


**Civil Engineering and Development Department**

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

**Monthly Environmental Monitoring and  
Audit Report for May 2018**

**(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 19<sup>th</sup> Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction” (hereinafter called “the Project”). This report documents the findings of EM&A Works conducted in May 2018.
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;
  - Contract No. NE/2017/01 – Tseung Kwan O – Lam Tin Tunnel –Tseung Kwan O Interchange and Associated Works
  - Contract No. NE/2017/02 – Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works.

**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 (exceedance) in the reporting month for the Project is tabulated in **Table I**.

**Table I Non-compliance (exceedance) Record for the Project in the Reporting Month**

Environmental Monitoring	No. of Non-compliance (Exceedance)		No. of Non-compliance (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	16	0	0(*)	0	Refer to Appendix O
Groundwater Quality	0	3	0(*)	0(*)	N/A
Marine Water Quality	0	0	0	0	N/A
Groundwater Level Monitoring (Piezometer Monitoring)	N/A(*)	N/A(*)	N/A(*)	N/A(*)	N/A(*)
Ecological	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

Note (\*): (1) Environmental complaints received from May 2018 are still under investigation.

(2) The exceedance for groundwater quality recorded on 24 May 2018 is still under investigation.

(3) Tunnel construction was within +/- 50m of the piezometer gate in plan. Construction phase

daily piezometer monitoring by the Contractor was not carried out in this reporting period as the monitoring point was being blocked by heavy overgrown vegetation. Piezometer monitoring is expected to begin in June 2018.

*Action Taken by the Contractor after received the complaint (Details of the complaints are shown in **Appendix O**)*

- Vehicle washing bay was set up at the site access of Portion 1 near Cha Kwo Ling Road;
- The access road leading to and exiting from the wheel washing bay to Cha Kwo Ling Road was hard-paved to prevent vehicle tracking of soil and mud to public roads;
- Water trucks and workers were dispatched to clear dust on Cha Kwo Ling Road and frequently perform water spraying to reduce dust generation due to vehicle movement;
- Accumulated dust on Cha Kwo Ling Road was cleared by using the shovel and the boom.
- Acoustic baffle between Works Area 1 and Cha Kwo Ling Village with acoustic materials mounted on container office to absorb noise due to handling of construction materials in Works Area 1.
- Steel bridge with full enclosure was used by construction vehicles to access Cha Kwo Ling Barging Point to reduce noise nuisance generated by entering or leaving of dump trucks from Cha Kwo Ling Barging Point
- Vertical screens with blasting mat to minimize the blasting noise due to surface blasting works; and
- Protective cages with rubber mat has been provided for the surface blasting works to minimize the blasting noise to the nearby NSRs in Lam Tin Interchange;

#### *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. Sixteen (16) Action Level exceedance was recorded due to the documented complaints received in this reporting month. No Limit Level exceedance was recorded in the reporting month.

#### *Water Quality Monitoring*

8. Groundwater quality monitoring was conducted as scheduled in the reporting month. No Action Level and Three (3) Limit Level exceedances were recorded in the reporting. The Action & Limit Level exceedance for groundwater quality recorded on 24 May 2018 is still under investigation and the investigation details will be reported in the next reporting month.

9. The investigation details of the groundwater quality exceedance on 24 April 2018 are shown in **Appendix K**.
10. All marine water monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
11. Construction phase daily piezometer monitoring by the Contractor was not carried out in this reporting period as the monitoring point was being blocked by heavy overgrown vegetation. Piezometer monitoring is expected to begin in June 2018.

#### *Ecological Monitoring*

12. Post-translation coral monitoring survey shall be conducted once every 3 months for a period of 12 months after completion of coral translocation. The post-translocation coral monitoring surveys were completed in November 2017.

#### *Monitoring on Cultural Heritage*

13. 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*

14. 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*

15. 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*

16. 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, NE/2015/03, NE/2017/01 and NE/2017/02 on 30, 23, 23, 30, 23 May 2018 respectively. Details of the audit findings and implementation status are presented in Section 10.

#### *Waste Management*

17. 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**

18. 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 by Project Team / Complaint referred by EPD (May 2018)	22	Construction dust / Noise nuisance/ Odour	Under investigation	On-going	Details refer to App O
Complaint received by Project Team / Complaint referred by EPD (April 2018)	15*	Noise nuisance / Light pollution/ Odour	Under investigation	On-going	
Complaint received by Project Team / Complaint referred by EPD (March 2018)	17	Construction dust / noise nuisance / Visual & Landscape	Provision of water truck, Frequent water spraying, erection of acoustic materials, and etc. (Refer to App O)	Closed	
Complaint received by Project Team / Complaint referred by EPD (February 2018)	6	Construction dust / noise nuisance	Provision of water truck, Frequent water spraying, erection of acoustic materials, and etc. (Refer to App O)	Closed	
Notifications of any summons & prosecutions received	0	---	N/A	N/A	

Note (\*): The number of complaints in April 2018 has been updated.

