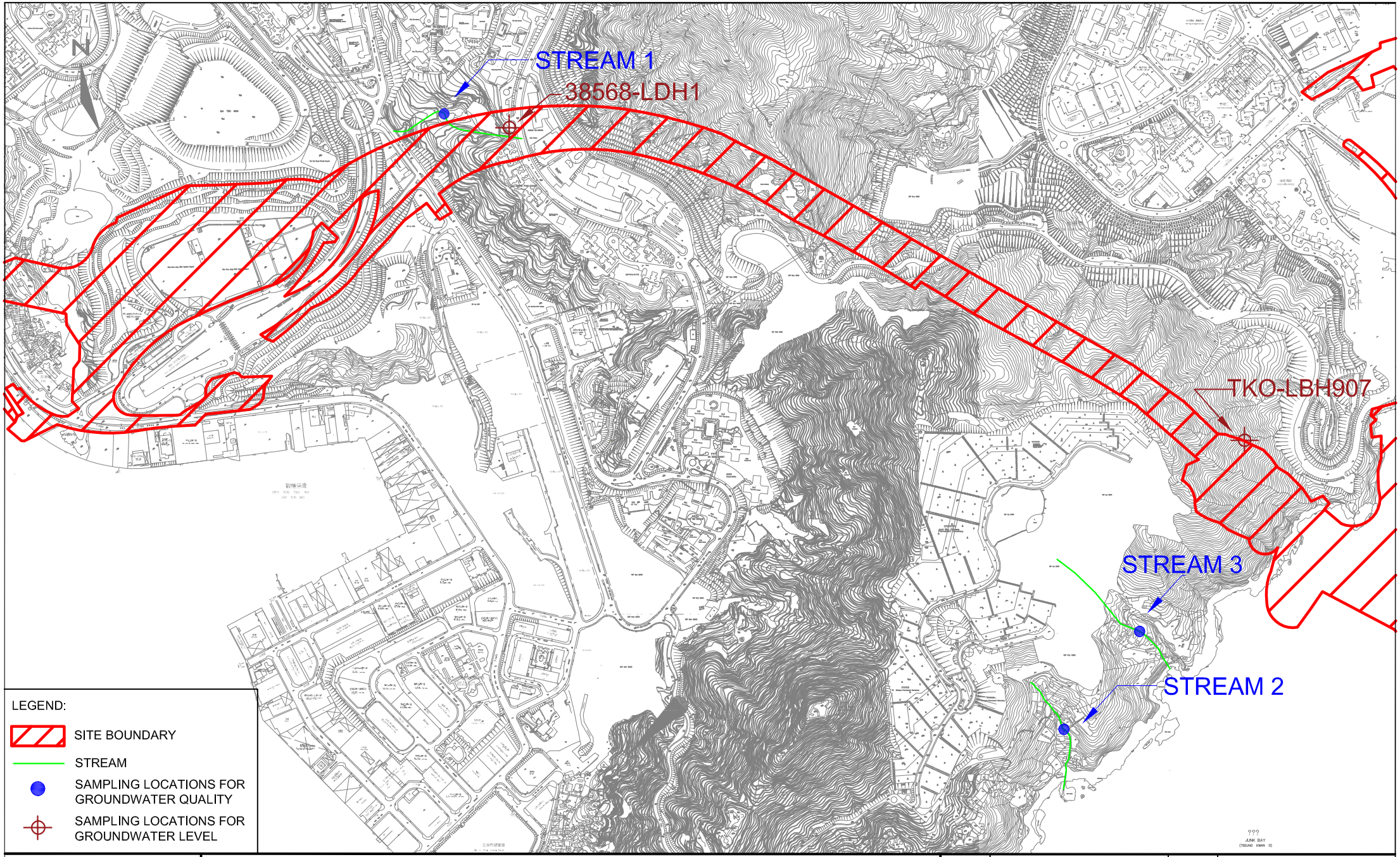
JOB No.	MA16034	FIGURE NO. 3	REV -



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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

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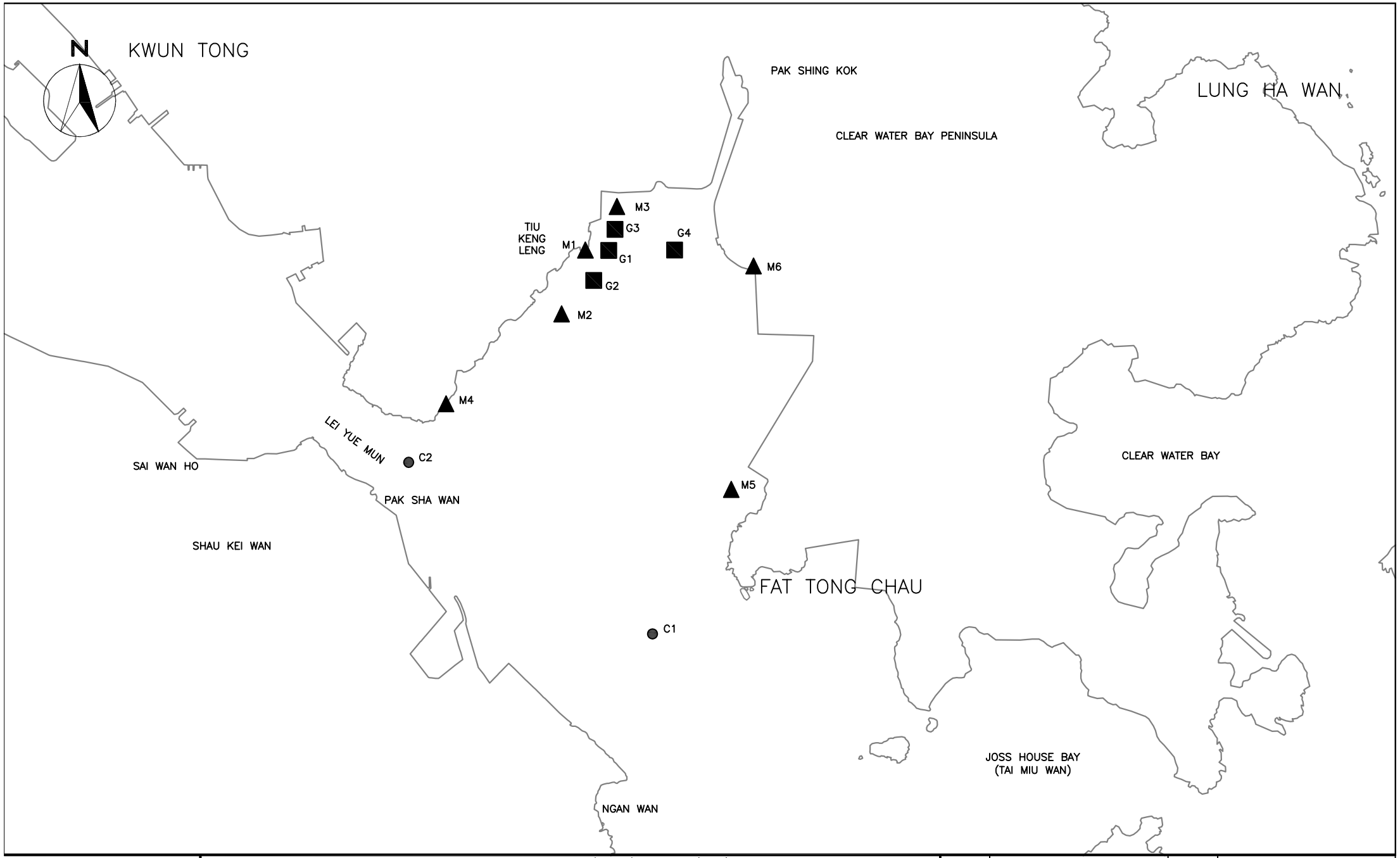
JOB No.	MA16034	FIGURE NO. 4	REV -



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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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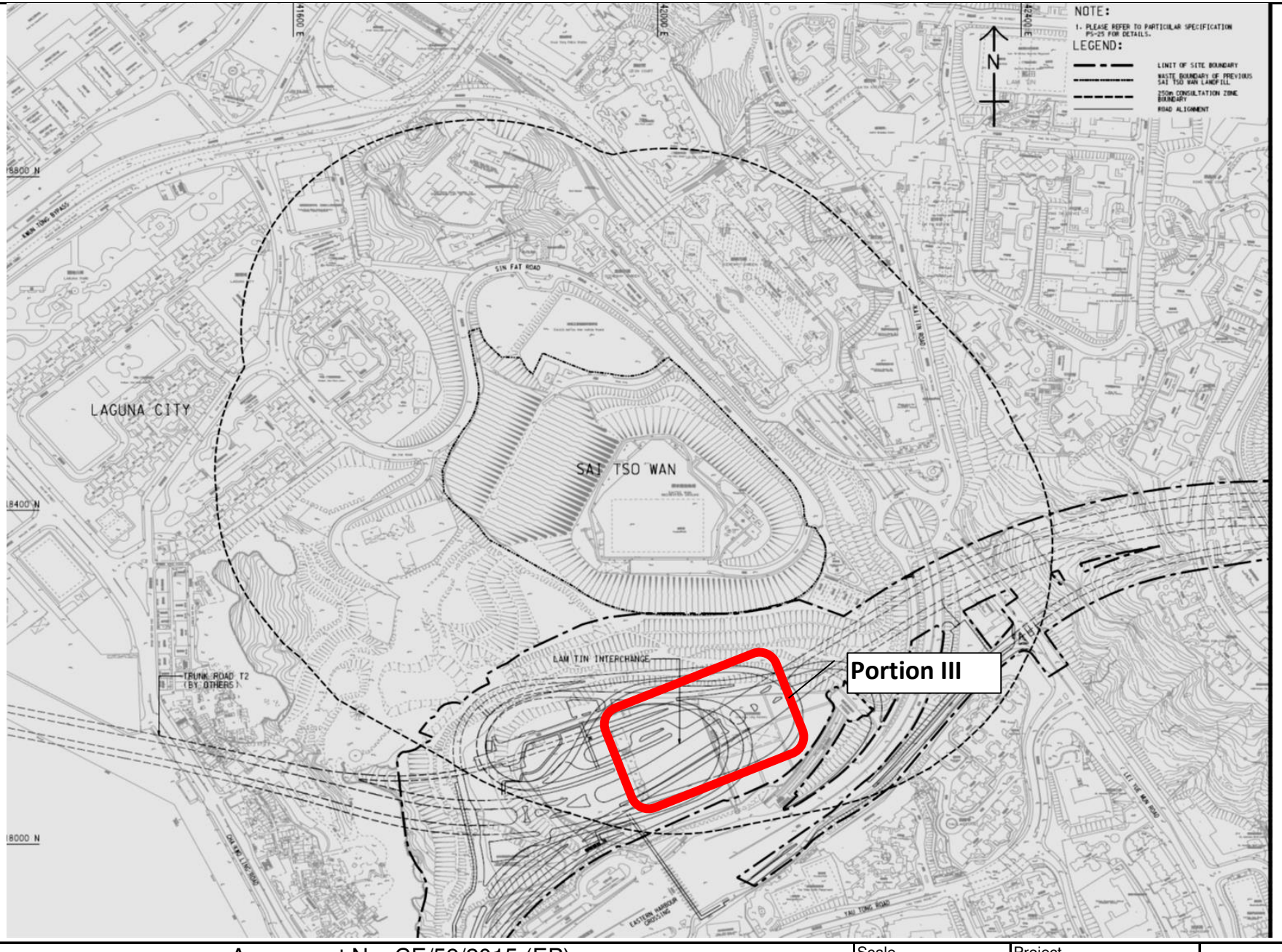
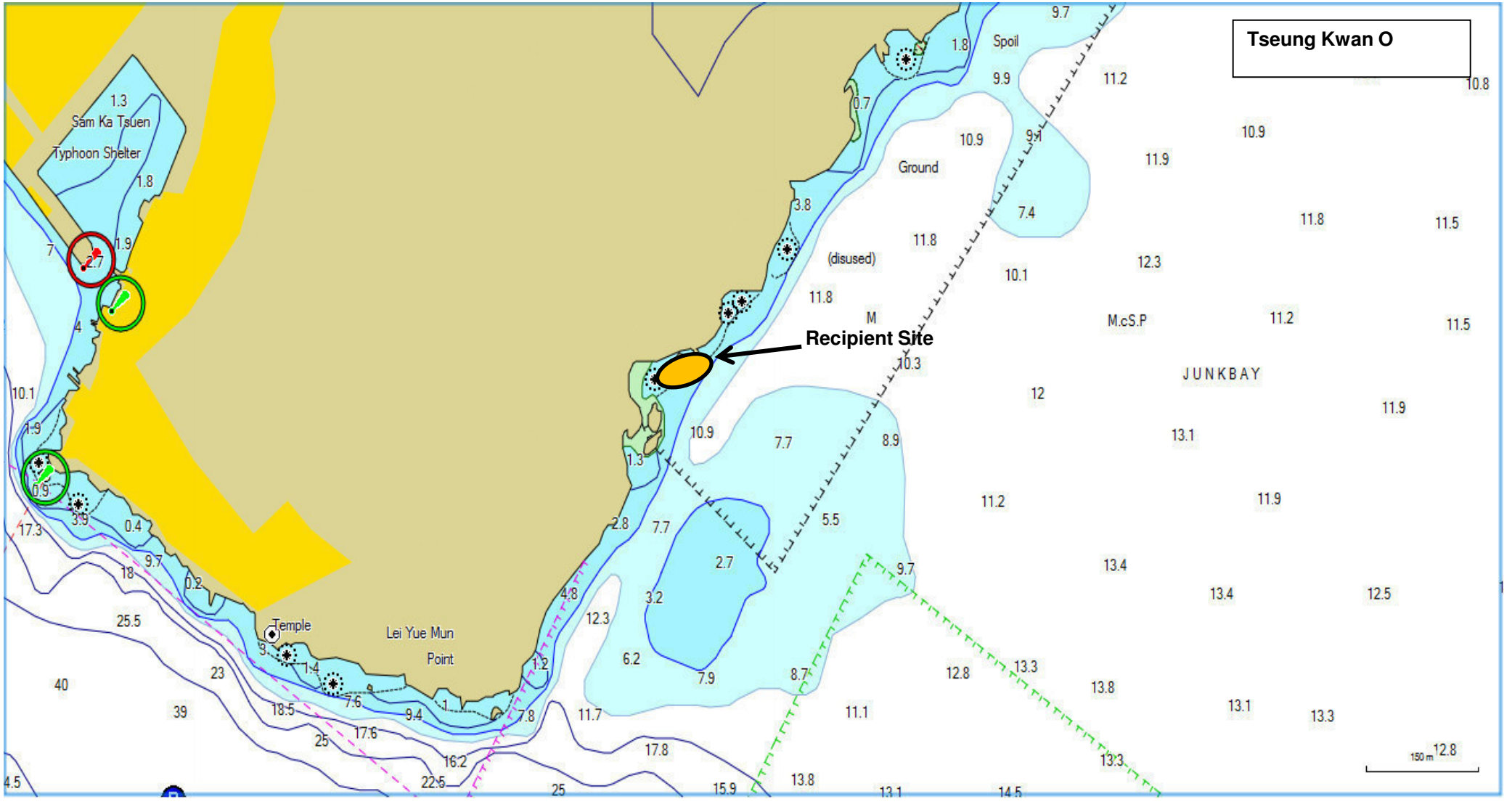
PROJECT NO.	MA16034	FIGURE NO.	5
		REV	–



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

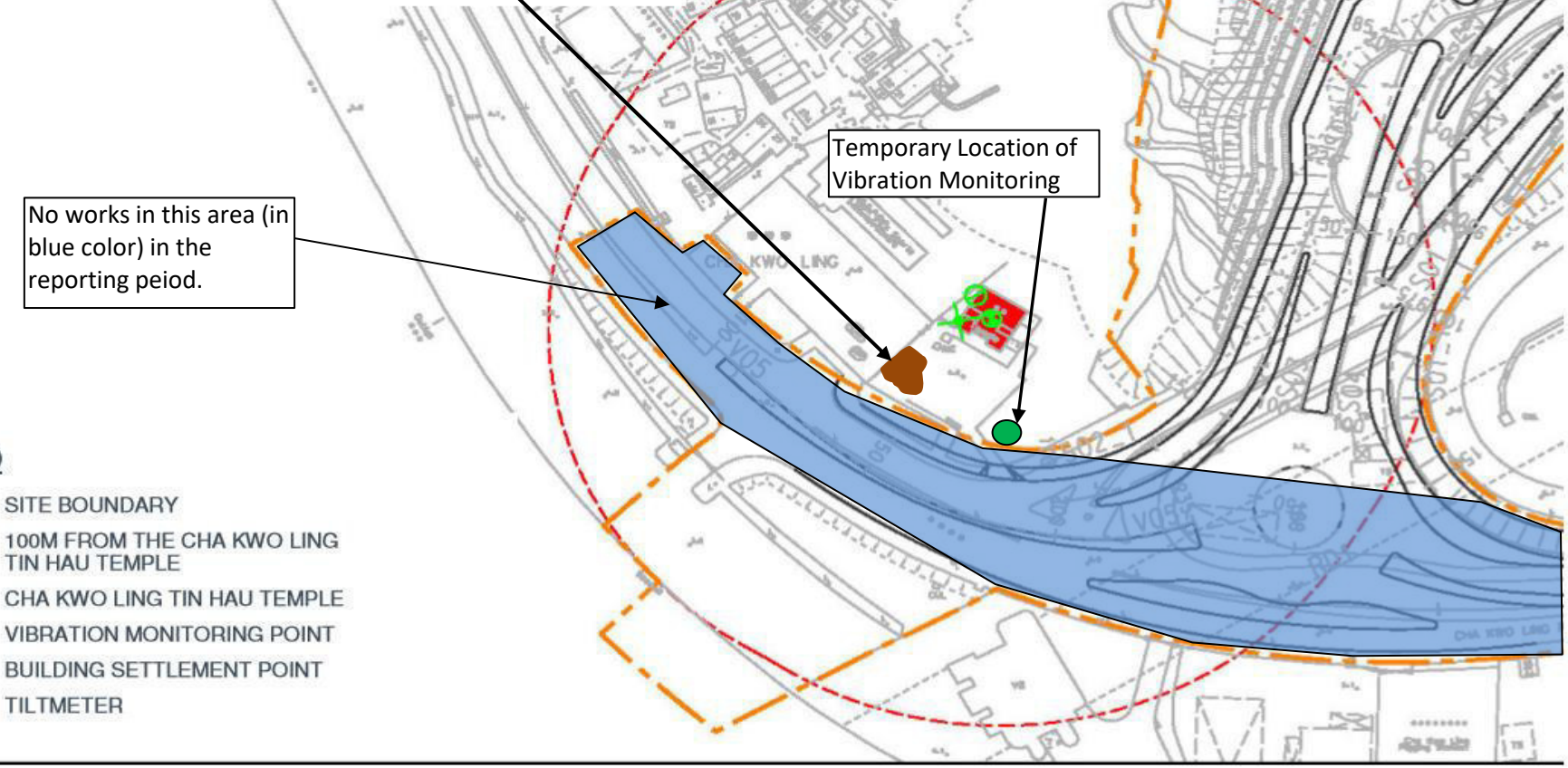
CINOTECH



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	Project No.: MA16034	CINOTECH
	Date: Mar-17	Figure: 7	

Cha Kwo Ling Tin Hau Temple

Child Giving Rock



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 Date Apr-17	Project No. MA16034 Figure 8

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APPENDIX A
ACTION AND LIMIT LEVELS

APPENDIX A – Action and Limit Levels

Air Quality

1-hr TSP

Monitoring Stations	Location	Action Level, µg/m³	Limit Level, µg/m³
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, µg/m³	Limit Level, µg/m³
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/C
3 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 (BOD_5), 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)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2, 4 and 5)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2, 4 ad 5)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***6.9mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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. MA16034/08/0005

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	Orfice			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: [illegible] Signature: [illegible] Date: 16/5/17

Checked by: W.K Tang Signature: [illegible] Date: 16/5/17

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0006

Station: AM1 - Tin Hau Temple Operator: MH

Date: 11-Jul-17 Next Due Date: 10-Sep-17

Equipment No.: A-01-05 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	302.1	Pressure, Pa (mmHg)	760.5

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	**mc x 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	Orfice			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	13.1	3.60	63.09	7.6	2.74
2	9.7	3.09	54.41	5.9	2.41
3	8.6	2.91	51.28	4.9	2.20
4	5.4	2.31	40.81	3.4	1.83
5	3.1	1.75	31.12	2.0	1.41

By Linear Regression of Y on X

Slope , mw = 0.0416 **Intercept, bw =** 0.1153

Correlation coefficient* = 0.9981

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.67**

Remarks:

Conducted by: hei Signature: hei Date: 11/7/2017

Checked by: wk Tang Signature: Kwan Date: 11/7/2017

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	Orfice			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	13.6	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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.51**

Remarks:

Conducted by: [illegible] Signature: [illegible] Date: 10/5/17

Checked by: W.K. Tang Signature: [illegible] Date: 10/5/17

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0006

Station: AM2 - Sai Tso Wan Recreation Ground Operator: MH

Date: 11-Jul-17 Next Due Date: 10-Sep-17

Equipment No.: A-01-08 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	302.6	Pressure, Pa (mmHg)	760.3

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	**mc x 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	Orfice			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	13.6	3.66	64.20	7.8	2.77
2	10.9	3.28	57.57	6.2	2.47
3	8.4	2.88	50.64	5.0	2.22
4	5.2	2.26	40.02	3.3	1.80
5	3.3	1.80	32.06	2.1	1.44

By Linear Regression of Y on X

Slope , mw = 0.0407 **Intercept, bw =** 0.1488

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.67**

Remarks:

Conducted by: hei Signature: hei Date: 11/7/2017

Checked by: wk Tang Signature: Kwai Date: 11/7/2017

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	Orfice			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: Kwai Date: 4/5/17

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/03/0005

Station: AM3 - Yau Lai Estate, Bik Lai House Operator: MH

Date: 5-Jul-17 Next Due Date: 4-Sep-17

Equipment No.: A-01-03 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	301.6	Pressure, Pa (mmHg)	758.6

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	**mc x 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	Orfice			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	12.6	3.53	61.86	7.0	2.63
2	10.7	3.25	57.08	6.0	2.43
3	7.1	2.65	46.65	4.1	2.01
4	5.3	2.29	40.42	3.2	1.78
5	3.2	1.78	31.60	2.0	1.40

By Linear Regression of Y on X

Slope , mw = 0.0402 **Intercept, bw =** 0.1398

Correlation coefficient* = 0.9999

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.54**

Remarks:

Conducted by: hei Signature: hei Date: 5/7/2017

Checked by: wk Tang Signature: Kwai Date: 6/7/2017

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	Orfice			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	17.6	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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.83**

Remarks:

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

Checked by: W.K. Tang Signature: Date: 16/5/17

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/54/0006

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

Operator: MH

Date: 18-Jul-17

Next Due Date: 17-Sep-17

Equipment No.: A-01-54

Serial No. 1536

Ambient Condition			
Temperature, Ta (K)	297.4	Pressure, Pa (mmHg)	762

Orifice Transfer Standard Information					
Serial No.:	0993	Slope, mc (CFM)	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	**mc x 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	Orfice			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	17.5	4.19	73.42	10.5	3.25
2	13.4	3.67	64.36	8.1	2.85
3	10.6	3.26	57.33	6.7	2.59
4	6.7	2.59	45.75	4.2	2.05
5	4.2	2.05	36.40	2.9	1.71

By Linear Regression of Y on X

Slope , mw = 0.0419 **Intercept, bw :** 0.1650

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.86**

Remarks:

Conducted by: hei Signature: hei Date: 18/7/2017

Checked by: W.K. Tang Signature: Kwai Date: 18/7/2017

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	Orfice			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: hcw Signature: hcw Date: 10/5/17

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

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/37/0006

Station: AM5(A) - DSD Desilting Compound Operator: HL

Date: 11-Jul-17 Next Due Date: 10-Sep-17

Equipment No.: A-01-37 Serial No. 1704

Ambient Condition			
Temperature, Ta (K)	302.7	Pressure, Pa (mmHg)	761.3

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	Orfice			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	17.4	4.14	72.55	8.8	2.95
2	13.2	3.61	63.30	7.0	2.63
3	10.9	3.28	57.60	5.8	2.39
4	6.7	2.57	45.34	3.4	1.83
5	4.3	2.06	36.49	2.3	1.51

By Linear Regression of Y on X

Slope , mw = **0.0409** **Intercept, bw :** **0.0080**

Correlation coefficient* = **0.9987**

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.17**

Remarks:

Conducted by: hei Signature: hei Date: 11/7/2017

Checked by: WK Tang Signature: kwai Date: 11/7/2017

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/07/0005

Station: AM6 - Park Central | Operator: WK

Date: 31-May-17 | Next Due Date: 30-Jul-17

Equipment No.: A-01-07 | Serial No. 10592

Ambient Condition			
Temperature, Ta (K)	303.4	Pressure, Pa (mmHg)	756.8

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	Orfice			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	11.6	3.37	59.15	7.3	2.67
2	9.8	3.10	54.43	6.0	2.42
3	7.4	2.69	47.41	4.8	2.17
4	5.2	2.26	39.88	3.4	1.82
5	3.4	1.82	32.41	2.2	1.47

By Linear Regression of Y on X

Slope , mw = 0.0442 **Intercept, bw =** 0.0480

Correlation coefficient* = 0.9989

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.88**

Remarks:

Conducted by: WK Tang Signature: Date: 31/5/2017

Checked by: Signature: Date: 31 May 2017

TISCH Environmental

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

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 DIFF Hg (mm)	ORFICE 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}

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
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Website: www.wellab.com.hk

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**

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

PATRICK TSE
Laboratory Manager

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Testing & Research

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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**********

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TEST REPORT

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

Test Report No.:	C/A/170505
Date of Issue:	2017-05-08
Date Received:	2017-05-05
Date Tested:	2017-05-05
Date Completed:	2017-05-08
Next Due Date:	2017-07-07

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/m^3
Sen. Adjustment Scale Setting	: 625 CPM
Equipment No.	: A-02-07

Test Conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 65 %

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)	0.0033

****

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

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/170707
Date of Issue:	2017-07-10
Date Received:	2017-07-07
Date Tested:	2017-07-07
Date Completed:	2017-07-10
Next Due Date:	2017-09-09

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/m^3
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.**

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TEST REPORT

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

Test Report No.:	C/170630
Date of Issue:	2017-07-03
Date Received:	2017-06-30
Date Tested:	2017-06-30
Date Completed:	2017-07-03
Next Due Date:	2017-09-02

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	: 23 degree Celsius
Relative Humidity	: 65 %

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)	0.0036

****

PREPARED AND CHECKED BY:
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Patrick Tse

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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ATTN: **Mr. W. K. Tang**

Test Report No.:	C/170609A
Date of Issue:	2017-06-12
Date Received:	2017-06-09
Date Tested:	2017-06-09
Date Completed:	2017-06-12
Next Due Date:	2017-08-11
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC301
Serial No.	: 3011701016
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-27-03

Test Conditions:

Room Temperature	: 21 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)	1.097

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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ATTN: **Mr. W. K. Tang**

Test Report No.:	C/170609B
Date of Issue:	2017-06-12
Date Received:	2017-06-09
Date Tested:	2017-06-09
Date Completed:	2017-06-12
Next Due Date:	2017-08-11
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC301
Serial No.	: 3011701017
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-27-04

Test Conditions:

Room Temperature	: 21 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)	1.077

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/170609C
Date of Issue:	2017-06-12
Date Received:	2017-06-09
Date Tested:	2017-06-09
Date Completed:	2017-06-12
Next Due Date:	2017-08-11
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC301
Serial No.	: 3011701014
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-27-06

Test Conditions:

Room Temperature	: 21 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)	1.062

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

Test Report No.:	C/170609J
Date of Issue:	2017-06-12
Date Received:	2017-06-09
Date Tested:	2017-06-09
Date Completed:	2017-06-12
Next Due Date:	2017-08-11

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	: 21 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)	1.193

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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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
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

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 Temperatre	: 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.**

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Laboratory Manager

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Website: www.wellab.com.hk

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
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

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 Temperatre	: 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.**

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TEST REPORT

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

ATTN: **Mr. W.K. Tang**

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
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 Temperatre	: 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.**

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Laboratory Manager

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TEST REPORT

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

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/160819B
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
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21459
Microphone No.	: 43676
Equipment No.	: N-08-08

Test conditions:

Room Temperatre	: 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

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TEST REPORT

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

ATTN: **Mr. W.K. Tang**

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
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 Temperatre	: 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

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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
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Item for calibration:

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

Test conditions:

Room Temperatre	: 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

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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 Temperatre	: 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

WELLAB 匯力
Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T. Hong Kong,
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

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 Temperatre	: 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
PATRICK TSE
Laboratory Manager

WELLAB LIMITED
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18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/160819D
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	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

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

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Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/W/170703
Date of Issue:	2017-07-03
Date Received:	2017-07-03
Date Tested:	2017-07-03
Date Completed:	2017-07-03
Next Due Date:	2017-10-02

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6820-C-M
Serial No.	: 12B100803
Equipment No.	: W.03.12

Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 60%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, L/N: 12B10055
1. Conductivity performance check with Potassium Chloride standard solution
2. Salinity performance check with Sodium Chloride standard solution

Dissolved Oxygen Sensor, Model: 6562, L/N: 12A100930
1. Performance check against Winkler titration

Turbidity Sensor, Model: 6136, S/N: 12B100644
1. Calibration check with Formazin standard solution

pH Meter, Model: 6561, L/N: 11H
1. Calibration check with standard pH buffer

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (APHA 19th 4500-H+ B)

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

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

Test Report No.:	C/W/170703
Date of Issue:	2017-07-03
Date Received:	2017-07-03
Date Tested:	2017-07-03
Date Completed:	2017-07-03
Next Due Date:	2017-10-02
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	D = C1 - C2	
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.0	9.0	0.0	± 0.2
Half-saturated	5.8	5.8	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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

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Website: www.wellab.com.hk

TEST REPORT

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

ATTN: **Miss Mei Ling Tang**

Test Report No.:	C/W/170527
Date of Issue:	2017-05-27
Date Received:	2017-05-27
Date Tested:	2017-05-27
Date Completed:	2017-05-27
Next Due Date:	2017-08-26
Page:	1 of 2

Certificate of Calibration

Item for calibration:

YSI EXO1 Multiparameter Sondes	Equipment No.:	SW-08-05 (S/N: 16J100679)
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO Optical DO Sensor, Ti	599100-01	16H102984
- EXO conductivity/Temperature Sensor, Ti	599870	16G102306
- EXO Turbuduty Sensor, Ti	599101-01	16H102462
- EXO pH Sensor Assembly, Guarded, Ti	599701	16J100415

Test conditions:

Room Temperatre : 21 degree Celsius
Relative Humidity : 64%

Test Specifications:

Performance checking for Conductivity, Temperature, pH, Dissolved oxygen (D.O.) and Turbidity

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

WELLAB 匯力 Testing & Research

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Website: www.wellab.com.hk

TEST REPORT

Test Report No.:	C/W/170527
Date of Issue:	2017-05-27
Date Received:	2017-05-27
Date Tested:	2017-05-27
Date Completed:	2017-05-27
Next Due Date:	2017-08-26
Page:	2 of 2

Certificate of Calibration

Results:

Conductivity performance checking

	Instrument Readings (μS/cm)	Accetance Criteria	Comment
KCl stock solution (12890 μS/cm)	12901	12246-13534	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
22.4	22.403	-0.003	N/A

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.00	4.00	4.00 ± 0.10	Pass
pH QC buffer 6.86	6.90	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.17	9.18 ± 0.10	Pass

D.O. performance checking

	Instrument Readings (mg/L)	Accetance Criteria	Comment
Zero DO soultion	0.05	<0.1mg/L	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.82	8.79	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Accetance Criteria	Comment
10 NTU	10.02	9.0-11.0	Pass
50 NTU	50.25	45.0-55.0	Pass
100 NTU	101.53	90.0-110.0	Pass

Depth performance checking

Water Depth	Instrument Readings (NTU)	Accetance Criteria	Comment
0.5 meter	0.50	0.45-0.55	Pass

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

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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

ATTN: **Miss Mei Ling Tang**

Test Report No.:	C/W/170527A
Date of Issue:	2017-05-27
Date Received:	2017-05-27
Date Tested:	2017-05-27
Date Completed:	2017-05-27
Next Due Date:	2017-08-26
Page:	1 of 2

Certificate of Calibration

Item for calibration:

YSI EXO1 Multiparameter Sondes	Equipment No.:	SW-08-06 (S/N: 16J100680)
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO Optical DO Sensor, Ti	599100-01	16H102985
- EXO conductivity/Temperature Sensor, Ti	599870	16G102307
- EXO Turbuduty Sensor, Ti	599101-01	16H102463
- EXO pH Sensor Assembly, Guarded, Ti	599701	16J100416

Test conditions:

Room Temperatre : 21 degree Celsius
Relative Humidity : 64%

Test Specifications:

Performance checking for Conductivity, Temperature, pH, Dissolved oxygen (D.O.) and Turbidity

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

WELLAB 匯力 Testing & Research

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18 On Lai Street, Shatin, N.T., Hong Kong.
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TEST REPORT

Test Report No.:	C/W/170527A
Date of Issue:	2017-05-27
Date Received:	2017-05-27
Date Tested:	2017-05-27
Date Completed:	2017-05-27
Next Due Date:	2017-08-26
Page:	2 of 2

Certificate of Calibration

Results:

Conductivity performance checking

	Instrument Readings (μS/cm)	Accetance Criteria	Comment
KCl stock solution (12890 μS/cm)	12982	12246-13534	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
22.4	22.407	-0.007	N/A

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.00	4.01	4.00 ± 0.10	Pass
pH QC buffer 6.86	6.89	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.16	9.18 ± 0.10	Pass

D.O. performance checking

	Instrument Readings (mg/L)	Accetance Criteria	Comment
Zero DO soultion	0.06	<0.1mg/L	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.82	8.88	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Accetance Criteria	Comment
10 NTU	10.01	9.0-11.0	Pass
50 NTU	50.27	45.0-55.0	Pass
100 NTU	103.05	90.0-110.0	Pass

Depth performance checking

Water Depth	Instrument Readings (NTU)	Accetance Criteria	Comment
0.5 meter	0.50	0.45-0.55	Pass

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

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

ATTN: **Miss Mei Ling Tang**

Test Report No.:	C/W/170527B
Date of Issue:	2017-05-27
Date Received:	2017-05-27
Date Tested:	2017-05-27
Date Completed:	2017-05-27
Next Due Date:	2017-08-26
Page:	1 of 2

Certificate of Calibration

Item for calibration:

YSI EXO1 Multiparameter Sondes	Equipment No.:	SW-08-09 (S/N: 16J100869)
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO Optical DO Sensor, Ti	599100-01	16H102988
- EXO conductivity/Temperature Sensor, Ti	599870	16G102310
- EXO Turbuduty Sensor, Ti	599101-01	16H102467
- EXO pH Sensor Assembly, Guarded, Ti	599701	16J100419

Test conditions:

Room Temperatre : 21 degree Celsius
Relative Humidity : 64%

Test Specifications:

Performance checking for Conductivity, Temperature, pH, Dissolved oxygen (D.O.) and Turbidity

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

WELLAB 匯力 Testing & Research

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18 On Lai Street, Shatin, N.T., Hong Kong.
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TEST REPORT

Test Report No.:	C/W/170527B
Date of Issue:	2017-05-27
Date Received:	2017-05-27
Date Tested:	2017-05-27
Date Completed:	2017-05-27
Next Due Date:	2017-08-26
Page:	2 of 2

Certificate of Calibration

Results:

Conductivity performance checking

	Instrument Readings (µS/cm)	Accetance Criteria	Comment
KCl stock solution (12890 µS/cm)	12991	12246-13534	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
22.4	22.403	-0.003	N/A

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.00	4.01	4.00 ± 0.10	Pass
pH QC buffer 6.86	6.90	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.19	9.18 ± 0.10	Pass

D.O. performance checking

	Instrument Readings (mg/L)	Accetance Criteria	Comment
Zero DO soultion	0.04	<0.1mg/L	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.82	8.70	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Accetance Criteria	Comment
10 NTU	10.21	9.0-11.0	Pass
50 NTU	50.16	45.0-55.0	Pass
100 NTU	100.46	90.0-110.0	Pass

Depth performance checking

Water Depth	Instrument Readings (NTU)	Accetance Criteria	Comment
0.5 meter	0.50	0.45-0.55	Pass

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

FIREMARK

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 Alarm 1	Alarm 2	STEL	LTEL	Test Gas	Result
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 ±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

FireMark Hong Kong 瑞志香港有限公司 Ltd.

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

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

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 BG15180)
Model No.:	716A0403
Serial No.:	BE15894
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

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.

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:	Minimate Plus Unit (Calibration with Geophone BG14853)
Model No.:	716A0403
Serial No.:	BE17906
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

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.

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: 6 April 2017

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG16955)
Model No.:	716A0403
Serial No.:	BE16223
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

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.

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: 6 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

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.

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

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:	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

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

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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

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: 10 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

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

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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

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:	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

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 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

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

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 July 2017	26.7 - 31.7	79	7.4
2 July 2017	26.2 - 30.3	84	8.8
3 July 2017	26.7 - 30.7	83	8.4
4 July 2017	25.3 - 28.6	92	32.3
5 July 2017	26.5 – 31.0	89	27.5
6 July 2017	25.8 - 28.7	93	16.3
7 July 2017	26.0 - 29.8	87	35.8
8 July 2017	26.3 - 28.9	91	12.8
9 July 2017	27.1 - 32.3	81	1.2
10 July 2017	27.5 - 32.1	77	0.6
11 July 2017	27.6 - 32.7	78	0
12 July 2017	27.9 - 32.9	79	Trace
13 July 2017	28.2 - 33.5	79	Trace
14 July 2017	27.4 - 32.8	82	2.3
15 July 2017	27.0 - 32.1	84	8.8
16 July 2017	26.1 - 28.5	90	21
17 July 2017	24.4 - 28.8	95	184.6
18 July 2017	24.6 - 27.8	96	134.3
19 July 2017	24.5 - 30.8	89	12.6

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 July 2017	27.2 - 30.8	85	2
21 July 2017	27.6 - 32.2	81	0.2
22 July 2017	26.5 - 33.1	81	3.3
23 July 2017	25.6 - 28.8	87	46.5
24 July 2017	25.8 - 31.2	89	3.3
25 July 2017	27.7 - 33.1	80	Trace
26 July 2017	27.1 - 34.4	77	0
27 July 2017	28.0 - 30.6	80	Trace
28 July 2017	28.1 - 34.4	73	0
29 July 2017	28.8 - 33.8	72	0
30 July 2017	29.6 - 34.8	74	0
31 July 2017	29.8 - 32.4	79	0

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

** Trace means rainfall less than 0.05 mm

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-Jul-2017	0:00	2.1	ESE
1-Jul-2017	1:00	1.9	ESE
1-Jul-2017	2:00	1.6	ESE
1-Jul-2017	3:00	2.4	NE
1-Jul-2017	4:00	1.2	ENE
1-Jul-2017	5:00	1.2	WSW
1-Jul-2017	6:00	1.4	N
1-Jul-2017	7:00	1.6	WNW
1-Jul-2017	8:00	1.8	SSW
1-Jul-2017	9:00	1.4	ESE
1-Jul-2017	10:00	1.8	ENE
1-Jul-2017	11:00	2	ENE
1-Jul-2017	12:00	1.9	ESE
1-Jul-2017	13:00	2.2	NE
1-Jul-2017	14:00	1.7	SSE
1-Jul-2017	15:00	1.7	SSE
1-Jul-2017	16:00	1.8	S
1-Jul-2017	17:00	1.4	S
1-Jul-2017	18:00	1.2	E
1-Jul-2017	19:00	1.3	SW
1-Jul-2017	20:00	1.8	WNW
1-Jul-2017	21:00	2.1	NE
1-Jul-2017	22:00	1.9	N
1-Jul-2017	23:00	1.9	ESE
2-Jul-2017	0:00	1.9	N
2-Jul-2017	1:00	1.3	ENE
2-Jul-2017	2:00	1.5	SE
2-Jul-2017	3:00	1.1	WSW
2-Jul-2017	4:00	1.2	W
2-Jul-2017	5:00	0.2	S
2-Jul-2017	6:00	0.1	SW
2-Jul-2017	7:00	0.1	W
2-Jul-2017	8:00	0.1	WSW
2-Jul-2017	9:00	0.3	W
2-Jul-2017	10:00	0.4	NE
2-Jul-2017	11:00	0.3	N
2-Jul-2017	12:00	0.9	NNW

II. Mean Wind Speed and Wind Direction

2-Jul-2017	13:00	1.2	SW
2-Jul-2017	14:00	1.4	ENE
2-Jul-2017	15:00	0.9	ENE
2-Jul-2017	16:00	0.4	SW
2-Jul-2017	17:00	0.9	N
2-Jul-2017	18:00	0.6	N
2-Jul-2017	19:00	0.1	SW
2-Jul-2017	20:00	0.4	WSW
2-Jul-2017	21:00	0.6	WSW
2-Jul-2017	22:00	0.5	N
2-Jul-2017	23:00	0.7	ENE
3-Jul-2017	0:00	0.9	ENE
3-Jul-2017	1:00	0.8	ENE
3-Jul-2017	2:00	0.7	SW
3-Jul-2017	3:00	0.6	N
3-Jul-2017	4:00	0.8	N
3-Jul-2017	5:00	0.4	W
3-Jul-2017	6:00	0.2	WNW
3-Jul-2017	7:00	0.2	W
3-Jul-2017	8:00	0.1	W
3-Jul-2017	9:00	0.3	W
3-Jul-2017	10:00	0.3	SSW
3-Jul-2017	11:00	0.4	W
3-Jul-2017	12:00	1	W
3-Jul-2017	13:00	1.6	W
3-Jul-2017	14:00	1.2	SSW
3-Jul-2017	15:00	1.2	SSW
3-Jul-2017	16:00	1.2	SW
3-Jul-2017	17:00	1.2	W
3-Jul-2017	18:00	0.8	W
3-Jul-2017	19:00	0.5	W
3-Jul-2017	20:00	0.9	SSW
3-Jul-2017	21:00	0.9	WSW
3-Jul-2017	22:00	0.8	ENE
3-Jul-2017	23:00	0.9	SE
4-Jul-2017	0:00	0.8	N
4-Jul-2017	1:00	0.9	SW
4-Jul-2017	2:00	1	SSE

II. Mean Wind Speed and Wind Direction

4-Jul-2017	3:00	1.3	SSW
4-Jul-2017	4:00	0.4	WSW
4-Jul-2017	5:00	0.4	WSW
4-Jul-2017	6:00	0.6	SSW
4-Jul-2017	7:00	0.1	W
4-Jul-2017	8:00	0.2	W
4-Jul-2017	9:00	0.2	W
4-Jul-2017	10:00	1.6	SW
4-Jul-2017	11:00	1.5	W
4-Jul-2017	12:00	1.4	W
4-Jul-2017	13:00	1.4	ENE
4-Jul-2017	14:00	1.4	WSW
4-Jul-2017	15:00	1.5	WSW
4-Jul-2017	16:00	1	W
4-Jul-2017	17:00	1.3	WSW
4-Jul-2017	18:00	0.8	WSW
4-Jul-2017	19:00	1.1	E
4-Jul-2017	20:00	1.4	E
4-Jul-2017	21:00	1.1	SSE
4-Jul-2017	22:00	1.6	SE
4-Jul-2017	23:00	1.2	ESE
5-Jul-2017	0:00	1.2	SE
5-Jul-2017	1:00	1.4	SE
5-Jul-2017	2:00	1.7	S
5-Jul-2017	3:00	1.7	SSW
5-Jul-2017	4:00	1.7	W
5-Jul-2017	5:00	1.7	SE
5-Jul-2017	6:00	1.6	W
5-Jul-2017	7:00	1.8	SSE
5-Jul-2017	8:00	1.8	N
5-Jul-2017	9:00	1.8	SE
5-Jul-2017	10:00	1.4	WNW
5-Jul-2017	11:00	1.5	WNW
5-Jul-2017	12:00	1.5	NNE
5-Jul-2017	13:00	2	W
5-Jul-2017	14:00	2.2	NNE
5-Jul-2017	15:00	2.3	NE
5-Jul-2017	16:00	2.2	NE

II. Mean Wind Speed and Wind Direction

5-Jul-2017	17:00	1.9	SE
5-Jul-2017	18:00	1.9	ENE
5-Jul-2017	19:00	1.7	NW
5-Jul-2017	20:00	1.8	W
5-Jul-2017	21:00	1.7	ENE
5-Jul-2017	22:00	1.6	NNE
5-Jul-2017	23:00	1.1	NE
6-Jul-2017	0:00	1.3	ENE
6-Jul-2017	1:00	1.4	ESE
6-Jul-2017	2:00	0.8	ESE
6-Jul-2017	3:00	0.7	SSE
6-Jul-2017	4:00	0.7	NNE
6-Jul-2017	5:00	0.7	E
6-Jul-2017	6:00	0.7	NE
6-Jul-2017	7:00	1.2	NE
6-Jul-2017	8:00	1.2	E
6-Jul-2017	9:00	1.6	E
6-Jul-2017	10:00	1.7	E
6-Jul-2017	11:00	2.1	SE
6-Jul-2017	12:00	1.7	ESE
6-Jul-2017	13:00	1.8	ESE
6-Jul-2017	14:00	1.5	NE
6-Jul-2017	15:00	1.6	ENE
6-Jul-2017	16:00	1	ENE
6-Jul-2017	17:00	1	NE
6-Jul-2017	18:00	1.2	NE
6-Jul-2017	19:00	1.4	SE
6-Jul-2017	20:00	1.6	ENE
6-Jul-2017	21:00	1.7	NE
6-Jul-2017	22:00	1.6	ESE
6-Jul-2017	23:00	1.4	ENE
7-Jul-2017	0:00	1.3	E
7-Jul-2017	1:00	1.3	ENE
7-Jul-2017	2:00	0.9	ENE
7-Jul-2017	3:00	1	SSE
7-Jul-2017	4:00	1	ESE
7-Jul-2017	5:00	1.8	ESE
7-Jul-2017	6:00	1.6	ESE

II. Mean Wind Speed and Wind Direction

7-Jul-2017	7:00	2.2	NE
7-Jul-2017	8:00	2.4	NE
7-Jul-2017	9:00	2.4	E
7-Jul-2017	10:00	1.9	W
7-Jul-2017	11:00	2.1	WNW
7-Jul-2017	12:00	2.7	W
7-Jul-2017	13:00	1.8	WNW
7-Jul-2017	14:00	1.3	WNW
7-Jul-2017	15:00	1.9	W
7-Jul-2017	16:00	1.8	WNW
7-Jul-2017	17:00	1.5	WNW
7-Jul-2017	18:00	1.3	W
7-Jul-2017	19:00	0.7	WNW
7-Jul-2017	20:00	0.7	SW
7-Jul-2017	21:00	0.7	WSW
7-Jul-2017	22:00	0.9	WSW
7-Jul-2017	23:00	0.6	WNW
8-Jul-2017	0:00	0.1	WNW
8-Jul-2017	1:00	0.4	WNW
8-Jul-2017	2:00	0.4	NNE
8-Jul-2017	3:00	0.1	W
8-Jul-2017	4:00	0.1	WNW
8-Jul-2017	5:00	0.4	WNW
8-Jul-2017	6:00	0.4	WSW
8-Jul-2017	7:00	0.1	WSW
8-Jul-2017	8:00	0.1	WSW
8-Jul-2017	9:00	0.4	SW
8-Jul-2017	10:00	2.1	SW
8-Jul-2017	11:00	1.9	SW
8-Jul-2017	12:00	2.1	SW
8-Jul-2017	13:00	1.5	WSW
8-Jul-2017	14:00	1.5	WSW
8-Jul-2017	15:00	1.6	SW
8-Jul-2017	16:00	2.2	WSW
8-Jul-2017	17:00	1.8	WNW
8-Jul-2017	18:00	1.4	ESE
8-Jul-2017	19:00	1.2	ENE
8-Jul-2017	20:00	1	ESE

II. Mean Wind Speed and Wind Direction

8-Jul-2017	21:00	1.3	NE
8-Jul-2017	22:00	1.3	NE
8-Jul-2017	23:00	1.2	NW
9-Jul-2017	0:00	1.4	W
9-Jul-2017	1:00	0.7	NNE
9-Jul-2017	2:00	0.7	NE
9-Jul-2017	3:00	0.9	ENE
9-Jul-2017	4:00	0.7	NE
9-Jul-2017	5:00	0.6	ESE
9-Jul-2017	6:00	0.6	W
9-Jul-2017	7:00	0.6	NNE
9-Jul-2017	8:00	0.1	ESE
9-Jul-2017	9:00	0.9	ESE
9-Jul-2017	10:00	1.6	NE
9-Jul-2017	11:00	1.3	E
9-Jul-2017	12:00	1.2	SSE
9-Jul-2017	13:00	1.6	NNE
9-Jul-2017	14:00	1.8	E
9-Jul-2017	15:00	1.8	NE
9-Jul-2017	16:00	1.8	NE
9-Jul-2017	17:00	1.6	E
9-Jul-2017	18:00	1.6	E
9-Jul-2017	19:00	1.2	E
9-Jul-2017	20:00	0.7	ENE
9-Jul-2017	21:00	0.6	ENE
9-Jul-2017	22:00	0.6	ESE
9-Jul-2017	23:00	0.7	NE
10-Jul-2017	0:00	0.6	ENE
10-Jul-2017	1:00	1.3	ENE
10-Jul-2017	2:00	1.6	NE
10-Jul-2017	3:00	1.5	NE
10-Jul-2017	4:00	1.8	NE
10-Jul-2017	5:00	2.2	E
10-Jul-2017	6:00	2.2	NE
10-Jul-2017	7:00	2.1	ESE
10-Jul-2017	8:00	2.5	E
10-Jul-2017	9:00	2.7	SSE
10-Jul-2017	10:00	2.8	WSW

II. Mean Wind Speed and Wind Direction

10-Jul-2017	11:00	2.5	W
10-Jul-2017	12:00	2.2	WNW
10-Jul-2017	13:00	2.7	WNW
10-Jul-2017	14:00	2.5	W
10-Jul-2017	15:00	2.1	WNW
10-Jul-2017	16:00	2.2	W
10-Jul-2017	17:00	2.4	W
10-Jul-2017	18:00	2.2	WNW
10-Jul-2017	19:00	1.9	SW
10-Jul-2017	20:00	1.3	NW
10-Jul-2017	21:00	1	W
10-Jul-2017	22:00	0.6	WNW
10-Jul-2017	23:00	1.2	WNW
11-Jul-2017	0:00	1.6	NNE
11-Jul-2017	1:00	1.6	W
11-Jul-2017	2:00	1.8	WNW
11-Jul-2017	3:00	0.9	WNW
11-Jul-2017	4:00	0.7	WSW
11-Jul-2017	5:00	1.8	WSW
11-Jul-2017	6:00	1.3	WSW
11-Jul-2017	7:00	0.7	SW
11-Jul-2017	8:00	0.9	WSW
11-Jul-2017	9:00	1.8	WSW
11-Jul-2017	10:00	2.2	SW
11-Jul-2017	11:00	1.9	SW
11-Jul-2017	12:00	2.7	SW
11-Jul-2017	13:00	2.7	SW
11-Jul-2017	14:00	2.2	SSW
11-Jul-2017	15:00	2.2	W
11-Jul-2017	16:00	2.1	ESE
11-Jul-2017	17:00	2.2	ESE
11-Jul-2017	18:00	1.8	WNW
11-Jul-2017	19:00	0.9	W
11-Jul-2017	20:00	1.6	WNW
11-Jul-2017	21:00	1.9	NE
11-Jul-2017	22:00	1.6	NE
11-Jul-2017	23:00	1.2	NE
12-Jul-2017	0:00	1	NNE

II. Mean Wind Speed and Wind Direction

12-Jul-2017	1:00	1.2	NE
12-Jul-2017	2:00	0.7	NE
12-Jul-2017	3:00	0.7	NE
12-Jul-2017	4:00	0.4	NNE
12-Jul-2017	5:00	0.7	NNE
12-Jul-2017	6:00	0.1	NE
12-Jul-2017	7:00	0.4	E
12-Jul-2017	8:00	0.9	WNW
12-Jul-2017	9:00	0.7	SSW
12-Jul-2017	10:00	1.3	W
12-Jul-2017	11:00	1.5	WNW
12-Jul-2017	12:00	1.5	WNW
12-Jul-2017	13:00	2.2	WSW
12-Jul-2017	14:00	1.3	WSW
12-Jul-2017	15:00	1	WSW
12-Jul-2017	16:00	0.9	W
12-Jul-2017	17:00	1.2	WNW
12-Jul-2017	18:00	0.7	WSW
12-Jul-2017	19:00	0.3	WSW
12-Jul-2017	20:00	0.3	WSW
12-Jul-2017	21:00	0.3	WSW
12-Jul-2017	22:00	0.3	W
12-Jul-2017	23:00	0.1	ENE
13-Jul-2017	0:00	0.1	W
13-Jul-2017	1:00	0.1	NE
13-Jul-2017	2:00	0.1	WNW
13-Jul-2017	3:00	0.1	WNW
13-Jul-2017	4:00	0.1	W
13-Jul-2017	5:00	0.1	W
13-Jul-2017	6:00	0.1	WSW
13-Jul-2017	7:00	0.1	WSW
13-Jul-2017	8:00	0.1	WNW
13-Jul-2017	9:00	0.4	WNW
13-Jul-2017	10:00	0.7	WNW
13-Jul-2017	11:00	0.6	WNW
13-Jul-2017	12:00	1.2	WNW
13-Jul-2017	13:00	1.3	WNW
13-Jul-2017	14:00	1.3	SW

II. Mean Wind Speed and Wind Direction

13-Jul-2017	15:00	1.5	WNW
13-Jul-2017	16:00	1.2	ESE
13-Jul-2017	17:00	1	NE
13-Jul-2017	18:00	0.9	NE
13-Jul-2017	19:00	0.4	ENE
13-Jul-2017	20:00	0.1	ENE
13-Jul-2017	21:00	0.4	ENE
13-Jul-2017	22:00	0.4	ENE
13-Jul-2017	23:00	0.4	ESE
14-Jul-2017	0:00	0.1	NE
14-Jul-2017	1:00	0.1	E
14-Jul-2017	2:00	0.1	ENE
14-Jul-2017	3:00	0.1	ENE
14-Jul-2017	4:00	0.3	ENE
14-Jul-2017	5:00	0.3	NE
14-Jul-2017	6:00	0.3	ENE
14-Jul-2017	7:00	0.3	ENE
14-Jul-2017	8:00	0.3	NNE
14-Jul-2017	9:00	0.3	E
14-Jul-2017	10:00	1.2	ENE
14-Jul-2017	11:00	1.5	ENE
14-Jul-2017	12:00	2.2	ENE
14-Jul-2017	13:00	1.5	ENE
14-Jul-2017	14:00	1.3	NE
14-Jul-2017	15:00	1.9	N
14-Jul-2017	16:00	1.3	NE
14-Jul-2017	17:00	0.9	ENE
14-Jul-2017	18:00	0.6	E
14-Jul-2017	19:00	0.6	E
14-Jul-2017	20:00	0.4	ENE
14-Jul-2017	21:00	0.9	NE
14-Jul-2017	22:00	0.4	SE
14-Jul-2017	23:00	0.1	ESE
15-Jul-2017	0:00	0.4	SSE
15-Jul-2017	1:00	0.1	SSE
15-Jul-2017	2:00	0.3	SE
15-Jul-2017	3:00	0.6	ESE
15-Jul-2017	4:00	0.4	SSE

II. Mean Wind Speed and Wind Direction

15-Jul-2017	5:00	0.6	SE
15-Jul-2017	6:00	1	SE
15-Jul-2017	7:00	0.9	SE
15-Jul-2017	8:00	0.7	ENE
15-Jul-2017	9:00	1.5	ENE
15-Jul-2017	10:00	2.2	ENE
15-Jul-2017	11:00	2.1	NE
15-Jul-2017	12:00	2.5	NE
15-Jul-2017	13:00	2.5	ENE
15-Jul-2017	14:00	2.1	WSW
15-Jul-2017	15:00	2.1	S
15-Jul-2017	16:00	2.2	N
15-Jul-2017	17:00	1.8	ENE
15-Jul-2017	18:00	1.5	ENE
15-Jul-2017	19:00	1.2	ENE
15-Jul-2017	20:00	0.9	NE
15-Jul-2017	21:00	0.7	NE
15-Jul-2017	22:00	0.9	ENE
15-Jul-2017	23:00	0.6	NE
16-Jul-2017	0:00	0.3	ENE
16-Jul-2017	1:00	0.3	NE
16-Jul-2017	2:00	0.1	NE
16-Jul-2017	3:00	0.1	NE
16-Jul-2017	4:00	0.1	NE
16-Jul-2017	5:00	0.4	NE
16-Jul-2017	6:00	0.1	ENE
16-Jul-2017	7:00	0.3	NE
16-Jul-2017	8:00	0.3	NE
16-Jul-2017	9:00	0.9	ENE
16-Jul-2017	10:00	0.9	NE
16-Jul-2017	11:00	0.9	NE
16-Jul-2017	12:00	1.6	NE
16-Jul-2017	13:00	1.8	NE
16-Jul-2017	14:00	1.3	NE
16-Jul-2017	15:00	1	NE
16-Jul-2017	16:00	0.9	ENE
16-Jul-2017	17:00	0.6	NE
16-Jul-2017	18:00	0.6	ENE

II. Mean Wind Speed and Wind Direction

16-Jul-2017	19:00	0.4	SSW
16-Jul-2017	20:00	0.3	SW
16-Jul-2017	21:00	0.1	SW
16-Jul-2017	22:00	0.1	SW
16-Jul-2017	23:00	0.1	W
17-Jul-2017	0:00	0.9	W
17-Jul-2017	1:00	1.2	N
17-Jul-2017	2:00	1	WSW
17-Jul-2017	3:00	0.7	W
17-Jul-2017	4:00	0.6	W
17-Jul-2017	5:00	0.3	W
17-Jul-2017	6:00	0.6	WSW
17-Jul-2017	7:00	0.6	WSW
17-Jul-2017	8:00	1.2	SSW
17-Jul-2017	9:00	0.7	S
17-Jul-2017	10:00	0.9	S
17-Jul-2017	11:00	2.1	ENE
17-Jul-2017	12:00	2.1	ENE
17-Jul-2017	13:00	2.1	SW
17-Jul-2017	14:00	2.1	SW
17-Jul-2017	15:00	2.5	SW
17-Jul-2017	16:00	1.9	ENE
17-Jul-2017	17:00	1.3	NE
17-Jul-2017	18:00	0.7	ENE
17-Jul-2017	19:00	0.7	NE
17-Jul-2017	20:00	0.9	NE
17-Jul-2017	21:00	0.6	ENE
17-Jul-2017	22:00	0.7	ENE
17-Jul-2017	23:00	0.3	NE
18-Jul-2017	0:00	0.4	ENE
18-Jul-2017	1:00	0.6	ENE
18-Jul-2017	2:00	0.6	NE
18-Jul-2017	3:00	0.6	NE
18-Jul-2017	4:00	0.9	NE
18-Jul-2017	5:00	0.7	NE
18-Jul-2017	6:00	0.3	ENE
18-Jul-2017	7:00	0.6	NE
18-Jul-2017	8:00	1.2	ENE

II. Mean Wind Speed and Wind Direction

18-Jul-2017	9:00	1.3	NE
18-Jul-2017	10:00	2.1	NE
18-Jul-2017	11:00	1.9	ENE
18-Jul-2017	12:00	2.2	NE
18-Jul-2017	13:00	1.8	NE
18-Jul-2017	14:00	1.5	NE
18-Jul-2017	15:00	1.5	NE
18-Jul-2017	16:00	1.5	NE
18-Jul-2017	17:00	1.3	NE
18-Jul-2017	18:00	1.8	NE
18-Jul-2017	19:00	1	NNE
18-Jul-2017	20:00	1.8	ENE
18-Jul-2017	21:00	1.8	ENE
18-Jul-2017	22:00	1.3	NE
18-Jul-2017	23:00	1.8	NE
19-Jul-2017	0:00	1.9	ENE
19-Jul-2017	1:00	1.5	ENE
19-Jul-2017	2:00	2.1	ENE
19-Jul-2017	3:00	1.9	ENE
19-Jul-2017	4:00	1.8	ENE
19-Jul-2017	5:00	1.8	ENE
19-Jul-2017	6:00	1.5	ENE
19-Jul-2017	7:00	1.5	ENE
19-Jul-2017	8:00	1.8	NE
19-Jul-2017	9:00	1.8	NNE
19-Jul-2017	10:00	2.1	N
19-Jul-2017	11:00	2.1	N
19-Jul-2017	12:00	2.4	N
19-Jul-2017	13:00	1.5	W
19-Jul-2017	14:00	1.9	SSW
19-Jul-2017	15:00	1.6	SW
19-Jul-2017	16:00	2.1	SSW
19-Jul-2017	17:00	1.8	ENE
19-Jul-2017	18:00	1.8	SSW
19-Jul-2017	19:00	1	SW
19-Jul-2017	20:00	0.9	ENE
19-Jul-2017	21:00	0.4	WSW
19-Jul-2017	22:00	0.4	SSW

II. Mean Wind Speed and Wind Direction

19-Jul-2017	23:00	1	SSW
20-Jul-2017	0:00	0.7	SSW
20-Jul-2017	1:00	0.4	SSW
20-Jul-2017	2:00	0.7	ENE
20-Jul-2017	3:00	0.7	WNW
20-Jul-2017	4:00	0.7	WNW
20-Jul-2017	5:00	0.4	WNW
20-Jul-2017	6:00	0.4	WNW
20-Jul-2017	7:00	0.7	SSW
20-Jul-2017	8:00	1	WSW
20-Jul-2017	9:00	1.3	WSW
20-Jul-2017	10:00	1.9	WSW
20-Jul-2017	11:00	1.9	ENE
20-Jul-2017	12:00	2.2	SW
20-Jul-2017	13:00	2.2	NE
20-Jul-2017	14:00	2.1	W
20-Jul-2017	15:00	2.2	NE
20-Jul-2017	16:00	1.9	SW
20-Jul-2017	17:00	1.8	SSE
20-Jul-2017	18:00	1.5	SW
20-Jul-2017	19:00	0.7	SW
20-Jul-2017	20:00	0.4	SW
20-Jul-2017	21:00	0.1	ENE
20-Jul-2017	22:00	0.4	NE
20-Jul-2017	23:00	0.3	NE
21-Jul-2017	0:00	0.4	SE
21-Jul-2017	1:00	0.4	NE
21-Jul-2017	2:00	0.4	SW
21-Jul-2017	3:00	0.9	SSW
21-Jul-2017	4:00	0.4	SW
21-Jul-2017	5:00	0.1	SSW
21-Jul-2017	6:00	0.1	SSW
21-Jul-2017	7:00	0.3	SSW
21-Jul-2017	8:00	0.6	SW
21-Jul-2017	9:00	1.3	SSE
21-Jul-2017	10:00	1.2	SSE
21-Jul-2017	11:00	0.9	S
21-Jul-2017	12:00	1	E

II. Mean Wind Speed and Wind Direction

21-Jul-2017	13:00	1.5	E
21-Jul-2017	14:00	1.6	NE
21-Jul-2017	15:00	1.3	NE
21-Jul-2017	16:00	1	NE
21-Jul-2017	17:00	1	SW
21-Jul-2017	18:00	0.9	SSW
21-Jul-2017	19:00	0.7	W
21-Jul-2017	20:00	1.2	SW
21-Jul-2017	21:00	1	SSW
21-Jul-2017	22:00	1.2	S
21-Jul-2017	23:00	1.5	S
22-Jul-2017	0:00	1.5	SSE
22-Jul-2017	1:00	1.5	N
22-Jul-2017	2:00	1.3	N
22-Jul-2017	3:00	0.6	N
22-Jul-2017	4:00	1.2	WNW
22-Jul-2017	5:00	1	SSW
22-Jul-2017	6:00	0.7	SE
22-Jul-2017	7:00	0.7	SE
22-Jul-2017	8:00	1.3	ENE
22-Jul-2017	9:00	1	WNW
22-Jul-2017	10:00	1	WNW
22-Jul-2017	11:00	1	SSE
22-Jul-2017	12:00	1.2	SE
22-Jul-2017	13:00	1.3	SE
22-Jul-2017	14:00	1.8	NNW
22-Jul-2017	15:00	1.9	SSE
22-Jul-2017	16:00	2.2	SW
22-Jul-2017	17:00	1.2	WNW
22-Jul-2017	18:00	0.9	SW
22-Jul-2017	19:00	1.8	NW
22-Jul-2017	20:00	1.6	WSW
22-Jul-2017	21:00	1.6	ENE
22-Jul-2017	22:00	1.6	E
22-Jul-2017	23:00	1.2	NE
23-Jul-2017	0:00	1.2	NNE
23-Jul-2017	1:00	1.2	NNE
23-Jul-2017	2:00	1.3	NNE

II. Mean Wind Speed and Wind Direction

23-Jul-2017	3:00	0.9	ENE
23-Jul-2017	4:00	1.2	S
23-Jul-2017	5:00	1.5	SW
23-Jul-2017	6:00	1	NNE
23-Jul-2017	7:00	0.9	ENE
23-Jul-2017	8:00	1.3	NNE
23-Jul-2017	9:00	1.2	N
23-Jul-2017	10:00	1.9	NE
23-Jul-2017	11:00	2.1	NNE
23-Jul-2017	12:00	2.2	NE
23-Jul-2017	13:00	2.5	N
23-Jul-2017	14:00	2.2	NE
23-Jul-2017	15:00	1.8	W
23-Jul-2017	16:00	1.5	W
23-Jul-2017	17:00	1.8	W
23-Jul-2017	18:00	1.8	W
23-Jul-2017	19:00	1.9	SW
23-Jul-2017	20:00	2.2	WSW
23-Jul-2017	21:00	1.8	W
23-Jul-2017	22:00	1.5	WSW
23-Jul-2017	23:00	1.5	NE
24-Jul-2017	0:00	1.8	NE
24-Jul-2017	1:00	0.9	NNE
24-Jul-2017	2:00	1	NE
24-Jul-2017	3:00	0.7	NE
24-Jul-2017	4:00	0.4	W
24-Jul-2017	5:00	0.7	NE
24-Jul-2017	6:00	0.7	ENE
24-Jul-2017	7:00	1	SE
24-Jul-2017	8:00	1.6	WNW
24-Jul-2017	9:00	1.9	SW
24-Jul-2017	10:00	2.5	WSW
24-Jul-2017	11:00	2.8	W
24-Jul-2017	12:00	2.8	W
24-Jul-2017	13:00	3.1	WSW
24-Jul-2017	14:00	3.7	WSW
24-Jul-2017	15:00	3	WSW
24-Jul-2017	16:00	3.1	S

II. Mean Wind Speed and Wind Direction

24-Jul-2017	17:00	3.3	SSW
24-Jul-2017	18:00	1.9	S
24-Jul-2017	19:00	2.4	SSW
24-Jul-2017	20:00	1.2	S
24-Jul-2017	21:00	0.9	W
24-Jul-2017	22:00	0.9	WSW
24-Jul-2017	23:00	1.2	WSW
25-Jul-2017	0:00	0.6	W
25-Jul-2017	1:00	0.6	W
25-Jul-2017	2:00	0.9	W
25-Jul-2017	3:00	0.7	SSW
25-Jul-2017	4:00	0.7	W
25-Jul-2017	5:00	0.9	W
25-Jul-2017	6:00	0.9	W
25-Jul-2017	7:00	1.2	SSE
25-Jul-2017	8:00	1.6	WSW
25-Jul-2017	9:00	1.9	SSW
25-Jul-2017	10:00	2.1	WSW
25-Jul-2017	11:00	1.6	WSW
25-Jul-2017	12:00	0.9	WSW
25-Jul-2017	13:00	1.6	W
25-Jul-2017	14:00	1.6	W
25-Jul-2017	15:00	1.8	W
25-Jul-2017	16:00	1.3	WSW
25-Jul-2017	17:00	1.5	W
25-Jul-2017	18:00	1.5	SW
25-Jul-2017	19:00	0.9	WSW
25-Jul-2017	20:00	0.6	WSW
25-Jul-2017	21:00	0.4	SW
25-Jul-2017	22:00	0.4	WSW
25-Jul-2017	23:00	0.4	W
26-Jul-2017	0:00	0.4	W
26-Jul-2017	1:00	0.3	WSW
26-Jul-2017	2:00	0.4	W
26-Jul-2017	3:00	0.3	ESE
26-Jul-2017	4:00	0.3	SSW
26-Jul-2017	5:00	0.1	S
26-Jul-2017	6:00	0.1	W

II. Mean Wind Speed and Wind Direction

26-Jul-2017	7:00	0.1	N
26-Jul-2017	8:00	1.2	ESE
26-Jul-2017	9:00	1.5	W
26-Jul-2017	10:00	1.5	W
26-Jul-2017	11:00	0.9	W
26-Jul-2017	12:00	1.3	W
26-Jul-2017	13:00	1.8	W
26-Jul-2017	14:00	1.8	WSW
26-Jul-2017	15:00	1.6	W
26-Jul-2017	16:00	1.6	W
26-Jul-2017	17:00	1.2	W
26-Jul-2017	18:00	0.4	W
26-Jul-2017	19:00	0.3	WNW
26-Jul-2017	20:00	0.6	W
26-Jul-2017	21:00	1.3	W
26-Jul-2017	22:00	1	WNW
26-Jul-2017	23:00	0.9	W
27-Jul-2017	0:00	0.6	W
27-Jul-2017	1:00	0.7	S
27-Jul-2017	2:00	0.6	S
27-Jul-2017	3:00	0.4	S
27-Jul-2017	4:00	0.4	S
27-Jul-2017	5:00	0.3	SW
27-Jul-2017	6:00	0.3	SSW
27-Jul-2017	7:00	0.3	W
27-Jul-2017	8:00	0.4	SSE
27-Jul-2017	9:00	0.6	WSW
27-Jul-2017	10:00	0.1	SW
27-Jul-2017	11:00	0.4	WSW
27-Jul-2017	12:00	1.2	W
27-Jul-2017	13:00	1.5	W
27-Jul-2017	14:00	1.5	WSW
27-Jul-2017	15:00	1.3	WSW
27-Jul-2017	16:00	1.5	W
27-Jul-2017	17:00	1	WSW
27-Jul-2017	18:00	1.2	WSW
27-Jul-2017	19:00	0.6	W
27-Jul-2017	20:00	0.3	W

II. Mean Wind Speed and Wind Direction

27-Jul-2017	21:00	0.3	WNW
27-Jul-2017	22:00	0.1	WSW
27-Jul-2017	23:00	0.1	S
28-Jul-2017	0:00	0.1	WSW
28-Jul-2017	1:00	0.1	SSW
28-Jul-2017	2:00	0.1	W
28-Jul-2017	3:00	0.1	S
28-Jul-2017	4:00	0.1	SW
28-Jul-2017	5:00	0.1	SSW
28-Jul-2017	6:00	0.1	SW
28-Jul-2017	7:00	0.1	WSW
28-Jul-2017	8:00	0.1	WSW
28-Jul-2017	9:00	0.6	W
28-Jul-2017	10:00	0.9	W
28-Jul-2017	11:00	1	W
28-Jul-2017	12:00	0.7	WNW
28-Jul-2017	13:00	1	W
28-Jul-2017	14:00	0.9	W
28-Jul-2017	15:00	1	W
28-Jul-2017	16:00	0.7	W
28-Jul-2017	17:00	1.2	WNW
28-Jul-2017	18:00	0.4	W
28-Jul-2017	19:00	0.3	W
28-Jul-2017	20:00	0.1	W
28-Jul-2017	21:00	0.1	W
28-Jul-2017	22:00	0.3	WNW
28-Jul-2017	23:00	0.3	WNW
29-Jul-2017	0:00	0.3	W
29-Jul-2017	1:00	0.3	WNW
29-Jul-2017	2:00	0.4	WNW
29-Jul-2017	3:00	0.3	W
29-Jul-2017	4:00	0.3	WNW
29-Jul-2017	5:00	0.3	W
29-Jul-2017	6:00	0.3	W
29-Jul-2017	7:00	0.3	SW
29-Jul-2017	8:00	0.3	SSE
29-Jul-2017	9:00	0.4	S
29-Jul-2017	10:00	0.6	W

II. Mean Wind Speed and Wind Direction

29-Jul-2017	11:00	0.6	W
29-Jul-2017	12:00	1	W
29-Jul-2017	13:00	1	NNE
29-Jul-2017	14:00	1	N
29-Jul-2017	15:00	1.3	E
29-Jul-2017	16:00	1	N
29-Jul-2017	17:00	0.9	NE
29-Jul-2017	18:00	0.4	ENE
29-Jul-2017	19:00	0.3	WSW
29-Jul-2017	20:00	0.3	WSW
29-Jul-2017	21:00	0.1	SW
29-Jul-2017	22:00	0.4	S
29-Jul-2017	23:00	0.3	S
30-Jul-2017	0:00	0.4	SSW
30-Jul-2017	1:00	0.6	SW
30-Jul-2017	2:00	0.6	SW
30-Jul-2017	3:00	0.7	WSW
30-Jul-2017	4:00	0.6	SW
30-Jul-2017	5:00	0.4	SW
30-Jul-2017	6:00	0.4	SW
30-Jul-2017	7:00	0.3	W
30-Jul-2017	8:00	0.1	SW
30-Jul-2017	9:00	0.6	WSW
30-Jul-2017	10:00	0.3	SW
30-Jul-2017	11:00	0.6	SW
30-Jul-2017	12:00	0.6	SW
30-Jul-2017	13:00	0.1	WSW
30-Jul-2017	14:00	0.6	SW
30-Jul-2017	15:00	0.9	SSW
30-Jul-2017	16:00	0.7	SW
30-Jul-2017	17:00	0.6	W
30-Jul-2017	18:00	0.3	W
30-Jul-2017	19:00	0.3	W
30-Jul-2017	20:00	0.3	W
30-Jul-2017	21:00	0.3	W
30-Jul-2017	22:00	0.1	W
30-Jul-2017	23:00	0.6	WSW
31-Jul-2017	0:00	1.2	W

II. Mean Wind Speed and Wind Direction

31-Jul-2017	1:00	0.9	WNW
31-Jul-2017	2:00	1.3	SW
31-Jul-2017	3:00	1.3	W
31-Jul-2017	4:00	1.2	W
31-Jul-2017	5:00	1	W
31-Jul-2017	6:00	1	WSW
31-Jul-2017	7:00	1.2	W
31-Jul-2017	8:00	1.3	WNW
31-Jul-2017	9:00	1.5	WNW
31-Jul-2017	10:00	1.6	W
31-Jul-2017	11:00	1.8	WNW
31-Jul-2017	12:00	1.8	W
31-Jul-2017	13:00	1.9	WNW
31-Jul-2017	14:00	1.8	WNW
31-Jul-2017	15:00	1.9	W
31-Jul-2017	16:00	1.8	W
31-Jul-2017	17:00	1.3	WNW
31-Jul-2017	18:00	1	W
31-Jul-2017	19:00	0.9	W
31-Jul-2017	20:00	1.2	W
31-Jul-2017	21:00	0.1	W
31-Jul-2017	22:00	0.4	W
31-Jul-2017	23:00	0.4	W

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 (July 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Jul
2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul
	1 hr TSP X3 [AM5(A), AM6(A)]		1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM4] 24hr 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)] 24hr TSP [AM4(A)]	
9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul
		1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM3, CM4, CM5, CM6(A), CM7(A)]	24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM1, CM6(A), CM7(A), CM8(A)]		
16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul
	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]		
23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul
	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] Noise [CM1, CM2, CM4]		24 hr TSP	
30-Jul	31-Jul					
	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 Groundwater Quality Monitoring Schedule (July 2017)

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

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
Impact Water Quality Monitoring Schedule (July 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Jul
2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul
	Mid-Ebb 8:57 Mid-Flood 15:06		Mid-Ebb 10:27 Mid-Flood 17:07		Mid-Ebb 11:29 Mid-Flood 18:35	
9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul
	Mid-Ebb 13:06 Mid-Flood 20:18		Mid-Flood 7:31 Mid-Ebb 14:18		Mid-Flood 8:59 Mid-Ebb 15:36	
16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul
	Mid-Flood 12:21 Mid-Ebb 18:21		Mid-Ebb 8:50 Mid-Flood 15:14		Mid-Ebb 10:38 Mid-Flood 17:31	
23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul
	Mid-Ebb 13:04 Mid-Flood 20:00		Mid-Flood 7:48 Mid-Ebb 14:33		Mid-Flood 9:21 Mid-Ebb 15:56	
30-Jul	31-Jul					
	Mid-Flood 12:47 Mid-Ebb 18:36					

Note #: Impact Water Quality Monitoring is cancelled as Strong Wind Signal No.3 is in force

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 (August 2017)

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

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
Tentative Impact Groundwater Quality Monitoring Schedule (August 2017)

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

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

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
Tentative Impact Water Quality Monitoring Schedule (August 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Aug	2-Aug	3-Aug	4-Aug	5-Aug
			Mid-Ebb 9:18 Mid-Flood 16:11		Mid-Ebb 10:28 Mid-Flood 17:49	
6-Aug	7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	12-Aug
	Mid-Ebb 12:11 Mid-Flood 19:22		Mid-Flood 13:22 Mid-Ebb 20:14		Mid-Flood 8:11 Mid-Ebb 14:38	
13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug
	Mid-Flood 10:51 Mid-Ebb 16:53		Mid-Ebb 7:21 Mid-Flood 13:51		Mid-Ebb 9:33 Mid-Flood 16:38	
20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug
	Mid-Ebb 12:03 Mid-Flood 18:55		Mid-Ebb 13:29 Mid-Flood 20:03		Mid-Flood 8:21 Mid-Ebb 14:45	
27-Aug	28-Aug	29-Aug	30-Aug	31-Aug		
	Mid-Flood 10:44 Mid-Ebb 16:43		Mid-Ebb 7:16 Mid-Flood 14:41			

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

Note #: Impact Water Quality Monitoring is cancelled as Strong Wind Signal No.3 is in force

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 ($\mu g/m^3$)
5-Jul-17	9:00	Fine	119.0
5-Jul-17	10:00	Fine	119.8
5-Jul-17	11:00	Fine	121.0
11-Jul-17	9:00	Sunny	38.4
11-Jul-17	10:00	Sunny	37.3
11-Jul-17	11:00	Sunny	40.6
17-Jul-17	8:30	Fine	76.4
17-Jul-17	9:30	Fine	84.9
17-Jul-17	10:30	Fine	82.6
20-Jul-17	9:00	Sunny	81.0
20-Jul-17	10:00	Sunny	80.8
20-Jul-17	11:00	Sunny	80.4
26-Jul-17	13:10	Sunny	67.3
26-Jul-17	14:10	Sunny	68.9
26-Jul-17	15:10	Sunny	58.1
		Average	77.1
		Maximum	121.0
		Minimum	37.3

Location AM2 - Sai Tso Wan Recreation Ground			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
5-Jul-17	13:00	Fine	112.4
5-Jul-17	14:00	Fine	110.9
5-Jul-17	15:00	Fine	116.3
11-Jul-17	8:45	Sunny	28.7
11-Jul-17	9:45	Sunny	27.6
11-Jul-17	10:45	Sunny	25.5
17-Jul-17	13:00	Fine	64.8
17-Jul-17	14:00	Fine	63.5
17-Jul-17	15:00	Fine	69.9
20-Jul-17	9:00	Sunny	81.1
20-Jul-17	10:00	Sunny	80.3
20-Jul-17	11:00	Sunny	79.3
26-Jul-17	8:10	Sunny	53.7
26-Jul-17	9:10	Sunny	56.5
26-Jul-17	10:10	Sunny	54.0
		Average	68.3
		Maximum	116.3
		Minimum	25.5

Appendix E - 1-hour TSP Monitoring Results

Location AM3 - Yau Lai Estate Bik Lai House			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
5-Jul-17	13:00	Fine	107.6
5-Jul-17	14:00	Fine	119.8
5-Jul-17	15:00	Fine	110.5
11-Jul-17	13:00	Sunny	32.9
11-Jul-17	14:00	Sunny	34.0
11-Jul-17	15:00	Sunny	32.9
17-Jul-17	13:40	Fine	75.0
17-Jul-17	14:40	Fine	77.4
17-Jul-17	15:40	Fine	75.5
20-Jul-17	13:00	Fine	68.6
20-Jul-17	14:00	Fine	67.8
20-Jul-17	15:00	Fine	68.2
26-Jul-17	8:45	Sunny	61.0
26-Jul-17	9:45	Sunny	59.9
26-Jul-17	10:45	Sunny	61.6
		Average	70.2
		Maximum	119.8
		Minimum	32.9

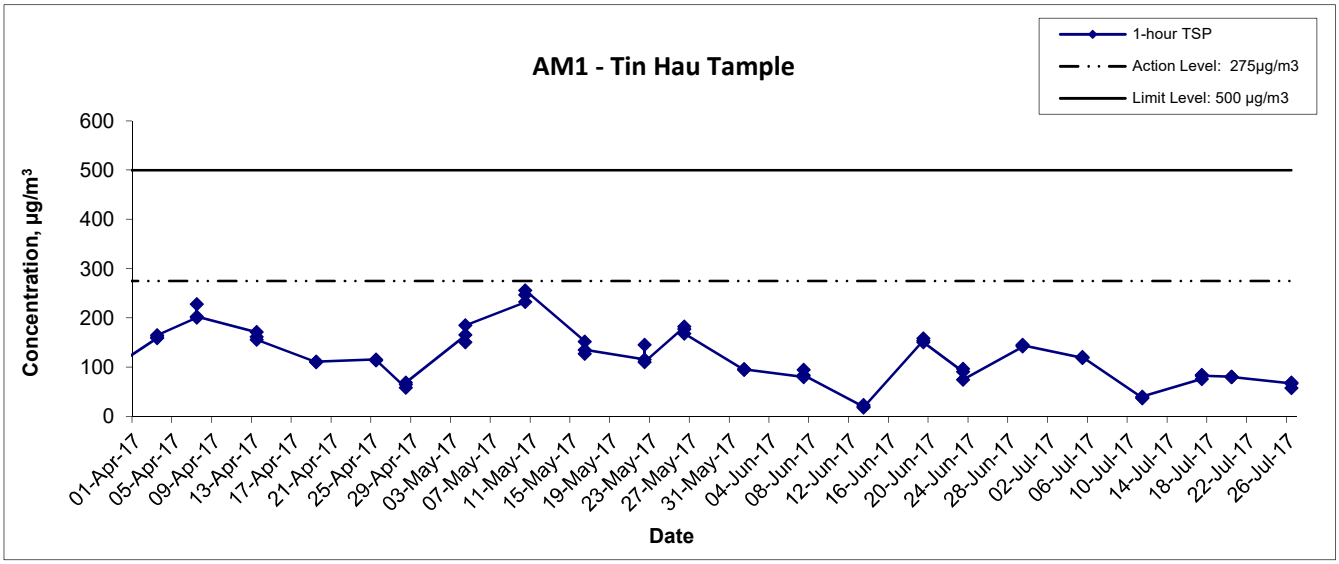
Location AM4 - Sitting-out Area at Cha Kwo Ling Village			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
5-Jul-17	8:40	Fine	110.9
5-Jul-17	9:40	Fine	115.9
5-Jul-17	10:40	Fine	110.9
11-Jul-17	13:15	Sunny	39.3
11-Jul-17	14:15	Sunny	40.4
11-Jul-17	15:15	Sunny	41.4
17-Jul-17	9:00	Fine	83.1
17-Jul-17	10:00	Fine	93.8
17-Jul-17	11:00	Fine	96.6
20-Jul-17	13:00	Sunny	97.4
20-Jul-17	14:00	Sunny	95.9
20-Jul-17	15:00	Sunny	96.6
26-Jul-17	13:40	Sunny	71.8
26-Jul-17	14:40	Sunny	61.7
26-Jul-17	15:40	Sunny	62.2
		Average	81.2
		Maximum	115.9
		Minimum	39.3

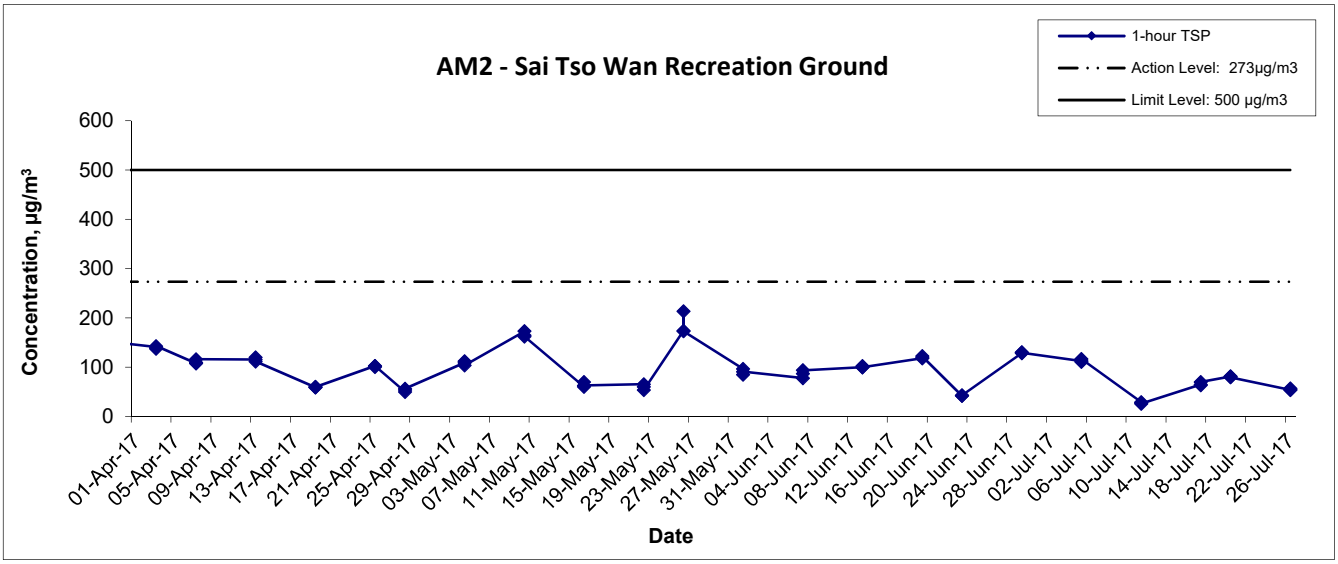
Appendix E - 1-hour TSP Monitoring Results

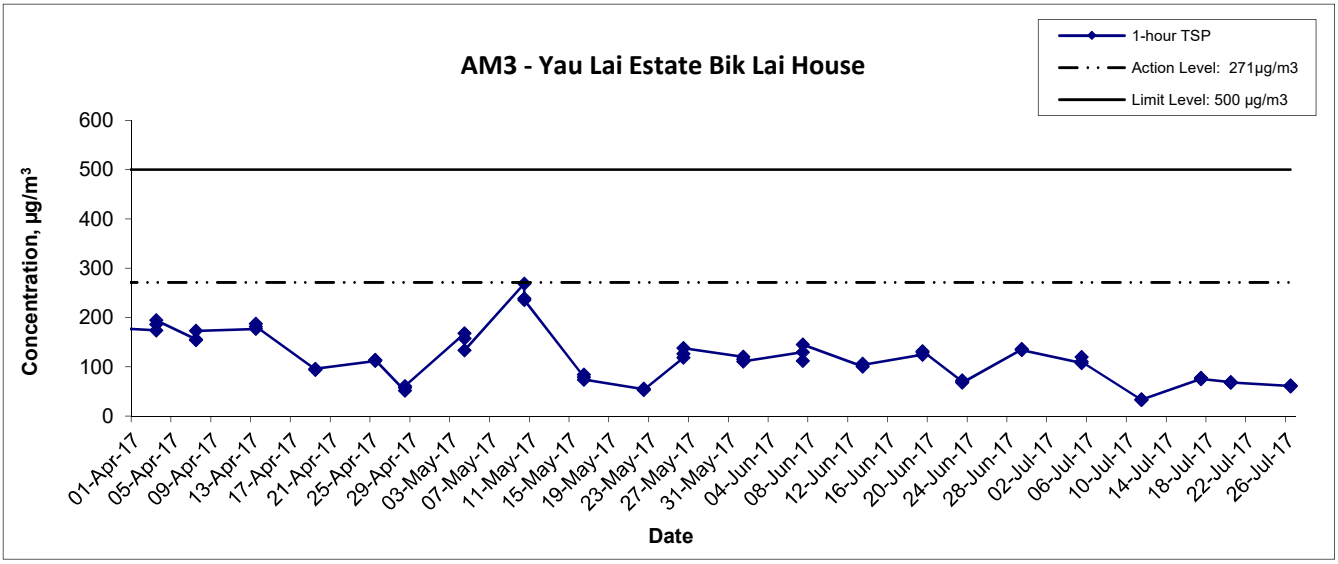
Location AM5(A) - Tseung Kwan O DSD Desilting Compound			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
3-Jul-17	13:00	Cloudy	72.5
3-Jul-17	14:00	Cloudy	76.5
3-Jul-17	15:00	Cloudy	69.4
7-Jul-17	13:00	Cloudy	176.8
7-Jul-17	14:00	Cloudy	137.0
7-Jul-17	15:00	Cloudy	152.6
13-Jul-17	13:30	Sunny	68.9
13-Jul-17	14:30	Sunny	67.0
13-Jul-17	15:30	Sunny	62.0
19-Jul-17	13:40	Fine	146.8
19-Jul-17	14:40	Fine	151.3
19-Jul-17	15:40	Fine	155.9
25-Jul-17	13:00	Sunny	55.8
25-Jul-17	14:00	Sunny	56.0
25-Jul-17	15:00	Sunny	55.4
31-Jul-17	13:00	Cloudy	190.0
31-Jul-17	13:00	Cloudy	164.0
31-Jul-17	13:00	Cloudy	200.7
		Average	114.4
		Maximum	200.7
		Minimum	55.4

Location AM6(A) - Park Central, L1/F Open Space Area			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
3-Jul-17	9:00	Cloudy	78.1
3-Jul-17	10:00	Cloudy	70.3
3-Jul-17	11:00	Cloudy	64.9
7-Jul-17	13:00	Cloudy	137.2
7-Jul-17	14:00	Cloudy	155.8
7-Jul-17	15:00	Cloudy	133.5
13-Jul-17	13:00	Sunny	55.8
13-Jul-17	14:00	Sunny	56.5
13-Jul-17	15:00	Sunny	57.6
19-Jul-17	13:00	Cloudy	137.6
19-Jul-17	14:00	Cloudy	141.6
19-Jul-17	15:00	Cloudy	145.8
25-Jul-17	13:30	Sunny	52.0
25-Jul-17	14:30	Sunny	41.6
25-Jul-17	15:30	Sunny	49.0
31-Jul-17	15:00	Cloudy	227.5
31-Jul-17	16:00	Cloudy	206.0
31-Jul-17	17:00	Cloudy	213.9
		Average	112.5
		Maximum	227.5
		Minimum	41.6

1-hr TSP Concentration Levels

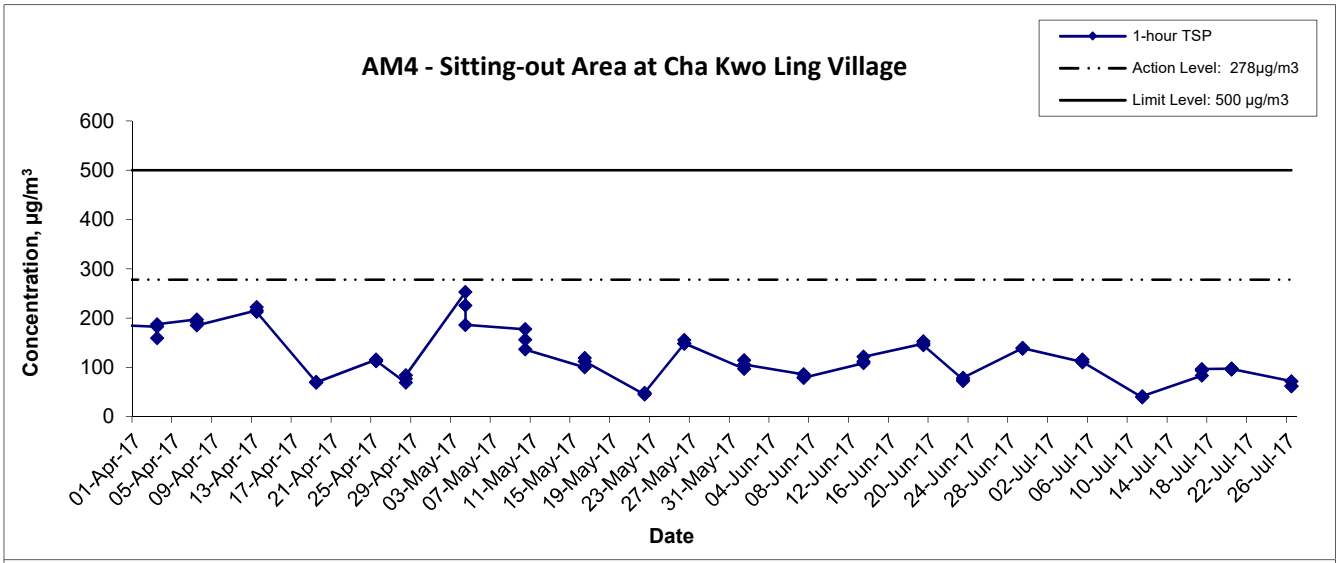


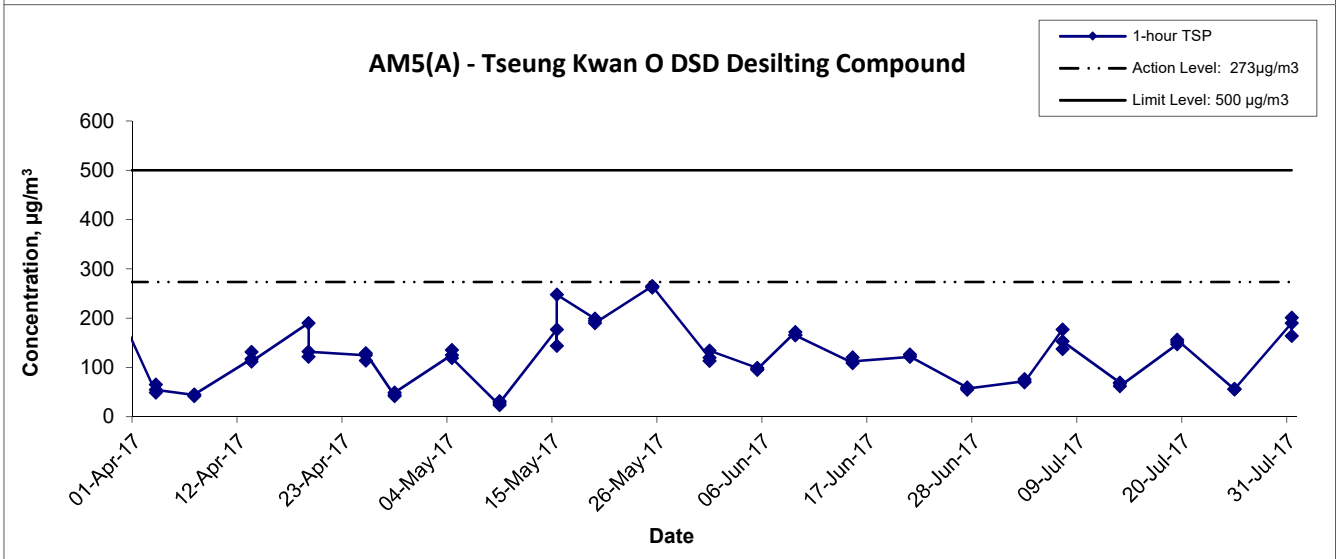


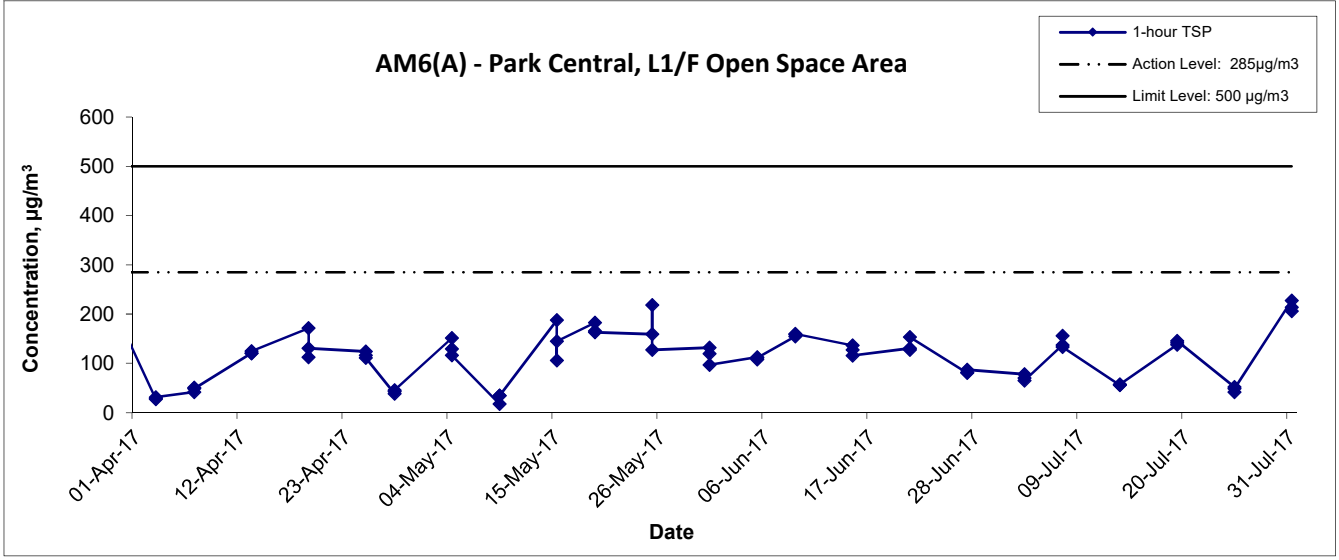


Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Jul 17	Project No.: MA16034 Appendix: E	CINOTECH

1-hr TSP Concentration Levels







Title		Scale	Project No.
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		N.T.S	MA16034
		Date Jul 17	Appendix E

CINOTECH

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. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
6-Jul-17	Cloudy	301.4	759.5	2.8564	2.9177	0.0613	2147.0	2171.0	24.0	1.22	1.21	1.21	1749.6	35.0
12-Jul-17	Cloudy	302.5	761.2	2.8273	2.9882	0.1609	2171.0	2195.0	24.0	1.22	1.22	1.22	1758.8	91.5
18-Jul-17	Cloudy	297.7	761.6	2.8821	2.9158	0.0337	2195.0	2219.0	24.0	1.23	1.23	1.23	1774.3	19.0
24-Jul-17	Sunny	299.8	757.1	2.8370	2.9336	0.0966	2219.0	2243.0	24.0	1.22	1.22	1.22	1762.1	54.8
28-Jul-17	Sunny	303.1	756.1	2.8199	2.9465	0.1266	2243.0	2267.0	24.0	1.22	1.22	1.22	1750.7	72.3
													Min	19.0
													Max	91.5
													Average	54.5

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. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
6-Jul-17	Cloudy	302.3	758.7	2.8459	2.9079	0.0620	23111.3	23135.3	24.0	1.21	1.21	1.21	1738.4	35.7
12-Jul-17	Cloudy	301.9	759.2	2.8701	2.9161	0.0460	23135.3	23159.3	24.0	1.06	1.06	1.06	1527.1	30.1
18-Jul-17	Cloudy	298.4	762.1	2.8441	2.8757	0.0316	23159.3	23183.3	24.0	1.07	1.07	1.07	1540.0	20.5
24-Jul-17	Sunny	300.4	757.5	2.8788	2.9603	0.0815	23183.3	23207.3	24.0	1.06	1.06	1.06	1529.4	53.3
28-Jul-17	Sunny	303.2	756.6	2.8464	2.9767	0.1303	23207.3	23231.3	24.0	1.06	1.06	1.06	1520.7	85.7
													Min	20.5
													Max	85.7
													Average	45.1

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. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
6-Jul-17	Cloudy	301.6	759.0	2.8485	2.8742	0.0257	11678.7	11702.7	24.0	1.21	1.21	1.21	1742.2	14.8
12-Jul-17	Cloudy	301.7	759.3	2.8395	2.8722	0.0327	11702.7	11726.7	24.0	1.21	1.21	1.21	1742.3	18.8
18-Jul-17	Cloudy	298.9	761.2	2.8487	2.8792	0.0305	11726.7	11750.7	24.0	1.22	1.22	1.22	1753.4	17.4
24-Jul-17	Sunny	299.8	757.3	2.8277	2.8588	0.0311	11750.7	11774.7	24.0	1.21	1.21	1.21	1745.7	17.8
28-Jul-17	Sunny	302.7	757.1	2.8127	2.8606	0.0479	11774.7	11798.7	24.0	1.21	1.21	1.21	1736.4	27.6
													Min	14.8
													Max	27.6
													Average	19.3