### Key Construction Work in the reporting month & the next reporting month

19. Summary of key construction work in the reporting month is tabulated in **Table III**.

**Table III Summary Table for Key Construction Work in the Reporting Month**

Contract No.	Project Title	Site Activities (May 2018)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation – Area 1G1, Area 1G2, Area 2, Area 3, Area 4 & Area 5
		Main Tunnel	1) Main tunnel Excavation
		TKO Interchange	1) Haul Road Construction, Site Formation and Slope Works 2) Steel Platform for Bridge Construction
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Installation of DN2100 Concrete Pipe at Portion IV & VII 2) ELS Installation for U-Trough B at Portion V & VI 3) Construction of Retaining Wall and U-Trough A at Portion VIII 4) Enhancement of Temporary Steel Cofferdam at Portion IX 5) Dredging Works and Armour Rock Removal at Portion IX 6) Treatment of Marine Sediment at Area A 7) General Site Clearance and Hoarding Erection	

NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	<ol style="list-style-type: none"> <li>1) Falsework erection of main bridge deck</li> <li>2) Construction of Pile Cap PC4 and Sump Pit</li> <li>3) Install steel mould and rebar fixing of main deck</li> </ol>
NE/2017/01	Tseung Kwan O – Lam Tin Tunnel – Tseung Kwan O Interchange and Associated Works	<ol style="list-style-type: none"> <li>1. Construction of Site Office</li> <li>2. Temporary Platform and Ground Investigation</li> </ol>
NE/2017/02	Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works	<ol style="list-style-type: none"> <li>1) Trial pit</li> <li>2) Underground utilities detection</li> <li>3) Temporary traffic arrangement Setup</li> <li>4) Site office erection</li> <li>5) Communication Liaison Center erection</li> <li>6) Modification of traffic island</li> <li>7) Fencing erection</li> <li>8) Modification of traffic island</li> <li>9) Predrilling</li> <li>10) Construction of Temporary cycle track</li> </ol>

### Future Key Issues

20. The future key environmental issues in the coming month include:

**Table IV Summary Table for Site Activities in the next Reporting Period**

Contract No. and Project Title	Site Activities (June 2018)		Key environmental issues *
NE/2015/01 - Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	<ol style="list-style-type: none"> <li>1) EHC2 U-Trough</li> <li>2) Site Formation – Area 1G1, Area 1G2, Area 2, Area 3, Area 4 &amp; Area 5</li> </ol>	(A) / (B) / (C) / (D) / (E) / (G)
	Main Tunnel	<ol style="list-style-type: none"> <li>1) Main Tunnel Excavation</li> </ol>	(B)
	TKO Interchange	<ol style="list-style-type: none"> <li>1) Haul Road Construction and Site Formation &amp; Slope Works</li> <li>2) Steel Platform for Bridge Construction</li> </ol>	(A) / (C) / (D) / (E) / (F) / (I)
NE/2015/02 - Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	<ol style="list-style-type: none"> <li>1) Pre-bored works, sheet piling and interlocking pipe piles installation works at Portion IV &amp; VII</li> <li>2) Removal of existing seawall blocks at Portion IV &amp; VII</li> <li>3) Reconstruction of existing outfall and installation of DN2100 drainage system at Portion IV &amp; VII</li> <li>4) Pre-bored works at Portion V &amp; VI</li> <li>5) Waterproofing, backfilling works and wall construction at Portion VIII</li> <li>6) Dredging at Portion IX</li> <li>7) Seawall Construction at Portion IX</li> <li>8) Placing sand blanket at non-dredged area at Portion IX</li> </ol>		(A) / (B) / (C) / (D) / (E) / (G) / (I)

NE/2015/03 - Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	1) Pier Construction at East Pier 2) Pier Construction at West Pier	(A) / (B) / (C) / (D) / (E)
NE/2017/01 – Tseung Kwan O Interchange and Associated Works	1) Construction of Site Office 2) Temporary Platform and Ground Investigation	(A) / (B) / (E) / (F) / (G)
NE/2017/02 – Tseung Kwan O - Lam Tin Tunnel - Road P2/D4 and Associated Works	1) Trial pit 2) Underground utilities detection 3) Temporary traffic arrangement Setup 4) Site office erection 5) Communication Liaison Center erection 6) Modification of traffic island 7) Fencing erection 8) Predrilling 9) Construction of Temporary cycle track 10) Construction of drainage and watermain	(A) / (B) / (E) / (F) / (G)

Note:

- (A) Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- (B) Noisy construction activity such as rock-breaking activities and piling works;
- (C) Runoff from exposed slope or site area;
- (D) Wastewater and runoff discharge from site;
- (E) Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
- (F) Set up and implementation of temporary drainage system for the surface runoff;
- (G) Storage of chemicals/fuel and chemical waste/waste oil on site;
- (H) Accumulation and storage of general and construction waste on site; and
- (I) 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 19<sup>th</sup> Monthly EM&A report summarizing the EM&A works for the Project in May 2018.

### **Purpose of the Report**

- 1.2 This is the 19<sup>th</sup> Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in May 2018.

### **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.
  - Contract No. NE/2017/02: 15 March 2018.
  - Contract No. NE/2017/01: 23 April 2018.