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. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
5-Jul-17	Cloudy	301.9	758.1	2.8735	3.0013	0.1278	8617.2	8641.2	24.0	1.20	1.20	1.20	1724.7	74.1
6-Jul-17	Cloudy	301.5	758.8	3.3008	3.4110	0.1102	8641.2	8665.2	24.0	1.20	1.20	1.20	1726.8	63.8
7-Jul-17	Cloudy	299.6	758.5	2.8403	3.0238	0.1835	8665.2	8689.2	24.0	1.20	1.20	1.20	1732.5	105.9
12-Jul-17	Cloudy	302.4	758.7	2.8534	2.9444	0.0910	8689.2	8713.2	24.0	1.20	1.20	1.20	1723.9	52.8
18-Jul-17	Cloudy	297.2	761.1	2.8493	2.8843	0.0350	8713.2	8737.2	24.0	1.23	1.22	1.23	1764.2	19.8
24-Jul-17	Sunny	300.4	757.1	2.8458	2.9938	0.1480	8737.2	8761.2	24.0	1.21	1.21	1.21	1748.9	84.6
28-Jul-17	Sunny	303.4	757.3	2.8600	3.1061	0.2461	8761.2	8785.2	24.0	1.21	1.21	1.21	1739.7	141.5
													Min	19.8
													Max	141.5
													Average	77.5

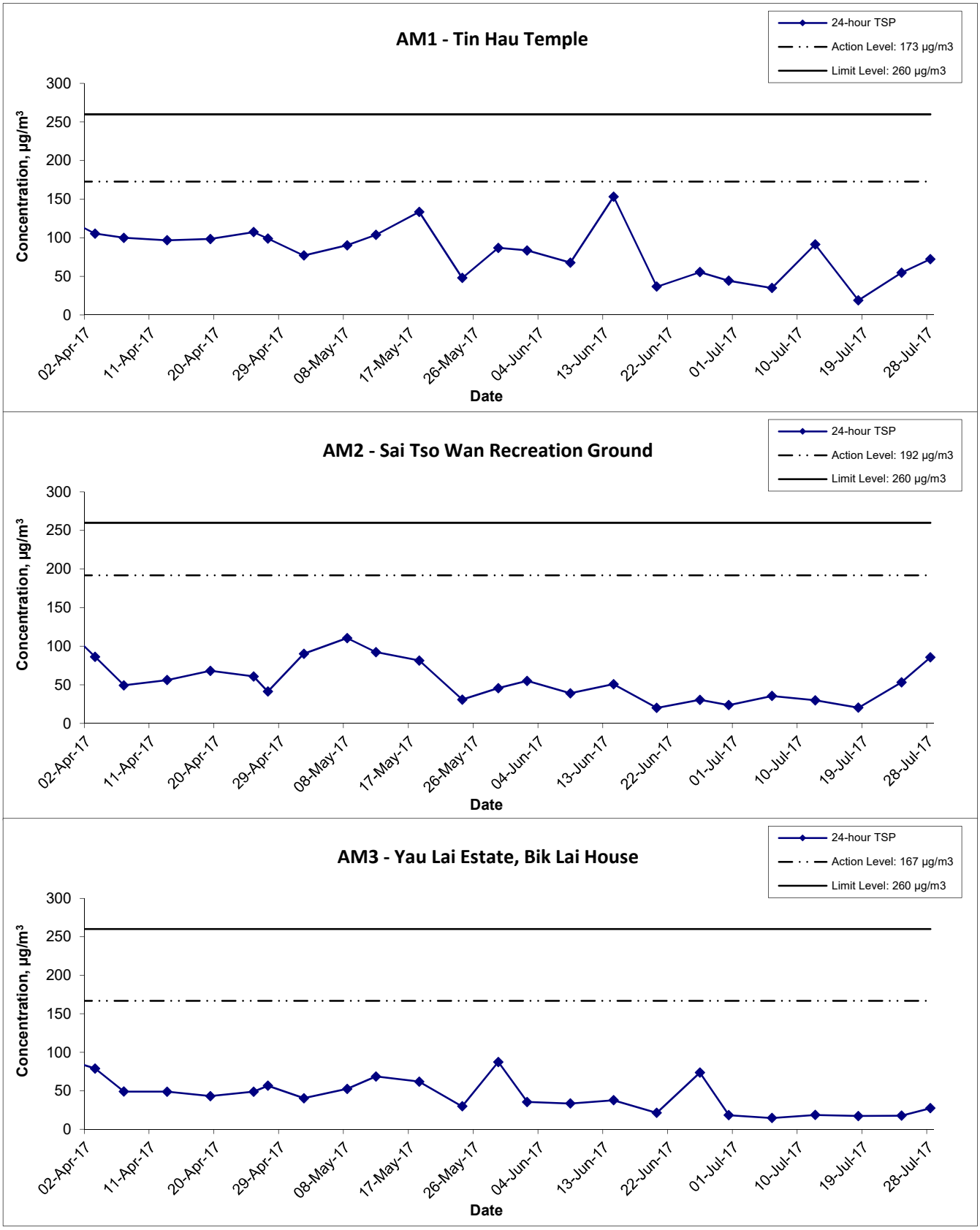
Location AM5(A) - Tseung Kwan O DSD Desilting Compound

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. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
6-Jul-17	Cloudy	301.8	759.1	2.8674	2.9191	0.0517	22407.5	22431.5	24.0	1.21	1.21	1.21	1738.6	29.7
12-Jul-17	Cloudy	301.5	758.6	3.2976	3.3604	0.0628	22431.5	22455.5	24.0	1.22	1.22	1.22	1762.4	35.6
18-Jul-17	Cloudy	298.1	761.4	2.8510	2.8976	0.0466	22455.5	22479.5	24.0	1.23	1.23	1.23	1775.8	26.2
24-Jul-17	Sunny	299.9	757.5	2.8090	2.8653	0.0563	22479.5	22503.5	24.0	1.23	1.23	1.23	1765.8	31.9
28-Jul-17	Sunny	304.1	756.2	2.8600	2.9346	0.0746	22503.5	22527.5	24.0	1.22	1.22	1.22	1752.0	42.6
													Min	26.2
													Max	42.6
													Average	33.2

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

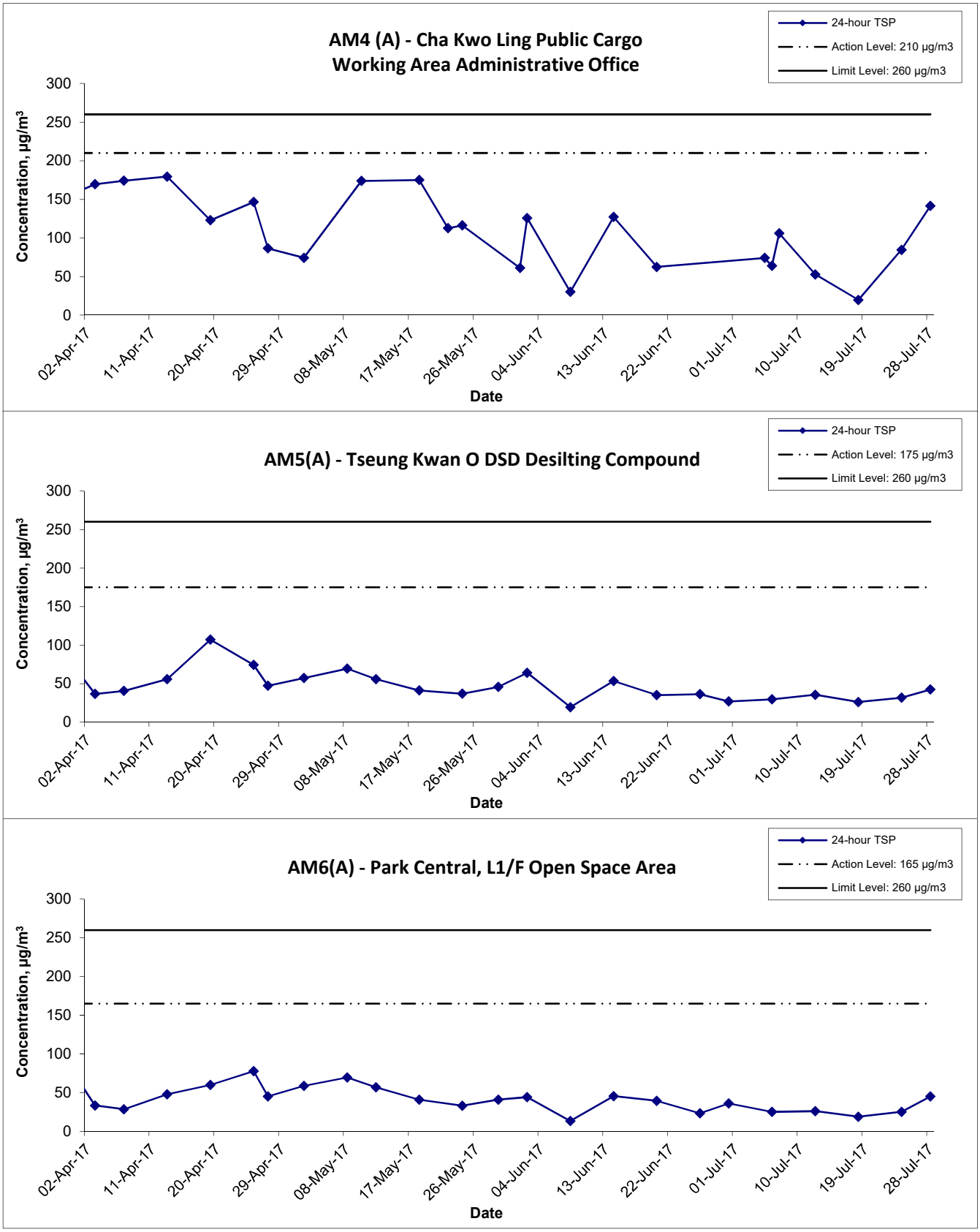
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
6-Jul-17	Cloudy	302.1	758.6	2.8673	2.9116	0.0443	15467.8	15491.8	24.0	1.22	1.22	1.22	1762.5	25.1
12-Jul-17	Cloudy	301.5	758.7	3.2886	3.3347	0.0461	15491.8	15515.8	24.0	1.23	1.22	1.23	1764.4	26.1
18-Jul-17	Cloudy	297.6	762.3	2.8864	2.9200	0.0336	15515.8	15539.8	24.0	1.24	1.24	1.24	1780.5	18.9
24-Jul-17	Sunny	300.4	757.1	2.8215	2.8659	0.0444	15539.8	15563.8	24.0	1.23	1.23	1.23	1765.8	25.1
28-Jul-17	Sunny	303.5	756.7	2.8546	2.9335	0.0789	15563.8	15587.8	24.0	1.22	1.22	1.22	1756.0	44.9
													Min	18.9
													Max	44.9
													Average	28.0

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		Scale	Project No.
	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	N.T.S	MA16034
		Date: Jul 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-Jul-17	11:00	Cloudy	69.4	72.0	67.9	65.5	67.1
6-Jul-17	14:45	Cloudy	71.3	73.4	67.4		70.0
11-Jul-17	14:35	Sunny	73.8	76.7	70.8		73.1
13-Jul-17	09:24	Sunny	69.7	71.2	67.7		67.6
17-Jul-17	15:15	Cloudy	69.8	73.4	66.2		67.8
18-Jul-17	09:30	Cloudy	73.8	76.7	68.5		73.1
24-Jul-17	13:00	Sunny	71.7	74.3	67.6		70.5
26-Jul-17	10:00	Sunny	72.6	74.8	69.0		71.7

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}
5-Jul-17	13:15	Cloudy	74.4	76.6	71.3	63.6	74.0
11-Jul-17	13:05	Sunny	74.1	77.2	70.8		73.7
17-Jul-17	14:30	Sunny	69.4	72.3	66.8		68.1
26-Jul-17	09:00	Sunny	71.7	74.3	68.2		71.0

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}
6-Jul-17	10:45	Cloudy	72.3	74.9	69.1	65.6	71.3
11-Jul-17	10:30	Sunny	74.0	76.2	69.3		73.3
18-Jul-17	10:30	Cloudy	73.3	75.4	69.6		72.5
24-Jul-17	13:45	Sunny	71.8	73.5	69.5		70.6

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}
5-Jul-17	09:55	Cloudy	60.8	64.3	54.1	62.0	60.8 Measured $\leqq$ Baseline
11-Jul-17	09:05	Sunny	73.7	76.4	71.1		73.4
17-Jul-17	09:00	Cloudy	65.0	65.4	59.8		62.0
26-Jul-17	14:15	Sunny	61.8	64.3	57.0		61.8

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}
6-Jul-17	11:30	Cloudy	69.4	71.9	66.1	68.2	63.2
11-Jul-17	10:30	Sunny	69.2	71.6	65.7		62.3
18-Jul-17	11:30	Cloudy	68.9	70.3	65.2		60.6
24-Jul-17	16:30	Sunny	69.7	71.2	63.2		64.4

Appendix G - Noise Monitoring Results

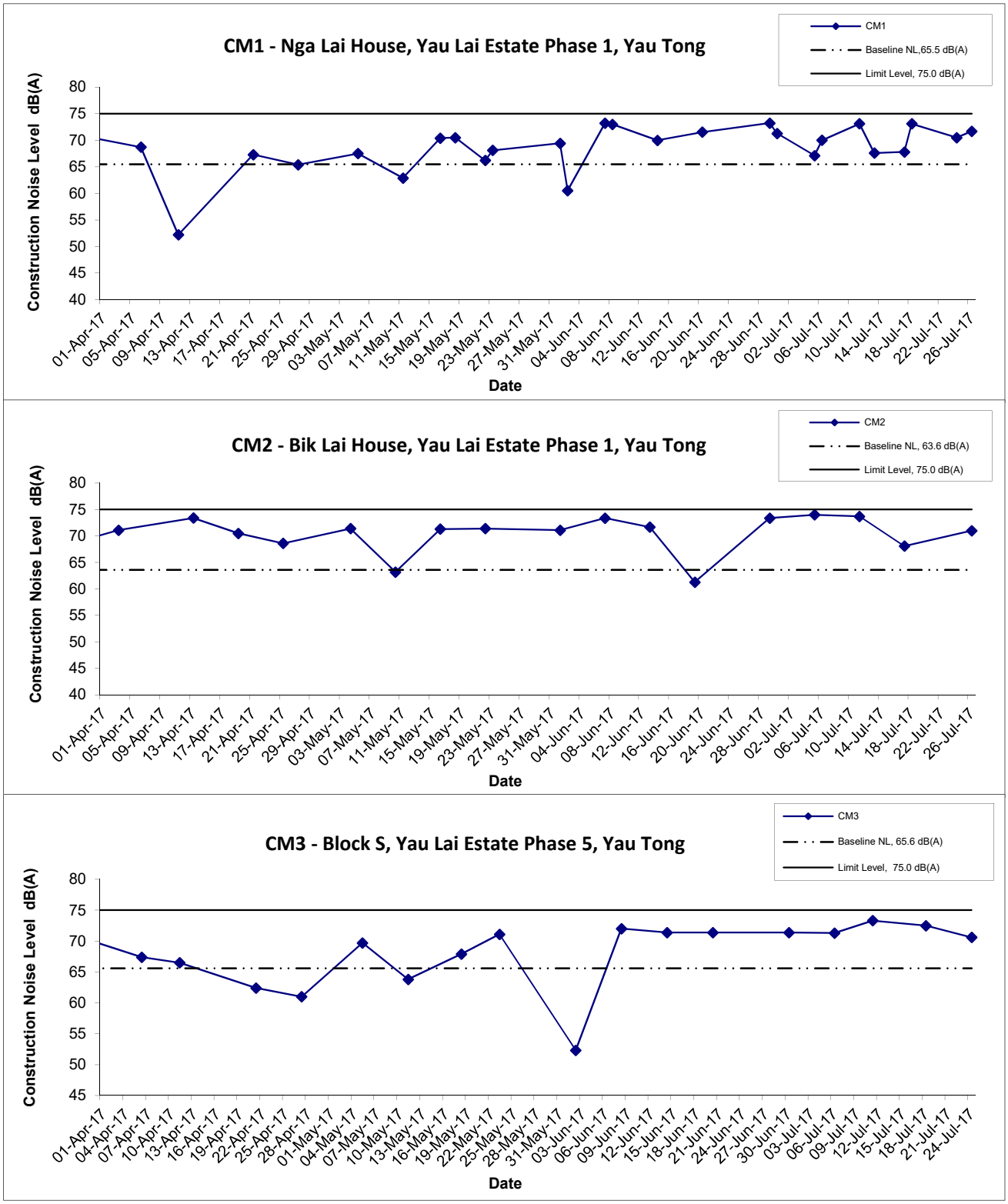
(0700-1900 hrs on Normal Weekdays)

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}
6-Jul-17	13:00	Cloudy	68.3	71.2	61.4	61.9	67.2
7-Jul-17	14:15	Cloudy	67.4	69.4	61.2		66.0
11-Jul-17	09:30	Sunny	71.7	73.2	69.2		71.2
13-Jul-17	15:40	Sunny	70.3	71.7	68.2		69.6
18-Jul-17	10:00	Cloudy	69.2	70.4	66.9		68.3
19-Jul-17	14:50	Sunny	61.8	62.9	60.1		61.8 Measured ≦ Baseline
24-Jul-17	15:15	Sunny	73.1	77.0	66.5		72.8
25-Jul-17	14:55	Sunny	70.4	71.9	68.3		69.7
31-Jul-17	13:25	Cloudy	68.4	70.8	65.3		67.3

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}
6-Jul-17	13:45	Cloudy	70.1	71.5	67.8	58.3	69.8
7-Jul-17	13:20	Cloudy	68.2	70.4	65.4		67.7
11-Jul-17	09:30	Sunny	68.2	69.9	65.1		67.7
13-Jul-17	14:45	Sunny	67.8	72.1	62.4		67.3
18-Jul-17	11:00	Cloudy	70.3	73.2	63.4		70.0
19-Jul-17	14:00	Sunny	64.3	65.9	63.3		63.0
24-Jul-17	15:15	Sunny	71.0	74.2	63.2		70.8
25-Jul-17	14:45	Sunny	74.3	77.7	66.2		74.2
31-Jul-17	14:05	Cloudy	69.3	71.2	66.4		68.9

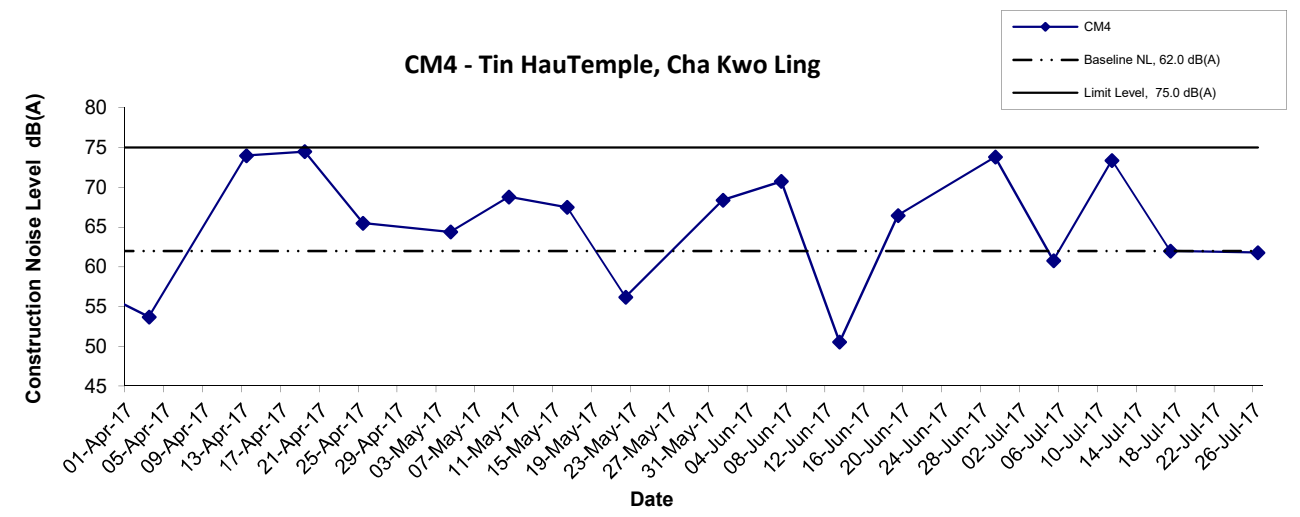
Location CM8(A) - Park Central, L1/F Open Space Area							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
7-Jul-17	13:10	Cloudy	65.8	68.9	62.0	69.1	65.8 Measured ≦ Baseline
13-Jul-17	13:30	Cloudy	64.2	67.0	59.9		64.2 Measured ≦ Baseline
19-Jul-17	15:40	Sunny	65.0	67.6	60.3		65.0 Measured ≦ Baseline
25-Jul-17	13:30	Sunny	66.4	69.4	59.6		66.4 Measured ≦ Baseline
31-Jul-17	15:15	Cloudy	64.1	66.7	60.8		64.1 Measured ≦ Baseline

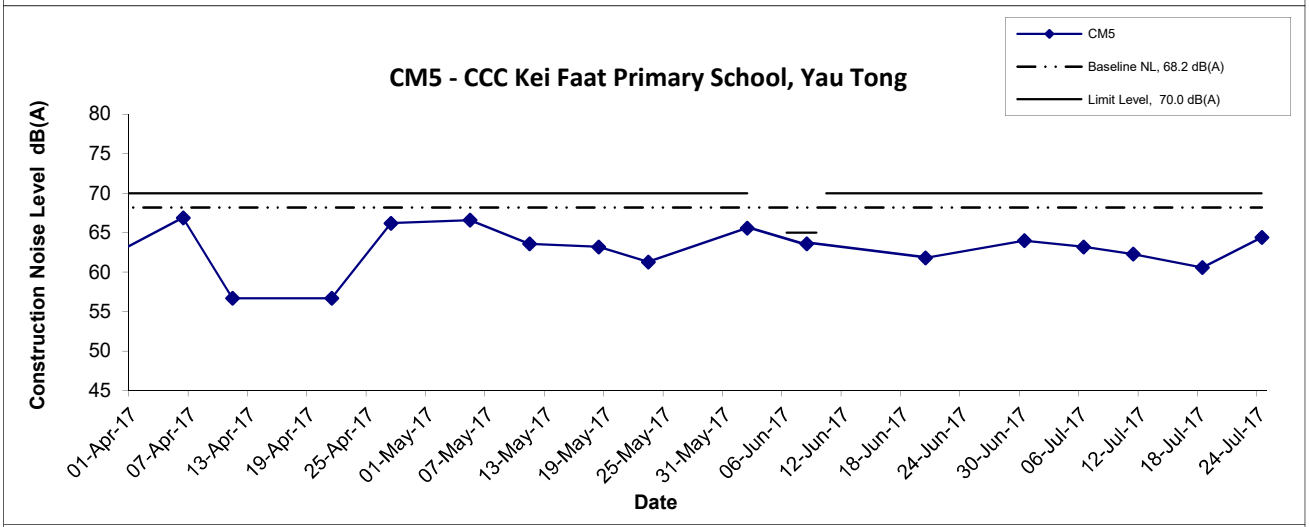
Noise Levels

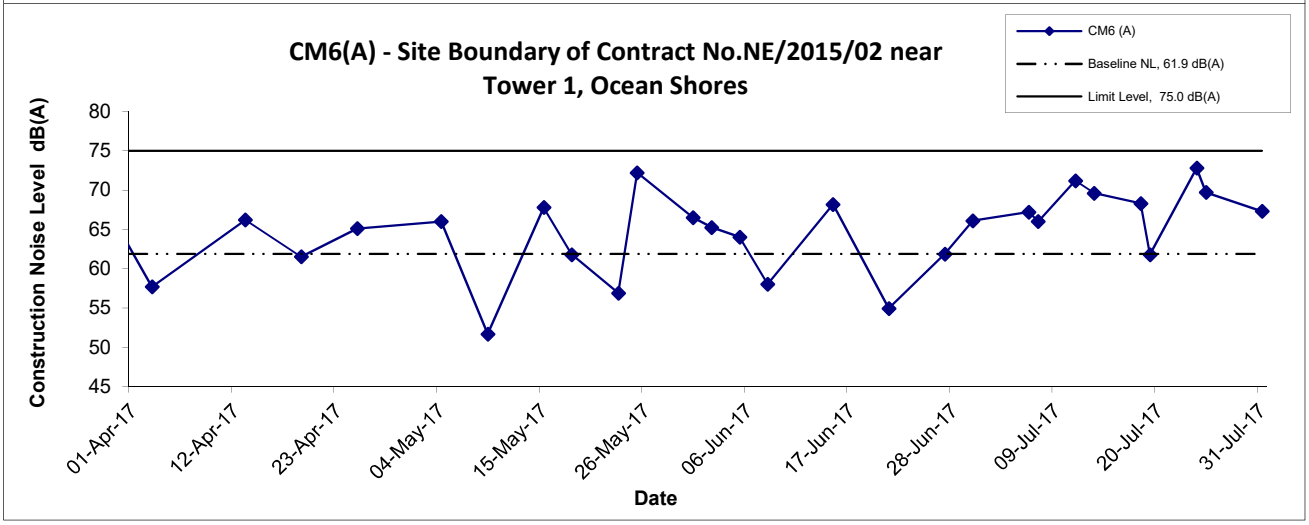


Title	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S Date Jul 17	Project No. MA16034 Appendix G	CINOTECH

Noise Levels

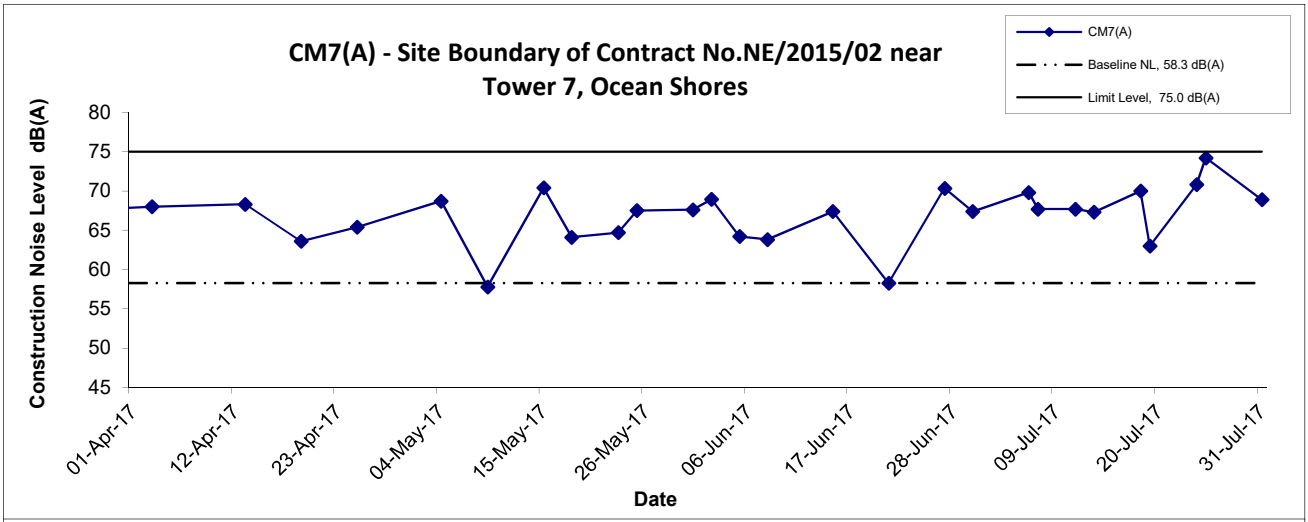


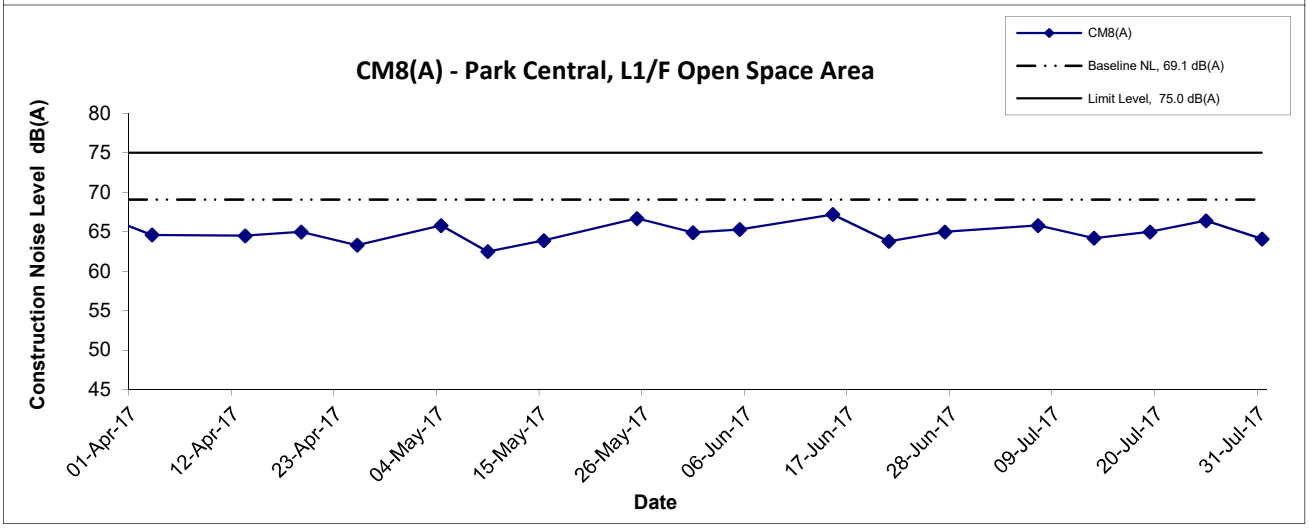




Title	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
		Date Jul 17	Appendix G	

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 Date: Jul 17	Project No.: MA16034 Appendix: G	CINOTECH

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
7-Jul-17	Rainy	13:03	Middle	26.2 26.3	26.3	7.4 7.4	7.4	0.1 0.1	0.1	91.1 88.1	89.6	7.9 7.6	7.8	0.4 0.4	0.4
18-Jul-17	Rainy	13:07	Middle	24.8 24.8	24.8	7.6 7.6	7.6	0.4 0.4	0.4	99.3 99.3	99.3	8.0 8.0	8.0	1.5 1.5	1.5

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
7-Jul-17	Rainy	14:15	Middle	25.9 25.9	25.9	7.5 7.5	7.5	0.1 0.1	0.1	70.9 74.7	72.8	7.8 7.8	7.8	0.8 0.9	0.9
18-Jul-17	Rainy	13:15	Middle	24.6 24.5	24.6	7.6 7.6	7.6	0.1 0.1	0.1	98.9 98.9	98.9	8.0 8.0	8.0	1.4 1.5	1.5

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
7-Jul-17	Rainy	14:06	Middle	25.8 25.8	25.8	7.3 7.3	7.3	0.1 0.1	0.1	90.9 90.9	90.9	7.9 7.9	7.9	1.5 1.5	1.5
18-Jul-17	Rainy	14:32	Middle	24.4 24.4	24.4	7.6 7.6	7.6	0.1 0.1	0.1	98.2 98.1	98.2	8.0 8.0	8.0	1.6 1.6	1.6

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	07-Jul-17	7.4	7.8	0.4	0.8	<2	3	1.5	<0.05	<0.05
	18-Jul-17	7.6	8	1.5	1.9	<2	7	1	<0.05	<0.05
Stream 2	07-Jul-17	7.5	7.8	0.9	2.7	<2	4	1.5	0.05	<0.05
	18-Jul-17	7.6	8	1.5	6.5	<2	6	1.4	<0.05	<0.05
Stream 3	07-Jul-17	7.3	7.9	1.5	0.9	<2	2	1.5	<0.05	<0.05
	18-Jul-17	7.6	8	1.6	10	<2	5	1.9	<0.05	<0.05

WELLAB 匯力 Testing & Research

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TEST REPORT

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

Report No.:	27158
Date of Issue:	2017-07-17
Date Received:	2017-07-07
Date Tested:	2017-07-07
Date Completed:	2017-07-17

ATTN: **Ms. Mei Ling Tang** Page: 1 of 1

Sample Description : 3 liquid samples as received from client said to be groundwater
Laboratory No. : 27158
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)/170707
Sampling Date : 2017-07-07

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.	27158-1	27158-2	27158-3
Total Suspended Solids (mg/L)	0.8	2.7	0.9
Biochemical Oxygen Demand (mg O_2/L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	3	4	2
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	1.5	1.5	1.5
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

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TEST REPORT

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

ATTN: **Ms. Mei Ling Tang**

Report No.:	27205
Date of Issue:	2017-07-28
Date Received:	2017-07-18
Date Tested:	2017-07-18
Date Completed:	2017-07-28
Page:	1 of 1

Sample Description : 3 liquid samples as received from client said to be groundwater
Laboratory No. : 27205
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)/170718
Sampling Date : 2017-07-18

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.	27205-1	27205-2	27205-3
Total Suspended Solids (mg/L)	1.9	6.5	10
Biochemical Oxygen Demand (mg O_2/L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	7	6	5
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	1.0	1.4	1.9
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

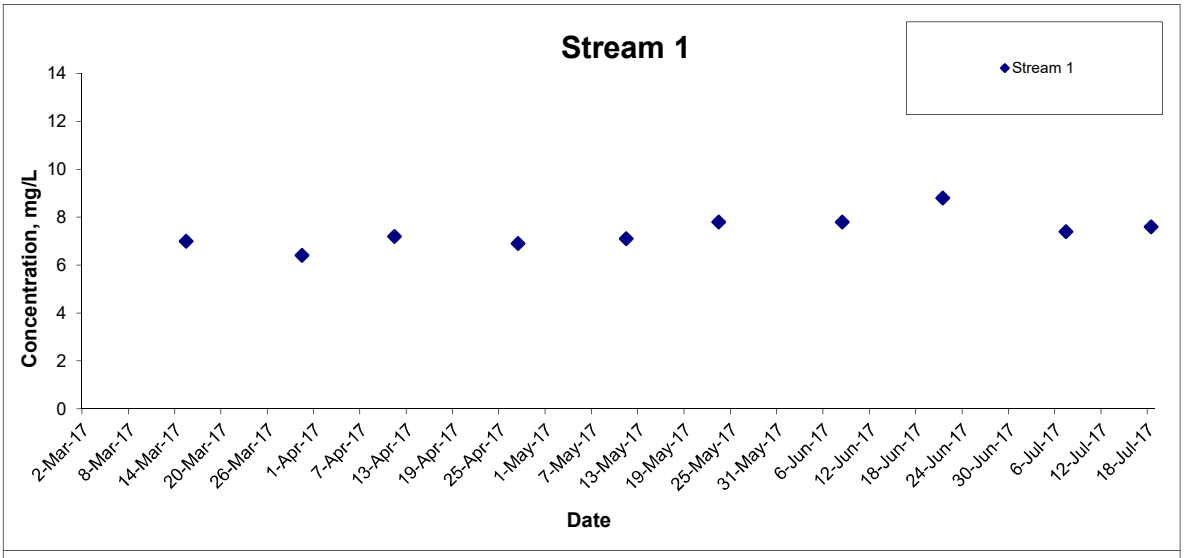
**********END OF REPORT**********

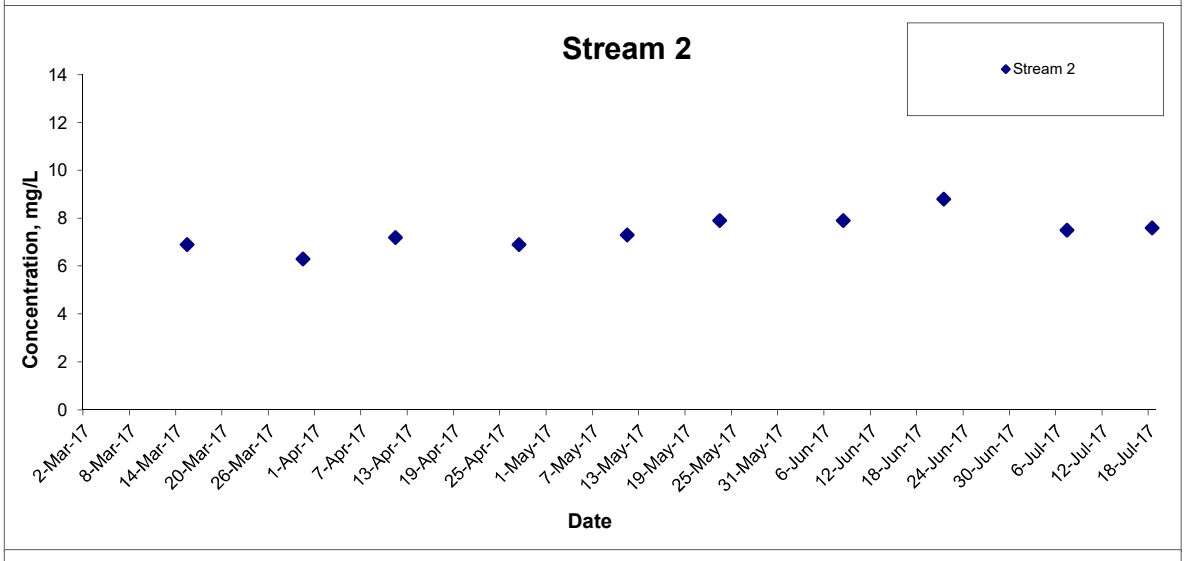
PREPARED AND CHECKED BY:

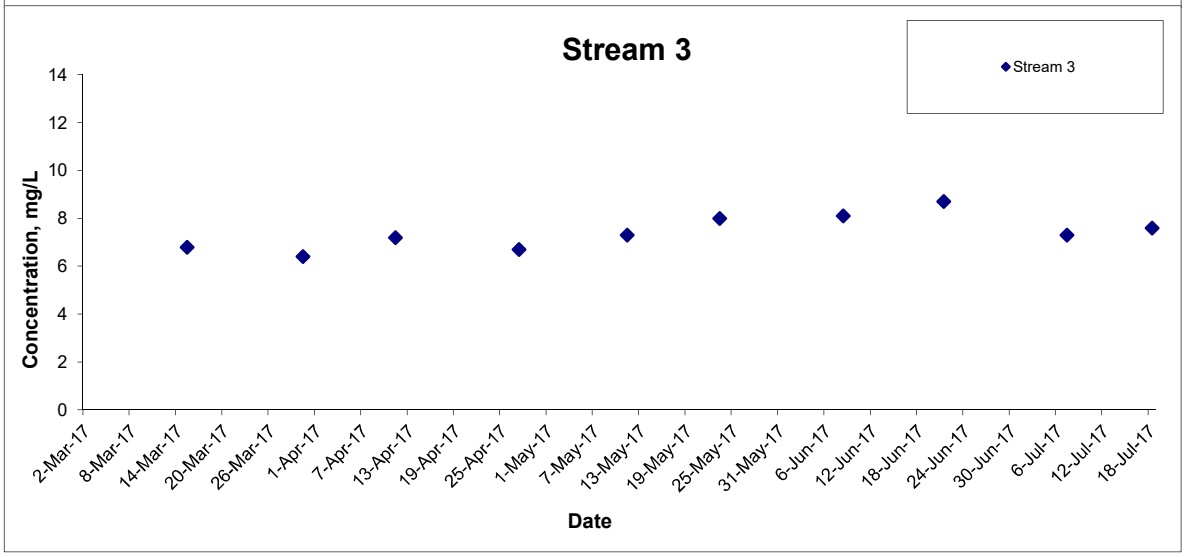
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

pH

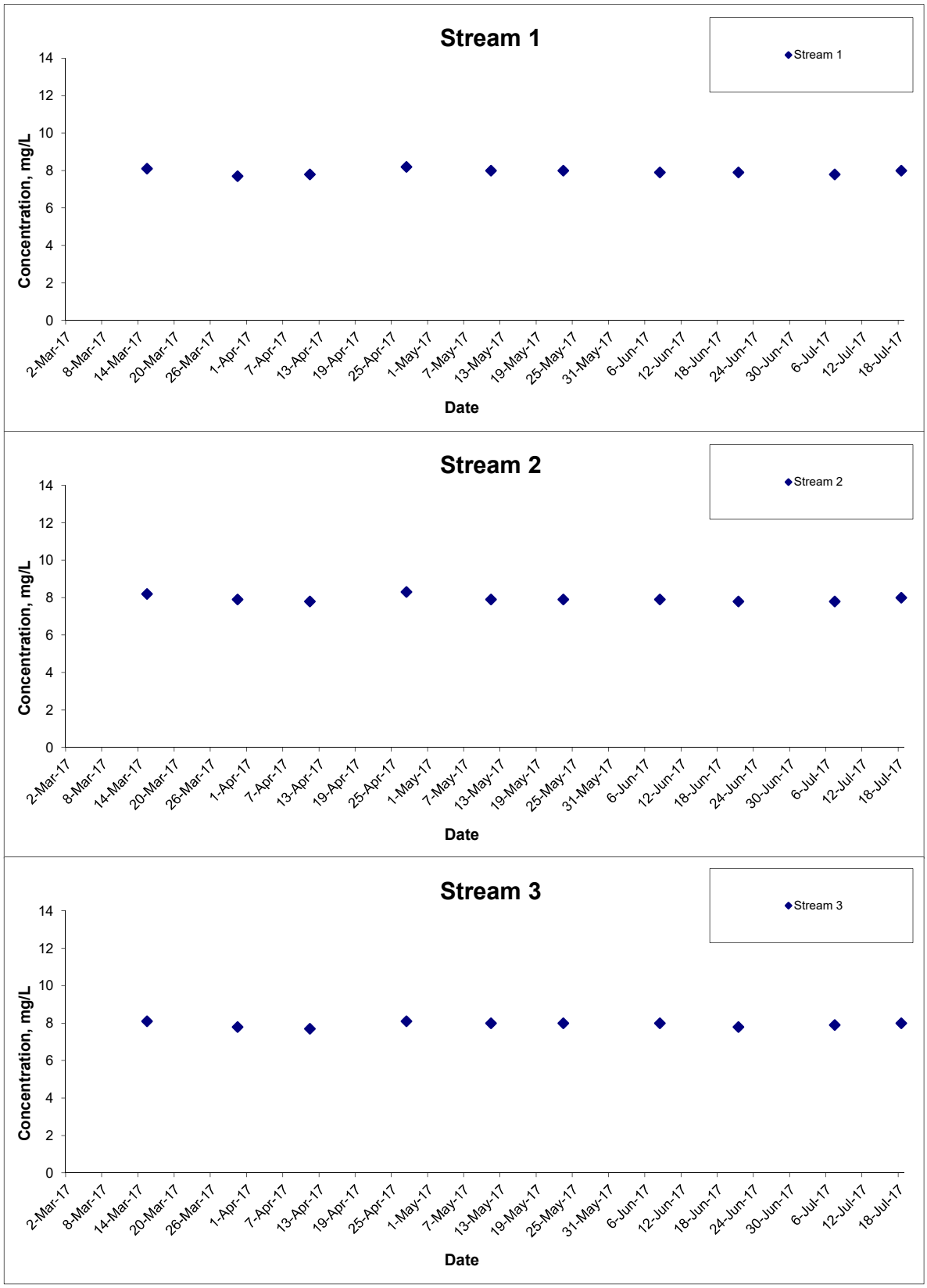






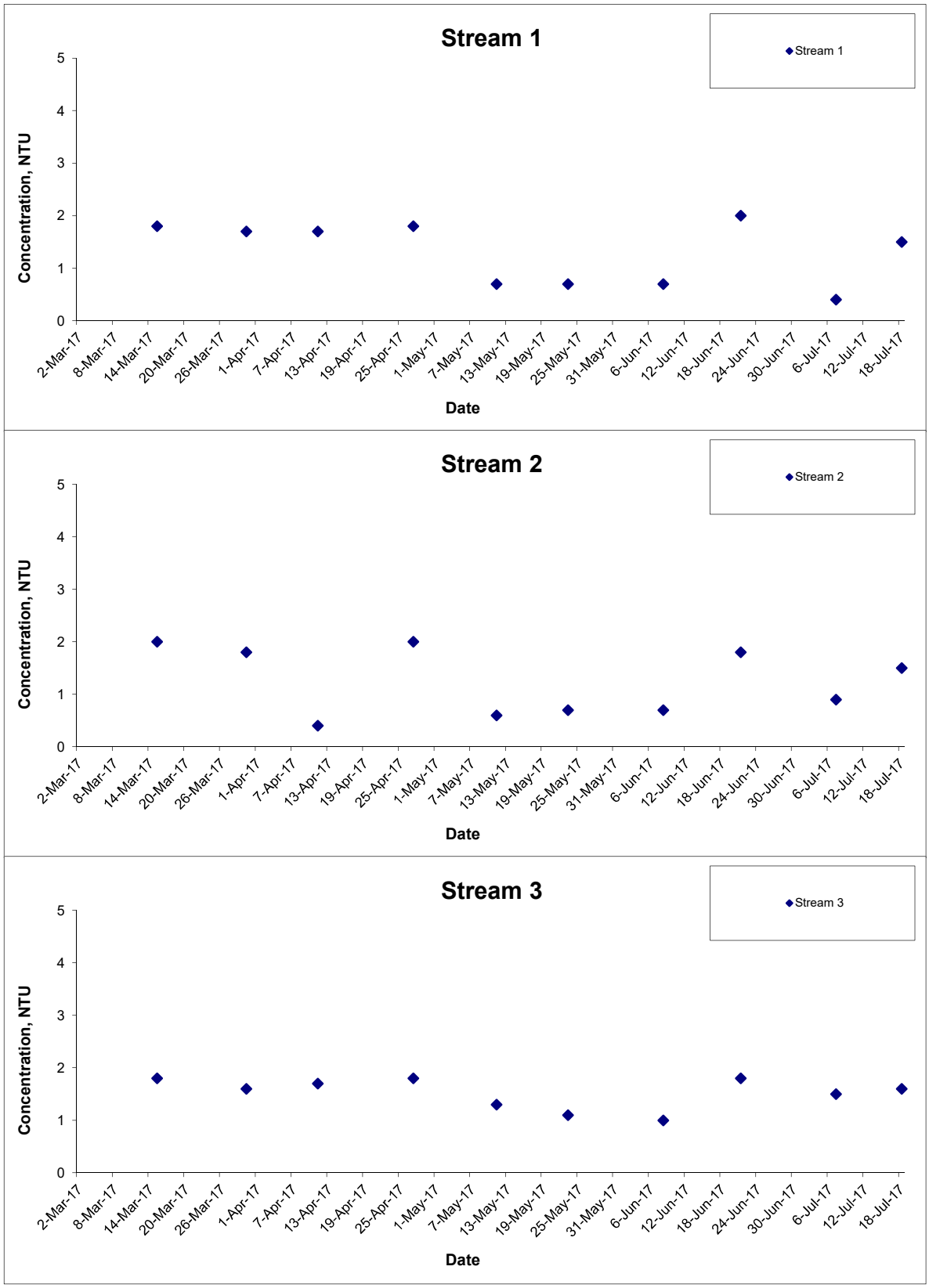
Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jul 17	Appendix: H	

Dissolved Oxygen



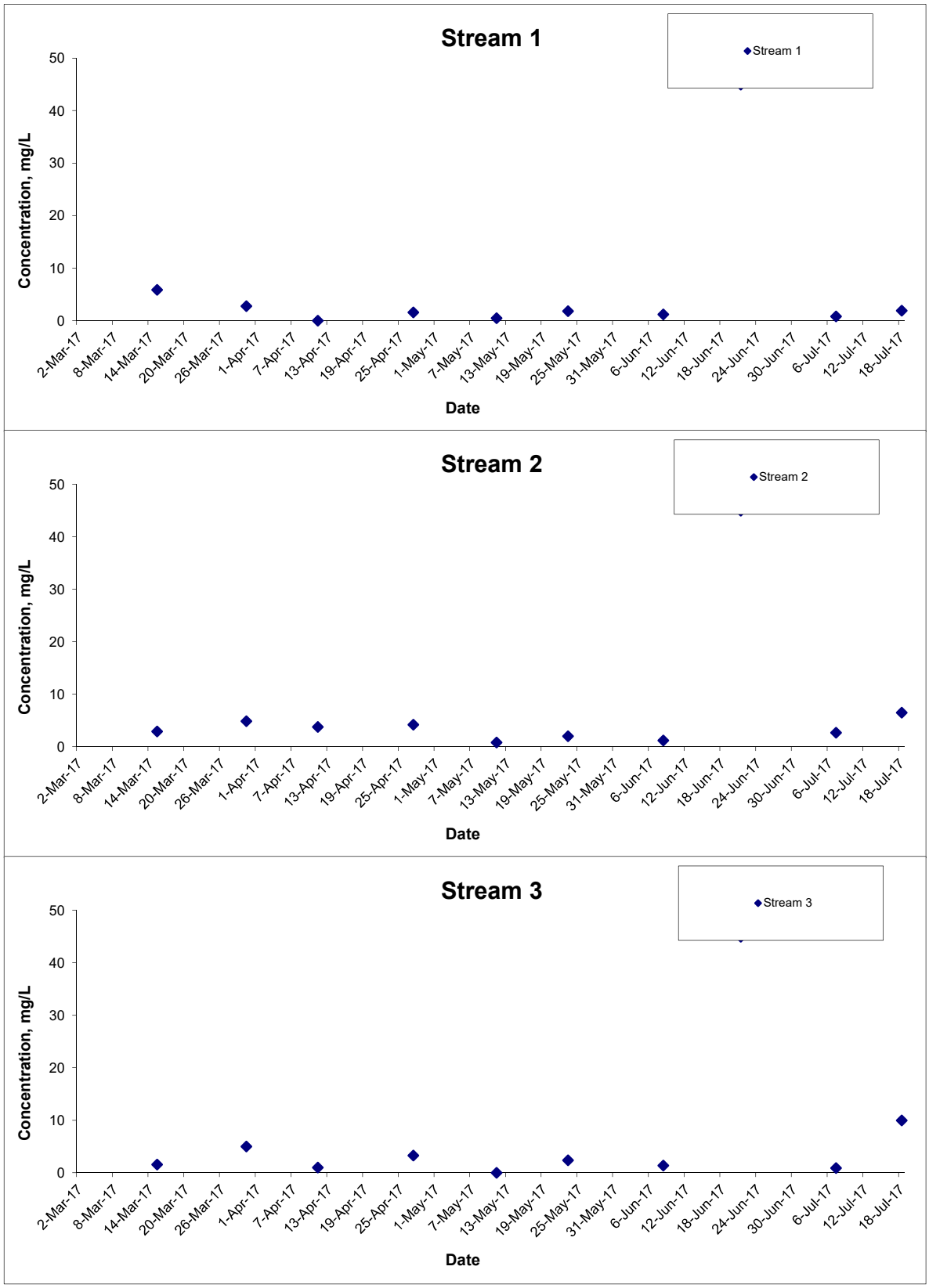
Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jul 17	Appendix: H	

Turbidity



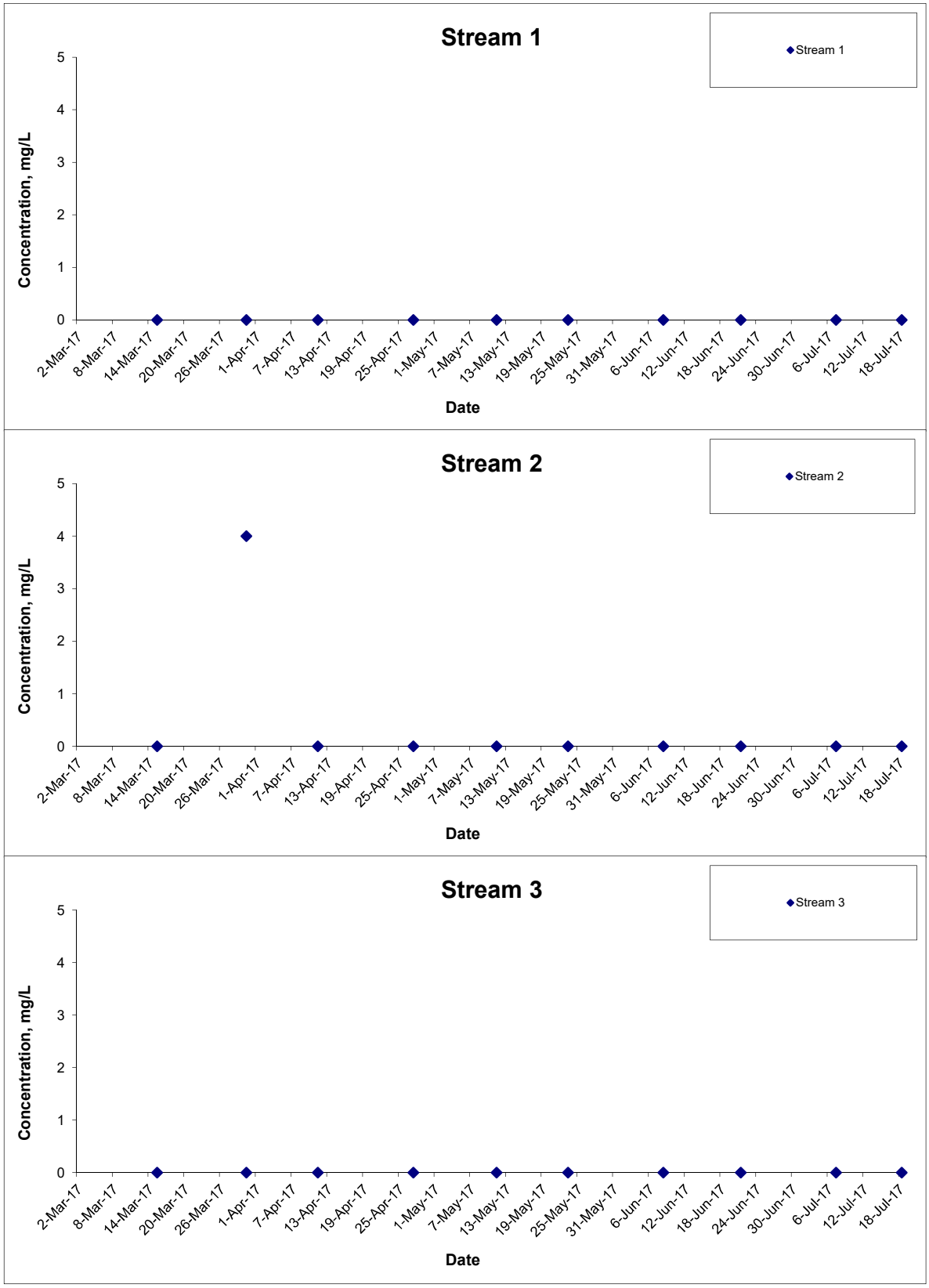
Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jul 17	Appendix: H	

Suspended Solids



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jul 17	Appendix: H	

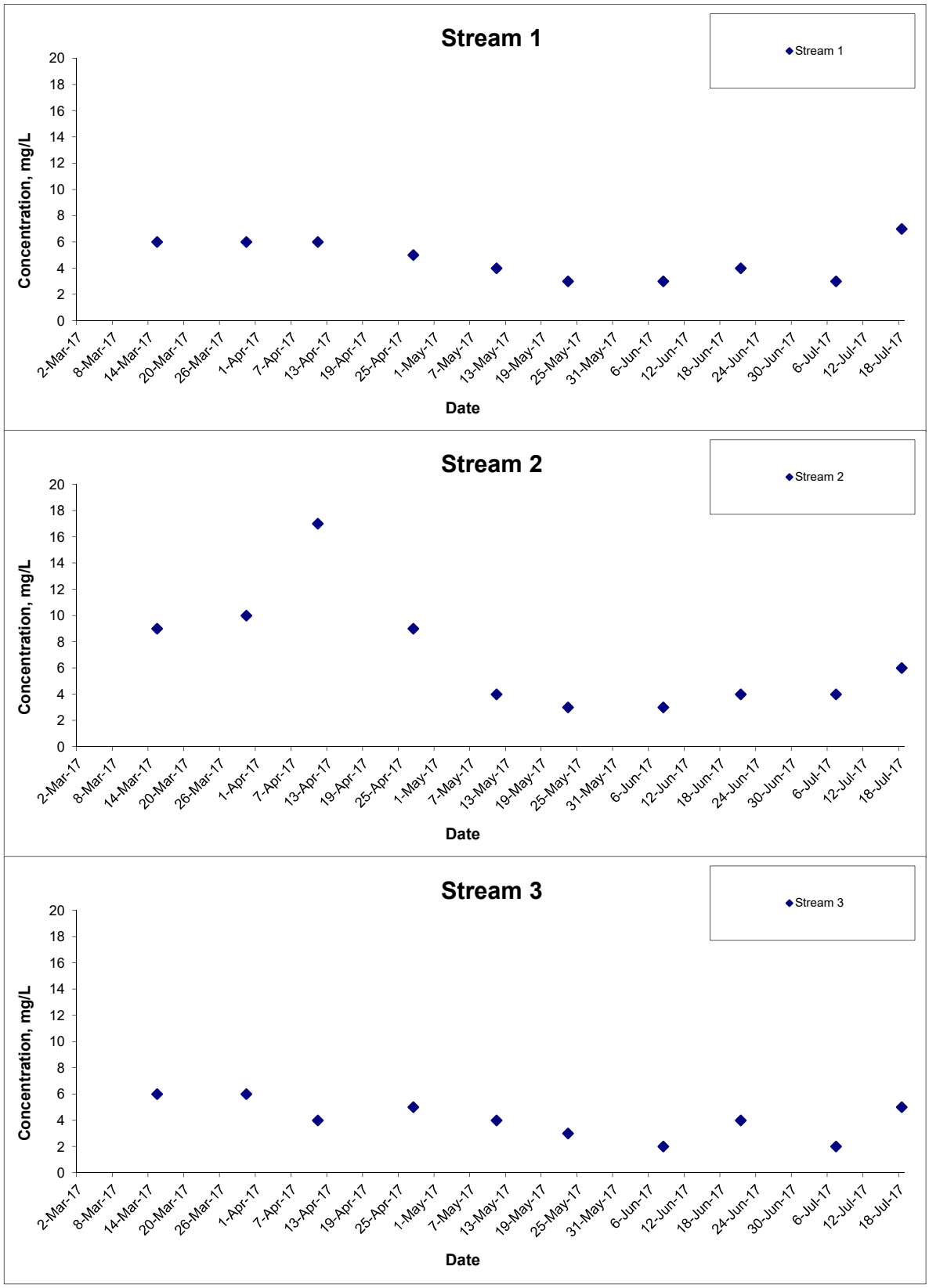
5-day Biochemical Oxygen Demand (BOD_5)



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

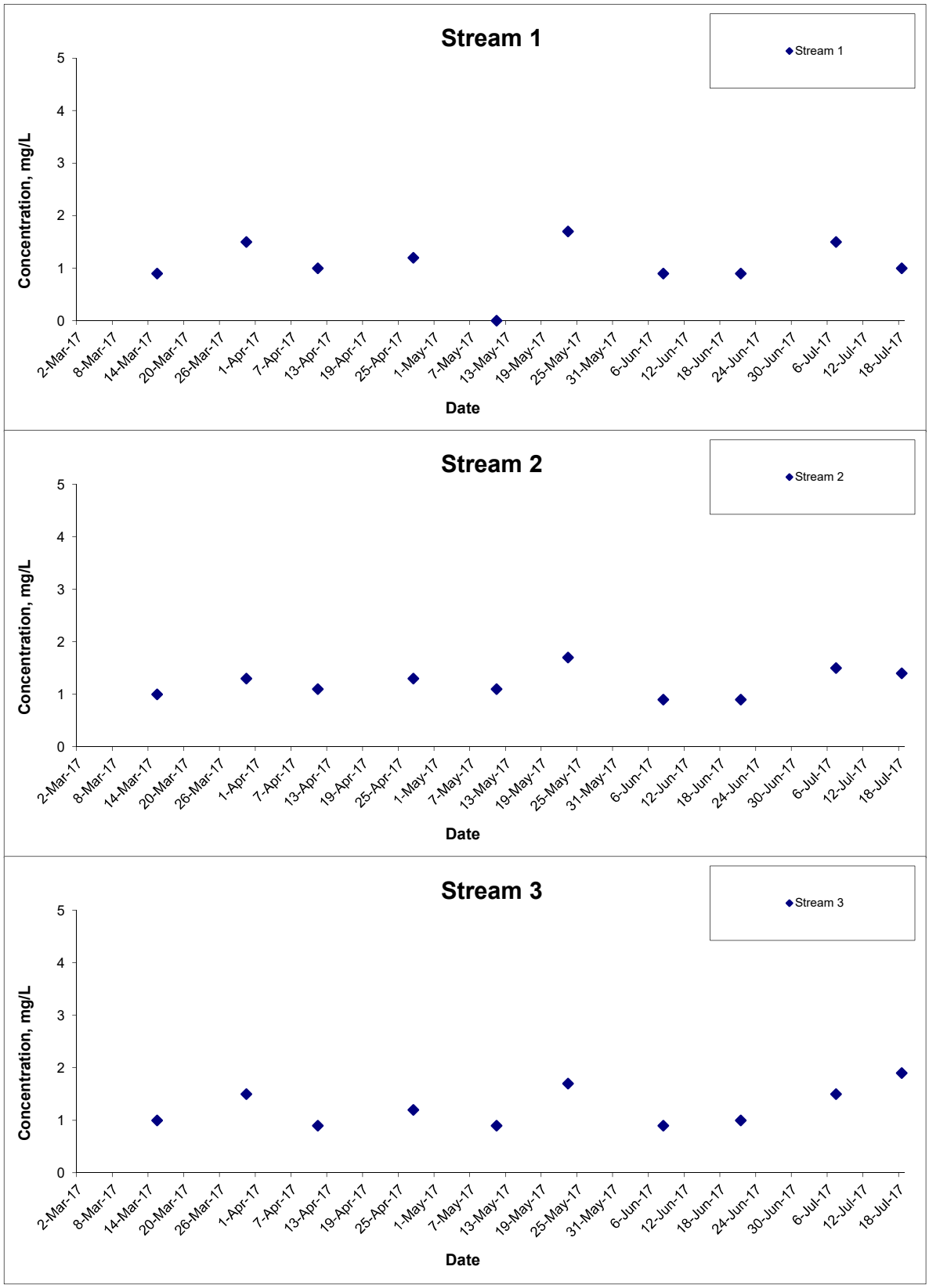
Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jul 17	Appendix: H	

Total Organic Carbon (TOC)



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jul 17	Appendix: H	

Total Nitrogen



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

Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
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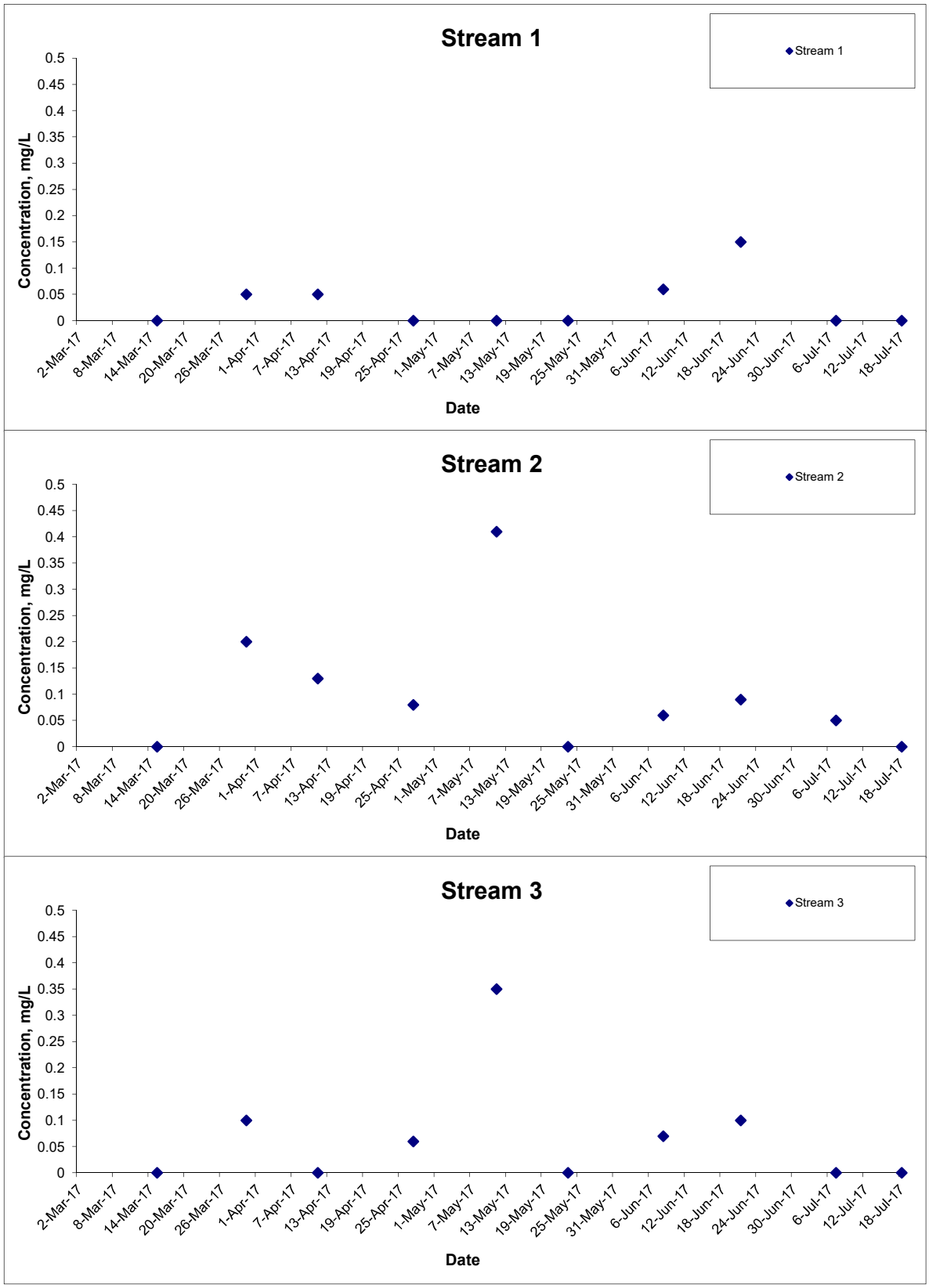
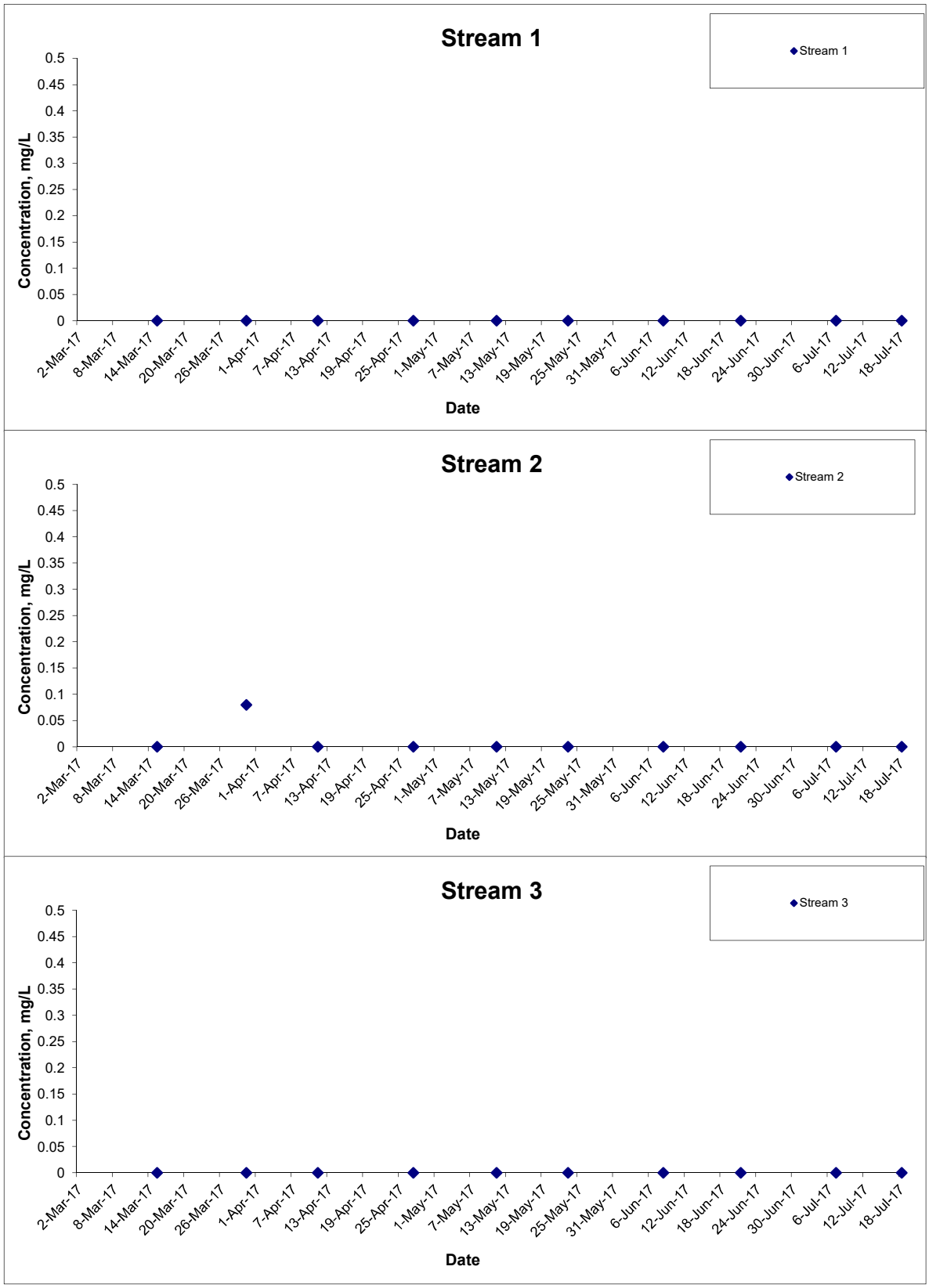
Ammonia-Nitrogen



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

Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jul 17	Appendix: H	

Total Phosphate



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

Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jul 17	Appendix: H	

APPENDIX I
MARINE WATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix I - Action and Limit Levels for Marine Water Quality on 3 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 03 July 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	10:20	Surface	1	25.5 25.1	25.3	8.4 8.4	8.4	27.4 27.4	27.4	95.2 92.6	93.9	6.7 6.5	6.6	5.8	2.0 2.1	2.1	2.7	4.9 5.0	5.0	6.1
				Middle	10	25.5 24.9	25.2	8.4 8.4	8.4	28.5 28.4	28.5	68.7 69.5	69.1	4.8 4.9	4.9		2.5 2.4	2.5		6.9 6.9	6.9	
				Bottom	19	25.1 25.0	25.1	8.4 8.5	8.5	29.2 29.0	29.1	65.9 67.9	66.9	4.6 4.8	4.7	4.7	3.5 3.5	3.5		6.3 6.5	6.4	
C2	Cloudy	Moderate	08:25	Surface	1	25.2 24.6	24.9	8.4 8.3	8.4	28.6 28.6	28.6	89.6 93.5	91.6	6.3 6.6	6.5	5.8	2.3 2.4	2.4	3.9	5.5 5.8	5.7	5.4
				Middle	17.5	25.2 24.5	24.9	8.3 8.3	8.3	28.8 28.8	28.8	68.6 71.9	70.3	4.8 5.1	5.0		3.9 3.5	3.7		4.6 4.7	4.7	
				Bottom	34	24.6 24.4	24.5	8.4 8.4	8.4	29.0 29.1	29.1	62.5 63.0	62.8	4.4 4.5	4.5	4.5	5.5 5.8	5.7		5.9 5.7	5.8	
G1	Cloudy	Moderate	09:14	Surface	1	25.0 24.9	25.0	8.4 8.4	8.4	28.9 28.9	28.9	85.9 82.8	84.4	6.0 5.8	5.9	5.5	2.7 3.1	2.9	3.0	5.3 5.2	5.3	4.7
				Middle	4	25.1 24.9	25.0	8.4 8.4	8.4	29.2 29.3	29.3	67.2 75.3	71.3	4.7 5.3	5.0		3.0 2.9	3.0		4.6 4.7	4.7	
				Bottom	7	24.9 24.9	24.9	8.4 8.4	8.4	29.5 29.5	29.5	67.1 68.4	67.8	4.7 4.8	4.8	4.8	3.1 3.3	3.2		4.2 4.2	4.2	
G2	Cloudy	Moderate	08:55	Surface	1	24.9 24.9	24.9	8.5 8.4	8.5	29.0 29.0	29.0	89.4 94.1	91.8	6.3 6.6	6.5	5.8	2.2 2.7	2.5	4.0	5.5 5.7	5.6	6.5
				Middle	5	24.9 24.9	24.9	8.4 8.4	8.4	29.3 29.2	29.3	68.5 72.5	70.5	4.8 5.1	5.0		3.9 3.9	3.9		7.9 8.0	8.0	
				Bottom	9	24.9 24.9	24.9	8.5 8.5	8.5	30.0 29.8	29.9	63.2 63.8	63.5	4.4 4.5	4.5	4.5	5.4 5.6	5.5		5.9 5.9	5.9	
G3	Cloudy	Moderate	09:24	Surface	1	24.6 24.6	24.6	8.4 8.4	8.4	29.4 29.4	29.4	86.3 86.3	86.3	6.1 6.1	6.1	5.7	2.3 2.0	2.2	2.6	5.7 5.7	5.7	6.1
				Middle	4	24.6 24.5	24.6	8.4 8.4	8.4	29.4 29.4	29.4	75.3 74.9	75.1	5.3 5.3	5.3		2.5 2.3	2.4		7.3 7.6	7.5	
				Bottom	7	24.6 24.5	24.6	8.4 8.4	8.4	29.4 29.4	29.4	76.2 77.6	76.9	5.4 5.5	5.5	5.5	3.5 3.1	3.3		5.2 5.0	5.1	
G4	Cloudy	Moderate	09:45	Surface	1	25.5 24.9	25.2	8.4 8.4	8.4	27.4 27.4	27.4	85.3 80.5	82.9	6.0 5.7	5.9	5.5	2.3 1.9	2.1	3.7	5.8 5.6	5.7	6.0
				Middle	4.5	25.5 24.8	25.2	8.4 8.4	8.4	28.4 28.3	28.4	70.7 71.0	70.9	4.9 5.0	5.0		3.5 3.8	3.7		6.0 6.0	6.0	
				Bottom	8	24.9 24.9	24.9	8.4 8.4	8.4	29.0 28.9	29.0	71.4 66.5	69.0	5.0 4.7	4.9	4.9	5.1 5.5	5.3		6.2 6.2	6.2	
M1	Cloudy	Moderate	09:04	Surface	1	24.6 24.6	24.6	8.4 8.5	8.5	29.3 29.3	29.3	83.2 83.6	83.4	5.9 5.9	5.9	5.5	3.0 3.1	3.1	3.1	5.1 5.0	5.1	5.2
				Middle	3	24.6 24.5	24.6	8.4 8.4	8.4	29.5 29.5	29.5	70.9 70.5	70.7	5.0 5.0	5.0		2.5 3.0	2.8		6.1 6.2	6.2	
				Bottom	5	25.5 25.1	25.3	8.4 8.4	8.4	28.0 27.9	28.0	76.3 75.7	76.0	5.3 5.3	5.3	5.3	3.2 3.3	3.3		4.3 4.3	4.3	
M2	Cloudy	Moderate	08:45	Surface	1	25.2 24.6	24.9	8.5 8.4	8.5	27.6 27.6	27.6	82.5 82.1	82.3	5.8 5.8	5.8	5.4	3.1 3.2	3.2	3.3	5.2 5.2	5.2	5.3
				Middle	5.5	25.2 24.5	24.9	8.4 8.5	8.5	28.8 28.8	28.8	70.6 70.2	70.4	4.9 5.0	5.0		2.9 3.1	3.0		5.0 5.0	5.0	
				Bottom	10	24.6 24.4	24.5	8.5 8.4	8.5	29.0 29.1	29.1	62.5 61.8	62.2	4.4 4.4	4.4	4.4	3.6 3.5	3.6		5.8 5.8	5.8	
M3	Cloudy	Moderate	09:33	Surface	1	25.5 25.1	25.3	8.4 8.4	8.4	27.2 27.1	27.2	80.0 81.9	81.0	5.6 5.8	5.7	5.2	1.7 1.8	1.8	2.9	5.4 5.5	5.5	6.1
				Middle	4	25.5 24.9	25.2	8.4 8.4	8.4	27.8 27.8	27.8	63.6 67.1	65.4	4.5 4.7	4.6		3.1 3.3	3.2		6.1 6.1	6.1	
				Bottom	7	25.1 24.9	25.0	8.4 8.4	8.4	28.1 28.2	28.2	64.2 62.8	63.5	4.5 4.4	4.5	4.5	3.5 3.9	3.7		6.7 6.5	6.6	
M4	Cloudy	Moderate	08:35	Surface	1	24.6 24.5	24.6	8.4 8.4	8.4	29.4 29.4	29.4	91.0 89.6	90.3	6.4 6.3	6.4	5.8	2.2 2.7	2.5	4.0	5.1 5.0	5.1	5.4
				Middle	4.5	24.6 24.0	24.3	8.5 8.4	8.5	29.4 29.4	29.4	72.3 71.8	72.1	5.1 5.1	5.1		3.9 3.9	3.9		6.1 6.2	6.2	
				Bottom	8	24.5 24.0	24.3	8.4 8.4	8.4	30.3 30.3	30.3	70.5 69.5	70.0	4.9 4.9	4.9	4.9	5.4 5.6	5.5		4.9 4.8	4.9	
M5	Cloudy	Moderate	10:10	Surface	1	25.4 25.1	25.3	8.4 8.4	8.4	27.4 27.4	27.4	77.0 82.4	79.7	5.4 5.8	5.6	5.3	2.3 2.4	2.4	3.4	5.6 5.7	5.7	5.6
				Middle	6	25.4 24.9	25.2	8.4 8.4	8.4	28.4 28.4	28.4	66.8 71.7	69.3	4.7 5.1	4.9		2.7 3.1	2.9		6.2 6.3	6.3	
				Bottom	11	25.1 24.9	25.0	8.4 8.4	8.4	29.1 29.1	29.1	68.9 63.7	66.3	4.8 4.5	4.7	4.7	4.9 5.1	5.0		4.7 4.8	4.8	
M6	Cloudy	Moderate	09:58	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.4	- -	-	2.9	- -	-	6.7
				Middle	2	25.6 25.1	25.4	8.4 8.4	8.4	27.1 27.2	27.2	77.0 76.0	76.5	5.4 5.4	5.4		2.9 2.8	2.9		6.7 6.7	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 3 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.2 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 03 July 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	16:06	Surface	1	25.2 25.0	25.1	8.4 8.4	8.4	28.1 28.1	28.1	87.5 89.9	88.7	6.2 6.3	6.3	5.6	3.6 3.2	3.4	3.9	5.6 5.8	5.7	6.0
				Middle	9.5	25.2 24.9	25.1	8.4 8.4	8.4	28.2 28.2	28.2	69.2 69.6	69.4	4.9 4.9	4.9		3.5 3.7	3.6		6.4 6.3	6.4	
				Bottom	18	25.0 24.9	25.0	8.4 8.4	8.4	28.3 28.3	28.3	68.3 68.3	68.3	4.8 4.8	4.8	4.8	4.6 4.7	4.7		5.9 6.0	6.0	
C2	Cloudy	Moderate	14:10	Surface	1	24.8 24.8	24.8	8.4 8.4	8.4	28.4 28.4	28.4	83.8 85.0	84.4	5.9 6.0	6.0	5.5	2.2 2.1	2.2	3.2	4.6 4.5	4.6	5.3
				Middle	18	24.9 24.8	24.9	8.4 8.4	8.4	28.4 28.4	28.4	69.9 69.9	69.9	4.9 4.9	4.9		2.4 2.7	2.6		6.0 5.9	6.0	
				Bottom	35	24.8 24.8	24.8	8.4 8.4	8.4	28.4 28.4	28.4	69.6 69.6	69.6	4.9 4.9	4.9	4.9	4.9 4.7	4.8		5.3 5.3	5.3	
G1	Cloudy	Moderate	14:58	Surface	1	24.8 24.7	24.8	8.4 8.4	8.4	28.1 28.1	28.1	83.5 84.2	83.9	5.9 6.0	6.0	5.5	3.1 2.9	3.0	3.8	5.4 5.4	5.4	5.8
				Middle	4	24.8 24.5	24.7	8.4 8.4	8.4	28.2 28.2	28.2	67.3 68.4	67.9	4.8 4.9	4.9		3.3 3.6	3.5		6.2 6.3	6.3	
				Bottom	7	24.7 24.5	24.6	8.4 8.4	8.4	28.4 28.4	28.4	67.7 68.7	68.2	4.8 4.9	4.9	4.9	4.7 4.8	4.8		5.8 5.6	5.7	
G2	Cloudy	Moderate	14:39	Surface	1	24.8 24.8	24.8	8.4 8.4	8.4	28.7 28.6	28.7	82.5 83.1	82.8	5.8 5.9	5.9	5.4	3.1 3.0	3.1	3.6	5.7 6.0	5.9	5.2
				Middle	4.5	24.8 24.7	24.8	8.4 8.4	8.4	28.7 28.7	28.7	69.3 68.2	68.8	4.9 4.8	4.9		3.6 3.5	3.6		5.0 5.0	5.0	
				Bottom	8	24.8 24.7	24.8	8.4 8.4	8.4	29.1 29.1	29.1	65.4 64.2	64.8	4.6 4.5	4.6	4.6	4.1 4.1	4.1		4.5 4.6	4.6	
G3	Cloudy	Moderate	15:08	Surface	1	24.8 24.8	24.8	8.3 8.4	8.4	28.1 28.1	28.1	84.3 84.9	84.6	6.0 6.0	6.0	5.4	3.4 3.2	3.3	4.2	4.7 4.9	4.8	5.2
				Middle	4	24.7 24.5	24.6	8.4 8.4	8.4	28.4 28.4	28.4	68.4 68.3	68.4	4.8 4.8	4.8		3.9 4.4	4.2		5.9 5.7	5.8	
				Bottom	7	24.8 24.6	24.7	8.3 8.4	8.4	28.7 28.7	28.7	67.0 66.3	66.7	4.7 4.7	4.7	4.7	5.1 5.1	5.1		4.8 5.0	4.9	
G4	Cloudy	Moderate	15:30	Surface	1	25.2 25.0	25.1	8.3 8.3	8.3	28.1 28.1	28.1	83.8 83.9	83.9	5.9 5.9	5.9	5.4	3.4 2.8	3.1	4.0	5.3 5.4	5.4	5.1
				Middle	4	25.2 25.0	25.1	8.3 8.3	8.3	28.5 28.5	28.5	68.7 68.8	68.8	4.8 4.8	4.8		3.4 3.6	3.5		5.2 5.2	5.2	
				Bottom	7	25.0 25.0	25.0	8.4 8.4	8.4	28.9 28.9	28.9	72.4 72.4	72.4	5.1 5.1	5.1	5.1	5.3 5.6	5.5		4.9 4.7	4.8	
M1	Cloudy	Moderate	14:48	Surface	1	24.8 24.8	24.8	8.4 8.3	8.4	28.4 28.4	28.4	82.7 83.0	82.9	5.8 5.9	5.9	5.4	2.8 3.2	3.0	3.3	5.2 5.2	5.2	6.4
				Middle	3	24.8 24.6	24.7	8.4 8.4	8.4	28.4 28.4	28.4	68.8 68.4	68.6	4.9 4.8	4.9		3.0 3.0	3.0		7.5 7.5	7.5	
				Bottom	5	25.2 25.0	25.1	8.4 8.4	8.4	28.4 28.4	28.4	69.6 70.1	69.9	4.9 4.9	4.9	4.9	4.0 3.7	3.9		6.4 6.3	6.4	
M2	Cloudy	Moderate	14:30	Surface	1	24.8 24.8	24.8	8.4 8.4	8.4	28.6 28.6	28.6	78.3 78.7	78.5	5.5 5.6	5.6	5.1	2.9 3.1	3.0	3.5	5.4 5.4	5.4	5.8
				Middle	5	24.8 24.8	24.8	8.4 8.4	8.4	28.6 28.7	28.7	64.8 64.5	64.7	4.6 4.6	4.6		3.8 3.5	3.7		6.0 6.0	6.0	
				Bottom	9	24.8 24.7	24.8	8.4 8.4	8.4	28.8 28.8	28.8	63.2 63.1	63.2	4.5 4.5	4.5	4.5	3.9 3.9	3.9		6.1 6.1	6.1	
M3	Cloudy	Moderate	15:18	Surface	1	25.1 25.0	25.1	8.4 8.4	8.4	28.6 28.6	28.6	95.6 91.6	93.6	6.7 6.4	6.6	5.8	2.3 2.5	2.4	3.2	5.5 5.4	5.5	6.4
				Middle	3.5	25.1 25.0	25.1	8.4 8.4	8.4	28.9 28.9	28.9	70.4 70.7	70.6	4.9 5.0	5.0		3.1 3.1	3.1		7.2 7.3	7.3	
				Bottom	6	25.0 24.9	25.0	8.4 8.4	8.4	29.2 29.2	29.2	63.2 62.8	63.0	4.4 4.4	4.4	4.4	3.9 4.0	4.0		6.4 6.4	6.4	
M4	Cloudy	Moderate	14:20	Surface	1	24.8 24.8	24.8	8.4 8.4	8.4	28.4 28.4	28.4	84.0 84.0	84.0	5.9 5.9	5.9	5.4	4.2 3.9	4.1	4.3	6.0 6.0	6.0	5.9
				Middle	4.5	24.8 24.1	24.5	8.3 8.4	8.4	28.4 28.3	28.4	69.5 68.3	68.9	4.9 4.9	4.9		4.4 4.2	4.3		5.8 5.7	5.8	
				Bottom	8	24.8 24.1	24.5	8.4 8.4	8.4	28.4 28.5	28.5	66.2 64.0	65.1	4.7 4.6	4.7	4.7	4.5 4.6	4.6		5.7 5.9	5.8	
M5	Cloudy	Moderate	15:56	Surface	1	25.1 25.0	25.1	8.4 8.4	8.4	28.4 28.4	28.4	83.5 83.2	83.4	5.9 5.9	5.9	5.4	3.0 3.4	3.2	3.8	5.4 5.4	5.4	5.3
				Middle	5.5	25.2 25.0	25.1	8.4 8.4	8.4	28.4 28.4	28.4	67.9 68.4	68.2	4.8 4.8	4.8		3.6 3.5	3.6		5.2 5.1	5.2	
				Bottom	10	25.0 25.0	25.0	8.4 8.4	8.4	28.5 28.5	28.5	65.0 64.7	64.9	4.6 4.6	4.6	4.6	4.5 4.8	4.7		5.2 5.2	5.2	
M6	Cloudy	Moderate	15:42	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.7	- -	-	3.8	- -	-	6.1
				Middle	2.1	25.2 25.0	25.1	8.4 8.4	8.4	28.0 28.0	28.0	79.0 80.5	79.8	5.6 5.7	5.7		3.6 3.9	3.8		6.0 6.1	6.1	
				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 5 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.7 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.7 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.7 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.8 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 05 July 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	11:02	Surface	1	25.3 24.9	25.1	8.5 8.5	8.5	28.3 28.3	28.3	103.6 101.0	102.3	7.3 7.1	7.2	6.0	1.9 2.0	2.0	2.8	5.9 5.8	5.9	5.1
				Middle	10	25.2 24.7	25.0	8.5 8.6	8.6	31.3 31.3	31.3	66.9 67.8	67.4	4.6 4.7	4.7		2.7 3.1	2.9		5.0 5.2	5.1	
				Bottom	19	23.5 23.4	23.5	8.5 8.6	8.6	33.4 33.3	33.4	63.1 65.1	64.1	4.4 4.6	4.5	4.5	3.3 3.4	3.4		4.4 4.4	4.4	
C2	Cloudy	Moderate	09:10	Surface	1	25.0 24.4	24.7	8.5 8.6	8.6	28.5 28.5	28.5	97.5 99.9	98.7	6.9 7.1	7.0	5.9	1.6 1.7	1.7	2.3	5.7 5.5	5.6	5.9
				Middle	17.5	25.0 24.2	24.6	8.6 8.6	8.6	31.6 31.6	31.6	66.9 70.2	68.6	4.6 4.9	4.8		2.1 2.0	2.1		7.3 7.3	7.3	
				Bottom	34	23.0 22.8	22.9	8.6 8.6	8.6	33.3 33.3	33.3	59.7 60.3	60.0	4.2 4.3	4.3	4.3	3.1 3.1	3.1		4.8 4.8	4.8	
G1	Cloudy	Moderate	09:57	Surface	1	24.8 24.7	24.8	8.4 8.4	8.4	29.9 29.8	29.9	94.3 91.2	92.8	6.6 6.4	6.5	5.7	1.3 1.3	1.3	2.1	4.9 4.7	4.8	4.6
				Middle	4	24.9 24.7	24.8	8.4 8.4	8.4	30.0 30.1	30.1	64.7 72.8	68.8	4.5 5.1	4.8		2.4 2.3	2.4		5.0 4.9	5.0	
				Bottom	7	23.3 23.3	23.3	8.5 8.5	8.5	31.8 31.8	31.8	63.6 64.8	64.2	4.5 4.6	4.6	4.6	2.5 2.7	2.6		4.0 4.1	4.1	
G2	Cloudy	Moderate	09:39	Surface	1	24.7 24.7	24.7	8.5 8.4	8.5	29.9 29.9	29.9	97.8 96.8	97.3	6.9 6.8	6.9	5.9	1.5 1.5	1.5	2.3	4.6 4.8	4.7	5.6
				Middle	5	24.7 24.7	24.7	8.4 8.5	8.5	31.1 31.0	31.1	66.4 70.5	68.5	4.6 4.9	4.8		2.3 2.3	2.3		6.6 6.9	6.8	
				Bottom	9	23.3 23.3	23.3	8.5 8.5	8.5	32.3 32.1	32.2	59.7 60.3	60.0	4.2 4.3	4.3	4.3	3.0 3.2	3.1		5.2 5.1	5.2	
G3	Cloudy	Moderate	10:07	Surface	1	24.4 24.4	24.4	8.4 8.4	8.4	28.3 28.3	28.3	93.6 93.6	93.6	6.7 6.7	6.7	5.9	1.7 1.4	1.6	1.8	5.2 5.4	5.3	5.1
				Middle	4	24.4 24.3	24.4	8.5 8.5	8.5	30.2 30.2	30.2	72.8 72.4	72.6	5.1 5.1	5.1		1.9 1.7	1.8		5.8 6.0	5.9	
				Bottom	7	23.0 22.9	23.0	8.5 8.5	8.5	31.7 31.7	31.7	72.6 73.9	73.3	5.2 5.3	5.3	5.3	2.1 1.7	1.9		4.2 4.1	4.2	
G4	Cloudy	Moderate	10:29	Surface	1	25.3 24.7	25.0	8.5 8.5	8.5	27.3 27.3	27.3	81.9 77.0	79.5	5.8 5.5	5.7	5.1	2.1 1.7	1.9	2.6	5.5 5.5	5.5	4.9
				Middle	4.5	25.3 24.6	25.0	8.5 8.5	8.5	28.2 28.2	28.2	63.5 63.9	63.7	4.5 4.5	4.5		2.5 2.8	2.7		5.6 5.7	5.7	
				Bottom	8	23.3 23.3	23.3	8.5 8.5	8.5	30.3 30.2	30.3	63.2 58.4	60.8	4.5 4.2	4.4	4.4	3.5 3.1	3.3		3.6 3.5	3.6	
M1	Cloudy	Moderate	09:48	Surface	1	24.2 24.4	24.3	8.4 8.4	8.4	29.2 29.2	29.2	90.7 91.4	91.1	6.4 6.5	6.5	5.7	1.8 1.9	1.9	2.4	5.3 5.4	5.4	4.6
				Middle	3	24.4 24.3	24.4	8.5 8.5	8.5	30.3 30.4	30.4	68.4 68.0	68.2	4.8 4.8	4.8		2.1 2.6	2.4		5.1 5.2	5.2	
				Bottom	5	23.9 23.5	23.7	8.5 8.5	8.5	31.2 31.2	31.2	73.0 72.4	72.7	5.2 5.2	5.2	5.2	2.8 2.9	2.9		3.0 3.1	3.1	
M2	Cloudy	Moderate	09:30	Surface	1	25.0 24.4	24.7	8.4 8.4	8.4	28.5 28.5	28.5	90.9 90.4	90.7	6.4 6.4	6.4	5.9	1.5 1.6	1.6	2.2	5.0 5.0	5.0	5.2
				Middle	5.5	25.0 24.2	24.6	8.4 8.4	8.4	30.6 30.6	30.6	75.7 75.2	75.5	5.3 5.3	5.3		2.1 2.3	2.2		7.0 7.1	7.1	
				Bottom	10	23.0 22.8	22.9	8.5 8.5	8.5	31.3 31.3	31.3	66.0 65.3	65.7	4.7 4.7	4.7	4.7	2.8 2.7	2.8		3.6 3.5	3.6	
M3	Cloudy	Moderate	10:17	Surface	1	25.3 24.9	25.1	8.4 8.4	8.4	28.1 28.0	28.1	88.4 90.3	89.4	6.2 6.4	6.3	5.5	1.3 1.4	1.4	2.0	4.4 4.5	4.5	5.1
				Middle	4	25.3 24.7	25.0	8.4 8.4	8.4	29.6 29.6	29.6	64.3 67.8	66.1	4.5 4.8	4.7		1.9 2.1	2.0		7.4 7.5	7.5	
				Bottom	7	23.5 23.3	23.4	8.5 8.5	8.5	30.4 30.4	30.4	63.5 62.2	62.9	4.5 4.5	4.5	4.5	2.3 2.7	2.5		3.2 3.2	3.2	
M4	Cloudy	Moderate	09:20	Surface	1	24.4 24.3	24.4	8.4 8.4	8.4	28.3 28.3	28.3	98.3 96.9	97.6	7.0 6.9	7.0	6.0	1.5 1.6	1.6	2.3	5.3 5.2	5.3	4.8
				Middle	4.5	24.4 23.8	24.1	8.5 8.5	8.5	30.3 30.3	30.3	69.8 69.3	69.6	4.9 4.9	4.9		2.3 2.3	2.3		4.9 5.1	5.0	
				Bottom	8	22.9 22.4	22.7	8.5 8.5	8.5	31.6 31.6	31.6	66.5 65.6	66.1	4.8 4.7	4.8	4.8	3.0 3.2	3.1		4.0 4.0	4.0	
M5	Cloudy	Moderate	10:52	Surface	1	25.2 24.9	25.1	8.4 8.4	8.4	28.3 28.3	28.3	85.3 90.8	88.1	6.0 6.4	6.2	5.5	1.8 1.9	1.9	2.6	4.8 4.9	4.9	4.6
				Middle	6	25.2 24.7	25.0	8.4 8.5	8.5	30.2 30.2	30.2	64.7 69.6	67.2	4.5 4.9	4.7		2.5 2.9	2.7		5.8 5.7	5.8	
				Bottom	11	23.5 23.3	23.4	8.5 8.5	8.5	31.4 31.4	31.4	65.4 60.2	62.8	4.6 4.3	4.5	4.5	3.1 3.3	3.2		3.1 3.3	3.2	
M6	Cloudy	Moderate	10:40	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.2	- -	-	2.7	- -	-	3.1
				Middle	2	24.2 23.5	23.9	8.6 8.6	8.6	27.0 27.1	27.1	72.6 71.3	72.0	5.2 5.2	5.2		2.7 2.6	2.7		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 5 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.3 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 05 July 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	17:41	Surface	1	24.8 24.6	24.7	8.5 8.5	8.5	29.4 28.5	29.0	98.3 100.1	99.2	6.9 7.1	7.0	6.1	2.1 2.1	2.1	3.0	5.5 5.8	5.7	5.9
				Middle	9.5	24.8 24.5	24.7	8.5 8.5	8.5	31.9 32.0	32.0	73.9 74.3	74.1	5.1 5.2	5.2		2.4 2.6	2.5		5.9 5.8	5.9	
				Bottom	18	23.6 23.5	23.6	8.5 8.5	8.5	33.8 33.8	33.8	68.1 68.0	68.1	4.8 4.8	4.8	4.8	4.1 4.9	4.5		6.1 6.0	6.1	
C2	Cloudy	Moderate	15:50	Surface	1	24.4 24.4	24.4	8.5 8.5	8.5	29.7 29.8	29.8	94.5 95.8	95.2	6.7 6.8	6.8	6.5	1.9 1.8	1.9	2.3	3.3 3.3	3.3	3.8
				Middle	17.5	24.5 24.4	24.5	8.5 8.5	8.5	31.7 31.8	31.8	88.7 88.7	88.7	6.2 6.2	6.2		2.1 2.4	2.3		5.0 5.0	5.0	
				Bottom	34	23.4 23.4	23.4	8.6 8.5	8.6	33.8 33.9	33.9	73.6 73.7	73.7	5.2 5.2	5.2	5.2	2.4 2.8	2.6		3.0 2.9	3.0	
G1	Cloudy	Moderate	16:37	Surface	1	24.4 24.3	24.4	8.5 8.5	8.5	28.4 28.4	28.4	93.7 94.3	94.0	6.7 6.7	6.7	5.9	1.8 1.6	1.7	2.1	5.4 5.7	5.6	5.0
				Middle	3.5	24.4 24.1	24.3	8.5 8.5	8.5	28.9 28.9	28.9	70.7 71.7	71.2	5.0 5.1	5.1		2.0 2.3	2.2		6.2 6.3	6.3	
				Bottom	6	23.3 23.1	23.2	8.6 8.6	8.6	31.9 31.9	31.9	66.7 66.3	66.5	4.7 4.7	4.7	4.7	2.4 2.5	2.5		3.0 3.0	3.0	
G2	Cloudy	Moderate	16:18	Surface	1	24.4 24.4	24.4	8.5 8.5	8.5	29.0 28.9	29.0	92.6 93.2	92.9	6.6 6.6	6.6	5.9	1.2 1.4	1.3	1.7	5.7 5.6	5.7	5.3
				Middle	4.5	24.4 23.9	24.2	8.5 8.5	8.5	29.4 29.4	29.4	72.6 71.0	71.8	5.1 5.1	5.1		1.5 1.4	1.5		4.4 4.3	4.4	
				Bottom	8	23.4 23.3	23.4	8.6 8.6	8.6	31.6 31.6	31.6	65.4 65.6	65.5	4.7 4.7	4.7	4.7	2.3 2.3	2.3		5.6 5.7	5.7	
G3	Cloudy	Moderate	16:46	Surface	1	24.4 24.4	24.4	8.5 8.5	8.5	28.4 28.4	28.4	94.4 95.0	94.7	6.7 6.8	6.8	6.0	2.1 1.9	2.0	2.8	5.6 5.6	5.6	4.6
				Middle	3.5	24.3 24.1	24.2	8.5 8.5	8.5	29.1 29.1	29.1	71.8 71.6	71.7	5.1 5.1	5.1		2.6 2.5	2.6		5.5 5.4	5.5	
				Bottom	6	23.4 23.2	23.3	8.5 8.5	8.5	31.2 31.2	31.2	65.6 64.9	65.3	4.7 4.6	4.7	4.7	3.8 3.8	3.8		2.7 2.7	2.7	
G4	Cloudy	Moderate	17:08	Surface	1	24.8 24.6	24.7	8.4 8.5	8.5	28.4 28.4	28.4	85.5 85.5	85.5	6.0 6.1	6.1	5.4	1.5 1.5	1.5	2.4	3.5 3.6	3.6	3.8
				Middle	4	24.8 24.6	24.7	8.5 8.5	8.5	29.2 29.2	29.2	66.3 66.5	66.4	4.7 4.7	4.7		2.1 2.3	2.2		3.6 3.6	3.6	
				Bottom	7	23.6 23.6	23.6	8.5 8.5	8.5	30.4 30.4	30.4	63.6 63.6	63.6	4.5 4.5	4.5	4.5	3.5 3.3	3.4		4.0 4.2	4.1	
M1	Cloudy	Moderate	16:28	Surface	1	24.4 24.4	24.4	8.5 8.5	8.5	28.7 28.7	28.7	92.8 93.1	93.0	6.6 6.6	6.6	5.9	1.7 1.8	1.8	2.2	5.6 5.6	5.6	5.3
				Middle	3	24.4 24.2	24.3	8.5 8.5	8.5	29.1 29.1	29.1	72.2 71.7	72.0	5.1 5.1	5.1		1.9 1.9	1.9		6.0 6.3	6.2	
				Bottom	5	23.8 23.6	23.7	8.5 8.5	8.5	31.9 31.9	31.9	67.2 67.6	67.4	4.7 4.8	4.8	4.8	2.9 2.6	2.8		4.2 4.2	4.2	
M2	Cloudy	Moderate	16:09	Surface	1	24.4 24.4	24.4	8.5 8.4	8.5	28.9 28.9	28.9	88.4 88.8	88.6	6.3 6.3	6.3	5.6	1.4 1.3	1.4	1.9	5.5 5.5	5.5	5.2
				Middle	5	24.4 24.4	24.4	8.5 8.5	8.5	29.3 29.4	29.4	68.1 67.9	68.0	4.8 4.8	4.8		1.7 1.4	1.6		6.2 6.2	6.2	
				Bottom	9	23.4 23.3	23.4	8.5 8.5	8.5	31.3 31.3	31.3	64.9 64.9	64.9	4.6 4.6	4.6	4.6	2.8 2.8	2.8		3.9 3.9	3.9	
M3	Cloudy	Moderate	16:56	Surface	1	24.7 24.6	24.7	8.5 8.5	8.5	28.9 28.9	28.9	105.7 101.7	103.7	7.5 7.2	7.4	6.3	2.0 2.2	2.1	2.4	5.7 5.8	5.8	4.9
				Middle	3.5	24.7 24.6	24.7	8.5 8.5	8.5	29.6 29.6	29.6	73.8 74.0	73.9	5.2 5.2	5.2		2.3 2.4	2.4		4.5 4.4	4.5	
				Bottom	6	23.6 23.5	23.6	8.5 8.5	8.5	31.7 31.7	31.7	66.1 65.7	65.9	4.7 4.7	4.7	4.7	2.6 2.7	2.7		4.3 4.4	4.4	
M4	Cloudy	Moderate	16:00	Surface	1	24.4 24.4	24.4	8.5 8.5	8.5	28.7 28.7	28.7	94.1 94.1	94.1	6.7 6.7	6.7	6.0	1.1 1.2	1.2	1.7	4.2 4.3	4.3	4.4
				Middle	4.5	24.4 23.7	24.1	8.5 8.5	8.5	29.1 29.0	29.1	72.9 71.6	72.3	5.2 5.1	5.2		1.3 1.3	1.3		6.0 5.9	6.0	
				Bottom	8	23.4 22.7	23.1	8.5 8.5	8.5	30.9 30.2	30.6	63.4 62.4	62.9	4.5 4.5	4.5	4.5	2.4 2.5	2.5		2.8 2.8	2.8	
M5	Cloudy	Moderate	17:32	Surface	1	24.7 24.6	24.7	8.5 8.5	8.5	27.7 31.7	29.7	93.2 95.0	94.1	6.6 6.6	6.6	5.9	1.7 1.7	1.7	2.1	5.6 5.6	5.6	4.9
				Middle	5.5	24.8 24.6	24.7	8.5 8.5	8.5	29.2 29.2	29.2	71.2 71.8	71.5	5.0 5.1	5.1		2.1 2.0	2.1		6.3 6.3	6.3	
				Bottom	10	23.6 23.6	23.6	8.6 8.5	8.6	29.3 30.0	29.7	67.2 67.2	67.2	4.8 4.8	4.8	4.8	2.4 2.3	2.4		2.8 2.7	2.8	
M6	Cloudy	Moderate	17:20	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.0	- -	-	2.5	- -	-	3.3
				Middle	2.1	24.8 24.6	24.7	8.5 8.5	8.5	27.5 27.5	27.5	85.0 84.6	84.8	6.0 6.0	6.0		2.3 2.6	2.5		3.3 3.3	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 7 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 07 July 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	Calm	12:29	Surface	1	27.6 27.2	27.4	8.6 8.6	8.6	28.7 28.8	28.8	121.6 118.7	120.2	8.2 8.0	8.1	6.7	1.9 2.0	2.0	3.5	5.0 5.1	5.1	4.4
				Middle	10	25.6 25.0	25.3	8.5 8.5	8.5	29.8 29.7	29.8	67.4 68.3	67.9	5.2 5.3	5.3		2.6 3.2	2.9		3.9 3.9	3.9	
				Bottom	19	24.5 24.4	24.5	8.4 8.4	8.4	32.5 32.4	32.5	50.8 52.8	51.8	4.5 4.7	4.6	4.6	5.9 5.2	5.6		4.3 4.3	4.3	
C2	Cloudy	Calm	10:30	Surface	1	27.3 26.7	27.0	8.6 8.5	8.6	28.0 28.5	28.3	114.5 118.7	116.6	7.8 8.1	8.0	6.7	1.6 1.5	1.6	3.1	6.2 6.2	6.2	5.7
				Middle	17.5	25.4 24.6	25.0	8.5 8.4	8.5	30.1 30.1	30.1	67.3 70.6	69.0	5.2 5.5	5.4		2.2 2.2	2.2		5.1 5.1	5.1	
				Bottom	34	24.0 23.8	23.9	8.4 8.4	8.4	32.3 32.4	32.4	47.5 48.1	47.8	4.3 4.4	4.4	4.4	5.4 5.6	5.5		5.7 5.8	5.8	
G1	Cloudy	Calm	11:20	Surface	1	27.1 27.0	27.1	8.7 8.7	8.7	28.3 28.3	28.3	110.7 107.4	109.1	7.5 7.3	7.4	6.4	1.3 1.3	1.3	2.8	3.6 3.6	3.6	4.3
				Middle	4	25.2 25.0	25.1	8.6 8.6	8.6	30.5 30.6	30.6	65.9 74.0	70.0	5.1 5.6	5.4		2.5 2.4	2.5		3.6 3.6	3.6	
				Bottom	7	24.3 24.3	24.3	8.6 8.6	8.6	32.8 32.9	32.9	52.0 53.3	52.7	4.6 4.7	4.7	4.7	4.8 4.5	4.7		5.7 5.8	5.8	
G2	Cloudy	Calm	10:59	Surface	1	27.0 27.0	27.0	8.6 8.6	8.6	28.7 28.3	28.5	114.4 119.1	116.8	7.8 8.1	8.0	6.7	1.3 1.4	1.4	2.3	3.6 3.4	3.5	4.1
				Middle	5	25.1 25.0	25.1	8.6 8.6	8.6	30.6 30.5	30.6	67.2 71.3	69.3	5.2 5.5	5.4		2.2 2.4	2.3		4.5 4.4	4.5	
				Bottom	9	24.3 24.3	24.3	8.5 8.6	8.6	33.4 33.2	33.3	48.0 48.6	48.3	4.3 4.4	4.4	4.4	3.0 3.5	3.3		4.1 4.2	4.2	
G3	Cloudy	Calm	11:31	Surface	1	26.7 26.7	26.7	8.6 8.6	8.6	28.7 28.5	28.6	111.0 110.8	110.9	7.6 7.6	7.6	6.7	1.7 1.4	1.6	3.4	4.1 4.1	4.1	4.6
				Middle	4	24.8 24.7	24.8	8.5 8.5	8.5	30.7 30.7	30.7	74.0 73.7	73.9	5.7 5.6	5.7		3.1 3.8	3.5		3.6 3.6	3.6	
				Bottom	7	24.0 24.0	24.0	8.5 8.5	8.5	32.7 32.7	32.7	61.3 62.7	62.0	5.3 5.4	5.4	5.4	4.7 5.3	5.0		6.0 5.9	6.0	
G4	Cloudy	Calm	11:55	Surface	1	27.6 27.0	27.3	8.6 8.6	8.6	28.7 28.7	28.7	99.4 94.2	96.8	6.7 6.4	6.6	5.9	1.3 1.4	1.4	3.0	4.7 4.7	4.7	4.6
				Middle	4.5	25.7 25.0	25.4	8.5 8.5	8.5	29.7 29.6	29.7	57.8 58.3	58.1	5.0 5.1	5.1		3.6 3.2	3.4		5.2 5.0	5.1	
				Bottom	8	24.3 24.3	24.3	8.5 8.5	8.5	32.4 32.3	32.4	44.9 39.9	42.4	4.5 4.2	4.4	4.4	4.1 4.1	4.1		3.8 3.9	3.9	
M1	Cloudy	Calm	11:10	Surface	1	26.7 26.7	26.7	8.6 8.6	8.6	28.6 28.5	28.6	107.8 108.0	107.9	7.4 7.4	7.4	6.4	1.6 1.7	1.7	2.5	4.3 4.4	4.4	4.2
				Middle	3	24.7 24.7	24.7	8.6 8.5	8.6	30.8 30.8	30.8	69.6 69.2	69.4	5.4 5.3	5.4		2.2 2.7	2.5		4.0 4.0	4.0	
				Bottom	5	24.0 23.9	24.0	8.5 8.5	8.5	32.9 32.9	32.9	55.9 55.5	55.7	4.9 4.9	4.9	4.9	3.2 3.5	3.4		4.2 4.2	4.2	
M2	Cloudy	Calm	10:51	Surface	1	27.3 26.7	27.0	8.7 8.7	8.7	28.9 28.9	28.9	108.3 107.6	108.0	7.3 7.3	7.3	6.3	1.6 1.5	1.6	3.1	4.7 4.7	4.7	4.2
				Middle	5.5	25.4 24.6	25.0	8.5 8.5	8.5	30.3 30.1	30.2	69.4 68.9	69.2	5.3 5.3	5.3		2.2 2.2	2.2		3.8 3.7	3.8	
				Bottom	10	24.0 23.8	23.9	8.5 8.5	8.5	32.3 32.4	32.4	47.5 46.8	47.2	4.3 4.3	4.3	4.3	5.4 5.6	5.5		4.0 4.0	4.0	
M3	Cloudy	Calm	11:41	Surface	1	27.6 27.2	27.4	8.6 8.7	8.7	28.5 28.4	28.5	105.7 107.5	106.6	7.1 7.3	7.2	6.2	1.3 1.4	1.4	3.3	4.6 4.7	4.7	4.8
				Middle	4	25.7 25.1	25.4	8.5 8.6	8.6	29.1 29.1	29.1	57.9 61.5	59.7	5.0 5.3	5.2		3.8 3.5	3.7		4.5 4.4	4.5	
				Bottom	7	24.5 24.3	24.4	8.5 8.5	8.5	31.5 31.5	31.5	44.8 43.5	44.2	4.4 4.3	4.4	4.4	4.9 4.8	4.9		5.1 5.2	5.2	
M4	Cloudy	Calm	10:41	Surface	1	26.7 26.6	26.7	8.6 8.6	8.6	28.7 28.7	28.7	115.8 114.4	115.1	7.9 7.8	7.9	7.0	1.4 1.7	1.6	2.6	4.8 4.6	4.7	4.6
				Middle	4.5	24.8 24.1	24.5	8.5 8.5	8.5	30.7 30.7	30.7	71.1 70.6	70.9	6.0 6.0	6.0		2.2 2.1	2.2		3.6 3.5	3.6	
				Bottom	8	24.0 23.4	23.7	8.5 8.5	8.5	33.7 33.7	33.7	55.4 54.6	55.0	5.2 5.1	5.2	5.2	3.9 3.9	3.9		5.5 5.6	5.6	
M5	Cloudy	Calm	12:19	Surface	1	27.5 27.2	27.4	8.6 8.7	8.7	28.7 28.7	28.7	102.5 108.1	105.3	6.9 7.3	7.1	6.4	1.4 1.4	1.4	3.3	5.7 5.9	5.8	5.2
				Middle	6	25.5 25.1	25.3	8.6 8.6	8.6	29.7 29.7	29.7	65.5 70.4	68.0	5.5 5.9	5.7		2.4 2.7	2.6		4.7 4.8	4.8	
				Bottom	11	24.5 24.3	24.4	8.6 8.5	8.6	32.5 32.5	32.5	53.8 48.6	51.2	5.0 4.7	4.9	4.9	5.9 5.8	5.9		4.9 4.9	4.9	
M6	Cloudy	Calm	12:08	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	8.1	- -	-	2.7	- -	-	4.1
				Middle	2	27.1 26.6	26.9	8.7 8.7	8.7	29.5 29.6	29.6	118.9 119.0	119.0	8.0 8.1	8.1		2.7 2.6	2.7		4.1 4.1	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 7 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 7.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.6 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.1 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.6 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.1 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.3 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 07 July 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	Calm	19:11	Surface	1	26.6 26.4	26.5	8.6 8.6	8.6	27.7 27.8	27.8	110.8 113.2	112.0	7.6 7.8	7.7	6.6	1.8 1.5	1.7	3.7	4.7 4.7	4.7	5.1
				Middle	9.5	24.7 24.4	24.6	8.5 8.5	8.5	29.9 29.9	29.9	62.6 63.0	62.8	5.4 5.4	5.4		3.9 3.5	3.7		4.6 4.4	4.5	
				Bottom	18	23.7 23.6	23.7	8.5 8.5	8.5	31.9 32.1	32.0	48.1 48.1	48.1	4.7 4.7	4.7	4.7	5.9 5.5	5.7		6.0 6.2	6.1	
C2	Cloudy	Calm	17:20	Surface	1	26.3 26.2	26.3	8.6 8.5	8.6	28.0 28.0	28.0	106.9 108.1	107.5	7.4 7.5	7.5	6.5	1.9 1.6	1.8	3.4	5.0 4.9	5.0	4.3
				Middle	17	24.3 24.3	24.3	8.4 8.4	8.4	30.0 30.0	30.0	63.3 63.3	63.3	5.5 5.5	5.5		3.1 2.9	3.0		4.6 4.6	4.6	
				Bottom	33	23.5 23.6	23.6	8.4 8.4	8.4	32.1 32.1	32.1	49.4 49.4	49.4	4.8 4.8	4.8	4.8	5.2 5.3	5.3		3.4 3.3	3.4	
G1	Cloudy	Calm	18:08	Surface	1	26.2 26.1	26.2	8.6 8.6	8.6	27.7 27.7	27.7	106.5 107.2	106.9	7.4 7.4	7.4	6.4	1.6 1.4	1.5	2.6	4.6 4.7	4.7	3.9
				Middle	3.5	24.2 23.9	24.1	8.6 8.5	8.6	29.8 29.8	29.8	60.7 61.8	61.3	5.3 5.4	5.4		2.3 2.5	2.4		4.2 4.2	4.2	
				Bottom	6	23.4 23.2	23.3	8.6 8.5	8.6	32.1 32.0	32.1	47.6 48.7	48.2	4.7 4.8	4.8	4.8	3.9 3.9	3.9		2.7 2.7	2.7	
G2	Cloudy	Calm	17:51	Surface	1	26.2 26.2	26.2	8.7 8.7	8.7	28.3 28.2	28.3	105.5 106.1	105.8	7.3 7.3	7.3	6.4	1.1 1.1	1.1	2.4	4.1 4.1	4.1	5.2
				Middle	4.5	24.3 24.2	24.3	8.6 8.6	8.6	30.3 30.3	30.3	62.6 61.5	62.1	5.4 5.3	5.4		2.1 2.2	2.2		4.9 5.0	5.0	
				Bottom	8	23.5 23.4	23.5	8.6 8.5	8.6	32.8 32.8	32.8	45.2 44.0	44.6	4.5 4.4	4.5	4.5	3.9 4.1	4.0		6.4 6.3	6.4	
G3	Cloudy	Calm	18:18	Surface	1	26.2 26.2	26.2	8.7 8.6	8.7	27.7 27.7	27.7	107.3 107.9	107.6	7.4 7.5	7.5	6.5	1.3 1.1	1.2	2.8	4.7 4.5	4.6	5.2
				Middle	3.5	24.2 24.0	24.1	8.5 8.6	8.6	30.0 30.0	30.0	61.8 61.7	61.8	5.4 5.4	5.4		2.4 2.7	2.6		5.3 5.3	5.3	
				Bottom	6	23.5 23.3	23.4	8.5 8.5	8.5	32.4 32.4	32.4	46.8 46.2	46.5	4.6 4.6	4.6	4.6	4.5 4.6	4.6		5.6 5.6	5.6	
G4	Cloudy	Calm	18:38	Surface	1	26.6 26.4	26.5	8.7 8.7	8.7	27.8 27.8	27.8	106.9 106.9	106.9	7.3 7.4	7.4	6.4	1.6 1.8	1.7	3.8	4.0 3.9	4.0	4.5
				Middle	4	24.7 24.5	24.6	8.6 8.6	8.6	30.1 30.1	30.1	62.0 62.1	62.1	5.3 5.4	5.4		3.5 3.3	3.4		5.1 5.1	5.1	
				Bottom	7	23.7 23.7	23.7	8.6 8.6	8.6	32.6 32.6	32.6	52.1 52.1	52.1	5.0 5.0	5.0	5.0	6.1 6.4	6.3		4.4 4.2	4.3	
M1	Cloudy	Calm	18:00	Surface	1	26.2 26.2	26.2	8.7 8.6	8.7	28.0 28.1	28.1	105.7 106.0	105.9	7.3 7.3	7.3	6.4	1.2 1.4	1.3	2.4	3.7 3.6	3.7	4.9
				Middle	3	24.3 24.1	24.2	8.6 8.5	8.6	30.0 30.1	30.1	62.2 61.8	62.0	5.4 5.4	5.4		2.3 2.5	2.4		5.6 5.9	5.8	
				Bottom	5	23.5 23.4	23.5	8.6 8.5	8.6	32.2 32.2	32.2	48.7 48.3	48.5	4.7 4.7	4.7	4.7	3.4 3.8	3.6		5.0 5.1	5.1	
M2	Cloudy	Calm	17:40	Surface	1	26.2 26.2	26.2	8.7 8.7	8.7	28.2 28.2	28.2	101.2 101.6	101.4	7.0 7.0	7.0	6.1	1.5 1.4	1.5	2.3	4.0 3.9	4.0	4.4
				Middle	5	24.3 24.2	24.3	8.6 8.5	8.6	30.3 30.3	30.3	58.2 57.9	58.1	5.1 5.1	5.1		2.4 2.4	2.4		3.9 3.9	3.9	
				Bottom	9	23.5 23.5	23.5	8.6 8.6	8.6	32.5 32.5	32.5	43.0 42.9	43.0	4.3 4.3	4.3	4.3	3.1 3.1	3.1		5.1 5.2	5.2	
M3	Cloudy	Calm	18:27	Surface	1	26.5 26.4	26.5	8.6 8.6	8.6	28.2 28.2	28.2	119.0 114.9	117.0	8.2 7.9	8.1	6.8	1.1 1.2	1.2	2.9	4.1 4.1	4.1	4.1
				Middle	3.5	24.6 24.4	24.5	8.6 8.5	8.6	30.5 30.5	30.5	63.7 64.0	63.9	5.5 5.5	5.5		3.2 3.1	3.2		3.2 3.2	3.2	
				Bottom	6	23.7 23.7	23.7	8.5 8.5	8.5	32.9 32.9	32.9	42.9 42.5	42.7	4.3 4.3	4.3	4.3	4.1 4.3	4.2		4.9 4.8	4.9	
M4	Cloudy	Calm	17:30	Surface	1	26.2 26.2	26.2	8.7 8.7	8.7	28.0 28.0	28.0	107.0 107.0	107.0	7.4 7.4	7.4	6.4	1.1 1.0	1.1	2.4	4.2 4.2	4.2	4.6
				Middle	4	24.3 23.6	24.0	8.5 8.5	8.5	30.0 30.0	30.0	62.9 61.7	62.3	5.4 5.4	5.4		2.3 2.6	2.5		5.1 5.1	5.1	
				Bottom	7	23.5 22.8	23.2	8.5 8.5	8.5	32.2 32.2	32.2	46.0 44.1	45.1	4.6 4.5	4.6	4.6	3.8 3.6	3.7		4.4 4.6	4.5	
M5	Cloudy	Calm	19:01	Surface	1	26.6 26.4	26.5	8.7 8.7	8.7	28.0 28.0	28.0	106.7 106.3	106.5	7.3 7.3	7.3	6.3	1.4 1.7	1.6	2.7	4.1 4.0	4.1	4.6
				Middle	5.5	24.6 24.5	24.6	8.6 8.6	8.6	31.1 30.5	30.8	61.6 61.9	61.8	5.3 5.3	5.3		1.9 1.8	1.9		5.2 5.2	5.2	
				Bottom	10	23.7 23.7	23.7	8.6 8.6	8.6	32.1 32.1	32.1	44.7 44.5	44.6	4.5 4.4	4.5	4.5	4.8 4.1	4.5		4.4 4.3	4.4	
M6	Cloudy	Calm	18:50	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.6	- -	-	2.2	- -	-	4.3
				Middle	2	26.7 26.8	26.8	8.6 8.7	8.7	29.7 29.7	29.7	112.7 111.7	112.2	7.6 7.6	7.6		2.1 2.2	2.2		4.2 4.3	4.3	
				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 10 June 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.3 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.7 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.9 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.9 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Fine	Calm	13:20	Surface	1	25.9 25.9	25.9	8.8 8.8	8.8	28.4 28.4	28.4	117.3 117.7	117.5	8.1 8.2	8.2	6.4	1.2 1.1	1.2	2.1	5.4 5.5	5.5	5.4
				Middle	10	23.6 23.6	23.6	8.6 8.6	8.6	33.7 33.7	33.7	66.0 65.3	65.7	4.6 4.6	4.6		1.9 1.9	1.9		5.5 5.4	5.5	
				Bottom	19	23.4 23.4	23.4	8.5 8.5	8.5	34.0 34.0	34.0	63.0 62.8	62.9	4.4 4.4	4.4	4.4	3.2 3.3	3.3		5.3 5.3	5.3	
C2	Fine	Calm	11:39	Surface	1	26.2 26.2	26.2	8.7 8.7	8.7	27.9 27.9	27.9	128.4 130.3	129.4	8.9 9.0	9.0	6.7	1.0 1.0	1.0	2.8	6.0 6.2	6.1	6.3
				Middle	18	23.5 23.5	23.5	8.5 8.5	8.5	33.8 33.8	33.8	61.7 62.7	62.2	4.3 4.4	4.4		2.8 3.0	2.9		6.7 6.6	6.7	
				Bottom	35	23.4 23.4	23.4	8.5 8.5	8.5	34.0 34.0	34.0	61.4 61.4	61.4	4.3 4.3	4.3	4.3	4.4 4.3	4.4		6.2 6.1	6.2	
G1	Fine	Calm	12:26	Surface	1	26.4 26.4	26.4	9.0 9.0	9.0	28.3 28.2	28.3	172.4 174.5	173.5	11.9 12.0	12.0	10.0	1.2 1.2	1.2	2.3	5.3 5.2	5.3	5.4
				Middle	4	25.2 25.4	25.3	8.8 8.8	8.8	30.1 29.8	30.0	112.3 116.8	114.6	7.8 8.1	8.0		1.1 1.0	1.1		5.6 5.4	5.5	
				Bottom	7	24.2 24.2	24.2	8.6 8.6	8.6	32.3 32.2	32.3	72.7 74.0	73.4	5.1 5.2	5.2	5.2	4.6 4.5	4.6		5.5 5.4	5.5	
G2	Fine	Calm	12:06	Surface	1	26.7 26.7	26.7	9.1 9.1	9.1	28.0 28.1	28.1	193.5 192.4	193.0	13.2 13.2	13.2	10.7	1.3 1.3	1.3	1.3	5.4 5.5	5.5	5.7
				Middle	5	25.4 25.4	25.4	8.8 8.8	8.8	29.8 29.8	29.8	117.6 118.7	118.2	8.2 8.2	8.2		1.0 0.9	1.0		6.0 5.8	5.9	
				Bottom	9	24.5 24.6	24.6	8.6 8.6	8.6	31.6 31.5	31.6	75.6 74.6	75.1	5.3 5.2	5.3	5.3	1.7 1.7	1.7		5.7 5.9	5.8	
G3	Fine	Calm	12:35	Surface	1	26.8 26.6	26.7	9.0 9.0	9.0	27.9 28.1	28.0	195.2 179.0	187.1	13.3 12.3	12.8	10.7	1.2 1.2	1.2	2.3	4.7 4.6	4.7	5.9
				Middle	4	25.6 25.5	25.6	8.8 8.8	8.8	29.4 29.5	29.5	124.3 123.3	123.8	8.6 8.5	8.6		1.0 1.0	1.0		6.2 6.3	6.3	
				Bottom	7	24.2 24.2	24.2	8.6 8.6	8.6	32.3 31.9	32.1	65.6 69.4	67.5	4.6 4.9	4.8	4.8	4.5 4.6	4.6		6.5 6.7	6.6	
G4	Fine	Calm	12:54	Surface	1	27.9 28.0	28.0	9.3 9.3	9.3	27.1 27.2	27.2	244.9 243.1	244.0	16.5 16.4	16.5	12.7	1.3 1.3	1.3	1.1	4.3 4.2	4.3	4.4
				Middle	4	25.7 25.7	25.7	8.8 8.8	8.8	29.3 29.3	29.3	127.3 126.0	126.7	8.8 8.7	8.8		0.9 0.9	0.9		4.3 4.2	4.3	
				Bottom	7	23.6 23.6	23.6	8.6 8.6	8.6	33.7 33.8	33.8	64.9 66.1	65.5	4.5 4.6	4.6	4.6	1.2 1.2	1.2		4.6 4.6	4.6	
M1	Fine	Calm	12:17	Surface	1	26.6 26.6	26.6	9.1 9.1	9.1	28.2 28.1	28.2	184.8 194.4	189.6	12.7 13.3	13.0	10.6	1.2 1.3	1.3	1.1	4.5 4.5	4.5	5.5
				Middle	3	25.9 25.9	25.9	8.9 8.8	8.9	28.9 29.0	29.0	119.8 117.9	118.9	8.3 8.1	8.2		0.9 0.9	0.9		5.0 5.1	5.1	
				Bottom	5	24.9 24.9	24.9	8.7 8.7	8.7	30.9 30.9	30.9	71.8 71.6	71.7	5.0 5.0	5.0	5.0	1.0 0.9	1.0		6.8 6.7	6.8	
M2	Fine	Calm	11:56	Surface	1	27.2 27.1	27.2	9.1 9.2	9.2	27.6 27.7	27.7	216.0 215.0	215.5	14.7 14.7	14.7	10.6	1.4 1.2	1.3	1.4	4.9 4.9	4.9	5.4
				Middle	5.5	25.2 25.2	25.2	8.8 8.8	8.8	30.2 30.3	30.3	93.0 89.7	91.4	6.5 6.2	6.4		1.9 1.9	1.9		5.7 5.9	5.8	
				Bottom	10	24.9 24.9	24.9	8.7 8.7	8.7	30.9 30.9	30.9	78.3 79.4	78.9	5.4 5.5	5.5	5.5	0.8 0.9	0.9		5.4 5.4	5.4	
M3	Fine	Calm	12:46	Surface	1	26.2 26.2	26.2	9.0 9.0	9.0	28.5 28.5	28.5	149.8 150.4	150.1	10.3 10.4	10.4	8.3	1.0 1.1	1.1	1.3	5.9 5.9	5.9	5.7
				Middle	4.5	25.2 25.3	25.3	8.7 8.7	8.7	30.1 29.9	30.0	86.2 87.6	86.9	6.0 6.1	6.1		1.1 1.0	1.1		5.9 5.9	5.9	
				Bottom	8	24.3 24.3	24.3	8.6 8.6	8.6	32.1 32.0	32.1	74.9 76.1	75.5	5.2 5.3	5.3	5.3	1.6 1.6	1.6		5.3 5.4	5.4	
M4	Fine	Calm	11:48	Surface	1	26.4 26.3	26.4	9.0 9.0	9.0	28.2 28.3	28.3	183.3 183.6	183.5	12.6 12.6	12.6	10.5	2.0 2.0	2.0	1.3	5.7 5.7	5.7	5.8
				Middle	4	25.8 25.8	25.8	8.8 8.8	8.8	29.1 29.0	29.1	119.6 120.7	120.2	8.3 8.3	8.3		1.1 1.0	1.1		6.4 6.5	6.5	
				Bottom	7	24.8 24.7	24.8	8.6 8.6	8.6	31.0 31.1	31.1	70.0 70.4	70.2	4.9 4.9	4.9	4.9	0.8 0.7	0.8		5.3 5.3	5.3	
M5	Fine	Calm	13:11	Surface	1	26.4 26.3	26.4	9.0 9.0	9.0	28.9 28.9	28.9	160.0 159.5	159.8	11.0 10.9	11.0	8.1	1.1 0.9	1.0	1.9	4.1 4.0	4.1	5.2
				Middle	5.5	23.9 23.9	23.9	8.6 8.6	8.6	33.2 33.2	33.2	74.4 73.3	73.9	5.2 5.1	5.2		1.2 1.1	1.2		5.7 5.5	5.6	
				Bottom	10	23.6 23.6	23.6	8.5 8.6	8.6	33.7 33.6	33.7	64.1 64.8	64.5	4.5 4.5	4.5	4.5	3.6 3.5	3.6		5.8 5.8	5.8	
M6	Fine	Calm	13:03	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	13.1	- -	-	1.2	- -	-	5.8
				Middle	2.3	26.7 26.6	26.7	9.1 9.1	9.1	28.2 28.2	28.2	190.0 192.1	191.1	13.0 13.2	13.1		1.1 1.2	1.2		5.8 5.7	5.8	
				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 10 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 10.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.4 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.9 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.4 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.9 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 8.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Fine	Calm	20:40	Surface	1	25.9 25.9	25.9	8.8 8.8	8.8	28.1 28.1	28.1	112.1 112.1	112.1	7.8 7.8	7.8	6.5	1.5 1.6	1.6	4.0	5.3 5.3	5.3	6.4
				Middle	10	23.7 23.7	23.7	8.6 8.6	8.6	33.3 33.3	33.3	73.9 72.4	73.2	5.2 5.1	5.2		2.3 2.2	2.3		7.5 7.6	7.6	
				Bottom	19	23.3 23.3	23.3	8.5 8.5	8.5	34.2 34.2	34.2	61.9 61.9	61.9	4.3 4.3	4.3	4.3	7.4 8.6	8.0		6.6 6.2	6.4	
C2	Fine	Calm	18:54	Surface	1	26.5 26.5	26.5	8.7 8.7	8.7	27.8 27.8	27.8	137.7 136.7	137.2	9.5 9.4	9.5	7.3	1.4 1.5	1.5	2.2	5.8 5.5	5.7	5.8
				Middle	18	23.9 24.0	24.0	8.5 8.5	8.5	32.9 32.8	32.9	72.1 72.5	72.3	5.0 5.1	5.1		1.5 1.5	1.5		5.7 5.8	5.8	
				Bottom	35	23.5 23.5	23.5	8.5 8.5	8.5	33.7 33.7	33.7	62.9 63.0	63.0	4.4 4.4	4.4	4.4	3.4 3.5	3.5		6.0 6.0	6.0	
G1	Fine	Calm	19:45	Surface	1	28.1 28.1	28.1	9.2 9.2	9.2	28.2 28.2	28.2	234.3 235.9	235.1	15.7 15.8	15.8	11.1	1.7 1.6	1.7	1.3	5.7 5.6	5.7	5.0
				Middle	4	25.1 25.1	25.1	8.8 8.8	8.8	30.5 30.5	30.5	91.0 92.0	91.5	6.3 6.4	6.4		0.9 1.0	1.0		3.7 3.6	3.7	
				Bottom	7	24.5 24.5	24.5	8.7 8.7	8.7	31.8 31.8	31.8	69.1 68.8	69.0	4.8 4.8	4.8	4.8	1.2 1.1	1.2		5.6 5.5	5.6	
G2	Fine	Calm	19:26	Surface	1	28.2 28.1	28.2	9.2 9.2	9.2	28.0 28.0	28.0	245.2 243.7	244.5	16.4 16.3	16.4	10.6	1.9 1.8	1.9	1.4	4.1 4.1	4.1	4.2
				Middle	4.5	24.6 24.6	24.6	8.7 8.7	8.7	31.4 31.4	31.4	69.7 67.8	68.8	4.9 4.7	4.8		0.6 0.6	0.6		4.2 4.2	4.2	
				Bottom	8	23.8 23.8	23.8	8.5 8.6	8.6	33.1 33.2	33.2	63.8 64.8	64.3	4.5 4.5	4.5	4.5	1.6 1.6	1.6		4.2 4.4	4.3	
G3	Fine	Calm	19:55	Surface	1	27.6 27.7	27.7	9.2 9.2	9.2	28.4 28.3	28.4	220.1 219.2	219.7	14.8 14.7	14.8	10.4	1.2 1.1	1.2	1.3	4.0 4.0	4.0	3.9
				Middle	4	25.0 25.0	25.0	8.7 8.7	8.7	30.7 30.7	30.7	86.6 85.0	85.8	6.0 5.9	6.0		0.9 1.0	1.0		4.5 4.2	4.4	
				Bottom	7	24.0 24.0	24.0	8.6 8.6	8.6	32.8 32.7	32.8	69.0 70.3	69.7	4.8 4.9	4.9	4.9	1.7 1.7	1.7		3.3 3.2	3.3	
G4	Fine	Calm	20:14	Surface	1	27.1 27.6	27.4	9.1 9.1	9.1	28.1 27.8	28.0	179.5 206.8	193.2	12.2 14.0	13.1	9.6	1.2 1.2	1.2	1.7	5.7 5.9	5.8	6.3
				Middle	4	24.8 24.9	24.9	8.7 8.7	8.7	31.0 30.9	31.0	85.2 85.8	85.5	5.9 6.0	6.0		1.2 1.4	1.3		6.9 6.9	6.9	
				Bottom	7	24.1 24.1	24.1	8.6 8.6	8.6	32.4 32.4	32.4	77.7 77.6	77.7	5.4 5.4	5.4	5.4	2.8 2.6	2.7		6.3 6.2	6.3	
M1	Fine	Calm	19:36	Surface	1	27.6 27.2	27.4	9.2 9.2	9.2	28.3 28.5	28.4	214.2 209.4	211.8	14.4 14.2	14.3	11.2	1.2 1.2	1.2	1.1	4.3 4.4	4.4	6.1
				Middle	3	25.5 25.5	25.5	8.8 8.8	8.8	30.1 30.1	30.1	120.5 111.4	116.0	8.3 7.7	8.0		1.2 1.2	1.2		7.6 7.5	7.6	
				Bottom	5	24.6 24.6	24.6	8.6 8.6	8.6	31.4 31.4	31.4	68.1 67.8	68.0	4.7 4.7	4.7	4.7	0.8 0.8	0.8		6.4 6.3	6.4	
M2	Fine	Calm	19:14	Surface	1	28.8 28.8	28.8	9.3 9.3	9.3	27.6 27.6	27.6	267.0 265.5	266.3	17.7 17.6	17.7	13.4	1.5 1.4	1.5	2.3	3.6 3.8	3.7	4.4
				Middle	5.5	25.8 25.8	25.8	8.9 8.9	8.9	29.2 29.3	29.3	133.0 126.7	129.9	9.2 8.8	9.0		0.9 0.9	0.9		4.3 4.4	4.4	
				Bottom	10	24.3 24.3	24.3	8.6 8.6	8.6	32.3 32.3	32.3	66.8 65.2	66.0	4.7 4.5	4.6	4.6	4.3 4.6	4.5		5.0 5.2	5.1	
M3	Fine	Calm	20:06	Surface	1	28.1 28.0	28.1	9.2 9.2	9.2	28.2 28.2	28.2	238.3 238.0	238.2	15.9 15.9	15.9	10.4	1.5 1.5	1.5	1.3	6.0 5.9	6.0	5.4
				Middle	4.5	24.6 24.6	24.6	8.7 8.7	8.7	31.5 31.5	31.5	70.0 69.0	69.5	4.9 4.8	4.9		0.7 0.8	0.8		6.4 6.2	6.3	
				Bottom	8	24.0 24.0	24.0	8.6 8.6	8.6	32.7 32.7	32.7	64.3 64.8	64.6	4.5 4.5	4.5	4.5	1.6 1.6	1.6		3.8 3.7	3.8	
M4	Fine	Calm	19:05	Surface	1	29.0 29.0	29.0	9.3 9.3	9.3	27.5 27.5	27.5	276.0 275.1	275.6	18.2 18.2	18.2	14.1	1.2 1.2	1.2	1.2	2.9 2.8	2.9	4.5
				Middle	3.5	25.9 25.9	25.9	8.9 8.9	8.9	29.0 29.0	29.0	143.0 143.7	143.4	9.9 9.9	9.9		1.1 1.1	1.1		5.9 5.9	5.9	
				Bottom	6	24.8 24.8	24.8	8.7 8.7	8.7	31.0 31.0	31.0	75.4 76.4	75.9	5.2 5.3	5.3	5.3	1.3 1.4	1.4		4.6 4.5	4.6	
M5	Fine	Calm	20:30	Surface	1	27.0 27.0	27.0	9.1 9.1	9.1	27.5 27.4	27.5	204.6 204.2	204.4	14.0 14.0	14.0	9.5	1.3 1.3	1.3	1.8	4.3 4.4	4.4	4.7
				Middle	5	24.5 24.5	24.5	8.7 8.6	8.7	31.6 31.6	31.6	69.6 69.0	69.3	4.9 4.8	4.9		1.8 1.8	1.8		6.1 5.7	5.9	
				Bottom	9	23.8 23.8	23.8	8.6 8.6	8.6	33.2 33.2	33.2	60.1 60.8	60.5	4.2 4.3	4.3	4.3	2.4 2.4	2.4		3.9 3.8	3.9	
M6	Fine	Calm	20:22	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	9.6	- -	-	1.0	- -	-	5.5
				Middle	2.3	26.0 26.0	26.0	8.9 8.9	8.9	28.9 28.9	28.9	139.7 138.2	139.0	9.6 9.5	9.6		1.0 1.0	1.0		5.4 5.6	5.5	
				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 12 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.6 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.6 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Calm	15:30	Surface	1	27.9 27.7	27.8	8.6 8.6	8.6	29.9 29.9	29.9	94.0 96.5	95.3	6.2 6.4	6.3	5.9	0.9 1.1	1.0	2.7	5.2 5.3	5.3	4.6
				Middle	9.5	26.7 26.4	26.6	8.7 8.7	8.7	31.0 31.0	31.0	80.9 81.3	81.1	5.5 5.5	5.5		1.6 1.7	1.7		5.0 5.1	5.1	
				Bottom	18	25.3 25.2	25.3	8.7 8.6	8.7	34.9 34.9	34.9	80.1 80.0	80.1	5.4 5.4	5.4	5.4	5.4 5.3	5.4		3.3 3.2	3.3	
C2	Sunny	Calm	13:40	Surface	1	27.6 27.5	27.6	8.6 8.5	8.6	30.2 30.2	30.2	90.0 91.3	90.7	6.0 6.1	6.1	5.8	1.4 1.5	1.5	3.0	4.7 4.6	4.7	5.1
				Middle	17.5	26.4 26.3	26.4	8.5 8.5	8.5	31.2 31.2	31.2	81.6 81.6	81.6	5.5 5.5	5.5		1.8 1.6	1.7		5.3 5.3	5.3	
				Bottom	34	25.1 25.1	25.1	8.6 8.6	8.6	35.0 34.6	34.8	81.3 81.2	81.3	5.5 5.5	5.5	5.5	5.7 5.8	5.8		5.3 5.3	5.3	
G1	Sunny	Calm	14:32	Surface	1	27.5 27.4	27.5	8.6 8.6	8.6	29.9 29.9	29.9	89.7 90.4	90.1	6.0 6.1	6.1	5.8	0.9 0.9	0.9	2.8	4.9 5.0	5.0	4.6
				Middle	3.5	26.3 26.0	26.2	8.7 8.6	8.7	31.0 31.0	31.0	78.9 80.0	79.5	5.4 5.5	5.5		1.1 1.3	1.2		4.9 4.9	4.9	
				Bottom	6	25.0 24.8	24.9	8.6 8.7	8.7	33.0 33.0	33.0	78.5 79.5	79.0	5.4 5.5	5.5	5.5	6.1 6.2	6.2		3.8 3.8	3.8	
G2	Sunny	Calm	14:12	Surface	1	27.5 27.5	27.5	8.6 8.6	8.6	30.5 30.4	30.5	88.6 89.3	89.0	5.9 6.0	6.0	5.8	1.2 1.3	1.3	2.5	5.0 5.0	5.0	5.7
				Middle	4.5	26.3 26.2	26.3	8.6 8.6	8.6	31.5 31.5	31.5	81.0 79.8	80.4	5.5 5.4	5.5		2.2 1.9	2.1		6.2 6.2	6.2	
				Bottom	8	25.1 25.0	25.1	8.6 8.6	8.6	33.7 33.7	33.7	76.1 74.9	75.5	5.2 5.1	5.2	5.2	4.1 4.3	4.2		6.0 6.0	6.0	
G3	Sunny	Calm	14:39	Surface	1	27.5 27.5	27.5	8.7 8.6	8.7	29.9 29.9	29.9	90.5 91.1	90.8	6.1 6.1	6.1	5.8	1.3 1.3	1.3	2.3	4.0 4.0	4.0	3.9
				Middle	3.5	26.2 26.1	26.2	8.6 8.7	8.7	31.2 31.2	31.2	80.0 79.9	80.0	5.4 5.4	5.4		1.5 1.8	1.7		5.8 6.0	5.9	
				Bottom	6	25.1 24.9	25.0	8.7 8.7	8.7	33.3 33.3	33.3	77.8 77.0	77.4	5.3 5.3	5.3	5.3	3.7 3.8	3.8		1.8 1.8	1.8	
G4	Sunny	Calm	15:00	Surface	1	27.9 27.7	27.8	8.6 8.6	8.6	30.0 30.0	30.0	90.0 90.1	90.1	6.0 6.0	6.0	5.7	1.0 1.2	1.1	3.0	4.7 4.5	4.6	4.7
				Middle	4	26.7 26.5	26.6	8.7 8.7	8.7	31.3 31.3	31.3	80.4 80.5	80.5	5.4 5.4	5.4		1.6 1.4	1.5		4.4 4.4	4.4	
				Bottom	7	25.3 25.3	25.3	8.7 8.7	8.7	33.5 33.5	33.5	83.4 83.4	83.4	5.7 5.7	5.7	5.7	6.3 6.6	6.5		5.1 5.2	5.2	
M1	Sunny	Calm	14:22	Surface	1	27.5 27.5	27.5	8.6 8.6	8.6	30.2 30.3	30.3	88.8 89.2	89.0	5.9 6.0	6.0	5.8	1.4 1.6	1.5	2.8	4.9 4.9	4.9	4.7
				Middle	3	26.3 26.2	26.3	8.6 8.6	8.6	31.2 31.3	31.3	80.5 80.0	80.3	5.5 5.4	5.5		2.4 2.6	2.5		4.8 4.8	4.8	
				Bottom	5	25.1 25.0	25.1	8.6 8.6	8.6	33.1 33.1	33.1	79.7 79.2	79.5	5.5 5.4	5.5	5.5	4.6 4.3	4.5		4.3 4.4	4.4	
M2	Sunny	Calm	14:02	Surface	1	27.5 27.5	27.5	8.6 8.6	8.6	30.4 30.4	30.4	84.2 84.6	84.4	5.6 5.6	5.6	5.4	0.9 0.8	0.9	1.9	5.1 5.2	5.2	4.9
				Middle	5	26.3 26.3	26.3	8.6 8.6	8.6	31.5 31.5	31.5	76.3 76.0	76.2	5.2 5.1	5.2		1.5 1.5	1.5		4.8 4.9	4.9	
				Bottom	9	25.1 25.1	25.1	8.6 8.6	8.6	33.4 33.4	33.4	73.8 73.8	73.8	5.0 5.0	5.0	5.0	3.3 3.3	3.3		4.5 4.5	4.5	
M3	Sunny	Calm	14:49	Surface	1	27.8 27.7	27.8	8.6 8.6	8.6	29.4 29.4	29.4	101.9 97.7	99.8	6.8 6.5	6.7	6.2	1.5 1.5	1.5	2.4	4.9 5.0	5.0	4.4
				Middle	3.5	26.6 26.5	26.6	8.6 8.6	8.6	31.7 31.7	31.7	82.2 82.4	82.3	5.5 5.6	5.6		2.3 2.2	2.3		4.7 4.9	4.8	
				Bottom	6	25.3 25.3	25.3	8.6 8.6	8.6	33.8 33.8	33.8	73.9 73.5	73.7	5.0 5.0	5.0	5.0	3.3 3.5	3.4		3.2 3.3	3.3	
M4	Sunny	Calm	13:51	Surface	1	27.5 27.5	27.5	8.6 8.6	8.6	30.2 30.2	30.2	90.2 90.2	90.2	6.0 6.0	6.0	5.8	1.2 1.1	1.2	2.4	5.6 5.5	5.6	4.6
				Middle	4.5	26.3 25.6	26.0	8.6 8.6	8.6	31.2 31.2	31.2	81.2 79.8	80.5	5.5 5.5	5.5		1.9 1.8	1.9		4.0 4.0	4.0	
				Bottom	8	25.1 24.4	24.8	8.6 8.6	8.6	33.2 33.2	33.2	76.9 74.6	75.8	5.3 5.2	5.3	5.3	4.3 4.1	4.2		4.1 4.1	4.1	
M5	Sunny	Calm	15:19	Surface	1	27.9 27.7	27.8	8.7 8.7	8.7	30.2 30.2	30.2	89.7 89.4	89.6	6.0 6.0	6.0	5.7	1.8 1.8	1.8	3.0	5.6 5.5	5.6	5.9
				Middle	5.5	26.7 26.5	26.6	8.7 8.7	8.7	31.3 31.3	31.3	79.5 80.1	79.8	5.4 5.4	5.4		2.6 2.5	2.6		6.7 6.7	6.7	
				Bottom	10	25.3 25.3	25.3	8.7 8.7	8.7	33.1 33.1	33.1	75.7 75.5	75.6	5.2 5.1	5.2	5.2	4.3 4.6	4.5		5.2 5.3	5.3	
M6	Sunny	Calm	15:09	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.2	- -	-	2.5	- -	-	4.9
				Middle	1.6	27.9 27.7	27.8	8.6 8.7	8.7	29.2 29.1	29.2	92.1 93.6	92.9	6.1 6.3	6.2		2.4 2.6	2.5		4.9 4.9	4.9	
				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 12 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 8.2 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 8.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.1 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.7 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.1 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.7 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 8.3 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 9.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Calm	08:41	Surface	1	27.7 27.3	27.5	8.6 8.6	8.6	29.5 29.5	29.5	132.6 129.7	131.2	8.9 8.7	8.8	7.1	2.0 2.1	2.1	3.8	5.9 5.9	5.9	5.8
				Middle	10	26.5 25.9	26.2	8.6 8.6	8.6	31.5 31.5	31.5	76.8 77.6	77.2	5.2 5.3	5.3		2.5 2.5	2.5		4.7 4.7	4.7	
				Bottom	19	24.9 24.8	24.9	8.6 8.6	8.6	35.0 34.9	35.0	65.2 67.2	66.2	4.4 4.6	4.5	4.5	6.6 6.9	6.8		6.9 6.9	6.9	
C2	Sunny	Calm	07:00	Surface	1	27.5 26.9	27.2	8.6 8.6	8.6	29.7 30.2	30.0	133.5 134.7	134.1	8.9 9.1	9.0	7.2	1.7 1.8	1.8	3.6	5.1 4.9	5.0	3.9
				Middle	17.5	26.2 25.5	25.9	8.6 8.6	8.6	31.9 31.9	31.9	76.7 80.0	78.4	5.2 5.5	5.4		2.8 2.8	2.8		4.5 4.5	4.5	
				Bottom	34	24.5 24.3	24.4	8.6 8.6	8.6	34.8 34.9	34.9	61.7 62.2	62.0	4.2 4.3	4.3	4.3	6.1 6.3	6.2		2.1 2.0	2.1	
G1	Sunny	Calm	07:42	Surface	1	27.3 27.1	27.2	8.6 8.6	8.6	31.0 31.0	31.0	137.9 134.5	136.2	9.2 9.0	9.1	7.3	1.4 1.4	1.4	2.3	5.0 4.9	5.0	3.9
				Middle	4	26.1 25.9	26.0	8.6 8.6	8.6	32.3 32.3	32.3	75.3 83.6	79.5	5.1 5.7	5.4		2.1 2.0	2.1		4.4 4.5	4.5	
				Bottom	7	24.7 24.7	24.7	8.6 8.6	8.6	34.3 34.3	34.3	66.0 67.3	66.7	4.5 4.6	4.6	4.6	3.5 3.2	3.4		2.0 2.1	2.1	
G2	Sunny	Calm	07:26	Surface	1	27.2 27.1	27.2	8.6 8.6	8.6	31.1 31.1	31.1	141.4 146.4	143.9	9.4 9.8	9.6	7.5	1.4 1.5	1.5	2.3	2.3 2.3	2.3	3.2
				Middle	5	26.0 25.9	26.0	8.6 8.6	8.6	32.3 32.3	32.3	76.6 80.8	78.7	5.2 5.5	5.4		1.8 2.0	1.9		4.8 4.9	4.9	
				Bottom	9	24.7 24.7	24.7	8.7 8.7	8.7	34.9 34.7	34.8	62.0 62.6	62.3	4.2 4.3	4.3	4.3	3.7 3.2	3.5		2.4 2.4	2.4	
G3	Sunny	Calm	07:50	Surface	1	26.8 26.8	26.8	8.6 8.6	8.6	31.4 31.4	31.4	138.1 138.0	138.1	9.3 9.3	9.3	7.5	1.8 1.5	1.7	2.5	4.6 4.6	4.6	3.8
				Middle	4	25.6 25.6	25.6	8.6 8.6	8.6	32.5 32.4	32.5	83.6 83.2	83.4	5.7 5.7	5.7		2.6 2.4	2.5		4.6 4.5	4.6	
				Bottom	7	24.4 24.4	24.4	8.6 8.6	8.6	34.2 34.2	34.2	60.8 62.3	61.6	4.2 4.3	4.3	4.3	3.4 3.0	3.2		2.2 2.1	2.2	
G4	Sunny	Calm	08:10	Surface	1	27.8 27.2	27.5	8.5 8.5	8.5	29.5 29.5	29.5	125.3 119.8	122.6	8.4 8.1	8.3	6.6	1.2 1.3	1.3	2.7	4.1 3.9	4.0	3.2
				Middle	4.5	26.6 25.9	26.3	8.6 8.6	8.6	31.4 31.4	31.4	71.5 71.8	71.7	4.8 4.9	4.9		2.2 2.6	2.4		3.8 3.8	3.8	
				Bottom	8	24.8 24.8	24.8	8.6 8.6	8.6	33.9 33.7	33.8	67.5 62.5	65.0	4.6 4.3	4.5	4.5	4.2 4.4	4.3		1.9 1.9	1.9	
M1	Sunny	Calm	07:35	Surface	1	26.9 26.8	26.9	8.6 8.5	8.6	31.4 31.4	31.4	134.8 135.1	135.0	9.0 9.1	9.1	7.4	1.7 1.8	1.8	2.7	5.0 4.8	4.9	4.3
				Middle	3	25.6 25.5	25.6	8.6 8.6	8.6	32.6 32.6	32.6	83.4 83.1	83.3	5.7 5.7	5.7		2.1 2.3	2.2		5.2 5.3	5.3	
				Bottom	5	24.4 24.3	24.4	8.6 8.6	8.6	34.4 34.4	34.4	69.9 69.5	69.7	4.8 4.8	4.8	4.8	3.9 4.2	4.1		2.7 2.7	2.7	
M2	Sunny	Calm	07:16	Surface	1	27.5 26.9	27.2	8.6 8.6	8.6	30.0 30.0	30.0	134.4 133.4	133.9	9.0 9.0	9.0	7.4	1.7 1.8	1.8	3.6	4.5 4.5	4.5	4.9
				Middle	5.5	26.2 25.5	25.9	8.6 8.6	8.6	31.9 31.9	31.9	83.3 82.7	83.0	5.6 5.7	5.7		2.8 2.8	2.8		4.6 4.7	4.7	
				Bottom	10	24.5 24.3	24.4	8.6 8.6	8.6	33.8 33.9	33.9	61.3 63.5	62.4	4.2 4.4	4.3	4.3	6.1 6.3	6.2		5.3 5.4	5.4	
M3	Sunny	Calm	07:59	Surface	1	27.7 27.4	27.6	8.6 8.6	8.6	29.3 29.2	29.3	131.6 133.3	132.5	8.8 9.0	8.9	7.0	1.4 1.5	1.5	2.3	4.5 4.5	4.5	3.7
				Middle	4	26.6 26.0	26.3	8.6 8.6	8.6	30.8 30.9	30.9	74.5 75.1	74.8	5.0 5.1	5.1		1.9 1.8	1.9		4.4 4.2	4.3	
				Bottom	7	25.0 24.8	24.9	8.6 8.6	8.6	33.0 33.0	33.0	65.9 64.5	65.2	4.5 4.4	4.5	4.5	3.6 3.5	3.6		2.3 2.2	2.3	
M4	Sunny	Calm	07:08	Surface	1	26.9 26.8	26.9	8.6 8.6	8.6	31.4 31.4	31.4	143.0 141.5	142.3	9.6 9.5	9.6	7.8	1.7 1.8	1.8	2.7	4.0 4.0	4.0	4.4
				Middle	4.5	25.7 25.0	25.4	8.6 8.6	8.6	32.5 32.5	32.5	87.9 84.3	86.1	6.0 5.8	5.9		1.8 1.7	1.8		4.7 4.9	4.8	
				Bottom	8	24.4 23.8	24.1	8.6 8.6	8.6	35.2 35.2	35.2	76.8 75.8	76.3	5.3 5.2	5.3	5.3	4.6 4.6	4.6		4.3 4.4	4.4	
M5	Sunny	Calm	08:31	Surface	1	27.6 27.4	27.5	8.6 8.6	8.6	29.5 29.5	29.5	128.3 133.8	131.1	8.6 9.0	8.8	7.3	2.2 2.1	2.2	3.7	4.1 4.0	4.1	4.3
				Middle	6	26.4 25.9	26.2	8.6 8.6	8.6	31.4 31.5	31.5	82.3 84.3	83.3	5.6 5.7	5.7		2.4 2.3	2.4		5.6 5.5	5.6	
				Bottom	11	24.9 24.7	24.8	8.6 8.6	8.6	33.9 34.0	34.0	75.2 69.8	72.5	5.1 4.8	5.0	5.0	6.4 6.8	6.6		3.1 3.1	3.1	
M6	Sunny	Calm	08:20	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.3	- -	-	2.7	- -	-	7.1
				Middle	2	27.8 27.3	27.6	8.6 8.6	8.6	30.5 30.6	30.6	110.5 109.2	109.9	7.3 7.3	7.3		2.7 2.6	2.7		6.9 7.2	7.1	
				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 14 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.7 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.3 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.1 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 14 July 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	17:01	Surface	1	26.7 26.5	26.6	8.6 8.6	8.6	27.6 27.6	27.6	125.1 127.4	126.3	8.6 8.8	8.7	7.1	2.9 2.5	2.7	4.4	4.9 5.1	5.0	5.2
				Middle	9.5	26.7 26.4	26.6	8.5 8.6	8.6	29.0 29.0	29.0	79.6 80.0	79.8	5.4 5.5	5.5		4.6 3.8	4.2		5.9 5.8	5.9	
				Bottom	18	26.5 26.4	26.5	8.5 8.6	8.6	31.2 31.2	31.2	65.8 65.7	65.8	4.4 4.4	4.4	4.4	6.8 5.9	6.4		4.9 4.7	4.8	
C2	Cloudy	Moderate	15:09	Surface	1	26.4 26.3	26.4	8.6 8.5	8.6	27.9 27.9	27.9	121.1 122.3	121.7	8.3 8.4	8.4	7.0	1.1 1.0	1.1	3.0	5.3 5.5	5.4	5.4
				Middle	17	26.4 26.4	26.4	8.5 8.5	8.5	29.2 29.2	29.2	80.3 80.3	80.3	5.5 5.5	5.5		2.1 2.4	2.3		4.5 4.5	4.5	
				Bottom	33	26.3 26.4	26.4	8.5 8.6	8.6	31.3 31.3	31.3	67.1 67.2	67.2	4.5 4.5	4.5	4.5	5.7 5.5	5.6		6.2 6.1	6.2	
G1	Cloudy	Moderate	15:58	Surface	1	26.3 26.2	26.3	8.6 8.6	8.6	27.7 27.7	27.7	120.7 121.4	121.1	8.3 8.4	8.4	6.9	1.6 1.4	1.5	3.2	5.2 5.3	5.3	5.3
				Middle	3.5	26.3 26.0	26.2	8.6 8.6	8.6	29.0 29.0	29.0	77.6 78.7	78.2	5.3 5.4	5.4		2.6 2.9	2.8		5.5 5.6	5.6	
				Bottom	6	26.2 26.0	26.1	8.6 8.6	8.6	31.3 31.2	31.3	65.2 66.3	65.8	4.4 4.5	4.5	4.5	5.1 5.2	5.2		5.2 5.0	5.1	
G2	Cloudy	Moderate	15:39	Surface	1	26.3 26.3	26.3	8.5 8.5	8.5	28.2 28.2	28.2	119.8 120.4	120.1	8.2 8.3	8.3	6.9	1.8 1.7	1.8	3.2	4.2 4.2	4.2	5.0
				Middle	4.5	26.3 26.2	26.3	8.5 8.6	8.6	29.5 29.5	29.5	79.6 78.5	79.1	5.4 5.4	5.4		3.1 3.0	3.1		5.2 5.2	5.2	
				Bottom	8	26.3 26.2	26.3	8.5 8.5	8.5	32.0 32.0	32.0	64.2 64.0	64.1	4.3 4.3	4.3	4.3	4.7 4.7	4.7		5.6 5.6	5.6	
G3	Cloudy	Moderate	16:08	Surface	1	26.3 26.3	26.3	8.5 8.5	8.5	27.7 27.6	27.7	121.5 122.1	121.8	8.4 8.4	8.4	6.9	1.9 1.7	1.8	3.6	5.2 5.1	5.2	5.6
				Middle	3.5	26.2 26.1	26.2	8.5 8.5	8.5	29.2 29.2	29.2	78.7 78.6	78.7	5.4 5.4	5.4		3.2 3.7	3.5		6.3 6.4	6.4	
				Bottom	6	26.3 26.1	26.2	8.5 8.5	8.5	31.6 31.6	31.6	64.4 63.7	64.1	4.4 4.3	4.4	4.4	5.5 5.5	5.5		5.2 5.3	5.3	
G4	Cloudy	Moderate	16:28	Surface	1	26.7 26.5	26.6	8.5 8.5	8.5	27.7 27.7	27.7	121.2 121.2	121.2	8.3 8.3	8.3	6.9	1.6 1.6	1.6	3.4	5.5 5.5	5.5	5.4
				Middle	4	26.7 26.5	26.6	8.5 8.5	8.5	29.3 29.3	29.3	79.0 79.2	79.1	5.4 5.4	5.4		2.7 2.9	2.8		5.6 5.4	5.5	
				Bottom	7	26.5 26.5	26.5	8.5 8.5	8.5	31.8 31.8	31.8	70.0 70.0	70.0	4.7 4.7	4.7	4.7	5.7 6.0	5.9		5.2 5.2	5.2	
M1	Cloudy	Moderate	15:49	Surface	1	26.3 26.3	26.3	8.5 8.5	8.5	28.0 28.0	28.0	119.9 120.2	120.1	8.3 8.3	8.3	6.9	1.7 1.7	1.7	2.9	5.0 4.9	5.0	5.2
				Middle	3	26.3 26.2	26.3	8.5 8.5	8.5	29.2 29.2	29.2	79.2 78.7	79.0	5.4 5.4	5.4		2.5 2.5	2.5		5.3 5.5	5.4	
				Bottom	5	26.7 26.5	26.6	8.5 8.5	8.5	31.2 31.2	31.2	67.1 67.6	67.4	4.5 4.6	4.6	4.6	4.6 4.3	4.5		5.2 5.2	5.2	
M2	Cloudy	Moderate	15:29	Surface	1	26.3 26.3	26.3	8.6 8.6	8.6	28.2 28.1	28.2	115.4 115.8	115.6	8.0 8.0	8.0	6.6	1.6 1.8	1.7	3.1	5.7 5.6	5.7	5.3
				Middle	5	26.3 26.3	26.3	8.5 8.5	8.5	29.4 29.5	29.5	75.0 74.7	74.9	5.1 5.1	5.1		3.3 3.0	3.2		5.3 5.2	5.3	
				Bottom	9	26.3 26.3	26.3	8.5 8.5	8.5	31.7 31.7	31.7	64.9 64.8	64.9	4.4 4.4	4.4	4.4	4.5 4.5	4.5		4.8 4.7	4.8	
M3	Cloudy	Moderate	16:18	Surface	1	26.6 26.5	26.6	8.5 8.6	8.6	28.2 28.2	28.2	133.3 129.2	131.3	9.1 8.9	9.0	7.3	1.8 2.0	1.9	3.2	4.9 4.7	4.8	4.9
				Middle	3.5	26.6 26.5	26.6	8.5 8.5	8.5	29.7 29.7	29.7	80.9 81.1	81.0	5.5 5.5	5.5		3.4 3.2	3.3		5.0 5.2	5.1	
				Bottom	6	26.5 26.5	26.5	8.5 8.5	8.5	32.1 32.1	32.1	64.9 64.5	64.7	4.4 4.3	4.4	4.4	4.3 4.4	4.4		4.7 4.7	4.7	
M4	Cloudy	Moderate	15:19	Surface	1	26.3 26.3	26.3	8.5 8.5	8.5	28.0 28.0	28.0	121.3 121.2	121.3	8.4 8.4	8.4	7.0	2.9 2.6	2.8	3.9	4.7 4.6	4.7	5.3
				Middle	4	26.3 25.6	26.0	8.5 8.5	8.5	29.2 29.1	29.2	79.9 78.5	79.2	5.5 5.4	5.5		3.9 3.7	3.8		6.1 6.3	6.2	
				Bottom	7	26.3 25.6	26.0	8.5 8.6	8.6	31.3 31.4	31.4	68.0 65.8	66.9	4.6 4.5	4.6	4.6	5.1 5.2	5.2		5.1 4.9	5.0	
M5	Cloudy	Moderate	16:49	Surface	1	26.7 26.5	26.6	8.5 8.6	8.6	27.9 27.9	27.9	121.0 120.6	120.8	8.3 8.3	8.3	6.9	2.3 2.7	2.5	4.0	5.1 5.3	5.2	5.1
				Middle	5	26.7 26.5	26.6	8.6 8.5	8.6	29.2 29.2	29.2	78.2 78.8	78.5	5.3 5.4	5.4		3.7 3.6	3.7		5.2 5.1	5.2	
				Bottom	9	26.5 26.5	26.5	8.6 8.6	8.6	31.4 31.4	31.4	66.8 66.5	66.7	4.5 4.5	4.5	4.5	5.7 6.0	5.9		5.0 4.9	5.0	
M6	Cloudy	Moderate	16:39	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.2	- -	-	2.6	- -	-	6.5
				Middle	2.1	26.7 26.5	26.6	8.6 8.6	8.6	29.2 29.2	29.2	104.9 106.3	105.6	7.1 7.3	7.2		2.5 2.6	2.6		6.5 6.5	6.5	
				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 14 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.5 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 10.3 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 14 July 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	10:17	Surface	1	26.7 26.3	26.5	8.6 8.6	8.6	27.4 27.5	27.5	133.6 130.7	132.2	9.2 9.0	9.1	7.5	1.7 1.8	1.8	4.8	5.6 5.7	5.7	5.1
				Middle	10	26.6 26.1	26.4	8.5 8.5	8.5	29.8 29.7	29.8	84.3 85.1	84.7	5.7 5.8	5.8		5.0 4.6	4.8		4.6 4.7	4.7	
				Bottom	19	26.3 26.2	26.3	8.6 8.6	8.6	32.5 32.4	32.5	73.0 75.1	74.1	4.9 5.1	5.0	5.0	7.7 8.0	7.9		5.0 4.9	5.0	
C2	Cloudy	Moderate	08:20	Surface	1	26.4 25.8	26.1	8.5 8.5	8.5	27.6 27.6	27.6	127.2 130.8	129.0	8.8 9.1	9.0	7.5	1.4 1.5	1.5	3.9	5.1 5.2	5.2	5.0
				Middle	17.5	26.4 25.6	26.0	8.5 8.5	8.5	30.1 30.1	30.1	84.2 87.4	85.8	5.7 6.0	5.9		3.6 3.5	3.6		4.9 5.0	5.0	
				Bottom	34	25.8 25.6	25.7	8.6 8.6	8.6	32.3 32.4	32.4	69.4 70.0	69.7	4.7 4.8	4.8	4.8	6.7 6.7	6.7		4.8 4.7	4.8	
G1	Cloudy	Moderate	09:09	Surface	1	26.2 26.1	26.2	8.5 8.5	8.5	29.0 29.0	29.0	124.1 120.9	122.5	8.5 8.3	8.4	7.2	1.9 2.3	2.1	4.1	5.0 4.9	5.0	4.7
				Middle	4	26.3 26.1	26.2	8.5 8.6	8.6	30.5 30.5	30.5	82.8 91.0	86.9	5.6 6.2	5.9		3.9 3.8	3.9		4.6 4.6	4.6	
				Bottom	7	26.1 26.1	26.1	8.6 8.5	8.6	32.8 32.8	32.8	74.3 75.6	75.0	5.0 5.1	5.1	5.1	6.1 6.3	6.2		4.5 4.5	4.5	
G2	Cloudy	Moderate	08:50	Surface	1	26.1 26.1	26.1	8.6 8.5	8.6	29.0 29.0	29.0	127.6 132.4	130.0	8.8 9.1	9.0	7.5	1.4 1.5	1.5	4.5	5.3 5.1	5.2	5.3
				Middle	5	26.1 26.1	26.1	8.6 8.6	8.6	30.5 30.5	30.5	84.1 88.2	86.2	5.7 6.0	5.9		4.6 4.6	4.6		5.3 5.3	5.3	
				Bottom	9	26.1 26.1	26.1	8.6 8.6	8.6	33.4 33.2	33.3	70.2 70.8	70.5	4.7 4.8	4.8	4.8	7.2 7.4	7.3		5.4 5.4	5.4	
G3	Cloudy	Moderate	09:19	Surface	1	25.8 25.8	25.8	8.5 8.5	8.5	29.4 29.4	29.4	124.4 124.3	124.4	8.6 8.6	8.6	7.4	1.5 1.2	1.4	3.7	5.0 5.1	5.1	5.3
				Middle	4	25.8 25.7	25.8	8.6 8.5	8.6	30.7 30.7	30.7	90.9 90.6	90.8	6.2 6.2	6.2		3.4 3.2	3.3		5.9 5.6	5.8	
				Bottom	7	25.8 25.7	25.8	8.5 8.5	8.5	32.7 32.7	32.7	83.7 85.2	84.5	5.7 5.8	5.8	5.8	6.5 6.1	6.3		4.9 4.9	4.9	
G4	Cloudy	Moderate	09:41	Surface	1	26.7 26.1	26.4	8.6 8.6	8.6	27.4 27.4	27.4	111.9 106.6	109.3	7.7 7.4	7.6	6.4	1.7 1.7	1.7	2.8	5.6 5.3	5.5	5.8
				Middle	4.5	26.7 26.0	26.4	8.5 8.5	8.5	29.6 29.6	29.6	74.6 74.9	74.8	5.1 5.1	5.1		4.8 5.1	5.0		6.1 6.1	6.1	
				Bottom	8	26.1 26.1	26.1	8.6 8.6	8.6	32.4 32.2	32.3	66.8 61.8	64.3	4.5 4.2	4.4	4.4	1.7 1.7	1.7		5.8 5.9	5.9	
M1	Cloudy	Moderate	08:59	Surface	1	25.8 25.8	25.8	8.6 8.6	8.6	29.4 29.4	29.4	121.2 121.5	121.4	8.4 8.4	8.4	7.2	2.4 2.5	2.5	4.3	5.1 5.2	5.2	5.2
				Middle	3	25.8 25.7	25.8	8.6 8.6	8.6	30.8 30.8	30.8	86.5 86.1	86.3	5.9 5.9	5.9		3.6 4.1	3.9		5.1 5.1	5.1	
				Bottom	5	26.7 26.3	26.5	8.5 8.6	8.6	31.3 31.2	31.3	83.8 83.1	83.5	5.6 5.6	5.6	5.6	6.4 6.5	6.5		5.3 5.4	5.4	
M2	Cloudy	Moderate	08:40	Surface	1	26.4 25.8	26.1	8.6 8.6	8.6	27.6 27.6	27.6	120.5 119.7	120.1	8.3 8.3	8.3	7.1	2.1 2.2	2.2	4.1	5.1 5.2	5.2	5.2
				Middle	5.5	26.4 25.6	26.0	8.6 8.6	8.6	30.1 30.1	30.1	86.3 85.6	86.0	5.9 5.9	5.9		3.6 3.8	3.7		4.7 4.6	4.7	
				Bottom	10	25.8 25.6	25.7	8.6 8.6	8.6	32.3 32.4	32.4	69.4 68.7	69.1	4.7 4.7	4.7	4.7	6.4 6.3	6.4		5.6 5.7	5.7	
M3	Cloudy	Moderate	09:31	Surface	1	26.7 26.3	26.5	8.5 8.5	8.5	27.2 27.2	27.2	118.0 119.7	118.9	8.1 8.3	8.2	6.8	1.1 1.2	1.2	4.0	5.4 5.6	5.5	5.1
				Middle	4.5	26.7 26.1	26.4	8.5 8.5	8.5	29.1 29.1	29.1	74.6 78.1	76.4	5.1 5.4	5.3		4.2 4.4	4.3		4.9 5.0	5.0	
				Bottom	8	26.3 26.1	26.2	8.6 8.5	8.6	31.5 31.5	31.5	66.8 65.3	66.1	4.5 4.4	4.5	4.5	6.7 6.5	6.6		4.7 4.7	4.7	
M4	Cloudy	Moderate	08:30	Surface	1	25.8 25.7	25.8	8.6 8.6	8.6	29.4 29.4	29.4	129.2 127.7	128.5	8.9 8.8	8.9	7.5	1.4 1.5	1.5	4.1	5.5 5.4	5.5	5.1
				Middle	4.5	25.8 25.2	25.5	8.6 8.6	8.6	30.7 30.7	30.7	87.9 87.3	87.6	6.0 6.0	6.0		4.6 4.6	4.6		5.0 5.1	5.1	
				Bottom	8	25.7 25.2	25.5	8.5 8.5	8.5	33.7 33.7	33.7	77.7 76.7	77.2	5.2 5.2	5.2	5.2	6.2 6.4	6.3		4.6 4.6	4.6	
M5	Cloudy	Moderate	10:05	Surface	1	26.6 26.3	26.5	8.5 8.5	8.5	27.4 27.4	27.4	114.9 120.3	117.6	7.9 8.3	8.1	7.0	1.6 1.7	1.7	4.1	5.2 5.2	5.2	5.1
				Middle	5.5	26.6 26.1	26.4	8.5 8.6	8.6	29.6 29.7	29.7	82.4 87.3	84.9	5.6 6.0	5.8		4.0 4.4	4.2		5.2 5.2	5.2	
				Bottom	10	26.3 26.1	26.2	8.6 8.6	8.6	32.4 32.5	32.5	76.1 70.7	73.4	5.1 4.8	5.0	5.0	6.3 6.5	6.4		4.9 4.9	4.9	
M6	Cloudy	Moderate	09:53	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.4	- -	-	2.5	- -	-	4.6
				Middle	2	26.8 26.3	26.6	8.6 8.5	8.6	28.7 28.8	28.8	107.9 106.6	107.3	7.4 7.3	7.4		2.5 2.4	2.5		4.6 4.5	4.6	
				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 17 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.1 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.6 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.6 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.9 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.6 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.9 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 5.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Calm	18:35	Surface	1	26.8 26.6	26.7	8.9 8.9	8.9	25.5 25.6	25.6	104.1 101.7	102.9	7.2 7.1	7.2	6.4	1.7 1.8	1.8	3.5	2.5 2.5	2.5	3.0
				Middle	9.5	26.8 26.6	26.7	8.8 8.9	8.9	28.1 28.1	28.1	80.9 82.1	81.5	5.5 5.6	5.6		3.9 4.1	4.0		3.6 3.7	3.7	
				Bottom	18	26.6 26.6	26.6	8.8 8.9	8.9	30.3 30.1	30.2	50.8 53.0	51.9	3.4 3.6	3.5	3.5	4.5 4.7	4.6		2.9 2.9	2.9	
C2	Rainy	Calm	16:57	Surface	1	26.5 26.5	26.5	8.9 8.8	8.9	25.7 25.8	25.8	101.8 102.6	102.2	7.1 7.1	7.1	6.3	1.4 1.5	1.5	3.2	3.8 3.8	3.8	4.3
				Middle	17.5	26.5 26.5	26.5	8.8 8.8	8.8	28.5 28.5	28.5	80.7 80.6	80.7	5.5 5.5	5.5		3.1 3.1	3.1		4.8 4.8	4.8	
				Bottom	34	26.5 26.5	26.5	8.8 8.9	8.9	31.1 31.2	31.2	48.0 48.8	48.4	3.2 3.3	3.3	3.3	5.0 5.2	5.1		4.2 4.2	4.2	
G1	Rainy	Calm	17:39	Surface	1	26.4 26.4	26.4	8.9 8.9	8.9	24.1 24.1	24.1	93.2 90.2	91.7	6.6 6.4	6.5	6.1	1.9 1.7	1.8	2.8	3.8 3.7	3.8	3.6
				Middle	4	26.4 26.1	26.3	8.9 8.9	8.9	25.9 25.9	25.9	78.0 85.9	82.0	5.4 6.0	5.7		2.4 2.3	2.4		3.3 3.3	3.3	
				Bottom	7	26.3 26.1	26.2	8.9 8.9	8.9	29.6 29.6	29.6	51.7 52.8	52.3	3.5 3.6	3.6	3.6	4.4 4.1	4.3		3.8 3.7	3.8	
G2	Rainy	Calm	17:21	Surface	1	26.5 26.4	26.5	8.8 8.8	8.8	24.1 24.1	24.1	96.8 101.6	99.2	6.8 7.1	7.0	6.4	1.1 1.2	1.2	2.6	3.4 3.3	3.4	3.9
				Middle	5	26.5 26.4	26.5	8.8 8.9	8.9	25.9 25.9	25.9	79.5 83.5	81.5	5.5 5.8	5.7		2.1 2.3	2.2		5.0 5.0	5.0	
				Bottom	9	26.4 26.4	26.4	8.9 8.9	8.9	30.2 29.9	30.1	47.7 48.3	48.0	3.2 3.3	3.3	3.3	4.6 4.1	4.4		3.2 3.2	3.2	
G3	Rainy	Calm	17:50	Surface	1	26.4 26.5	26.5	8.8 8.8	8.8	24.5 24.5	24.5	94.2 94.3	94.3	6.6 6.6	6.6	6.3	1.5 1.2	1.4	2.2	3.7 3.7	3.7	4.3
				Middle	4	26.3 26.2	26.3	8.8 8.8	8.8	25.0 25.0	25.0	86.1 85.6	85.9	6.0 6.0	6.0		1.9 1.7	1.8		5.8 5.7	5.8	
				Bottom	7	26.5 26.2	26.4	8.8 8.8	8.8	29.5 29.5	29.5	61.6 62.8	62.2	4.2 4.3	4.3	4.3	3.3 3.6	3.5		3.4 3.4	3.4	
G4	Rainy	Calm	18:08	Surface	1	26.9 26.6	26.8	8.8 8.8	8.8	23.5 23.5	23.5	81.6 77.3	79.5	5.7 5.4	5.6	5.3	1.6 1.7	1.7	3.5	3.1 3.0	3.1	3.8
				Middle	4	26.9 26.6	26.8	8.8 8.8	8.8	25.0 25.0	25.0	70.0 70.9	70.5	4.9 4.9	4.9		3.5 3.9	3.7		4.2 4.3	4.3	
				Bottom	7	26.6 26.6	26.6	8.8 8.8	8.8	29.2 29.0	29.1	44.6 39.6	42.1	3.0 2.7	2.9	2.9	5.1 5.3	5.2		4.1 4.1	4.1	
M1	Rainy	Calm	17:30	Surface	1	26.4 26.4	26.4	8.8 8.8	8.8	24.5 24.5	24.5	91.1 91.5	91.3	6.4 6.4	6.4	6.1	1.4 1.5	1.5	2.7	3.6 3.6	3.6	3.6
				Middle	3	26.4 26.3	26.4	8.8 8.8	8.8	25.2 25.2	25.2	81.9 81.4	81.7	5.7 5.7	5.7		2.1 2.6	2.4		3.8 4.0	3.9	
				Bottom	5	26.9 26.6	26.8	8.8 8.8	8.8	28.1 28.0	28.1	61.0 60.7	60.9	4.2 4.2	4.2	4.2	4.2 4.3	4.3		3.3 3.3	3.3	
M2	Rainy	Calm	17:15	Surface	1	26.4 26.4	26.4	8.9 8.9	8.9	23.7 23.7	23.7	90.0 90.4	90.2	6.3 6.4	6.4	6.1	1.4 1.5	1.5	3.2	2.6 2.7	2.7	3.0
				Middle	5.5	26.5 26.4	26.5	8.8 8.8	8.8	25.5 25.5	25.5	81.3 81.7	81.5	5.7 5.7	5.7		3.1 3.1	3.1		3.6 3.5	3.6	
				Bottom	10	26.4 26.4	26.4	8.8 8.8	8.8	29.1 29.2	29.2	47.4 46.8	47.1	3.2 3.2	3.2	3.2	5.0 5.2	5.1		2.5 2.6	2.6	
M3	Rainy	Calm	18:01	Surface	1	26.8 26.6	26.7	8.8 8.9	8.9	23.3 23.3	23.3	87.6 89.8	88.7	6.2 6.3	6.3	5.7	1.1 1.2	1.2	2.8	4.0 3.9	4.0	3.7
				Middle	4	26.8 26.6	26.7	8.8 8.8	8.8	24.4 24.4	24.4	69.9 73.9	71.9	4.9 5.2	5.1		2.7 2.9	2.8		3.4 3.4	3.4	
				Bottom	7	26.6 26.6	26.6	8.8 8.8	8.8	28.3 28.3	28.3	44.4 43.2	43.8	3.0 3.0	3.0	3.0	4.5 4.4	4.5		3.6 3.5	3.6	
M4	Rainy	Calm	17:06	Surface	1	26.4 26.4	26.4	8.8 8.8	8.8	24.5 24.5	24.5	99.0 97.7	98.4	6.9 6.9	6.9	6.4	1.4 1.5	1.5	2.4	4.4 4.3	4.4	3.4
				Middle	4.5	26.4 25.8	26.1	8.8 8.8	8.8	25.1 25.1	25.1	83.3 82.6	83.0	5.8 5.8	5.8		2.1 2.0	2.1		2.7 2.8	2.8	
				Bottom	8	26.4 25.8	26.1	8.8 8.9	8.9	29.5 29.5	29.5	55.3 54.4	54.9	3.8 3.8	3.8	3.8	3.5 3.5	3.5		2.9 3.0	3.0	
M5	Rainy	Calm	18:28	Surface	1	26.8 26.6	26.7	8.8 8.9	8.9	23.5 23.5	23.5	89.0 90.3	89.7	6.2 6.4	6.3	6.0	1.7 1.7	1.7	3.2	3.2 3.0	3.1	2.8
				Middle	5	26.8 26.7	26.8	8.9 8.8	8.9	25.0 25.1	25.1	77.7 83.0	80.4	5.4 5.8	5.6		3.3 3.6	3.5		2.6 2.6	2.6	
				Bottom	9	26.6 26.7	26.7	8.9 8.9	8.9	29.2 29.2	29.2	53.6 48.5	51.1	3.7 3.3	3.5	3.5	4.3 4.7	4.5		2.6 2.5	2.6	
M6	Rainy	Calm	18:15	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.0	- -	-	1.5	- -	-	3.5
				Middle	2	26.9 26.7	26.8	8.9 8.9	8.9	24.3 24.4	24.4	86.5 86.1	86.3	6.0 6.0	6.0		1.5 1.4	1.5		3.5 3.5	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 17 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.5 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 7.0 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 4.4 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 4.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Calm	13:01	Surface	1	26.7 26.4	26.6	8.8 8.8	8.8	25.6 25.7	25.7	102.8 104.9	103.9	7.1 7.3	7.2	6.3	1.9 2.1	2.0	3.3	4.1 4.2	4.2	3.8
				Middle	10	26.7 26.2	26.5	8.9 8.9	8.9	28.0 28.0	28.0	78.5 78.4	78.5	5.4 5.4	5.4		2.5 2.6	2.6		3.6 3.5	3.6	
				Bottom	19	26.4 26.3	26.4	8.9 8.8	8.9	31.2 31.2	31.2	53.4 53.3	53.4	3.6 3.6	3.6	3.6	5.1 5.7	5.4		3.7 3.6	3.7	
C2	Rainy	Calm	11:05	Surface	1	26.5 25.9	26.2	8.8 8.7	8.8	25.9 25.9	25.9	99.1 99.4	99.3	6.9 7.0	7.0	6.2	2.0 1.7	1.9	3.0	3.2 3.2	3.2	3.2
				Middle	17.5	26.5 25.7	26.1	8.7 8.7	8.7	28.2 28.2	28.2	79.2 78.2	78.7	5.4 5.4	5.4		2.7 2.5	2.6		3.5 3.4	3.5	
				Bottom	34	25.9 25.7	25.8	8.8 8.8	8.8	31.3 31.3	31.3	54.4 54.3	54.4	3.7 3.7	3.7	3.7	4.4 4.5	4.5		2.8 2.8	2.8	
G1	Rainy	Calm	11:59	Surface	1	26.3 26.2	26.3	8.9 8.9	8.9	23.6 23.6	23.6	97.5 98.0	97.8	6.9 6.9	6.9	6.2	0.9 0.9	0.9	2.7	2.6 2.6	2.6	3.3
				Middle	4	26.3 26.1	26.2	8.9 8.8	8.9	25.0 25.0	25.0	75.2 76.4	75.8	5.3 5.4	5.4		2.2 2.3	2.3		3.8 3.9	3.9	
				Bottom	7	26.2 26.1	26.2	8.8 8.9	8.9	29.3 29.3	29.3	52.3 53.6	53.0	3.6 3.7	3.7	3.7	4.8 4.8	4.8		3.4 3.3	3.4	
G2	Rainy	Calm	11:38	Surface	1	26.2 26.2	26.2	8.8 8.8	8.8	24.2 24.1	24.2	96.3 96.8	96.6	6.8 6.8	6.8	6.1	0.8 0.8	0.8	1.8	3.3 3.2	3.3	3.1
				Middle	5	26.2 26.1	26.2	8.8 8.8	8.8	25.5 25.5	25.5	77.0 75.9	76.5	5.4 5.3	5.4		1.1 1.2	1.2		3.4 3.4	3.4	
				Bottom	9	26.2 26.2	26.2	8.8 8.8	8.8	30.0 30.0	30.0	49.8 48.6	49.2	3.4 3.3	3.4	3.4	3.4 3.4	3.4		2.5 2.5	2.5	
G3	Rainy	Calm	12:08	Surface	1	25.9 25.8	25.9	8.9 8.9	8.9	23.6 23.6	23.6	97.5 98.0	97.8	6.9 7.0	7.0	6.2	0.6 0.7	0.7	1.7	4.1 4.2	4.2	3.4
				Middle	4	25.9 25.8	25.9	8.8 8.9	8.9	25.2 25.2	25.2	75.8 75.8	75.8	5.4 5.4	5.4		1.4 1.2	1.3		2.6 2.6	2.6	
				Bottom	7	25.8 25.8	25.8	8.9 8.9	8.9	29.6 29.6	29.6	51.1 50.7	50.9	3.5 3.5	3.5	3.5	3.4 2.9	3.2		3.3 3.3	3.3	
G4	Rainy	Calm	12:28	Surface	1	26.8 26.2	26.5	8.8 8.8	8.8	23.6 23.6	23.6	98.0 97.3	97.7	6.9 6.9	6.9	6.2	1.0 1.2	1.1	2.7	2.7 2.8	2.8	3.4
				Middle	4.5	26.8 26.1	26.5	8.9 8.9	8.9	25.3 25.3	25.3	76.7 76.2	76.5	5.3 5.4	5.4		2.5 2.3	2.4		3.7 3.8	3.8	
				Bottom	8	26.2 26.2	26.2	8.9 8.9	8.9	29.8 29.8	29.8	56.8 56.8	56.8	3.9 3.9	3.9	3.9	4.7 4.3	4.5		3.6 3.6	3.6	
M1	Rainy	Calm	11:48	Surface	1	25.9 25.8	25.9	8.8 8.8	8.8	23.9 23.9	23.9	96.0 96.2	96.1	6.8 6.8	6.8	6.1	0.7 0.7	0.7	1.7	3.3 3.4	3.4	3.3
				Middle	3	25.8 25.8	25.8	8.8 8.8	8.8	25.2 25.2	25.2	76.1 75.7	75.9	5.4 5.4	5.4		1.3 1.5	1.4		3.6 3.6	3.6	
				Bottom	5	26.8 26.3	26.6	8.9 8.8	8.9	29.2 29.2	29.2	54.2 54.5	54.4	3.7 3.7	3.7	3.7	2.9 3.3	3.1		2.8 2.7	2.8	
M2	Rainy	Calm	11:27	Surface	1	26.5 25.9	26.2	8.8 8.8	8.8	24.1 24.1	24.1	92.6 92.0	92.3	6.5 6.5	6.5	5.8	0.9 0.8	0.9	1.8	4.0 4.0	4.0	4.1
				Middle	5.5	26.5 25.7	26.1	8.8 8.8	8.8	25.5 25.5	25.5	72.9 71.7	72.3	5.1 5.1	5.1		1.4 1.4	1.4		3.9 4.0	4.0	
				Bottom	10	25.9 25.7	25.8	8.8 8.8	8.8	29.7 29.7	29.7	47.3 47.1	47.2	3.3 3.3	3.3	3.3	3.2 3.2	3.2		4.3 4.3	4.3	
M3	Rainy	Calm	12:17	Surface	1	26.8 26.4	26.6	8.9 8.9	8.9	24.1 24.1	24.1	109.9 105.5	107.7	7.7 7.4	7.6	6.6	0.9 0.8	0.9	2.2	3.4 3.5	3.5	3.7
				Middle	4	26.8 26.2	26.5	8.8 8.8	8.8	25.7 25.7	25.7	78.5 78.2	78.4	5.4 5.5	5.5		1.7 1.9	1.8		3.4 3.3	3.4	
				Bottom	7	26.4 26.2	26.3	8.8 8.9	8.9	30.1 30.1	30.1	47.5 46.9	47.2	3.2 3.2	3.2	3.2	3.9 3.7	3.8		4.3 4.2	4.3	
M4	Rainy	Calm	11:17	Surface	1	25.9 25.8	25.9	8.8 8.8	8.8	23.9 23.9	23.9	97.3 97.1	97.2	6.9 6.9	6.9	6.2	1.2 1.1	1.2	2.4	4.0 4.1	4.1	3.9
				Middle	4.5	25.9 25.3	25.6	8.8 8.8	8.8	25.2 25.2	25.2	76.8 75.6	76.2	5.4 5.4	5.4		1.9 2.2	2.1		4.0 4.1	4.1	
				Bottom	8	25.8 25.3	25.6	8.9 8.9	8.9	29.5 29.5	29.5	50.3 48.4	49.4	3.5 3.4	3.5	3.5	4.0 3.8	3.9		3.4 3.4	3.4	
M5	Rainy	Calm	12:50	Surface	1	26.6 26.4	26.5	8.9 8.9	8.9	23.9 23.9	23.9	97.5 97.1	97.3	6.8 6.8	6.8	6.1	1.8 1.8	1.8	2.8	3.3 3.3	3.3	3.4
				Middle	5.5	26.7 26.2	26.5	8.9 8.9	8.9	25.2 25.2	25.2	75.7 75.8	75.8	5.3 5.3	5.3		2.5 2.4	2.5		3.2 3.2	3.2	
				Bottom	10	26.4 26.2	26.3	8.9 8.9	8.9	29.4 29.4	29.4	49.3 48.9	49.1	3.4 3.4	3.4	3.4	4.0 4.3	4.2		3.6 3.6	3.6	
M6	Rainy	Calm	12:38	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.5	- -	-	1.2	- -	-	4.9
				Middle	2.3	26.8 26.4	26.6	8.8 8.9	8.9	25.1 25.1	25.1	91.5 92.4	92.0	6.4 6.5	6.5		1.1 1.2	1.2		4.8 4.9	4.9	
				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 19 June 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.9 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.4 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 5.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Fine	Moderate	10:11	Surface	1	27.5 27.4	27.5	8.9 8.9	8.9	20.8 23.4	22.1	86.6 76.2	81.4	6.1 5.3	5.7	4.6	1.6 1.7	1.7	2.3	4.4 4.4	4.4	4.2
				Middle	10	26.7 26.8	26.8	8.7 8.7	8.7	28.6 28.4	28.5	49.0 49.8	49.4	3.3 3.4	3.4		1.3 1.1	1.2		3.6 3.7	3.7	
				Bottom	19	23.6 23.6	23.6	8.5 8.5	8.5	34.1 34.1	34.1	30.5 31.9	31.2	2.1 2.2	2.2	2.2	4.0 4.0	4.0		4.5 4.6	4.6	
C2	Fine	Moderate	08:15	Surface	1	27.2 27.2	27.2	8.8 8.8	8.8	21.6 22.0	21.8	78.0 74.9	76.5	5.5 5.3	5.4	3.9	1.4 1.4	1.4	3.1	6.2 6.2	6.2	4.6
				Middle	17.5	25.1 25.3	25.2	8.6 8.6	8.6	31.5 31.2	31.4	33.1 33.8	33.5	2.3 2.3	2.3		3.0 2.7	2.9		3.1 3.2	3.2	
				Bottom	34	24.9 24.8	24.9	8.6 8.6	8.6	32.3 32.4	32.4	34.8 34.4	34.6	2.4 2.4	2.4	2.4	5.1 4.7	4.9		4.5 4.5	4.5	
G1	Fine	Moderate	09:10	Surface	1	27.6 27.6	27.6	8.9 8.9	8.9	22.3 22.9	22.6	83.9 81.6	82.8	5.8 5.7	5.8	5.2	1.3 1.4	1.4	0.8	3.1 3.2	3.2	3.4
				Middle	4	27.5 27.5	27.5	8.8 8.8	8.8	25.5 25.6	25.6	65.9 65.3	65.6	4.5 4.5	4.5		0.3 0.3	0.3		3.3 3.3	3.3	
				Bottom	7	27.4 27.4	27.4	8.8 8.8	8.8	26.2 26.1	26.2	57.7 59.9	58.8	3.9 4.1	4.0	4.0	0.6 0.6	0.6		3.7 3.7	3.7	
G2	Fine	Moderate	08:52	Surface	1	27.6 27.6	27.6	8.9 8.9	8.9	23.1 23.1	23.1	81.3 80.4	80.9	5.6 5.6	5.6	5.1	0.8 0.9	0.9	0.8	3.1 3.1	3.1	3.8
				Middle	4.5	27.5 27.5	27.5	8.8 8.8	8.8	25.8 25.9	25.9	65.8 65.1	65.5	4.5 4.5	4.5		0.2 0.2	0.2		3.9 3.8	3.9	
				Bottom	8	27.2 27.2	27.2	8.8 8.8	8.8	27.2 27.3	27.3	51.9 50.3	51.1	3.5 3.4	3.5	3.5	1.1 1.2	1.2		4.5 4.5	4.5	
G3	Fine	Moderate	09:29	Surface	1	27.8 27.8	27.8	8.9 8.9	8.9	20.7 20.9	20.8	79.1 77.8	78.5	5.5 5.4	5.5	4.8	2.6 2.3	2.5	1.4	3.7 3.8	3.8	3.0
				Middle	4	27.6 27.6	27.6	8.8 8.8	8.8	25.9 26.0	26.0	59.1 58.8	59.0	4.0 4.0	4.0		0.6 0.6	0.6		1.8 1.8	1.8	
				Bottom	7	27.4 27.4	27.4	8.8 8.8	8.8	26.7 26.7	26.7	51.2 50.1	50.7	3.5 3.4	3.5	3.5	1.2 1.2	1.2		3.4 3.4	3.4	
G4	Fine	Moderate	09:43	Surface	1	27.7 27.9	27.8	8.9 9.0	9.0	20.1 19.6	19.9	85.3 86.3	85.8	6.0 6.1	6.1	5.2	2.2 2.4	2.3	2.8	2.9 3.0	3.0	3.0
				Middle	4.5	27.6 27.5	27.6	8.8 8.8	8.8	25.9 26.0	26.0	63.5 62.7	63.1	4.3 4.3	4.3		0.4 0.4	0.4		2.4 2.3	2.4	
				Bottom	8	27.2 27.2	27.2	8.7 8.7	8.7	27.3 27.3	27.3	37.1 37.0	37.1	2.5 2.5	2.5	2.5	5.6 5.6	5.6		3.5 3.6	3.6	
M1	Fine	Moderate	09:02	Surface	1	27.6 27.7	27.7	8.9 8.9	8.9	22.6 22.8	22.7	79.1 79.0	79.1	5.5 5.5	5.5	5.0	1.2 1.2	1.2	0.6	3.7 3.6	3.7	3.4
				Middle	3	27.5 27.5	27.5	8.8 8.8	8.8	25.6 25.4	25.5	65.2 64.4	64.8	4.5 4.4	4.5		0.3 0.3	0.3		3.3 3.3	3.3	
				Bottom	5	27.4 27.5	27.5	8.8 8.8	8.8	25.8 25.8	25.8	64.1 64.0	64.1	4.4 4.4	4.4	4.4	0.3 0.3	0.3		3.2 3.2	3.2	
M2	Fine	Moderate	08:39	Surface	1	27.6 27.6	27.6	8.9 8.9	8.9	23.7 23.5	23.6	77.1 78.3	77.7	5.3 5.4	5.4	5.0	0.7 0.8	0.8	0.9	4.7 4.7	4.7	3.6
				Middle	5.5	27.6 27.7	27.7	8.8 8.8	8.8	26.4 26.4	26.4	63.9 65.8	64.9	4.4 4.5	4.5		0.1 0.1	0.1		2.5 2.7	2.6	
				Bottom	10	27.1 27.2	27.2	8.7 8.8	8.8	27.9 27.8	27.9	48.9 51.9	50.4	3.3 3.5	3.4	3.4	1.7 1.6	1.7		3.4 3.3	3.4	
M3	Fine	Moderate	09:34	Surface	1	27.8 27.8	27.8	8.9 8.9	8.9	21.4 21.5	21.5	76.8 76.3	76.6	5.4 5.3	5.4	4.7	2.3 2.2	2.3	1.5	3.7 3.6	3.7	3.2
				Middle	4	27.6 27.7	27.7	8.8 8.8	8.8	26.0 25.9	26.0	57.4 57.3	57.4	3.9 3.9	3.9		0.9 0.8	0.9		3.2 3.3	3.3	
				Bottom	7	27.4 27.4	27.4	8.8 8.8	8.8	26.7 26.6	26.7	47.4 47.5	47.5	3.2 3.2	3.2	3.2	1.3 1.1	1.2		2.5 2.5	2.5	
M4	Fine	Moderate	08:28	Surface	1	27.4 27.4	27.4	8.9 8.9	8.9	23.8 23.4	23.6	72.2 71.4	71.8	5.0 5.0	5.0	4.8	0.8 1.0	0.9	0.7	5.5 5.3	5.4	4.4
				Middle	4.5	27.6 27.5	27.6	8.8 8.8	8.8	25.3 25.5	25.4	66.6 66.0	66.3	4.6 4.5	4.6		0.4 0.4	0.4		4.1 4.0	4.1	
				Bottom	8	27.3 27.3	27.3	8.8 8.8	8.8	27.2 27.0	27.1	53.2 53.4	53.3	3.6 3.6	3.6	3.6	0.9 0.9	0.9		3.7 3.7	3.7	
M5	Fine	Moderate	09:59	Surface	1	27.5 27.4	27.5	8.9 8.9	8.9	23.6 24.6	24.1	75.4 69.6	72.5	5.2 4.8	5.0	4.4	0.7 0.8	0.8	2.4	2.8 2.7	2.8	4.1
				Middle	6	27.2 27.1	27.2	8.8 8.8	8.8	27.0 27.1	27.1	56.9 52.8	54.9	3.9 3.6	3.8		1.1 1.2	1.2		4.0 4.1	4.1	
				Bottom	11	26.0 26.3	26.2	8.7 8.7	8.7	30.2 29.8	30.0	39.4 42.2	40.8	2.7 2.9	2.8	2.8	4.8 5.8	5.3		5.2 5.4	5.3	
M6	Fine	Moderate	09:51	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	4.9	- -	-	0.3	- -	-	2.8
				Middle	2.1	27.9 27.9	27.9	8.9 8.9	8.9	24.7 24.6	24.7	70.7 70.9	70.8	4.8 4.9	4.9		0.3 0.3	0.3		2.8 2.7	2.8	
				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 19 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.3 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.7 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 4.9 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	16:01	Surface	1	28.5 28.5	28.5	9.0 9.0	9.0	23.3 23.2	23.3	104.9 104.1	104.5	7.2 7.1	7.2	5.7	0.6 0.6	0.6	1.9	4.2 4.2	4.2	3.9
				Middle	9.5	27.7 27.3	27.5	8.8 8.8	8.8	27.4 26.9	27.2	64.1 59.3	61.7	4.3 4.0	4.2		0.7 0.6	0.7		3.5 3.5	3.5	
				Bottom	18	26.0 25.9	26.0	8.7 8.7	8.7	29.9 30.1	30.0	39.7 39.1	39.4	2.7 2.7	2.7	2.7	4.7 4.1	4.4		4.0 4.1	4.1	
C2	Sunny	Moderate	14:18	Surface	1	28.5 28.0	28.3	8.9 8.9	8.9	22.4 23.6	23.0	96.1 90.3	93.2	6.6 6.2	6.4	5.0	0.8 0.8	0.8	2.2	4.8 4.8	4.8	4.4
				Middle	17	26.8 26.8	26.8	8.7 8.7	8.7	28.7 28.5	28.6	51.2 50.1	50.7	3.5 3.4	3.5		0.9 0.8	0.9		4.1 4.1	4.1	
				Bottom	33	24.8 25.0	24.9	8.5 8.6	8.6	32.2 31.7	32.0	33.9 33.0	33.5	2.3 2.3	2.3	2.3	4.8 4.8	4.8		4.3 4.3	4.3	
G1	Sunny	Moderate	15:05	Surface	1	27.6 27.6	27.6	8.9 8.9	8.9	24.9 24.9	24.9	78.6 78.0	78.3	5.4 5.4	5.4	5.2	0.4 0.4	0.4	0.3	3.3 3.4	3.4	3.7
				Middle	4	27.5 27.5	27.5	8.8 8.8	8.8	25.4 25.3	25.4	72.2 72.7	72.5	5.0 5.0	5.0		0.3 0.3	0.3		4.4 4.3	4.4	
				Bottom	7	27.4 27.4	27.4	8.8 8.8	8.8	26.3 26.0	26.2	63.3 66.1	64.7	4.3 4.5	4.4	4.4	0.3 0.3	0.3		3.1 3.2	3.2	
G2	Sunny	Moderate	14:53	Surface	1	28.1 28.0	28.1	9.0 9.0	9.0	24.1 24.1	24.1	83.5 83.5	83.5	5.7 5.7	5.7	5.2	0.4 0.4	0.4	0.5	3.3 3.2	3.3	3.1
				Middle	4.5	27.5 27.5	27.5	8.8 8.8	8.8	25.9 25.9	25.9	68.3 68.9	68.6	4.7 4.7	4.7		0.3 0.3	0.3		3.1 3.1	3.1	
				Bottom	8	27.4 27.4	27.4	8.8 8.8	8.8	26.6 26.6	26.6	57.5 57.6	57.6	3.9 3.9	3.9	3.9	0.7 0.6	0.7		2.9 3.0	3.0	
G3	Sunny	Moderate	15:17	Surface	1	28.1 28.2	28.2	9.0 9.0	9.0	22.6 22.4	22.5	91.2 88.2	89.7	6.3 6.1	6.2	5.3	1.0 1.1	1.1	1.0	2.6 2.6	2.6	3.7
				Middle	4	27.9 27.9	27.9	8.9 8.9	8.9	25.3 25.4	25.4	63.3 62.3	62.8	4.3 4.2	4.3		0.4 0.5	0.5		4.3 4.3	4.3	
				Bottom	7	27.4 27.5	27.5	8.8 8.8	8.8	26.6 26.5	26.6	48.1 47.6	47.9	3.3 3.3	3.3	3.3	1.4 1.2	1.3		4.0 4.2	4.1	
G4	Sunny	Moderate	15:34	Surface	1	27.7 27.8	27.8	8.9 8.9	8.9	24.7 24.6	24.7	83.1 83.4	83.3	5.7 5.7	5.7	5.4	0.5 0.5	0.5	0.4	3.3 3.5	3.4	3.4
				Middle	4	27.5 27.5	27.5	8.8 8.9	8.9	25.7 25.4	25.6	71.0 72.6	71.8	4.9 5.0	5.0		0.3 0.3	0.3		2.6 2.6	2.6	
				Bottom	7	27.3 27.3	27.3	8.8 8.8	8.8	26.3 26.3	26.3	61.7 62.1	61.9	4.2 4.3	4.3	4.3	0.4 0.4	0.4		4.2 4.1	4.2	
M1	Sunny	Moderate	14:58	Surface	1	27.7 27.7	27.7	8.9 8.9	8.9	25.3 25.3	25.3	72.8 73.1	73.0	5.0 5.0	5.0	4.8	0.7 0.7	0.7	0.7	2.6 2.6	2.6	3.1
				Middle	3	27.5 27.5	27.5	8.8 8.8	8.8	25.8 25.8	25.8	65.9 66.2	66.1	4.5 4.5	4.5		1.0 0.9	1.0		2.5 2.6	2.6	
				Bottom	5	27.5 27.5	27.5	8.8 8.8	8.8	26.1 26.0	26.1	63.5 63.6	63.6	4.3 4.4	4.4	4.4	0.4 0.4	0.4		4.0 3.9	4.0	
M2	Sunny	Moderate	14:41	Surface	1	28.0 28.0	28.0	8.9 8.9	8.9	23.4 23.5	23.5	93.4 90.5	92.0	6.4 6.2	6.3	5.4	0.6 0.6	0.6	0.6	4.3 4.2	4.3	3.6
				Middle	5.5	27.3 27.3	27.3	8.8 8.8	8.8	26.2 26.2	26.2	63.4 63.5	63.5	4.3 4.4	4.4		0.3 0.3	0.3		3.4 3.3	3.4	
				Bottom	10	27.3 27.2	27.3	8.8 8.8	8.8	28.4 28.4	28.4	56.1 54.2	55.2	3.8 3.8	3.8	3.8	0.8 0.9	0.9		3.1 3.2	3.2	
M3	Sunny	Moderate	15:25	Surface	1	28.1 28.1	28.1	9.0 9.0	9.0	22.8 23.3	23.1	90.7 85.4	88.1	6.3 5.9	6.1	5.0	0.8 0.8	0.8	0.9	4.7 4.6	4.7	3.8
				Middle	4	27.8 27.8	27.8	8.8 8.8	8.8	25.6 25.6	25.6	55.4 57.3	56.4	3.8 3.9	3.9		0.6 0.5	0.6		4.1 4.1	4.1	
				Bottom	7	27.5 27.5	27.5	8.8 8.8	8.8	26.5 26.5	26.5	48.5 52.0	50.3	3.3 3.5	3.4	3.4	1.3 1.4	1.4		2.7 2.7	2.7	
M4	Sunny	Moderate	14:29	Surface	1	28.3 28.5	28.4	9.0 9.0	9.0	22.4 22.4	22.4	99.1 100.9	100.0	6.8 6.9	6.9	6.2	1.0 0.9	1.0	0.6	4.3 4.2	4.3	4.0
				Middle	4.5	27.8 27.6	27.7	8.9 8.9	8.9	24.5 25.4	25.0	83.4 74.2	78.8	5.7 5.1	5.4		0.4 0.4	0.4		4.7 4.5	4.6	
				Bottom	8	27.6 27.5	27.6	8.9 8.8	8.9	25.3 25.9	25.6	75.4 68.7	72.1	5.2 4.7	5.0	5.0	0.5 0.5	0.5		2.9 3.0	3.0	
M5	Sunny	Moderate	15:51	Surface	1	28.3 28.4	28.4	8.9 8.9	8.9	23.7 23.6	23.7	92.5 93.0	92.8	6.3 6.3	6.3	5.9	0.6 0.6	0.6	0.7	3.6 3.8	3.7	3.8
				Middle	5.5	27.9 27.9	27.9	8.9 8.9	8.9	24.6 24.5	24.6	79.6 80.0	79.8	5.5 5.5	5.5		0.4 0.4	0.4		3.9 4.0	4.0	
				Bottom	10	27.4 27.3	27.4	8.8 8.8	8.8	26.4 26.8	26.6	60.5 55.4	58.0	4.1 3.8	4.0	4.0	1.1 1.0	1.1		3.8 3.7	3.8	
M6	Sunny	Moderate	15:44	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	4.4	- -	-	0.4	- -	-	2.9
				Middle	2	27.6 27.6	27.6	8.8 8.8	8.8	25.8 25.8	25.8	65.0 64.7	64.9	4.4 4.4	4.4		0.4 0.4	0.4		2.8 2.9	2.9	
				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 21 July 2017 (Mid-Ebb Tide)

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

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 21 July 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	12:03	Surface	1	28.3 28.3	28.3	9.0 9.0	9.0	25.2 25.2	25.2	106.4 105.0	105.7	7.2 7.1	7.2	6.6	0.4 0.5	0.5	1.8	3.2 3.3	3.3	4.8
				Middle	10	26.6 27.1	26.9	8.7 8.8	8.8	28.0 26.9	27.5	82.9 90.1	86.5	5.7 6.2	6.0		1.0 1.0	1.0		6.3 6.5	6.4	
				Bottom	19	23.6 23.6	23.6	8.5 8.5	8.5	34.2 34.3	34.3	63.6 58.8	61.2	4.4 4.1	4.3	4.3	3.8 4.0	3.9		4.7 4.7	4.7	
C2	Sunny	Moderate	10:31	Surface	1	27.9 27.9	27.9	8.8 8.9	8.9	25.1 25.1	25.1	98.0 96.8	97.4	6.7 6.6	6.7	5.6	0.5 0.5	0.5	2.0	5.6 5.6	5.6	4.2
				Middle	17.5	25.7 25.7	25.7	8.6 8.6	8.6	30.1 30.0	30.1	63.0 65.4	64.2	4.3 4.5	4.4		2.0 2.0	2.0		2.7 2.8	2.8	
				Bottom	34	24.9 25.0	25.0	8.5 8.6	8.6	31.7 31.5	31.6	63.2 64.9	64.1	4.4 4.5	4.5	4.5	3.5 3.5	3.5		4.0 4.1	4.1	
G1	Sunny	Moderate	11:15	Surface	1	28.4 28.4	28.4	9.0 9.0	9.0	24.1 24.2	24.2	110.6 110.6	110.6	7.5 7.5	7.5	6.7	0.4 0.4	0.4	0.3	5.4 5.6	5.5	4.8
				Middle	4	28.1 28.1	28.1	8.9 8.9	8.9	25.1 25.2	25.2	85.9 83.9	84.9	5.8 5.7	5.8		0.3 0.3	0.3		4.8 4.8	4.8	
				Bottom	7	27.8 27.8	27.8	8.9 8.8	8.9	25.7 25.7	25.7	74.2 68.9	71.6	5.1 4.7	4.9	4.9	0.3 0.3	0.3		4.2 4.2	4.2	
G2	Sunny	Moderate	11:00	Surface	1	28.4 28.3	28.4	9.0 9.0	9.0	24.3 24.5	24.4	109.1 107.6	108.4	7.4 7.3	7.4	6.9	0.4 0.4	0.4	0.9	4.9 4.9	4.9	4.6
				Middle	5	28.0 27.9	28.0	8.9 8.8	8.9	25.3 25.5	25.4	98.8 89.2	94.0	6.7 6.1	6.4		0.5 0.5	0.5		4.6 4.7	4.7	
				Bottom	9	27.3 27.3	27.3	8.7 8.7	8.7	26.6 26.6	26.6	76.3 76.7	76.5	5.2 5.2	5.2	5.2	1.8 1.8	1.8		4.3 4.3	4.3	
G3	Sunny	Moderate	11:22	Surface	1	28.2 28.3	28.3	9.0 9.0	9.0	24.4 24.3	24.4	105.0 106.1	105.6	7.2 7.2	7.2	7.1	0.5 0.5	0.5	1.2	4.4 4.1	4.3	4.8
				Middle	4	27.9 27.9	27.9	8.9 8.9	8.9	25.0 25.0	25.0	101.6 103.1	102.4	6.9 7.0	7.0		0.5 0.4	0.5		5.6 5.6	5.6	
				Bottom	7	27.5 27.4	27.5	8.7 8.7	8.7	26.1 26.3	26.2	66.8 65.1	66.0	4.6 4.5	4.6	4.6	2.6 2.6	2.6		4.5 4.7	4.6	
G4	Sunny	Moderate	11:37	Surface	1	28.3 28.4	28.4	8.9 9.0	9.0	24.7 24.6	24.7	100.9 102.1	101.5	6.9 6.9	6.9	6.0	0.4 0.5	0.5	1.3	3.3 3.3	3.3	3.3
				Middle	4.5	27.9 27.9	27.9	8.8 8.9	8.9	25.4 25.3	25.4	73.4 74.6	74.0	5.0 5.1	5.1		0.4 0.4	0.4		3.3 3.3	3.3	
				Bottom	8	27.6 27.6	27.6	8.8 8.8	8.8	25.9 25.9	25.9	65.0 70.6	67.8	4.4 4.8	4.6	4.6	2.9 2.8	2.9		3.4 3.3	3.4	
M1	Sunny	Moderate	11:08	Surface	1	28.4 28.4	28.4	9.0 9.0	9.0	24.6 24.6	24.6	108.2 109.1	108.7	7.3 7.4	7.4	7.0	0.4 0.4	0.4	0.4	5.0 5.0	5.0	5.1
				Middle	3	28.3 28.2	28.3	8.9 8.9	8.9	25.0 25.0	25.0	95.3 93.6	94.5	6.5 6.4	6.5		0.3 0.3	0.3		5.6 5.7	5.7	
				Bottom	5	28.0 27.8	27.9	8.9 8.8	8.9	25.3 25.6	25.5	80.3 79.6	80.0	5.5 5.4	5.5	5.5	0.6 0.5	0.6		4.6 4.7	4.7	
M2	Sunny	Moderate	10:52	Surface	1	28.6 28.6	28.6	9.0 9.0	9.0	24.4 24.2	24.3	114.9 114.4	114.7	7.8 7.8	7.8	6.3	0.3 0.3	0.3	0.8	5.8 5.8	5.8	4.7
				Middle	5.5	27.8 27.8	27.8	8.8 8.8	8.8	25.7 25.6	25.7	69.2 69.5	69.4	4.7 4.7	4.7		0.4 0.4	0.4		3.4 3.6	3.5	
				Bottom	10	27.2 27.3	27.3	8.7 8.7	8.7	27.0 26.7	26.9	71.3 75.6	73.5	4.9 5.2	5.1	5.1	1.7 1.7	1.7		4.6 4.7	4.7	
M3	Sunny	Moderate	11:29	Surface	1	28.3 28.3	28.3	9.0 9.0	9.0	24.6 24.6	24.6	110.1 109.8	110.0	7.5 7.5	7.5	7.1	0.4 0.4	0.4	1.5	5.5 5.7	5.6	5.0
				Middle	4	27.9 27.9	27.9	8.9 8.9	8.9	25.0 25.0	25.0	96.6 96.3	96.5	6.6 6.6	6.6		0.5 0.5	0.5		5.0 4.9	5.0	
				Bottom	7	27.4 27.4	27.4	8.7 8.7	8.7	26.2 26.3	26.3	69.1 67.0	68.1	4.7 4.6	4.7	4.7	3.4 3.6	3.5		4.4 4.6	4.5	
M4	Sunny	Moderate	10:41	Surface	1	28.6 28.6	28.6	9.0 9.0	9.0	24.3 24.2	24.3	113.2 114.7	114.0	7.7 7.8	7.8	6.9	0.4 0.4	0.4	0.4	5.8 5.8	5.8	4.8
				Middle	5	28.3 28.0	28.2	8.9 8.9	8.9	24.9 25.5	25.2	91.6 80.9	86.3	6.2 5.5	5.9		0.3 0.3	0.3		4.4 4.5	4.5	
				Bottom	9	27.7 27.7	27.7	8.8 8.8	8.8	25.9 25.9	25.9	70.8 74.0	72.4	4.8 5.0	4.9	4.9	0.4 0.4	0.4		4.2 4.2	4.2	
M5	Sunny	Moderate	11:55	Surface	1	28.2 28.2	28.2	8.9 8.9	8.9	25.5 25.4	25.5	97.6 97.9	97.8	6.6 6.6	6.6	6.5	0.5 0.6	0.6	0.8	5.7 5.6	5.7	5.4
				Middle	6	28.0 28.1	28.1	8.9 8.9	8.9	25.8 25.6	25.7	90.8 94.3	92.6	6.2 6.4	6.3		0.4 0.4	0.4		6.2 6.3	6.3	
				Bottom	11	26.4 26.7	26.6	8.7 8.7	8.7	28.5 28.0	28.3	77.0 77.3	77.2	5.3 5.3	5.3	5.3	1.3 1.4	1.4		4.1 4.0	4.1	
M6	Sunny	Moderate	11:47	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.6	- -	-	0.4	- -	-	4.3
				Middle	2.1	28.3 28.3	28.3	8.9 8.9	8.9	24.9 24.9	24.9	96.9 97.8	97.4	6.6 6.6	6.6		0.4 0.4	0.4		4.3 4.2	4.3	
				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 21 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 4.9 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.3 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.3 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 21 July 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
C1	Sunny	Moderate	17:42	Surface	1	29.3 29.3	29.3	9.0 9.0	9.0	25.4 25.4	25.4	116.8 116.5	116.7	7.8 7.8	7.8	7.0	0.4 0.4	0.4	1.6	5.3 5.4	5.4	5.1
				Middle	9.5	28.2 28.2	28.2	8.9 8.9	8.9	26.3 26.2	26.3	89.6 93.4	91.5	6.0 6.3	6.2		0.3 0.3	0.3		3.8 3.8	3.8	
				Bottom	18	24.0 24.2	24.1	8.5 8.5	8.5	33.5 33.2	33.4	70.5 71.9	71.2	4.9 5.0	5.0	5.0	4.2 4.0	4.1		6.1 6.1	6.1	
C2	Sunny	Moderate	16:09	Surface	1	28.8 28.8	28.8	9.0 9.0	9.0	25.1 25.1	25.1	124.8 121.6	123.2	8.4 8.2	8.3	7.2	0.4 0.4	0.4	0.7	3.6 3.5	3.6	3.4
				Middle	17	27.8 26.9	27.4	8.9 8.8	8.9	26.6 28.0	27.3	91.6 88.4	90.0	6.2 6.0	6.1		0.5 0.5	0.5		3.1 3.1	3.1	
				Bottom	33	27.2 26.6	26.9	8.8 8.7	8.8	27.6 28.5	28.1	65.9 67.0	66.5	4.5 4.6	4.6	4.6	1.2 1.4	1.3		3.5 3.4	3.5	
G1	Sunny	Moderate	16:50	Surface	1	28.6 28.5	28.6	9.0 9.0	9.0	25.2 25.4	25.3	120.8 123.6	122.2	8.1 8.3	8.2	7.4	0.4 0.4	0.4	0.7	3.7 3.5	3.6	4.3
				Middle	3.5	28.0 28.0	28.0	8.9 8.9	8.9	25.7 25.7	25.7	95.0 95.5	95.3	6.5 6.5	6.5		0.5 0.4	0.5		5.2 5.3	5.3	
				Bottom	6	27.9 27.8	27.9	8.9 8.9	8.9	25.8 25.8	25.8	92.3 83.5	87.9	6.3 5.7	6.0	6.0	1.3 1.1	1.2		4.1 4.1	4.1	
G2	Sunny	Moderate	16:38	Surface	1	28.4 28.4	28.4	9.0 9.0	9.0	25.4 25.4	25.4	119.5 117.5	118.5	8.1 7.9	8.0	7.3	0.5 0.4	0.5	0.6	3.8 3.9	3.9	4.5
				Middle	4	28.0 28.0	28.0	8.9 9.0	9.0	25.8 25.8	25.8	94.3 97.1	95.7	6.4 6.6	6.5		0.5 0.4	0.5		3.7 3.9	3.8	
				Bottom	7	27.9 27.9	27.9	8.9 8.9	8.9	25.8 25.8	25.8	84.1 88.5	86.3	5.7 6.0	5.9	5.9	0.7 0.6	0.7		5.7 5.6	5.7	
G3	Sunny	Moderate	17:03	Surface	1	28.6 28.6	28.6	9.0 9.0	9.0	24.5 24.2	24.4	110.9 120.6	115.8	7.5 8.2	7.9	7.0	0.6 0.5	0.6	0.9	3.8 3.7	3.8	5.1
				Middle	3.5	28.0 28.0	28.0	8.9 8.9	8.9	25.6 25.6	25.6	83.7 93.8	88.8	5.7 6.4	6.1		0.6 0.7	0.7		5.6 5.4	5.5	
				Bottom	6	27.7 27.7	27.7	8.8 8.8	8.8	26.0 25.9	26.0	64.2 66.2	65.2	4.4 4.5	4.5	4.5	1.3 1.3	1.3		6.1 6.1	6.1	
G4	Sunny	Moderate	17:16	Surface	1	28.5 28.5	28.5	9.0 9.0	9.0	25.5 25.5	25.5	120.2 119.9	120.1	8.1 8.1	8.1	7.5	0.5 0.5	0.5	0.8	6.0 5.8	5.9	6.1
				Middle	4	28.0 28.0	28.0	8.9 8.9	8.9	25.7 25.7	25.7	100.9 99.0	100.0	6.8 6.7	6.8		0.6 0.6	0.6		7.5 7.6	7.6	
				Bottom	7	27.9 27.8	27.9	8.9 8.9	8.9	25.9 25.9	25.9	89.8 84.6	87.2	6.1 5.8	6.0	6.0	1.2 1.1	1.2		4.6 4.7	4.7	
M1	Sunny	Moderate	16:44	Surface	1	28.3 28.2	28.3	8.9 8.9	8.9	25.3 25.1	25.2	94.9 98.8	96.9	6.4 6.7	6.6	6.5	0.5 0.5	0.5	0.6	4.8 4.7	4.8	4.8
				Middle	3	28.0 28.0	28.0	8.9 8.9	8.9	25.6 25.6	25.6	92.3 93.5	92.9	6.3 6.4	6.4		0.5 0.5	0.5		6.1 5.9	6.0	
				Bottom	5	28.0 28.0	28.0	8.9 8.9	8.9	25.6 25.6	25.6	90.5 91.7	91.1	6.2 6.2	6.2	6.2	0.7 0.8	0.8		3.5 3.4	3.5	
M2	Sunny	Moderate	16:29	Surface	1	28.4 28.3	28.4	9.0 9.0	9.0	25.3 25.4	25.4	114.1 113.5	113.8	7.7 7.7	7.7	6.9	0.5 0.5	0.5	1.5	4.6 4.8	4.7	4.5
				Middle	5	27.9 27.9	27.9	8.9 8.9	8.9	25.8 25.7	25.8	87.4 89.2	88.3	5.9 6.1	6.0		0.4 0.4	0.4		4.9 4.9	4.9	
				Bottom	9	27.0 27.5	27.3	8.7 8.8	8.8	27.4 26.3	26.9	69.1 69.6	69.4	4.7 4.7	4.7	4.7	3.9 3.5	3.7		4.0 3.9	4.0	
M3	Sunny	Moderate	17:09	Surface	1	28.5 28.6	28.6	9.0 9.0	9.0	24.4 24.5	24.5	105.2 106.1	105.7	7.1 7.2	7.2	6.6	0.6 0.5	0.6	1.1	5.4 5.2	5.3	5.0
				Middle	3.5	27.9 28.0	28.0	8.9 8.9	8.9	25.4 25.4	25.4	85.4 86.6	86.0	5.8 5.9	5.9		0.8 0.9	0.9		4.9 4.9	4.9	
				Bottom	6	27.7 27.7	27.7	8.8 8.8	8.8	25.9 25.9	25.9	69.3 67.8	68.6	4.7 4.6	4.7	4.7	1.8 1.7	1.8		4.6 4.9	4.8	
M4	Sunny	Moderate	16:20	Surface	1	28.7 28.7	28.7	9.0 9.0	9.0	24.7 24.7	24.7	110.8 109.0	109.9	7.5 7.4	7.5	7.2	0.5 0.4	0.5	0.5	5.6 5.4	5.5	4.2
				Middle	4.5	28.4 28.2	28.3	9.0 8.9	9.0	25.1 25.3	25.2	106.9 98.0	102.5	7.2 6.6	6.9		0.4 0.4	0.4		4.1 4.2	4.2	
				Bottom	8	27.7 27.8	27.8	8.9 8.9	8.9	26.1 26.1	26.1	79.1 80.6	79.9	5.4 5.5	5.5	5.5	0.5 0.5	0.5		3.0 3.0	3.0	
M5	Sunny	Moderate	17:32	Surface	1	28.3 28.4	28.4	9.0 9.0	9.0	25.2 25.2	25.2	112.0 113.4	112.7	7.6 7.7	7.7	7.5	0.5 0.4	0.5	0.5	5.9 5.9	5.9	4.9
				Middle	5.5	28.2 28.2	28.2	9.0 8.9	9.0	25.3 25.3	25.3	106.2 106.2	106.2	7.2 7.2	7.2		0.5 0.5	0.5		4.7 4.6	4.7	
				Bottom	10	28.1 27.8	28.0	8.9 8.9	8.9	25.6 26.0	25.8	89.3 90.6	90.0	6.1 6.2	6.2	6.2	0.6 0.6	0.6		4.0 3.9	4.0	
M6	Sunny	Moderate	17:24	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.1	- -	-	0.7	- -	-	2.9
				Middle	2.1	28.2 28.2	28.2	8.9 8.9	8.9	25.6 25.6	25.6	103.6 104.3	104.0	7.0 7.1	7.1		0.7 0.6	0.7		2.9 2.8	2.9	
				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 24 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 4.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.7 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.7 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	13:51	Surface	1	28.2 28.1	28.2	8.9 8.9	8.9	27.3 27.4	27.4	91.2 88.2	89.7	6.1 5.9	6.0	5.8	0.6 0.6	0.6	1.3	4.7 5.0	4.9	4.4
				Middle	9.5	27.4 27.5	27.5	8.8 8.8	8.8	28.0 27.8	27.9	81.1 84.4	82.8	5.5 5.7	5.6		1.0 0.9	1.0		4.4 4.4	4.4	
				Bottom	18	26.2 24.6	25.4	8.7 8.6	8.7	30.1 32.9	31.5	65.2 66.6	65.9	4.5 4.6	4.6	4.6	2.1 2.4	2.3		4.0 4.0	4.0	
C2	Sunny	Moderate	12:11	Surface	1	27.5 27.5	27.5	8.8 8.8	8.8	27.1 27.1	27.1	78.2 75.5	76.9	5.3 5.1	5.2	5.1	0.7 0.7	0.7	1.9	5.6 5.6	5.6	5.8
				Middle	17	26.8 26.8	26.8	8.7 8.7	8.7	28.8 28.8	28.8	72.1 71.4	71.8	4.9 4.9	4.9		1.9 1.8	1.9		5.5 5.5	5.5	
				Bottom	33	26.6 26.6	26.6	8.7 8.7	8.7	29.3 29.4	29.4	70.5 69.8	70.2	4.8 4.8	4.8	4.8	3.2 3.1	3.2		6.1 6.2	6.2	
G1	Sunny	Moderate	12:59	Surface	1	28.9 29.0	29.0	8.9 8.9	8.9	26.5 26.4	26.5	105.5 105.7	105.6	7.0 7.0	7.0	6.7	0.5 0.5	0.5	1.2	3.9 3.8	3.9	4.2
				Middle	4	28.5 28.5	28.5	8.9 8.9	8.9	26.8 26.8	26.8	96.2 96.3	96.3	6.4 6.4	6.4		0.6 0.7	0.7		4.0 4.1	4.1	
				Bottom	7	27.9 28.0	28.0	8.8 8.8	8.8	27.5 27.3	27.4	78.2 79.3	78.8	5.3 5.3	5.3	5.3	2.3 2.2	2.3		4.6 4.6	4.6	
G2	Sunny	Moderate	12:44	Surface	1	28.3 28.2	28.3	8.9 8.9	8.9	26.9 27.0	27.0	97.0 88.0	92.5	6.5 5.9	6.2	6.1	0.4 0.4	0.4	0.8	4.1 4.2	4.2	4.1
				Middle	4.5	28.3 28.0	28.2	8.9 8.8	8.9	26.9 27.3	27.1	95.7 81.7	88.7	6.4 5.5	6.0		0.4 0.5	0.5		3.8 3.6	3.7	
				Bottom	8	27.9 27.9	27.9	8.8 8.8	8.8	27.6 27.6	27.6	77.0 79.7	78.4	5.2 5.4	5.3	5.3	1.7 1.5	1.6		4.4 4.2	4.3	
G3	Sunny	Moderate	13:09	Surface	1	29.1 28.9	29.0	8.9 8.9	8.9	26.4 26.5	26.5	104.9 103.9	104.4	7.0 6.9	7.0	6.8	0.5 0.5	0.5	1.5	5.2 5.3	5.3	5.0
				Middle	4	28.4 27.9	28.2	8.9 8.8	8.9	26.9 27.2	27.1	94.6 101.8	98.2	6.3 6.9	6.6		0.8 0.8	0.8		6.3 6.1	6.2	
				Bottom	7	27.9 29.0	28.5	8.8 8.9	8.9	27.5 26.4	27.0	76.1 74.1	75.1	5.1 4.9	5.0	5.0	3.1 3.5	3.3		3.3 3.4	3.4	
G4	Sunny	Moderate	13:24	Surface	1	28.8 29.0	28.9	9.0 9.0	9.0	26.8 26.7	26.8	107.2 108.1	107.7	7.1 7.2	7.2	6.9	0.4 0.4	0.4	1.4	2.8 2.7	2.8	4.3
				Middle	4.5	28.4 28.6	28.5	8.9 8.9	8.9	26.9 26.9	26.9	93.5 101.1	97.3	6.3 6.8	6.6		0.6 0.5	0.6		6.9 7.0	7.0	
				Bottom	8	27.7 27.7	27.7	8.8 8.8	8.8	27.4 27.5	27.5	65.8 65.9	65.9	4.4 4.5	4.5	4.5	3.0 3.5	3.3		3.1 3.1	3.1	
M1	Sunny	Moderate	12:52	Surface	1	29.0 29.3	29.2	9.0 9.0	9.0	26.6 26.6	26.6	105.6 108.1	106.9	7.0 7.1	7.1	7.1	0.5 0.4	0.5	0.7	4.2 4.3	4.3	3.7
				Middle	3	28.9 28.8	28.9	9.0 8.9	9.0	26.7 26.7	26.7	105.7 103.5	104.6	7.0 6.9	7.0		0.5 0.6	0.6		3.6 3.5	3.6	
				Bottom	5	28.5 28.4	28.5	8.9 8.9	8.9	26.9 26.9	26.9	95.9 92.0	94.0	6.4 6.2	6.3	6.3	1.0 1.0	1.0		3.1 3.0	3.1	
M2	Sunny	Moderate	12:34	Surface	1	29.4 29.4	29.4	9.0 9.0	9.0	26.6 26.6	26.6	109.7 109.5	109.6	7.2 7.2	7.2	6.8	0.3 0.3	0.3	0.8	4.4 4.5	4.5	4.8
				Middle	5.5	28.5 28.6	28.6	8.9 8.9	8.9	27.0 27.1	27.1	94.0 95.2	94.6	6.3 6.4	6.4		0.7 0.7	0.7		4.6 4.8	4.7	
				Bottom	10	28.0 28.0	28.0	8.8 8.8	8.8	27.6 27.7	27.7	79.0 79.7	79.4	5.3 5.4	5.4	5.4	1.5 1.3	1.4		5.0 5.1	5.1	
M3	Sunny	Moderate	13:15	Surface	1	28.9 28.8	28.9	8.9 8.9	8.9	26.5 26.5	26.5	104.5 103.0	103.8	7.0 6.9	7.0	6.7	0.4 0.4	0.4	1.2	4.9 4.2	4.6	5.8
				Middle	4	28.4 28.5	28.5	8.9 8.9	8.9	26.6 26.6	26.6	94.6 96.3	95.5	6.3 6.5	6.4		0.7 0.7	0.7		6.6 6.8	6.7	
				Bottom	7	28.5 27.8	28.2	8.9 8.8	8.9	26.9 27.2	27.1	82.3 80.9	81.6	5.5 5.5	5.5	5.5	2.4 2.5	2.5		6.1 6.0	6.1	
M4	Sunny	Moderate	12:23	Surface	1	29.4 29.4	29.4	8.9 9.0	9.0	26.7 26.6	26.7	108.7 109.1	108.9	7.2 7.2	7.2	6.8	0.3 0.3	0.3	0.8	6.1 6.0	6.1	4.5
				Middle	5	28.8 28.6	28.7	8.9 8.9	8.9	26.9 27.0	27.0	98.6 93.1	95.9	6.6 6.2	6.4		0.5 0.6	0.6		3.0 3.1	3.1	
				Bottom	9	28.2 28.2	28.2	8.9 8.8	8.9	27.4 27.5	27.5	84.0 85.1	84.6	5.6 5.7	5.7	5.7	1.4 1.3	1.4		4.3 4.2	4.3	
M5	Sunny	Moderate	13:42	Surface	1	28.3 28.3	28.3	8.9 8.9	8.9	27.4 27.4	27.4	92.8 91.5	92.2	6.2 6.1	6.2	5.9	0.6 0.6	0.6	0.9	4.3 4.3	4.3	5.6
				Middle	6	27.9 27.9	27.9	8.9 8.9	8.9	27.8 27.7	27.8	83.6 84.0	83.8	5.6 5.6	5.6		0.6 0.5	0.6		7.1 7.4	7.3	
				Bottom	11	26.9 26.7	26.8	8.8 8.7	8.8	29.1 29.4	29.3	65.5 61.7	63.6	4.4 4.2	4.3	4.3	1.5 1.5	1.5		5.1 5.1	5.1	
M6	Sunny	Moderate	13:37	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.1	- -	-	3.1	- -	-	5.3
				Middle	2.1	28.4 28.4	28.4	8.9 8.9	8.9	26.9 26.9	26.9	90.8 90.5	90.7	6.1 6.1	6.1		3.0 3.2	3.1		5.3 5.3	5.3	
				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 24 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.2 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.6 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.2 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.6 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Fine	Moderate	20:14	Surface	1	29.3 29.3	29.3	9.0 9.0	9.0	26.9 27.0	27.0	108.5 108.5	108.5	7.2 7.2	7.2	6.3	0.2 0.2	0.2	2.1	4.3 4.3	4.3	4.0
				Middle	9.5	27.1 25.8	26.5	8.7 8.8	8.8	28.1 26.7	27.4	79.2 73.5	76.4	5.4 5.2	5.3		0.9 0.9	0.9		3.5 3.7	3.6	
				Bottom	18	25.1 23.9	24.5	8.6 8.6	8.6	32.0 30.4	31.2	68.2 64.2	66.2	4.7 4.6	4.7	4.7	5.2 5.1	5.2		4.2 4.2	4.2	
C2	Fine	Moderate	18:37	Surface	1	29.1 29.2	29.2	8.8 8.9	8.9	26.6 26.4	26.5	110.8 110.1	110.5	7.3 7.3	7.3	6.2	0.4 0.5	0.5	1.8	3.0 2.9	3.0	3.9
				Middle	17	26.8 26.8	26.8	8.7 8.7	8.7	28.5 28.5	28.5	72.4 73.6	73.0	4.9 5.0	5.0		1.6 1.3	1.5		3.9 3.9	3.9	
				Bottom	33	26.4 26.5	26.5	8.6 8.7	8.7	29.6 29.4	29.5	68.8 69.5	69.2	4.7 4.7	4.7	4.7	3.5 3.5	3.5		4.7 4.8	4.8	
G1	Fine	Moderate	19:30	Surface	1	28.2 28.3	28.3	8.9 8.9	8.9	27.4 27.4	27.4	93.8 93.8	93.8	6.3 6.3	6.3	6.2	0.6 0.6	0.6	1.1	3.1 3.1	3.1	3.6
				Middle	3	28.2 28.1	28.2	8.9 8.9	8.9	27.4 27.5	27.5	92.0 88.4	90.2	6.2 5.9	6.1		1.1 1.0	1.1		3.4 3.4	3.4	
				Bottom	5	28.0 27.9	28.0	8.8 8.8	8.8	27.7 27.7	27.7	83.5 82.3	82.9	5.6 5.5	5.6	5.6	1.6 1.3	1.5		4.2 4.1	4.2	
G2	Fine	Moderate	19:09	Surface	1	28.4 28.4	28.4	8.9 8.9	8.9	27.0 26.9	27.0	97.8 98.4	98.1	6.6 6.6	6.6	6.2	1.1 0.9	1.0	1.2	3.8 3.7	3.8	4.3
				Middle	4	28.1 28.0	28.1	8.9 8.9	8.9	27.5 27.6	27.6	86.9 86.7	86.8	5.8 5.8	5.8		0.6 0.5	0.6		4.3 4.3	4.3	
				Bottom	7	27.6 27.8	27.7	8.8 8.8	8.8	28.0 27.9	28.0	73.7 79.6	76.7	5.0 5.4	5.2	5.2	2.1 2.1	2.1		4.7 5.0	4.9	
G3	Fine	Moderate	19:38	Surface	1	28.6 28.4	28.5	8.9 8.9	8.9	26.5 26.7	26.6	107.5 98.2	102.9	7.2 6.6	6.9	6.2	0.9 0.8	0.9	2.2	4.9 5.0	5.0	3.7
				Middle	3.5	27.9 27.9	27.9	8.8 8.8	8.8	27.6 27.6	27.6	81.0 80.4	80.7	5.5 5.4	5.5		1.2 1.2	1.2		2.7 2.7	2.7	
				Bottom	6	27.5 27.5	27.5	8.8 8.7	8.8	28.0 28.0	28.0	62.7 62.1	62.4	4.2 4.2	4.2	4.2	4.4 4.3	4.4		3.5 3.4	3.5	
G4	Fine	Moderate	19:54	Surface	1	28.4 28.4	28.4	8.9 8.9	8.9	27.3 27.3	27.3	98.3 98.1	98.2	6.6 6.6	6.6	6.4	1.4 1.6	1.5	1.2	3.6 3.5	3.6	3.1
				Middle	4	28.2 28.3	28.3	8.9 8.9	8.9	27.5 27.5	27.5	91.5 92.4	92.0	6.1 6.2	6.2		0.5 0.5	0.5		2.6 2.6	2.6	
				Bottom	7	27.9 27.9	27.9	8.8 8.8	8.8	27.7 27.7	27.7	82.1 82.3	82.2	5.5 5.5	5.5	5.5	1.7 1.7	1.7		3.2 3.2	3.2	
M1	Fine	Moderate	19:20	Surface	1	28.1 28.1	28.1	8.9 8.9	8.9	27.3 27.2	27.3	88.2 87.5	87.9	5.9 5.9	5.9	5.9	1.4 1.3	1.4	1.4	5.1 5.1	5.1	4.5
				Middle	3	28.1 28.1	28.1	8.9 8.9	8.9	27.5 27.5	27.5	87.8 87.7	87.8	5.9 5.9	5.9		0.9 1.0	1.0		4.1 4.3	4.2	
				Bottom	5	27.8 28.0	27.9	8.8 8.8	8.8	27.7 27.6	27.7	77.7 84.4	81.1	5.2 5.7	5.5	5.5	1.9 1.9	1.9		4.1 4.2	4.2	
M2	Fine	Moderate	18:58	Surface	1	28.6 28.8	28.7	8.9 9.0	9.0	26.8 26.7	26.8	108.8 112.3	110.6	7.3 7.5	7.4	6.5	0.6 0.6	0.6	1.2	3.5 3.5	3.5	3.4
				Middle	5.5	28.0 27.9	28.0	8.8 8.8	8.8	27.6 27.7	27.7	83.2 82.6	82.9	5.6 5.6	5.6		0.7 0.8	0.8		3.0 3.0	3.0	
				Bottom	10	28.8 27.5	28.2	9.0 8.8	8.9	26.4 28.2	27.3	67.6 71.6	69.6	4.5 4.8	4.7	4.7	2.1 2.2	2.2		3.6 3.9	3.8	
M3	Fine	Moderate	19:44	Surface	1	28.4 28.4	28.4	8.9 8.9	8.9	26.7 26.7	26.7	96.3 96.4	96.4	6.5 6.5	6.5	5.6	0.9 1.0	1.0	2.5	3.4 3.5	3.5	3.9
				Middle	3.5	27.7 27.8	27.8	8.8 8.8	8.8	27.5 27.5	27.5	66.9 70.0	68.5	4.5 4.7	4.6		2.8 2.4	2.6		3.9 4.0	4.0	
				Bottom	6	27.5 27.5	27.5	8.7 8.8	8.8	27.9 27.9	27.9	62.3 63.1	62.7	4.2 4.3	4.3	4.3	4.2 3.7	4.0		4.2 4.1	4.2	
M4	Fine	Moderate	18:48	Surface	1	29.3 29.3	29.3	9.0 9.0	9.0	26.3 26.2	26.3	118.9 118.4	118.7	7.9 7.8	7.9	7.4	0.7 0.6	0.7	0.7	4.2 4.4	4.3	3.8
				Middle	4.5	28.4 28.4	28.4	8.9 8.9	8.9	26.9 26.9	26.9	101.5 102.9	102.2	6.8 6.9	6.9		0.6 0.5	0.6		2.9 2.8	2.9	
				Bottom	8	28.4 28.3	28.4	8.9 8.9	8.9	27.2 27.1	27.2	89.0 95.6	92.3	6.0 6.4	6.2	6.2	0.8 0.7	0.8		4.1 4.2	4.2	
M5	Fine	Moderate	20:05	Surface	1	28.0 28.0	28.0	8.8 8.8	8.8	27.6 27.6	27.6	85.3 85.3	85.3	5.7 5.7	5.7	5.6	1.4 1.4	1.4	1.8	4.3 4.4	4.4	4.8
				Middle	5.5	27.8 27.6	27.7	8.8 8.8	8.8	27.9 28.2	28.1	81.8 78.2	80.0	5.5 5.3	5.4		1.6 1.4	1.5		5.2 5.1	5.2	
				Bottom	10	27.5 27.6	27.6	8.8 8.8	8.8	28.2 28.2	28.2	75.6 76.4	76.0	5.1 5.2	5.2	5.2	2.5 2.5	2.5		4.8 4.6	4.7	
M6	Fine	Moderate	20:00	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.4	- -	-	0.8	- -	-	3.2
				Middle	2.1	28.2 28.3	28.3	8.9 8.9	8.9	27.4 27.4	27.4	94.8 95.1	95.0	6.4 6.4	6.4		0.8 0.8	0.8		3.2 3.1	3.2	
				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 26 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.3 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.7 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.3 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.7 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	15:20	Surface	1	28.1 28.0	28.1	8.7 8.7	8.7	27.8 28.0	27.9	101.0 98.4	99.7	6.8 6.6	6.7	6.4	0.7 0.8	0.8	1.9	4.2 4.3	4.3	4.4
				Middle	9.5	26.8 27.1	27.0	8.7 8.7	8.7	30.1 29.7	29.9	86.4 90.2	88.3	5.8 6.1	6.0		1.9 1.6	1.8		3.6 3.6	3.6	
				Bottom	18	25.8 25.2	25.5	8.6 8.6	8.6	31.9 32.4	32.2	75.8 70.0	72.9	5.2 4.8	5.0	5.0	3.0 3.1	3.1		5.1 5.2	5.2	
C2	Sunny	Moderate	13:51	Surface	1	28.1 28.1	28.1	8.8 8.8	8.8	28.1 28.2	28.2	100.6 99.1	99.9	6.7 6.6	6.7	6.1	0.5 0.5	0.5	1.9	3.6 3.5	3.6	5.2
				Middle	17.5	26.7 26.4	26.6	8.7 8.7	8.7	30.3 30.9	30.6	83.2 79.8	81.5	5.6 5.4	5.5		2.2 2.3	2.3		5.6 5.7	5.7	
				Bottom	34	26.1 25.9	26.0	8.7 8.6	8.7	31.4 31.7	31.6	77.2 74.9	76.1	5.2 5.1	5.2	5.2	2.9 3.0	3.0		6.3 6.3	6.3	
G1	Sunny	Moderate	14:33	Surface	1	29.3 29.2	29.3	8.9 8.9	8.9	28.0 28.0	28.0	106.5 106.8	106.7	7.0 7.0	7.0	6.8	0.9 0.8	0.9	0.8	2.9 2.9	2.9	3.8
				Middle	3.5	28.5 28.8	28.7	8.9 8.9	8.9	28.1 28.1	28.1	97.4 100.1	98.8	6.5 6.6	6.6		0.5 0.5	0.5		5.1 5.0	5.1	
				Bottom	6	27.8 27.8	27.8	8.8 8.8	8.8	28.6 28.5	28.6	75.1 74.7	74.9	5.0 5.0	5.0	5.0	1.0 1.1	1.1		3.3 3.3	3.3	
G2	Sunny	Moderate	14:22	Surface	1	28.7 29.2	29.0	8.9 8.9	8.9	28.0 27.9	28.0	99.4 102.2	100.8	6.6 6.7	6.7	6.3	0.4 0.4	0.4	0.7	2.6 2.7	2.7	4.2
				Middle	4.5	28.0 28.0	28.0	8.8 8.8	8.8	28.3 28.3	28.3	86.9 86.2	86.6	5.8 5.8	5.8		0.4 0.5	0.5		5.9 5.9	5.9	
				Bottom	8	27.4 27.7	27.6	8.7 8.8	8.8	29.2 28.6	28.9	64.3 73.7	69.0	4.3 4.9	4.6	4.6	1.1 1.1	1.1		4.1 4.1	4.1	
G3	Sunny	Moderate	14:41	Surface	1	29.5 29.6	29.6	8.9 8.9	8.9	27.6 27.6	27.6	103.8 105.3	104.6	6.8 6.9	6.9	6.7	0.5 0.5	0.5	0.6	3.1 3.0	3.1	3.8
				Middle	3.5	28.4 28.4	28.4	8.9 8.9	8.9	28.1 28.1	28.1	96.6 96.5	96.6	6.4 6.4	6.4		0.4 0.5	0.5		5.6 5.6	5.6	
				Bottom	6	27.9 27.8	27.9	8.8 8.8	8.8	28.4 28.5	28.5	77.2 70.1	73.7	5.2 4.7	5.0	5.0	0.8 0.8	0.8		2.8 2.8	2.8	
G4	Sunny	Moderate	14:52	Surface	1	28.8 28.9	28.9	8.9 8.9	8.9	28.1 28.0	28.1	104.7 105.2	105.0	6.9 6.9	6.9	6.7	0.5 0.4	0.5	1.2	3.0 2.9	3.0	4.1
				Middle	4	28.3 28.3	28.3	8.9 8.8	8.9	28.1 28.2	28.2	97.1 93.0	95.1	6.5 6.2	6.4		0.5 0.5	0.5		3.4 3.3	3.4	
				Bottom	7	27.1 27.1	27.1	8.7 8.7	8.7	29.8 29.8	29.8	66.5 65.9	66.2	4.5 4.4	4.5	4.5	2.7 2.6	2.7		6.0 5.9	6.0	
M1	Sunny	Moderate	14:29	Surface	1	29.1 29.2	29.2	8.9 8.8	8.9	28.0 28.0	28.0	103.7 102.8	103.3	6.8 6.8	6.8	6.6	0.5 0.5	0.5	0.6	2.8 2.9	2.9	2.9
				Middle	3	28.4 28.7	28.6	8.9 8.9	8.9	28.1 28.0	28.1	94.8 95.3	95.1	6.3 6.3	6.3		0.5 0.5	0.5		3.2 3.1	3.2	
				Bottom	5	27.9 27.9	27.9	8.8 8.8	8.8	28.4 28.4	28.4	78.5 78.5	78.5	5.3 5.3	5.3	5.3	0.6 0.7	0.7		2.5 2.6	2.6	
M2	Sunny	Moderate	14:12	Surface	1	28.7 29.6	29.2	8.9 8.9	8.9	28.1 27.8	28.0	90.8 101.3	96.1	6.0 6.6	6.3	5.8	0.6 0.5	0.6	0.7	3.1 3.1	3.1	3.7
				Middle	4.5	27.8 27.8	27.8	8.8 8.8	8.8	28.5 28.5	28.5	74.4 79.1	76.8	5.0 5.3	5.2		0.7 0.6	0.7		2.6 2.6	2.6	
				Bottom	8	27.7 27.7	27.7	8.8 8.8	8.8	28.6 28.6	28.6	72.8 72.1	72.5	4.9 4.8	4.9	4.9	0.8 0.9	0.9		5.2 5.3	5.3	
M3	Sunny	Moderate	14:45	Surface	1	29.6 27.9	28.8	8.9 8.9	8.9	27.6 26.6	27.1	105.0 97.9	101.5	6.9 6.6	6.8	6.6	0.5 0.6	0.6	0.8	4.2 4.3	4.3	3.7
				Middle	3.5	28.4 27.1	27.8	8.9 8.9	8.9	28.0 26.7	27.4	97.6 89.5	93.6	6.5 6.1	6.3		0.6 0.6	0.6		3.6 3.6	3.6	
				Bottom	6	27.8 26.4	27.1	8.8 8.8	8.8	28.4 27.2	27.8	70.1 69.0	69.6	4.7 4.8	4.8	4.8	1.1 1.0	1.1		3.1 3.0	3.1	
M4	Sunny	Moderate	14:00	Surface	1	29.7 27.9	28.8	8.9 8.8	8.9	27.8 27.5	27.7	88.4 77.6	83.0	5.8 5.2	5.5	5.4	0.4 0.4	0.4	1.2	4.3 4.2	4.3	5.6
				Middle	5	27.9 27.9	27.9	8.8 8.8	8.8	28.5 28.5	28.5	79.7 79.6	79.7	5.3 5.3	5.3		0.5 0.5	0.5		7.3 7.2	7.3	
				Bottom	9	27.5 27.8	27.7	8.7 8.8	8.8	29.0 28.7	28.9	65.5 74.2	69.9	4.4 5.0	4.7	4.7	2.6 2.6	2.6		5.1 5.0	5.1	
M5	Sunny	Moderate	15:09	Surface	1	28.5 28.5	28.5	8.8 8.8	8.8	28.4 28.4	28.4	93.7 91.9	92.8	6.2 6.1	6.2	5.9	0.3 0.3	0.3	1.2	3.1 3.0	3.1	3.9
				Middle	5.5	28.1 28.1	28.1	8.8 8.8	8.8	28.9 28.9	28.9	80.6 82.2	81.4	5.4 5.5	5.5		0.4 0.5	0.5		3.6 3.6	3.6	
				Bottom	10	26.4 26.4	26.4	8.7 8.7	8.7	31.1 31.1	31.1	67.8 67.4	67.6	4.6 4.6	4.6	4.6	2.6 3.0	2.8		4.8 4.9	4.9	
M6	Sunny	Moderate	14:59	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.0	- -	-	1.4	- -	-	5.0
				Middle	2.1	27.9 27.9	27.9	8.8 8.8	8.8	28.5 28.5	28.5	90.1 90.1	90.1	6.0 6.0	6.0		1.4 1.4	1.4		5.0 5.0	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 26 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.4 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.9 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.4 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.9 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 4.7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.1 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
C1	Sunny	Moderate	09:07	Surface	1	28.8 28.7	28.8	8.9 8.9	8.9	28.0 28.0	28.0	98.1 97.5	97.8	6.5 6.5	6.5	5.8	0.3 0.3	0.3	1.8	4.5 4.4	4.5	4.1
				Middle	10	27.7 27.7	27.7	8.8 8.8	8.8	29.0 29.0	29.0	75.9 75.8	75.9	5.1 5.1	5.1		0.4 0.4	0.4		3.8 3.7	3.8	
				Bottom	19	24.7 24.8	24.8	8.6 8.6	8.6	33.3 33.3	33.3	65.8 68.4	67.1	4.5 4.7	4.6	4.6	4.5 4.8	4.7		3.9 3.9	3.9	
C2	Sunny	Moderate	07:36	Surface	1	28.3 28.3	28.3	8.8 8.8	8.8	27.9 28.0	28.0	89.4 87.0	88.2	6.0 5.8	5.9	5.7	0.4 0.4	0.4	1.5	4.3 4.4	4.4	3.5
				Middle	17	27.3 27.3	27.3	8.7 8.7	8.7	29.4 29.5	29.5	82.1 81.8	82.0	5.5 5.5	5.5		1.4 1.5	1.5		2.7 3.7	3.2	
				Bottom	33	26.0 25.8	25.9	8.6 8.6	8.6	31.7 32.0	31.9	72.8 70.3	71.6	4.9 4.8	4.9	4.9	2.7 2.6	2.7		2.9 2.8	2.9	
G1	Sunny	Moderate	08:22	Surface	1	28.2 28.2	28.2	8.8 8.8	8.8	28.0 28.1	28.1	85.8 84.7	85.3	5.7 5.7	5.7	5.4	0.4 0.4	0.4	1.6	3.9 4.0	4.0	3.9
				Middle	4.5	27.7 27.7	27.7	8.8 8.8	8.8	28.6 28.6	28.6	74.7 73.8	74.3	5.0 5.0	5.0		0.9 0.8	0.9		3.1 3.1	3.1	
				Bottom	8	27.0 27.0	27.0	8.7 8.7	8.7	29.9 29.8	29.9	63.6 63.1	63.4	4.3 4.3	4.3	4.3	3.4 3.4	3.4		4.5 4.4	4.5	
G2	Sunny	Moderate	08:08	Surface	1	28.1 28.1	28.1	8.8 8.8	8.8	28.1 28.1	28.1	83.0 81.5	82.3	5.6 5.5	5.6	5.2	0.4 0.4	0.4	0.9	3.9 3.9	3.9	3.5
				Middle	5	27.6 27.6	27.6	8.7 8.7	8.7	28.7 28.8	28.8	72.1 71.8	72.0	4.8 4.8	4.8		0.9 0.9	0.9		2.5 2.6	2.6	
				Bottom	9	26.9 26.9	26.9	8.7 8.7	8.7	30.0 30.1	30.1	63.8 63.4	63.6	4.3 4.3	4.3	4.3	1.4 1.5	1.5		4.0 4.1	4.1	
G3	Sunny	Moderate	08:31	Surface	1	28.4 28.5	28.5	8.8 8.8	8.8	27.6 27.5	27.6	91.5 91.4	91.5	6.1 6.1	6.1	5.5	0.5 0.5	0.5	0.9	4.7 4.7	4.7	4.3
				Middle	4	27.8 27.8	27.8	8.7 8.8	8.8	28.4 28.4	28.4	70.6 74.1	72.4	4.7 5.0	4.9		0.9 0.9	0.9		4.4 4.4	4.4	
				Bottom	7	27.5 27.5	27.5	8.7 8.7	8.7	28.9 28.9	28.9	63.6 64.4	64.0	4.3 4.3	4.3	4.3	1.3 1.2	1.3		3.9 3.8	3.9	
G4	Sunny	Moderate	08:44	Surface	1	28.8 28.2	28.5	8.8 8.8	8.8	27.7 28.1	27.9	96.0 83.7	89.9	6.4 5.6	6.0	6.1	0.5 0.5	0.5	1.6	4.7 4.7	4.7	4.3
				Middle	4.5	27.8 27.7	27.8	8.8 8.8	8.8	28.6 28.6	28.6	90.6 89.9	90.3	6.1 6.0	6.1		0.5 0.6	0.6		4.2 4.2	4.2	
				Bottom	8	27.1 27.0	27.1	8.7 8.7	8.7	29.8 29.8	29.8	66.6 66.0	66.3	4.5 4.5	4.5	4.5	3.7 3.8	3.8		4.0 4.1	4.1	
M1	Sunny	Moderate	08:16	Surface	1	28.1 28.1	28.1	8.8 8.8	8.8	28.1 28.1	28.1	85.9 85.0	85.5	5.7 5.7	5.7	5.4	0.4 0.5	0.5	0.6	2.7 2.7	2.7	3.1
				Middle	3	27.8 27.9	27.9	8.8 8.8	8.8	28.4 28.4	28.4	74.1 74.6	74.4	5.0 5.0	5.0		0.7 0.7	0.7		2.7 2.6	2.7	
				Bottom	5	27.6 27.6	27.6	8.7 8.7	8.7	28.8 28.6	28.7	70.9 68.2	69.6	4.8 4.6	4.7	4.7	0.7 0.7	0.7		3.9 3.9	3.9	
M2	Sunny	Moderate	07:59	Surface	1	28.1 28.1	28.1	8.8 8.8	8.8	28.1 28.1	28.1	83.6 84.1	83.9	5.6 5.6	5.6	5.4	0.5 0.5	0.5	2.5	4.5 4.4	4.5	4.6
				Middle	5.5	27.2 27.2	27.2	8.7 8.7	8.7	29.5 29.5	29.5	77.3 77.1	77.2	5.2 5.2	5.2		5.2 4.2	4.7		5.2 5.3	5.3	
				Bottom	10	26.8 26.7	26.8	8.7 8.7	8.7	30.3 30.5	30.4	66.1 64.4	65.3	4.5 4.4	4.5	4.5	2.3 2.2	2.3		3.9 4.0	4.0	
M3	Sunny	Moderate	08:37	Surface	1	28.5 28.4	28.5	8.8 8.9	8.9	27.7 27.8	27.8	93.9 82.4	88.2	6.3 5.5	5.9	5.7	0.4 0.5	0.5	1.1	4.4 4.5	4.5	4.1
				Middle	4	27.6 27.8	27.7	8.7 8.9	8.8	28.5 28.5	28.5	81.7 78.5	80.1	5.5 5.3	5.4		1.0 1.0	1.0		3.4 3.3	3.4	
				Bottom	7	27.4 27.5	27.5	8.7 8.9	8.8	29.1 29.0	29.1	65.7 64.7	65.2	4.4 4.4	4.4	4.4	1.7 1.8	1.8		4.5 4.5	4.5	
M4	Sunny	Moderate	07:45	Surface	1	28.2 28.2	28.2	8.8 8.8	8.8	28.0 28.0	28.0	87.0 86.8	86.9	5.8 5.8	5.8	5.6	0.4 0.4	0.4	0.6	3.7 3.8	3.8	3.5
				Middle	5	28.1 27.9	28.0	8.8 8.8	8.8	28.1 28.4	28.3	82.3 78.1	80.2	5.5 5.2	5.4		0.5 0.6	0.6		3.6 3.6	3.6	
				Bottom	9	27.9 27.8	27.9	8.8 8.8	8.8	28.3 28.5	28.4	78.4 74.7	76.6	5.3 5.0	5.2	5.2	0.7 0.8	0.8		3.0 3.1	3.1	
M5	Sunny	Moderate	08:58	Surface	1	28.2 28.3	28.3	8.8 8.8	8.8	28.1 28.1	28.1	84.2 83.3	83.8	5.6 5.6	5.6	5.5	0.6 0.5	0.6	1.9	3.7 3.7	3.7	3.9
				Middle	6	27.9 28.0	28.0	8.8 8.8	8.8	28.3 28.3	28.3	79.3 80.0	79.7	5.3 5.4	5.4		0.5 0.5	0.5		4.0 4.0	4.0	
				Bottom	11	27.2 27.2	27.2	8.7 8.7	8.7	29.4 29.5	29.5	65.8 66.4	66.1	4.4 4.5	4.5	4.5	4.5 4.6	4.6		3.9 4.0	4.0	
M6	Sunny	Moderate	08:51	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.5	- -	-	0.4	- -	-	3.2
				Middle	2.1	28.1 28.1	28.1	8.8 8.8	8.8	28.2 28.2	28.2	81.6 81.7	81.7	5.5 5.5	5.5		0.4 0.4	0.4		3.2 3.2	3.2	
				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 28 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.2 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.6 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.3 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.7 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 28 July 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
C1	Sunny	Moderate	16:42	Surface	1	29.3 29.3	29.3	9.0 9.0	9.0	25.4 25.4	25.4	116.8 116.5	116.7	7.8 7.8	7.8	7.0	0.4 0.4	0.4	1.6	5.3 5.2	5.3	4.4
				Middle	9.5	28.2 28.2	28.2	8.9 8.9	8.9	26.3 26.2	26.3	89.6 93.4	91.5	6.0 6.3	6.2		0.3 0.3	0.3		4.7 4.6	4.7	
				Bottom	18	24.0 24.2	24.1	8.5 8.5	8.5	33.5 33.2	33.4	70.5 71.9	71.2	4.9 5.0	5.0	5.0	4.2 4.0	4.1		3.1 3.2	3.2	
C2	Sunny	Moderate	15:09	Surface	1	28.8 28.8	28.8	9.0 9.0	9.0	25.1 25.1	25.1	124.8 121.6	123.2	8.4 8.2	8.3	7.0	0.4 0.4	0.4	1.8	5.0 4.9	5.0	3.9
				Middle	17	27.8 26.9	27.4	8.9 8.8	8.9	26.6 28.0	27.3	82.8 82.5	82.7	5.6 5.6	5.6		0.6 0.6	0.6		3.0 2.9	3.0	
				Bottom	33	27.2 26.6	26.9	8.8 8.7	8.8	27.6 28.5	28.1	67.4 67.0	67.2	4.6 4.6	4.6	4.6	4.2 4.4	4.3		3.6 3.6	3.6	
G1	Sunny	Moderate	15:50	Surface	1	28.6 28.5	28.6	9.0 9.0	9.0	25.2 25.4	25.3	120.8 123.6	122.2	8.1 8.3	8.2	7.4	0.4 0.4	0.4	0.7	3.8 3.7	3.8	3.5
				Middle	3.5	28.0 28.0	28.0	8.9 8.9	8.9	25.7 25.7	25.7	95.0 95.5	95.3	6.5 6.5	6.5		0.5 0.4	0.5		3.6 3.6	3.6	
				Bottom	6	27.9 27.8	27.9	8.9 8.9	8.9	25.8 25.8	25.8	92.3 83.5	87.9	6.3 5.7	6.0	6.0	1.3 1.1	1.2		3.2 3.2	3.2	
G2	Sunny	Moderate	15:38	Surface	1	28.4 28.4	28.4	9.0 9.0	9.0	25.4 25.4	25.4	119.5 117.5	118.5	8.1 7.9	8.0	7.3	0.5 0.4	0.5	0.6	4.4 4.4	4.4	3.5
				Middle	4	28.0 28.0	28.0	8.9 9.0	9.0	25.8 25.8	25.8	94.3 97.1	95.7	6.4 6.6	6.5		0.5 0.4	0.5		3.4 3.4	3.4	
				Bottom	7	27.9 27.9	27.9	8.9 8.9	8.9	25.8 25.8	25.8	84.1 88.5	86.3	5.7 6.0	5.9	5.9	0.7 0.6	0.7		2.8 2.8	2.8	
G3	Sunny	Moderate	16:03	Surface	1	28.6 28.6	28.6	9.0 9.0	9.0	24.5 24.2	24.4	110.9 120.6	115.8	7.5 8.2	7.9	7.0	0.6 0.5	0.6	0.9	3.3 3.3	3.3	3.9
				Middle	3.5	28.0 28.0	28.0	8.9 8.9	8.9	25.6 25.6	25.6	83.7 93.8	88.8	5.7 6.4	6.1		0.6 0.7	0.7		5.0 4.8	4.9	
				Bottom	6	27.7 27.7	27.7	8.8 8.8	8.8	26.0 25.9	26.0	64.2 66.2	65.2	4.4 4.5	4.5	4.5	1.3 1.3	1.3		3.5 3.4	3.5	
G4	Sunny	Moderate	16:16	Surface	1	28.5 28.5	28.5	9.0 9.0	9.0	25.5 25.5	25.5	120.2 119.9	120.1	8.1 8.1	8.1	7.5	0.5 0.5	0.5	0.8	3.6 3.5	3.6	3.5
				Middle	4	28.0 28.0	28.0	8.9 8.9	8.9	25.7 25.7	25.7	100.9 99.0	100.0	6.8 6.7	6.8		0.6 0.6	0.6		3.1 3.2	3.2	
				Bottom	7	27.9 27.8	27.9	8.9 8.9	8.9	25.9 25.9	25.9	89.8 84.6	87.2	6.1 5.8	6.0	6.0	1.2 1.1	1.2		3.8 3.7	3.8	
M1	Sunny	Moderate	15:44	Surface	1	28.3 28.2	28.3	8.9 8.9	8.9	25.3 25.1	25.2	94.9 98.8	96.9	6.4 6.7	6.6	6.5	0.5 0.5	0.5	0.6	5.6 5.5	5.6	4.3
				Middle	3	28.0 28.0	28.0	8.9 8.9	8.9	25.6 25.6	25.6	92.3 93.5	92.9	6.3 6.4	6.4		0.5 0.5	0.5		3.8 3.8	3.8	
				Bottom	5	28.0 28.0	28.0	8.9 8.9	8.9	25.6 25.6	25.6	90.5 91.7	91.1	6.2 6.2	6.2	6.2	0.7 0.8	0.8		3.4 3.5	3.5	
M2	Sunny	Moderate	15:29	Surface	1	28.4 28.3	28.4	9.0 9.0	9.0	25.3 25.4	25.4	114.1 113.5	113.8	7.7 7.7	7.7	6.9	0.5 0.5	0.5	1.5	3.5 3.5	3.5	3.8
				Middle	5	27.9 27.9	27.9	8.9 8.9	8.9	25.8 25.7	25.8	87.4 89.2	88.3	5.9 6.1	6.0		0.4 0.4	0.4		4.1 4.1	4.1	
				Bottom	9	27.0 27.5	27.3	8.7 8.8	8.8	27.4 26.3	26.9	64.4 65.2	64.8	4.4 4.4	4.4	4.4	3.9 3.5	3.7		3.8 3.7	3.8	
M3	Sunny	Moderate	16:09	Surface	1	28.5 28.6	28.6	9.0 9.0	9.0	24.4 24.5	24.5	105.2 106.1	105.7	7.1 7.2	7.2	6.6	0.6 0.5	0.6	1.1	4.0 4.0	4.0	3.7
				Middle	3.5	27.9 28.0	28.0	8.9 8.9	8.9	25.4 25.4	25.4	85.4 86.6	86.0	5.8 5.9	5.9		0.8 0.9	0.9		3.6 3.4	3.5	
				Bottom	6	27.7 27.7	27.7	8.8 8.8	8.8	25.9 25.9	25.9	70.7 78.1	74.4	4.8 5.3	5.1	5.1	1.8 1.7	1.8		3.6 3.5	3.6	
M4	Sunny	Moderate	15:20	Surface	1	28.7 28.7	28.7	9.0 9.0	9.0	24.7 24.7	24.7	110.8 109.0	109.9	7.5 7.4	7.5	7.4	0.5 0.4	0.5	0.5	4.1 4.0	4.1	4.3
				Middle	4.5	28.4 28.2	28.3	9.0 8.9	9.0	25.1 25.3	25.2	106.9 98.0	102.5	7.2 7.2	7.2		0.4 0.4	0.4		4.5 4.3	4.4	
				Bottom	8	27.7 27.8	27.8	8.9 8.9	8.9	26.1 26.1	26.1	79.1 80.6	79.9	5.4 5.5	5.5	5.5	0.5 0.5	0.5		4.3 4.3	4.3	
M5	Sunny	Moderate	16:32	Surface	1	28.3 28.4	28.4	9.0 9.0	9.0	25.2 25.2	25.2	112.0 113.4	112.7	7.6 7.7	7.7	7.5	0.5 0.4	0.5	0.5	4.3 4.3	4.3	4.6
				Middle	5.5	28.2 28.2	28.2	9.0 8.9	9.0	25.3 25.3	25.3	106.2 106.2	106.2	7.2 7.2	7.2		0.5 0.5	0.5		5.8 5.8	5.8	
				Bottom	10	28.1 27.8	28.0	8.9 8.9	8.9	25.6 26.0	25.8	104.1 90.6	97.4	7.1 6.2	6.7	6.7	0.6 0.6	0.6		3.6 3.7	3.7	
M6	Sunny	Moderate	16:24	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.1	- -	-	0.7	- -	-	3.4
				Middle	2.1	28.2 28.2	28.2	8.9 8.9	8.9	25.6 25.6	25.6	103.6 104.3	104.0	7.0 7.1	7.1		0.7 0.6	0.7		3.4 3.3	3.4	
				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 28 July 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.7 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 10.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 4.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 4.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 28 July 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
C1	Sunny	Moderate	10:43	Surface	1	29.5 29.6	29.6	8.6 8.6	8.6	28.2 28.2	28.2	113.3 112.4	112.9	7.4 7.3	7.4	6.7	0.5 0.6	0.6	3.3	3.9 4.0	4.0	4.2
				Middle	9.5	28.4 28.3	28.4	8.5 8.5	8.5	29.0 29.0	29.0	88.3 88.0	88.2	5.9 5.8	5.9		1.3 1.1	1.2		3.0 3.0	3.0	
				Bottom	18	24.9 25.1	25.0	8.2 8.2	8.2	33.5 33.2	33.4	63.6 68.1	65.9	4.4 4.7	4.6	4.6	8.1 8.0	8.1		5.5 5.5	5.5	
C2	Sunny	Moderate	09:26	Surface	1	28.8 28.9	28.9	8.5 8.6	8.6	28.6 28.6	28.6	102.8 103.1	103.0	6.8 6.8	6.8	6.0	0.6 0.5	0.6	3.4	2.9 2.9	2.9	3.3
				Middle	17	27.9 27.6	27.8	8.4 8.4	8.4	29.5 29.7	29.6	78.7 75.3	77.0	5.2 5.0	5.1		3.3 2.9	3.1		4.2 4.3	4.3	
				Bottom	33	27.1 27.1	27.1	8.3 8.4	8.4	30.4 30.3	30.4	65.1 66.9	66.0	4.4 4.5	4.5	4.5	6.1 6.7	6.4		2.7 2.7	2.7	
G1	Sunny	Moderate	10:05	Surface	1	28.6 28.6	28.6	8.5 8.5	8.5	28.7 28.7	28.7	97.3 96.7	97.0	6.4 6.4	6.4	6.3	1.2 1.4	1.3	1.2	4.2 4.5	4.4	3.7
				Middle	4	28.4 28.5	28.5	8.5 8.5	8.5	28.8 28.8	28.8	93.2 93.5	93.4	6.2 6.2	6.2		0.9 1.1	1.0		3.4 3.2	3.3	
				Bottom	7	28.3 28.1	28.2	8.5 8.4	8.5	29.0 29.1	29.1	88.4 84.6	86.5	5.9 5.6	5.8	5.8	1.3 1.4	1.4		3.5 3.5	3.5	
G2	Sunny	Moderate	09:55	Surface	1	29.0 29.0	29.0	8.6 8.6	8.6	28.4 28.4	28.4	108.8 107.5	108.2	7.2 7.1	7.2	6.8	0.7 0.8	0.8	1.0	4.1 4.1	4.1	3.5
				Middle	4.5	28.5 28.5	28.5	8.5 8.5	8.5	28.8 28.8	28.8	93.9 94.7	94.3	6.2 6.3	6.3		1.2 1.2	1.2		2.2 2.2	2.2	
				Bottom	8	28.2 28.2	28.2	8.5 8.5	8.5	29.1 29.1	29.1	85.8 85.5	85.7	5.7 5.7	5.7	5.7	1.1 0.9	1.0		4.2 4.2	4.2	
G3	Sunny	Moderate	10:12	Surface	1	28.8 28.8	28.8	8.5 8.5	8.5	28.3 28.3	28.3	105.6 103.7	104.7	7.0 6.8	6.9	6.3	0.8 0.8	0.8	3.1	2.7 2.6	2.7	2.8
				Middle	4	28.3 28.3	28.3	8.4 8.4	8.4	28.9 28.9	28.9	84.3 84.5	84.4	5.6 5.6	5.6		2.5 2.3	2.4		3.1 3.2	3.2	
				Bottom	7	28.0 28.0	28.0	8.4 8.4	8.4	29.2 29.2	29.2	73.6 72.7	73.2	4.9 4.8	4.9	4.9	6.0 6.2	6.1		2.6 2.6	2.6	
G4	Sunny	Moderate	10:25	Surface	1	28.9 28.9	28.9	8.5 8.5	8.5	28.5 28.5	28.5	102.6 102.1	102.4	6.8 6.7	6.8	6.4	1.1 1.1	1.1	2.1	2.5 2.5	2.5	2.8
				Middle	4.5	28.4 28.4	28.4	8.5 8.5	8.5	28.9 28.9	28.9	91.2 91.0	91.1	6.0 6.0	6.0		1.1 1.1	1.1		2.7 2.7	2.7	
				Bottom	8	28.0 28.0	28.0	8.4 8.4	8.4	29.2 29.2	29.2	78.8 79.5	79.2	5.2 5.3	5.3	5.3	4.4 4.0	4.2		3.3 3.1	3.2	
M1	Sunny	Moderate	10:01	Surface	1	28.8 28.8	28.8	8.5 8.5	8.5	28.4 28.4	28.4	102.8 101.5	102.2	6.8 6.7	6.8	6.5	1.0 1.0	1.0	1.4	4.3 4.1	4.2	4.7
				Middle	3	28.5 28.5	28.5	8.5 8.5	8.5	28.7 28.8	28.8	93.8 91.9	92.9	6.2 6.1	6.2		1.6 1.7	1.7		4.2 4.1	4.2	
				Bottom	5	28.3 28.3	28.3	8.5 8.5	8.5	29.0 29.0	29.0	88.1 88.6	88.4	5.8 5.9	5.9	5.9	1.4 1.6	1.5		5.7 5.4	5.6	
M2	Sunny	Moderate	09:40	Surface	1	29.1 29.1	29.1	8.6 8.6	8.6	28.3 28.3	28.3	110.9 109.4	110.2	7.3 7.2	7.3	6.9	0.7 0.7	0.7	1.3	3.5 3.3	3.4	3.9
				Middle	5.5	28.5 28.6	28.6	8.5 8.5	8.5	28.8 28.7	28.8	95.0 96.1	95.6	6.3 6.4	6.4		0.8 0.8	0.8		4.5 4.4	4.5	
				Bottom	10	27.9 28.0	28.0	8.4 8.4	8.4	29.4 29.3	29.4	78.5 80.1	79.3	5.2 5.3	5.3	5.3	2.6 2.4	2.5		3.6 3.7	3.7	
M3	Sunny	Moderate	10:16	Surface	1	28.9 28.9	28.9	8.5 8.5	8.5	28.2 28.0	28.1	105.0 105.0	105.0	6.9 6.9	6.9	6.4	0.8 0.8	0.8	2.5	3.8 3.8	3.8	5.8
				Middle	4	28.4 28.4	28.4	8.5 8.5	8.5	28.8 28.8	28.8	86.9 87.2	87.1	5.8 5.8	5.8		2.2 2.0	2.1		7.2 7.5	7.4	
				Bottom	7	28.0 28.1	28.1	8.4 8.4	8.4	29.3 29.2	29.3	73.8 82.3	78.1	4.9 5.5	5.2	5.2	4.3 4.6	4.5		6.2 6.2	6.2	
M4	Sunny	Moderate	09:33	Surface	1	29.1 29.0	29.1	8.6 8.6	8.6	28.4 28.4	28.4	109.5 108.8	109.2	7.2 7.2	7.2	7.0	0.7 0.8	0.8	1.1	3.0 3.2	3.1	3.8
				Middle	5	28.7 29.0	28.9	8.5 8.6	8.6	28.6 28.5	28.6	100.3 105.4	102.9	6.6 6.9	6.8		0.9 0.8	0.9		3.9 3.9	3.9	
				Bottom	9	28.7 28.8	28.8	8.5 8.5	8.5	28.6 28.5	28.6	100.2 102.9	101.6	6.6 6.8	6.7	6.7	1.6 1.7	1.7		4.4 4.5	4.5	
M5	Sunny	Moderate	10:36	Surface	1	28.8 28.8	28.8	8.5 8.5	8.5	28.6 28.7	28.7	95.2 96.3	95.8	6.3 6.3	6.3	6.3	1.0 0.9	1.0	2.0	4.5 4.5	4.5	4.0
				Middle	6	28.6 28.6	28.6	8.5 8.5	8.5	28.8 28.8	28.8	95.4 94.5	95.0	6.3 6.2	6.3		0.8 0.9	0.9		4.2 4.1	4.2	
				Bottom	11	28.2 28.1	28.2	8.4 8.4	8.4	29.1 29.2	29.2	82.8 81.1	82.0	5.5 5.4	5.5	5.5	4.1 4.2	4.2		3.2 3.2	3.2	
M6	Sunny	Moderate	10:31	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-	1.8	- -	-	4.6
				Middle	2.2	28.4 28.4	28.4	8.5 8.5	8.5	28.9 28.9	28.9	95.2 95.0	95.1	6.3 6.3	6.3		1.7 1.8	1.8		4.5 4.7	4.6	
				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 July 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.9 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.9 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 July 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	Fine	Moderate	18:33	Surface	1	28.4 28.3	28.4	8.4 8.4	8.4	29.4 29.4	29.4	99.1 95.6	97.4	6.6 6.3	6.5	6.3	1.5 1.5	1.5	3.0	4.6 4.8	4.7	5.1
				Middle	9.5	25.9 25.7	25.8	8.2 8.2	8.2	32.8 33.1	33.0	87.5 88.0	87.8	5.9 6.0	6.0		3.0 3.4	3.2		7.3 7.5	7.4	
				Bottom	18	24.3 24.3	24.3	8.2 8.2	8.2	34.7 34.7	34.7	67.2 67.5	67.4	4.6 4.6	4.6	4.6	4.3 4.2	4.3		3.0 3.1	3.1	
C2	Fine	Moderate	17:10	Surface	1	29.0 28.8	28.9	8.2 8.3	8.3	27.4 27.6	27.5	104.9 98.3	101.6	6.9 6.5	6.7	6.4	1.0 1.1	1.1	3.7	4.9 4.9	4.9	5.9
				Middle	17	25.6 24.8	25.2	8.2 8.2	8.2	33.1 34.0	33.6	88.7 85.8	87.3	6.0 5.9	6.0		4.0 4.8	4.4		6.7 6.8	6.8	
				Bottom	33	24.5 24.7	24.6	8.2 8.2	8.2	34.3 34.2	34.3	67.0 68.2	67.6	4.6 4.7	4.7	4.7	5.6 5.3	5.5		6.2 5.9	6.1	
G1	Fine	Moderate	17:46	Surface	1	29.2 29.1	29.2	8.6 8.6	8.6	29.1 29.1	29.1	128.4 126.6	127.5	8.4 8.3	8.4	7.9	1.6 1.6	1.6	2.0	4.2 4.3	4.3	5.6
				Middle	4	29.1 28.9	29.0	8.5 8.5	8.5	29.2 29.3	29.3	119.4 104.3	111.9	7.8 6.8	7.3		1.6 1.7	1.7		8.0 7.8	7.9	
				Bottom	7	27.0 27.0	27.0	8.3 8.3	8.3	31.2 31.5	31.4	70.8 71.6	71.2	4.7 4.8	4.8	4.8	2.3 2.8	2.6		4.6 4.6	4.6	
G2	Fine	Moderate	17:32	Surface	1	28.9 29.0	29.0	8.5 8.5	8.5	29.4 29.4	29.4	110.8 111.0	110.9	7.3 7.3	7.3	6.4	1.3 1.4	1.4	2.2	4.2 4.3	4.3	4.2
				Middle	5	27.9 28.0	28.0	8.3 8.3	8.3	30.2 30.1	30.2	80.6 83.4	82.0	5.3 5.5	5.4		2.1 2.0	2.1		4.4 4.2	4.3	
				Bottom	9	26.2 26.4	26.3	8.3 8.3	8.3	32.0 32.4	32.2	68.7 68.8	68.8	4.6 4.6	4.6	4.6	3.0 2.9	3.0		4.0 4.0	4.0	
G3	Fine	Moderate	17:52	Surface	1	29.3 29.3	29.3	8.5 8.5	8.5	28.7 28.6	28.7	123.6 121.0	122.3	8.1 7.9	8.0	7.5	1.3 1.3	1.3	2.5	4.4 4.4	4.4	4.3
				Middle	4	28.8 28.8	28.8	8.5 8.5	8.5	29.3 29.2	29.3	103.1 105.9	104.5	6.8 7.0	6.9		1.9 1.8	1.9		3.6 3.7	3.7	
				Bottom	7	27.3 27.5	27.4	8.3 8.3	8.3	31.3 31.1	31.2	66.2 65.4	65.8	4.4 4.3	4.4	4.4	4.1 4.2	4.2		4.8 4.8	4.8	
G4	Fine	Moderate	18:04	Surface	1	29.6 29.7	29.7	8.6 8.6	8.6	28.9 28.8	28.9	137.4 135.3	136.4	8.9 8.8	8.9	8.8	1.5 1.5	1.5	2.5	4.1 4.1	4.1	5.3
				Middle	4	29.5 29.5	29.5	8.6 8.6	8.6	29.1 29.1	29.1	134.3 130.0	132.2	8.7 8.5	8.6		1.6 1.5	1.6		6.0 6.0	6.0	
				Bottom	7	27.2 27.2	27.2	8.3 8.3	8.3	31.5 31.5	31.5	66.2 67.2	66.7	4.4 4.5	4.5	4.5	4.2 4.8	4.5		5.9 5.5	5.7	
M1	Fine	Moderate	17:40	Surface	1	29.1 29.2	29.2	8.5 8.5	8.5	29.2 29.2	29.2	115.6 117.2	116.4	7.6 7.7	7.7	7.6	1.7 1.7	1.7	1.9	4.8 4.9	4.9	5.7
				Middle	3	29.1 29.0	29.1	8.5 8.5	8.5	29.2 29.3	29.3	115.9 111.6	113.8	7.6 7.3	7.5		1.7 1.8	1.8		7.1 7.1	7.1	
				Bottom	5	28.6 28.3	28.5	8.4 8.4	8.4	29.6 29.8	29.7	83.5 78.2	80.9	5.5 5.2	5.4	5.4	2.0 2.2	2.1		5.1 5.2	5.2	
M2	Fine	Moderate	17:27	Surface	1	28.9 28.9	28.9	8.5 8.5	8.5	29.4 29.5	29.5	108.4 107.7	108.1	7.1 7.1	7.1	6.6	1.3 1.3	1.3	2.5	3.6 3.3	3.5	3.8
				Middle	5.5	28.1 28.3	28.2	8.4 8.4	8.4	30.3 30.0	30.2	91.6 91.5	91.6	6.1 6.0	6.1		1.8 1.6	1.7		4.0 4.0	4.0	
				Bottom	10	26.2 25.9	26.1	8.3 8.3	8.3	32.6 32.8	32.7	66.5 65.6	66.1	4.5 4.4	4.5	4.5	4.7 4.0	4.4		3.9 3.8	3.9	
M3	Fine	Moderate	17:58	Surface	1	29.3 29.2	29.3	8.5 8.5	8.5	28.6 28.7	28.7	115.8 113.6	114.7	7.6 7.4	7.5	7.3	1.3 1.4	1.4	2.7	4.0 4.8	4.4	4.8
				Middle	4	28.9 28.9	28.9	8.5 8.5	8.5	29.2 29.3	29.3	106.0 105.1	105.6	7.0 6.9	7.0		1.7 1.8	1.8		5.7 5.8	5.8	
				Bottom	7	27.4 27.4	27.4	8.3 8.3	8.3	31.3 31.2	31.3	70.9 69.1	70.0	4.7 4.6	4.7	4.7	4.9 4.6	4.8		4.3 4.3	4.3	
M4	Fine	Moderate	17:20	Surface	1	28.7 28.7	28.7	8.4 8.4	8.4	29.5 29.5	29.5	100.6 99.9	100.3	6.6 6.6	6.6	6.5	1.2 1.2	1.2	2.5	5.3 5.3	5.3	6.1
				Middle	4	28.8 28.6	28.7	8.4 8.4	8.4	29.5 29.6	29.6	101.5 92.8	97.2	6.7 6.1	6.4		1.3 1.4	1.4		7.4 7.5	7.5	
				Bottom	7	28.2 28.0	28.1	8.4 8.4	8.4	30.0 30.2	30.1	97.7 87.2	92.5	6.5 5.8	6.2	6.2	4.9 4.9	4.9		5.6 5.4	5.5	
M5	Fine	Moderate	18:18	Surface	1	28.8 28.8	28.8	8.4 8.4	8.4	29.0 29.0	29.0	99.2 99.8	99.5	6.5 6.6	6.6	6.3	1.1 1.1	1.1	3.3	5.5 5.4	5.5	4.8
				Middle	5.5	27.6 28.2	27.9	8.4 8.4	8.4	31.0 30.1	30.6	83.6 93.1	88.4	5.6 6.2	5.9		2.6 2.7	2.7		3.8 3.9	3.9	
				Bottom	10	25.6 26.2	25.9	8.2 8.3	8.3	33.2 32.4	32.8	66.1 68.3	67.2	4.5 4.6	4.6	4.6	6.5 5.7	6.1		5.2 5.0	5.1	
M6	Fine	Moderate	18:12	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	8.1	- -	-	1.5	- -	-	5.0
				Middle	2.1	29.2 29.2	29.2	8.6 8.5	8.6	29.0 29.0	29.0	125.9 122.8	124.4	8.2 8.0	8.1		1.5 1.5	1.5		5.0 5.0	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 31 July 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 4.7 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.1 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.7 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.1 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.7 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

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 conditio

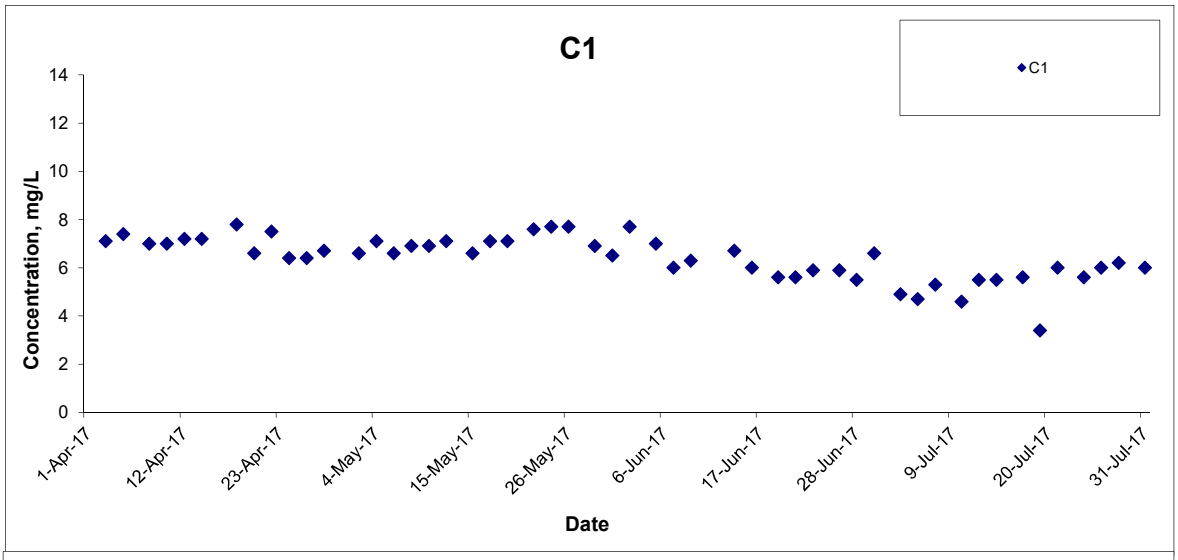
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 31 July 2017

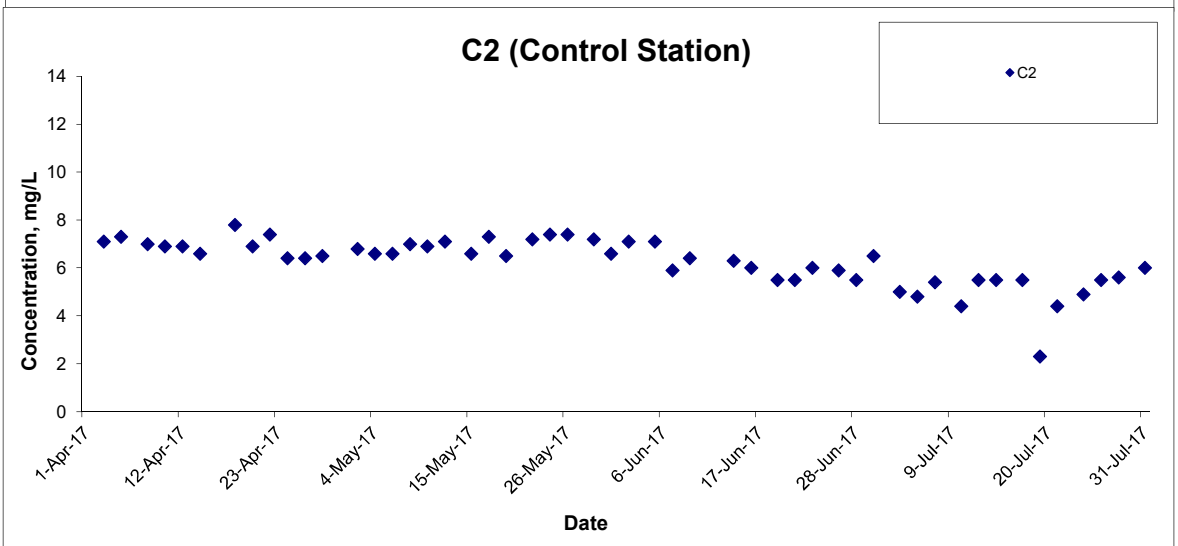
(Mid-Flood Tide)

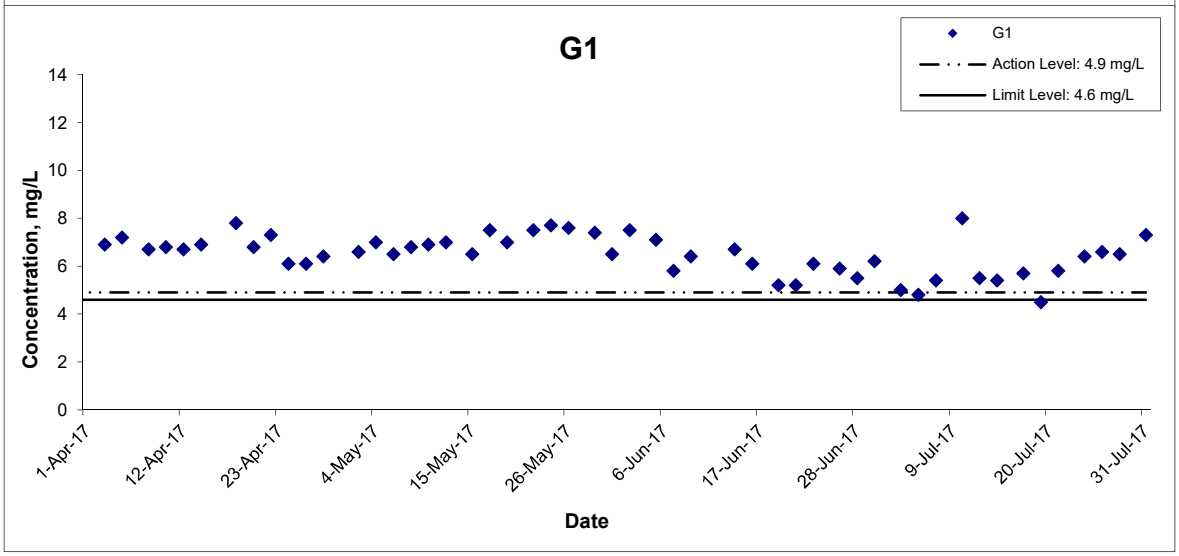
Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	13:42	Surface	1	28.8 28.8	28.8	8.4 8.4	8.4	29.4 29.4	29.4	104.8 101.7	103.3	6.9 6.7	6.8	6.6	1.2 1.3	1.3	2.5	5.8 5.9	5.9	5.0
				Middle	10.5	26.6 26.5	26.6	8.3 8.4	8.4	31.9 31.9	31.9	93.6 92.4	93.0	6.3 6.2	6.3		2.1 2.2	2.2		3.9 4.0	4.0	
				Bottom	20	26.7 26.5	26.6	8.3 8.3	8.3	32.1 32.3	32.2	73.9 74.9	74.4	5.0 5.0	5.0	5.0	3.9 3.8	3.9		5.2 5.1	5.2	
C2	Sunny	Moderate	12:01	Surface	1	28.5 28.4	28.5	8.2 8.3	8.3	28.4 29.1	28.8	89.5 96.7	93.1	5.9 6.4	6.2	5.6	1.1 1.2	1.2	2.4	5.4 5.2	5.3	3.8
				Middle	17	25.7 25.5	25.6	8.2 8.2	8.2	33.0 33.2	33.1	71.4 72.1	71.8	4.8 4.9	4.9		2.8 3.3	3.1		2.8 2.9	2.9	
				Bottom	33	25.6 25.1	25.4	8.2 8.2	8.2	33.0 33.7	33.4	65.8 64.1	65.0	4.5 4.4	4.5	4.5	3.0 3.0	3.0		3.2 3.4	3.3	
G1	Sunny	Moderate	12:54	Surface	1	29.0 29.1	29.1	8.5 8.5	8.5	29.2 29.2	29.2	110.5 112.7	111.6	7.2 7.4	7.3	6.5	1.3 1.2	1.3	2.0	3.0 2.9	3.0	5.4
				Middle	4.5	28.2 28.8	28.5	8.4 8.4	8.4	29.8 29.4	29.6	80.8 89.4	85.1	5.3 5.9	5.6		1.5 1.3	1.4		8.0 7.9	8.0	
				Bottom	8	27.4 27.3	27.4	8.4 8.3	8.4	31.3 31.4	31.4	64.2 64.2	64.2	4.3 4.3	4.3	4.3	3.2 3.1	3.2		5.2 5.2	5.2	
G2	Sunny	Moderate	12:38	Surface	1	28.8 28.6	28.7	8.4 8.4	8.4	29.3 29.5	29.4	101.3 93.3	97.3	6.7 6.1	6.4	5.9	1.2 1.3	1.3	2.3	4.8 4.7	4.8	5.2
				Middle	5	28.4 28.2	28.3	8.4 8.4	8.4	29.7 30.2	30.0	84.6 75.6	80.1	5.6 5.0	5.3		1.2 1.3	1.3		6.9 6.7	6.8	
				Bottom	9	26.4 26.3	26.4	8.3 8.3	8.3	32.4 32.5	32.5	67.0 68.2	67.6	4.5 4.6	4.6	4.6	4.2 4.2	4.2		4.0 4.0	4.0	
G3	Sunny	Moderate	13:02	Surface	1	29.0 29.0	29.0	8.4 8.5	8.5	29.0 29.0	29.0	106.0 105.7	105.9	7.0 6.9	7.0	6.1	1.2 1.2	1.2	2.7	4.0 3.8	3.9	5.5
				Middle	4	28.1 27.9	28.0	8.3 8.3	8.3	29.8 30.0	29.9	81.8 76.0	78.9	5.4 5.0	5.2		2.4 2.7	2.6		7.2 7.4	7.3	
				Bottom	7	27.3 27.3	27.3	8.3 8.3	8.3	31.3 31.3	31.3	74.4 72.7	73.6	5.0 4.8	4.9	4.9	4.3 4.3	4.3		5.3 5.4	5.4	
G4	Sunny	Moderate	13:17	Surface	1	29.4 29.5	29.5	8.5 8.5	8.5	28.9 28.7	28.8	122.8 121.0	121.9	8.0 7.9	8.0	7.1	1.2 1.2	1.2	2.3	5.6 5.6	5.6	4.3
				Middle	4.5	28.5 28.1	28.3	8.3 8.4	8.4	29.6 30.1	29.9	97.0 90.0	93.5	6.4 6.0	6.2		1.8 1.8	1.8		2.4 2.5	2.5	
				Bottom	8	26.7 26.7	26.7	8.3 8.3	8.3	32.0 31.6	31.8	72.7 77.1	74.9	4.9 5.2	5.1	5.1	3.9 3.8	3.9		5.1 4.7	4.9	
M1	Sunny	Moderate	12:45	Surface	1	28.8 28.9	28.9	8.4 8.5	8.5	29.3 29.3	29.3	105.4 105.5	105.5	6.9 6.9	6.9	6.2	1.3 1.1	1.2	1.4	5.3 5.5	5.4	5.6
				Middle	3	28.2 28.6	28.4	8.4 8.4	8.4	29.7 29.5	29.6	77.2 86.2	81.7	5.1 5.7	5.4		1.5 1.4	1.5		5.6 5.6	5.6	
				Bottom	5	28.1 28.1	28.1	8.4 8.4	8.4	30.3 30.1	30.2	75.0 74.9	75.0	5.0 5.0	5.0	5.0	1.5 1.7	1.6		5.7 5.7	5.7	
M2	Sunny	Moderate	12:30	Surface	1	28.6 28.7	28.7	8.4 8.4	8.4	29.4 29.4	29.4	97.3 93.4	95.4	6.4 6.1	6.3	5.8	1.1 1.1	1.1	2.0	5.9 6.0	6.0	4.6
				Middle	5.5	28.1 28.3	28.2	8.4 8.4	8.4	30.3 29.9	30.1	78.5 80.7	79.6	5.2 5.3	5.3		1.2 1.2	1.2		5.2 5.1	5.2	
				Bottom	10	26.2 26.2	26.2	8.3 8.3	8.3	32.6 32.5	32.6	79.4 76.7	78.1	5.4 5.2	5.3	5.3	3.7 3.6	3.7		2.5 2.4	2.5	
M3	Sunny	Moderate	13:07	Surface	1	29.2 29.0	29.1	8.4 8.4	8.4	28.3 28.8	28.6	100.2 98.6	99.4	6.6 6.5	6.6	6.0	1.0 1.2	1.1	2.5	3.0 2.9	3.0	3.9
				Middle	4	28.0 28.3	28.2	8.3 8.4	8.4	30.0 29.6	29.8	75.8 86.3	81.1	5.0 5.7	5.4		2.7 2.7	2.7		3.3 3.3	3.3	
				Bottom	7	27.2 27.5	27.4	8.3 8.3	8.3	31.5 31.0	31.3	70.5 74.6	72.6	4.7 5.0	4.9	4.9	3.8 3.5	3.7		5.4 5.3	5.4	
M4	Sunny	Moderate	12:14	Surface	1	28.6 28.4	28.5	8.4 8.4	8.4	29.5 29.7	29.6	93.2 84.8	89.0	6.1 5.6	5.9	6.2	1.0 1.1	1.1	2.0	5.9 6.1	6.0	4.5
				Middle	5	28.3 28.3	28.3	8.4 8.4	8.4	29.9 29.9	29.9	97.7 97.5	97.6	6.4 6.4	6.4		1.0 1.0	1.0		4.6 4.6	4.6	
				Bottom	9	26.4 28.3	27.4	8.3 8.4	8.4	32.2 30.0	31.1	69.8 69.3	69.6	4.7 4.6	4.7	4.7	3.8 3.8	3.8		3.0 3.0	3.0	
M5	Sunny	Moderate	13:29	Surface	1	29.1 29.1	29.1	8.5 8.5	8.5	29.2 29.1	29.2	115.8 116.3	116.1	7.6 7.6	7.6	6.9	1.2 1.2	1.2	2.3	5.8 5.7	5.8	5.6
				Middle	6	28.5 27.9	28.2	8.3 8.3	8.3	29.7 30.3	30.0	92.5 92.6	92.6	6.1 6.1	6.1		2.8 2.8	2.8		5.0 5.0	5.0	
				Bottom	11	26.5 26.5	26.5	8.3 8.3	8.3	32.3 32.3	32.3	72.7 71.4	72.1	4.9 4.8	4.9	4.9	2.7 3.1	2.9		6.0 6.0	6.0	
M6	Sunny	Moderate	13:24	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	8.3	- -	-	1.3	- -	-	7.5
				Middle	2	29.4 29.4	29.4	8.5 8.5	8.5	29.0 28.9	29.0	127.0 127.5	127.3	8.3 8.3	8.3		1.3 1.3	1.3		7.4 7.5	7.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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







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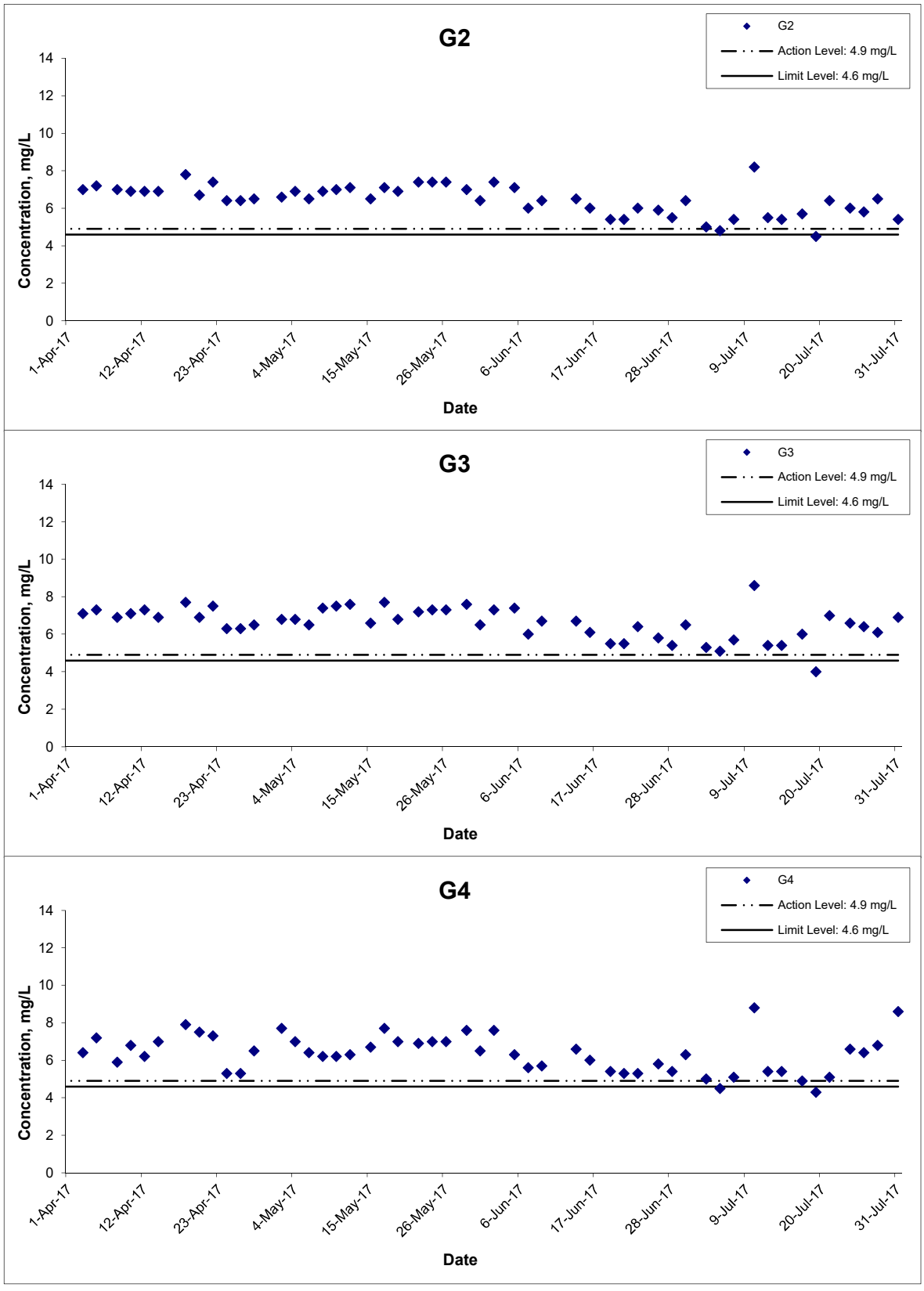
Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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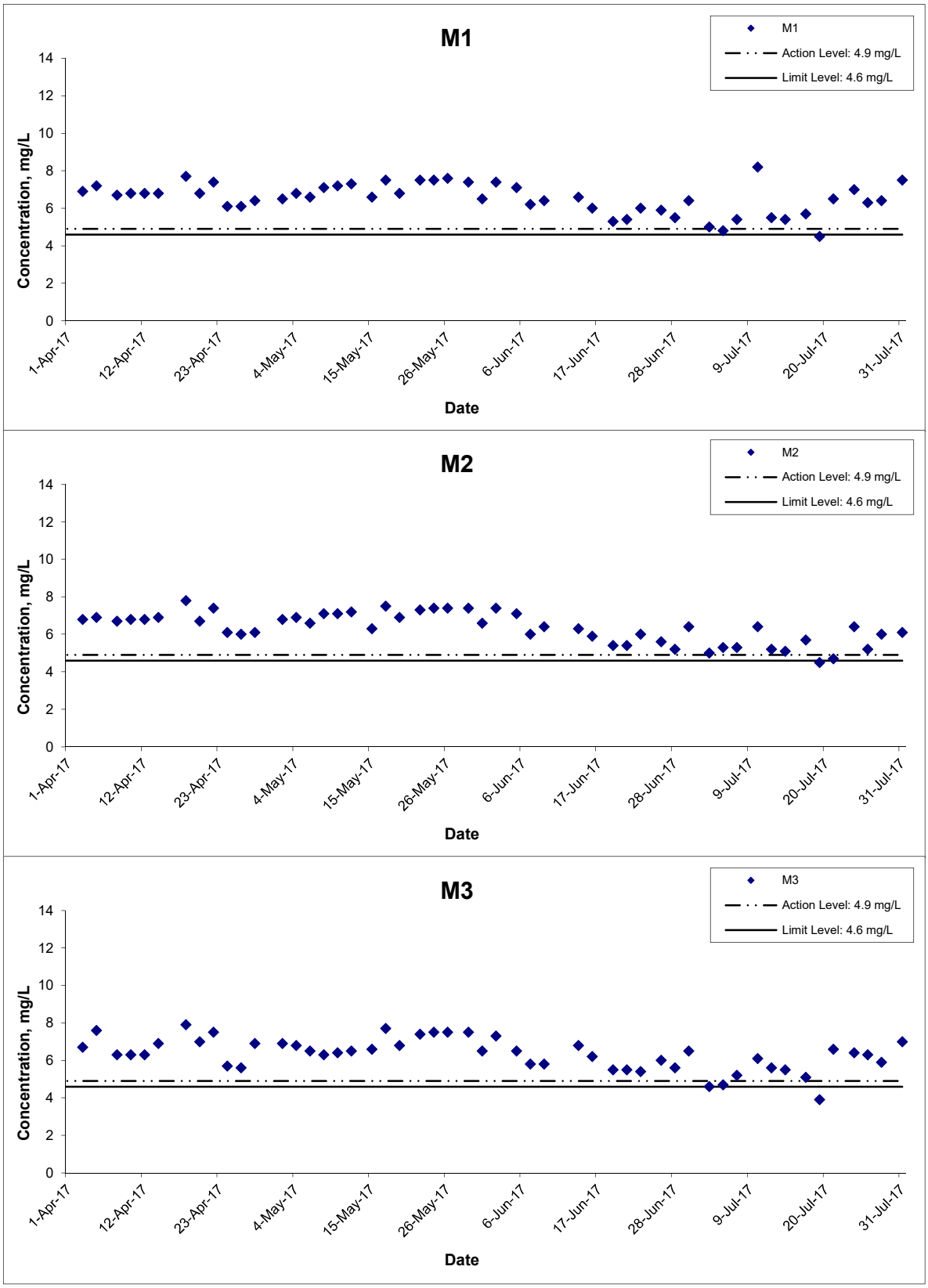
Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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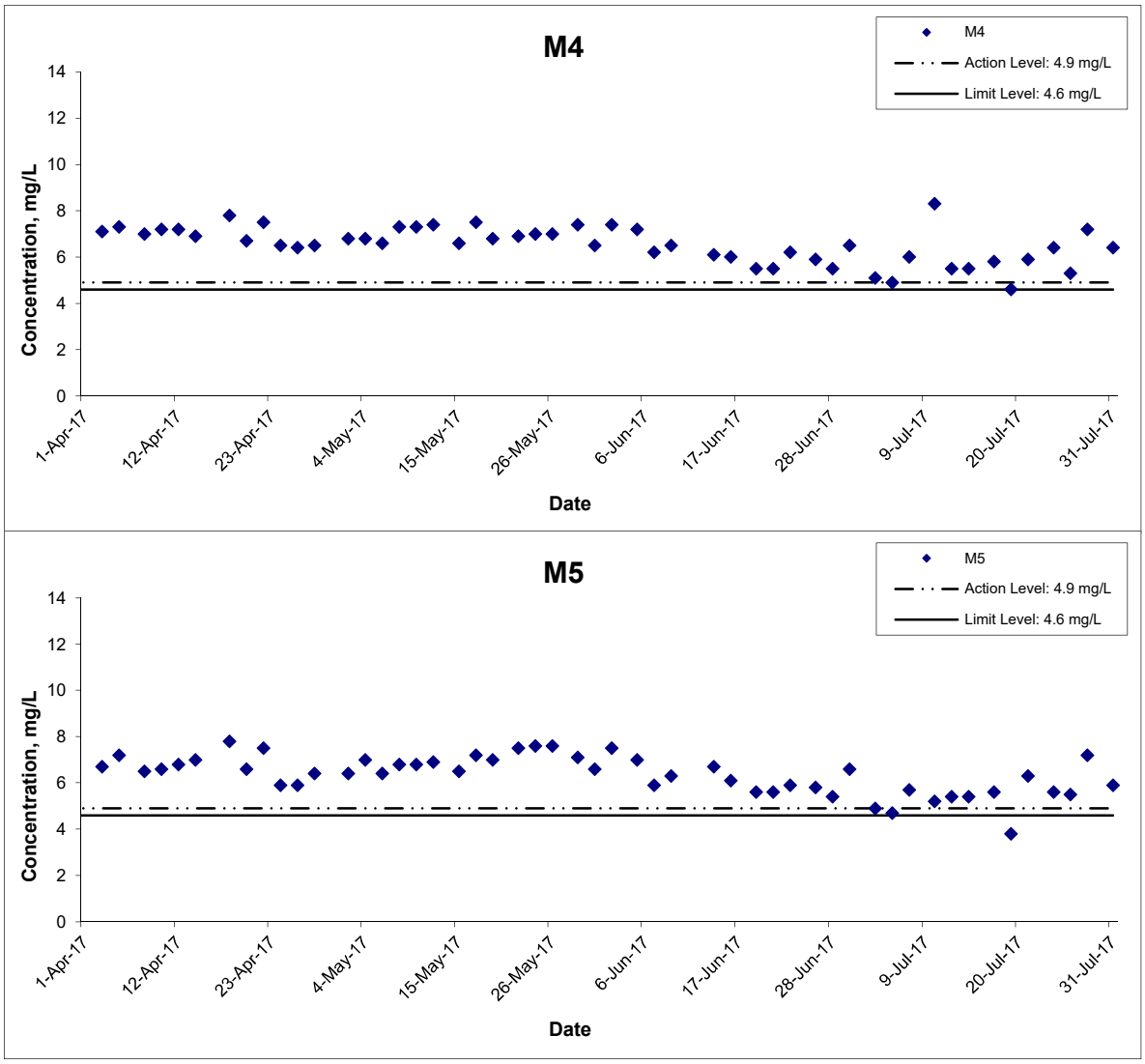
Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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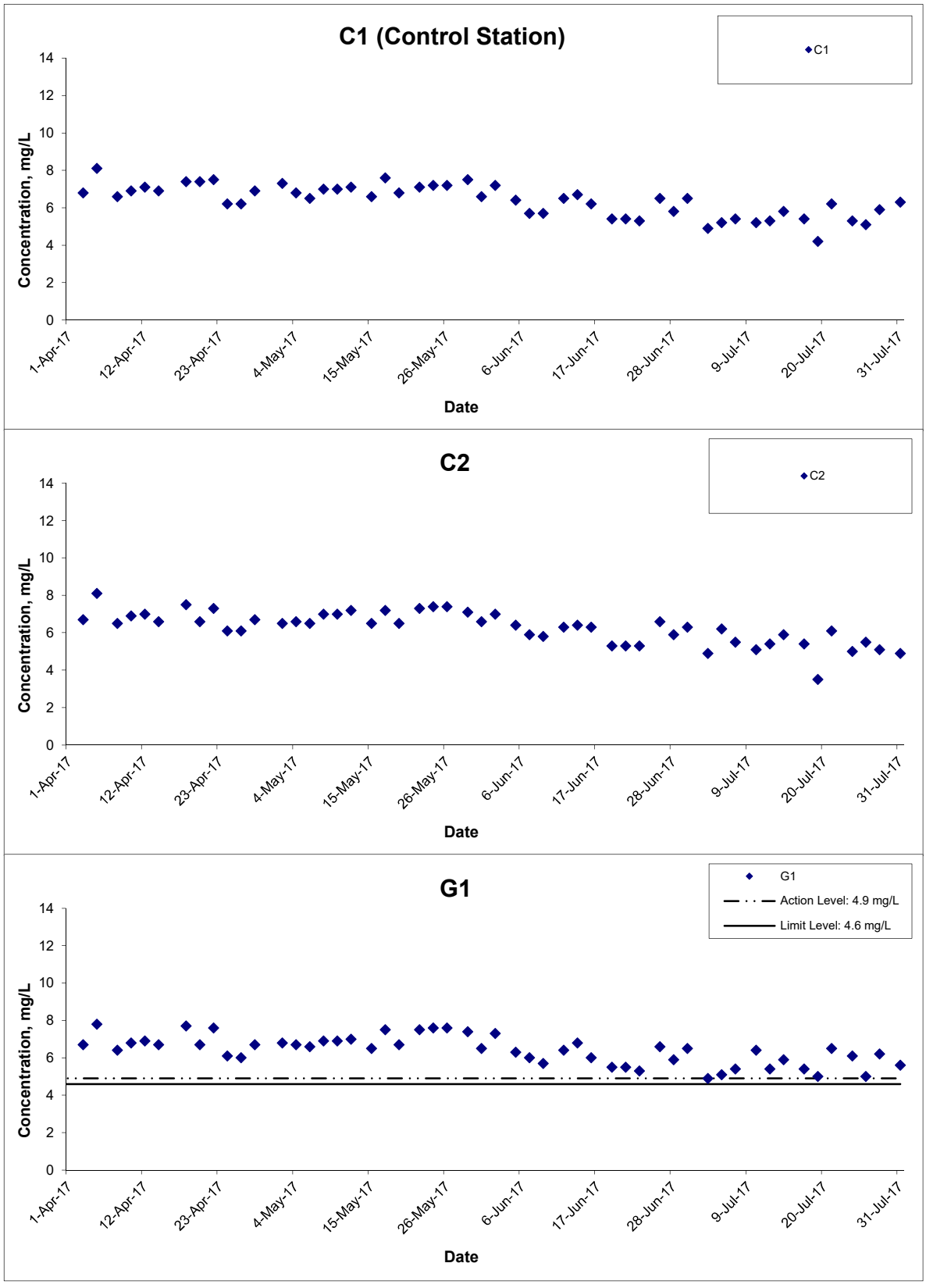
Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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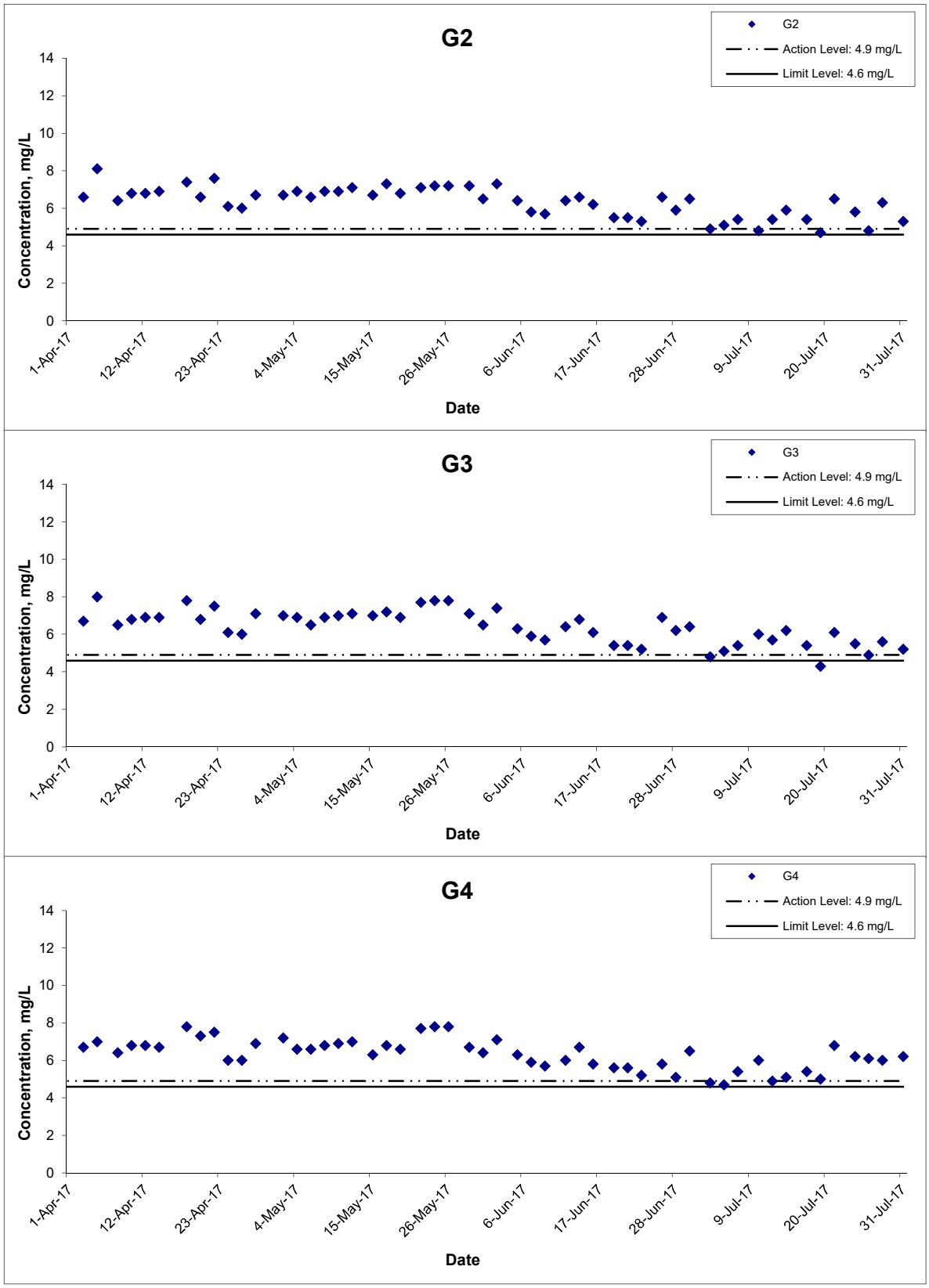
Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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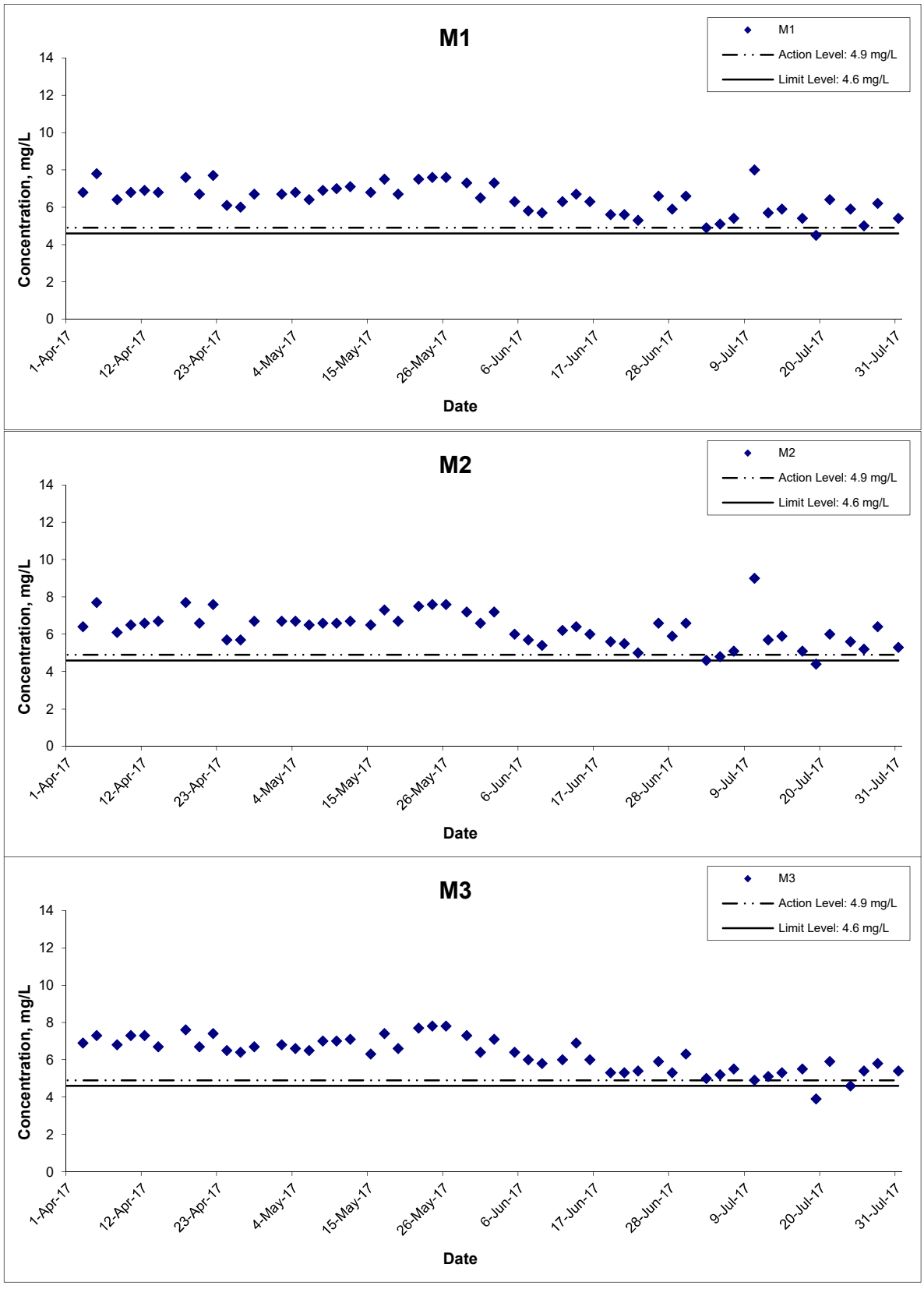
Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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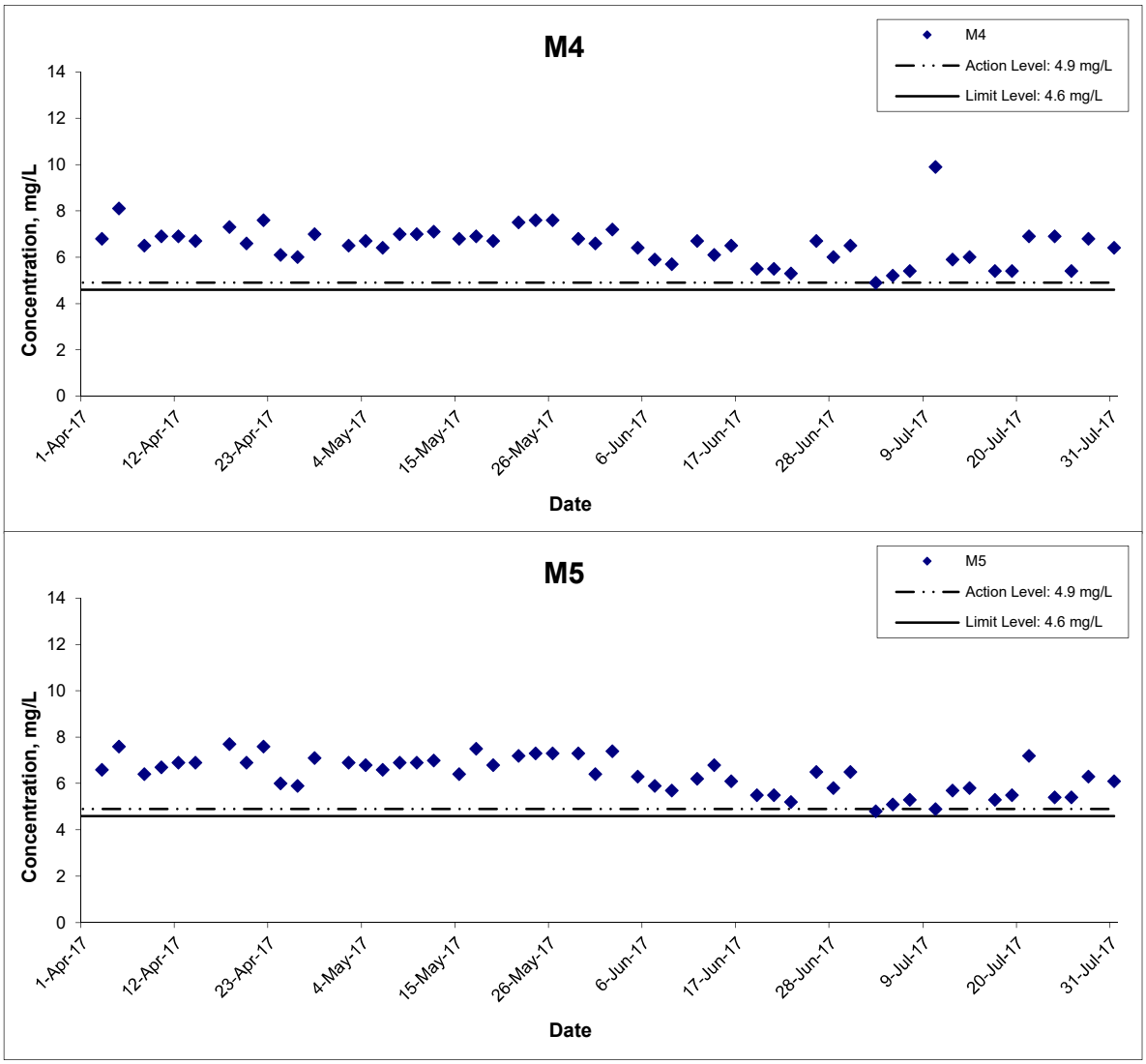
Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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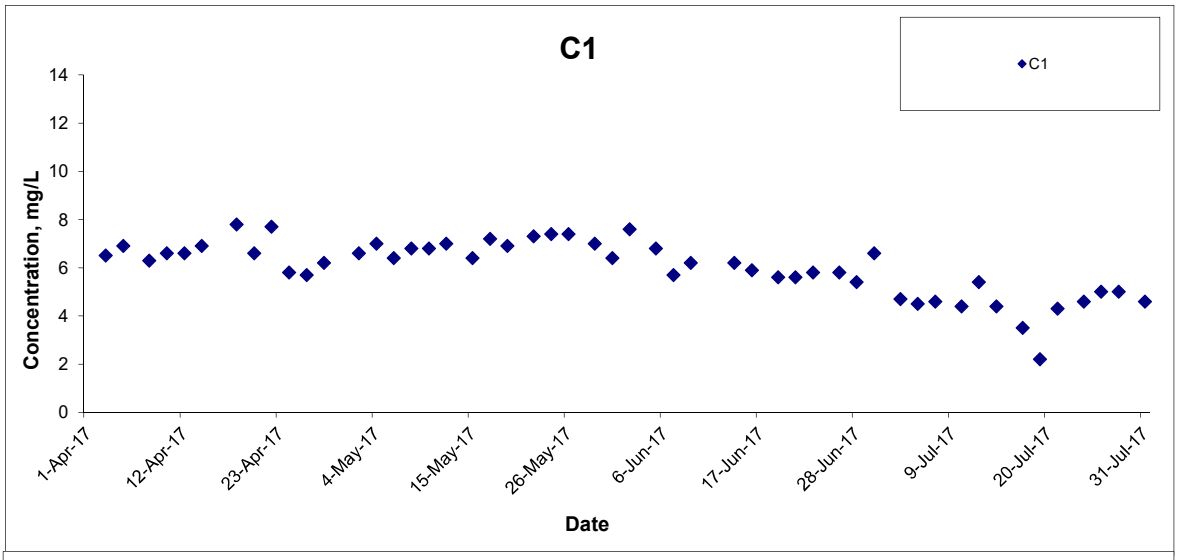
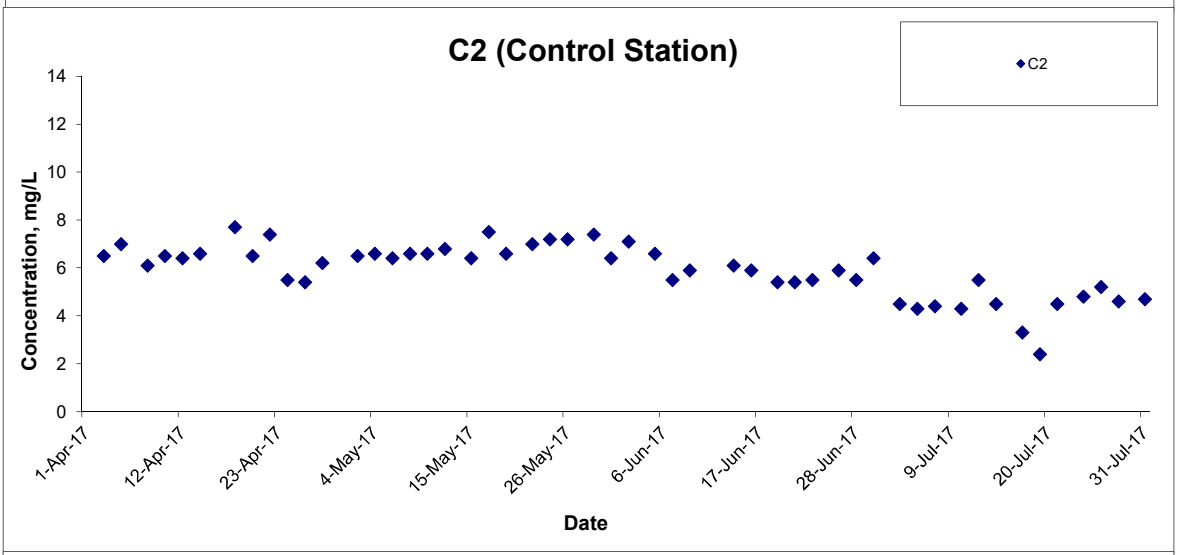
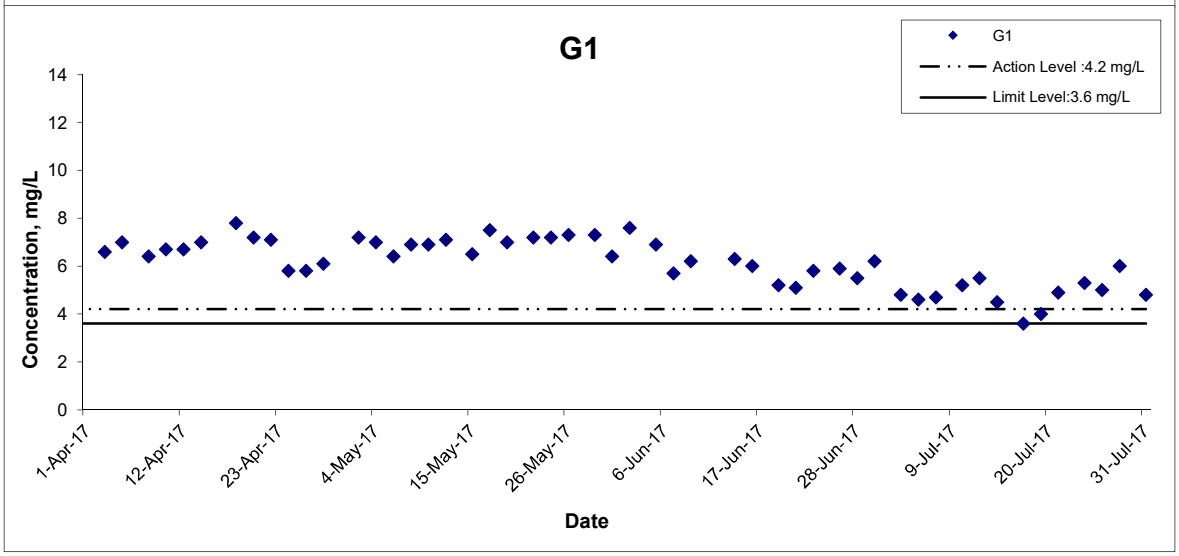
Dissolved Oxygen (Bottom) at Mid-Ebb Tide







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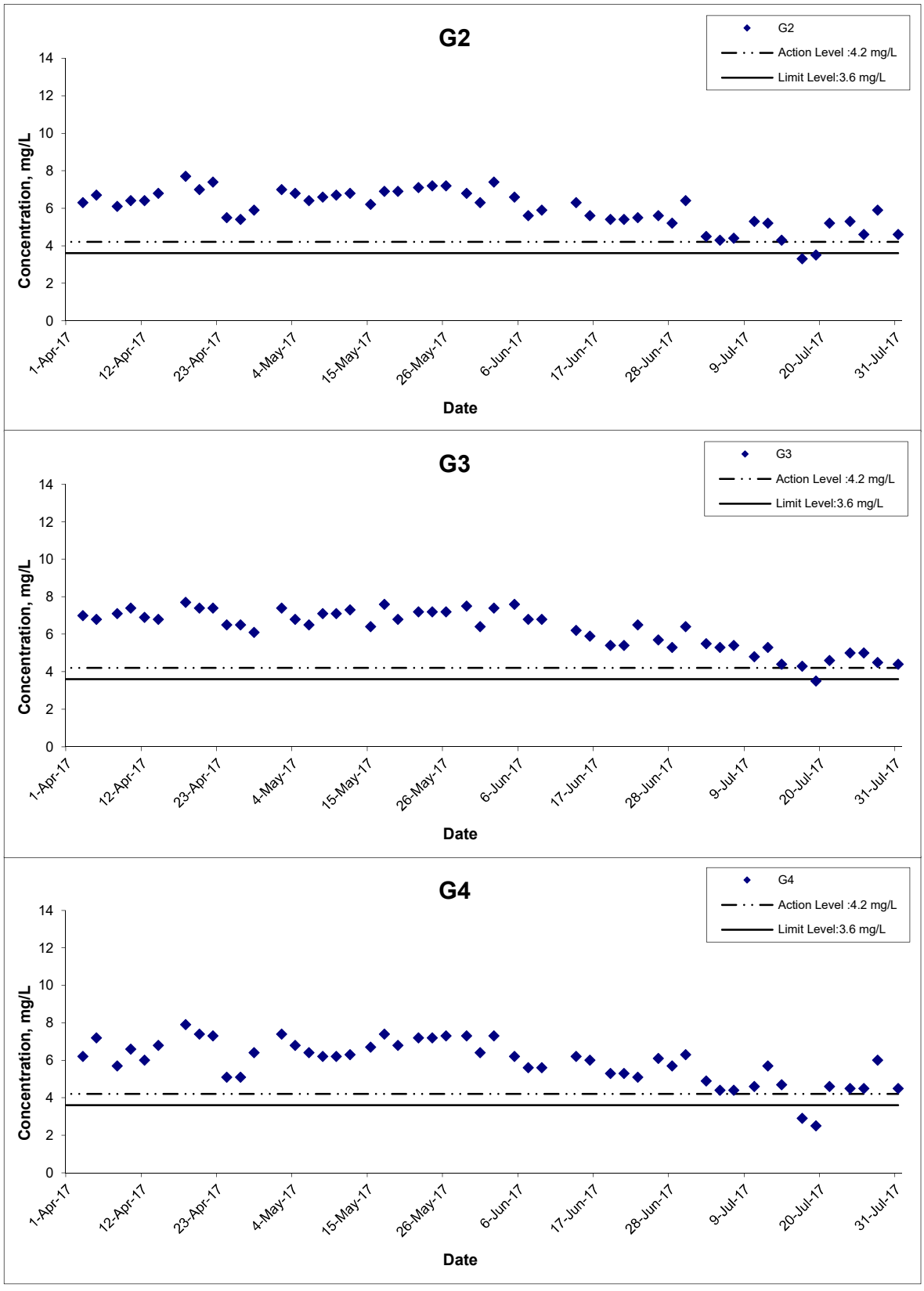
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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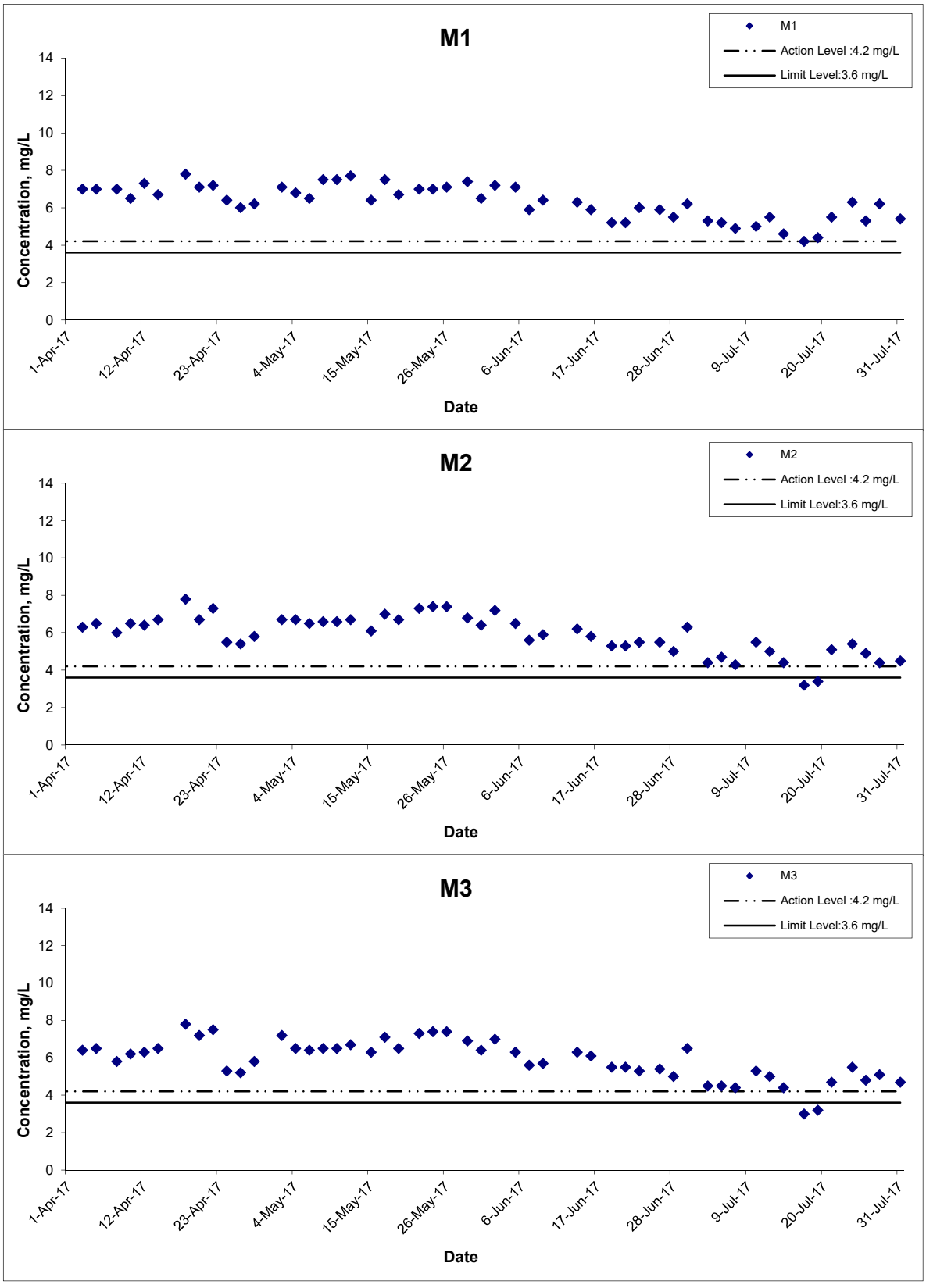
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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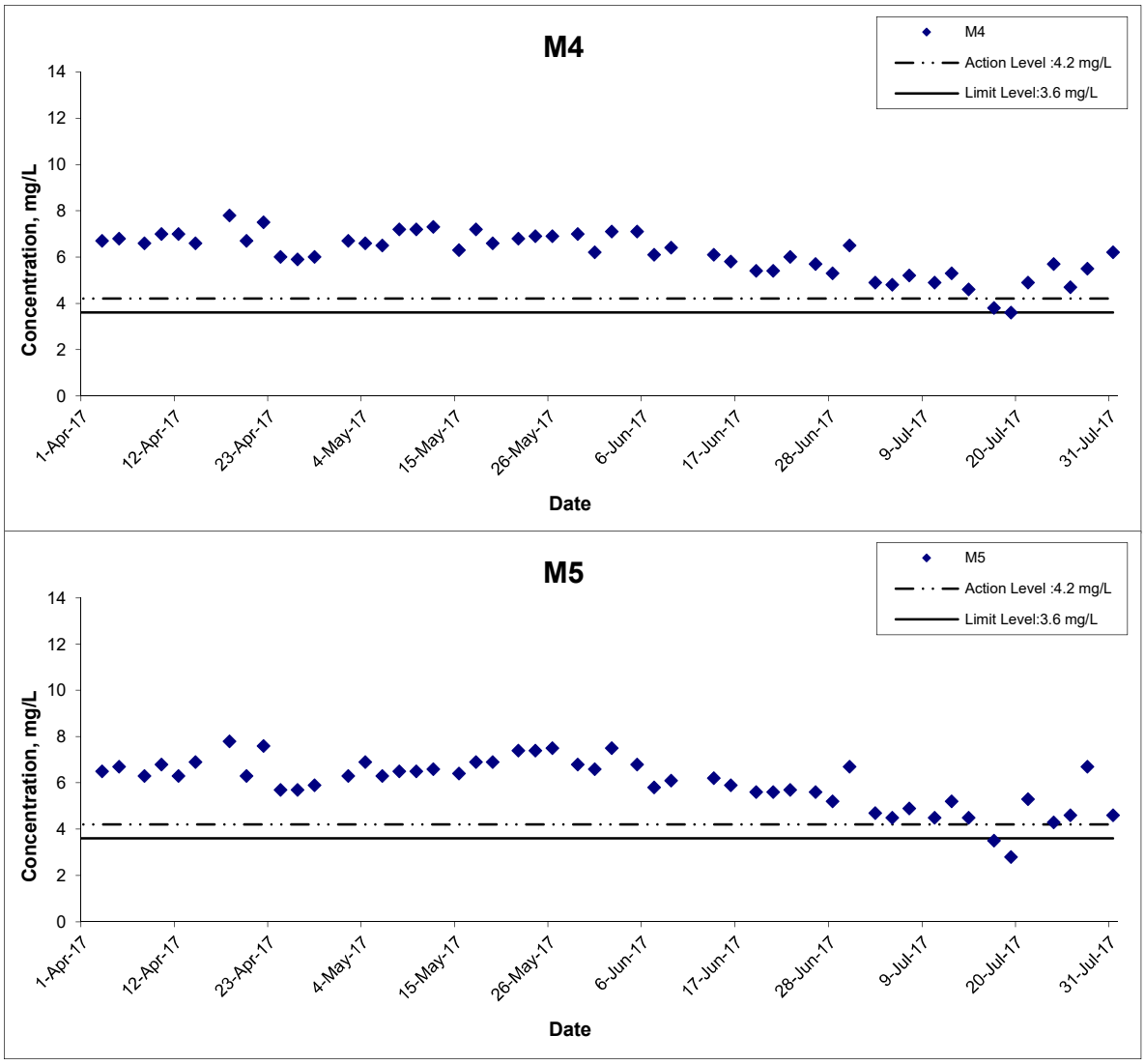
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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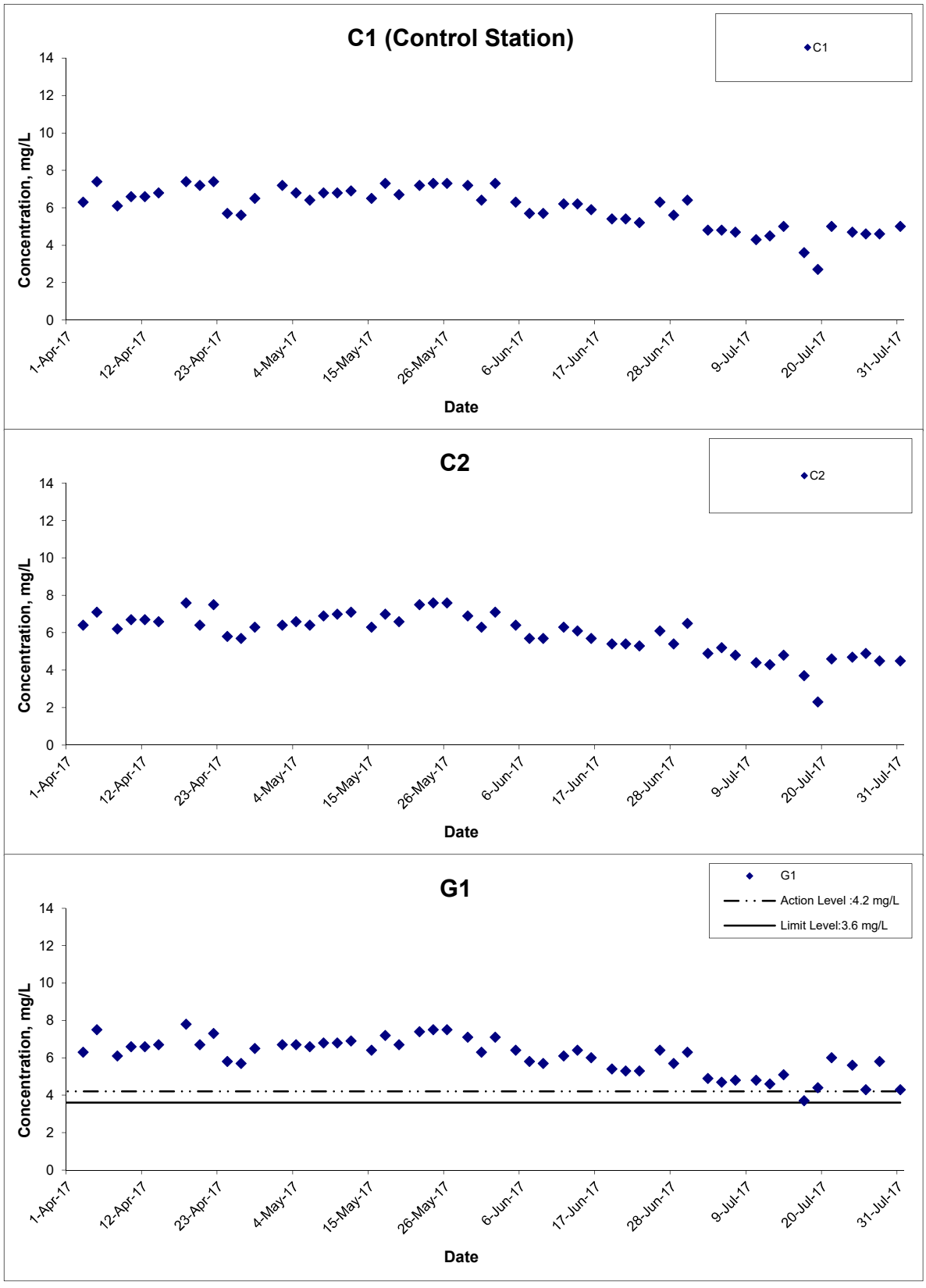
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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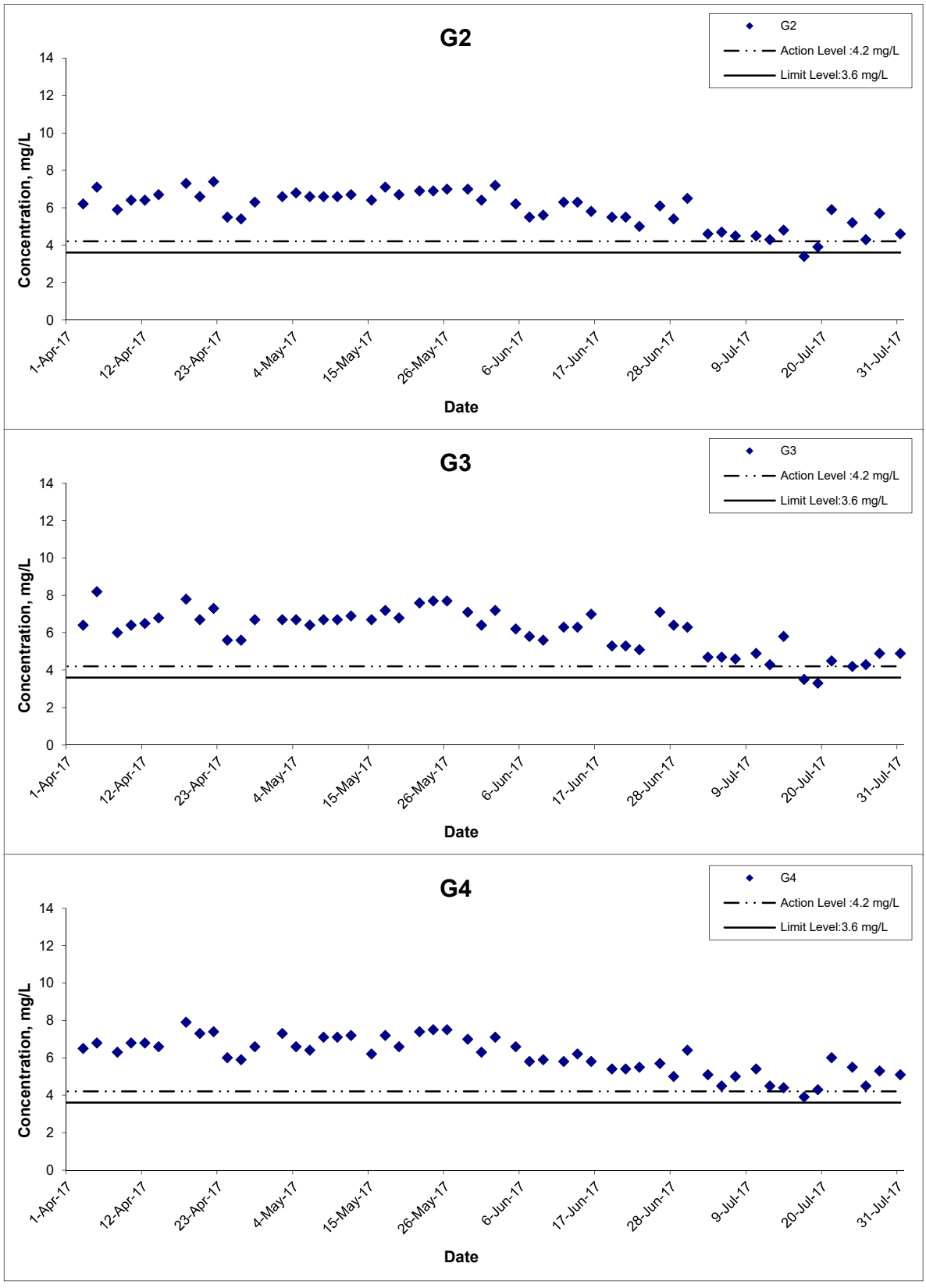
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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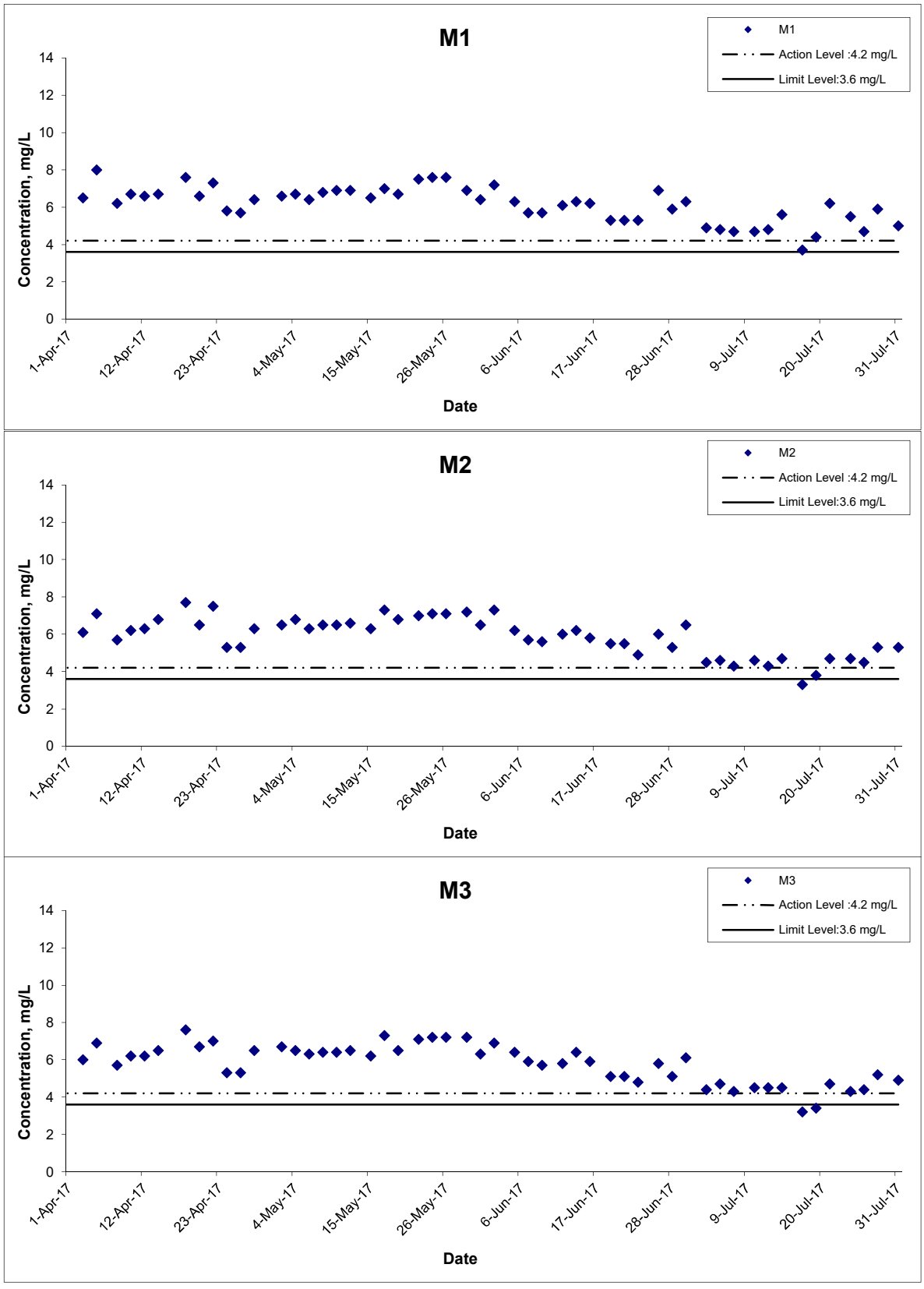
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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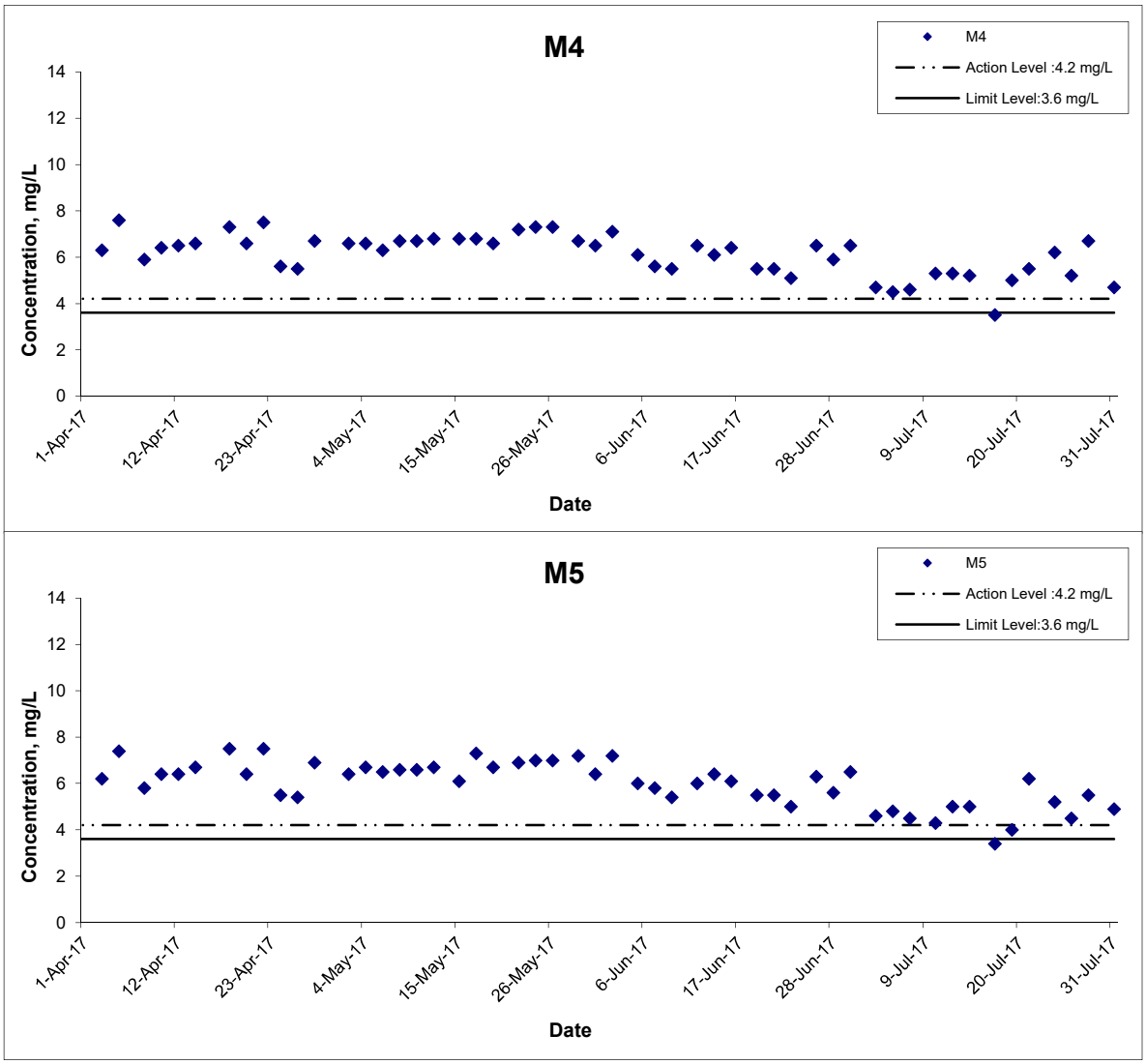
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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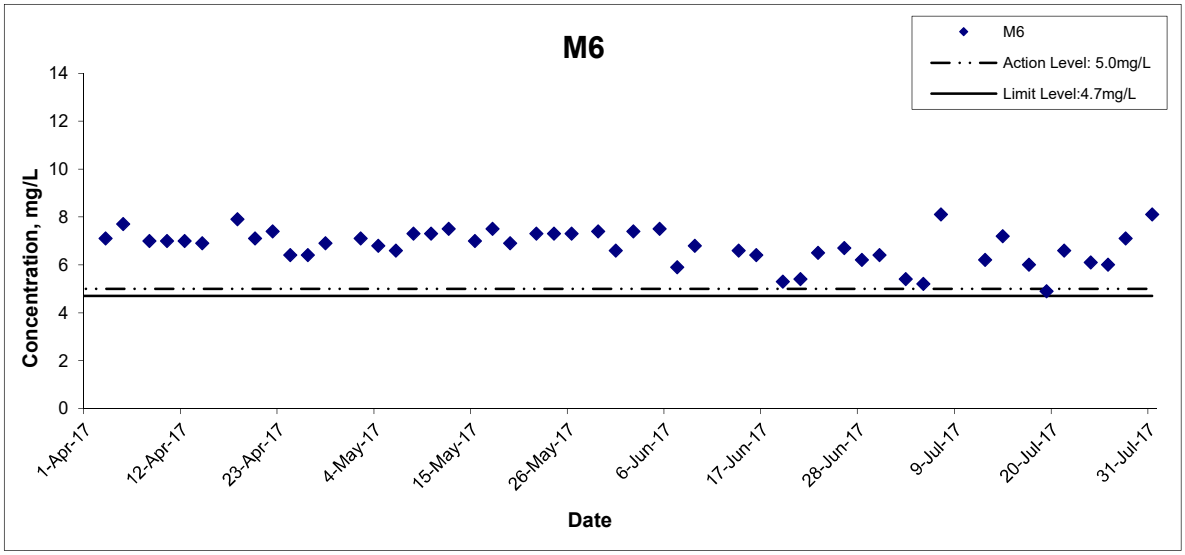
Dissolved Oxygen (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



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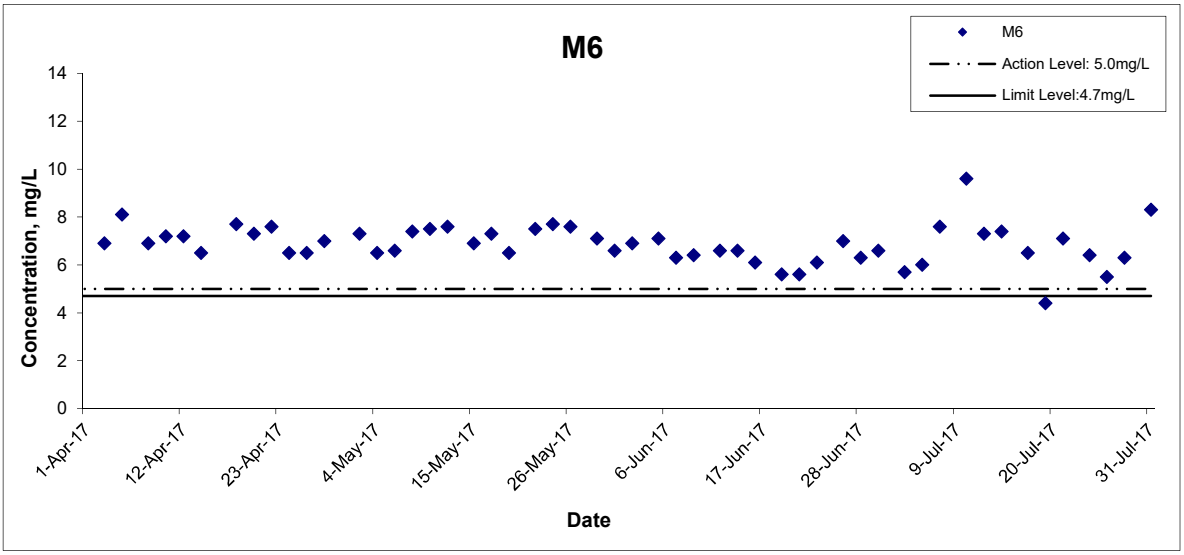
Dissolved Oxygen (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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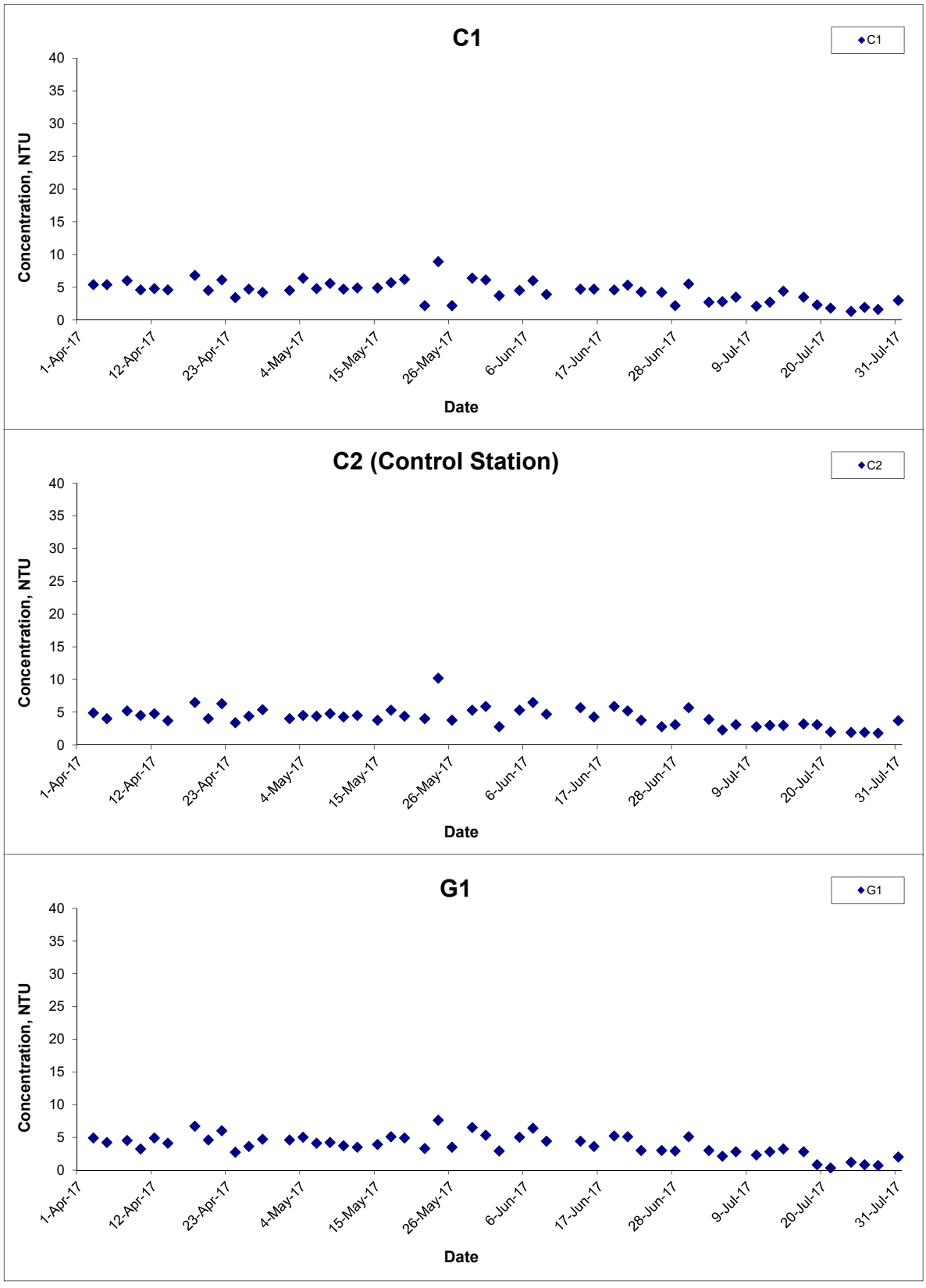
Turbidity (Depth-averaged) at Mid-Ebb Tide



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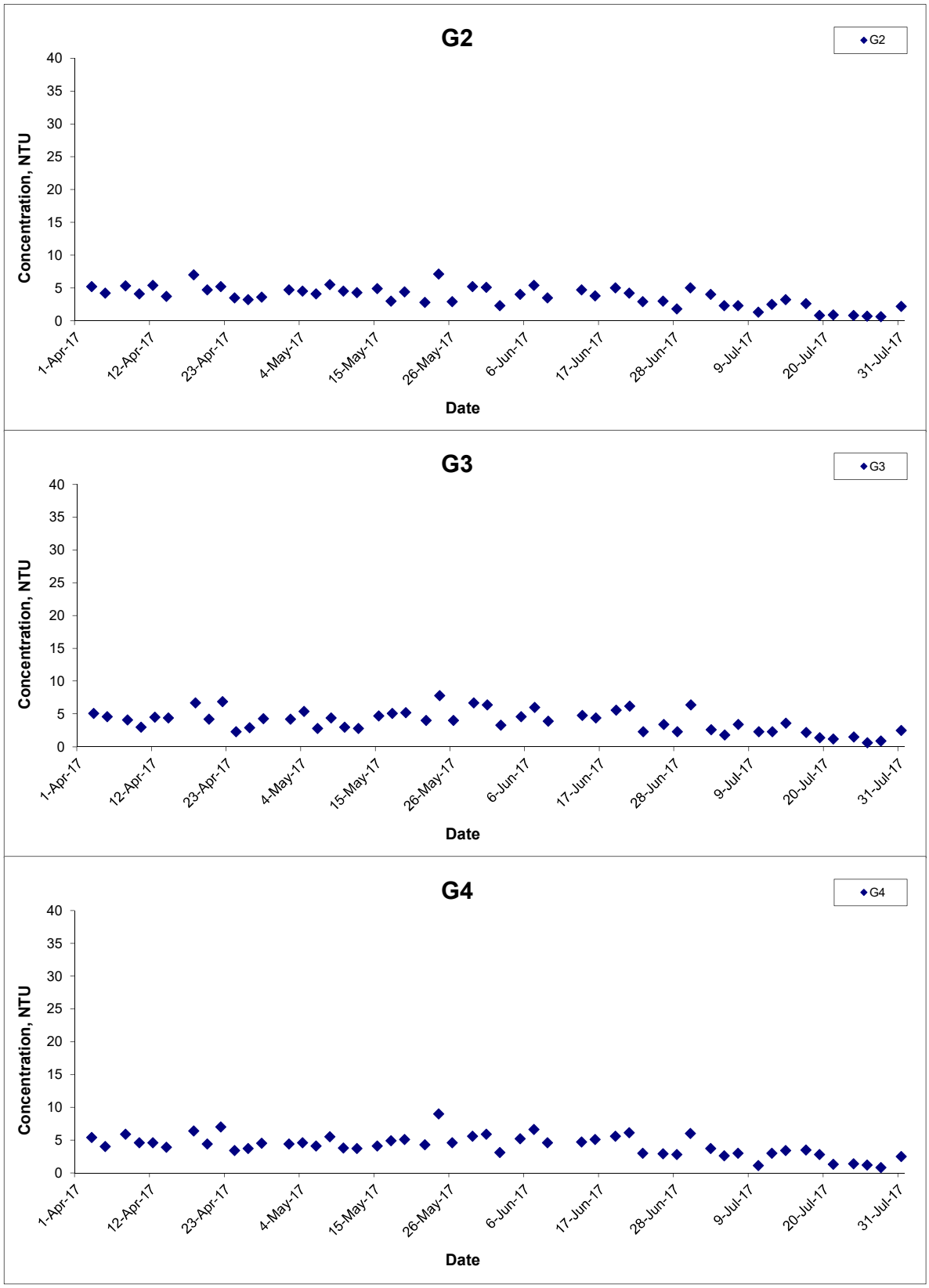
Turbidity (Depth-averaged) at Mid-Ebb Tide



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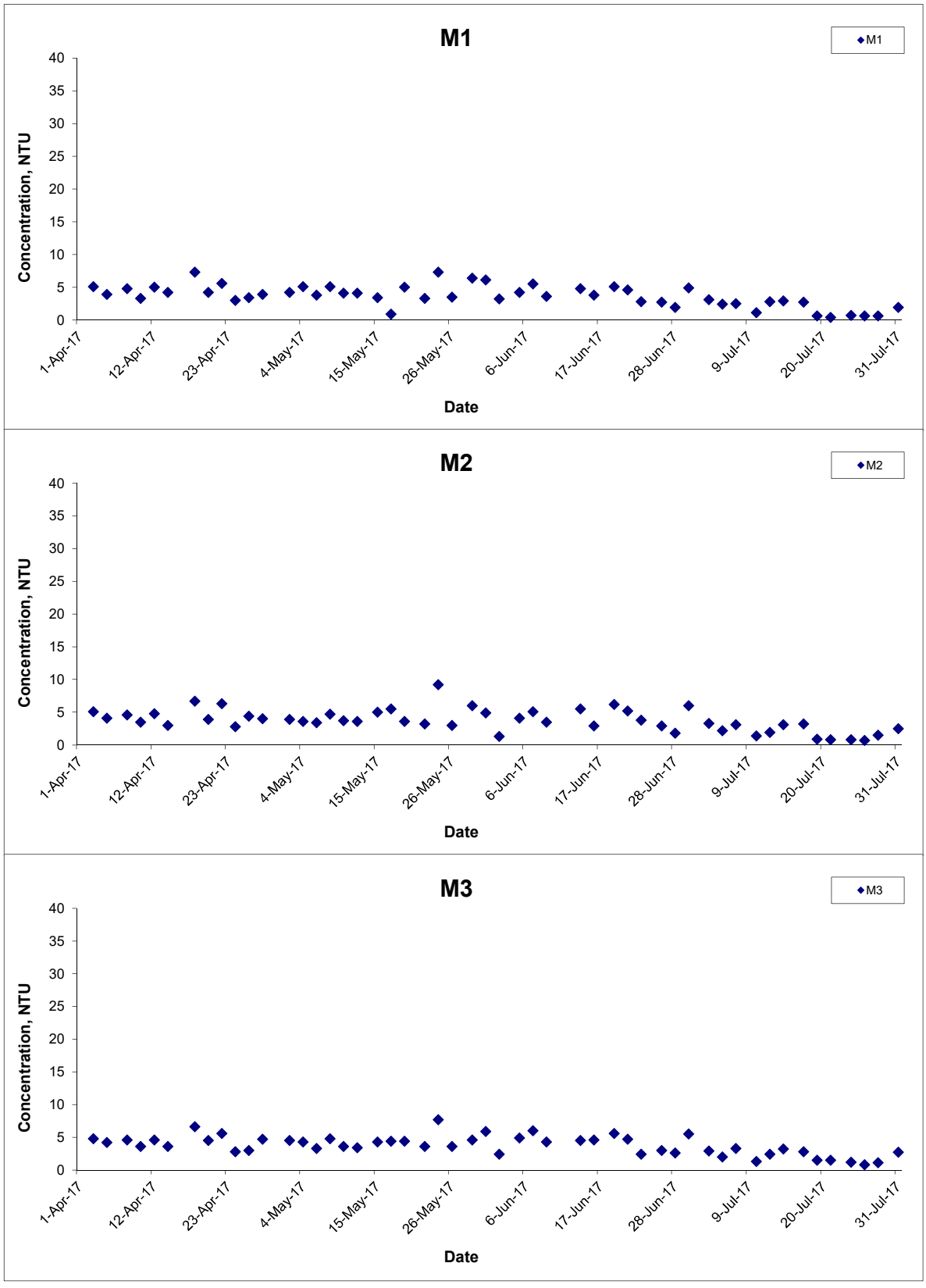
Turbidity (Depth-averaged) at Mid-Ebb Tide



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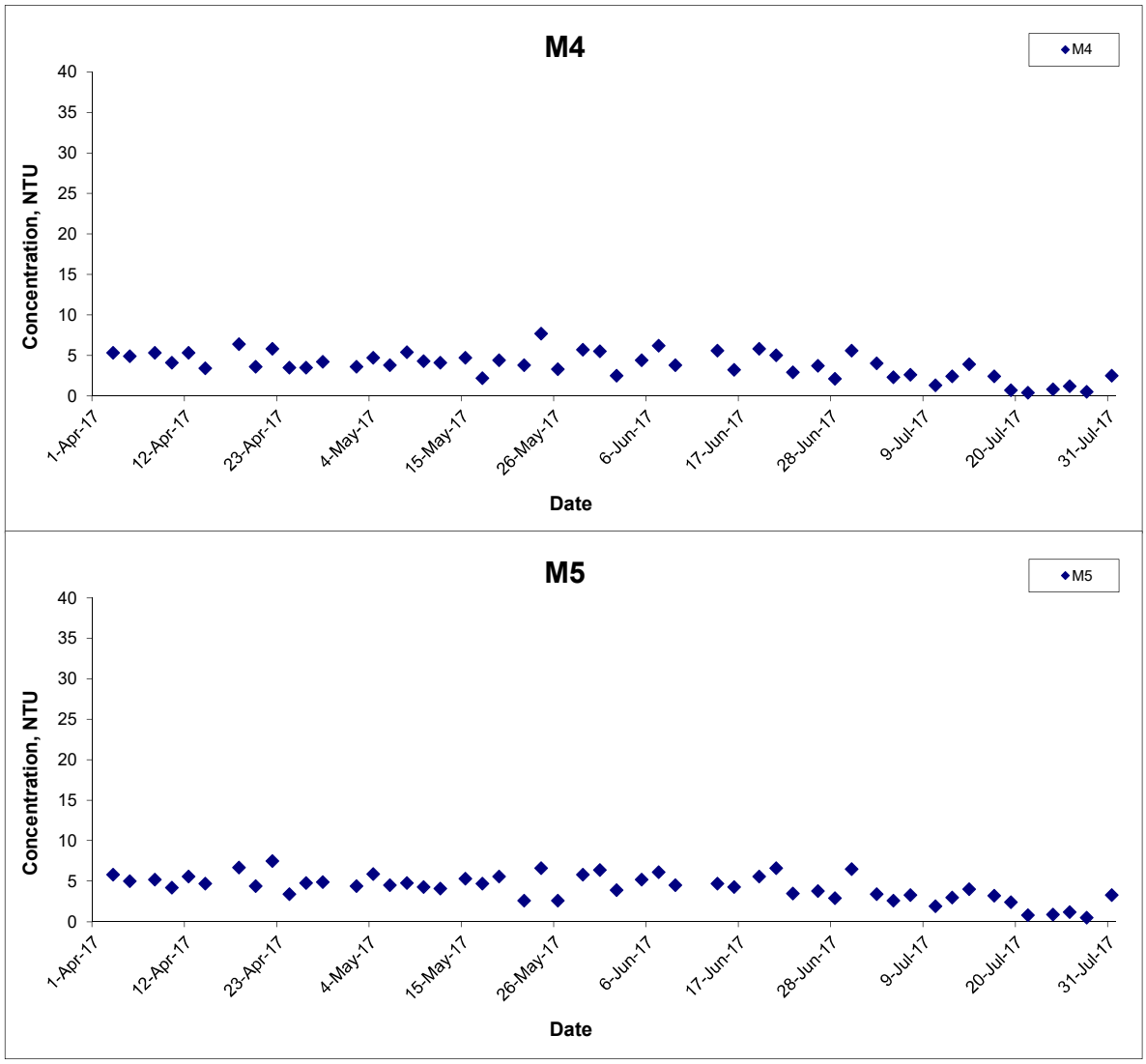
Turbidity (Depth-averaged) at Mid-Ebb Tide



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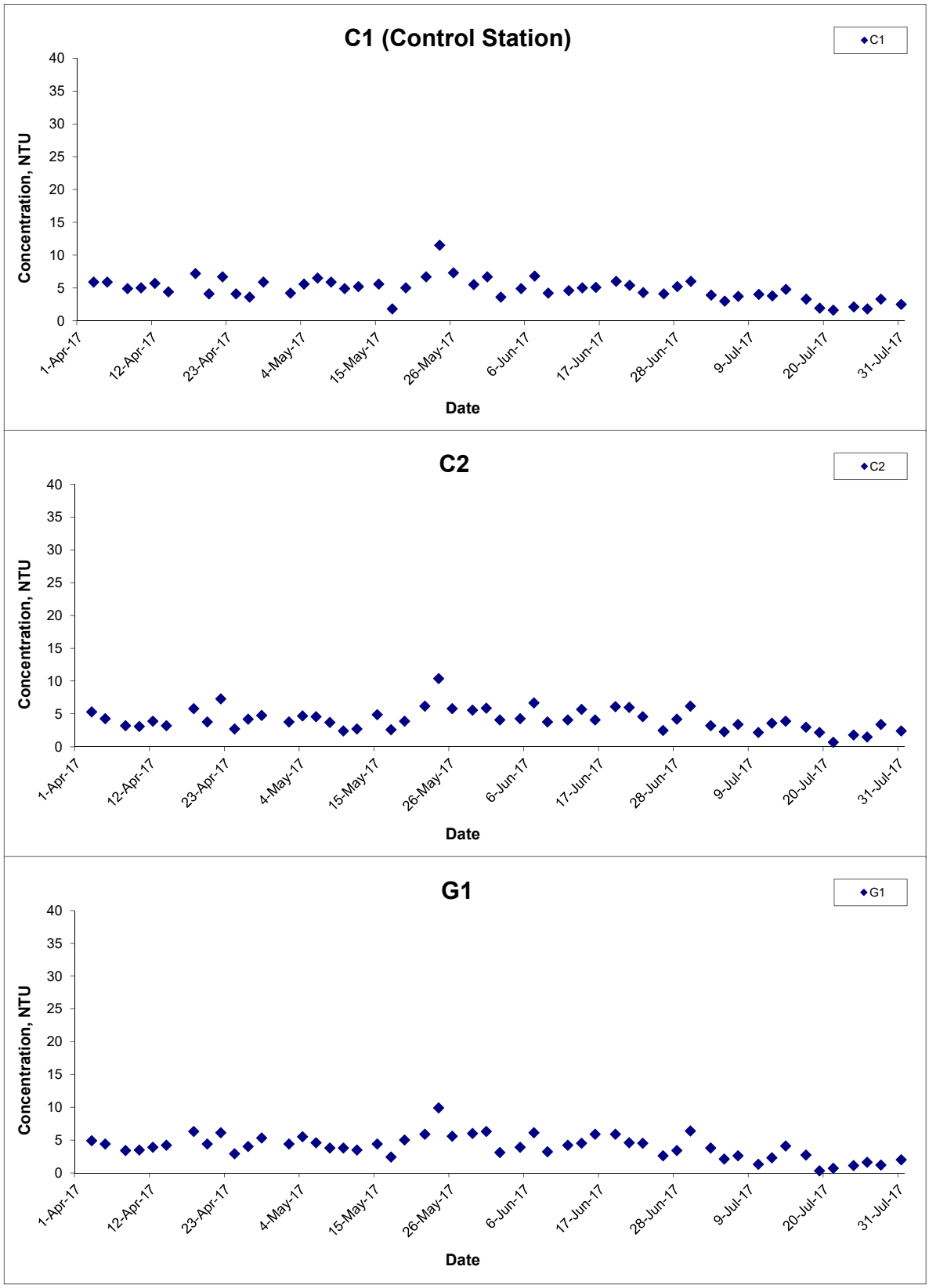
Turbidity (Depth-averaged) at Mid-Flood Tide



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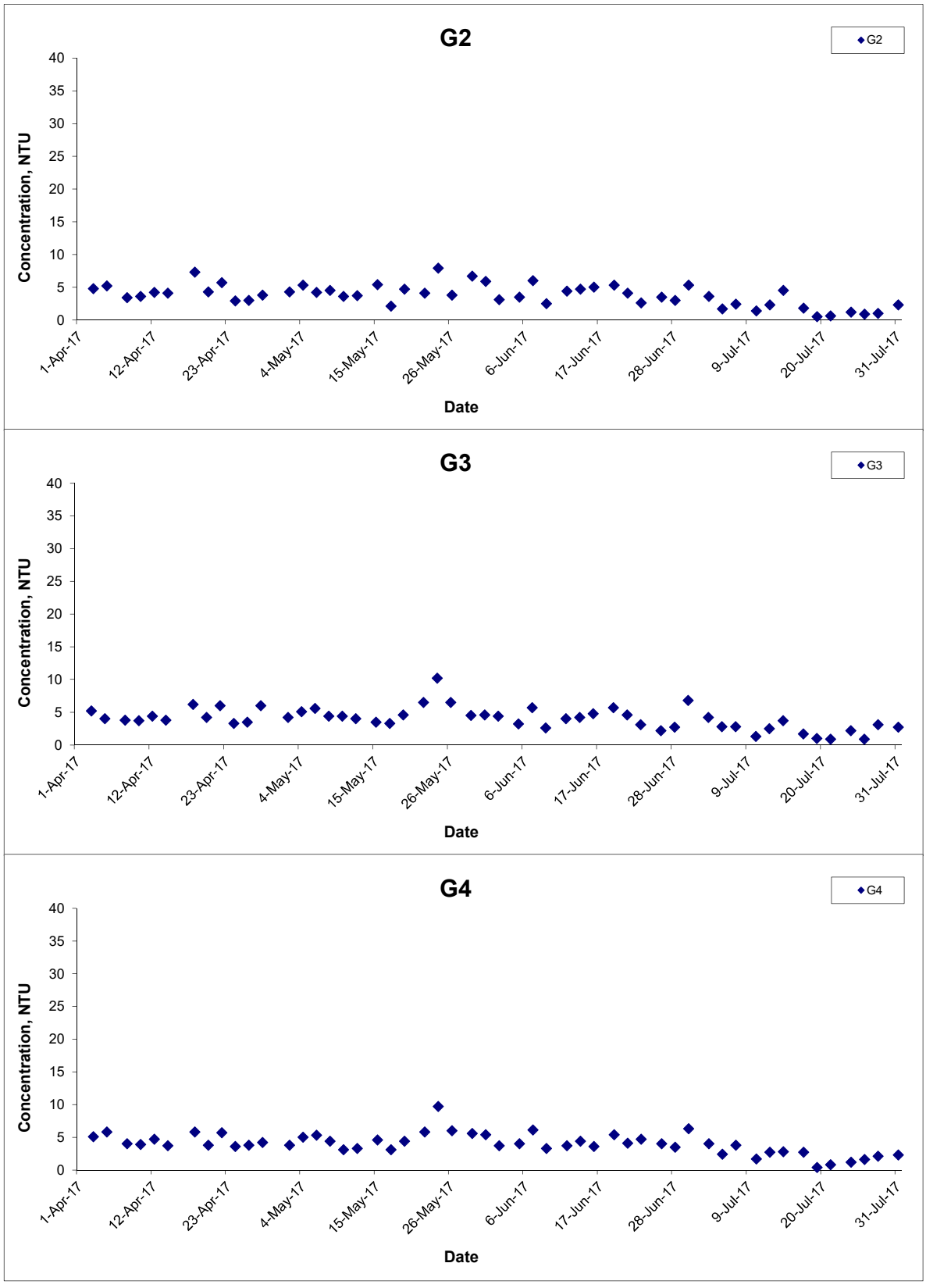
Turbidity (Depth-averaged) at Mid-Flood Tide



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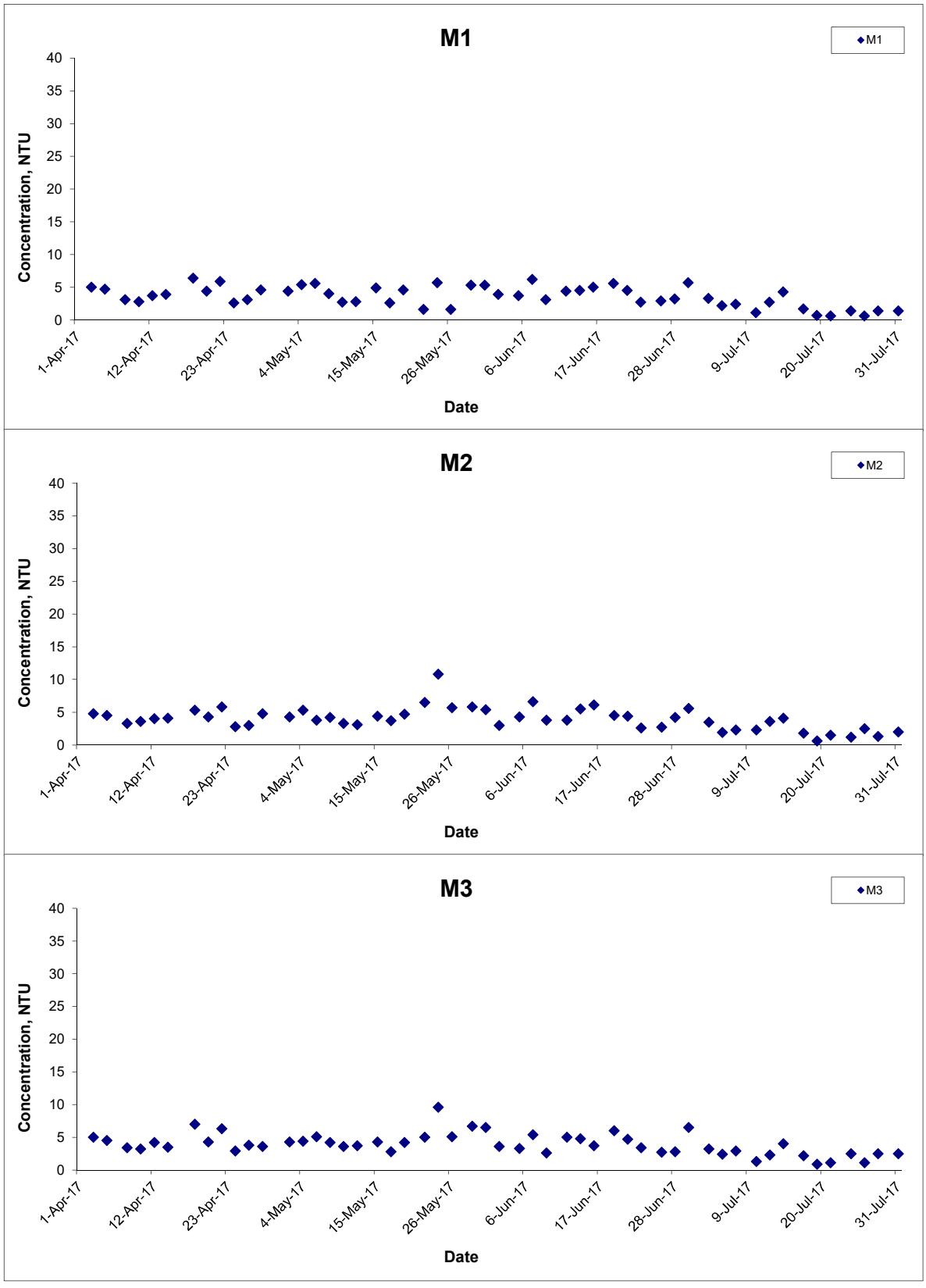
Turbidity (Depth-averaged) at Mid-Flood Tide



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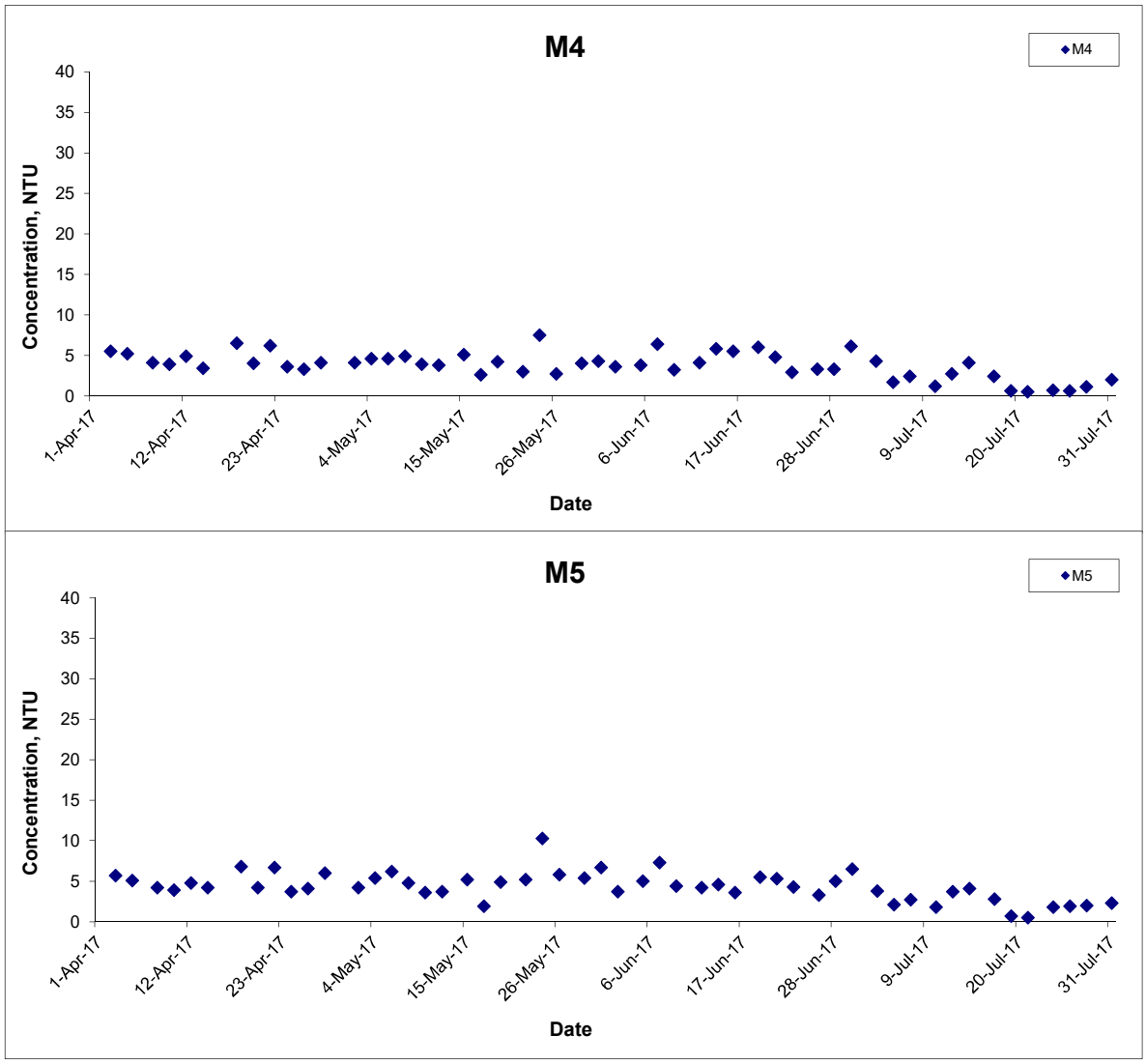
Turbidity (Depth-averaged) at Mid-Flood Tide



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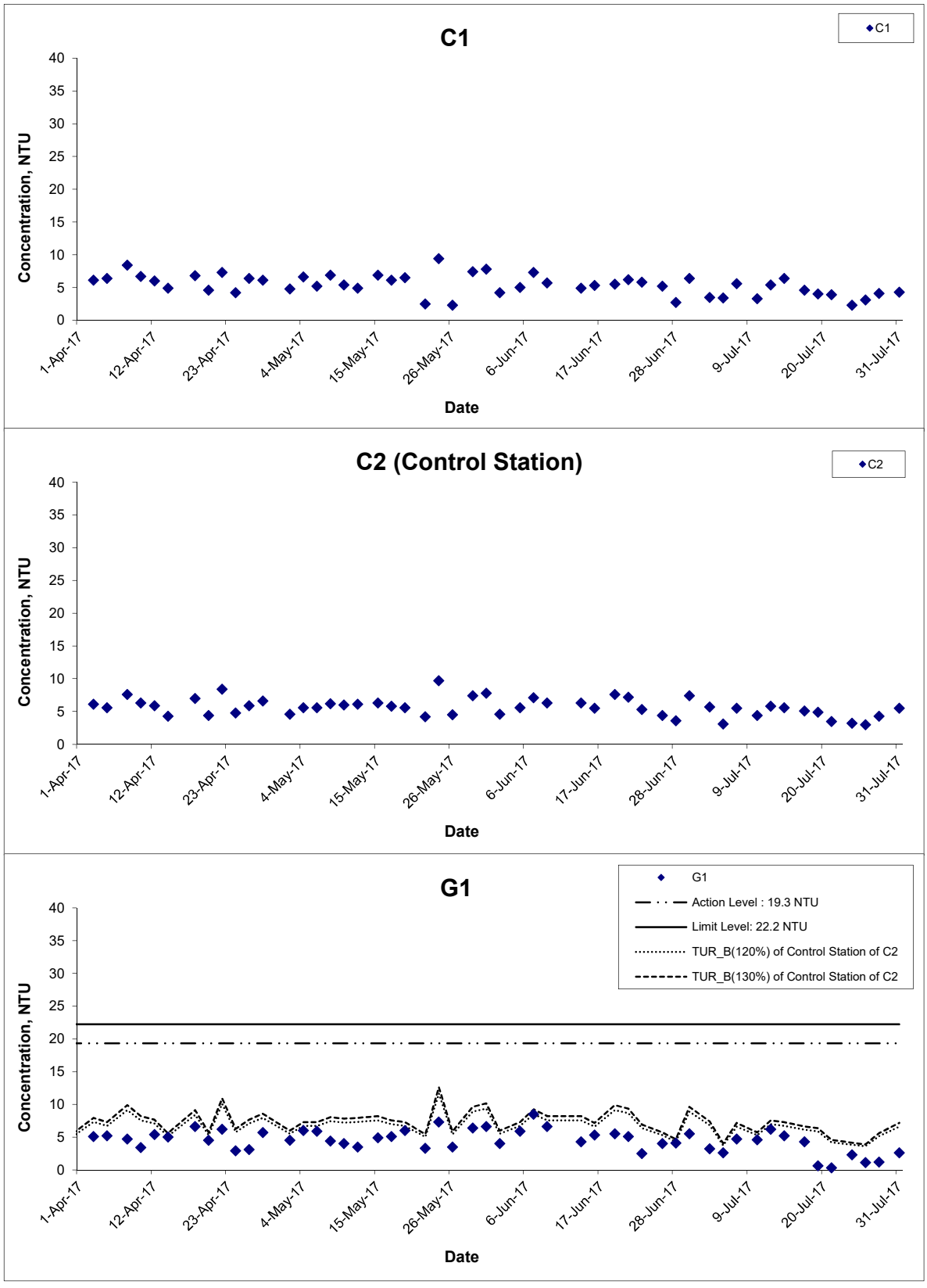
Turbidity (Bottom) at Mid-Ebb Tide



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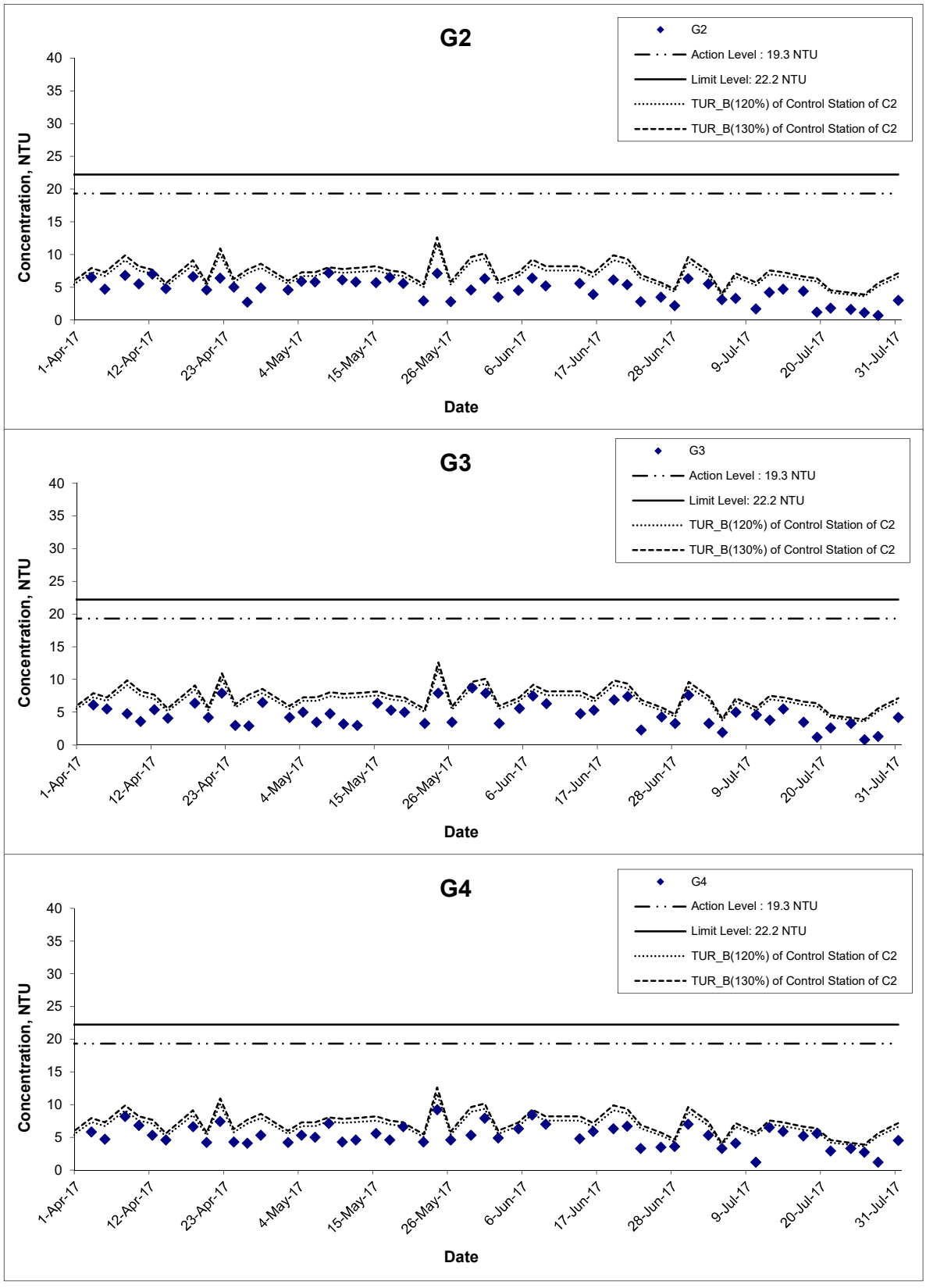

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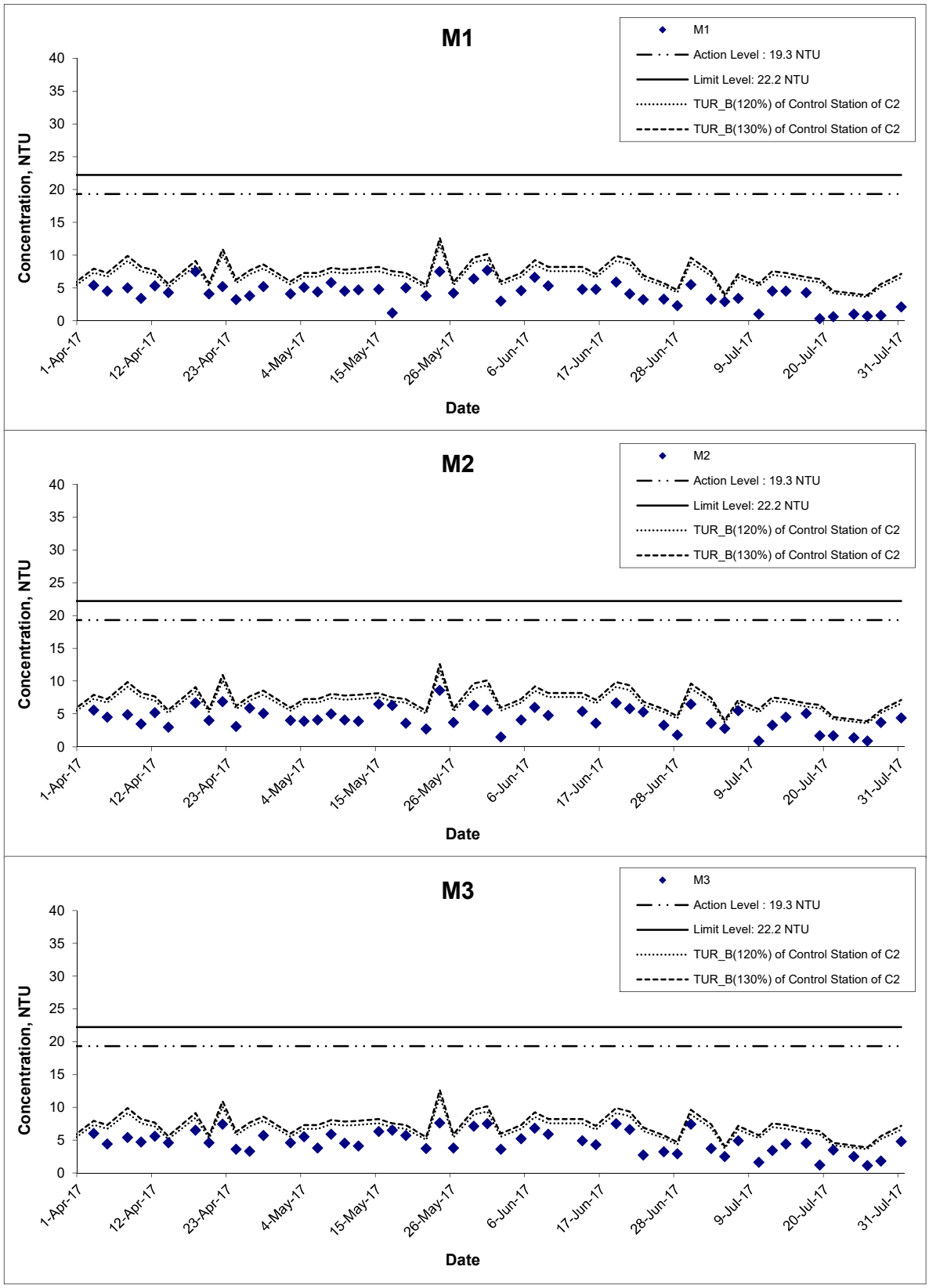
Turbidity (Bottom) at Mid-Ebb Tide



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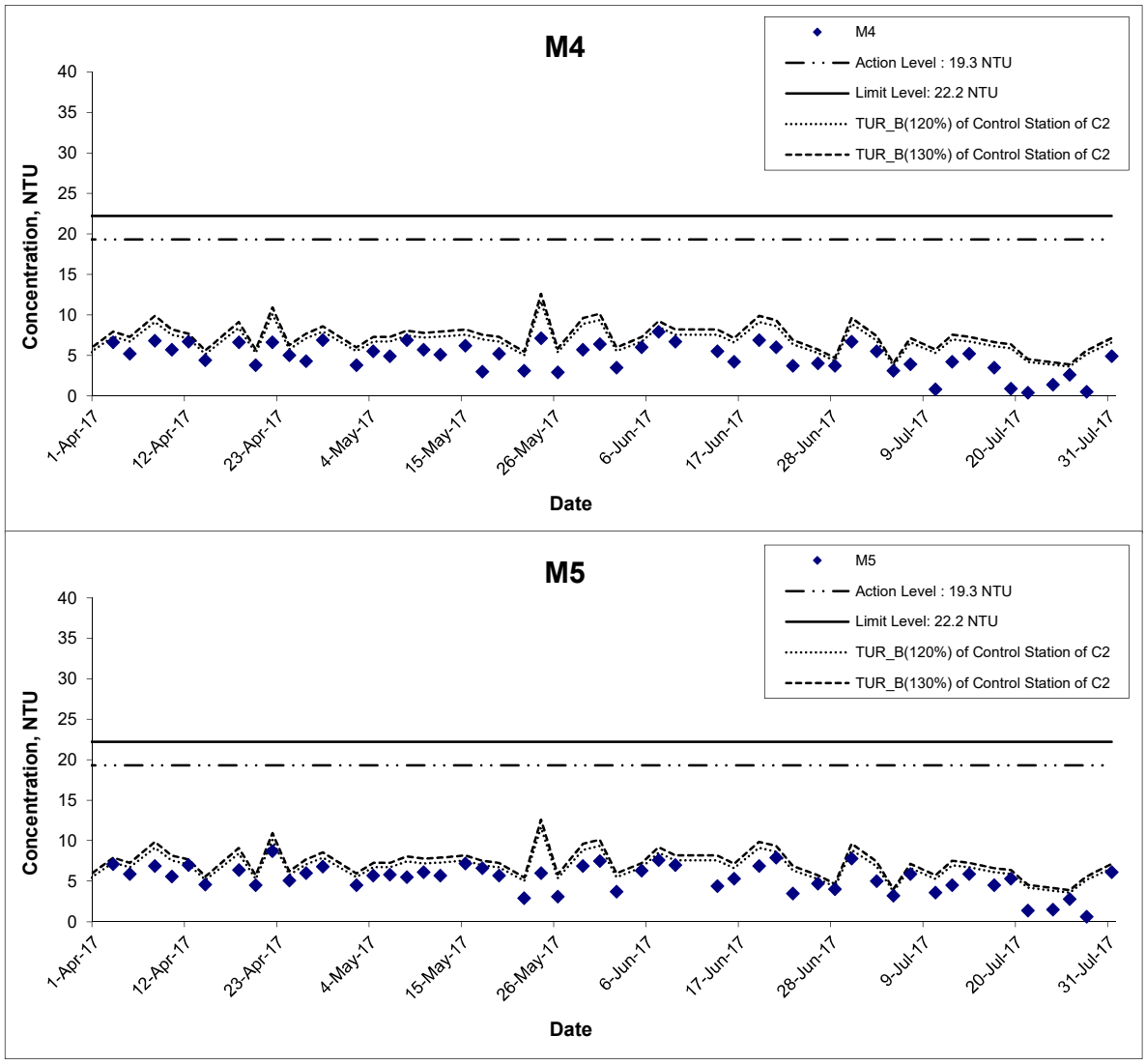
Turbidity (Bottom) at Mid-Ebb Tide



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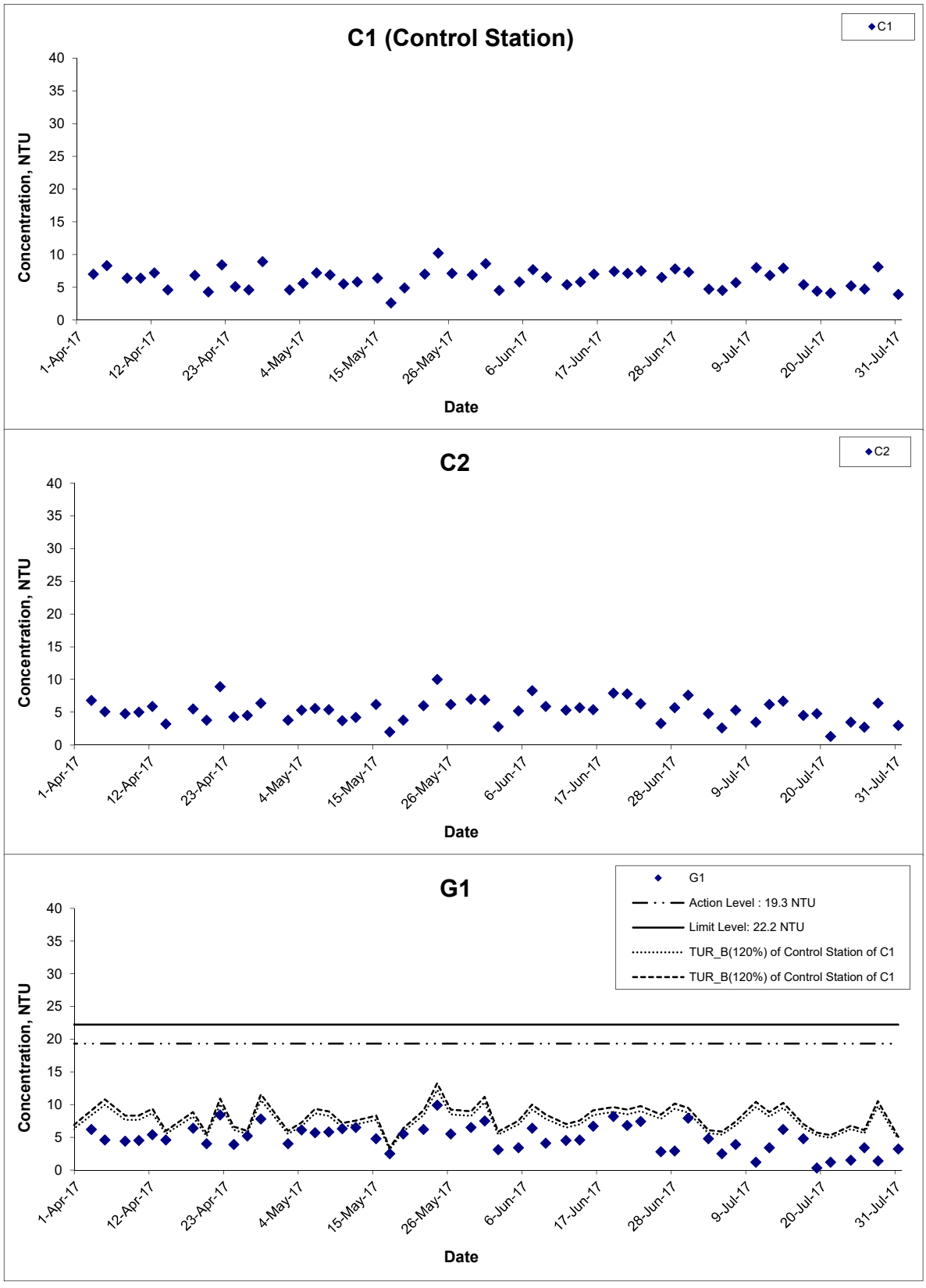
Turbidity (Bottom) at Mid-Flood Tide



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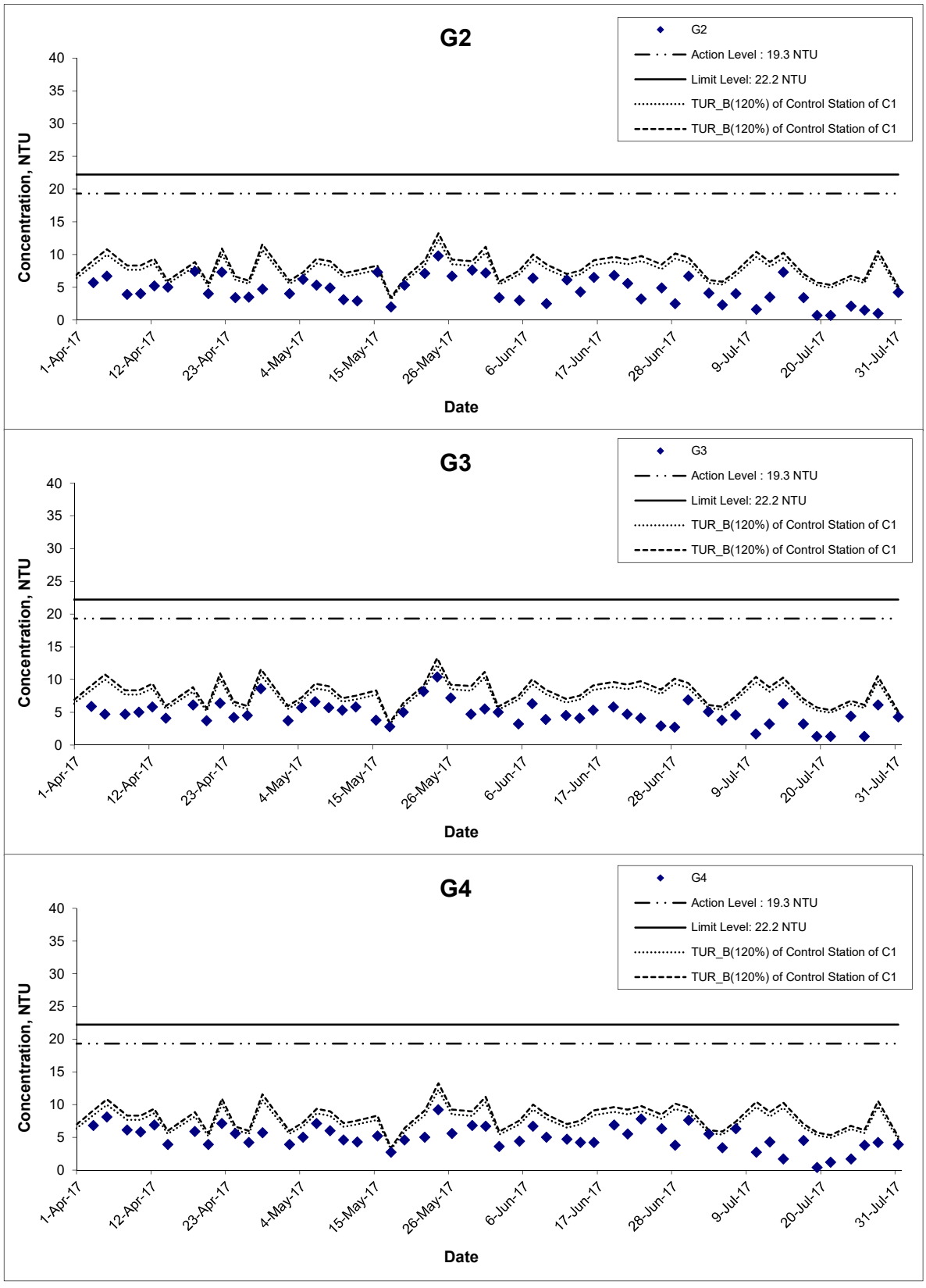
Turbidity (Bottom) at Mid-Flood Tide



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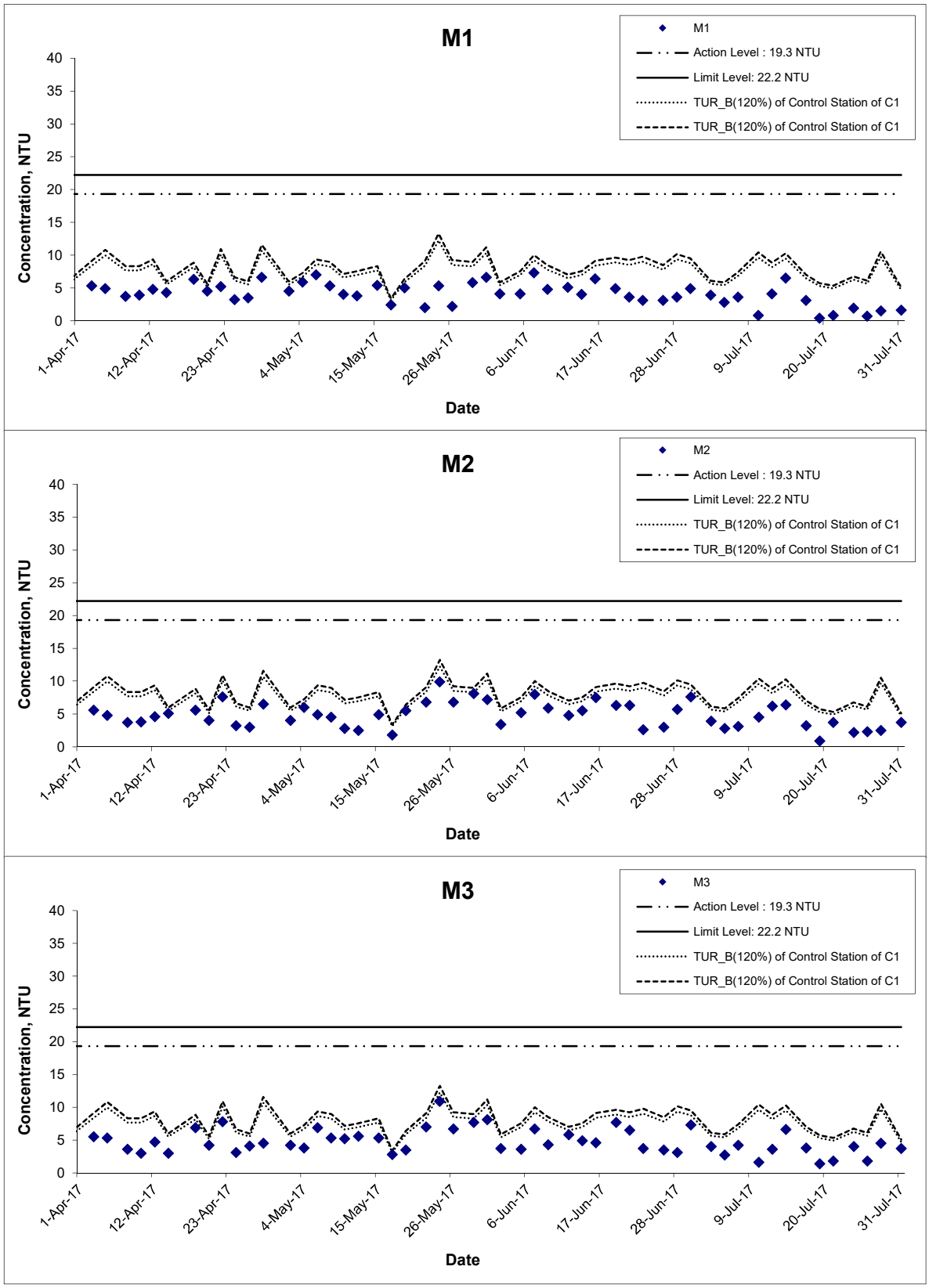
Turbidity (Bottom) at Mid-Flood Tide



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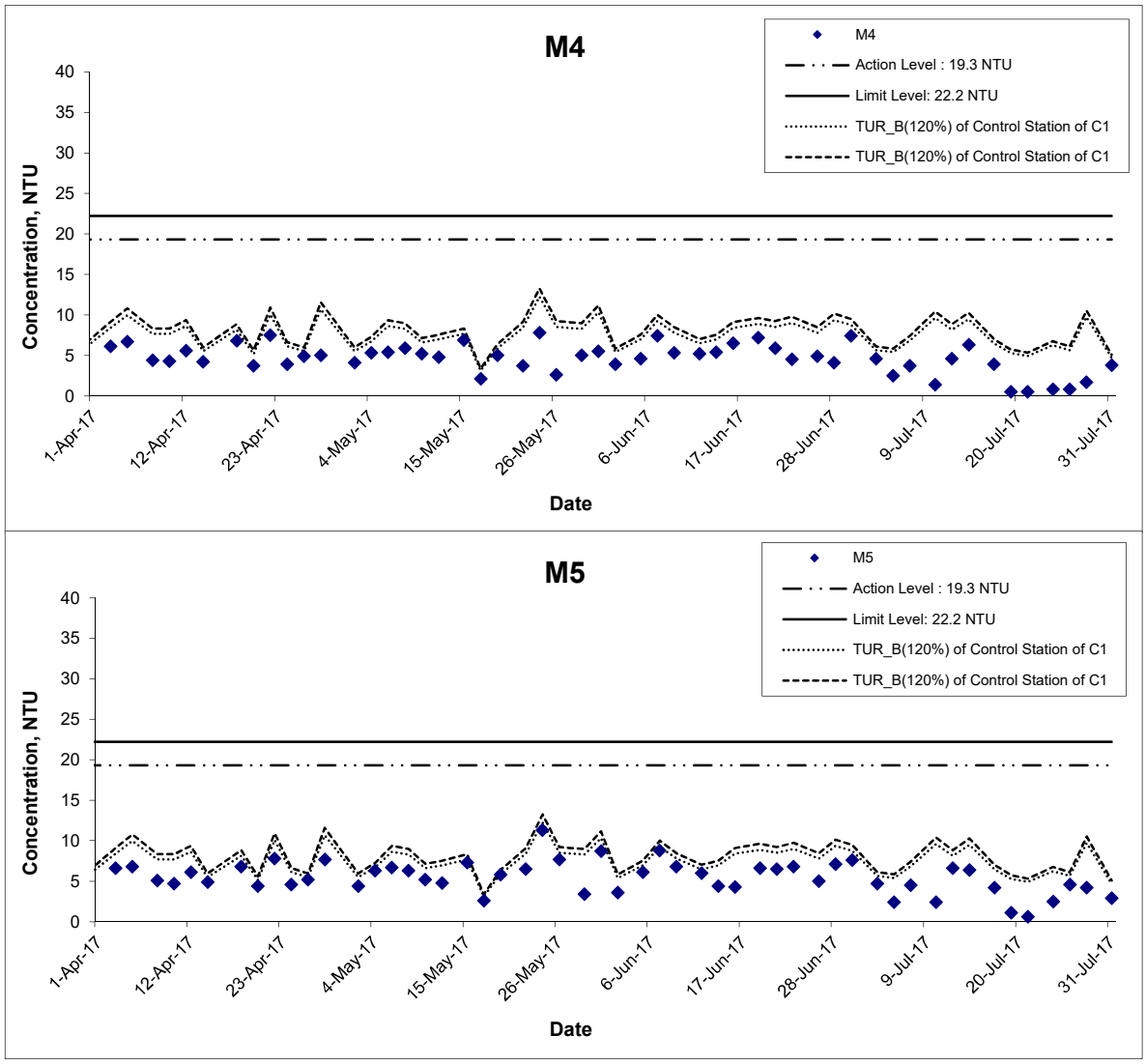
Turbidity (Bottom) at Mid-Flood Tide



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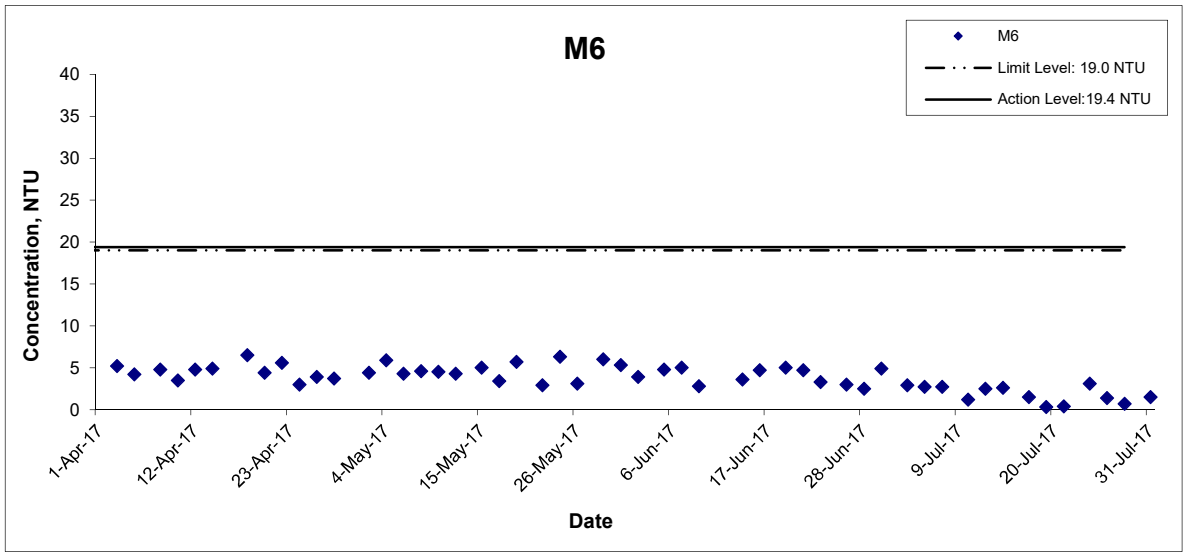
Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



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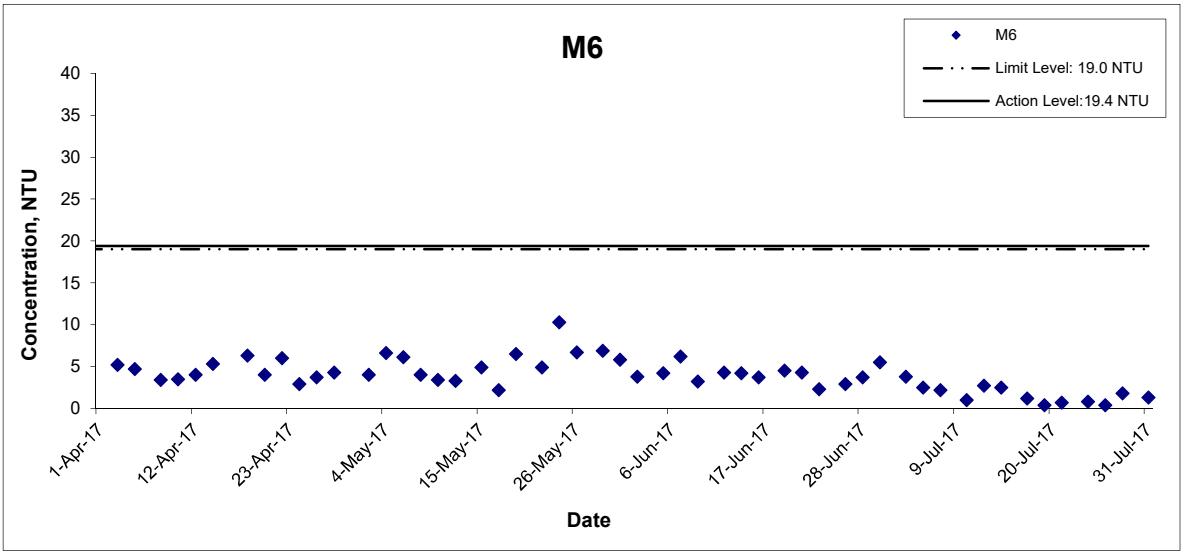
Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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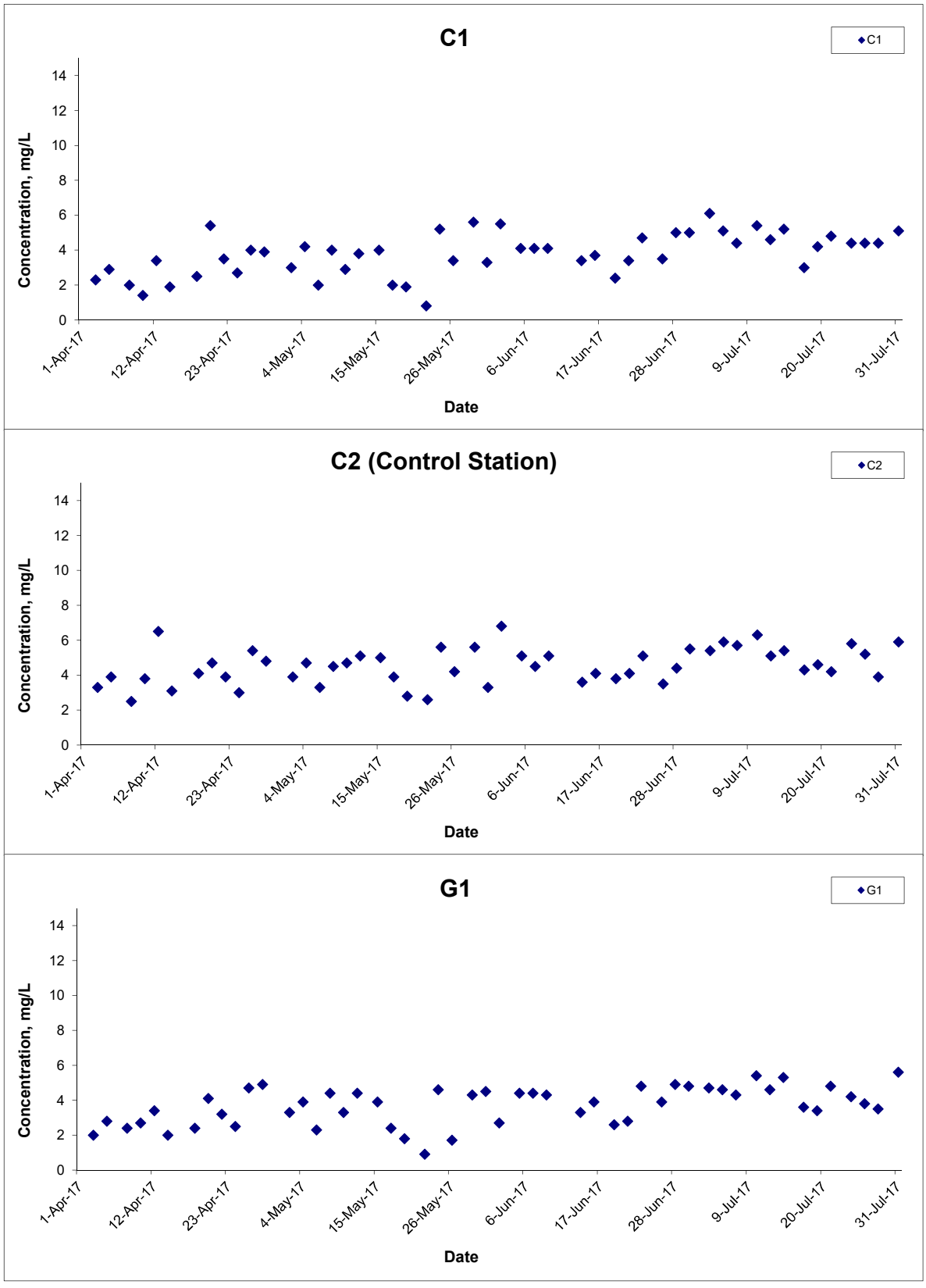
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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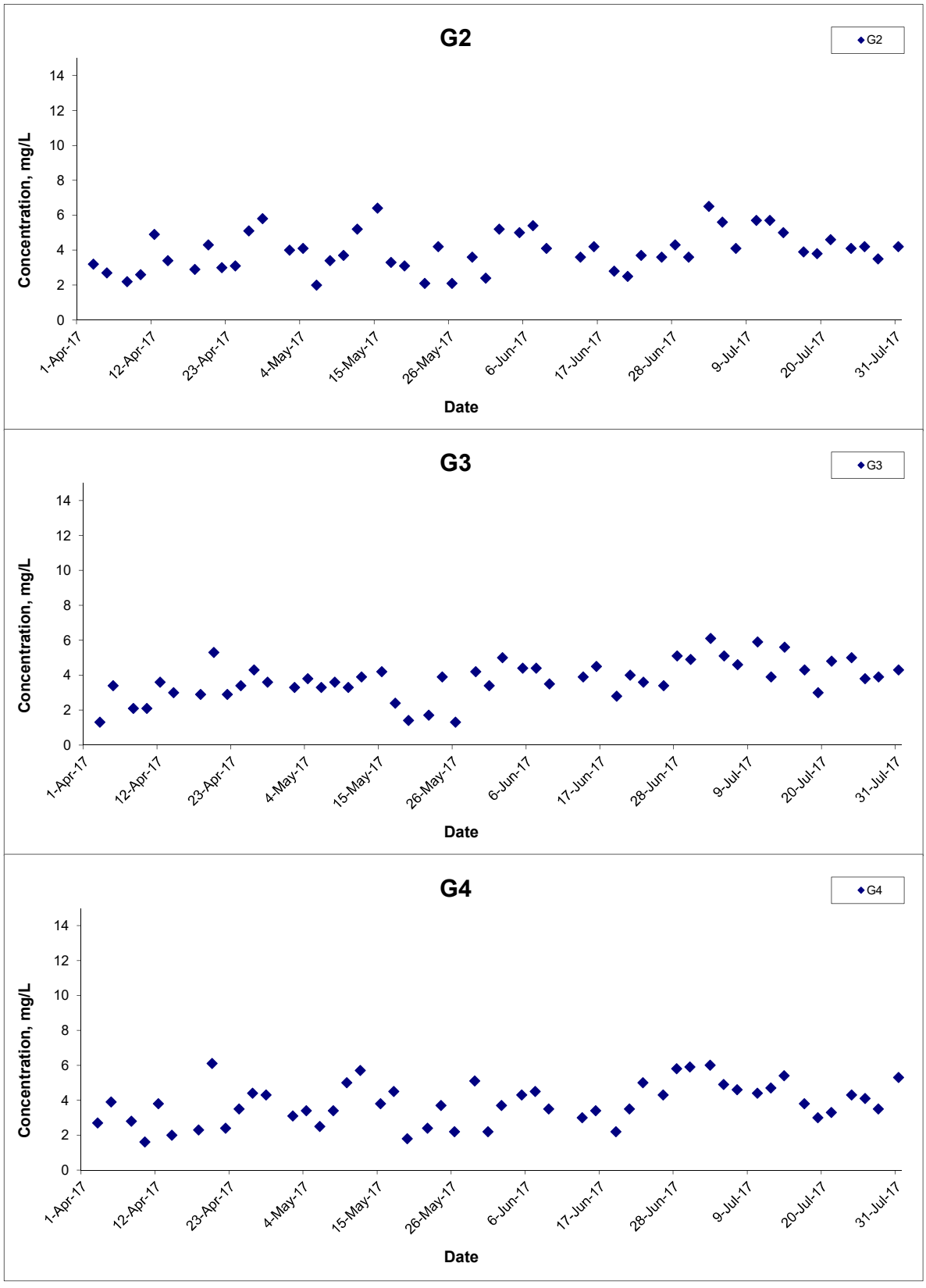

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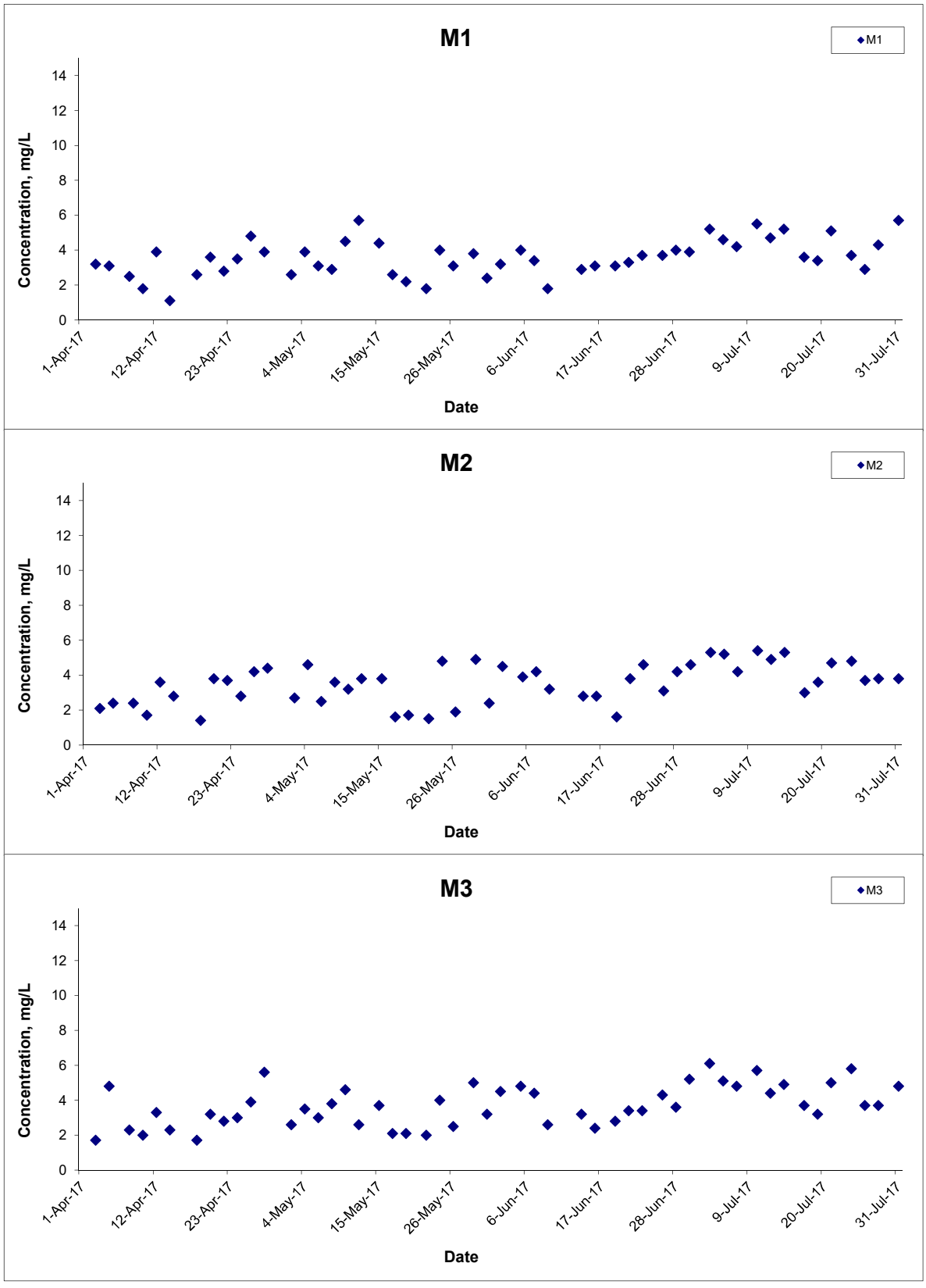

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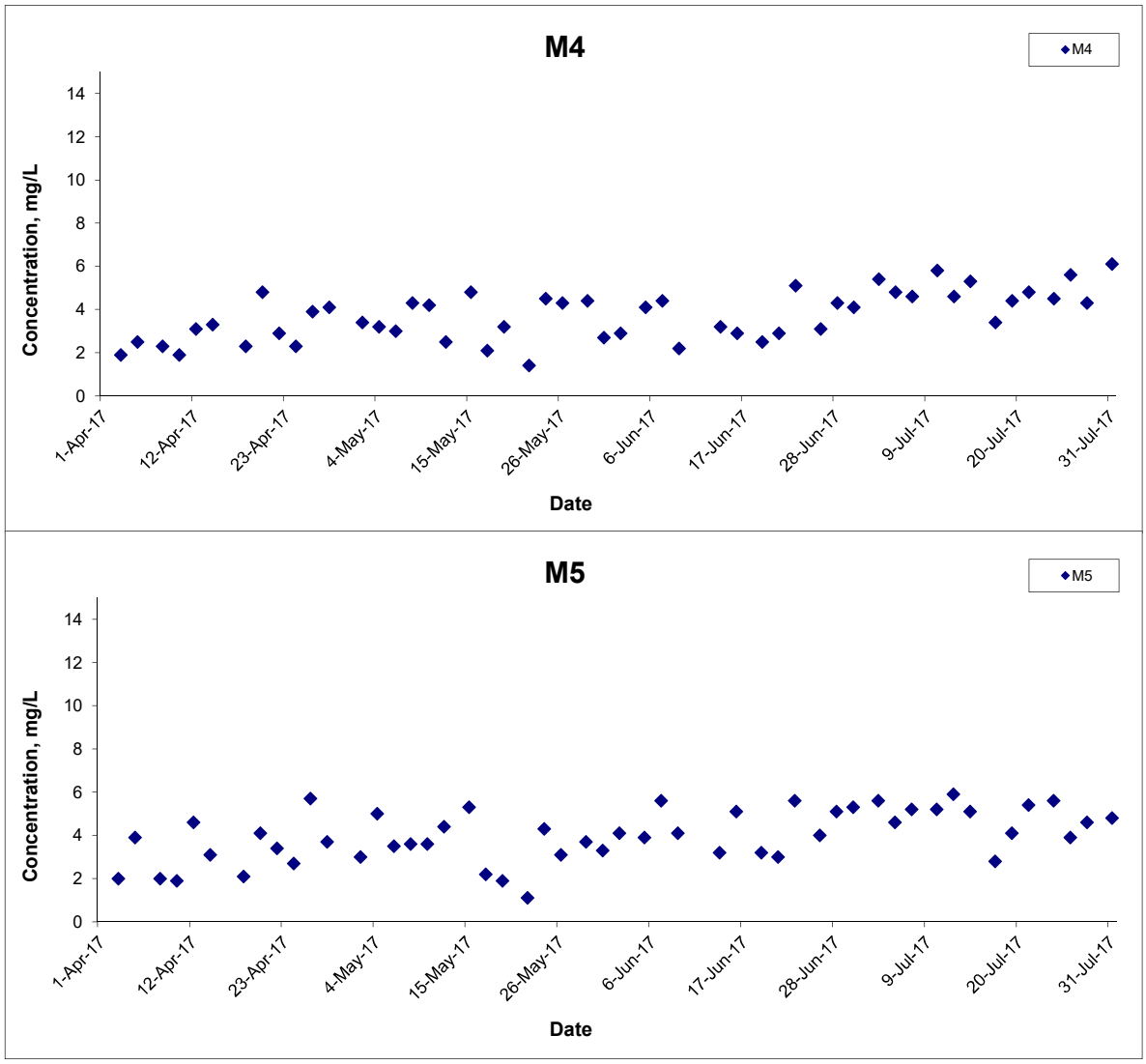

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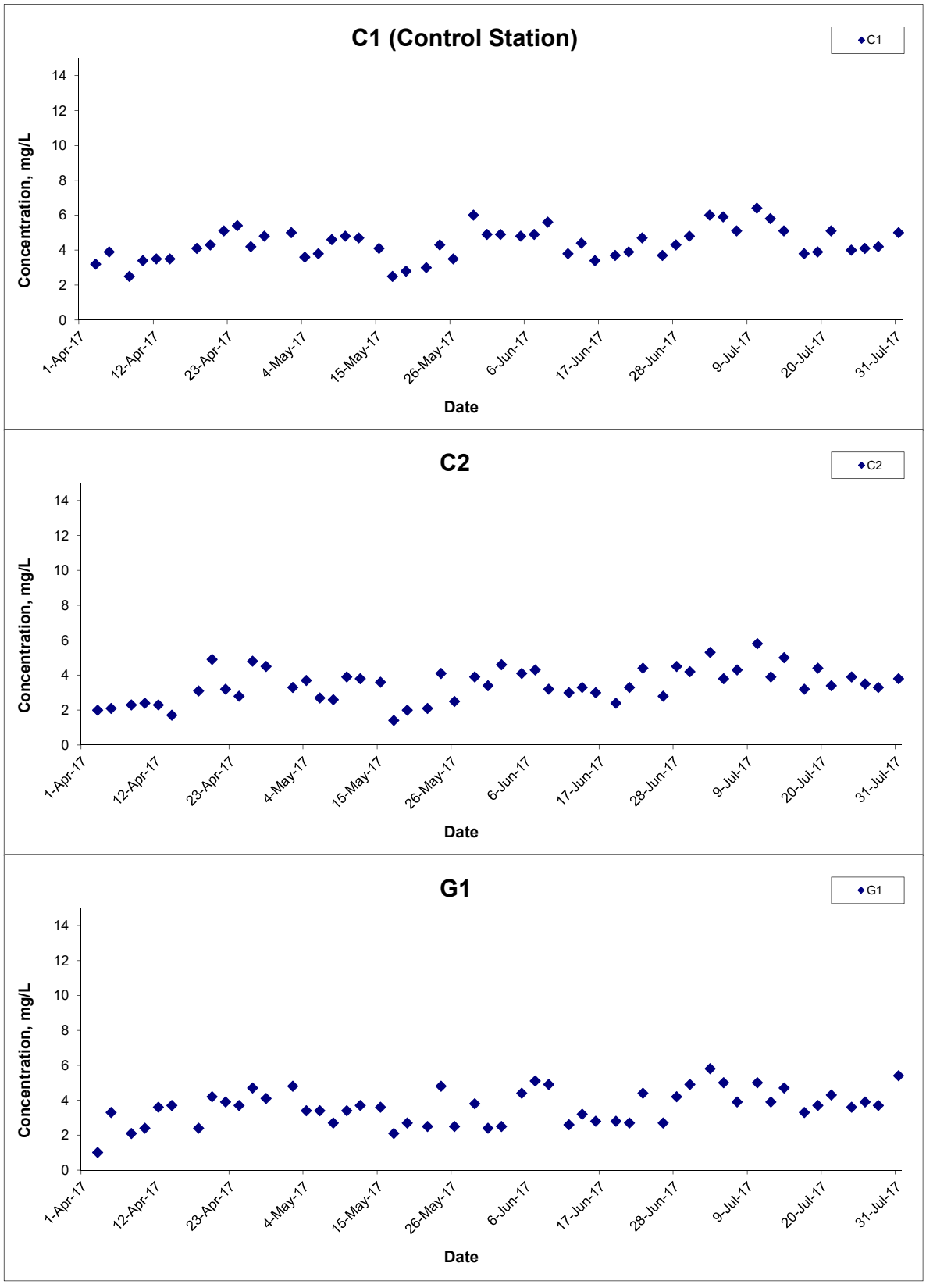
Suspended Solids (Depth-averaged) at Mid-Flood Tide



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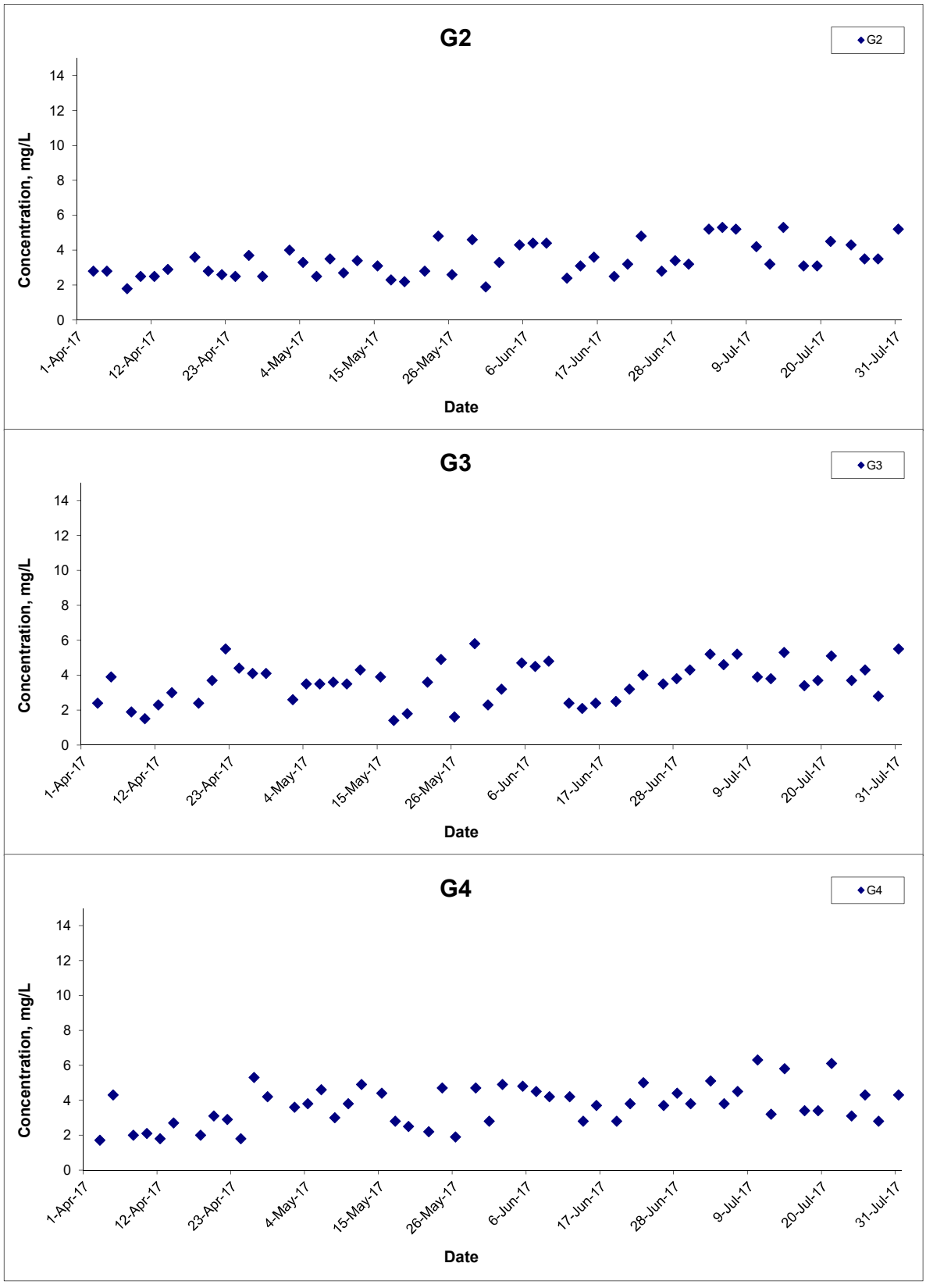
Suspended Solids (Depth-averaged) at Mid-Flood Tide



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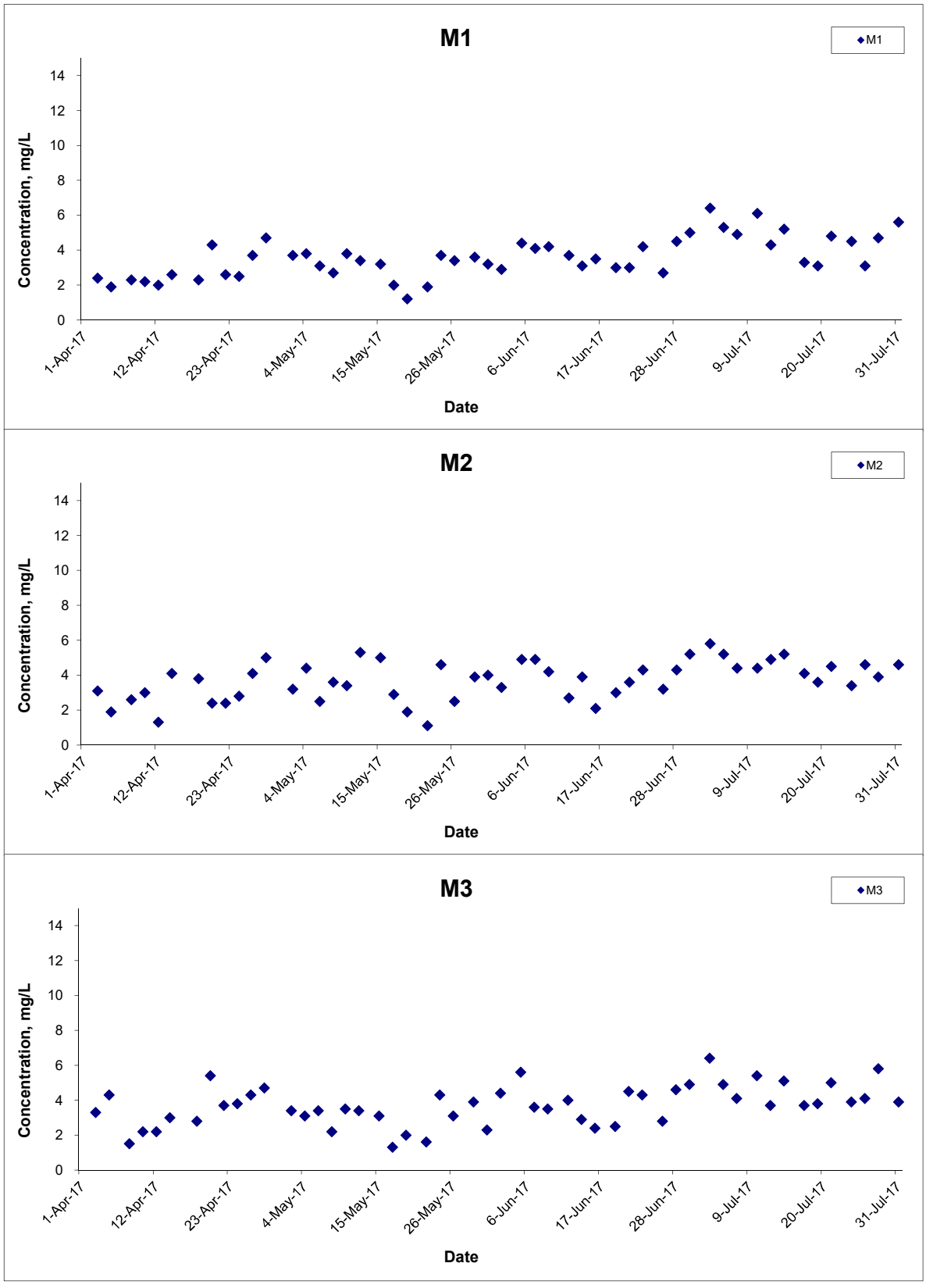

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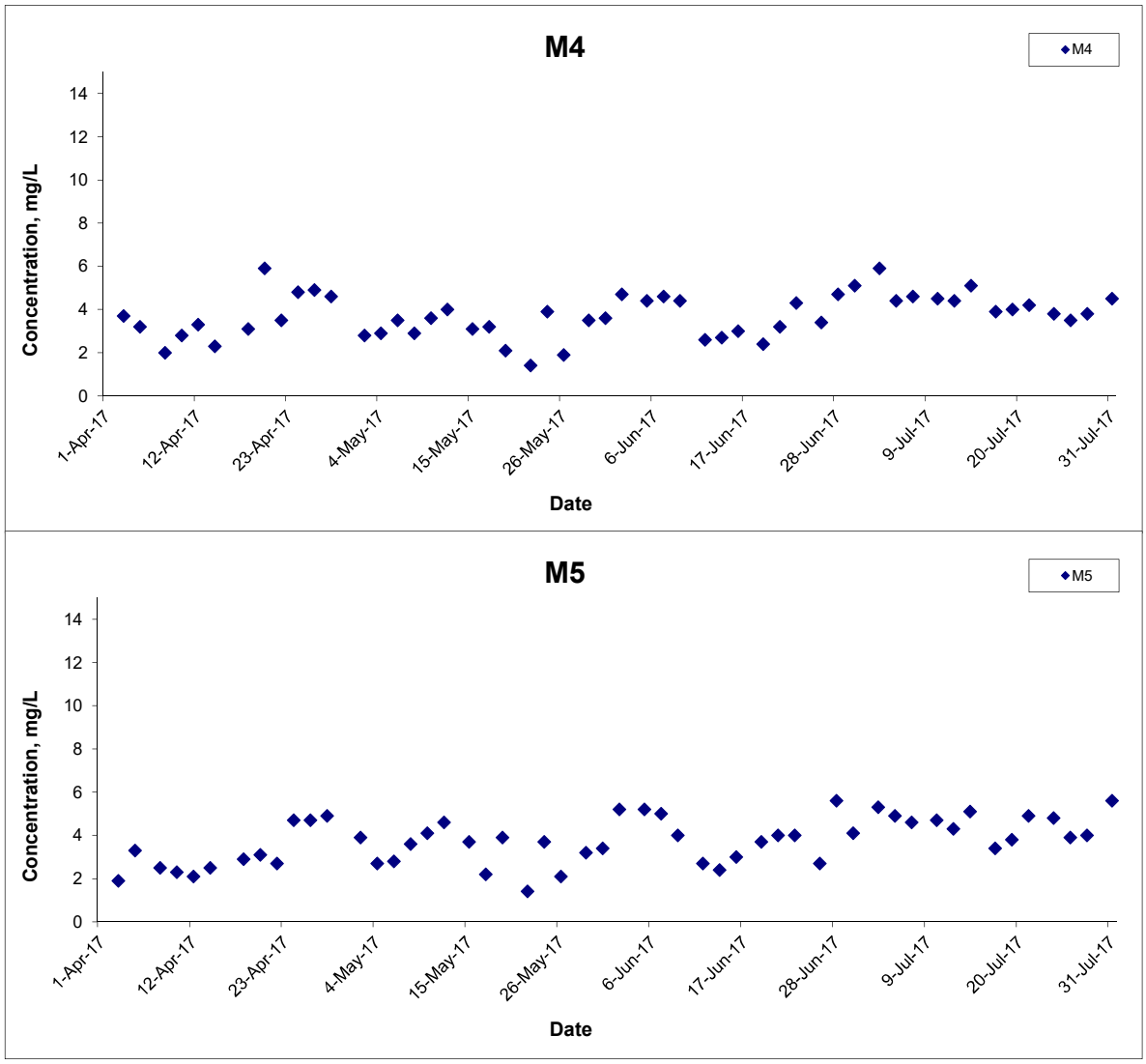

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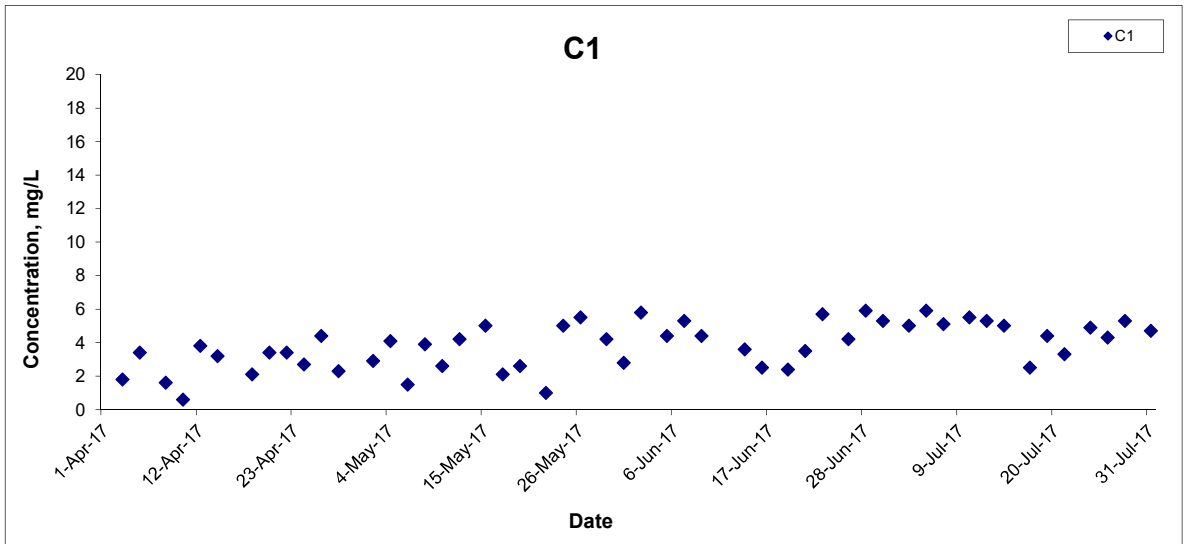
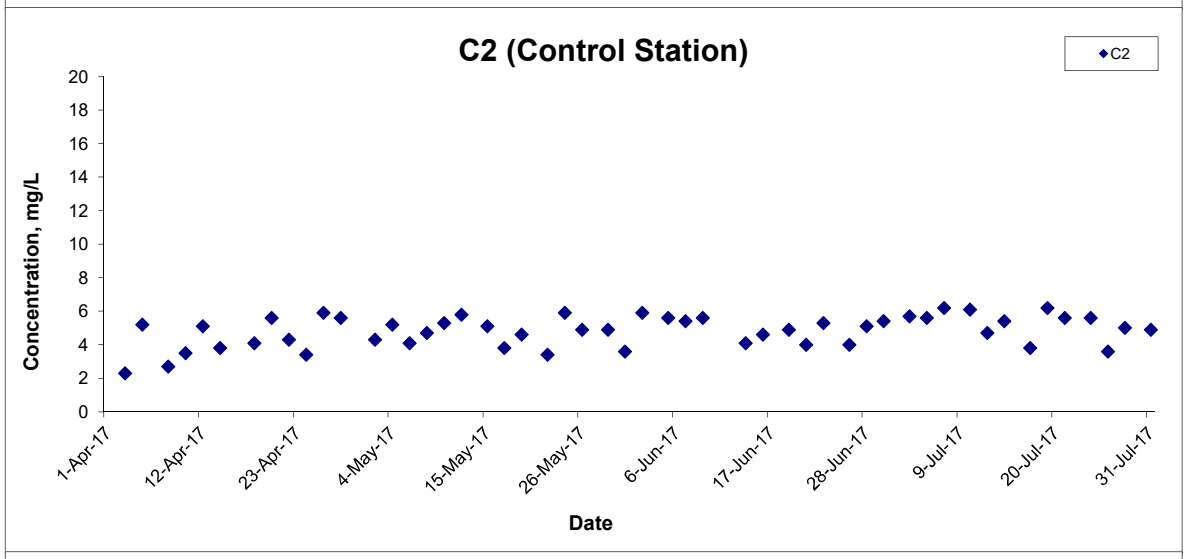
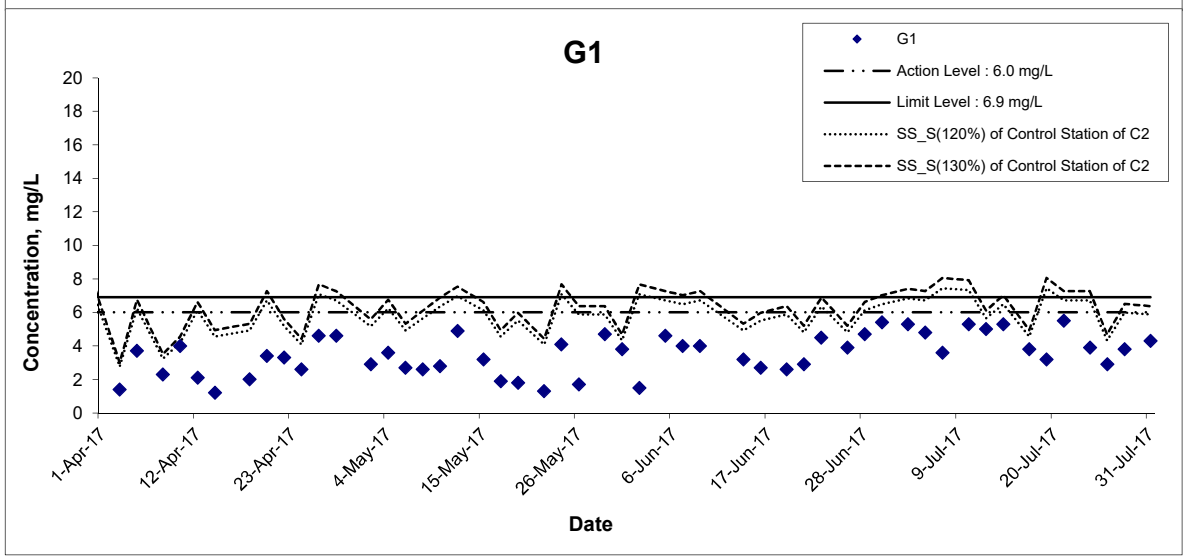
Suspended Solids (Surface) at Mid-Ebb Tide







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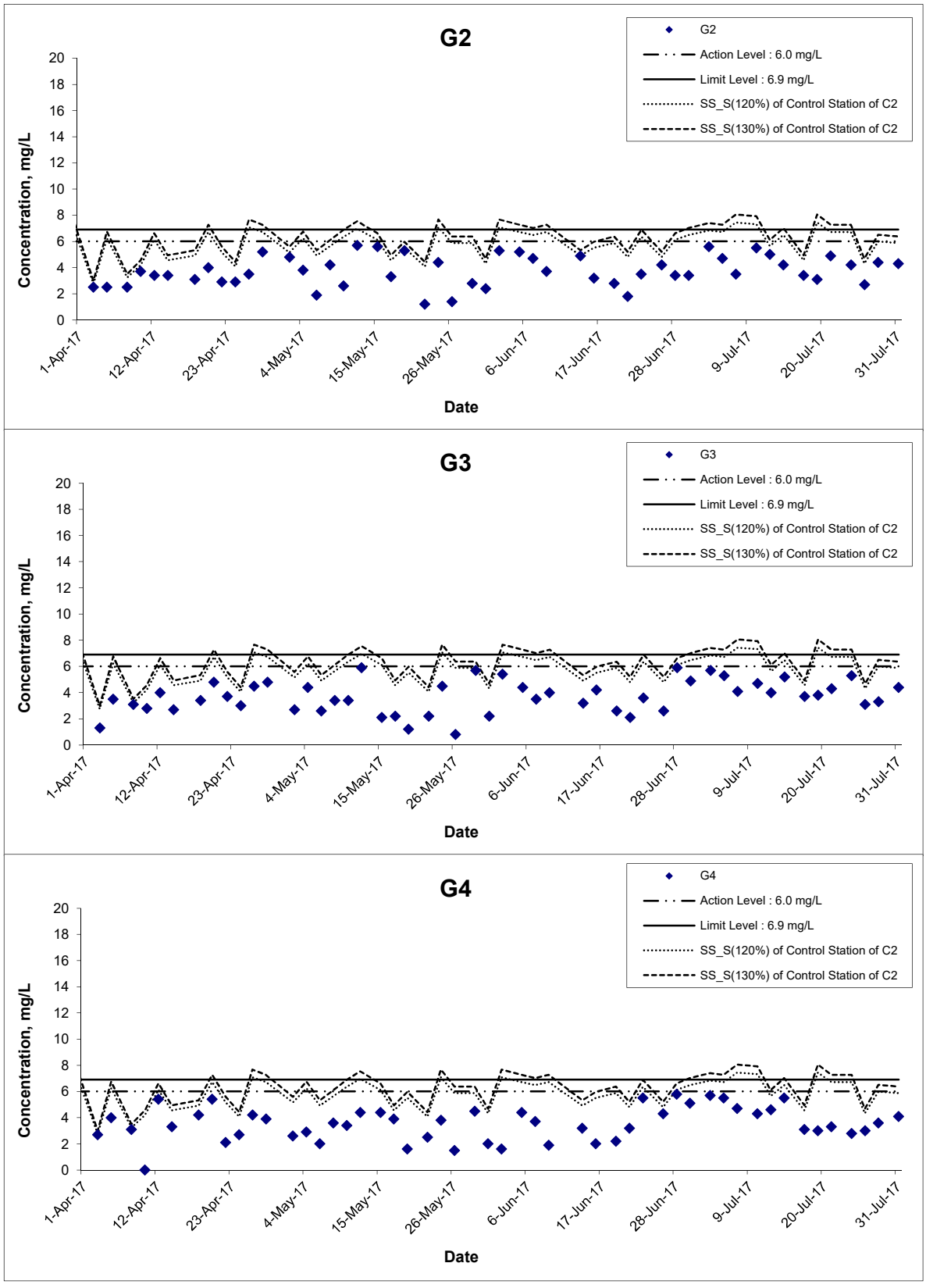
Suspended Solids (Surface) at Mid-Ebb Tide



Remarks: The graphical point at zero concentration is presented as <2.5mg/L.

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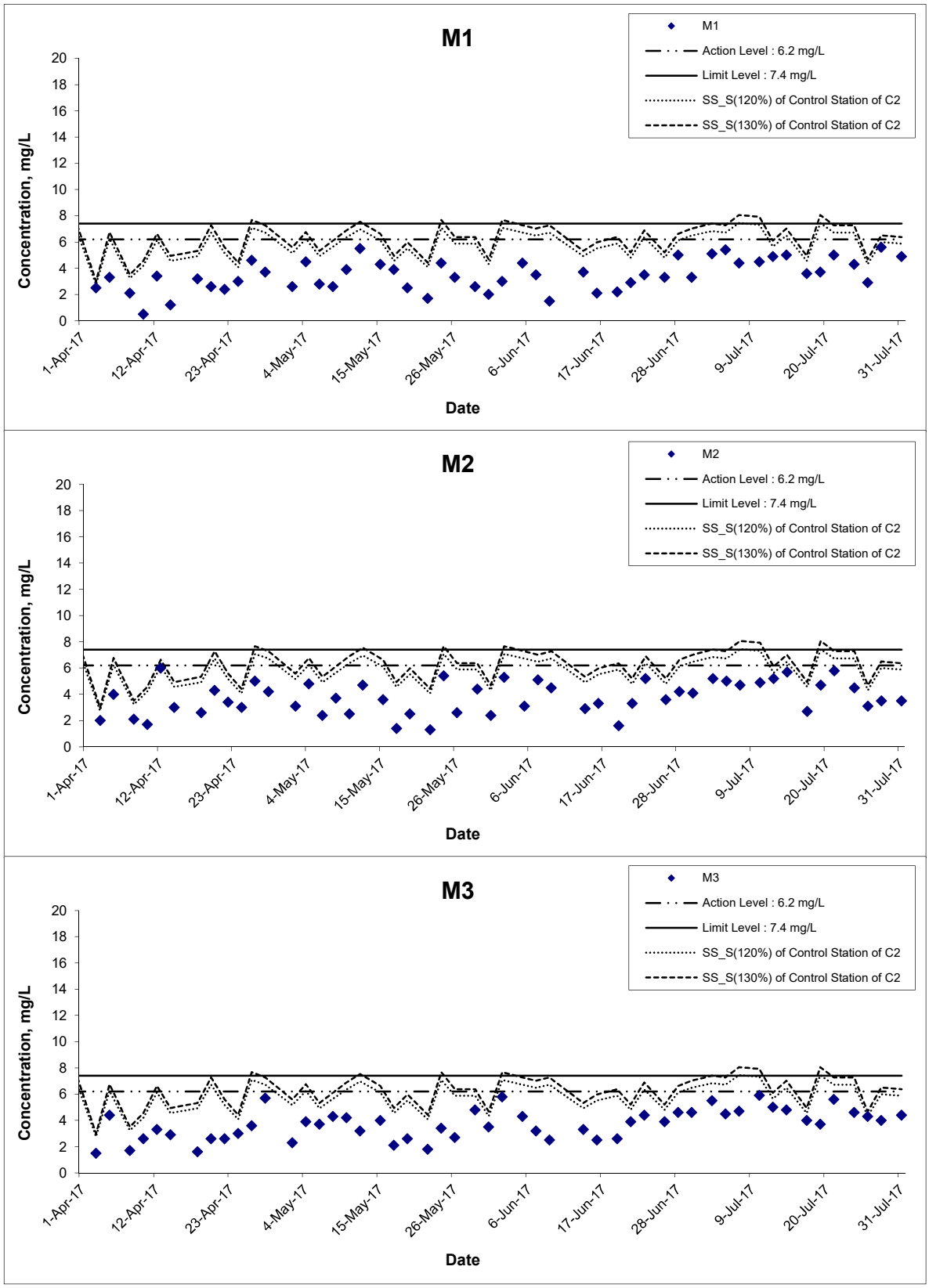

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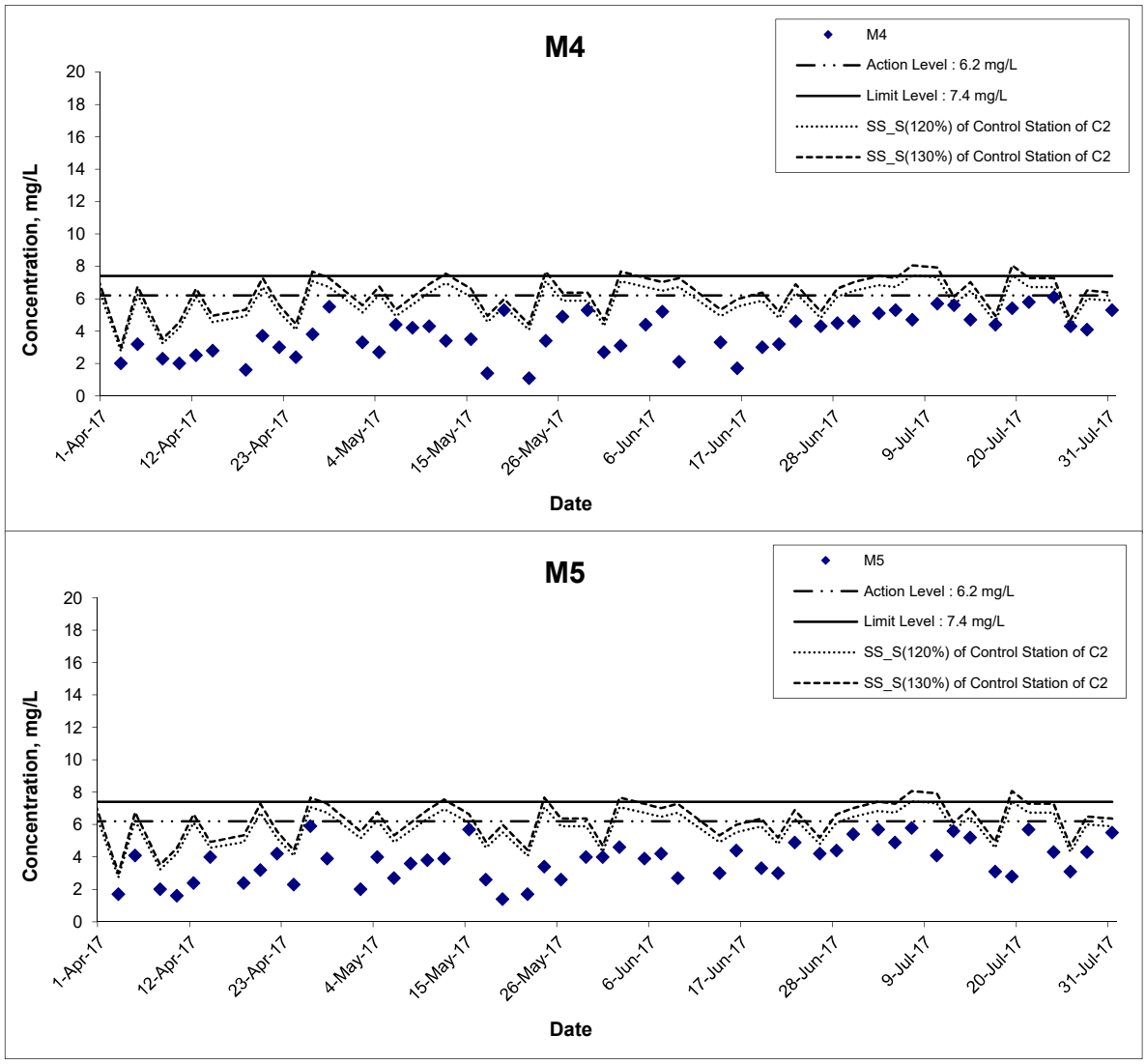
Suspended Solids (Surface) at Mid-Ebb Tide



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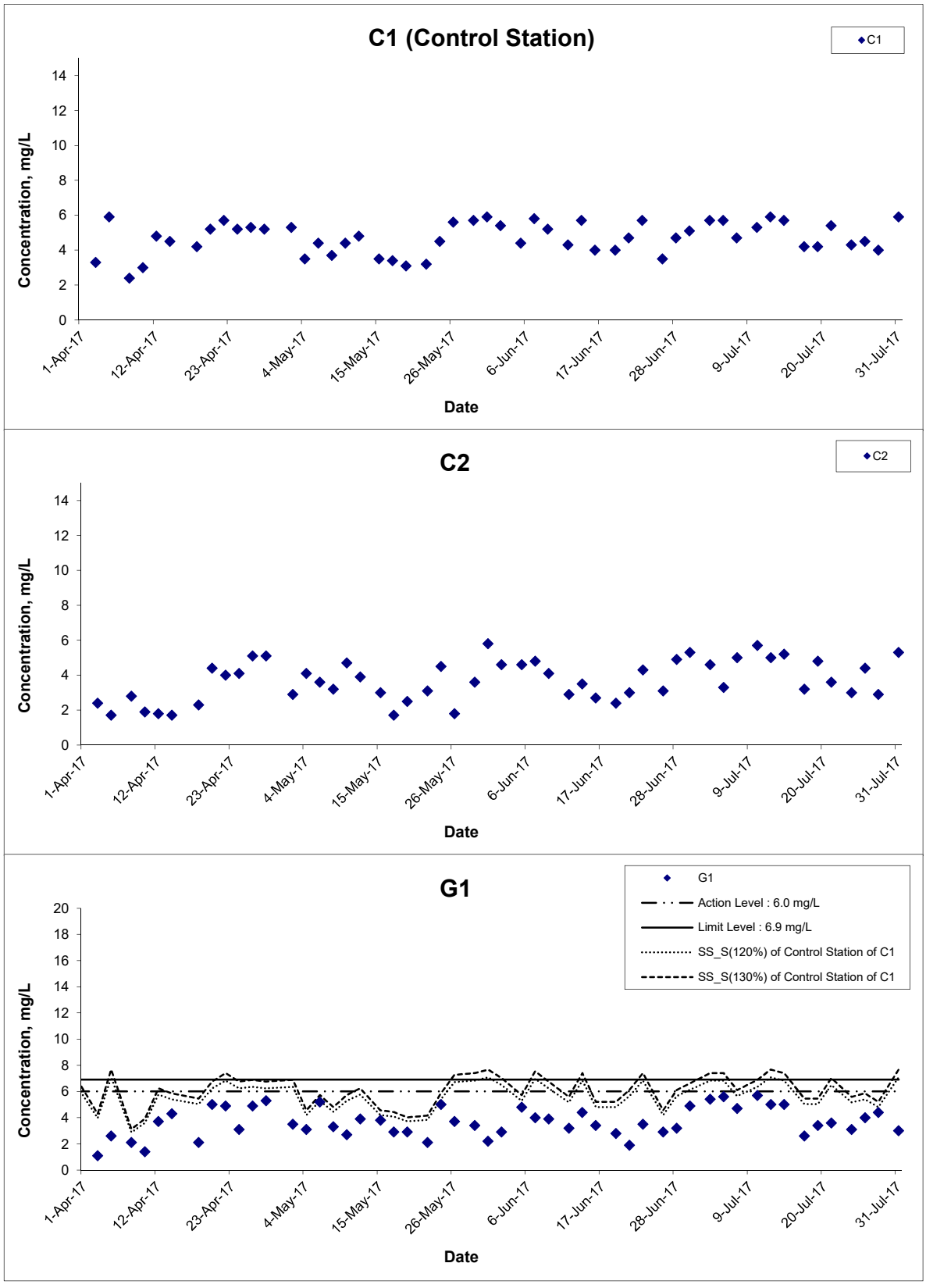
Suspended Solids (Surface) at Mid-Flood Tide



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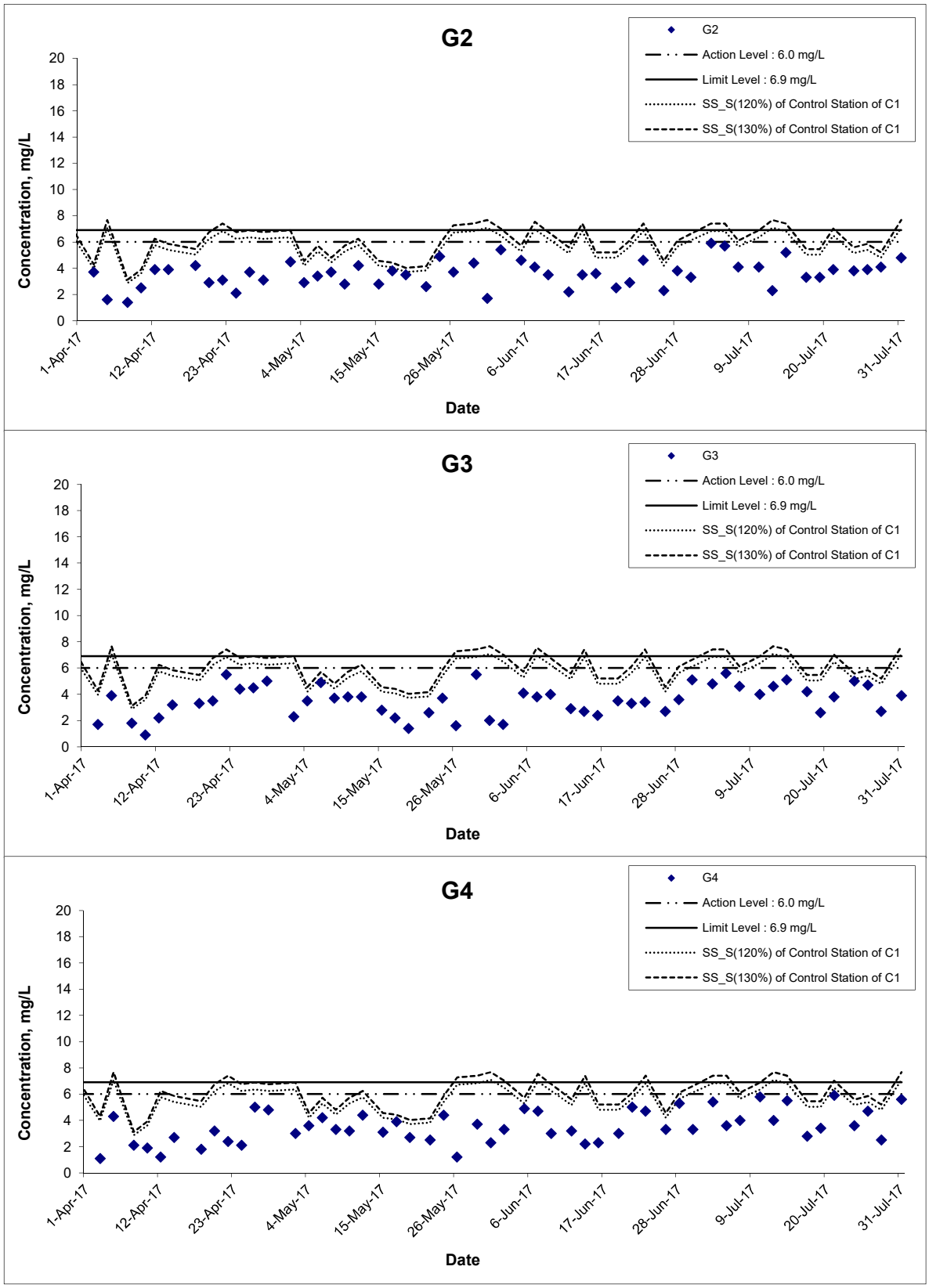
Suspended Solids (Surface) at Mid-Flood Tide



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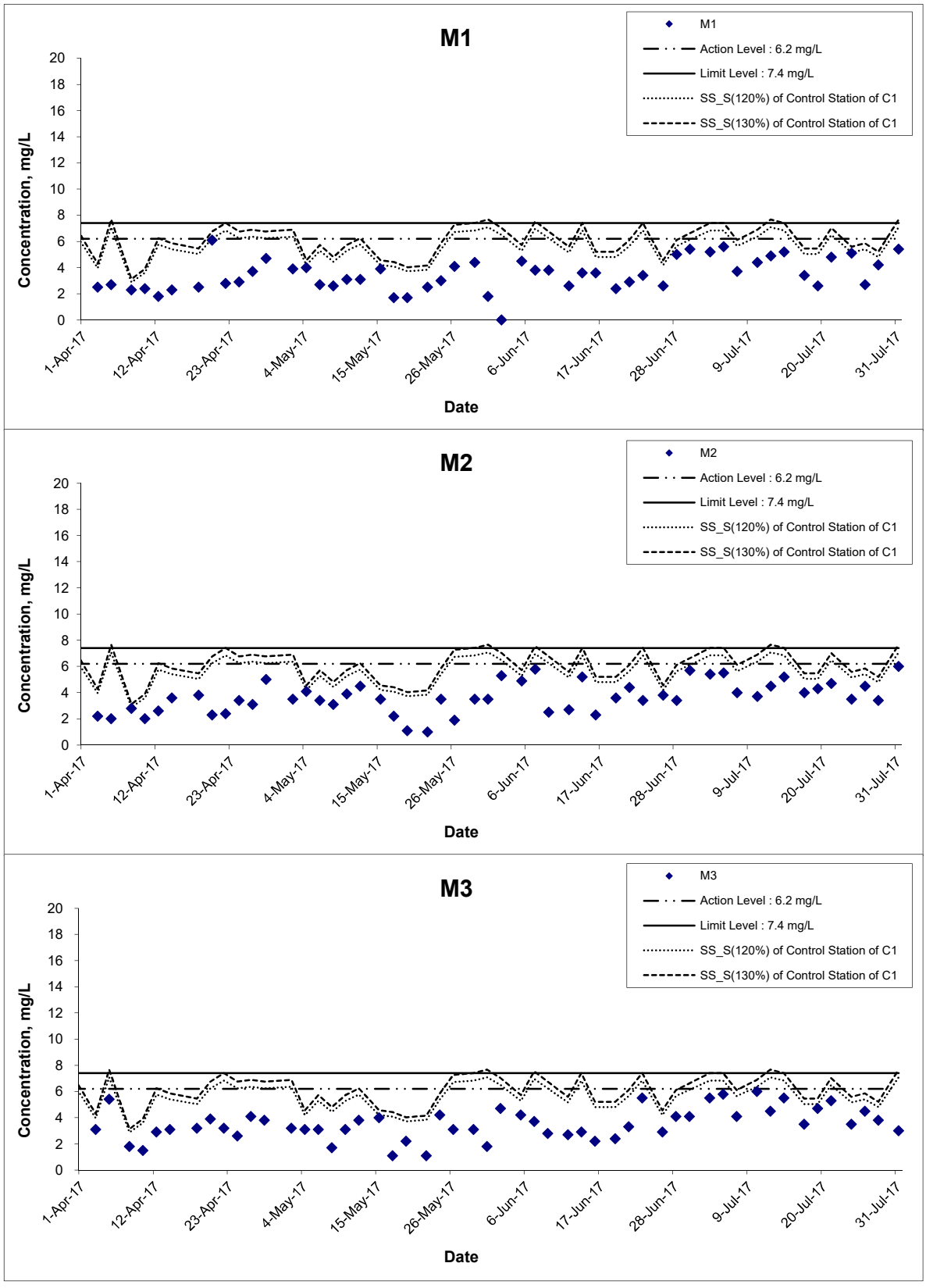
Suspended Solids (Surface) at Mid-Flood Tide



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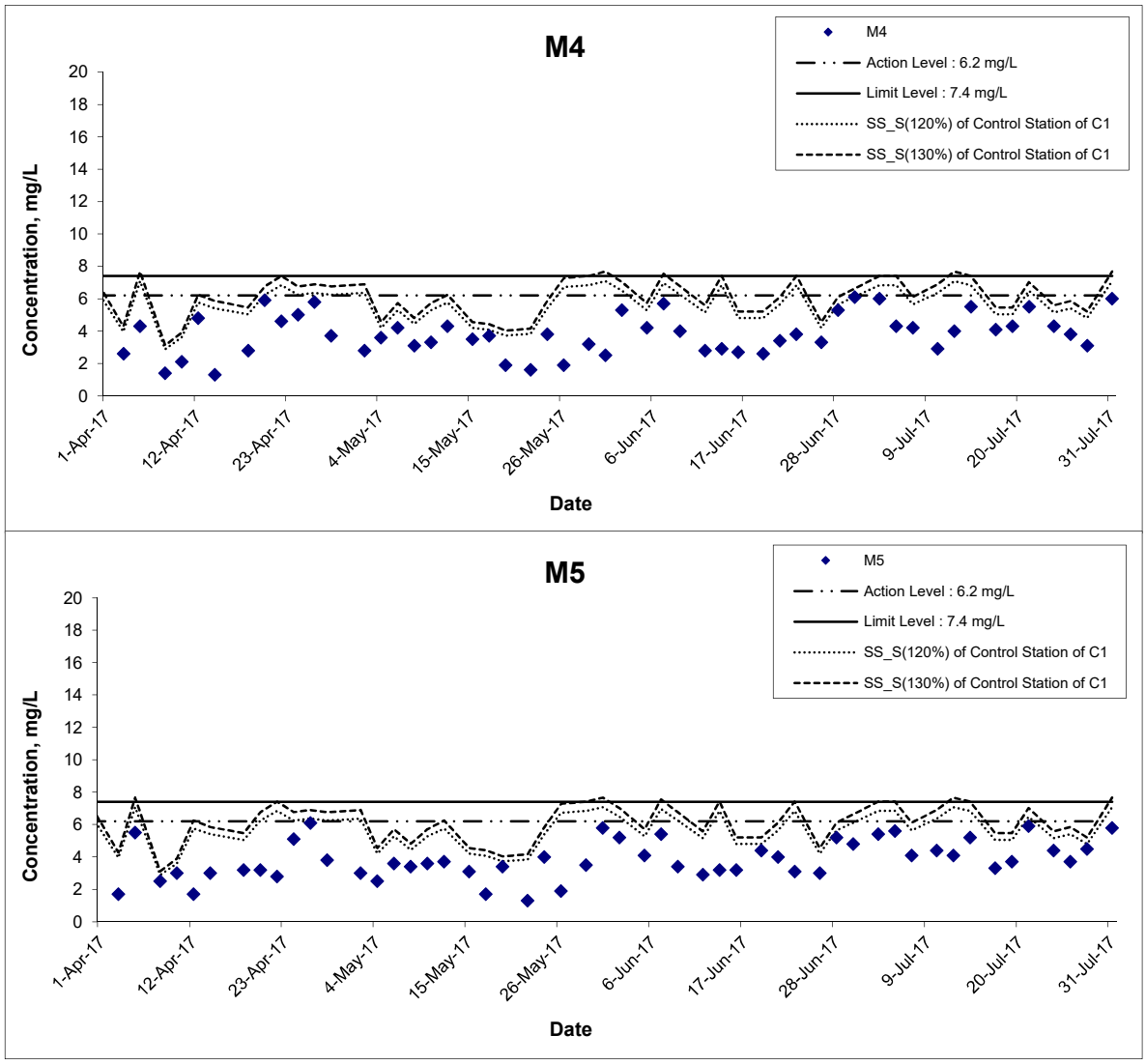
Suspended Solids (Surface) at Mid-Flood Tide



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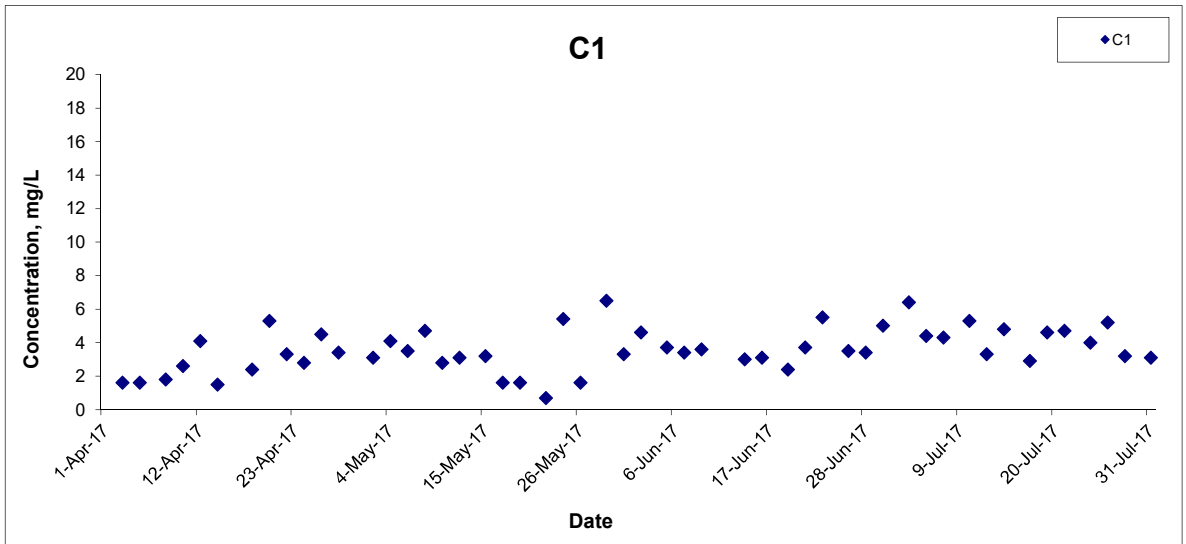
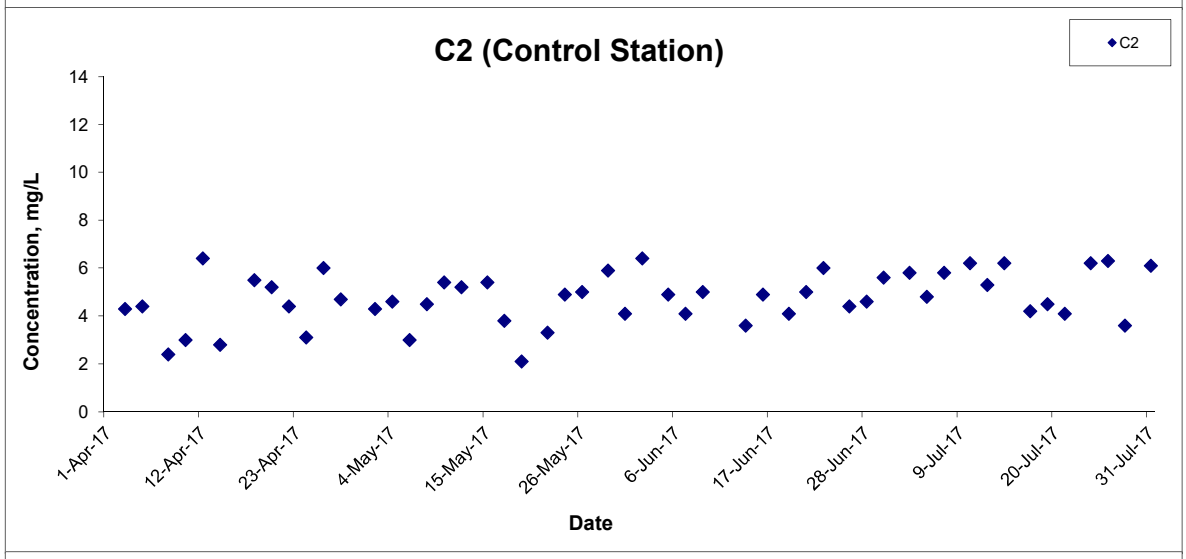
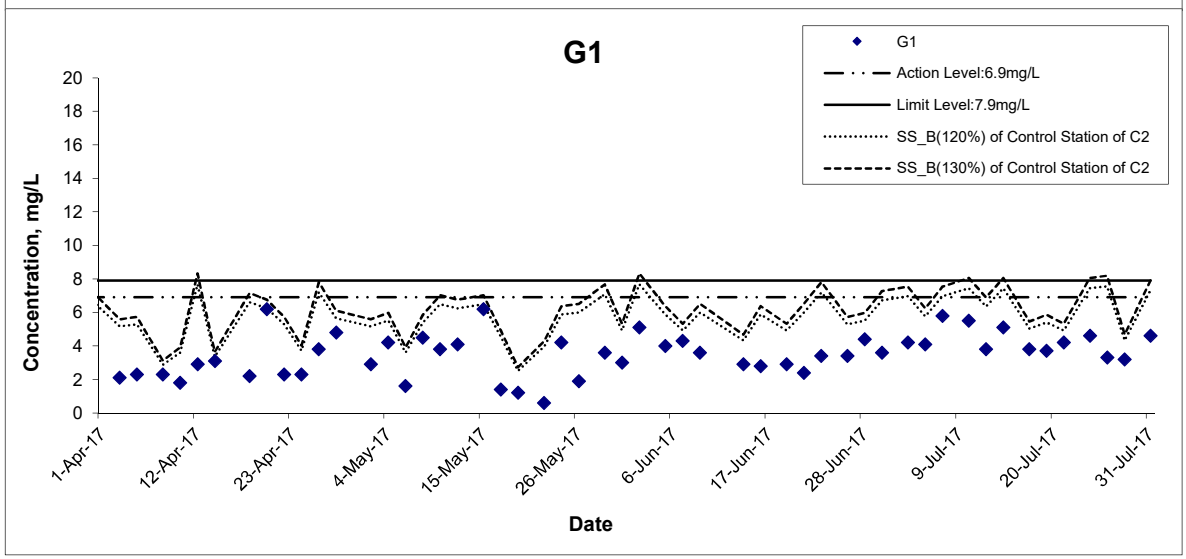
Suspended Solids (Bottom) at Mid-Ebb Tide







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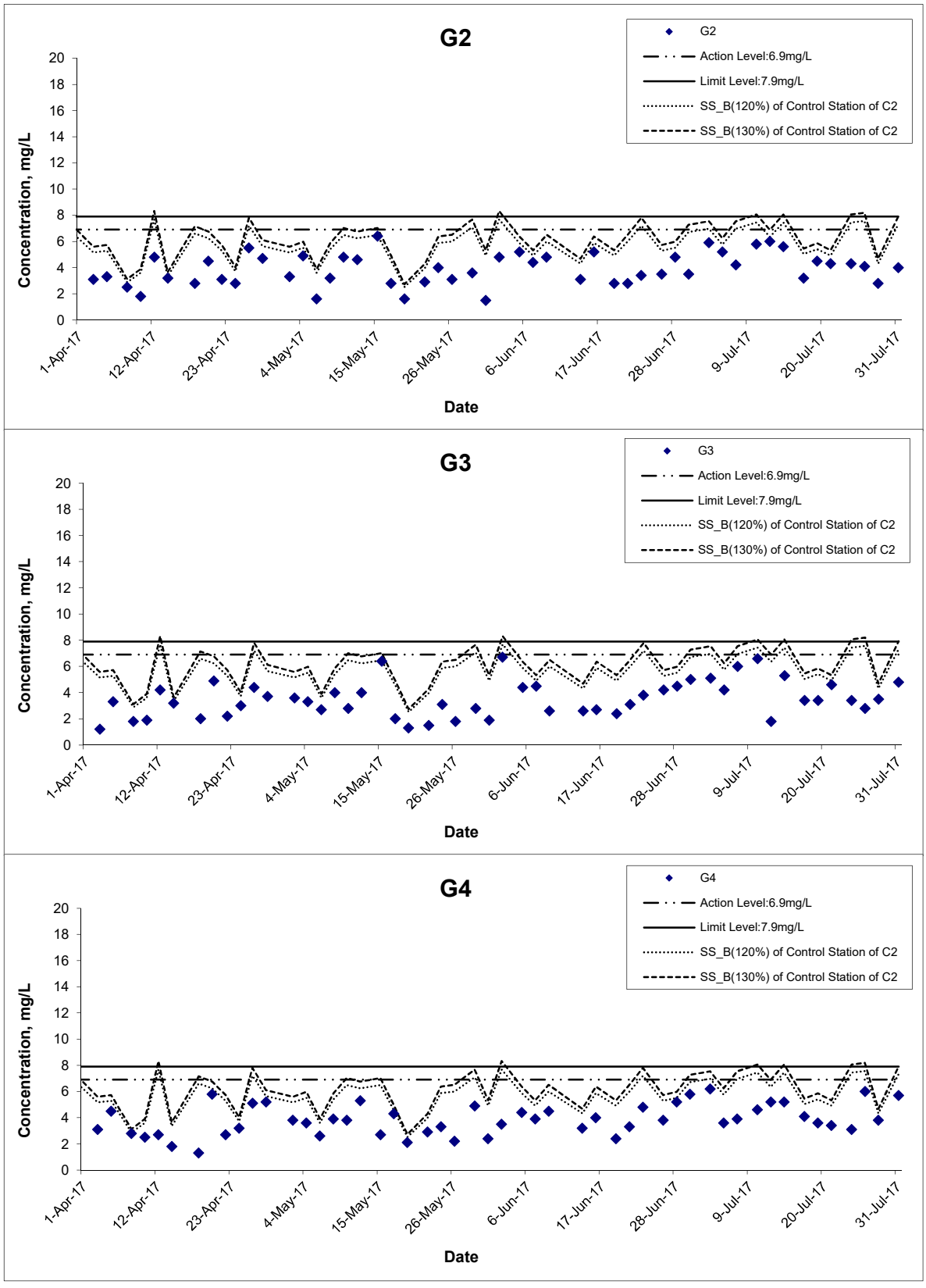
Suspended Solids (Bottom) at Mid-Ebb Tide



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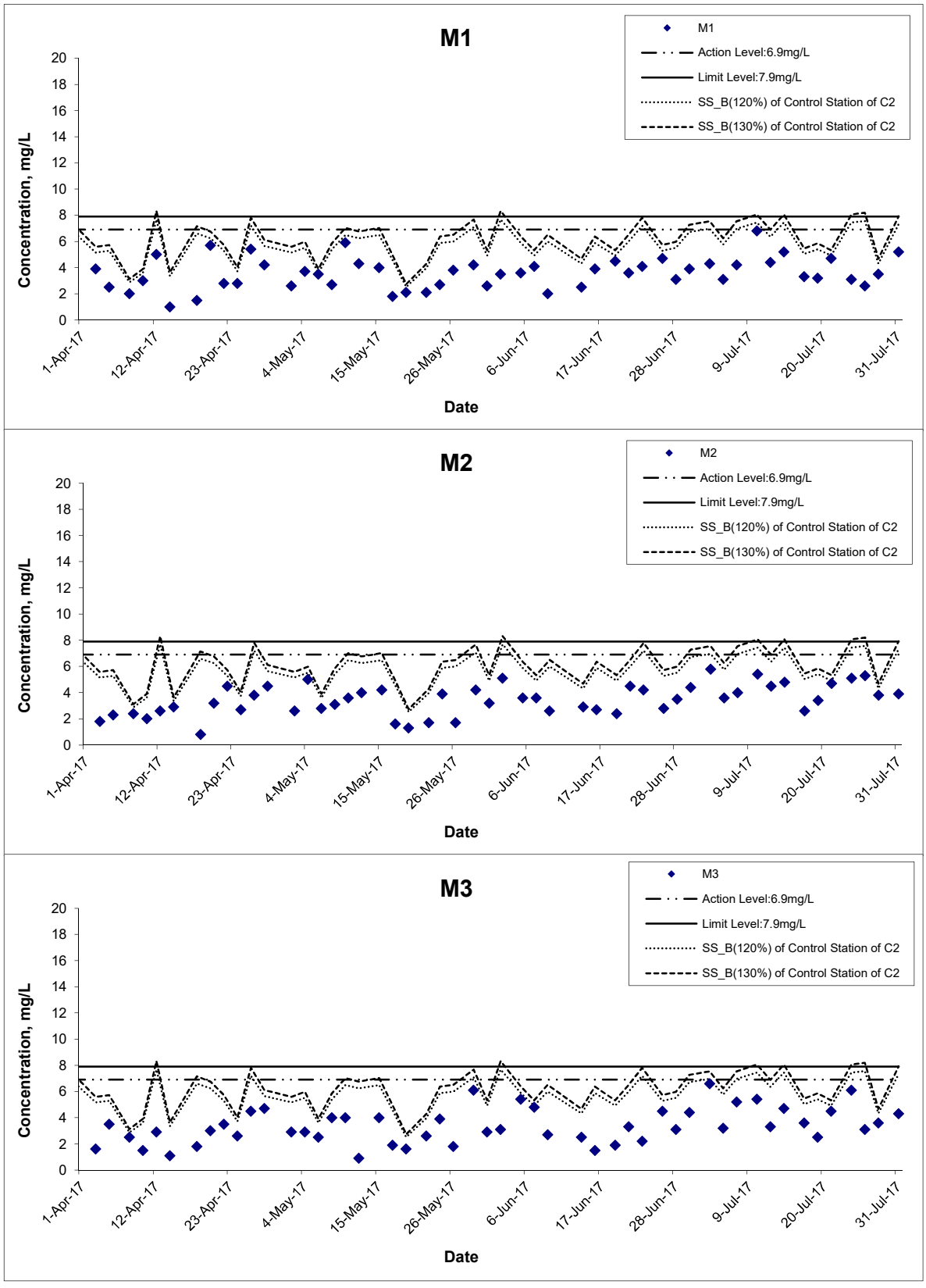
Suspended Solids (Bottom) at Mid-Ebb Tide



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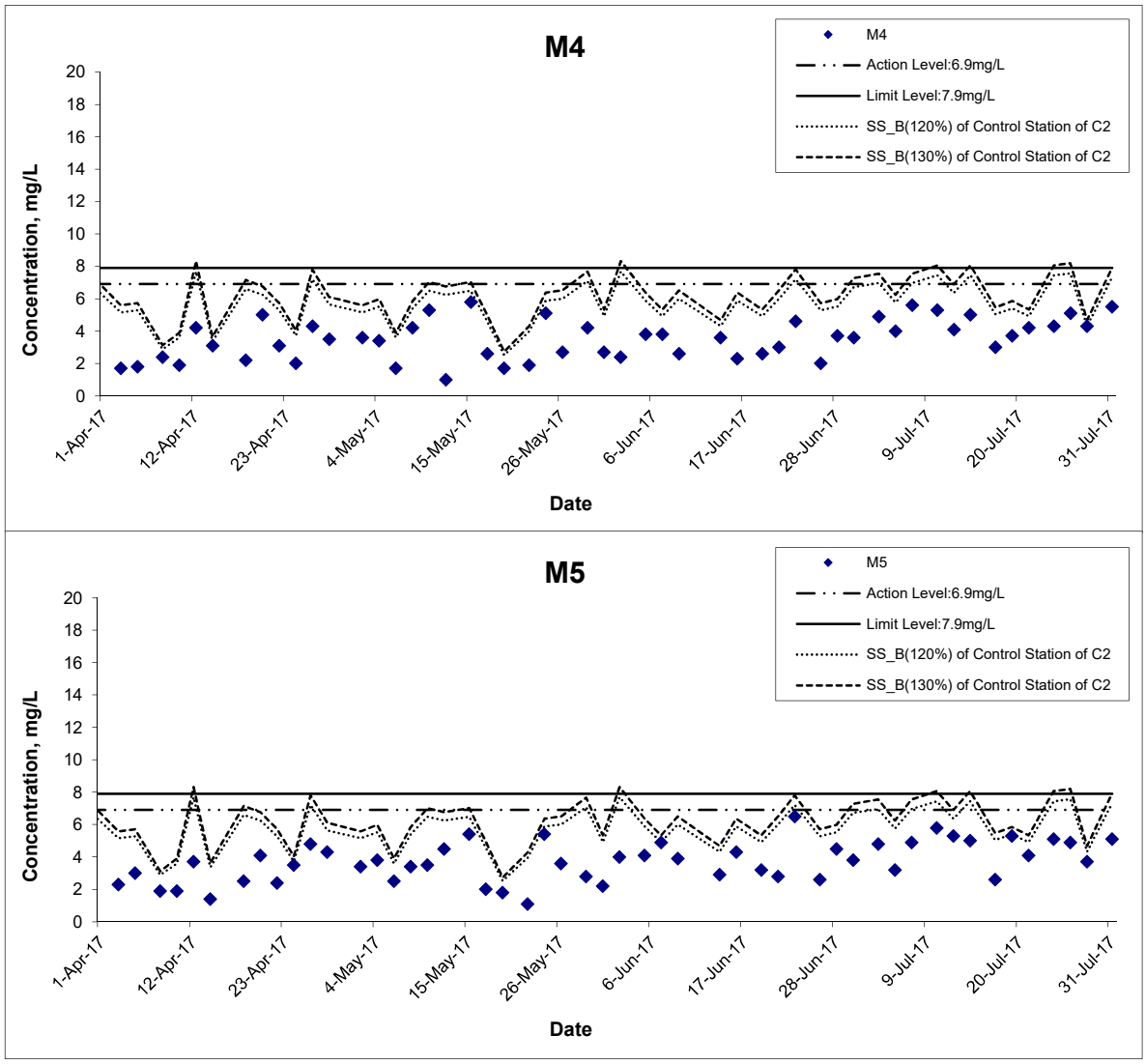

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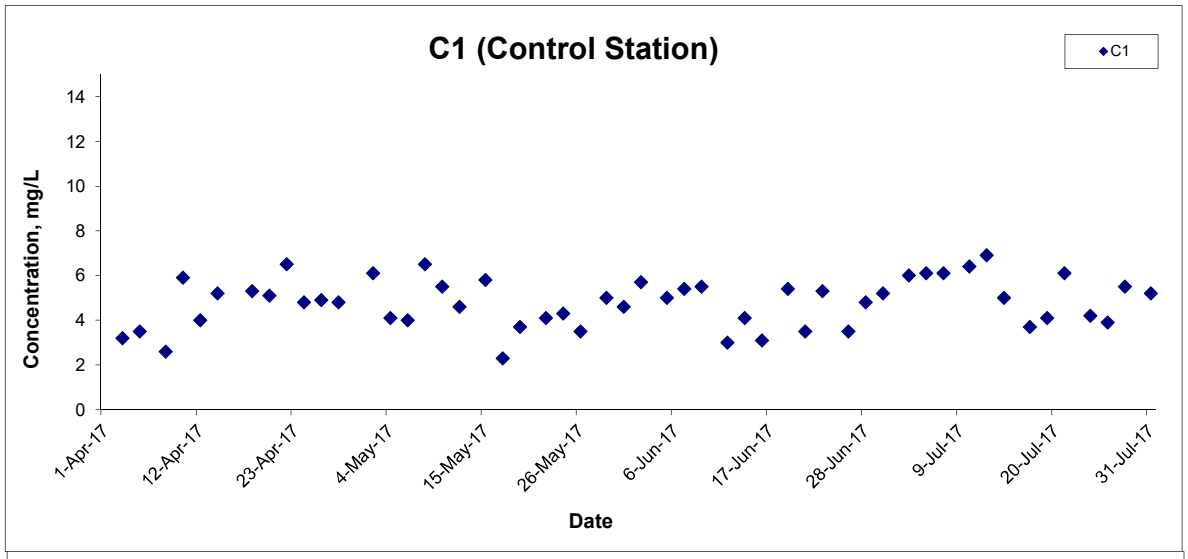
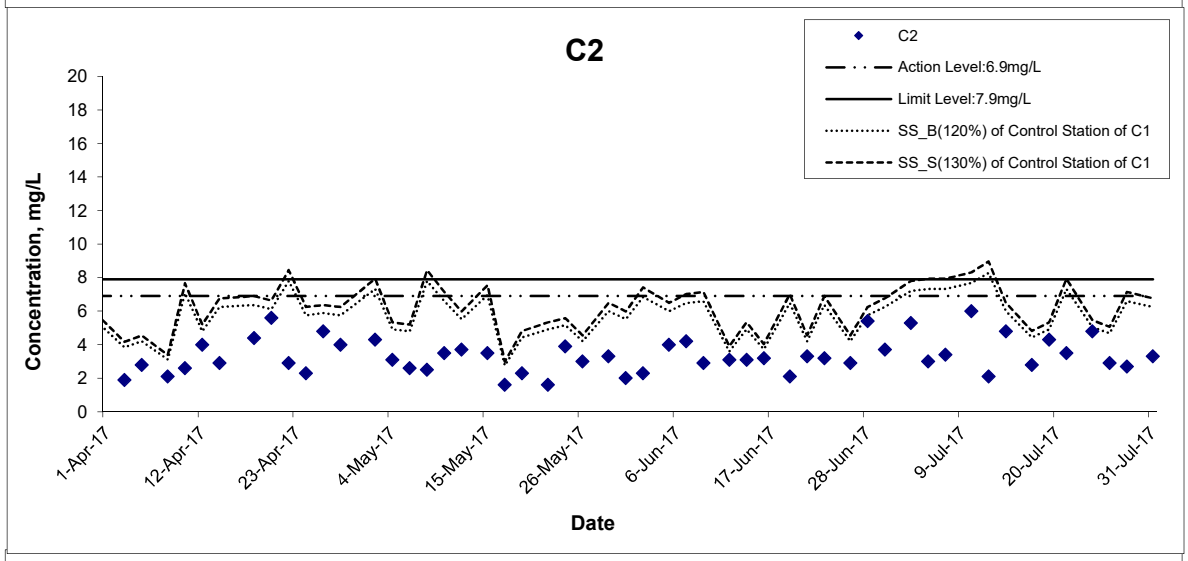
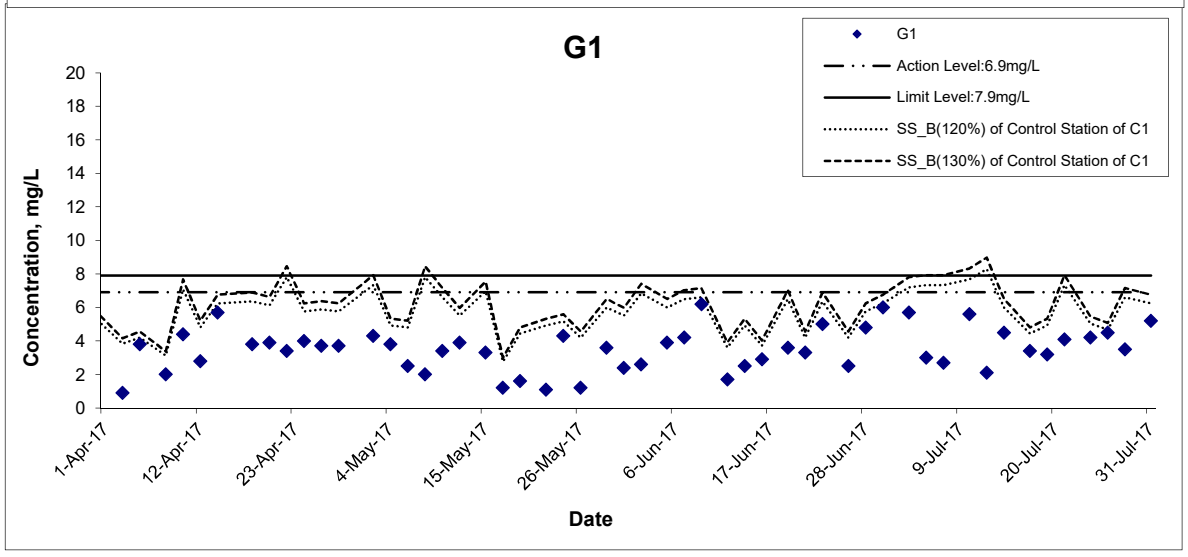
Suspended Solids (Bottom) at Mid-Flood Tide







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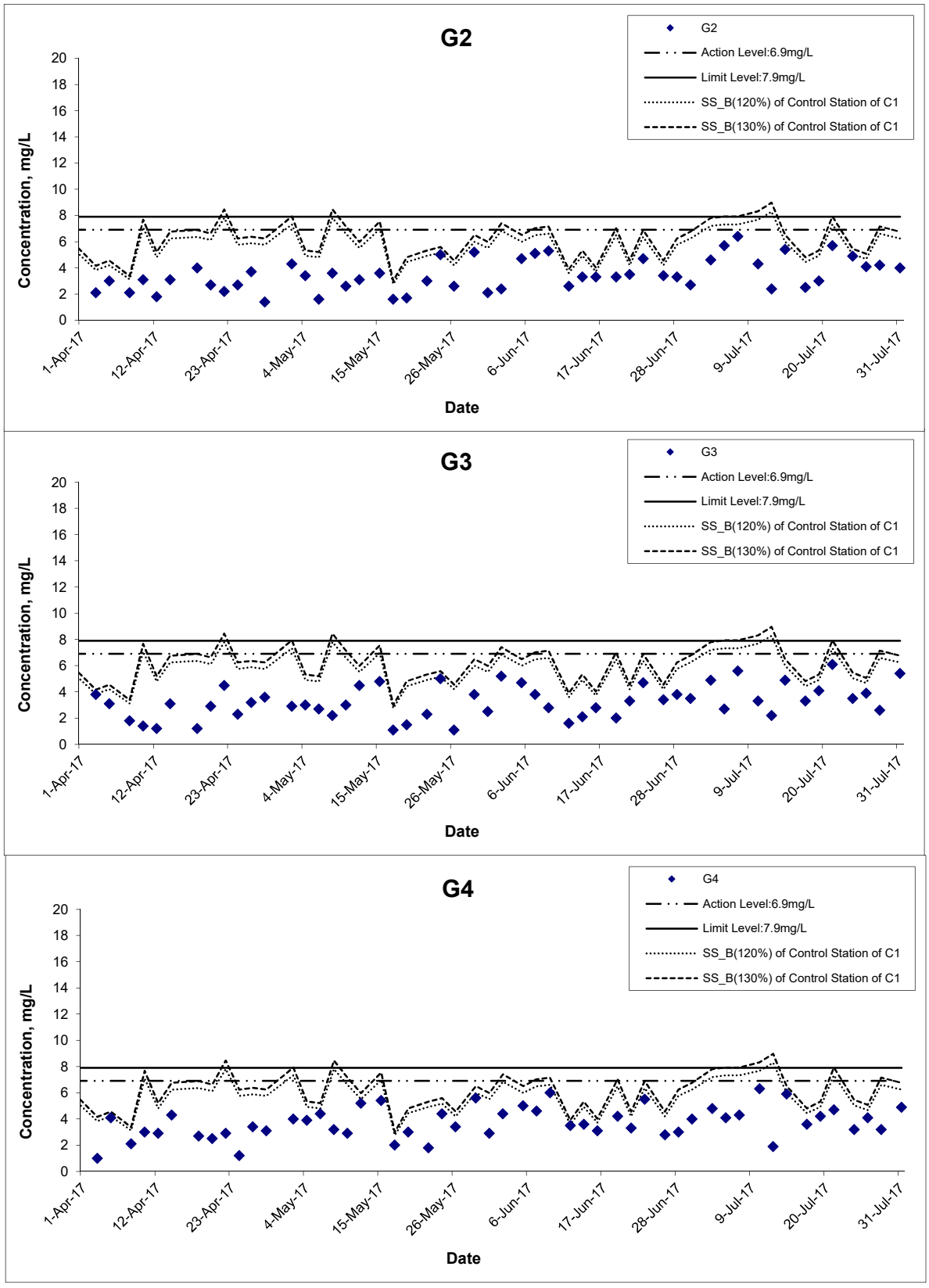

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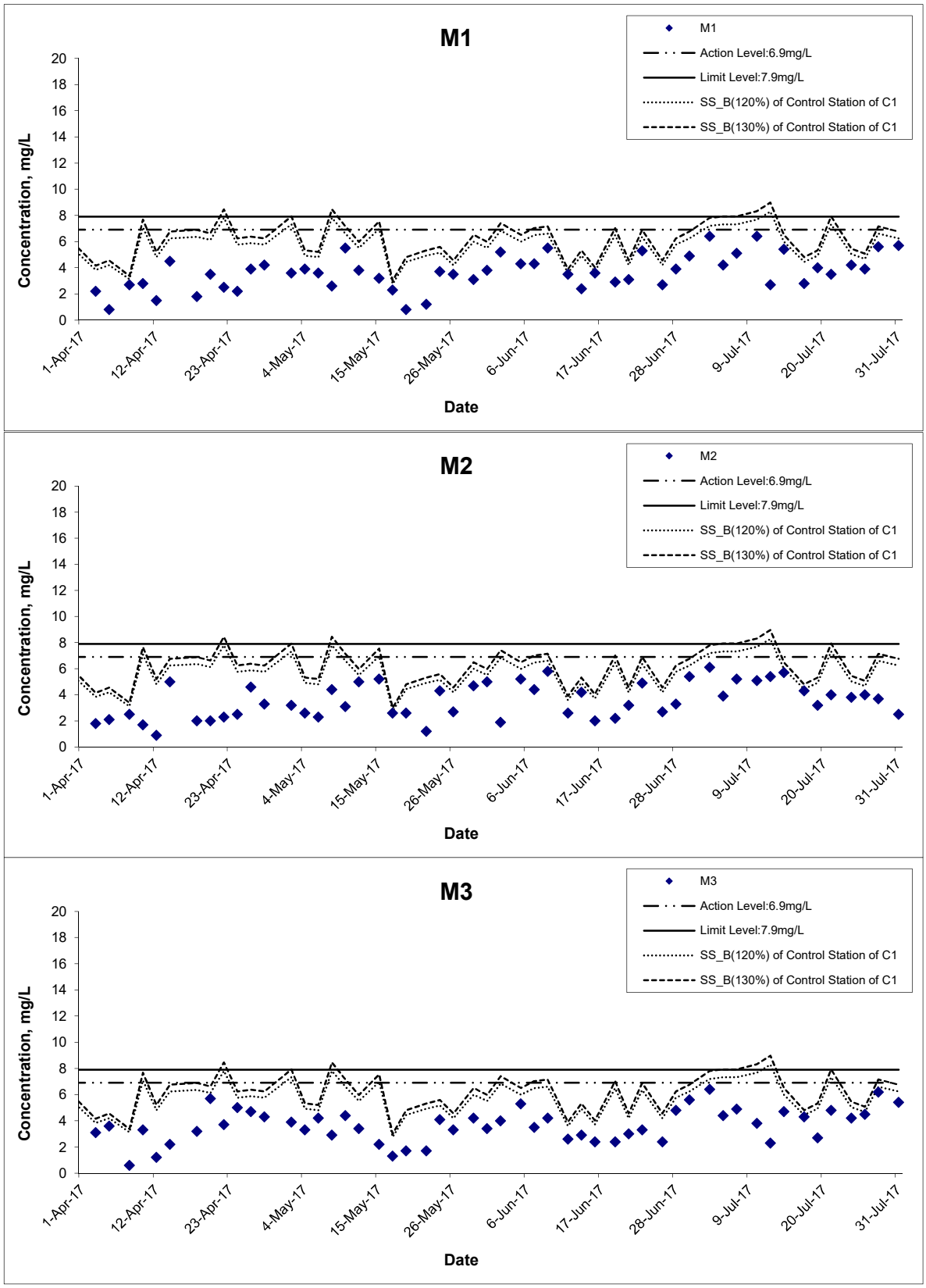

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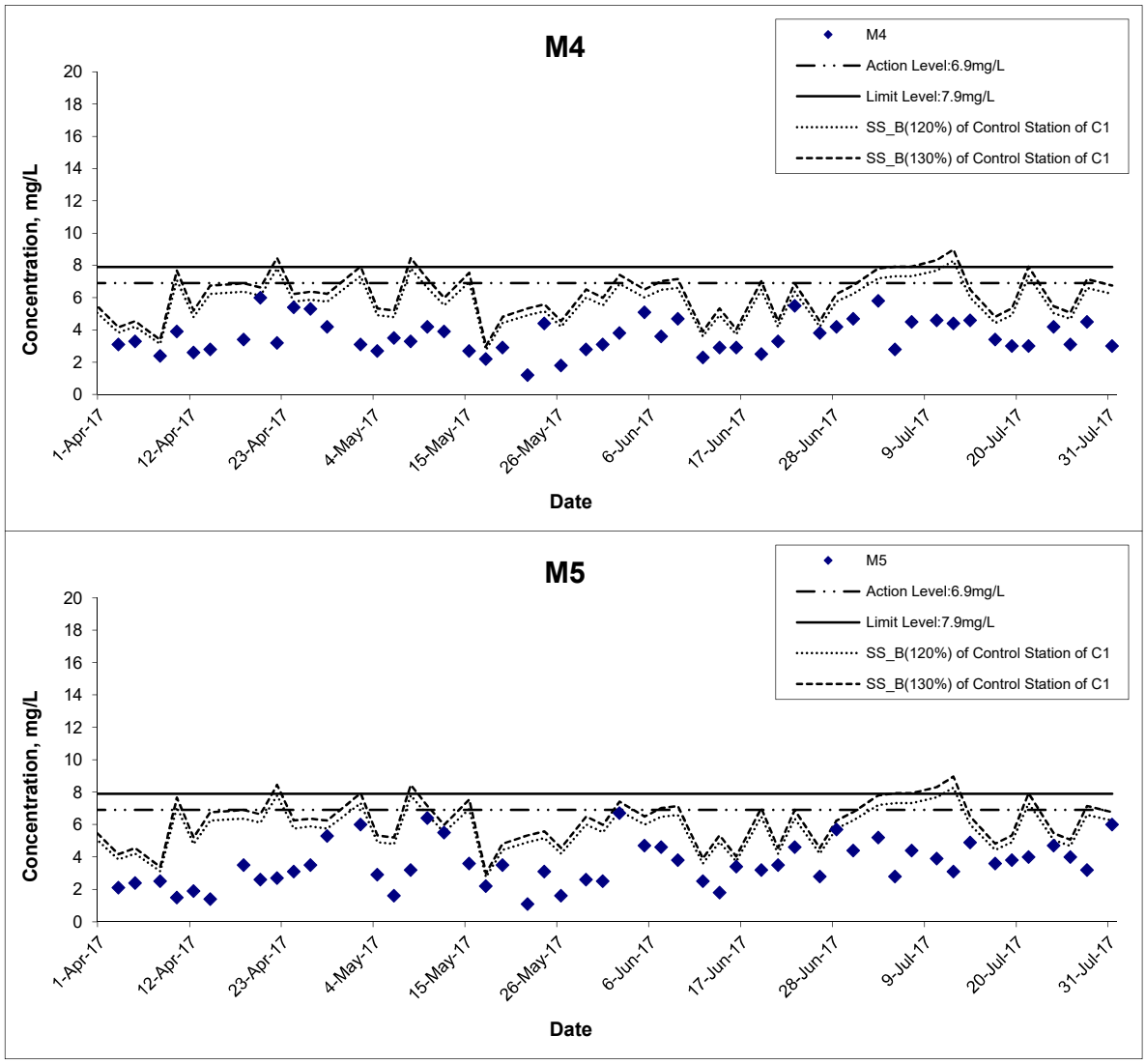
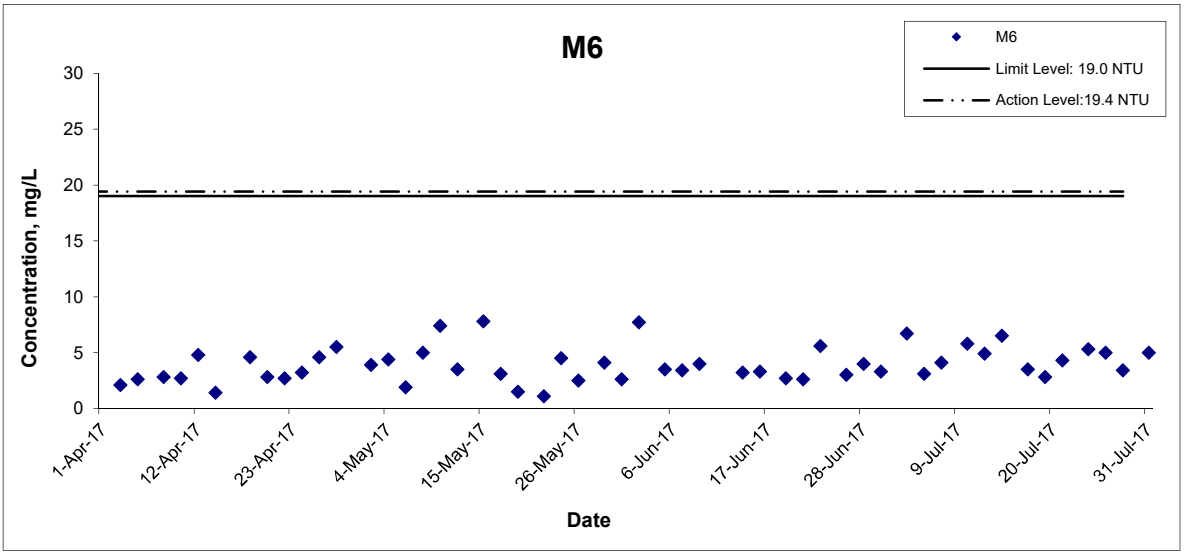
	Date: Jul 17	Appendix: I	

Suspended Solids (Bottom) at Mid-Flood Tide



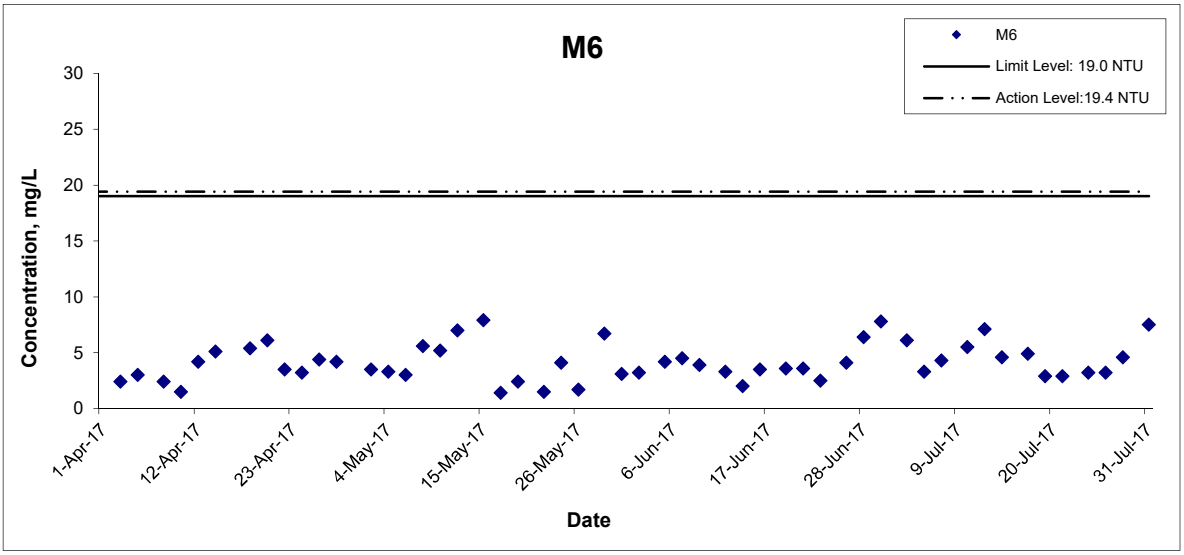
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jul 17	Appendix: I	

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 Jul 17	Appendix I	

Suspended Solids (Intake Level of WSD Salt Water Intake) 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: Jul 17	Project No.: MA16034 Appendix: I	CINOTECH

APPENDIX J
QUALITY CONTROL REPORTS FOR LABORATORY ANALYSIS

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Report No.:	QC27158
Date of Issue:	2017-07-17
Date Received:	2017-07-07
Date Tested:	2017-07-07
Date Completed:	2017-07-17

ATTN: **Ms. Mei Ling Tang** Page: 1 of 2

QC report:

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) (%)	95	80-120
Biochemical Oxygen Demand (mg O_2/L)	204	170-220
Total Organic Carbon (%)	108	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	98	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 27158.

****

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

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Report No.:	QC27158
Date of Issue:	2017-07-17
Date Received:	2017-07-07
Date Tested:	2017-07-07
Date Completed:	2017-07-17

QC report:

Sample Duplicate

Parameter	27158-3 chk	Acceptance
Suspended Solids (SS) (%)	5	RPD≤20%
Biochemical Oxygen Demand (%)	N/A	RPD≤20%
Total Organic Carbon (%)	2	RPD≤20%
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	N/A	RPD≤20%
Total Phosphorus (%)	N/A	RPD≤20%

Sample Spike

Parameter	27158-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	100	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	106	80-120
Total Phosphorus (%)	95	80-120

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 27158.

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

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Report No.:	QC27205
Date of Issue:	2017-07-28
Date Received:	2017-07-18
Date Tested:	2017-07-18
Date Completed:	2017-07-28

ATTN: **Ms. Mei Ling Tang**
Page: 1 of 2

QC report:

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) (%)	100	80-120
Biochemical Oxygen Demand (mg O_2/L)	174	170-220
Total Organic Carbon (%)	91	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	93	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 27205.

****

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

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

Report No.:	QC27205
Date of Issue:	2017-07-28
Date Received:	2017-07-18
Date Tested:	2017-07-18
Date Completed:	2017-07-28

QC report:

Sample Duplicate

Parameter	27205-3 chk	Acceptance
Suspended Solids (SS) (%)	4	RPD≤20%
Biochemical Oxygen Demand (%)	N/A	RPD≤20%
Total Organic Carbon (%)	10	RPD≤20%
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	5	RPD≤20%
Total Phosphorus (%)	N/A	RPD≤20%

Sample Spike

Parameter	27205-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	81	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	93	80-120
Total Phosphorus (%)	92	80-120

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 27205.

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

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27123
Date of Issue:	2017/07/04
Date Received:	2017/07/03
Date Tested:	2017/07/03
Date Completed:	2017/07/04
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/03
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170703

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.1	5.3	4	103

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

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

PATRICK TSE
Laboratory Manager

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Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27129
Date of Issue:	2017/07/06
Date Received:	2017/07/05
Date Tested:	2017/07/05
Date Completed:	2017/07/06
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/05
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170705

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.3	5.2	2	101

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

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

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Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27144
Date of Issue:	2017/07/10
Date Received:	2017/07/07
Date Tested:	2017/07/07
Date Completed:	2017/07/10
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/07
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170707

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.8	4.9	3	101

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

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

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

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TEST REPORT

QC REPORT

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

Report No.:	27156
Date of Issue:	2017/07/11
Date Received:	2017/07/10
Date Tested:	2017/07/10
Date Completed:	2017/07/11
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/10
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170710

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.7	5.5	3	98

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

PREPARED AND CHECKED BY:
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Laboratory Manager

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TEST REPORT

QC REPORT

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

Report No.:	27165
Date of Issue:	2017/07/13
Date Received:	2017/07/12
Date Tested:	2017/07/12
Date Completed:	2017/07/13
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/12
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170712

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.6	5.7	0	100

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

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

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Laboratory Manager

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TEST REPORT

QC REPORT

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

Report No.:	27178
Date of Issue:	2017/07/17
Date Received:	2017/07/14
Date Tested:	2017/07/14
Date Completed:	2017/07/17
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/14
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170714

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.7	4.9	3	101

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

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

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27189
Date of Issue:	2017/07/18
Date Received:	2017/07/17
Date Tested:	2017/07/17
Date Completed:	2017/07/18
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/17
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170717

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.4	4.3	2	98

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

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

PATRICK TSE
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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27203
Date of Issue:	2017/07/20
Date Received:	2017/07/19
Date Tested:	2017/07/19
Date Completed:	2017/07/20
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/19
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170719

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.5	5.3	4	92

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27214
Date of Issue:	2017/07/24
Date Received:	2017/07/21
Date Tested:	2017/07/21
Date Completed:	2017/07/24
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/21
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170721

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.8	5.7	2	103

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27220
Date of Issue:	2017/07/25
Date Received:	2017/07/24
Date Tested:	2017/07/24
Date Completed:	2017/07/25
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/24
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170724

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	6.1	6.0	2	100

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

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

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27236
Date of Issue:	2017/07/27
Date Received:	2017/07/26
Date Tested:	2017/07/26
Date Completed:	2017/07/27

Page: 1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/26
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170726

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.3	4.5	3	102

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

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

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27248
Date of Issue:	2017/07/31
Date Received:	2017/07/28
Date Tested:	2017/07/28
Date Completed:	2017/07/31
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/28
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170728

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.1	3.9	4	103

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

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

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	27262
Date of Issue:	2017/08/01
Date Received:	2017/07/31
Date Tested:	2017/07/31
Date Completed:	2017/08/01
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

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: 2017/07/31
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170731

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.3	5.4	2	101

**********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: July 2017

(A) Exceedance Report for Air Quality
(NIL in the reporting month)

(B) Exceedance Report for Construction Noise
(Two Action Level exceedance was recorded due to the documented complaints received in the reporting month)

(C) Exceedance Report for Water Quality
(Action and Limit Level for groundwater monitoring is under review with consideration of monitoring results obtained from November 2016 to June 2017.)

Sixteen (16) Action Level and Twenty (20) Limit Level exceedance in marine water quality monitoring but considered to be due to other external factors. Refer to next page for details)

(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)

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O – Lam Tin Tunnel

Design and Construction
- Investigation Report for Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 17 July 2017

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) ~~/ Turbidity (TURB) / Suspended Solids (SS)~~

Station(s)	Tide	Baseline Action Level	Baseline Limit Level	Baseline Action Level	Baseline Limit Level	Baseline Action Level	Baseline Limit Level	Dissolved Oxygen (mg/L)			Justification*	Validity (Yes/No)
		Surface and Middle		Intake Level		Bottom		Surface and Middle	Intake Level	Bottom		
G1	Mid-ebb	4.9	4.6	5.0	4.7	4.2	3.6	-	-	***3.6***	(1), (2), (4), (5)	No
G2								-	-	***3.3***	(1), (2), (4), (5)	No
G4								-	-	***2.9***	(1), (4), (5)	No
M2								-	-	***3.2***	(1), (4), (5)	No
M3								-	-	***3.0***	(1), (4), (5)	No
M4								-	-	***3.8***	(1), (2), (4), (5)	No
M5								-	-	***3.5***	(1), (2), (4), (5)	No
G1	Mid-flood							-	-	***3.7***	(1), (2), (4), (5)	No
G2								-	-	***3.4***	(1), (4), (5)	No
G3								-	-	***3.5***	(1), (4), (5)	No
G4								-	-	***3.9***	(1), (2), (4), (5)	No
M1								-	-	***3.7***	(1), (2), (4), (5)	No
M2								-	-	***3.3***	(1), (4), (5)	No
M3								-	-	***3.2***	(1), (3), (4), (5)	No
M4								-	-	***3.5***	(1), (4), (5)	No
M5								-	-	***3.4***	(1), (4), (5)	No

Note: For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
Intake Level: approximately mid-depth level
Bold Italic means Action Level exceedance
Bold Italic with underline means Limit Level exceedance

*Remarks (1) – No major marine construction activity was conducted (Please refer to Part B) and No pollution discharge from construction activity was observed.
(2) – Monitoring results were higher than that at the Control Station. (Please refer to Table II)
(3) – The exceeded results were within the ranges of baseline monitoring results. (Please refer to Table III)
(4) – The exceeded results were within the ranges of monitoring results under Marine Water Quality Monitoring Programme of EPD. (Please refer to Appendix A)
(5) – Other(s): Please specify – Heavy Rainfall and Thunderstorm were recorded before and during monitoring. Increased surface runoff and bed erosion near monitoring stations and subsequent high concentrations of suspended organic material in water column causing reduction in DO levels. Adverse water quality at Control Stations was observed. (see below the Daily Rainfall Distribution extracted from HKO) (Please refer to Appendix B)

Table II: Results at Control Stations for Reference – Dissolved Oxygen (DO)

Station	Tide	Measured Value (mg/L)	Remarks (based on tidal current information)
		Bottom	
C1	Mid-flood	3.6	Control Station for Mid-flood tide
C2	Mid-ebb	3.3	Control Station for Mid-ebb tide

Table III – Ranges of Baseline Water Quality Monitoring Results (August 2016) for Dissolved Oxygen (mg/L)

Station(s)	Mid-ebb		Mid-flood	
	Surface and Middle	Bottom	Surface and Middle	Bottom
G1	5.4 – 7.1	4.5 – 6.8	5.0 – 7.5	4.0 – 6.9
G2	5.3 – 7.1	4.6 – 6.5	4.8 – 7.4	3.8 – 6.5
G3	5.4 – 7.1	4.6 – 6.6	4.7 – 7.7	4.1 – 7.5
G4	5.4 – 7.1	4.1 – 7.0	4.7 – 7.2	4.1 – 6.1
M1	5.5 – 7.3	4.4 – 6.8	4.6 – 7.8	4.0 – 7.1
M2	5.1 – 6.8	4.0 – 6.4	4.8 – 7.1	3.4 – 6.5
M3	5.5 – 7.5	4.3 – 6.4	4.6 – 7.7	2.8 – 6.3
M4	5.2 – 7.1	4.8 – 6.6	4.6 – 7.5	4.2 – 7.0
M5	5.3 – 7.0	3.6 – 6.5	4.8 – 6.9	4.4 – 6.7
M6	Intake Level: 4.6 – 6.9		Intake Level: 4.3 – 7.4	

Part B – Summary of marine works activities under this Project:

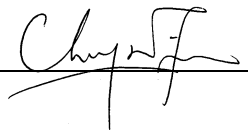
Contract No.	Marine Works Activities (17 July 2017)
NE/2015/01	No marine works activities. Tidying of C&D material/wastes was carried out on Marine Platform.
NE/2015/02	Lifting of rock fill material from Type 2 cofferdam (in the form of steel water tanks) to derrick barge. No dredging works were carried out.

Part C – Conclusion: No direct evidence that the exceedances were due to the Contract. Also, there is no monitoring exceedance in turbidity and suspended solids. Therefore the exceedances are considered due to the other external factors (such as adverse weather) rather than the contract works.

Part D – Recommendation: As the exceedances were not related to the contract works, no further action is required.

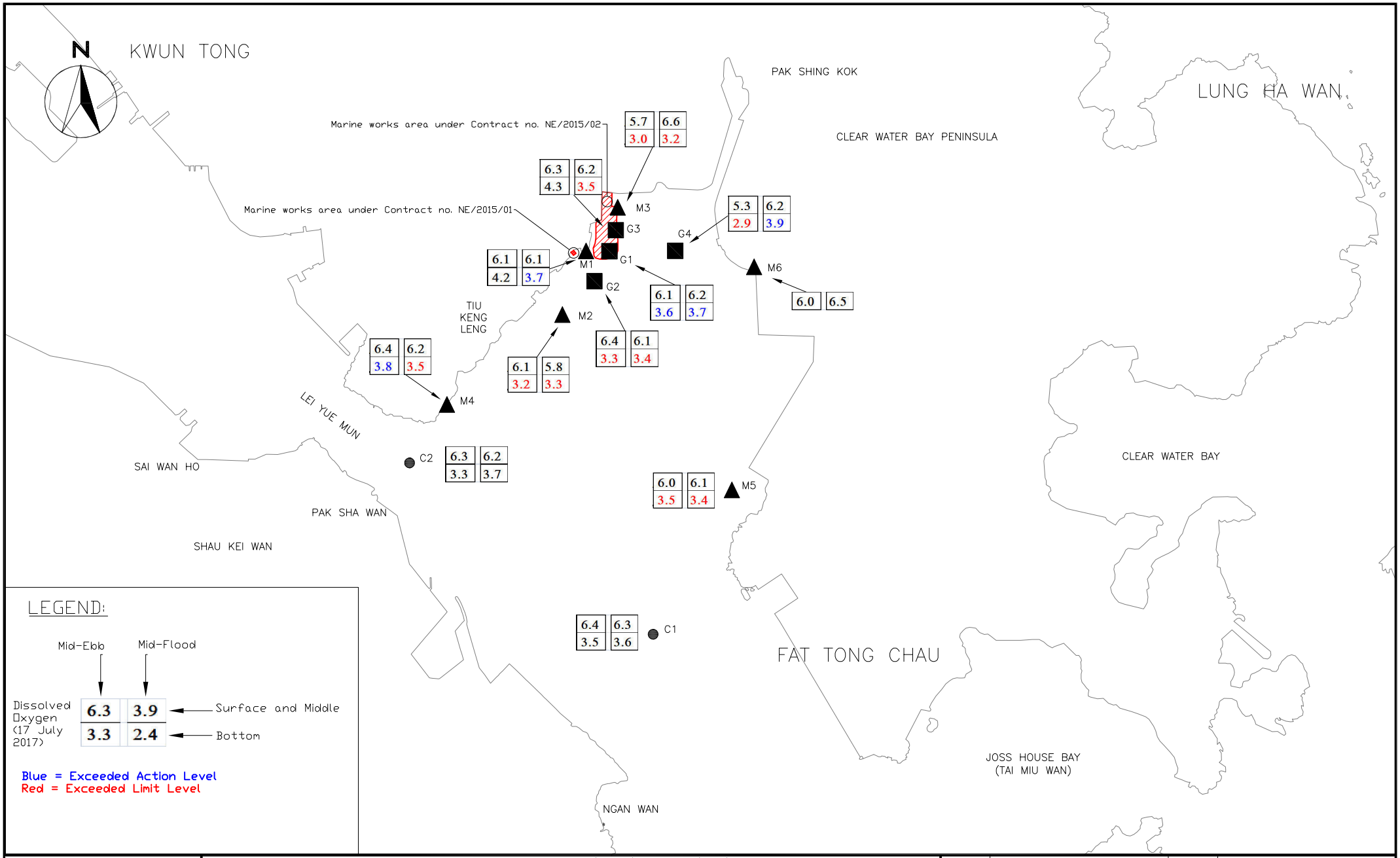
Reviewed by: Dr. Priscilla Choy

Title: Environmental Team Leader

Signature: 

Date: 20 July 2017

LOCATION PLAN



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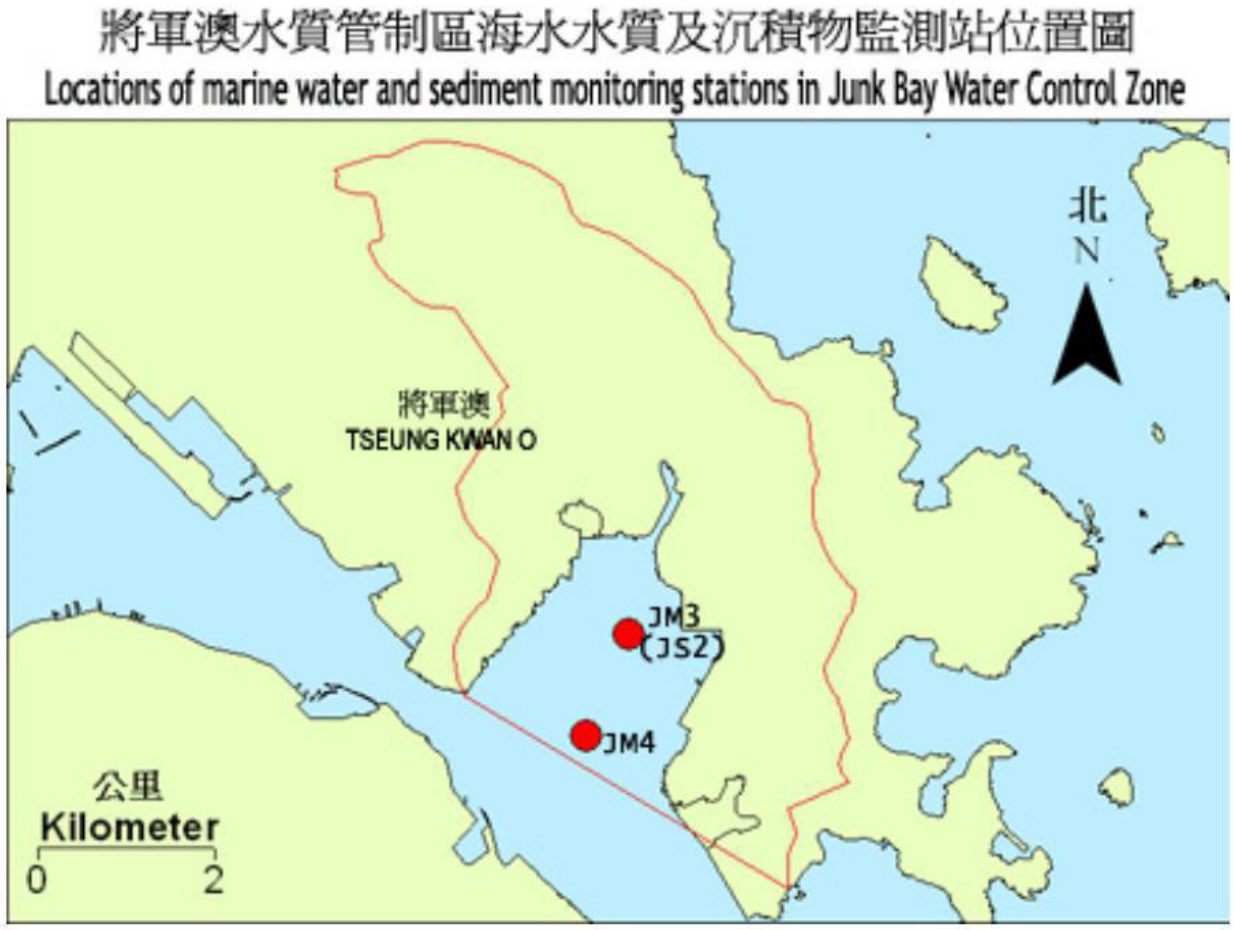
Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction
Locations of Water Quality Monitoring Stations (17 July 2017)

SCALE	N.T.S	DATE	JUL 2017
CHECK	JF	DRAWN	VW
PROJECT NO.	MA16034	FIGURE NO. 5	REV –

APPENDIX A
MARINE WATER QUALITY
MONITORING PROGRAMME OF EPD

Ranges of Dissolved Oxygen (mg/L) Monitoring Results under Marine Water Quality Monitoring Programme of EPD (every July of 2011 – 2015)

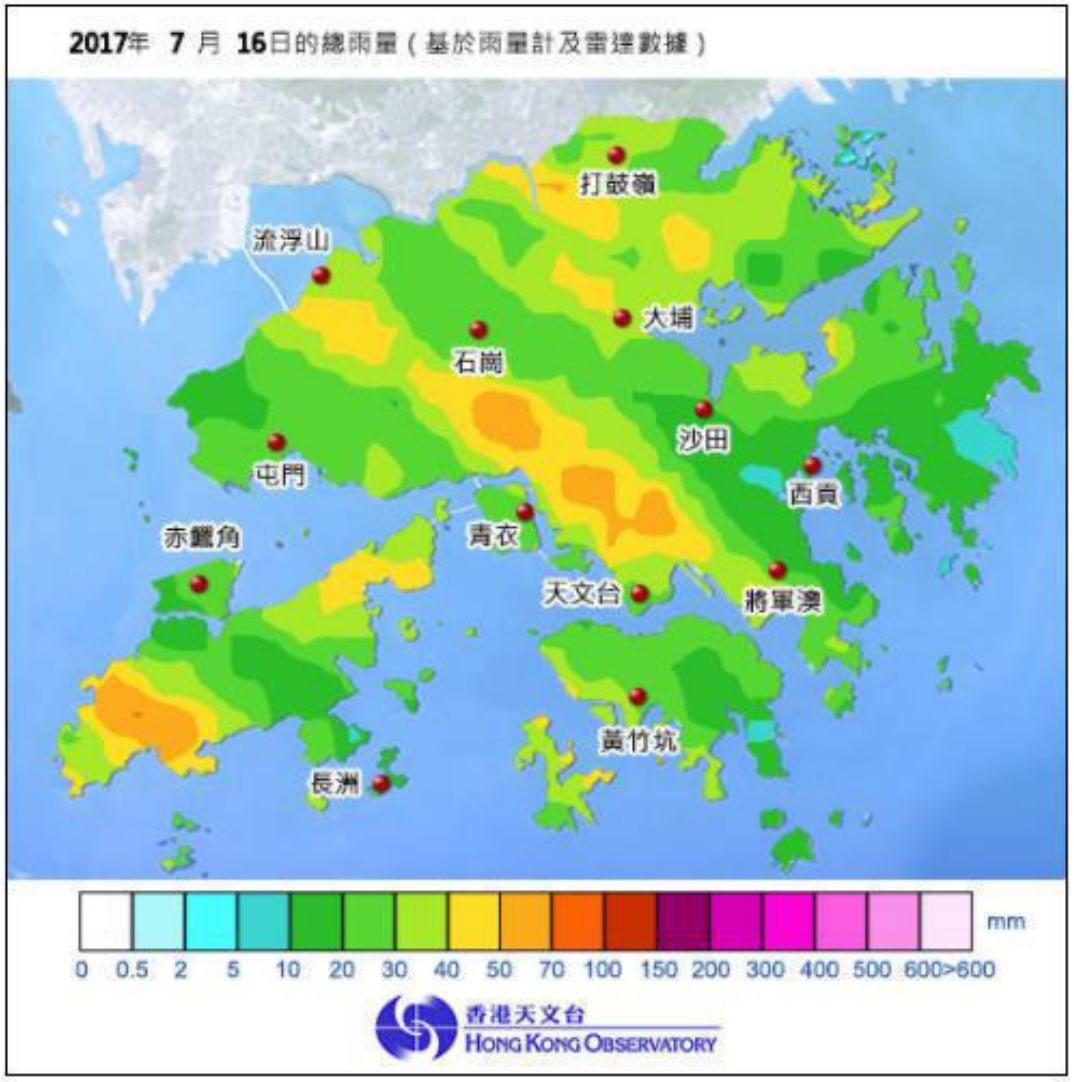


Station	Surface and Middle	Middle	Bottom
JM3 (JS2)	4.7 – 8.5	4.1 – 8.3	2.7 – 6.4
JM4	5.4 – 7.5	2.9 – 6.7	2.7 – 5.1

APPENDIX B
DAILY RAINFALL DISTRIBUTION
EXTRACTED FROM HKO

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel
Design and Construction - Investigation Report for Environmental Quality Limit Exceedances

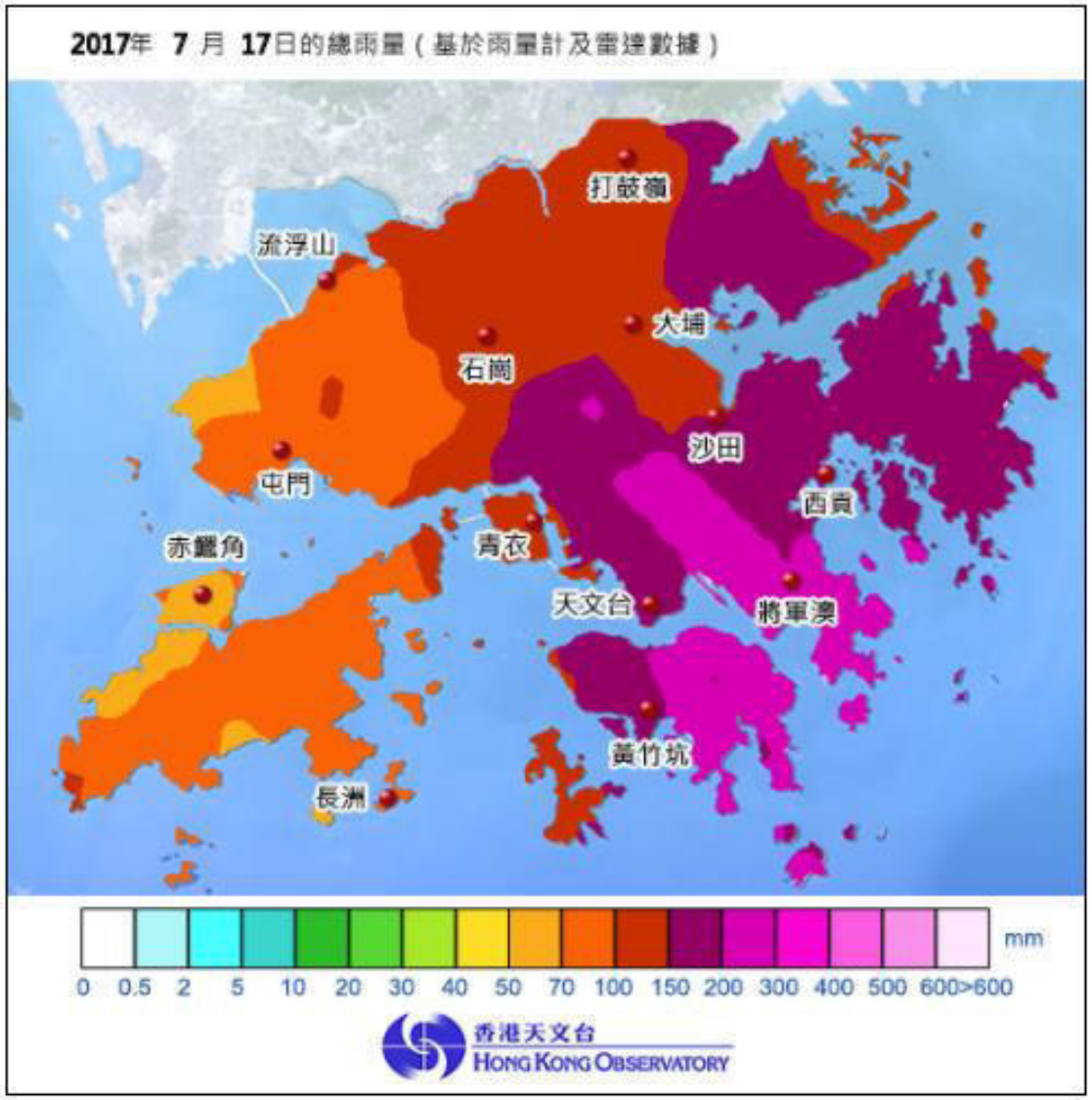
Daily Rainfall Distribution:



Rainfall recorded in Sai Kung region on **16 July 2017**			
Time	Rainfall (mm)	Amber Rainstorm Warning Signal	Thunderstorm Warning
23:45-00:45	-		
00:45-01:45	-		✔
01:45-02:45	0-2mm		✔
02:45-03:45	-		✔
03:45-04:45	0-1mm		✔
04:45-05:45	-		✔
05:45-06:45	0-2mm		✔
06:45-07:45	0-2mm		✔
07:45-08:45	0-7mm		✔
08:45-09:45	-		✔
09:45-10:45	0-13mm		✔
10:45-11:45	0-6mm		✔
11:45-12:45	0-1mm		✔
12:45-13:45	0-5mm		✔
13:45-14:45	0-12mm		✔
14:45-15:45	-		✔
15:45-16:45	-		✔
16:45-17:45	-		✔
17:45-18:45	-		✔
18:45-19:45	-		
19:45-20:45	-		✔
20:45-21:45	-		✔
21:45-22:45	-		✔
22:45-23:45	-		✔

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel
Design and Construction - Investigation Report for Environmental Quality Limit Exceedances

Daily Rainfall Distribution:



	Rainfall recorded in Sai Kung region on **17 July 2017**			
Time	Rainfall (mm)	Amber Rainstorm Warning Signal	Red Rainstorm Warning Signal	Thunderstorm warning
23:45-00:45	0-6mm			✔
00:45-01:45	-			✔
01:45-02:45	0-1mm			
02:45-03:45	-			
03:45-04:45	-			✔
04:45-05:45	0-3mm			✔
05:45-06:45	0-1mm			✔
06:45-07:45	0-9mm			✔
07:45-08:45	1-7mm			✔
08:45-09:45	0-1mm			✔
09:45-10:45	1-11mm			✔
10:45-11:45	0-9mm			✔
11:45-12:45	-			✔
12:45-13:45	1-7mm			✔
13:45-14:45	5-21mm			✔
14:45-15:45	15-54mm	✔		✔
15:45-16:45	18-50mm	✔		✔
16:45-17:45	6-11mm	✔		✔
17:45-18:45	20-30mm	✔		✔
18:45-19:45	6-20mm	✔		✔
19:45-20:45	12-57mm	✔		✔
20:45-21:45	2-13mm		✔	✔
21:45-22:45	3-22mm		✔	✔
22:45-23:45	-	✔		✔

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O – Lam Tin Tunnel

Design and Construction
- Investigation Report for Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 19 July 2017

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) ~~/ Turbidity (TURB) / Suspended Solids (SS)~~

Station(s)	Tide	Baseline Action Level	Baseline Limit Level	Baseline Action Level	Baseline Limit Level	Baseline Action Level	Baseline Limit Level	Dissolved Oxygen (mg/L)			Justification*	Validity (Yes/No)
		Surface and Middle		Intake Level		Bottom		Surface and Middle	Intake Level	Bottom		
G1	Mid-ebb	4.9	4.6	5.0	4.7	4.2	3.6	-	-	***4.0***	(1), (2), (4), (5)	No
G2								-	-	***3.5***	(1), (2), (4), (5)	No
G3								***4.8***	-	***3.5***	(1), (2), (4), (5)	No
G4								-	-	***2.5***	(1), (2), (4), (5)	No
M2								-	-	***3.4***	(1), (2), (4), (5)	No
M3								***4.7***	-	***3.2***	(1), (2), (4), (5)	No
M4								***4.8***	-	***3.6***	(1), (2), (4), (5)	No
M5								***4.4***	-	***2.8***	(1), (2), (5)	No
M6								-	***4.9***	-	(1), (2), (3), (4), (5)	No
G2	Mid-flood							-	-	***3.9***	(1), (2), (3), (4), (5)	No
G3								-	-	***3.3***	(1), (2), (4), (5)	No
M1								***4.8***	-	-	(1), (3), (4), (5)	No
M2								-	-	***3.8***	(1), (2), (3), (4), (5)	No
M3								-	-	***3.4***	(1), (2), (3), (4), (5)	No
M5								-	-	***4.0***	(1), (2), (4), (5)	No
M6								-	***4.9***	-	(1), (2), (3), (4), (5)	No

Note: For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
Intake Level: approximately mid-depth level
Bold Italic means Action Level exceedance
Bold Italic with underline means Limit Level exceedance

*Remarks (1) – No major marine construction activity was conducted (Please refer to Part B) and No pollution discharge from construction activity was observed.
(2) – Monitoring results were higher than that at the Control Station. (Please refer to Table II)
(3) – The exceeded results were within the ranges of baseline monitoring results. (Please refer to Table III)
(4) – The exceeded results were within the ranges of monitoring results under Marine Water Quality Monitoring Programme of EPD. (Please refer to Appendix A)
(5) – Other(s): Please specify – Heavy Rainfall and Thunderstorm were recorded before and during monitoring. Increased surface runoff and bed erosion near monitoring stations and subsequent high concentrations of suspended organic material in water column causing reduction in DO levels. Adverse water quality at Control Stations was observed. (see below the Daily Rainfall Distribution extracted from HKO) (Please refer to Appendix B)

Table II: Results at Control Stations for Reference – Dissolved Oxygen (DO)

Station	Tide	Measured Value (mg/L)			Remarks (based on tidal current information)
		Surface and Middle	Mid-depth	Bottom	
C1	Mid-flood	5.7	4.2	2.7	Control Station for Mid-flood tide
C2	Mid-ebb	3.9	2.3	2.4	Control Station for Mid-ebb tide

Table III – Ranges of Baseline Water Quality Monitoring Results (August 2016) for Dissolved Oxygen (mg/L)

Station(s)	Mid-ebb		Mid-flood	
	Surface and Middle	Bottom	Surface and Middle	Bottom
G1	5.4 – 7.1	4.5 – 6.8	5.0 – 7.5	4.0 – 6.9
G2	5.3 – 7.1	4.6 – 6.5	4.8 – 7.4	3.8 – 6.5
G3	5.4 – 7.1	4.6 – 6.6	4.7 – 7.7	4.1 – 7.5
G4	5.4 – 7.1	4.1 – 7.0	4.7 – 7.2	4.1 – 6.1
M1	5.5 – 7.3	4.4 – 6.8	4.6 – 7.8	4.0 – 7.1
M2	5.1 – 6.8	4.0 – 6.4	4.8 – 7.1	3.4 – 6.5
M3	5.5 – 7.5	4.3 – 6.4	4.6 – 7.7	2.8 – 6.3
M4	5.2 – 7.1	4.8 – 6.6	4.6 – 7.5	4.2 – 7.0
M5	5.3 – 7.0	3.6 – 6.5	4.8 – 6.9	4.4 – 6.7
M6	Intake Level: 4.6 – 6.9		Intake Level: 4.3 – 7.4	

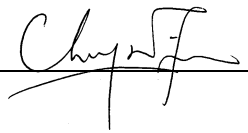
Part B – Summary of marine works activities under this Project:

Contract No.	Marine Works Activities (19 July 2017)
NE/2015/01	No marine works activities. Tidying of C&D material/wastes was carried out on Marine Platform.
NE/2015/02	Lifting of rock fill material from Type 2 cofferdam (in the form of steel water tanks) to derrick barge. No dredging works were carried out.

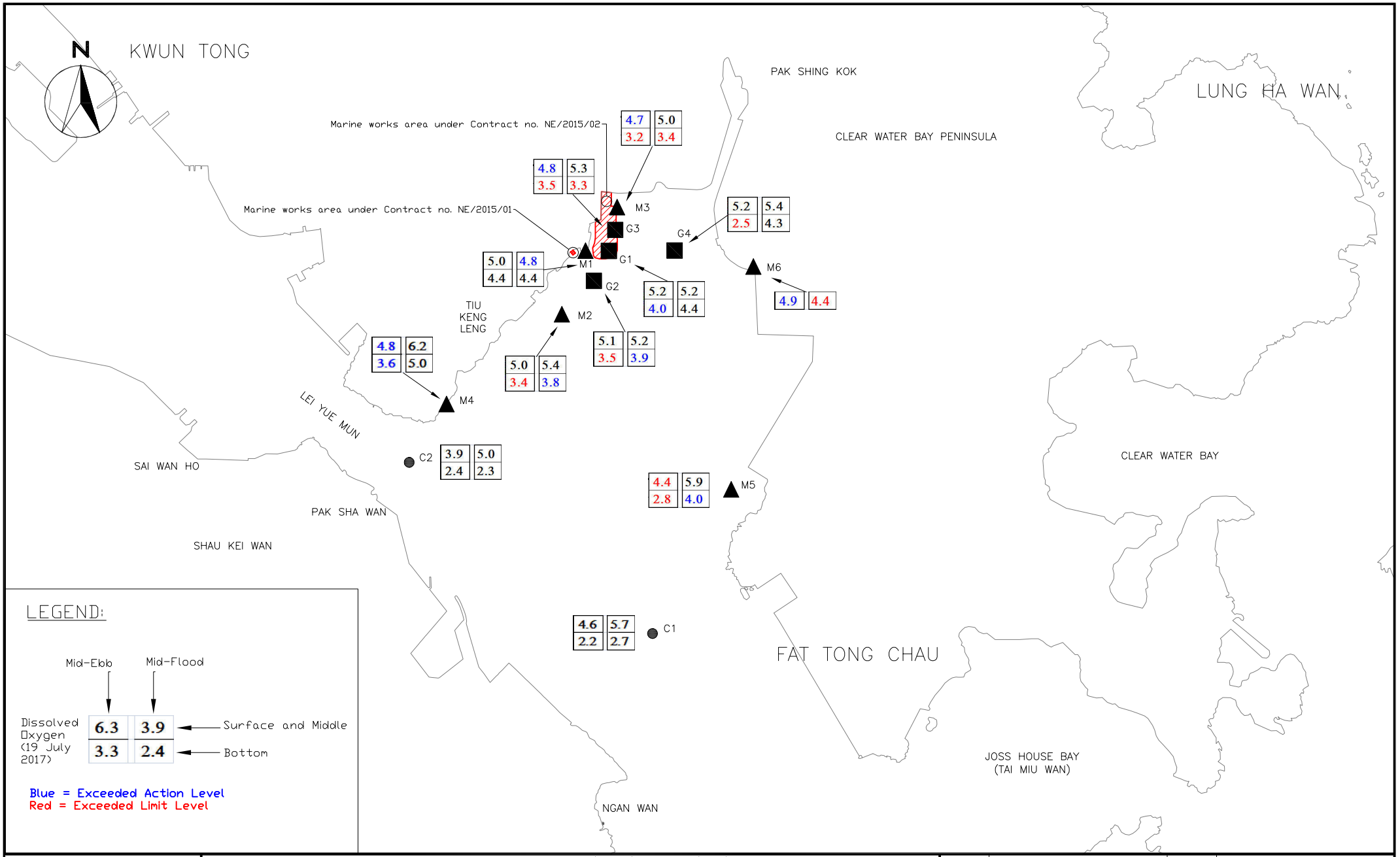
Part C – Conclusion: No direct evidence that the exceedances were due to the Contract. Also, there is no monitoring exceedance in turbidity and suspended solids. Therefore the exceedances are considered due to the other external factors (such as adverse weather) rather than the contract works.

Part D – Recommendation: As the exceedances were not related to the contract works, no further action is required.

Reviewed by: Dr. Priscilla Choy Title: Environmental Team Leader

Signature:  Date: 20 July 2017

LOCATION PLAN



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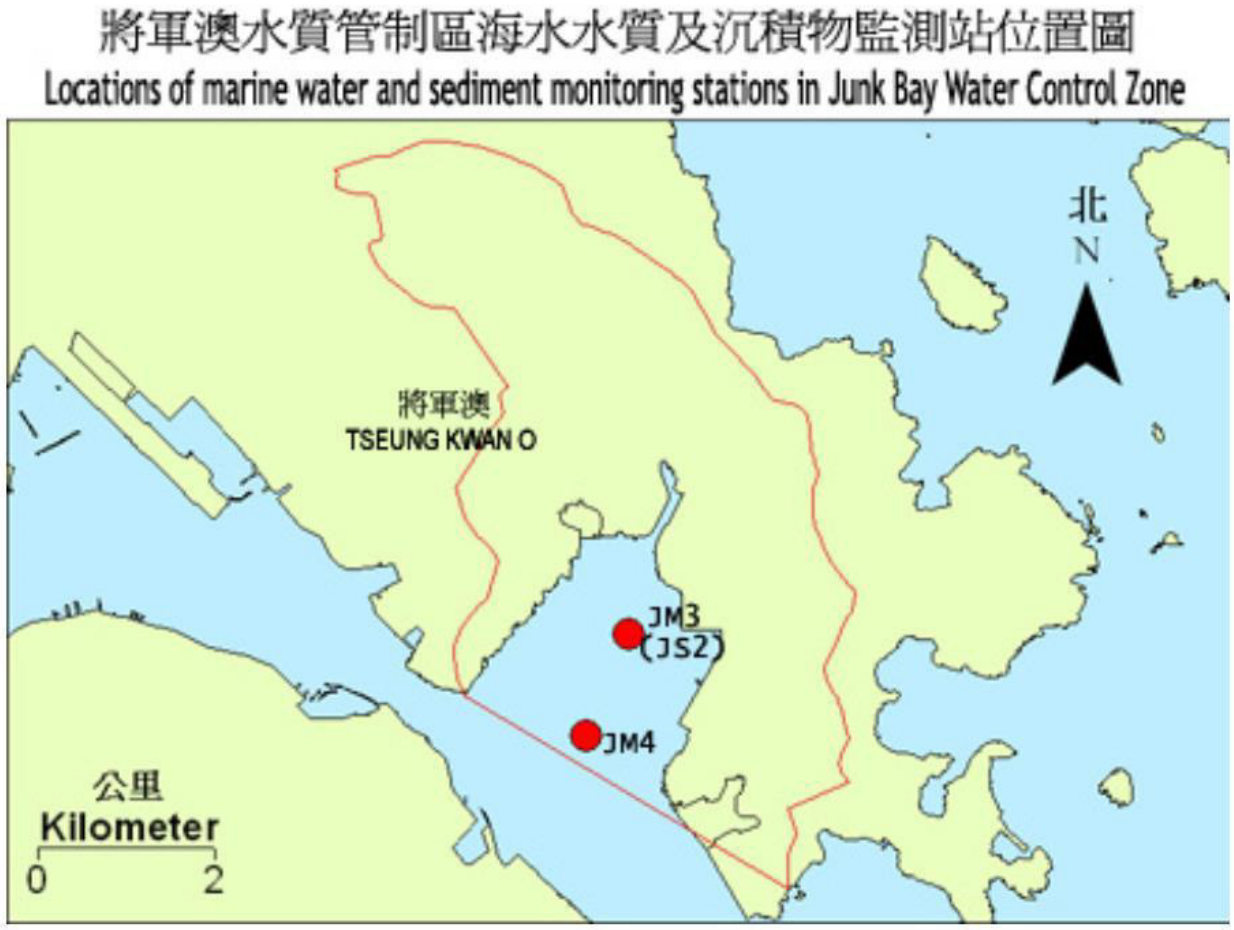
Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction
Locations of Water Quality Monitoring Stations (19 July 2017)

SCALE	N.T.S	DATE	JUL 2017
CHECK	JF	DRAWN	VW
PROJECT NO.	MA16034	FIGURE NO. 5	REV –

APPENDIX A
MARINE WATER QUALITY
MONITORING PROGRAMME OF EPD

Ranges of Dissolved Oxygen (mg/L) Monitoring Results under Marine Water Quality Monitoring Programme of EPD (every July of 2011 – 2015)

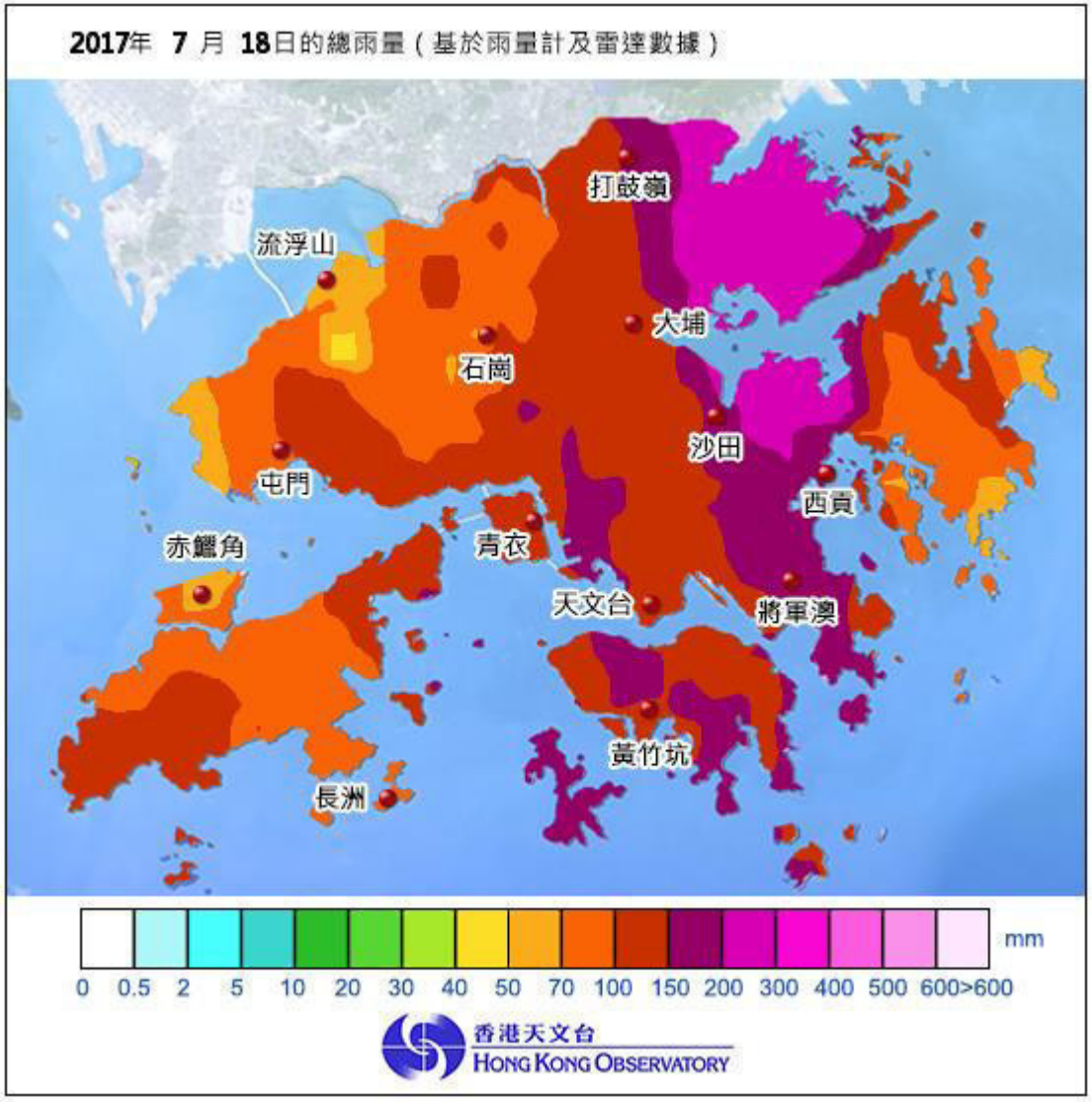


Station	Surface and Middle	Middle	Bottom
JM3 (JS2)	4.7 – 8.5	4.1 – 8.3	2.7 – 6.4
JM4	5.4 – 7.5	2.9 – 6.7	2.7 – 5.1

APPENDIX B
DAILY RAINFALL DISTRIBUTION
EXTRACTED FROM HKO

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel
Design and Construction - Investigation Report for Environmental Quality Limit Exceedances

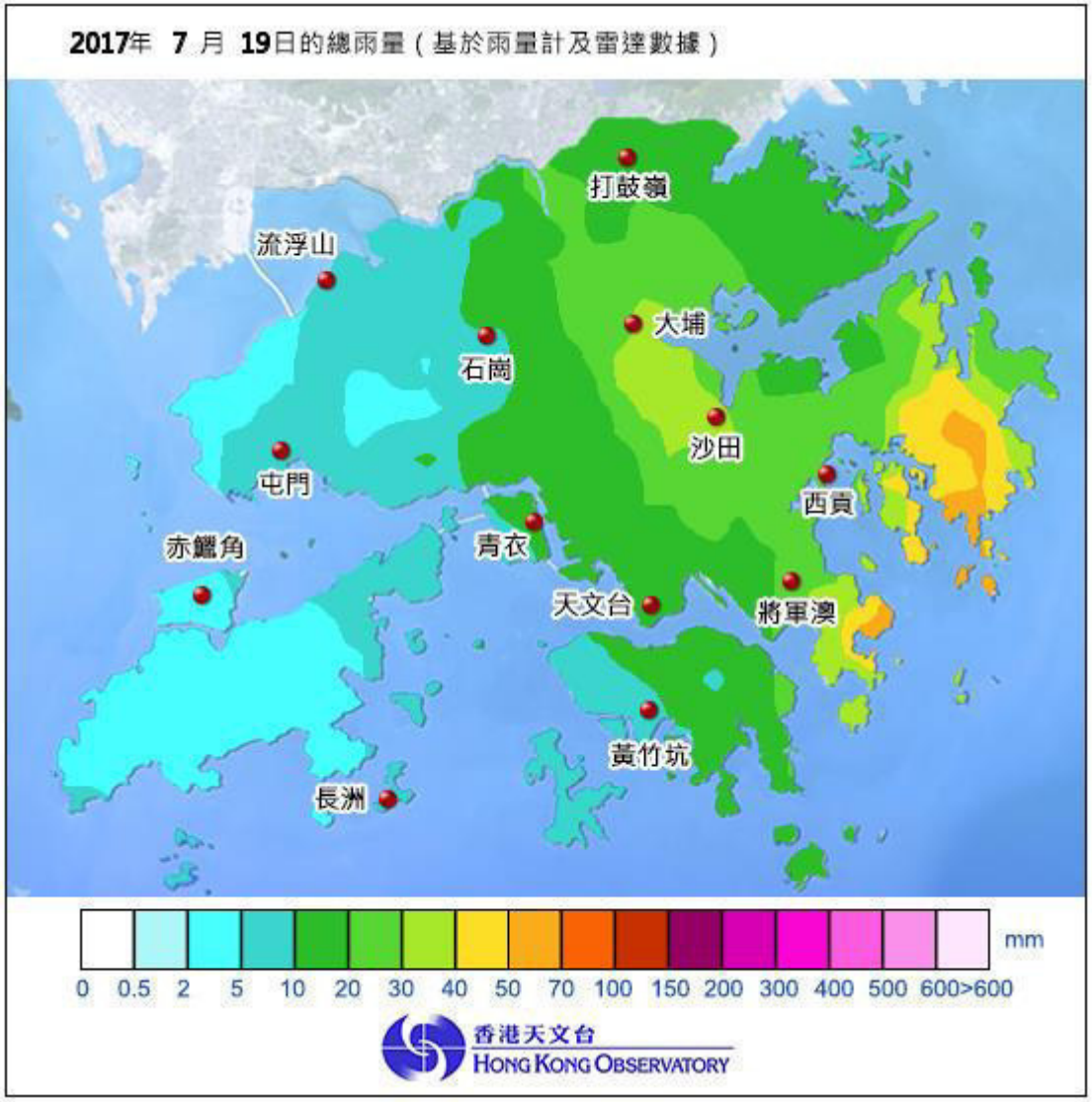
Daily Rainfall Distribution:



Rainfall recorded in Sai Kung region on **18 July 2017**			
Time	Rainfall (mm)	Amber Rainstorm Warning Signal	Thunderstorm Warning
23:45-00:45	0-5mm		✔
00:45-01:45	0-1mm		✔
01:45-02:45	0-6mm		✔
02:45-03:45	-		
03:45-04:45	-		
04:45-05:45	0-2mm		
05:45-06:45	0-6mm		✔
06:45-07:45	8-34mm		✔
07:45-08:45	0-64mm		✔
08:45-09:45	0-35mm	✔	✔
09:45-10:45	3-21mm	✔	✔
10:45-11:45	0-5mm	✔	✔
11:45-12:45	-		✔
12:45-13:45	-		
13:45-14:45	-		✔
14:45-15:45	-		✔
15:45-16:45	-	✔	✔
16:45-17:45	0-36mm		
17:45-18:45	9-40mm	✔	✔
18:45-19:45	6-27mm	✔	✔
19:45-20:45	2-5mm	✔	✔
20:45-21:45	1-2mm		✔
21:45-22:45	0-1mm		✔
22:45-23:45	0-3mm	✔	✔

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel
Design and Construction - Investigation Report for Environmental Quality Limit Exceedances

Daily Rainfall Distribution:



Rainfall recorded in Sai Kung region on **19 July 2017**

Time	Rainfall (mm)	Amber Rainstorm Warning Signal	Thunderstorm warning
23:45-00:45	9-41mm	✔	✔
00:45-01:45	3-25mm	✔	✔
01:45-02:45	1-2mm		✔
02:45-03:45	-		
03:45-04:45	-		
04:45-05:45	-		
05:45-06:45	-		
06:45-07:45	-		
07:45-08:45	-		
08:45-09:45	-		
09:45-10:45	-		
10:45-11:45	-		
11:45-12:45	-		
12:45-13:45	-		
13:45-14:45	-		
14:45-15:45	-		
15:45-16:45	-		
16:45-17:45	-		
17:45-18:45	-		
18:45-19:45	-		
19:45-20:45	-		
20:45-21:45	-		
21:45-22:45	-		
22:45-23:45	-		

APPENDIX L
SITE AUDIT SUMMARY

Appendix L - Site Audit Summary (July 2017)

Contract No. NE/2015/01

Tseung Kwan O - Lam Tin Tunnel - Main Tunnel and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
To maintain the manhole near Cha Kwo Ling site entrance and avoid any untreated sewage diverted into public drains or outside the site area	28 June 2017	✓	Improved/rectified on 5 July 2017
General refuse next to silt curtain at TKO site should be properly cleared.	12 July 2017	✗	Item remarked on 19 July 2017
	19 July 2017	✗	Item remarked on 26 July 2017
	26 July 2017	#	Follow up action will be reported in next reporting month
Construction material observed near silt curtain in TKO site. The Contractor is reminded to provide silt curtain in accordance with the silt curtain deployment plan.	19 July 2017	✗	Item remarked on 26 July 2017
	26 July 2017	#	Follow up action will be reported in next reporting month
Noise			
--	--	--	--
Landscape and Visual			
To provide proper tree protection zone for retain tree in near Cha Kwo Ling barging point in Portion 1a.	19 July 2017	✓	Improved/rectified on 26 July 2017
Air Quality			
To provide water-spraying regularly to unpaved slope above the BMCPC footpath at TKO site.	5 July 2017	✓	Improved/rectified on 12 July 2017
Top and three side enclosure should be provided to cement grouting machinery for soil nail works in Cha Kwo Ling Portion 2 to avoid dust generation.	19 July 2017	✓	Improved/rectified on 26 July 2017
To provide water spray to loading and unloading works in Portion 2a.	19 July 2017	✓	Improved/rectified on 26 July 2017
To provide NRMM Label to generator for soil nail works in Cha Kwo Ling Portion 2.	19 July 2017	✓	Improved/rectified on 26 July 2017
Waste / Chemical Management			
To remove oil stain on unpaved ground near soil nail works at BMCPC as chemical waste at TKO site.	5 July 2017	✓	Improved/rectified on 12 July 2017
To place oil container in the drip tray near soil nail works at CKL site.	5 July 2017	✓	Improved/rectified on 12 July 2017
To provide drip tray to chemical container near Cha Kwo Ling barging point in Portion 1a.	19 July 2017	✓	Improved/rectified on 26 July 2017
Drip tray should be provided to chemical containers near temporary steel bridge in Portion 1a to prevent leakage.	26 July 2017	#	Follow up action will be reported in next reporting month
Housekeeping on temporary steel bridge at Portion 1a should be enhanced and accumulation of waste should be avoided.	26 July 2017	#	Follow up action will be reported in next reporting month
Impact on Cultural Heritage			
--	--	--	--
Permits / Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month

Appendix L - Site Audit Summary (July 2017)

Contract No. NE/2015/02
Tseung Kwan O - Lam Tin Tunnel - Road P2 and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
To clear the surface water regularly near site entrance of in Portion 5. The contractor was reminded to provide pumps to divert the accumulated surface water.	26 July 2017	#	Follow up action will be reported in next reporting month
Noise			
Sheetpiling works in Portion 8 observed without noise barrier. The Contractor is reminded to provide noise mitigation measures in accordance with NMP.	28 June 2017	✗	Item remarked on 6 July 2017
Noise barrier should be placed for drill rig at Portion 6 and Ocean Shores to minimize the noise nuisance caused to the nearby residents.	6 July 2017	✓	Improved/rectified on 11 July 2017
To provide proper maintenance to the air compressor in Portion 5 near sheet piling works. The door of air compressor was observed broken while operating.	26 July 2017	#	Follow up action will be reported in next reporting month
Landscape and Visual			
--	--	--	--
Air Quality			
--	--	--	--
Waste / Chemical Management			
To provide drip tray for the chemical containers in H-beam storage area at Portion 6.	20 July 2017	✓	Improved/rectified on 26 July 2017
To remove general refuse regularly near site entrances of Portion 5 and 6. Waste collection points were observed not enough.	26 July 2017	#	Follow up action will be reported in next reporting month
Impact on Cultural Heritage			
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Permits / Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month

Appendix L - Site Audit Summary (July 2017)

Contract No. NE/2015/03
Tseung Kwan O - Lam Tin Tunnel - Northern Footbridge

Items	Date	Status*	Follow up Action
Water Quality			
Clear sand and silt accumulation in U-channel in East Pier	6 July 2017	✓	Improved/rectified on 10 July 2017
Clear litter and fallen leaves near U-channel in East Pier	6 July 2017	✓	Improved/rectified on 10 July 2017
Noise			
--	--	--	--
Landscape and Visual			
To set up proper tree protection area for retained trees and remove the construction waste.	8 June 2017	✗	Item remarked on 12 June 2017
	12 June 2017	✗	Item remarked on 22 June 2017
	22 June 2017	✗	Item remarked on 28 June 2017
	28 June 2017	✗	Item remarked on 10 July 2017
	10 July 2017	#	Follow up action will be reported in next reporting month
Air Quality			
To cover the bag of cement near Piling Rig in West Pier	10 July 2017	✓	Improved/rectified on 20 July 2017
Waste / Chemical Management			
Remove Silty water in drip tray of generator-set (generator no. GA781) in West Pier to avoid chemical overflow	28 June 2017	✗	Item remarked on 6 July 2017
	6 July 2017	✗	Item remarked on 10 July 2017
	10 July 2017	✓	Improved/rectified on 20 July 2017
Oil observed on paved ground near Piling Rig in west pier. The contractor was reminded to keep cleaning up properly and regularly.	20 July 2017	✓	Improved/rectified on 27 July 2017
Impact on Cultural Heritage			
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Permits / Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month

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	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.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling	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;	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	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	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.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 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	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily;	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;	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;	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	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.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	1. 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;	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.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the 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)	• 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 *in-situ* 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.	• 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.	• Discuss with IEC on the proposed mitigation measures; • Make agreement on the mitigation proposal.	• 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	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures;	• Discuss with IEC on the proposed mitigation measures; • Make agreement on the mitigation proposal;	• 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)	• 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.	• Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Assess the effectiveness of the implemented mitigation measures.	• 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)	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;	• Discuss with IEC, ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods;	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
	• If exceedance is found to be caused by the reclamation activities, repeat *in-situ* 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.	• Assess the effectiveness of the implemented mitigation measures.	• Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures.	• 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	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;	• Discuss with IC(E), ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods;	• 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)	• 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.	• Assess the effectiveness of the implemented mitigation measures.	• 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.	• 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%	• Ventilate to restore oxygen to >19%
	<18%	• Stop works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%
Methane	>10% LEL (i.e. > 0.5% by volume)	• Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. > 1% by volume)	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore methane to <10% LEL
Carbon Dioxide	>0.5%	• Ventilate to restore carbon dioxide to < 0.5%
	>1.5%	• 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	● 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	● 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	● 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.

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)
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: - 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) *(2)

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
	applied to aggregate fines.						
	- 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.						N/A
	- 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.						*(3)
	- 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.						^

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 • 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	*(4)
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	*(5)

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	Good Site Practice - 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	*(6) ^ ^ ^ ^ ^
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

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	Other good site practices should be undertaken during filling operations include: - 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)	^ #(7) ^ ^ ^ ^

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
	- 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.						^ ^ ^ ^
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	To minimize water quality impact arising from the dredging and filling works for Reclamation for Road P2, the following mitigation measures shall be implemented: - 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	^ ^ N/A

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
	quality inside the enclosed barrier is comparable to the ambient or baseline levels prior to the removal of the fully enclosed barrier. - 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).						^
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	#(8)
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	* (9)

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	^
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	^

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	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 run-off 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	*(10)

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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	^

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	^
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

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
		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	*(11)/ #(11)
S5.8.46	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: - 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	*(12) ^ ^
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	***Measures to Minimize Disturbance*** - 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	***Standard Good Site Practice*** - 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	***Measure to Minimize Groundwater Inflow*** - 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	N/A N/A
S6.8.8	***Measure to Minimize Impact on Corals*** <u>Coral translocation</u> - It is recommended to translocate the affected coral colonies, except the locally common *Oulastrea crispata*, 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	^ ^ ^ ^

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	exercises should be conducted by experienced marine ecologist(s) who is/are approved by AFCD prior to commencement of coral translocation. <u>Post translocation Monitoring</u> - 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.						^ ^
S6.8.9 S6.8.10	***Measure to Control Water Quality Impact*** - 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.	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	Design Team, contractor	Marine and landbased works area	Construction phase	WQO	N/A ^ ^ ^

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S6.8.11	***Compensation for Vegetation Loss*** - 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	***Measure to Control Water Quality Impact*** - 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	***Good Site Practices and Waste Reduction Measures*** - 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)	^ ^ ^ ^ ^

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
	interceptors.						
S8.6.4	***Good Site Practices and Waste Reduction Measures (con't)*** - 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	***Good Site Practices and Waste Reduction Measures (con't)*** 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.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^
S8.6.6	***Good Site Practices and Waste Reduction Measures (con't)*** - 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	***Storage, Collection and Transportation of Waste*** Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: - 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	***Storage, Collection and Transportation of Waste (con't)*** - 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		^ ^ ^ ^ ^ ^
S8.6.9	***Storage, Collection and Transportation of Waste (con't)*** - 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	^

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
	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	***Sorting of C&D Materials*** - 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	***Sediments*** - 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

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
	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. - 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	***Sediments (con't)*** - 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

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
	Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. - 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	***Sediments (con't)*** - 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	***Sediments (con't)*** - 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.	

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
S8.6.28	- The excavated sediments is expected to be loaded onto the barge and transported to the designated disposal sites allocated by the MFC. The excaveted 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	N/A N/A N/A N/A

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
	- 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.						N/A N/A
S8.6.26	***Chemical Wastes.*** - 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	#(13)

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
	- 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 - 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 - 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	^

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	# (14)
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	^

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
				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

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
		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	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: Methane 0-100% LEL and 0100% v/v Carbon dioxide 0-100% Oxygen 0-21%	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	***Safety Measures*** - 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.	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	^

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
	- 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	^ ^ ^ ^ ^ ^

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
	- 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						^

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
	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). - 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.						^
S11.5.26 - S11.5.31	***Monitoring*** ● 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: - 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	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	^ ^

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
	- periodically throughout the working day whilst workers are in the excavation. ● For excavations **between 300mm and 1m deep**, measurements should be carried out: - 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.						^ ^ ^ ^
S11.5.32	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.	construction stage within the Sai Tso Wan 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	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 TKO Portal	Water spraying should be provided more frequently to unpaved area above EMCPC footpath at TKO site to suppress dust generation
	S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: - 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 TKO Portal	To provide water spray to loading and unloading works in Portion 2a for dust suppression.
* (2)	S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: - 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 applied to aggregate fines.	NE/2015/01	Construction of Cha Kwo Ling Barging Point	Top and three side enclosure should be provided to cement grouting machinery for soil nail works in Cha Kwo Ling Portion 2 to avoid dust generation.
* (3)	S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: - 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	NE/2015/03	Construction of Northern Footbridge	To cover the bag of cement near Piling Rig in West Pier to avoide dust generation.

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
		sheltered on the top and the 3 sides.			
* (4)	/	Valid No-road Mobile Machinery (NRMM) labels should be provided to regulated machines	NE/2015/01	Construction of Cha Kwo Ling Barging Point	To provide NRMM Label to generatior for soil nail works in Cha Kwo Ling Portion 2 to Reduce air pollution emission from construction vehicles and plants.
Noise Impact (Construction Phase)					
*(5)	Noise Mitigation Plan	Use of Temporary Noise Barriers or Full Enclosure for PME according to the approved Noise Mitigation Plan	NE/2015/02	Construction of Road P2	Noise barrier should be placed for drill rig at Portion 6 and Ocean Shores to minimize the noise nuisance caused to the nearby resident.
#(6)	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/2015/02	Construction of Road P2	To provide proper maintenance to the air compressor in Portion 5 near sheetpiling works. The door of air compressor was observed broken while operating.
Water Quality Impact (Construction Phase)					
#(7)	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	Construction material observed near silt curtain in TKO site. The Contractor is reminded to provide silt tain in accordance with the silt curtain deployment plan.
#(8)	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.	NE/2015/02	Construction of TKO Portal	To clear the surface water regularly near site entrance in Portion 5. The contractor was reminded to provide pumps to divert the accumulated surface water.
#(9)	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	NE/2015/01	Construction of TKO Portal	General refuse next to silt curtain at TKO site should be properly cleared.
*(9)			NE/2015/03	Construction of Northern Footbridge	Clear sand and silt accumulation in U-Channel in East Pier.
			NE/2015/03	Construction of Northern	Clear litter and fallen leaves near U-Channel in East Pier.

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
		with the standards for effluents discharged into the corresponding WCZ under the TM-DSS.		Footbridge	
*(10)	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/2015/01	Construction of TKO Portal	To maintain the manhole near Cha Kwo Ling site entrance and avoid any untreated sewage diverted into public drains or outside the site area.
*(11)	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.	NE/2015/01	Construction of Cha Kwo Ling Barging Point	To place oil container in the drip tray near soil nail works at CKL site and provide drip tray to chemical container near Cha Kwo Ling barging point in Portion 1a.
			NE/2015/02	Construction of Road P2	To provide drip tray for the chemical containers in H-beam storage area at Portion 6.
			NE/2015/03	Construction of Northern Footbridge	Remove Silty water in drip tray of generator-set (Generator no. GA781) in West Pier to avoid chemical overflow
#(11)			NE/2015/01	Construction of TKO Portal	Drip tray should be provided to chemical containers near temporary steel bridge in Portion 1a to prevent leakage.
*(12)	S 5.8.46	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: - suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;	NE/2015/01	Construction of Lam Tin Interchange	To remove oil stain on unpaved ground near soil nail works at BMCPC as chemical waste at TKO site.
			NE/2015/03	Construction of Northern Footbridge	Oil observed on paved ground near Piling Rig in west pier. The contractor was reminded to keep cleaning up properly and regularly.
#(13)	S8.6.27	***General Refuse*** General refuse should be stored in enclosed bins or compaction units separate	NE/2015/01	Construction of TKO Portal	Housekeeping on temporary steel bridge at Portion 1a should be enhanced and accumulation of waste should be

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
		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.			avoided.
			NE/2015/02	Construction of Road P2	To remove general refuse regularly near site entrances of Portion 5 and 6. Waste Ccollection points were observed not enough.
Landscape and Visual Impact (Construction Phase)					
*(14)	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 TKO Portal	To provide proper tree protection zone for retain tree in near Cha Kwo Ling barging point in Portion 1a.

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	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
1	7th December 2016	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	Air Quality & Noise	The complainant complained about the construction noise and dust near Yau Lai Estate. (EPD Reference No.: K15/RE/00032001-16)	Y	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. 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. 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.	Closed
2	9th December 2016	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Block A Nga Lai House	Noise	The complainant complained about the construction noise near Yau Lai Estate. (EPD Reference No.: K15/RE/00032317-16)	Y		Closed
3	9th December 2016	Not Specified / Construction of Road P2	Sai Kung District Council Member Mr. Chan Kai Wai	Air Quality & Noise	The complainant complained about the noise nuisance during transportation of construction materials on haul road and dust generation during construction activities.	Y	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. 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.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
4	20th December 2016	Not Specified / Construction of Road P2	Resident of Ocean Shore	Noise	The complainant complained about the lighting and noise nuisance on construction vessels moored near Ocean Shores during night time.	Y	The Contractors had taken the initiative to provide additional noise 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 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. 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
5	22nd December 2016	21 Dec 2016 at night / Construction of TKO portal	Resident of Block 3, Ocean Shores	Noise	The complainant concerned the noise generated by the construction works at hillside near Block 3 of Ocean Shores in daytime.	Y		Closed
6	22nd December 2016	Not specified / Construction of TKO portal	Public	Noise	The complainant complained about the noise generated by the construction works at hillside in daytime.	Y		Closed
7	22nd December 2016	Not specified / Construction of Road P2	Resident from Ocean Shore	Noise	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.	Y		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
8	22nd December 2016	Not specified / Construction of Road P2 and TKO portal	Resident from Ocean Shore	Noise	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.	Y		Closed
9	16th December 2016	Not Specified / near Ocean Shores	DC member	Noise & (Light)	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.	Y	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. 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 purpose was observed from the construction vessel and anchors. The Contractor was recommended to continuously implement the following visual impact mitigation measures: • 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	Closed
10	17th January 2017	5 January 2017 / near Ocean Shores	DC member	Noise & (Light)	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.	Y		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
11	23rd December 2016	Not Specified / near Cha Kwo Ling Tsuen	Cha Kwo Ling Tsuen	Water	The complainant complaint about the Soil/muddy water from construction site near Cha Kwo Ling Tsuen. (EPD Reference No.: K15/RE/00033951-16)	N	No construction works were being carried out on 23rd 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. For complaint of muddy water on 23rd December 2016, the Contractor has fixed the clear water hose for wheel washing on 24th 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
12	29th December 2016	23rd December 2016 / near Cha Kwo Ling Tsuen	Cha Kwo Ling Tsuen	Water	The complainant complaint that some muddy water flowing from the wheel washing facility to the gullies within the site boundary.	N		Closed
13	6th January 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Block A Nga Lai House	Noise	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.	Y	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: <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) <u>Noise</u> ● Provision of portable noise enclosures to head of breakers to reduce noise emission during rock breaking works in Lam Tin	Closed
14	6th January 2017	Not Specified / Cha Kwo Ling Road	Resident of Yau Lai Estate	Noise	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.	Y		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
15	6th January 2017	Not Specified / Construction site near Yau Lai Estate	Resident of Yau Lai Estate Bik Lai House	Air Quality & Noise	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 system to minimize the noise and air nuisances to the nearby residents.	Y	Interchange; ● 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. 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: ● 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. 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. 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.	Closed
16	6th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Cheuk Lai House	Noise	The complainant complained the construction noise generated from this Project (EPD Reference No.: K15/RE/00000564-17)	Y		Closed
17	6th January 2017	Not Specified / Construction site near Yau Lai Estate	Resident of Yau Lai Estate Bik Lai House	Noise	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.	Y		Closed
18	10th January 2017	Not Specified	Anonymous	Noise	The complainant complained the construction noise generated from this Project (EPD Reference	Y		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
					No.: K15/RE/00000967-17)			
19	12th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained the noise generated from rock breaking at Lam Tin Interchange. He requested concrete actions to improve the situation.	Y		Closed
20	12th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	Noise	The complainant complained the noise generated from rock breaking at Lam Tin Interchange.	Y		Closed
21	13th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	Noise	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning.	Y		Closed
22	13th January 2017	Not Specified / Construction Works near Eastern Habour Crossing tunnel portal	Anonymous	Noise	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	Y		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
23	16th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning.	Y		Closed
24	17th January 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	Noise	The complainant complained the construction noise generated at Lam Tin Interchange.	Y		Closed
25	26th January 2017	Not Specified / Construction Works near Eastern Habour Crossing tunnel portal	黃國健議員及何啟明議員	Noise	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.	Y	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. 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: ➢ 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
26	27th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	Noise	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning. (EPD Ref No. K15/RE/00002945-17)	Y	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

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
27	9th February 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yat Lai House, Yau Lai Estate	Noise	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)	Y	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: ● 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. In addition, the Contractor has taken the initiative to explore measures to further reduce construction noise nuisance such as: ● 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. 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.	Closed
28	13th February 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yat Lai House, Yau Lai Estate	Noise	The complainant complained about the noise nuisance during the construction works of Lam tin Interchange.	Y		Closed
29	23rd February 2017	18 Feb 2017 / Slope Works at Lei Yue Mun Road	Anonymous	Air Quality	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	N	The major source of construction dust nuisance was construction of a temporary storage area. 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.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
					the pedestrian.			
30	23rd February 2017	Not Specified / BMCPC Footpath	Sai Kung District Council Member Mr. Chan Kai Wai	(Safety)	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.	N	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: ➢ 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
31	2nd March 2017	Not Specified / Construction Works near BMCPC Footpath	A resident of Ocean Shores	Air Quality	The complainant complained about the dust generated by the construction works near the existing BMCPC footpath	N		Closed
32	8th March 2017	7 Mar 2017 / Slope works near Sin Fat Road Tennis Court	Public	Air Quality & Noise	The complainant complained the dust and noise generated by the slope works near Sin Fat Road Tennis Court	Y	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: ➢ 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
33	10th March 2017	4 Mar 2017 / Slope works near Sin Fat Road Tennis Court	Anonymous	Air Quality	The complainant complained the dust generated by the slope works near Sin Fat Road Tennis Court.	N		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
34	13th March 2017	27 Feb – 12 Mar 2017 / Barging point in front of Ocean Shore	Public	Noise	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.	Y	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	21st March 2017	Not Specified / Construction Works near Cha Kwo Ling Village	茶果嶺鄉民聯誼會書記鍾先生	Water & Waste/Chemical Management	The complainant stated that villagers concerned about the 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.	N	In accordance with the information provided by the Contractor of the Project, vehicle wheel washing near Cha Kwo Ling Village was carried out site access of Portion 1 and Portion WAII. At Portion 1, a 'WetSep' wastewater treatment system was installed to treat wastewater from vehicle washing washing. For Portion WAII, surface runoff collection system is also installed near the site access. Also, concrete sand bag bunds are provided near seafront of Portion WAII to prevent wastewater flowing into the sea. 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.	Closed
36	25th March 2017	Not Specified / Construction Works of TKO Portal	Public	Air Quality	The complainant complaint about the construction dust impact due to marine works and construction of tunnel of this Project.	N	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 As per investigation, the following environmental mitigation measures are implemented by the Contractor: ➢ 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;	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
							➢ 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. 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.	
37	6th April 2017	1 Apr 2017 / Slope works near Sin Fat Road Tennis Court	Public	Air Quality	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 shotcrete may contain toxic substances and may affect the health.	N	See Investigation / Mitigation Action for Complaint No. 32 and 33.	Closed
38	4th May 2017	Not Specified / Construction site near Nga Lai House, Yau Lai Estate	Kwun Tong District Council Member Mr. Lai Shu Ho	Noise	The complainant complained about construction noise nuisance near Nga Lai House, Yau Lai Estate and lack of noise mitigation measures during construction works.	Y	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). 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.	Closed
39	8th May 2017	Not Specified / Construction site near Yau Lai Estate	Kwun Tong District Council Member Mr. Lai Shu Ho	Air Quality & Noise	The complainant complained about construction noise nuisance and air pollution generated by this Project.	Y		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
							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.	
40	9th May 2017	Not Specified / Construction of Road P2 near Ocean Shores	Public	Noise	The complainant complained about noise and environmental nuisance resulting from the piling works.	Y	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 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.	Closed
41	10th May 2017	Not Specified / Construction of Road P2 near Ocean Shores	Public	Noise	The complainant complained about noise nuisance from the use of the generators until midnight.	Y	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	10th May 2017	Not Specified / Slope works near Sin Fat Road Tennis	Public	Air Quality	The complainant complained about the generation of construction dust	N	See Investigation / Mitigation Action for Complaint No. 32 and 33.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
		Court			from this Project			
43	15th May 2017	Not Specified / Construction site at Lei Yue Mun Road	Kwun Tong District Council Member Mr. Lai Shu Ho	Noise	The complainant complained about construction noise nuisance during construction works at work site at Lei Yue Mun Road.	Y	See Investigation / Mitigation Action for Complaint No. 38 and 39.	Closed
44	16th May 2017	Not Specified / Construction site near Nga Lai House, Yau Lai Estate	Public	Noise	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.	Y	See Investigation / Mitigation Action for Complaint No. 38 and 39.	Closed
45	17th May 2017	3rd May 2017 / Marine Works Area in TKO Side	Public	Noise	The complainant complained about the noisy ongoing construction works on a public holiday.	Y	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	25th May 2017	Not Specified / Construction site near Tin Hau Temple	茶果嶺鄉民聯誼會主席羅悅屏	Noise	The complainant complaint about the noisy rock breaking works near Tin Hau Temple and poor efficiency of vehicle wheel washing on site.	Y	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 Ling Road to construction of Lam Tin Interchange. A 'WetSep' wastewater treatment system was installed to treat wastewater from vehicle washing washing.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
							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	27th May 2017	Not Specified / Construction site at Lei Yue Mun Road	Public	Noise	The complainant complained about construction noise nuisance during construction works at work site at Lei Yue Mun Road.	Y	See Investigation / Mitigation Action for Complaint No. 38 and 39.	Closed
48	1st June 2017	Not Specified / Construction site near Yung Lai House, Yau Lai Estate	Public	Noise	The complainant complained about construction dust and noise nuisance during construction works at work site near Yung Lai House, Yau Lai Estate (EPD Reference No.: K15/RE/00016902-17)	Y	According to the information provided by the Contractor, the major construction activities performed in June and mid-July included excavation and drilling in Portion IVC near Lei Yue Mun Road, excavation and rock breaking at Lam Tin Interchange and rock breaking next to Yau Tong Site Office. The Contractor had implemented environmental mitigation measures in accordance with the "Implementation Schedule of Proposed Mitigation Measures" of EM&A Manual as below: <u>Air Quality:</u> • Water spraying was provided during breaking works at Portion IVC, slope G of Lam Tin Interchange and works area near Yau Tong Site Office to minimize dust generation due to the works. <u>Noise:</u> • Operating PMEs at Portion IVC, slope G of Lam Tin Interchange and works area near Yau Tong Site Office were on and off with idling time. • Excavator-mounted breakers were mounted with acoustic sheets. • Noise barriers were erected during the breaking works at Portion IV, slope G of Lam Tin Interchange and works area near Yau Tong Site Office to minimize construction noise nuisance. With the implementation of environmental mitigation measures by Contractors on site, it is considered that air quality and noise nuisance by the works has been brought to a minimum level.	Closed
49	7th June 2017	7th June 2017 / Construction site near Sin Fat Road	Correspondent of Sin Fat Road Tennis Courts	Air Quality	The complainant complained about construction dust nuisance near the	N	In accordance with the information provided by the Contractor of the Project, the major construction activities at the location of complaints were shotcreting of slope surface and drilling for soil nail near Sin Fat Road Tennis Court.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
		Tennis Courts			tennis courts.		The Contractor immediately stopped the shotcreting works adjacent to the tennis courts upon the complaint, and re-schedule the works such that the shotcreting works near the tennis court are performed only when the tennis courts are not in use. The Contractor also cleared the dust brought by the construction in the tennis courts on the same day of the complaint. the Contractor was reminded to fully implement the relevant air quality mitigation measures according to the EM&A Manual on site.	
50	8th June 2017	30th May 2017 / marine works area inside the cofferdam installed under the Project	Sai Kung District Council Member Mr. Chan Kai Wai	Noise	The complainant complained about marine construction work being carried out on 30 May 2017 (a public holiday) within the reclamation area near Ocean Shore under this Project (EPD Reference No.: N08/RE/019540-17)	Y	According to information provided by the Contractor and confirmation by the Engineer, no marine construction activities were conducted on public holiday on 30th May 2017 within the cofferdams installed in the reclamation area under this Project. The complaint on 30th May 2017 therefore considered to be non-Project related.	Closed
51	15th June 2017	Not Specified / Construction site near Nga Lai House, Yau Lai Estate	Public	Air Quality & Noise	The complainant complained about construction dust and noise nuisance during construction works at work site near Nga Lai House, Yau Lai Estate. (EPD Reference No.: K15/RE/00018656-17)	Y	See Investigation / Mitigation Action for Complaint No. 48.	Closed
52	21st June 2017	Not Specified / Construction site near Yau Lai Estate	Public	Noise	The complainant complained about construction noise nuisance from work site near Yau Lai	Y	See Investigation / Mitigation Action for Complaint No. 48.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
					Estate.			
53	24th June 2017	24th June 2017 / land-based works area near Ocean Shores	Resident of Ocean Shores	Noise	The complainant complained about construction noise nuisance from land-based works area near Ocean Shores	Y	According to the information provided by the Contractor, the major construction activities during the time of complaint includes breaking of hard material. Upon received of the complaint, the Contractor has taken the initiative to minimize construction noise nuisance by erecting temporary noise barrier during rock breaking works. Nonetheless, the Contractor was recommended to implement and strictly follow the noise mitigation measures as recommended in the EM&A Manual and Noise Mitigation Plan in order to reduce construction noise impact on site.	Closed
54	26th June 2017	26th June 2017 / marine works area near Ocean Shores	Public	Waste/ Chemical Management	The complainant complained about oil spill on sea near marine works site near Ocean Shores	N	According to the information provided by the Contractor, marine works were conducted on 26 June 2017, including lifting operation for the concrete block from water gate to derrick barge. 3 derrick barges and 3 sampan were in operation for the marine works. According to records of the Contractor, no report of oil spill from the derrick barges was received from the site foremen. Oil spillage was not found in the afternoon on 26 June 2017. Therefore, the complaint is considered to be non-Project related.	Closed
55	27th June 2017	25th June 2017/ marine works area near Ocean Shores	Sai Kung District Council Member Mr. Chan Kai Wai	Noise	The complainant complained about marine construction work being carried out on public holidays within the marine works area near Ocean Shore under this Project	Y	Minor marine construction activities was conducted on public holiday 25th June 2017 within the reclamation area under this Project. Removal of damaged parts of steel cofferdam, which are damaged under adverse weather conditions in June 2017, was carried out by ONE number of derrick barge. Such operation is not considered to emit high level of noise. No violation of Construction Noise Permits (CNP) conditions is observed during the time of complaint. The Engineer and the Environmental Team reminded the Contractor(s) not to conduct any works near Ocean Shores during public holidays (including Sundays) to avoid noise nuisance to the nearby residents. Also, no use of PME will be allowed for general holidays (including Sundays) at marine works area under this Contract according to the latest CNP granted to the Contractor.	Closed
56	6th July 2017	Not Specified / Construction	Resident of Yat Lai House,	Noise	The complainant complained about	Y	See Investigation / Mitigation Action for Complaint No. 48.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
		site near Yau Lai Site Office	Yau Lai Estate		construction noise nuisance from work site near Yau Tong Site Office.			
57	14th July 2017	Not Specified / Construction sites near Cha Kwo Ling Road	Kwun Tong District Council Member Mr. Mok Kin Shing	Air Quality	The complainant complained about construction dust nuisance due to works and vehicles on Cha Kwo Ling Road	N	Under Investigation	On-going
58	18th July 2017	Not Specified / Construction sites near Yau Lai Estate	Yau Lai Estate Property Services Management Office	Noise	The complainant complained about construction noise nuisance from work site near Yau Lai Estate.	Y	See Investigation / Mitigation Action for Complaint No. 48.	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
June 2017	8	0	0
July 2017	3	0	0
Total	**58**	**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

Name of Department: Civil Engineering Development Department

Contract No.: NE/2015/01

Leighton - China State Joint Venture

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	37.960	2.949	17.914	19.409	0.637	0.000	0.000	0.114	0.000	0.000	0.138
Sub-total	184.551	12.793	77.154	83.978	23.419	0.000	0.000	0.642	0.000	1.000	1.787
July	33.640	2.302	4.851	28.223	0.566	0.000	0.000	0.000	0.000	0.000	0.166
August											
September											
October											
November											
December											
Total	218.191	15.095	82.005	112.201	23.985	0.000	0.000	0.642	0.000	1.000	1.953

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

Contract No. NE/2015/02

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 [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	0.75824	0.05099	0.00000	0.00000	0.00000	0.00000	0.00000	0.11508
June	16.75097	0.00000	0.00000	0.93488	5.96179	0.00000	9.82000	0.00000	0.00000	0.00000	0.03430
SUB-TOTAL	18.92908	0.00000	0.00000	1.69312	8.13990	0.00000	9.82000	0.00000	0.00000	0.00000	0.40576
Jul	6.00593	0.00000	0.00000	0.00000	5.97521	0.00000	0.00000	0.00000	0.00000	0.00000	0.03072
Aug											
Sep											
Oct											
Nov											
Dec											
TOTAL	24.93501	0.00000	0.00000	1.69312	14.11511	0.00000	9.82000	0.00000	0.00000	0.00000	0.43648

Note: Conversion to 1000m^3 for general refuse is weight in 1000kg multiply by 0.002

Conversion to 1000m^3 for Inert C&D is weight in 1000kg multiply by 0.0005

Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

Name of Department : CEDD

Contract No. : NE/2015/03

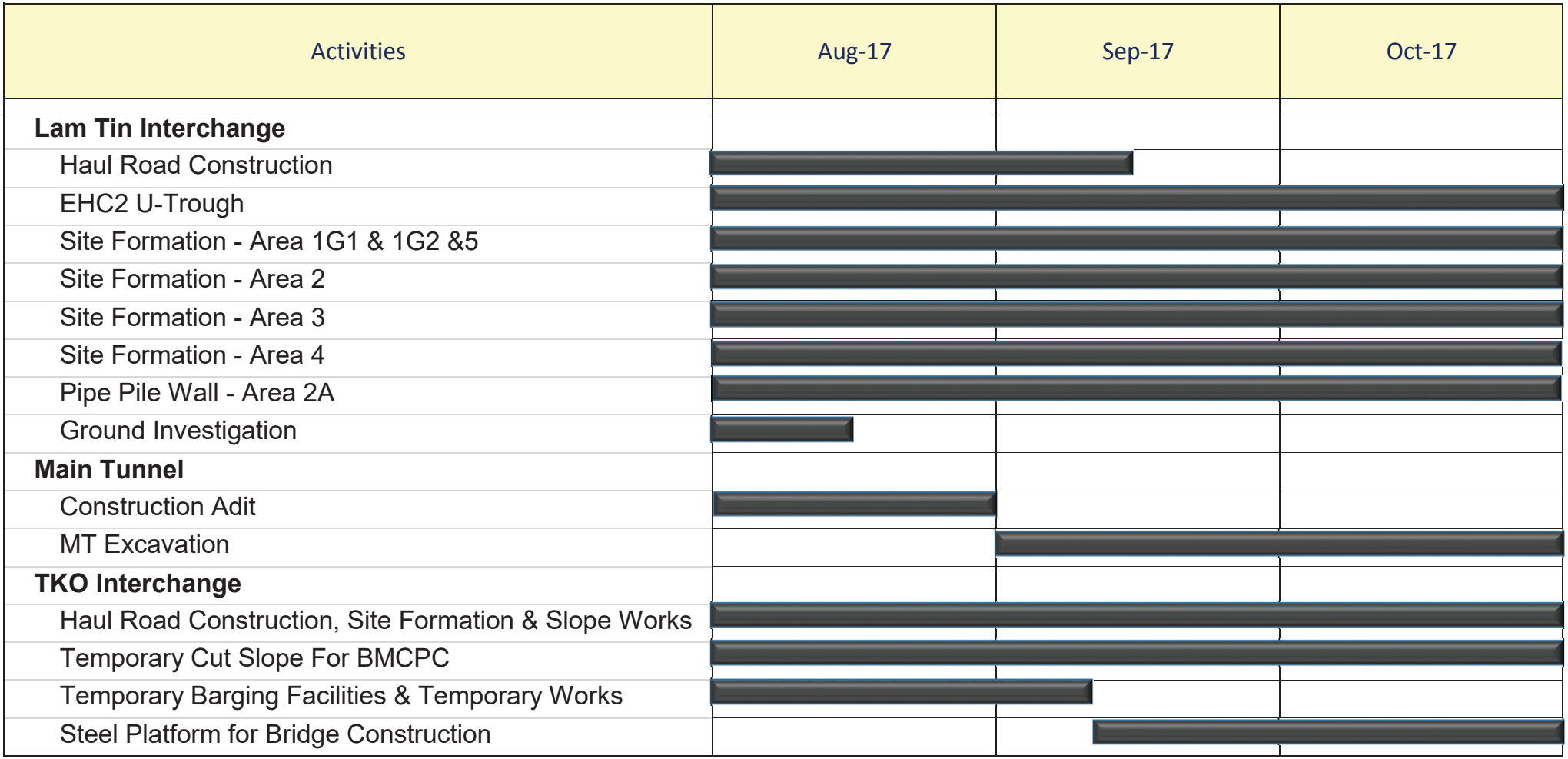
Monthly Summary Waste Flow Table for 2017 (year)

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	.00596	0	0	0	0	0	0	0	0	0	0.00596
Sub-total	0.046428	0	0	0	0.00896	0	0	0	0	0	0.01963
July	0.01207	0	0	0	0.01207	0	0	0	0	0	0
Aug											
Sept											
Oct											
Nov											
Dec											
Total	0.058498	0	0	0	0.02103	0	0	0	0	0	0.01963

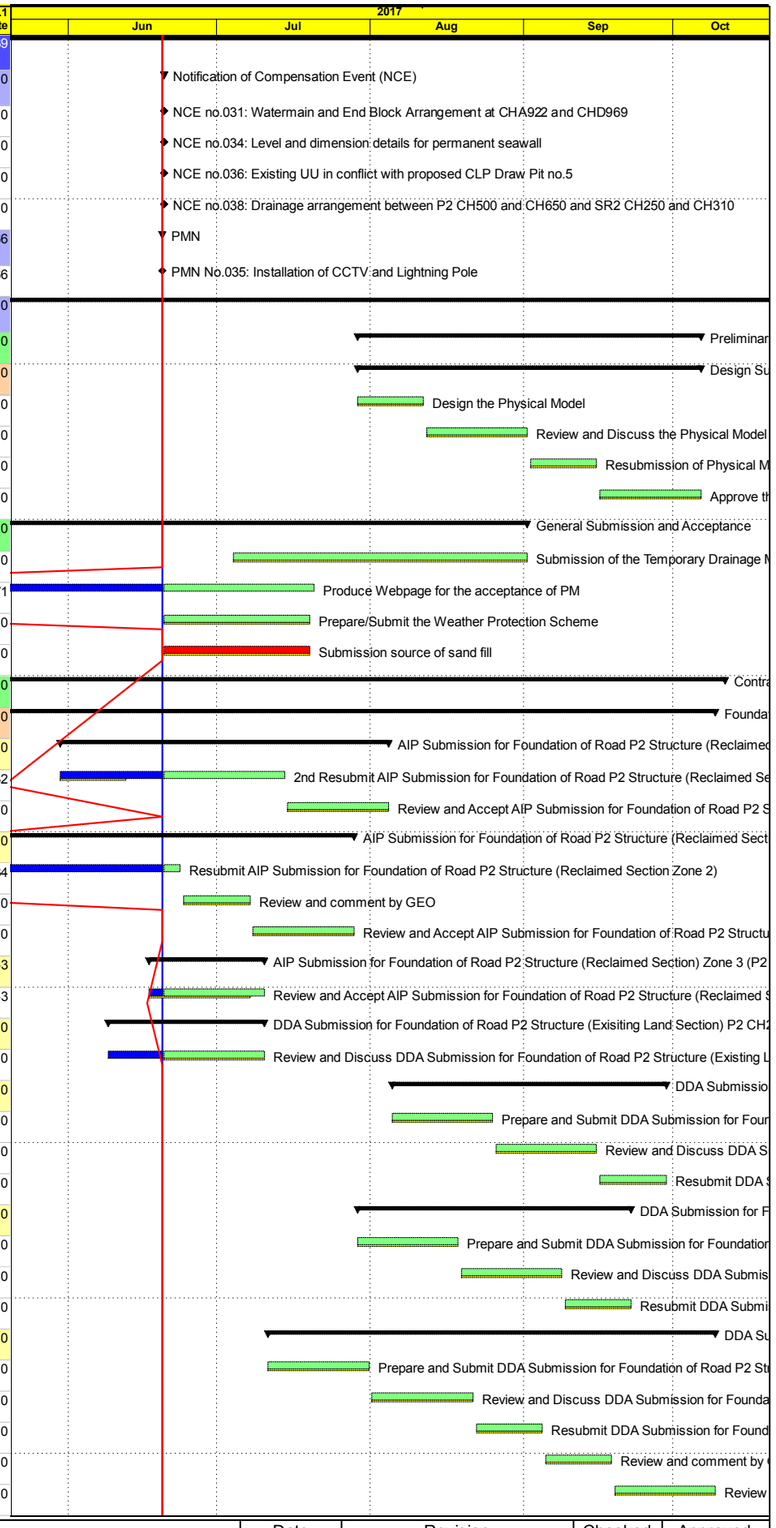
Notes: (1) The performance targets are given in PS Clause 6.14.
(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.
(4) The *Contractor* 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 m^3.

APPENDIX Q
TENTATIVE CONSTRUCTION PROGRAMME

High Level 3 Months Look Ahead Programme



Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (J			1525	1404	15-Dec-16 A	23-Apr-21	364		-139
Notification of Compensation Event (NCE)		P2-Cal.A	0	0	20-Jun-17	20-Jun-17	1768		0
LC38800	NCE no.031: Watermain and End Block Arrangement at CHA922 and CHD969	P2-Cal.A	0	0		20-Jun-17	1768	0%	0
LC38860	NCE no.034: Level and dimension details for permanent seawall	P2-Cal.A	0	0		20-Jun-17	1768	0%	0
LC38900	NCE no.036: Existing UU in conflict with proposed CLP Draw Pit no.5	P2-Cal.A	0	0		20-Jun-17	1768	0%	0
LC38940	NCE no.038: Drainage arrangement between P2 CH500 and CH650 and SR2 CH250 and CH310	P2-Cal.A	0	0		20-Jun-17	1768	0%	0
PMN		P2-Cal.A	0	0	20-Jun-17 A	20-Jun-17 A			-66
LC39460	PMN No.035: Installation of CCTV and Lightning Pole	P2-Cal.A	0	0		20-Jun-17 A		100%	-66
Preliminaries, Submission, Contractor's Design Submission and Approval			1124	864	15-Dec-16 A	31-Oct-19	331		0
Preliminaries		P2-Cal.A	70	70	29-Jul-17	06-Oct-17	907		0
Design Submission of Physical Model		P2-Cal.A	70	70	29-Jul-17	06-Oct-17	907		0
LC10242	Design the Physical Model	P2-Cal.A	14	14	29-Jul-17	11-Aug-17	907	0%	0
LC10244	Review and Discuss the Physical Model	P2-Cal.A	21	21	12-Aug-17	01-Sep-17	907	0%	0
LC10246	Resubmission of Physical Model	P2-Cal.A	14	14	02-Sep-17	15-Sep-17	907	0%	0
LC10248	Approve the Physical Model	P2-Cal.A	21	21	16-Sep-17	06-Oct-17	907	0%	0
General Submission and Acceptance		P2-Cal.A	228	74	17-Jan-17 A	01-Sep-17	1121		0
S10050	Submission of the Temporary Drainage Management Plan incorporating the mitigation plan for diversion of DN1500	P2-Cal.A	60	60	04-Jul-17	01-Sep-17	51	0%	0
S10120	Produce Webpage for the acceptance of PM	P2-Cal.A	14	31	17-Jan-17 A	20-Jul-17	1164	0%	-171
S10240	Prepare/Submit the Weather Protection Scheme	P2-Cal.A	30	30	20-Jun-17	19-Jul-17	1076	0%	0
S10780	Submission source of sand fill	P2-Cal.A	30	30	20-Jun-17	19-Jul-17	-83	0%	0
Contractor's Design Submission and Acceptance		P2-Cal.A	258	114	09-Feb-17 A	11-Oct-17	940		0
Foundation Design		P2-Cal.A	256	112	09-Feb-17 A	09-Oct-17	96		0
AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 1 CT01 CH366.059-201.44		P2-Cal.A	67	46	30-May-17 A	04-Aug-17	60		0
S11260-1	2nd Resubmit AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	14	25	30-May-17 A	14-Jul-17	60	0%	-32
S11260-2	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	15-Jul-17	04-Aug-17	60	0%	0
AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 2 (S200 CH821 - P2 CH188		P2-Cal.A	183	39	09-Feb-17 A	28-Jul-17	78		0
S11266	Resubmit AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	14	4	09-Feb-17 A	23-Jun-17	78	71.43%	-134
S11268	Review and comment by GEO	P2-Cal.A	14	14	24-Jun-17	07-Jul-17	78	0%	0
S11270	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	08-Jul-17	28-Jul-17	78	0%	0
AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 3 (P2 CH188 - CH278)		P2-Cal.A	21	21	17-Jun-17 A	10-Jul-17	96		-3
S11279	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	17-Jun-17 A	10-Jul-17	96	0%	-3
DDA Submission for Foundation of Road P2 Structure (Exisiting Land Section) P2 CH292-486		P2-Cal.A	21	21	09-Jun-17 A	10-Jul-17	90		0
S17920	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Existing Land Section)	P2-Cal.A	21	21	09-Jun-17 A	10-Jul-17	90	0%	0
DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 1 CT01 CH366.059-201.44		P2-Cal.A	56	56	05-Aug-17	29-Sep-17	60		0
S11360	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	05-Aug-17	25-Aug-17	60	0%	0
S11380	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	26-Aug-17	15-Sep-17	60	0%	0
S11400	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	14	14	16-Sep-17	29-Sep-17	60	0%	0
DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 2 (S200 CH821 - P2 CH188		P2-Cal.A	56	56	29-Jul-17	22-Sep-17	78		0
S11422	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	29-Jul-17	18-Aug-17	78	0%	0
S11424	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	19-Aug-17	08-Sep-17	78	0%	0
S11426	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	14	14	09-Sep-17	22-Sep-17	78	0%	0
DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 3 (P2 CH188 - CH278)		P2-Cal.A	91	91	11-Jul-17	09-Oct-17	96		0
S11432	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	11-Jul-17	31-Jul-17	96	0%	0
S11434	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	01-Aug-17	21-Aug-17	96	0%	0
S11436	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	14	14	22-Aug-17	04-Sep-17	96	0%	0
S11438	Review and comment by GEO	P2-Cal.A	14	14	05-Sep-17	18-Sep-17	96	0%	0
S11439	Review and Accept DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	19-Sep-17	09-Oct-17	96	0%	0



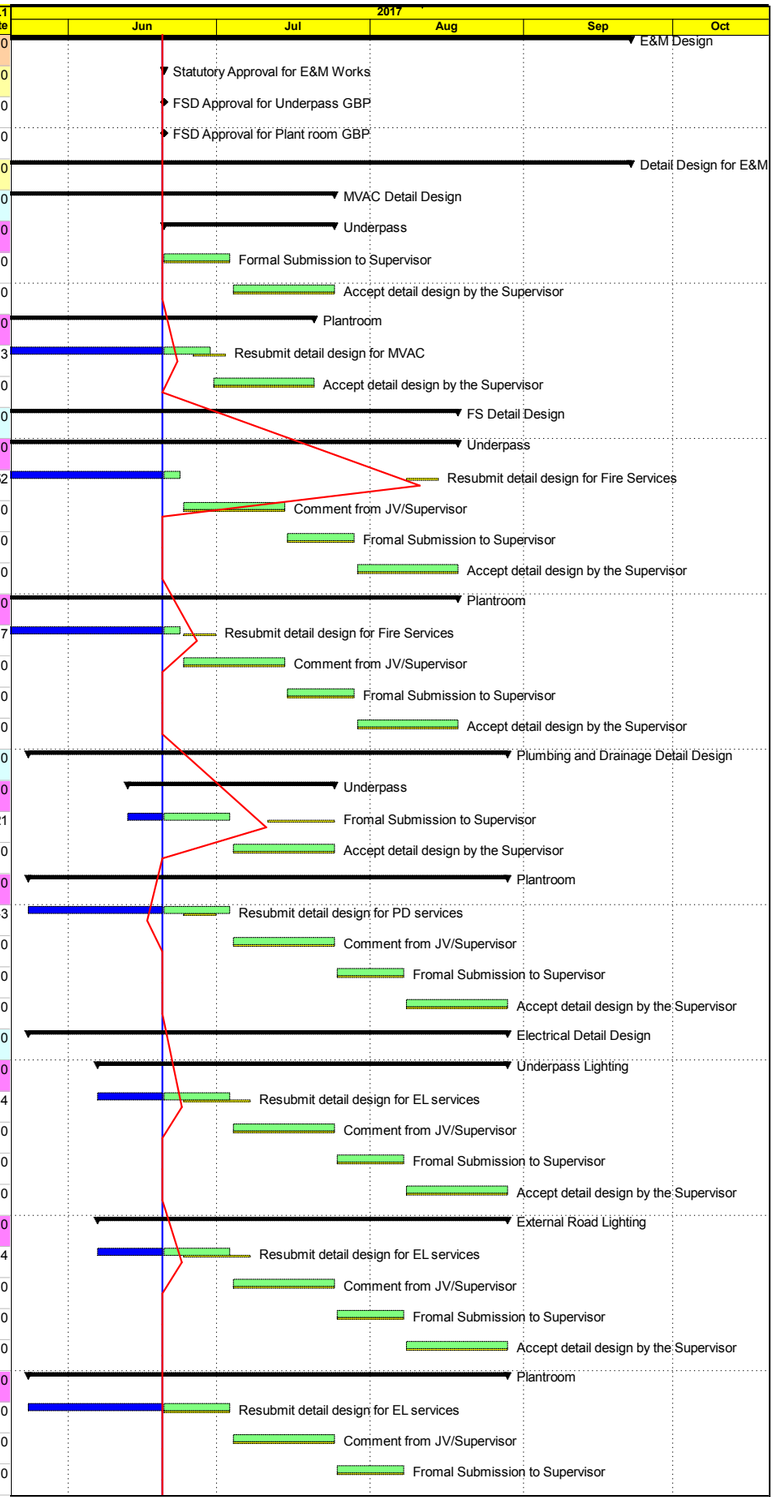
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-17)

3 Months Rolling Programme
(20 Jun 2017)

Date	Revision	Checked	Approved
20-Jun-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date
E&M Design		P2-Cal.A	95	95	27-Apr-17 A	22-Sep-17	831		0
Statutory Approval for E&M Works		P2-Cal.A	0	0	20-Jun-17	20-Jun-17	753		0
S11570-48	FSD Approval for Underpass GBP	P2-Cal.A	0	0		20-Jun-17	753	0%	0
S11570-68	FSD Approval for Plant room GBP	P2-Cal.A	0	0		20-Jun-17	753	0%	0
Detail Design for E&M Works (Tunnel and associated)		P2-Cal.A	95	95	27-Apr-17 A	22-Sep-17	831		0
MVAC Detail Design		P2-Cal.A	35	35	27-Apr-17 A	24-Jul-17	838		0
Underpass		P2-Cal.A	35	35	20-Jun-17	24-Jul-17	778		0
S11630	Formal Submission to Supervisor	P2-Cal.A	14	14	20-Jun-17	03-Jul-17	778	0%	0
S11640	Accept detail design by the Supervisor	P2-Cal.A	21	21	04-Jul-17	24-Jul-17	778	0%	0
Plantroom		P2-Cal.A	25	31	27-Apr-17 A	20-Jul-17	842		0
S18020	Resubmit detail design for MVAC	P2-Cal.A	7	10	27-Apr-17 A	29-Jun-17	842	0%	3
S18040	Accept detail design by the Supervisor	P2-Cal.A	21	21	30-Jun-17	20-Jul-17	842	0%	0
FS Detail Design		P2-Cal.A	56	60	15-May-17 A	18-Aug-17	813		0
Underpass		P2-Cal.A	56	60	15-May-17 A	18-Aug-17	753		0
S11649	Resubmit detail design for Fire Services	P2-Cal.A	7	4	15-May-17 A	23-Jun-17	753	42.86%	52
S11649-1	Comment from JV/Supervisor	P2-Cal.A	21	21	24-Jun-17	14-Jul-17	753	0%	0
S11649-2	Fromal Submission to Supervisor	P2-Cal.A	14	14	15-Jul-17	28-Jul-17	753	0%	0
S11651	Accept detail design by the Supervisor	P2-Cal.A	21	21	29-Jul-17	18-Aug-17	753	0%	0
Plantroom		P2-Cal.A	56	60	15-May-17 A	18-Aug-17	813		0
S18120	Resubmit detail design for Fire Services	P2-Cal.A	7	4	15-May-17 A	23-Jun-17	813	42.86%	7
S18140	Comment from JV/Supervisor	P2-Cal.A	21	21	24-Jun-17	14-Jul-17	813	0%	0
S18149-2	Fromal Submission to Supervisor	P2-Cal.A	14	14	15-Jul-17	28-Jul-17	813	0%	0
S18149-4	Accept detail design by the Supervisor	P2-Cal.A	21	21	29-Jul-17	18-Aug-17	813	0%	0
Plumbing and Drainage Detail Design		P2-Cal.A	66	70	24-May-17 A	28-Aug-17	805		0
Underpass		P2-Cal.A	21	35	13-Jun-17 A	24-Jul-17	780		0
S11658-4	Fromal Submission to Supervisor	P2-Cal.A	14	14	13-Jun-17 A	03-Jul-17	780	0%	21
S11659	Accept detail design by the Supervisor	P2-Cal.A	21	21	04-Jul-17	24-Jul-17	780	0%	0
Plantroom		P2-Cal.A	66	70	24-May-17 A	28-Aug-17	805		0
S18220	Resubmit detail design for PD services	P2-Cal.A	7	14	24-May-17 A	03-Jul-17	805	0%	-3
S18230	Comment from JV/Supervisor	P2-Cal.A	21	21	04-Jul-17	24-Jul-17	805	0%	0
S18235	Fromal Submission to Supervisor	P2-Cal.A	14	14	25-Jul-17	07-Aug-17	805	0%	0
S18240	Accept detail design by the Supervisor	P2-Cal.A	21	21	08-Aug-17	28-Aug-17	805	0%	0
Electrical Detail Design		P2-Cal.A	70	70	24-May-17 A	28-Aug-17	828		0
Underpass Lighting		P2-Cal.A	66	70	07-Jun-17 A	28-Aug-17	805		0
S18320	Resubmit detail design for EL services	P2-Cal.A	14	14	07-Jun-17 A	03-Jul-17	805	0%	4
S18330	Comment from JV/Supervisor	P2-Cal.A	21	21	04-Jul-17	24-Jul-17	805	0%	0
S18335	Fromal Submission to Supervisor	P2-Cal.A	14	14	25-Jul-17	07-Aug-17	805	0%	0
S18340	Accept detail design by the Supervisor	P2-Cal.A	21	21	08-Aug-17	28-Aug-17	805	0%	0
External Road Lighting		P2-Cal.A	66	70	07-Jun-17 A	28-Aug-17	828		0
S18580	Resubmit detail design for EL services	P2-Cal.A	14	14	07-Jun-17 A	03-Jul-17	828	0%	4
S18590	Comment from JV/Supervisor	P2-Cal.A	21	21	04-Jul-17	24-Jul-17	828	0%	0
S18660	Fromal Submission to Supervisor	P2-Cal.A	14	14	25-Jul-17	07-Aug-17	828	0%	0
S18670	Accept detail design by the Supervisor	P2-Cal.A	21	21	08-Aug-17	28-Aug-17	828	0%	0
Plantroom		P2-Cal.A	70	70	24-May-17 A	28-Aug-17	722		0
S11665	Resubmit detail design for EL services	P2-Cal.A	14	14	24-May-17 A	03-Jul-17	722	0%	0
S11666-1	Comment from JV/Supervisor	P2-Cal.A	21	21	04-Jul-17	24-Jul-17	722	0%	0
S11666-2	Fromal Submission to Supervisor	P2-Cal.A	14	14	25-Jul-17	07-Aug-17	722	0%	0



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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-17)

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(20 Jun 2017)

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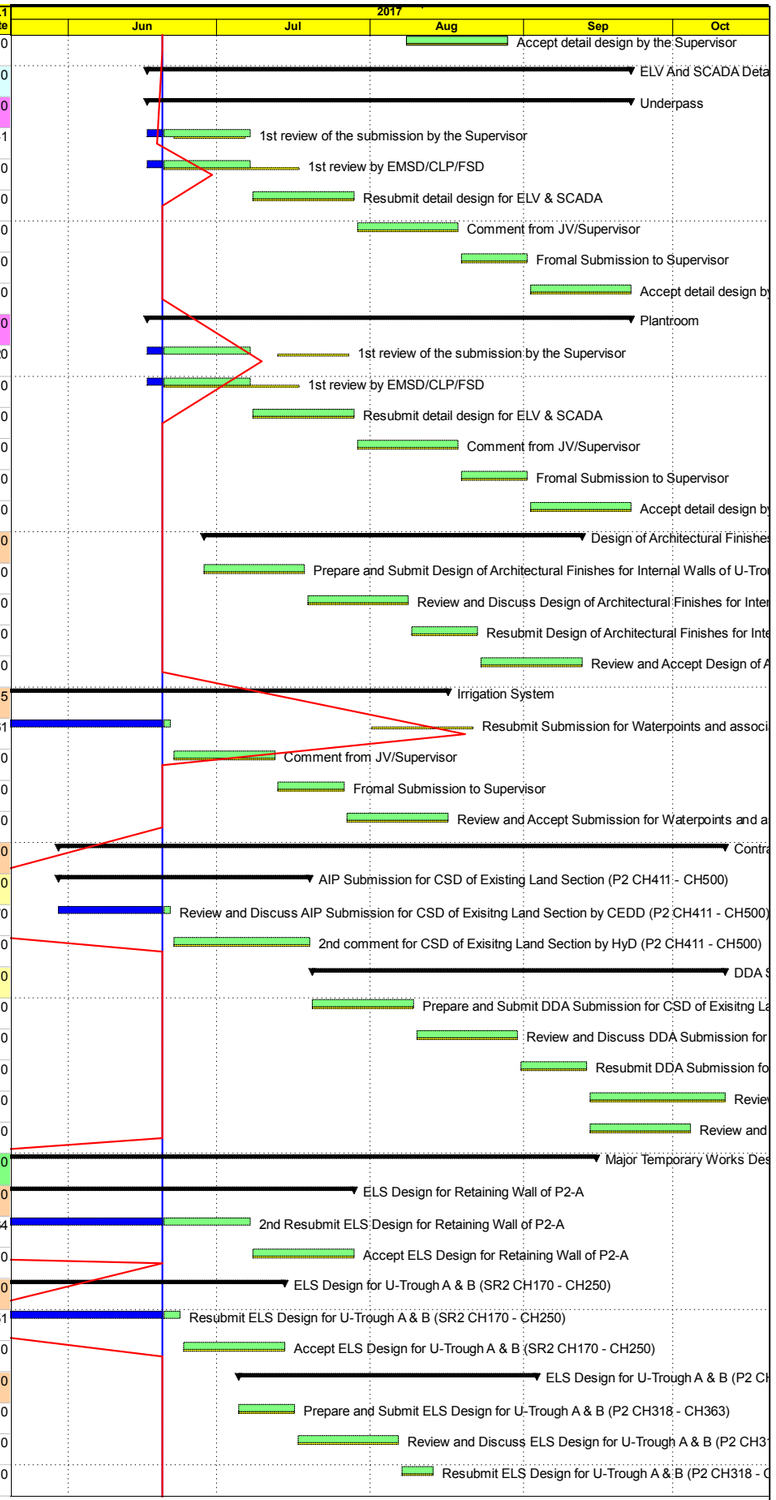
Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date
S11667	Accept detail design by the Supervisor	P2-Cal.A	21	21	08-Aug-17	28-Aug-17	722	0%	0
ELV And SCADA Detail Design		P2-Cal.A	95	95	17-Jun-17 A	22-Sep-17	831		0
Underpass		P2-Cal.A	95	95	17-Jun-17 A	22-Sep-17	831		0
S18480	1st review of the submission by the Supervisor	P2-Cal.A	15	18	17-Jun-17 A	07-Jul-17	831	0%	-1
S18490	1st review by EMSD/CLP/FSD	P2-Cal.A	28	18	17-Jun-17 A	07-Jul-17	831	35.71%	10
S18500	Resubmit detail design for ELV & SCADA	P2-Cal.A	21	21	08-Jul-17	28-Jul-17	831	0%	0
S18510-1	Comment from JV/Supervisor	P2-Cal.A	21	21	29-Jul-17	18-Aug-17	831	0%	0
S18510-2	Fromal Submission to Supervisor	P2-Cal.A	14	14	19-Aug-17	01-Sep-17	831	0%	0
S18520	Accept detail design by the Supervisor	P2-Cal.A	21	21	02-Sep-17	22-Sep-17	831	0%	0
Plantroom		P2-Cal.A	95	95	17-Jun-17 A	22-Sep-17	831		0
S18380	1st review of the submission by the Supervisor	P2-Cal.A	15	18	17-Jun-17 A	07-Jul-17	831	0%	20
S18390	1st review by EMSD/CLP/FSD	P2-Cal.A	28	18	17-Jun-17 A	07-Jul-17	831	35.71%	10
S18400	Resubmit detail design for ELV & SCADA	P2-Cal.A	21	21	08-Jul-17	28-Jul-17	831	0%	0
S18410-1	Comment from JV/Supervisor	P2-Cal.A	21	21	29-Jul-17	18-Aug-17	831	0%	0
S18410-2	Fromal Submission to Supervisor	P2-Cal.A	14	14	19-Aug-17	01-Sep-17	831	0%	0
S18420	Accept detail design by the Supervisor	P2-Cal.A	21	21	02-Sep-17	22-Sep-17	831	0%	0
Design of Architectural Finishes for Internal Walls of U-Trough Structures		P2-Cal.A	77	77	28-Jun-17	12-Sep-17	413		0
S11660	Prepare and Submit Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and Precast concrete)	P2-Cal.A	21	21	28-Jun-17	18-Jul-17	413	0%	0
S11680	Review and Discuss Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and Precast concrete)	P2-Cal.A	21	21	19-Jul-17	08-Aug-17	413	0%	0
S11700	Resubmit Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and Precast concrete)	P2-Cal.A	14	14	09-Aug-17	22-Aug-17	413	0%	0
S11720	Review and Accept Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and Precast concrete)	P2-Cal.A	21	21	23-Aug-17	12-Sep-17	413	0%	0
Irrigation System		P2-Cal.A	61	58	19-May-17 A	16-Aug-17	996		5
S11780	Resubmit Submission for Waterpoints and associated elements	P2-Cal.A	21	2	19-May-17 A	21-Jun-17	996	90.48%	61
S11780-22	Comment from JV/Supervisor	P2-Cal.A	21	21	22-Jun-17	12-Jul-17	996	0%	0
S11780-42	Fromal Submission to Supervisor	P2-Cal.A	14	14	13-Jul-17	26-Jul-17	996	0%	0
S11800	Review and Accept Submission for Waterpoints and associated elements	P2-Cal.A	21	21	27-Jul-17	16-Aug-17	996	0%	0
Contractor Cost Saving Design		P2-Cal.A	203	114	30-May-17 A	11-Oct-17	202		0
AIP Submission for CSD of Existing Land Section (P2 CH411 - CH500)		P2-Cal.A	119	30	30-May-17 A	19-Jul-17	202		0
S11880-5	Review and Discuss AIP Submission for CSD of Exisitng Land Section by CEDD (P2 CH411 - CH500)	P2-Cal.A	21	2	30-May-17 A	21-Jun-17	202	90.48%	-70
S11880-6	2nd comment for CSD of Exisitng Land Section by HyD (P2 CH411 - CH500)	P2-Cal.A	28	28	22-Jun-17	19-Jul-17	202	0%	0
DDA Submission for CSD of Existing Land Section (P2 CH411 - CH500)		P2-Cal.A	84	84	20-Jul-17	11-Oct-17	202		0
S11882	Prepare and Submit DDA Submission for CSD of Exisitng Land Section (P2 CH411 - CH500)	P2-Cal.A	21	21	20-Jul-17	09-Aug-17	202	0%	0
S11884	Review and Discuss DDA Submission for CSD of Exisitng Land Section (P2 CH411 - CH500)	P2-Cal.A	21	21	10-Aug-17	30-Aug-17	202	0%	0
S11886	Resubmit DDA Submission for CSD of Exisitng Land Section (P2 CH411 - CH500)	P2-Cal.A	14	14	31-Aug-17	13-Sep-17	202	0%	0
S11887	Review and Accept DDA Submission for CSD of Exisitng Land Section by HyD (P2 CH411 - CH500)	P2-Cal.A	28	28	14-Sep-17	11-Oct-17	202	0%	0
S11888	Review and Accept DDA Submission for CSD of Exisitng Land Section by CEDD (P2 CH411 - CH500)	P2-Cal.A	21	21	14-Sep-17	04-Oct-17	209	0%	0
Major Temporary Works Design		P2-Cal.A	348	88	15-Dec-16 A	15-Sep-17	1107		0
ELS Design for Retaining Wall of P2-A		P2-Cal.A	299	39	15-Dec-16 A	28-Jul-17	376		0
S12210	2nd Resubmit ELS Design for Retaining Wall of P2-A	P2-Cal.A	14	18	15-Dec-16 A	07-Jul-17	376	0%	-264
S12212	Accept ELS Design for Retaining Wall of P2-A	P2-Cal.A	21	21	08-Jul-17	28-Jul-17	376	0%	0
ELS Design for U-Trough A & B (SR2 CH170 - CH250)		P2-Cal.A	86	25	19-Apr-17 A	14-Jul-17	65		0
S12420	Resubmit ELS Design for U-Trough A & B (SR2 CH170 - CH250)	P2-Cal.A	14	4	19-Apr-17 A	23-Jun-17	65	71.43%	-51
S12440	Accept ELS Design for U-Trough A & B (SR2 CH170 - CH250)	P2-Cal.A	21	21	24-Jun-17	14-Jul-17	65	0%	0
ELS Design for U-Trough A & B (P2 CH318 - CH363) Existing Tong Yin Street		P2-Cal.A	61	61	05-Jul-17	03-Sep-17	142		0
S12460	Prepare and Submit ELS Design for U-Trough A & B (P2 CH318 - CH363)	P2-Cal.A	12	12	05-Jul-17	16-Jul-17	142	0%	0
S12480	Review and Discuss ELS Design for U-Trough A & B (P2 CH318 - CH363)	P2-Cal.A	21	21	17-Jul-17	06-Aug-17	142	0%	0
S12500	Resubmit ELS Design for U-Trough A & B (P2 CH318 - CH363)	P2-Cal.A	7	7	07-Aug-17	13-Aug-17	142	0%	0



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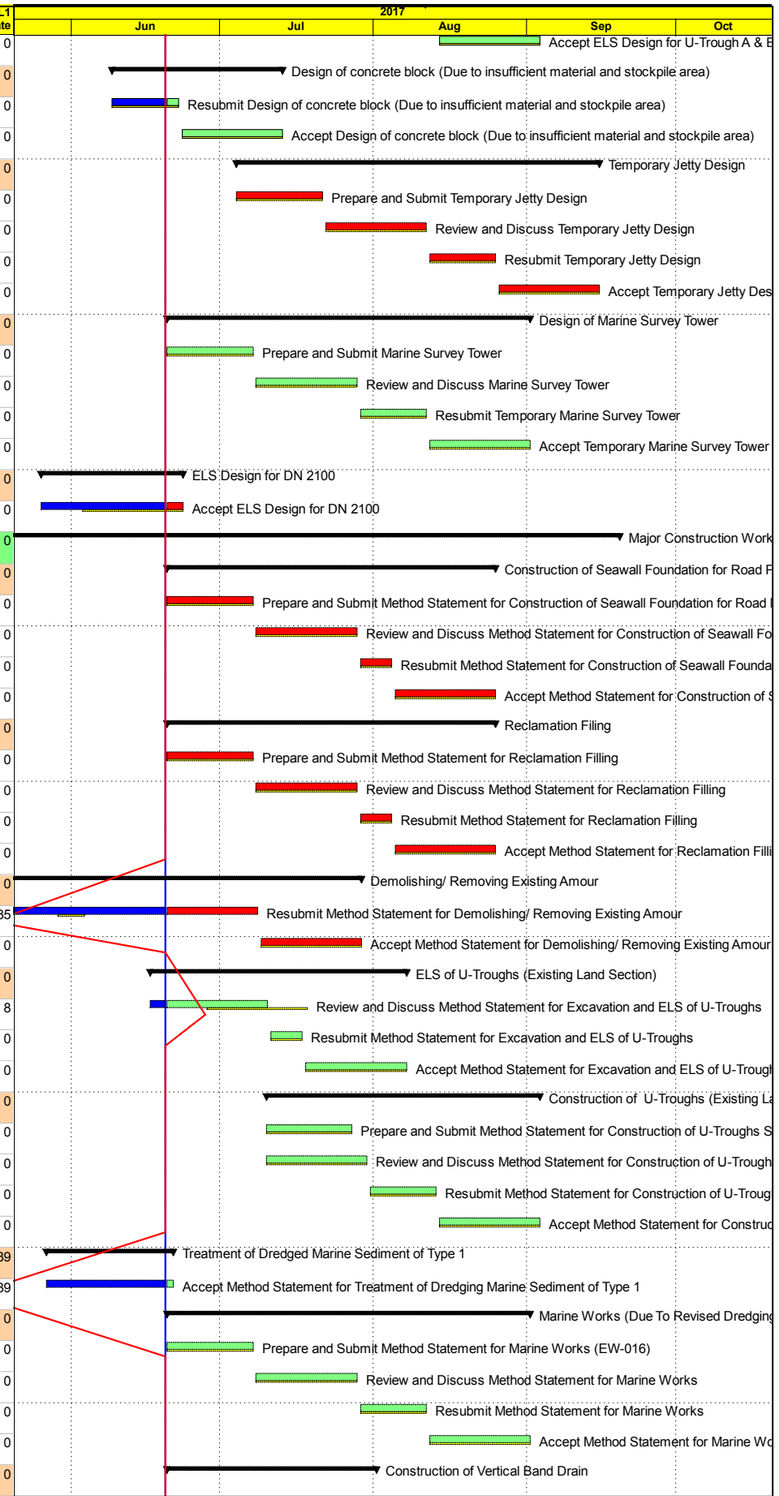
S12520	Accept ELS Design for U-Trough A & B (P2 CH318 - CH363)	P2-Cal.A	21	21	14-Aug-17	03-Sep-17	142	0%	0
Design of concrete block (Due to insufficient material and stockpile area)		P2-Cal.A	35	24	09-Jun-17 A	13-Jul-17	181		0
S12926	Resubmit Design of concrete block (Due to insufficient material and stockpile area)	P2-Cal.A	14	3	09-Jun-17 A	22-Jun-17	181	78.57%	0
S12928	Accept Design of concrete block (Due to insufficient material and stockpile area)	P2-Cal.A	21	21	23-Jun-17	13-Jul-17	181	0%	0
Temporary Jetty Design		P2-Cal.A	74	74	04-Jul-17	15-Sep-17	-103		0
S13020	Prepare and Submit Temporary Jetty Design	P2-Cal.A	18	18	04-Jul-17	21-Jul-17	-103	0%	0
S13040	Review and Discuss Temporary Jetty Design	P2-Cal.A	21	21	22-Jul-17	11-Aug-17	-103	0%	0
S13060	Resubmit Temporary Jetty Design	P2-Cal.A	14	14	12-Aug-17	25-Aug-17	-103	0%	0
S13080	Accept Temporary Jetty Design	P2-Cal.A	21	21	26-Aug-17	15-Sep-17	-103	0%	0
Design of Marine Survey Tower		P2-Cal.A	74	74	20-Jun-17	01-Sep-17	1121		0
S13100	Prepare and Submit Marine Survey Tower	P2-Cal.A	18	18	20-Jun-17	07-Jul-17	1121	0%	0
S13120	Review and Discuss Marine Survey Tower	P2-Cal.A	21	21	08-Jul-17	28-Jul-17	1121	0%	0
S13140	Resubmit Temporary Marine Survey Tower	P2-Cal.A	14	14	29-Jul-17	11-Aug-17	1121	0%	0
S13160	Accept Temporary Marine Survey Tower	P2-Cal.A	21	21	12-Aug-17	01-Sep-17	1121	0%	0
ELS Design for DN 2100		P2-Cal.A	21	4	26-May-17 A	23-Jun-17	-108		0
S13176	Accept ELS Design for DN 2100	P2-Cal.A	21	4	26-May-17 A	23-Jun-17	-108	80.95%	0
Major Construction Works Method Statement		P2-Cal.A	150	92	08-Apr-17 A	19-Sep-17	1103		0
Construction of Seawall Foundation for Road P2		P2-Cal.A	67	67	20-Jun-17	25-Aug-17	-34		0
S13260	Prepare and Submit Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	18	18	20-Jun-17	07-Jul-17	-34	0%	0
S13280	Review and Discuss Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	21	21	08-Jul-17	28-Jul-17	-34	0%	0
S13300	Resubmit Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	7	7	29-Jul-17	04-Aug-17	-34	0%	0
S13320	Accept Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	21	21	05-Aug-17	25-Aug-17	-34	0%	0
Reclamation Filing		P2-Cal.A	67	67	20-Jun-17	25-Aug-17	-94		0
S13340	Prepare and Submit Method Statement for Reclamation Filling	P2-Cal.A	18	18	20-Jun-17	07-Jul-17	-94	0%	0
S13360	Review and Discuss Method Statement for Reclamation Filling	P2-Cal.A	21	21	08-Jul-17	28-Jul-17	-94	0%	0
S13380	Resubmit Method Statement for Reclamation Filling	P2-Cal.A	7	7	29-Jul-17	04-Aug-17	-94	0%	0
S13400	Accept Method Statement for Reclamation Filling	P2-Cal.A	21	21	05-Aug-17	25-Aug-17	-94	0%	0
Demolishing/ Removing Existing Amour		P2-Cal.A	62	40	08-Apr-17 A	29-Jul-17	-110		0
S13620	Resubmit Method Statement for Demolishing/ Removing Existing Amour	P2-Cal.A	6	19	08-Apr-17 A	08-Jul-17	-110	0%	-35
S13640	Accept Method Statement for Demolishing/ Removing Existing Amour	P2-Cal.A	21	21	09-Jul-17	29-Jul-17	-110	0%	0
ELS of U-Troughs (Existing Land Section)		P2-Cal.A	41	49	17-Jun-17 A	07-Aug-17	86		0
S14080	Review and Discuss Method Statement for Excavation and ELS of U-Troughs	P2-Cal.A	21	21	17-Jun-17 A	10-Jul-17	69	0%	8
S14100	Resubmit Method Statement for Excavation and ELS of U-Troughs	P2-Cal.A	7	7	11-Jul-17	17-Jul-17	86	0%	0
S14120	Accept Method Statement for Excavation and ELS of U-Troughs	P2-Cal.A	21	21	18-Jul-17	07-Aug-17	86	0%	0
Construction of U-Troughs (Existing Land Section)		P2-Cal.A	56	56	10-Jul-17	03-Sep-17	238		0
S14140	Prepare and Submit Method Statement for Construction of U-Troughs Structure	P2-Cal.A	18	18	10-Jul-17	27-Jul-17	238	0%	0
S14160	Review and Discuss Method Statement for Construction of U-Troughs Structure	P2-Cal.A	21	21	10-Jul-17	30-Jul-17	238	0%	0
S14180	Resubmit Method Statement for Construction of U-Troughs Structure	P2-Cal.A	14	14	31-Jul-17	13-Aug-17	238	0%	0
S14200	Accept Method Statement for Construction of U-Troughs Structure	P2-Cal.A	21	21	14-Aug-17	03-Sep-17	238	0%	0
Treatment of Dredged Marine Sediment of Type 1		P2-Cal.A	21	2	27-May-17 A	21-Jun-17	203		-39
S14365	Accept Method Statement for Treatment of Dredging Marine Sediment of Type 1	P2-Cal.A	21	2	27-May-17 A	21-Jun-17	203	90.48%	-39
Marine Works (Due To Revised Dredging Profile & Reclamation Sequence)		P2-Cal.A	74	74	20-Jun-17	01-Sep-17	1121		0
S14842	Prepare and Submit Method Statement for Marine Works (EW-016)	P2-Cal.A	18	18	20-Jun-17	07-Jul-17	1121	0%	0
S14844	Review and Discuss Method Statement for Marine Works	P2-Cal.A	21	21	08-Jul-17	28-Jul-17	1121	0%	0
S14846	Resubmit Method Statement for Marine Works	P2-Cal.A	14	14	29-Jul-17	11-Aug-17	1121	0%	0
S14848	Accept Method Statement for Marine Works	P2-Cal.A	21	21	12-Aug-17	01-Sep-17	1121	0%	0
Construction of Vertical Band Drain		P2-Cal.A	43	43	20-Jun-17	01-Aug-17	-84		0



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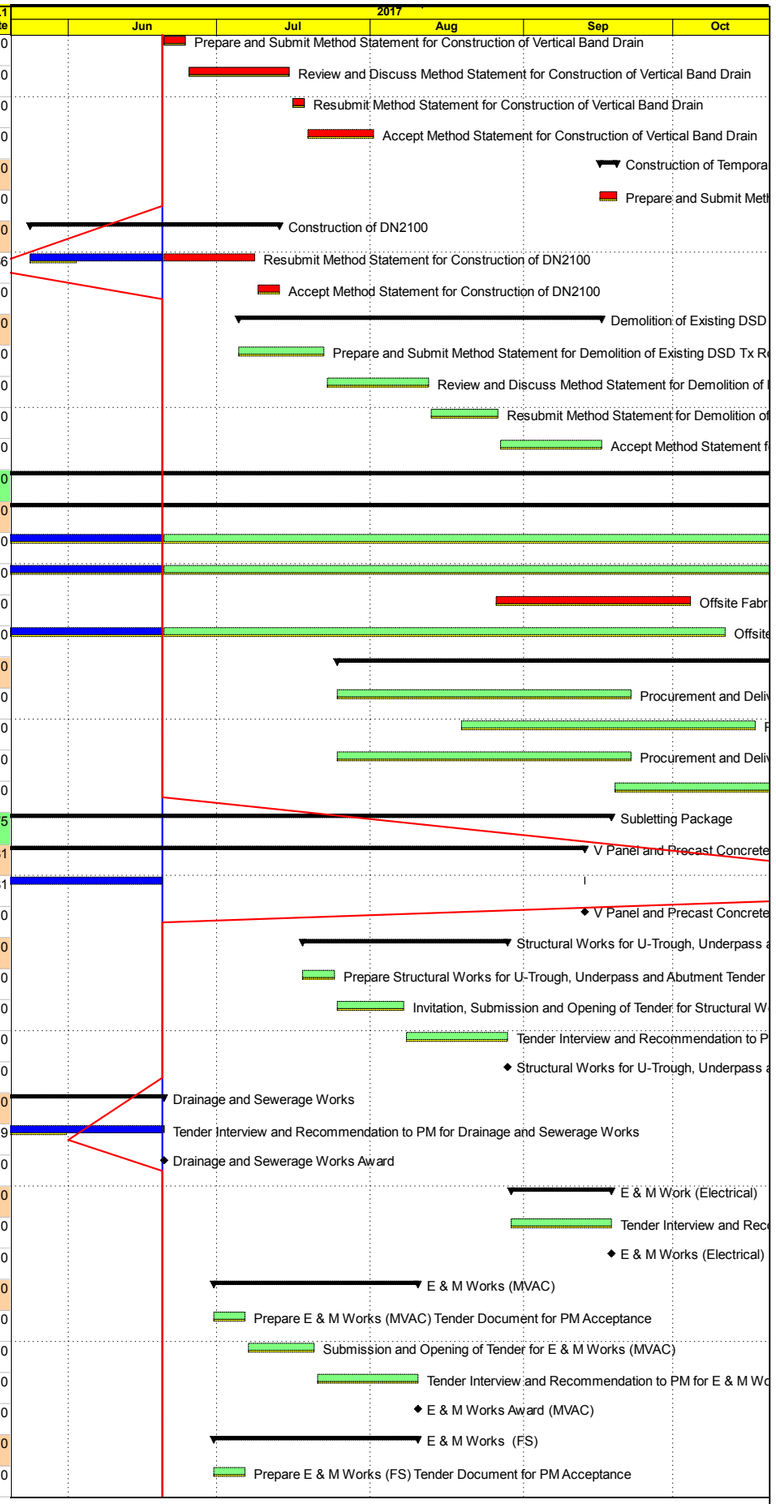
S14920-09	Prepare and Submit Method Statement for Construction of Vertical Band Drain	P2-Cal.A	5	5	20-Jun-17	24-Jun-17	-84	0%	0
S14920-10	Review and Discuss Method Statement for Construction of Vertical Band Drain	P2-Cal.A	21	21	25-Jun-17	15-Jul-17	-84	0%	0
S14920-11	Resubmit Method Statement for Construction of Vertical Band Drain	P2-Cal.A	3	3	16-Jul-17	18-Jul-17	-84	0%	0
S14920-12	Accept Method Statement for Construction of Vertical Band Drain	P2-Cal.A	14	14	19-Jul-17	01-Aug-17	-84	0%	0
Construction of Temporary Jetty		P2-Cal.A	4	4	16-Sep-17	19-Sep-17	-103		0
S14920-13	Prepare and Submit Method Statement for Construction of Temporary Jetty	P2-Cal.A	4	4	16-Sep-17	19-Sep-17	-103	0%	0
Construction of DN2100		P2-Cal.A	51	24	24-May-17 A	13-Jul-17	-128		0
S14920-19	Resubmit Method Statement for Construction of DN2100	P2-Cal.A	10	19	24-May-17 A	08-Jul-17	-128	0%	-36
S14920-20	Accept Method Statement for Construction of DN2100	P2-Cal.A	5	5	09-Jul-17	13-Jul-17	-128	0%	0
Demolition of Existing DSD Tx Room		P2-Cal.A	74	74	05-Jul-17	16-Sep-17	82		0
S14920-21	Prepare and Submit Method Statement for Demolition of Existing DSD Tx Room	P2-Cal.A	18	18	05-Jul-17	22-Jul-17	82	0%	0
S14920-22	Review and Discuss Method Statement for Demolition of Existing DSD Tx Room	P2-Cal.A	21	21	23-Jul-17	12-Aug-17	82	0%	0
S14920-23	Resubmit Method Statement for Demolition of Existing DSD Tx Room	P2-Cal.A	14	14	13-Aug-17	26-Aug-17	82	0%	0
S14920-24	Accept Method Statement for Demolition of Existing DSD Tx Room	P2-Cal.A	21	21	27-Aug-17	16-Sep-17	82	0%	0
Procurement of Major Material			1015	864	20-Jan-17 A	31-Oct-19	90		0
Civil/Structural			1015	864	20-Jan-17 A	31-Oct-19	90		0
S15020	Procurement and Delivery of Steel H-Pile	P2-Cal.A	800	660	31-Jan-17 A	10-Apr-19	4	17.5%	0
S15040	Procurement and Delivery of ELS Wailing & Struts Members	P2-Cal.A	1015	864	20-Jan-17 A	31-Oct-19	90	14.88%	0
S15080	Offsite Fabrication of Pre-cast Seawall blocks	P2-Cal.A	40	40	26-Aug-17	04-Oct-17	-34	0%	0
S15180	Offsite Fabrication of Marine Survey Tower	P2-Cal.B	120	95	20-May-17 A	11-Oct-17	81	20.83%	0
E&M		P2-Cal.A	116	116	25-Jul-17	17-Nov-17	724		0
S15144	Procurement and Delivery of MVAC Plant	P2-Cal.A	60	60	25-Jul-17	22-Sep-17	778	0%	0
S15146	Procurement and Delivery of FS Equipment	P2-Cal.A	60	60	19-Aug-17	17-Oct-17	753	0%	0
S15148	Procurement and Delivery of P/D Equipment	P2-Cal.A	60	60	25-Jul-17	22-Sep-17	780	0%	0
S15150	Procurement and Delivery of EL Equipment (Incl. SCADA and ELV)	P2-Cal.A	60	60	19-Sep-17	17-Nov-17	722	0%	0
Subletting Package		P2-Cal.A	306	91	31-Mar-17 A	18-Sep-17	839		175
V Panel and Precast Concrete Panel		P2-Cal.A	181	0	31-Mar-17 A	13-Sep-17	413		181
S15156	Tender Interview and Recommendation to PM for V Panel and Precast Concrete Panel	P2-Cal.A	21	0	31-Mar-17 A	13-Sep-17	413	100%	181
S15160	V Panel and Precast Concrete Panel Award	P2-Cal.A	0	0		13-Sep-17	413	0%	0
Structural Works for U-Trough, Underpass and Abutment		P2-Cal.A	42	42	18-Jul-17	28-Aug-17	244		0
S16400	Prepare Structural Works for U-Trough, Underpass and Abutment Tender Document for PM Acceptance	P2-Cal.A	7	7	18-Jul-17	24-Jul-17	244	0%	0
S16420	Invitation, Submission and Opening of Tender for Structural Works for U-Trough, Underpass and Abutment	P2-Cal.A	14	14	25-Jul-17	07-Aug-17	244	0%	0
S16440	Tender Interview and Recommendation to PM for Structural Works for U-Trough, Underpass and Abutment	P2-Cal.A	21	21	08-Aug-17	28-Aug-17	244	0%	0
S16460	Structural Works for U-Trough, Underpass and Abutment Award	P2-Cal.A	0	0		28-Aug-17	244	0%	0
Drainage and Sewerage Works		P2-Cal.A	40	0	11-May-17 A	20-Jun-17	132		0
S17080	Tender Interview and Recommendation to PM for Drainage and Sewerage Works	P2-Cal.A	21	0	11-May-17 A	20-Jun-17	132	100%	-19
S17100	Drainage and Sewerage Works Award	P2-Cal.A	0	0		20-Jun-17	132	0%	0
E & M Work (Electrical)		P2-Cal.A	21	21	29-Aug-17	18-Sep-17	722		0
S17400	Tender Interview and Recommendation to PM for E & M Works (Electrical)	P2-Cal.A	21	21	29-Aug-17	18-Sep-17	722	0%	0
S17420	E & M Works (Electrical) Award	P2-Cal.A	0	0		18-Sep-17	722	0%	0
E & M Works (MVAC)		P2-Cal.A	42	42	30-Jun-17	10-Aug-17	821		0
S17422	Prepare E & M Works (MVAC) Tender Document for PM Acceptance	P2-Cal.A	7	7	30-Jun-17	06-Jul-17	821	0%	0
S17423	Submission and Opening of Tender for E & M Works (MVAC)	P2-Cal.A	14	14	07-Jul-17	20-Jul-17	821	0%	0
S17424	Tender Interview and Recommendation to PM for E & M Works (MVAC)	P2-Cal.A	21	21	21-Jul-17	10-Aug-17	821	0%	0
S17425	E & M Works Award (MVAC)	P2-Cal.A	0	0		10-Aug-17	821	0%	0
E & M Works (FS)		P2-Cal.A	42	42	30-Jun-17	10-Aug-17	761		0
S17426	Prepare E & M Works (FS) Tender Document for PM Acceptance	P2-Cal.A	7	7	30-Jun-17	06-Jul-17	761	0%	0



Primary Baseline
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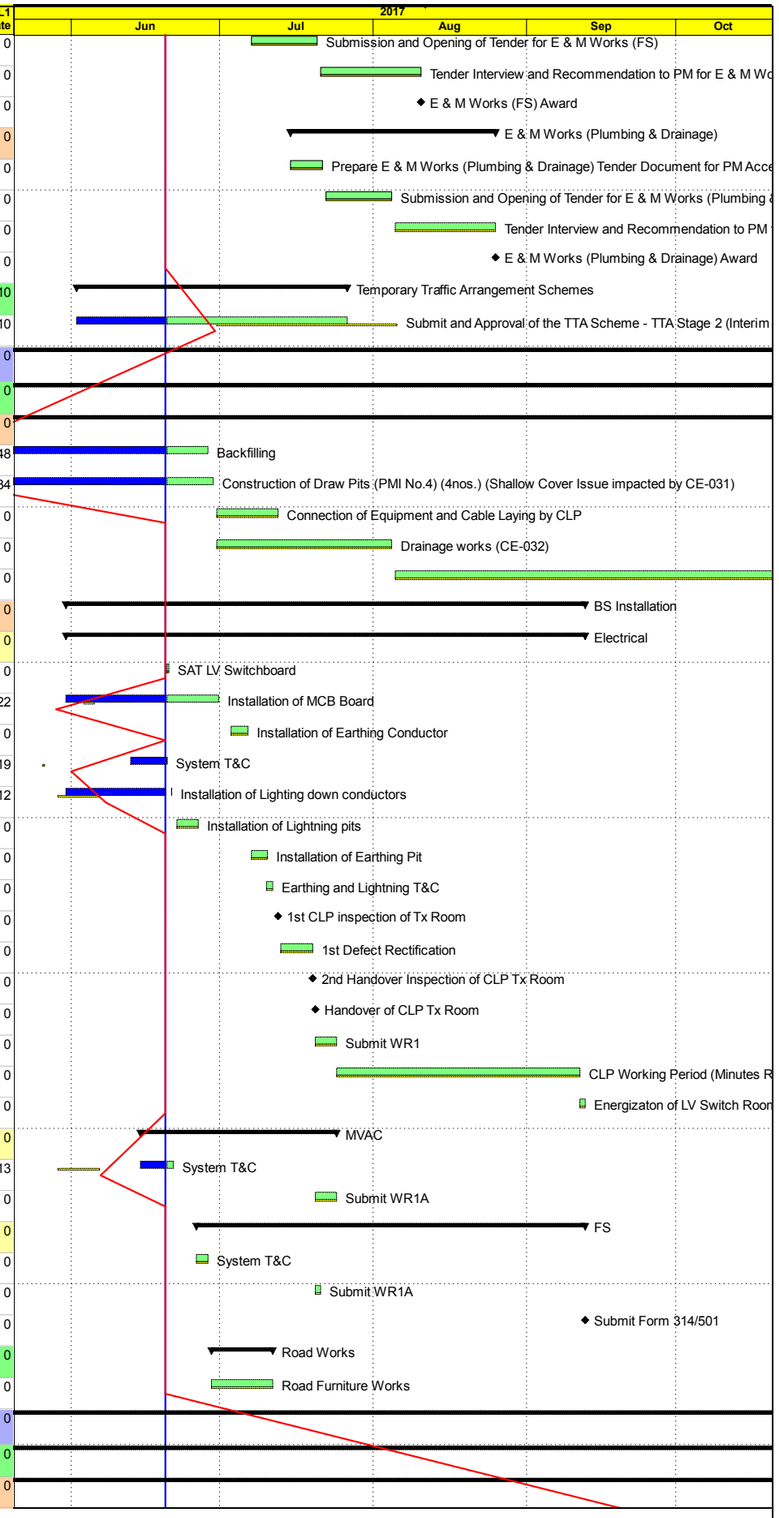
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-17)

3 Months Rolling Programme
(20 Jun 2017)

Date	Revision	Checked	Approved
20-Jun-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date
S17427	Submission and Opening of Tender for E & M Works (FS)	P2-Cal.A	14	14	07-Jul-17	20-Jul-17	761	0%	0
S17428	Tender Interview and Recommendation to PM for E & M Works (FS)	P2-Cal.A	21	21	21-Jul-17	10-Aug-17	761	0%	0
S17429	E & M Works (FS) Award	P2-Cal.A	0	0		10-Aug-17	761	0%	0
E & M Works (Plumbing & Drainage)		P2-Cal.A	42	42	15-Jul-17	25-Aug-17	863		0
S17430	Prepare E & M Works (Plumbing & Drainage) Tender Document for PM Acceptance	P2-Cal.A	7	7	15-Jul-17	21-Jul-17	863	0%	0
S17431	Submission and Opening of Tender for E & M Works (Plumbing & Drainage)	P2-Cal.A	14	14	22-Jul-17	04-Aug-17	863	0%	0
S17432	Tender Interview and Recommendation to PM for E & M Works (Plumbing & Drainage)	P2-Cal.A	21	21	05-Aug-17	25-Aug-17	863	0%	0
S17433	E & M Works (Plumbing & Drainage) Award	P2-Cal.A	0	0		25-Aug-17	863	0%	0
Temporary Traffic Arrangement Schemes		P2-Cal.A	37	37	02-Jun-17 A	26-Jul-17	561		10
S17880	Submit and Approval of the TTA Scheme - TTA Stage 2 (Interim Stage)	P2-Cal.A	37	37	02-Jun-17 A	26-Jul-17	561	0%	10
Section 1 of the Works		P2-Cal.B	173	108	01-Apr-17 A	26-Oct-17	43		0
Reprovisioning of DSD Transformer Room		P2-Cal.B	173	108	01-Apr-17 A	26-Oct-17	43		0
Structure Construction		P2-Cal.B	173	108	01-Apr-17 A	26-Oct-17	43		0
LC10940	Backfilling	P2-Cal.B	21	8	01-Apr-17 A	28-Jun-17	6	61.9%	-48
LC10957	Construction of Draw Pits (PMI No.4) (4nos.) (Shallow Cover Issue impacted by CE-031)	P2-Cal.B	40	9	16-May-17 A	29-Jun-17	6	77.5%	-34
LC10980	Connection of Equipment and Cable Laying by CLP	P2-Cal.B	10	10	30-Jun-17	12-Jul-17	6	0%	0
LC10983	Drainage works (CE-032)	P2-Cal.B	30	30	30-Jun-17	04-Aug-17	43	0%	0
LC10985	Road Pavement Works (RFI 017) (Incl. reinstatement, road formation, Kerb Installation)	P2-Cal.B	69	69	05-Aug-17	26-Oct-17	43	0%	0
BS Installation		P2-Cal.B	92	72	31-May-17 A	12-Sep-17	8		0
Electrical		P2-Cal.B	92	72	31-May-17 A	12-Sep-17	6		0
LC10986-11	SAT LV Switchboard	P2-Cal.B	1	1	20-Jun-17	20-Jun-17	27	0%	0
LC10986-12	Installation of MCB Board	P2-Cal.B	2	10	31-May-17 A	30-Jun-17	18	0%	-22
LC10986-13	Installation of Earthing Conductor	P2-Cal.B	4	4	03-Jul-17	06-Jul-17	18	0%	0
LC10986-14	System T&C	P2-Cal.B	1	0	13-Jun-17 A	20-Jun-17	28	100%	-19
LC10986-15	Installation of Lighting down conductors	P2-Cal.B	7	0	31-May-17 A	21-Jun-17	28	100%	-12
LC10986-16	Installation of Lightning pits	P2-Cal.B	4	4	22-Jun-17	26-Jun-17	27	0%	0
LC10986-17	Installation of Earthing Pit	P2-Cal.B	3	3	07-Jul-17	10-Jul-17	18	0%	0
LC10986-18	Earthing and Lightning T&C	P2-Cal.B	2	2	10-Jul-17	11-Jul-17	18	0%	0
LC10986-21	1st CLP inspection of Tx Room	P2-Cal.B	0	0		12-Jul-17	6	0%	0
LC10986-22	1st Defect Rectification	P2-Cal.B	6	6	13-Jul-17	19-Jul-17	6	0%	0
LC10986-23	2nd Handover Inspection of CLP Tx Room	P2-Cal.B	0	0		19-Jul-17	6	0%	0
LC10986-24	Handover of CLP Tx Room	P2-Cal.B	0	0	20-Jul-17		6	0%	0
LC10986-25	Submit WR1	P2-Cal.B	4	4	20-Jul-17	24-Jul-17	6	0%	0
LC10986-26	CLP Working Period (Minutes Record on 13-Jan-2017 with CLP)	P2-Cal.B	42	42	24-Jul-17	11-Sep-17	6	0%	0
LC10986-27	Energizaton of LV Switch Room	P2-Cal.B	1	1	11-Sep-17	12-Sep-17	6	0%	0
MVAC		P2-Cal.B	47	29	15-Jun-17 A	24-Jul-17	52		0
LC10986-36	System T&C	P2-Cal.B	7	2	15-Jun-17 A	21-Jun-17	70	71.43%	-13
LC10986-37	Submit WR1A	P2-Cal.B	4	4	20-Jul-17	24-Jul-17	52	0%	0
FS		P2-Cal.B	67	67	26-Jun-17	12-Sep-17	6		0
LC10986-46	System T&C	P2-Cal.B	3	3	26-Jun-17	28-Jun-17	69	0%	0
LC10986-47	Submit WR1A	P2-Cal.B	1	1	20-Jul-17	21-Jul-17	52	0%	0
LC10986-48	Submit Form 314/501	P2-Cal.B	0	0		12-Sep-17	6	0%	0
Road Works		P2-Cal.B	10	10	29-Jun-17	11-Jul-17	133		0
LC11000	Road Furniture Works	P2-Cal.B	10	10	29-Jun-17	11-Jul-17	133	0%	0
Section 3 of the Works All Works within Portion IV, V, VI, VII,VIII, and IX and rema			467	375	07-Feb-17 A	29-Jun-18	572		0
Existing Land Section			467	375	07-Feb-17 A	29-Jun-18	572		0
Retaining Wall P2-A CH 500- 650			406	375	07-Feb-17 A	29-Jun-18	40		0



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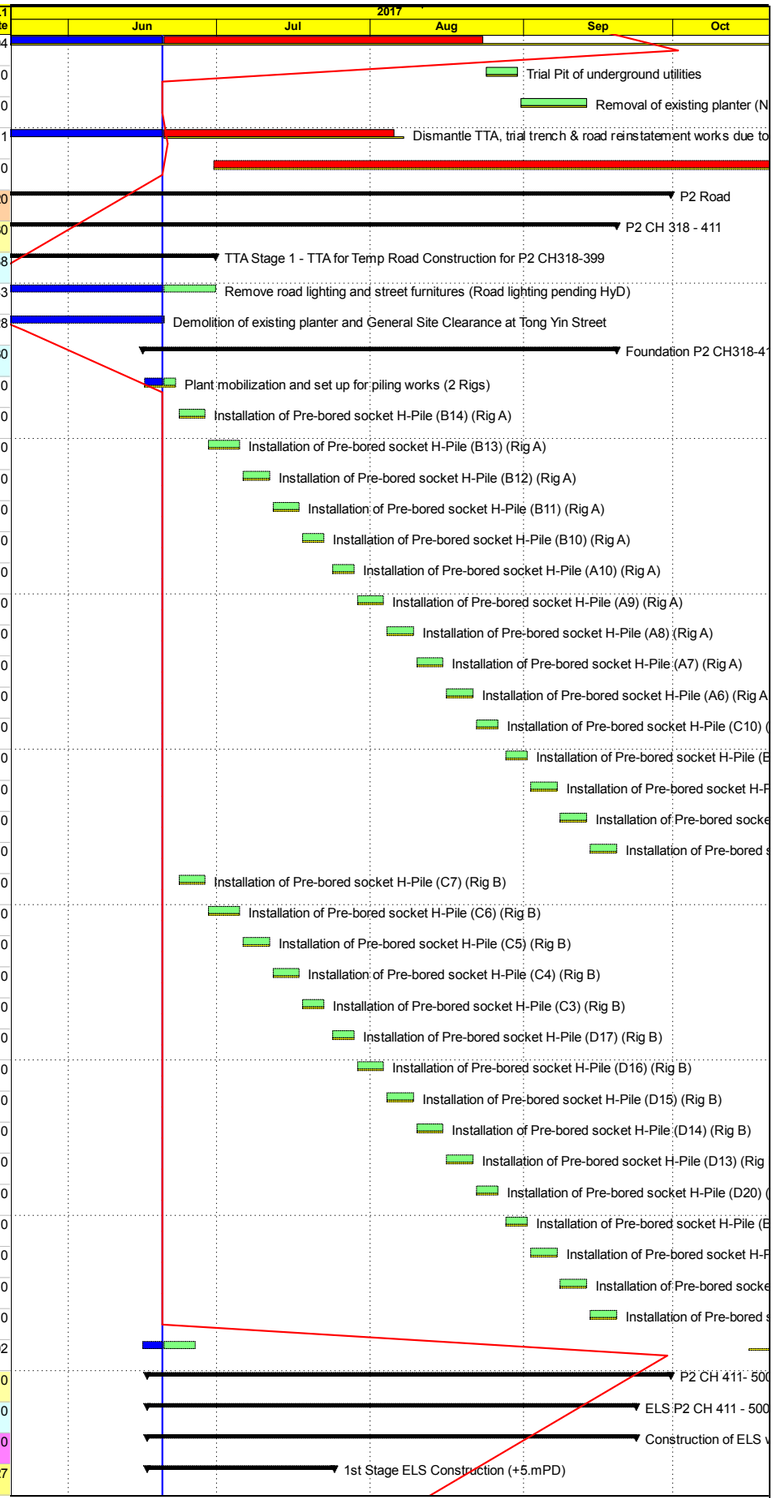
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-17)

3 Months Rolling Programme
(20 Jun 2017)

Date	Revision	Checked	Approved
20-Jun-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date
LC11911	Submission and Approval from LCSD for removal of existing planter (NCE-019 & EW-014) by PM	P2-Cal.A	200	65	07-Feb-17 A	23-Aug-17	0	67.5%	104
LC11914	Trial Pit of underground utilities	P2-Cal.B	6	6	24-Aug-17	30-Aug-17	265	0%	0
LC11916	Removal of existing planter (NCE-019 & EW-014)	P2-Cal.B	12	12	31-Aug-17	13-Sep-17	265	0%	0
LC11921	Dismantle TTA, trial trench & road reinstatement works due to conflict with existing CLP Cable / WSD flowmeter chamber	P2-Cal.B	41	40	23-Feb-17 A	05-Aug-17	0	2.44%	1
LC11930	CLP cable Diversion and relocation of WSD flowmeter chamber (by others) (NCE-029) (NCE-030) (PMI-027)	P2-Cal.A	365	365	30-Jun-17	29-Jun-18	0	0%	0
P2 Road		P2-Cal.B	146	88	04-May-17 A	30-Sep-17	239		20
P2 CH 318 - 411		P2-Cal.B	146	78	04-May-17 A	19-Sep-17	34		30
TTA Stage 1 - TTA for Temp Road Construction for P2 CH318-399		P2-Cal.B	10	10	04-May-17 A	30-Jun-17	102		-38
LC12760	Remove road lighting and street furnitures (Road lighting pending HyD)	P2-Cal.B	5	10	05-May-17 A	30-Jun-17	102	0%	-43
LC12780	Demolition of existing planter and General Site Clearance at Tong Yin Street	P2-Cal.B	5	0	04-May-17 A	20-Jun-17	4	100%	-28
Foundation P2 CH318-411		P2-Cal.B	111	78	16-Jun-17 A	19-Sep-17	34		30
LC12871	Plant mobilization and set up for piling works (2 Rigs)	P2-Cal.B	6	3	16-Jun-17 A	22-Jun-17	4	50%	0
LC12872	Installation of Pre-bored socket H-Pile (B14) (Rig A)	P2-Cal.B	5	5	23-Jun-17	28-Jun-17	9	0%	0
LC12873	Installation of Pre-bored socket H-Pile (B13) (Rig A)	P2-Cal.B	5	5	29-Jun-17	05-Jul-17	9	0%	0
LC12874	Installation of Pre-bored socket H-Pile (B12) (Rig A)	P2-Cal.B	5	5	06-Jul-17	11-Jul-17	9	0%	0
LC12875	Installation of Pre-bored socket H-Pile (B11) (Rig A)	P2-Cal.B	5	5	12-Jul-17	17-Jul-17	9	0%	0
LC12876	Installation of Pre-bored socket H-Pile (B10) (Rig A)	P2-Cal.B	5	5	18-Jul-17	22-Jul-17	9	0%	0
LC12877	Installation of Pre-bored socket H-Pile (A10) (Rig A)	P2-Cal.B	5	5	24-Jul-17	28-Jul-17	9	0%	0
LC12878	Installation of Pre-bored socket H-Pile (A9) (Rig A)	P2-Cal.B	5	5	29-Jul-17	03-Aug-17	9	0%	0
LC12879	Installation of Pre-bored socket H-Pile (A8) (Rig A)	P2-Cal.B	5	5	04-Aug-17	09-Aug-17	9	0%	0
LC12880	Installation of Pre-bored socket H-Pile (A7) (Rig A)	P2-Cal.B	5	5	10-Aug-17	15-Aug-17	9	0%	0
LC12881	Installation of Pre-bored socket H-Pile (A6) (Rig A)	P2-Cal.B	5	5	16-Aug-17	21-Aug-17	9	0%	0
LC12882	Installation of Pre-bored socket H-Pile (C10) (Rig A)	P2-Cal.B	5	5	22-Aug-17	26-Aug-17	9	0%	0
LC12883	Installation of Pre-bored socket H-Pile (B16) (Rig A)	P2-Cal.B	5	5	28-Aug-17	01-Sep-17	9	0%	0
LC12884	Installation of Pre-bored socket H-Pile (C9) (Rig A)	P2-Cal.B	5	5	02-Sep-17	07-Sep-17	9	0%	0
LC12885	Installation of Pre-bored socket H-Pile (C8) (Rig A)	P2-Cal.B	5	5	08-Sep-17	13-Sep-17	9	0%	0
LC12886	Installation of Pre-bored socket H-Pile (A16) (Rig A)	P2-Cal.B	5	5	14-Sep-17	19-Sep-17	9	0%	0
LC12890	Installation of Pre-bored socket H-Pile (C7) (Rig B)	P2-Cal.B	5	5	23-Jun-17	28-Jun-17	4	0%	0
LC12891	Installation of Pre-bored socket H-Pile (C6) (Rig B)	P2-Cal.B	5	5	29-Jun-17	05-Jul-17	4	0%	0
LC12892	Installation of Pre-bored socket H-Pile (C5) (Rig B)	P2-Cal.B	5	5	06-Jul-17	11-Jul-17	4	0%	0
LC12893	Installation of Pre-bored socket H-Pile (C4) (Rig B)	P2-Cal.B	5	5	12-Jul-17	17-Jul-17	4	0%	0
LC12894	Installation of Pre-bored socket H-Pile (C3) (Rig B)	P2-Cal.B	5	5	18-Jul-17	22-Jul-17	4	0%	0
LC12895	Installation of Pre-bored socket H-Pile (D17) (Rig B)	P2-Cal.B	5	5	24-Jul-17	28-Jul-17	4	0%	0
LC12896	Installation of Pre-bored socket H-Pile (D16) (Rig B)	P2-Cal.B	5	5	29-Jul-17	03-Aug-17	4	0%	0
LC12897	Installation of Pre-bored socket H-Pile (D15) (Rig B)	P2-Cal.B	5	5	04-Aug-17	09-Aug-17	4	0%	0
LC12898	Installation of Pre-bored socket H-Pile (D14) (Rig B)	P2-Cal.B	5	5	10-Aug-17	15-Aug-17	4	0%	0
LC12899	Installation of Pre-bored socket H-Pile (D13) (Rig B)	P2-Cal.B	5	5	16-Aug-17	21-Aug-17	4	0%	0
LC12900	Installation of Pre-bored socket H-Pile (D20) (Rig B)	P2-Cal.B	5	5	22-Aug-17	26-Aug-17	4	0%	0
LC12901	Installation of Pre-bored socket H-Pile (B15) (Rig B)	P2-Cal.B	5	5	28-Aug-17	01-Sep-17	4	0%	0
LC12902	Installation of Pre-bored socket H-Pile (D19) (Rig B)	P2-Cal.B	5	5	02-Sep-17	07-Sep-17	4	0%	0
LC12903	Installation of Pre-bored socket H-Pile (D18) (Rig B)	P2-Cal.B	5	5	08-Sep-17	13-Sep-17	4	0%	0
LC12904	Installation of Pre-bored socket H-Pile (A15) (Rig B)	P2-Cal.B	5	5	14-Sep-17	19-Sep-17	4	0%	0
LC39480	Loading Test for Pre-bored socket H-Pile (Set up at D10)	P2-Cal.B	10	6	16-Jun-17 A	26-Jun-17	106	40%	102
P2 CH 411- 500		P2-Cal.B	81	88	17-Jun-17 A	30-Sep-17	239		0
ELS P2 CH 411 - 500		P2-Cal.B	75	82	17-Jun-17 A	23-Sep-17	231		0
Construction of ELS works, P2 CH411 to CH500		P2-Cal.B	75	82	17-Jun-17 A	23-Sep-17	231		0
1st Stage ELS Construction (+5.mPD)		P2-Cal.B	49	29	17-Jun-17 A	24-Jul-17	121		27



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LC14635	Excavation CH451 to CH500 (Total 2959m3 @ 400m3/d)	P2-Cal.B	7	7	17-Jun-17 A	27-Jun-17	104	0%	49
LC14636	Strut and waler installation	P2-Cal.B	16	16	28-Jun-17	17-Jul-17	104	0%	0
LC14637	Excavation CH411 to CH451 (Total 2635m3 @ 400m3/d)	P2-Cal.B	6	6	28-Jun-17	05-Jul-17	114	0%	0
LC14638	Strut and waler installation	P2-Cal.B	16	16	06-Jul-17	24-Jul-17	121	0%	0
2nd Stage ELS Construction (+2.mPD)		P2-Cal.B	51	51	18-Jul-17	14-Sep-17	239		0
LC14639	Excavation CH451 to CH500 (Total 6193m3 @ 300m3/d)	P2-Cal.B	20	20	18-Jul-17	09-Aug-17	104	0%	0
LC14640	Strut and waler installation	P2-Cal.B	16	16	10-Aug-17	28-Aug-17	104	0%	0
LC14641	Excavation CH411 to CH451 (Total 4183m3 @ 300m3/d)	P2-Cal.B	13	13	10-Aug-17	24-Aug-17	107	0%	0
LC14642	Strut and waler installation	P2-Cal.B	18	18	25-Aug-17	14-Sep-17	112	0%	0
LC14643	Excavation down to formation CH451 to CH500 (Total 2959m3 @ 300m3/d)	P2-Cal.B	9	9	29-Aug-17	07-Sep-17	104	0%	0
LC14645	Trimming formation and blinding placing (total: 110m3)	P2-Cal.B	6	6	08-Sep-17	14-Sep-17	239	0%	0
3rd Stage ELS Construction (-0.5.mPD)		P2-Cal.B	14	14	08-Sep-17	23-Sep-17	104		0
LC14646	Excavation CH411 to CH451 (Total 4570m3 @ 300m3/d)	P2-Cal.B	14	14	08-Sep-17	23-Sep-17	104	0%	0
Structure P2 CH 411 - 500 (U Trough A)		P2-Cal.B	14	14	15-Sep-17	30-Sep-17	239		0
LC14900	Construction of base slab for U trough A Type 7 (CH459-472) structures (Team D)	P2-Cal.B	14	14	15-Sep-17	30-Sep-17	239	0%	0
SR2		P2-Cal.B	145	103	21-Apr-17 A	20-Oct-17	669		0
Retaining Wall SR2-A & B CH250 - 310		P2-Cal.B	86	86	20-Jun-17	28-Sep-17	686		0
Retaining Wall SR2-B		P2-Cal.B	20	20	20-Jun-17	13-Jul-17	752		0
LC17143	Backfilling Works (Bay 1 - 6) (SR2-B)	P2-Cal.B	20	20	20-Jun-17	13-Jul-17	752	0%	0
Retaining Wall SR2-A		P2-Cal.B	86	86	20-Jun-17	28-Sep-17	486		0
LC16630	Sheet Pile Installation for SR2-A Bay 1	P2-Cal.B	6	6	30-Aug-17	05-Sep-17	476	0%	0
LC16640	Construction of Base Slab (SR2-A Bay 1) (Team E)	P2-Cal.B	10	10	06-Sep-17	16-Sep-17	476	0%	0
LC16660	Construction of Wall Stem (SR2-A Bay 1) (Team E)	P2-Cal.B	10	10	18-Sep-17	28-Sep-17	486	0%	0
LC16680	Construction of Base Slab (SR2-A Bay 2) (Team E)	P2-Cal.B	10	10	20-Jun-17	30-Jun-17	476	0%	0
LC16700	Construction of Wall Stem (SR2-A Bay 2) (Team E)	P2-Cal.B	10	10	03-Jul-17	13-Jul-17	476	0%	0
LC16720	Construction of Base Slab (SR2-A Bay 3) (Team E)	P2-Cal.B	10	10	14-Jul-17	25-Jul-17	476	0%	0
LC16740	Construction of Wall Stem (SR2-A Bay 3) (Team E)	P2-Cal.B	10	10	26-Jul-17	05-Aug-17	476	0%	0
LC16750	RFI 029: Demolish the existing Channel and Catchpit for Retaining Wall SR2-A Bay 4 construction	P2-Cal.B	10	10	20-Jun-17	30-Jun-17	506	0%	0
LC16760	Construction of Base Slab (SR2-A Bay 4) (Team E) (CE-028)	P2-Cal.B	10	10	07-Aug-17	17-Aug-17	476	0%	0
LC16780	Construction of Wall Stem (SR2-A Bay 4) (Team E)	P2-Cal.B	10	10	18-Aug-17	29-Aug-17	476	0%	0
SR2 CH170 - 250		P2-Cal.B	145	103	21-Apr-17 A	20-Oct-17	55		0
ELS		P2-Cal.B	145	103	21-Apr-17 A	20-Oct-17	55		0
LC17147	Construction of prebored ~ P1 Stage 2 at CH208 to CH236 (42 hole for 3 hole/days) (EW-019)	P2-Cal.B	15	5	21-Apr-17 A	24-Jun-17	71	66.67%	-20
LC17150	Construction of prebored ~ P2 Stage 1 at CH236 to CH251.5 and end wall (34 hole for 3 hole/days) (EW-019)	P2-Cal.B	12	5	21-Apr-17 A	24-Jun-17	70	58.33%	-35
LC17151	Construction of prebored ~ P2 Stage 2 at CH208 to CH236 (42 hole for 3 hole/days) (EW-019)	P2-Cal.B	15	1	21-Apr-17 A	26-Jun-17	70	93.33%	-21
LC17160	Installation of sheet pile wall (48m) ~ Stage 1 at CH 234 to CH251.5 and end wall	P2-Cal.B	25	25	10-Jun-17 A	12-Aug-17	55	0%	0
LC17162	Installation of sheet pile wall (48m) ~ Stage 2 at CH 210 to CH234	P2-Cal.B	15	15	14-Aug-17	30-Aug-17	55	0%	0
LC17164	Installation of sheet pile wall (48m) ~ Stage 3 at CH 186 to CH210	P2-Cal.B	15	15	31-Aug-17	16-Sep-17	55	0%	0
LC17166	Installation of sheet pile wall (48m) ~ Stage 4 at CH 168.5 to CH186 and end wall	P2-Cal.B	27	27	18-Sep-17	20-Oct-17	55	0%	0
Portion IV & VII		P2-Cal.B	193	121	20-Mar-17 A	11-Nov-17	-20		0
General Site Clearance and demolition works		P2-Cal.B	84	30	20-Mar-17 A	25-Jul-17	-112		-18
LC18022	Tree Removal Application (From Land Department) of Portion IV (Non possessed Area) (NCE-026)	P2-Cal.B	60	0	20-Mar-17 A	20-Jun-17	-116	100%	-12
LC18028	Tree Removal of Portion IV (39 nos.)	P2-Cal.B	12	12	20-Jun-17	04-Jul-17	-116	0%	0
LC18194	Protection to existing unchartered utilities (NCE no.023)	P2-Cal.B	28	30	20-Mar-17 A	25-Jul-17	-112	0%	-74
Construction of DN2100 stormwater at Portion IV & VII (SMH9105-SMH9109)		P2-Cal.B	70	70	09-Jun-17 A	23-Sep-17	-116		-1
Preboring		P2-Cal.B	70	70	09-Jun-17 A	23-Sep-17	-116		-1
LC18182	Preboring along Existing EVA to BMCPC for Dia. 2100 Drain Pipe Rig 2 ~ (no.310-450) (2nos./d)	P2-Cal.B	70	70	09-Jun-17 A	23-Sep-17	-116	0%	-1

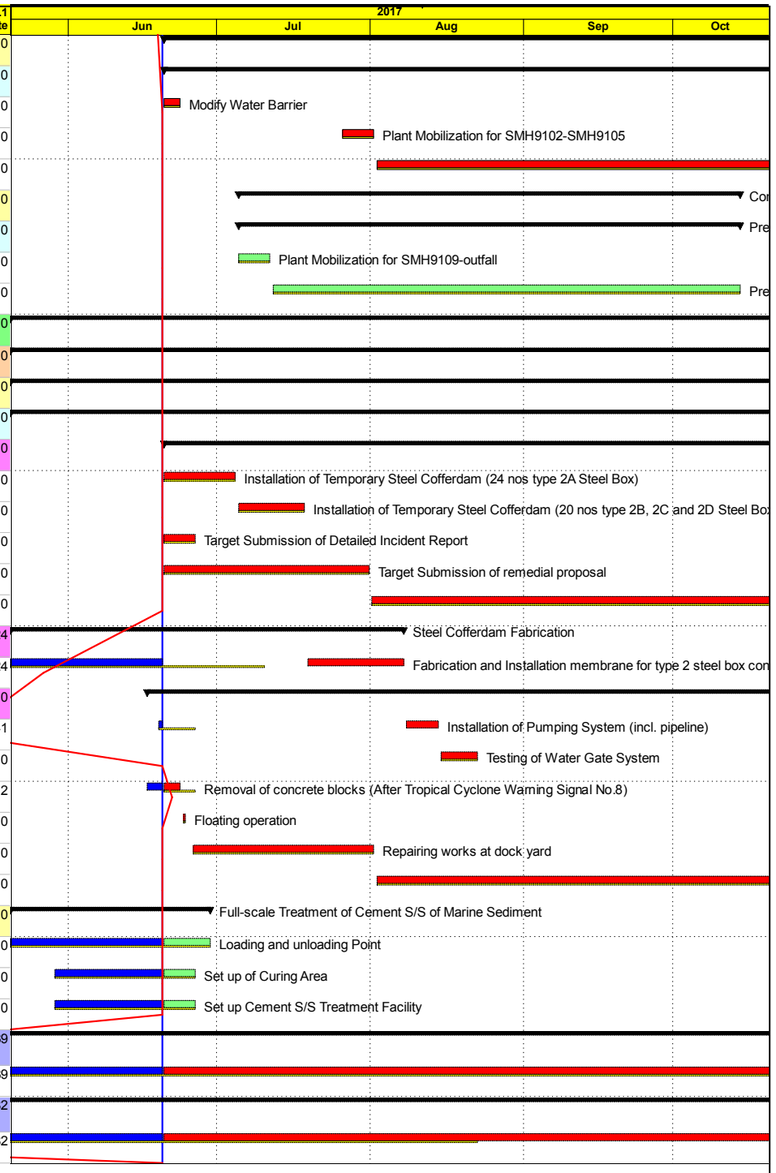
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-17)

3 Months Rolling Programme
(20 Jun 2017)

Date	Revision	Checked	Approved
20-Jun-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date
Construction of DN2100 stormwater at Portion IV & VII (SMH9102-SMH9105)		P2-Cal.B	121	121	20-Jun-17	11-Nov-17	-112		0
Preboring		P2-Cal.B	121	121	20-Jun-17	11-Nov-17	-112		0
LC18058	Modify Water Barrier	P2-Cal.B	4	4	20-Jun-17	23-Jun-17	-108	0%	0
LC18060	Plant Mobilization for SMH9102-SMH9105	P2-Cal.B	6	6	26-Jul-17	01-Aug-17	-112	0%	0
LC18062	Preboring along Existing EVA to BMCPC for Dia. 2100 Drain Pipe Rig 1 ~ (450-620) (2nos/d)	P2-Cal.B	85	85	02-Aug-17	11-Nov-17	-112	0%	0
Construction of DN2100 stormwater at Portion IV & VII (SMH9109 - outfall)		P2-Cal.B	86	86	05-Jul-17	14-Oct-17	3		0
Preboring		P2-Cal.B	86	86	05-Jul-17	14-Oct-17	3		0
LC18066	Plant Mobilization for SMH9109-outfall	P2-Cal.B	6	6	05-Jul-17	11-Jul-17	3	0%	0
LC18146	Preboring along Existing EVA to BMCPC for Dia. 2100 Drain Pipe Rig 3 ~ (260-100) (2no./d)	P2-Cal.B	80	80	12-Jul-17	14-Oct-17	3	0%	0
New Reclaimed Section		P2-Cal.B	136	111	20-May-17 A	31-Oct-17	58		0
Marine Works		P2-Cal.B	136	111	20-May-17 A	31-Oct-17	58		0
Initial Works		P2-Cal.B	136	111	20-May-17 A	31-Oct-17	-165		0
Steel Cofferdam and Water Gate		P2-Cal.B	136	111	20-May-17 A	31-Oct-17	-165		0
Steel Cofferdam Installation		P2-Cal.B	111	111	20-Jun-17	31-Oct-17	-165		0
MC10310	Installation of Temporary Steel Cofferdam (24 nos type 2A Steel Box)	P2-Cal.B	12	12	20-Jun-17	04-Jul-17	-108	0%	0
MC10320	Installation of Temporary Steel Cofferdam (20 nos type 2B, 2C and 2D Steel Box)	P2-Cal.B	12	12	05-Jul-17	18-Jul-17	-108	0%	0
MC10320-03	Target Submission of Detailed Incident Report	P2-Cal.B	6	6	20-Jun-17	26-Jun-17	-165	0%	0
MC10320-05	Target Submission of remedial proposal	P2-Cal.B	35	35	20-Jun-17	31-Jul-17	-165	0%	0
MC10320-07	Remedial Works	P2-Cal.B	76	76	01-Aug-17	31-Oct-17	-165	0%	0
Steel Cofferdam Fabrication		P2-Cal.B	42	17	20-May-17 A	07-Aug-17	-108		-24
MC10330	Fabrication and Installation membrane for type 2 steel box connection (47nos.)	P2-Cal.B	42	17	20-May-17 A	07-Aug-17	-108	59.52%	-24
Water Gate		P2-Cal.B	112	111	17-Jun-17 A	31-Oct-17	-165		0
MC10380	Installation of Pumping System (incl. pipeline)	P2-Cal.B	7	6	19-Jun-17 A	14-Aug-17	-108	14.29%	-41
MC10400	Testing of Water Gate System	P2-Cal.B	7	7	15-Aug-17	22-Aug-17	-108	0%	0
MC14260	Removal of concrete blocks (After Tropical Cyclone Warning Signal No.8)	P2-Cal.B	6	4	17-Jun-17 A	23-Jun-17	-165	33.33%	2
MC14280	Floating operation	P2-Cal.B	1	1	24-Jun-17	24-Jun-17	-165	0%	0
MC14300	Repairing works at dock yard	P2-Cal.B	31	31	26-Jun-17	01-Aug-17	-165	0%	0
MC14320	Ground strengthening works for water gate foundation	P2-Cal.B	75	75	02-Aug-17	31-Oct-17	-165	0%	0
Full-scale Treatment of Cement S/S of Marine Sediment		P2-Cal.B	34	9	20-May-17 A	29-Jun-17	160		0
MC14120	Loading and unloading Point	P2-Cal.B	34	9	20-May-17 A	29-Jun-17	160	73.53%	0
MC14140	Set up of Curing Area	P2-Cal.B	24	6	29-May-17 A	26-Jun-17	163	75%	0
MC14160	Set up Cement S/S Treatment Facility	P2-Cal.B	24	6	29-May-17 A	26-Jun-17	163	75%	0
Section 4 of the Works - Preservation and Protection of Existing Trees		P2-Cal.A	1424	1404	12-Jan-17 A	23-Apr-21	-209		-139
LC25260	Preservation and Protection of Existing Trees	P2-Cal.A	1424	1404	12-Jan-17 A	23-Apr-21	-209	1.4%	-139
Section 5 of the Works - Landscaping Works		P2-Cal.B	180	136	12-Jan-17 A	29-Nov-17	-173		-82
LC25320	Tree Transplanting Preparation Works	P2-Cal.B	180	136	12-Jan-17 A	29-Nov-17	-173	24.44%	-82



Primary Baseline
Actual Work
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Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-17)

3 Months Rolling Programme
(20 Jun 2017)

Date	Revision	Checked	Approved
20-Jun-17			

Contract No. NE/2015/03

Subject: 3 Months Look Ahead Programme

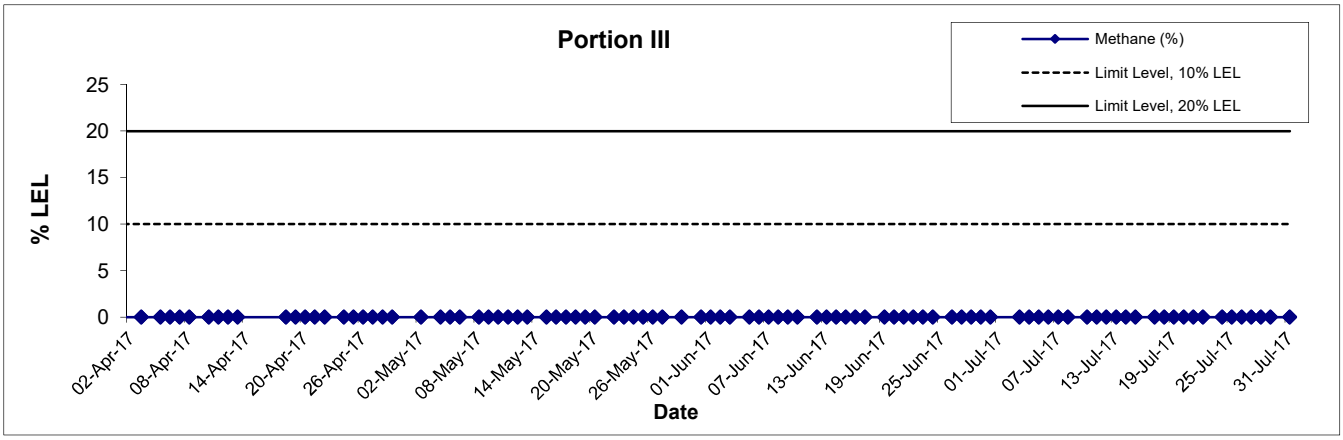
Activities	Aug 2017		Sept 2017		Oct 2017	
Construction of soldier wall panels						
Piling construction at East Pier						
Piling construction at West Pier						

APPENDIX R
RECORD OF LANDFILL GAS MONITORING BY CONTRACTOR

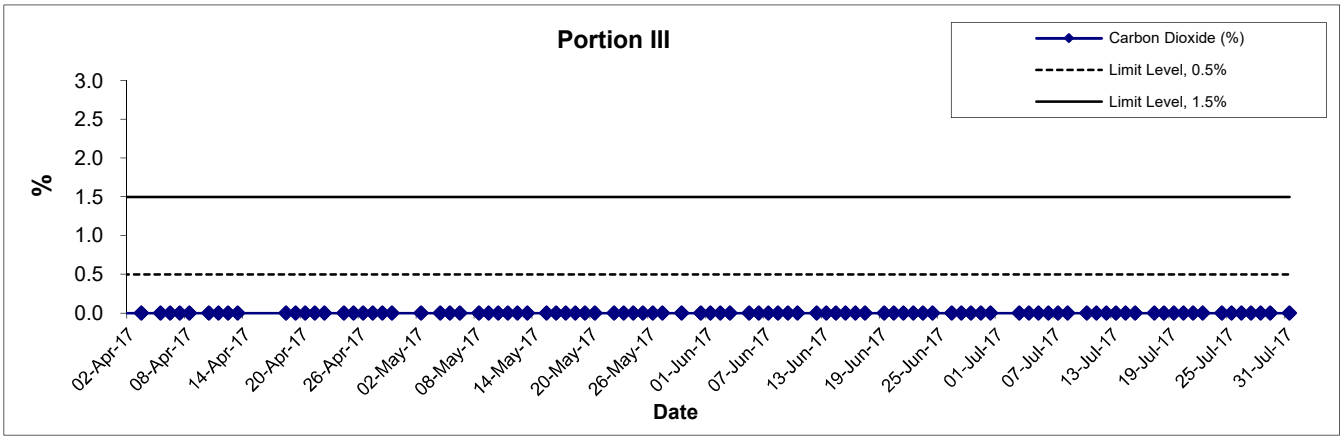
APPENDIX R - RECORD OF LANDFILL GAS MONITORING BY THE CONTRACTOR

Location	Date of Measurement	Sampling time	Weather Condition	Temperature (°C)	Methane (%)	Carbon dioxide (%)	Oxygen (%)
Portion III	3-Jul-17	8:30	Sunny	30	0	0	20.9
	3-Jul-17	14:15	Sunny	31	0	0	20.9
	4-Jul-17	8:30	Sunny	29	0	0	20.9
	4-Jul-17	13:35	Sunny	30	0	0	20.9
	5-Jul-17	8:35	Sunny	30	0	0	20.9
	5-Jul-17	13:40	Cloudy	31	0	0	20.9
	6-Jul-17	8:30	Cloudy	28	0	0	20.9
	6-Jul-17	13:02	Cloudy	32	0	0	20.9
	7-Jul-17	8:30	Cloudy	29	0	0	20.9
	7-Jul-17	13:00	Cloudy	32	0	0	20.9
	8-Jul-17	8:30	Sunny	29	0	0	20.9
	8-Jul-17	13:04	Cloudy	31	0	0	20.9
	10-Jul-17	8:30	Cloudy	27	0	0	20.9
	10-Jul-17	13:02	Sunny	33	0	0	20.9
	11-Jul-17	8:30	Sunny	29	0	0	20.9
	11-Jul-17	13:01	Cloudy	34	0	0	20.9
	12-Jul-17	8:28	Sunny	29	0	0	20.9
	12-Jul-17	13:02	Sunny	32	0	0	20.9
	13-Jul-17	8:29	Cloudy	29	0	0	20.9
	13-Jul-17	13:01	Cloudy	31	0	0	20.9
	14-Jul-17	8:25	Sunny	28	0	0	20.9
	14-Jul-17	13:04	Cloudy	31	0	0	20.9
	15-Jul-17	8:28	Rainy	27	0	0	20.9
	15-Jul-17	13:10	Cloudy	30	0	0	20.9
	17-Jul-17	8:28	Cloudy	30	0	0	20.9
	17-Jul-17	13:00	Cloudy	34	0	0	20.9
	18-Jul-17	8:29	Rainy	28	0	0	20.9
	18-Jul-17	13:02	Rainy	32	0	0	20.9
	19-Jul-17	8:30	Rainy	27	0	0	20.9
	19-Jul-17	13:00	Rainy	29	0	0	20.9
	20-Jul-17	8:30	Rainy	28	0	0	20.9
	20-Jul-17	13:03	Rainy	30	0	0	20.9
	21-Jul-17	8:28	Rainy	28	0	0	20.9
	21-Jul-17	13:01	Cloudy	32	0	0	20.9
	22-Jul-17	8:30	Rainy	28	0	0	20.9
	22-Jul-17	13:04	Cloudy	31	0	0	20.9
	24-Jul-17	8:27	Sunny	29	0	0	20.9
	24-Jul-17	13:03	Cloudy	32	0	0	20.9
	25-Jul-17	8:28	Cloudy	29	0	0	20.9
	25-Jul-17	13:05	Cloudy	32	0	0	20.9
	26-Jul-17	8:28	Sunny	31	0	0	20.9
	26-Jul-17	13:04	Sunny	36	0	0	20.9
	27-Jul-17	8:30	Sunny	30	0	0	20.9
	27-Jul-17	13:02	Cloudy	35	0	0	20.9
	28-Jul-17	8:30	Sunny	32	0	0	20.9
	28-Jul-17	13:04	Sunny	35	0	0	20.9
	29-Jul-17	8:30	Sunny	30	0	0	20.9
	29-Jul-17	13:00	Sunny	35	0	0	20.9
	31-Jul-17	8:30	Sunny	29	0	0	20.9
	31-Jul-17	13:02	Sunny	36	0	0	20.9

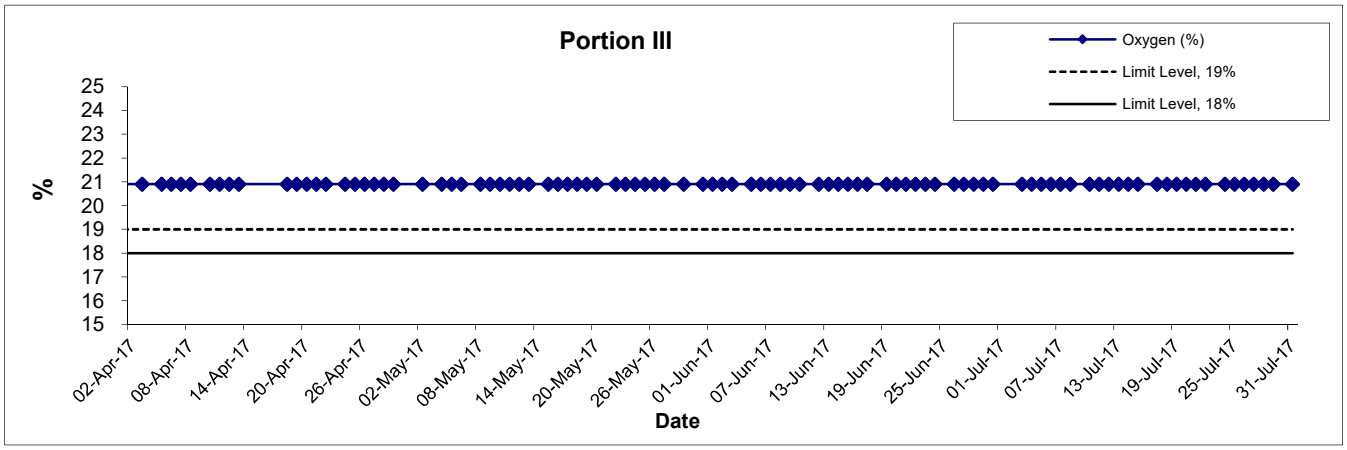
Methane



Carbon Dioxide



Oxygen



Title: Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction Graphical Presentation of Landfill Gas Measurement	Scale: N.T.S Date: Jul 17	Project No.: MA16034 Appendix: R	CINOTECH

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

No post-translocation coral monitoring was conducted in the reporting month