**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
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### Construction Activities undertaken during the Reporting Month

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

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

Contract No.	Project Title	Site Activities (May 2018)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation – Area 1G1, Area 1G2, Area 2, Area 3, Area 4 & Area 5
		Main Tunnel	1) Main tunnel Excavation
		TKO Interchange	1) Haul Road Construction, Site Formation and Slope Works 2) Steel Platform for Bridge Construction
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Installation of DN2100 Concrete Pipe at Portion IV & VII 2) ELS Installation for U-Trough B at Portion V & VI 3) Construction of Retaining Wall and U-Trough A at Portion VIII 4) Enhancement of Temporary Steel Cofferdam at Portion IX 5) Dredging Works and Armour Rock Removal at Portion IX 6) Treatment of Marine Sediment at Area A 7) General Site Clearance and Hoarding Erection	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	1) Falsework erection of main bridge deck 2) Construction of Pile Cap PC4 and Sump Pit 3) Install steel mould and rebar fixing of main deck	
NE/2017/01	Tseung Kwan O – Lam Tin Tunnel – Tseung Kwan O Interchange and Associated Works	1. Construction of Site Office 2. Temporary Platform and Ground Investigation	
NE/2017/02	Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works	1) Trial pit 2) Underground utilities detection 3) Temporary traffic arrangement Setup 4) Site office erection 5) Communication Liaison Center erection 6) Modification of traffic island 7) Fencing erection 8) Modification of traffic island 9) Predrilling 10) Construction of Temporary cycle track	

- 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 <b>Table 2.2</b>	Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities</li> <li>• Properly cover the stockpiles</li> <li>• On-site waste sorting and implementation of trip ticket system</li> <li>• Appropriate desilting/sedimentation devices provided on site for treatment before discharge</li> <li>• Use of quiet plant and well-maintained construction plant</li> <li>• Provide movable noise barrier</li> <li>• The open yard in front of the temple was kept as usual for annual Tin Hau Festival.</li> </ul>

#### 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	
<b>Environmental Permit (EP)</b>				
N/A	EP-458/2013/C	20/1/2017	N/A	Valid
<b>Notification pursuant to Air Pollution Control (Construction Dust) Regulation</b>				
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
NE/2017/02	EPD Ref no.: 429867	19/01/2018	N/A	Valid
NE/2017/01	EPD Ref no.: 430070	25/01/2018	N/A	Valid
<b>Billing Account for Construction Waste Disposal</b>				
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
NE/2017/02	Account No. 7029651	22/12/2017	N/A	Valid
NE/2017/01	Account No. 7029994	01/02/2018	N/A	Valid
<b>Vessel Billing Account under construction waste disposal charging scheme</b>				
NE/2015/01	Account No. 7027764	29/01/2018	10/05/2018	Valid
<b>Registration of Chemical Waste Producer</b>				



Contract No.	Permit / License No.	Valid Period		Status
		From	To	
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
NE/2017/02	Waste Producer No. 5213-833-Z4004-04	01/02/2018	N/A	Valid
NE/2017/01	Waste Producer No. 5213-833-C4262-01	12/02/2018	N/A	Valid
<b>Effluent Discharge License under Water Pollution Control Ordinance</b>				
NE/2015/01	WT00025806-2016	22/11/2016	30/11/2021	Valid
	WT00026212-2016	16/05/2017	30/11/2021	Valid
	WT00027354-2017	22/03/2017	31/03/2022	Valid
	WT00027405-2017	22/03/2017	31/03/2022	Valid
	WT-00028495-2017	11/08/2017	31/08/2022	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
NE/2017/01	WT00030711-2018	11/04/2018	30/04/2023	Valid
	WT00030716-2018	23/05/2018	31/05/2023	Valid
NE/2017/02	WT00030654-2018	16/04/2018	30/04/2023	Valid
<b>Construction Noise Permit (CNP)</b>				
NE/2015/01	GW-RE1024-17	23/12/2017	22/06/2018	Valid
	GW-RE0084-18	10/02/2018	07/05/2018	Expired on 07/05/2018
	GW-RE0125-18	25/02/2018	24/05/2018	Expired on 24/05/2018
	GW-RE0142-18	08/03/2018	04/05/2018	Expired on 04/05/2018
	GW-RE0141-18	02/03/2018	31/05/2018	Expired on 31/05/2018
	GW-RE0140-18	06/03/2018	05/09/2018	Valid
	GW-RE0278-18	26/04/2018	24/06/2018	Valid
	GW-RE0309-18	04/05/2018	02/08/2018	Valid
	GW-RE0371-18	05/06/2018	04/09/2018	Valid
	GW-RE0373-18	01/06/2018	30/09/2018	Valid
NE/2015/02	GW-RE0905-17	17/11/2017	15/05/2018	Expired on 15/05/2018

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
	GW-RE0916-17	02/12/2017	01/06/2018	Valid
	GW-RE0353-18	16/05/2018	15/11/2018	Valid
	GW-RE0231-18	30/04/2018	29/07/2018	Valid
	GW-RE0243-18	01/05/2018	31/10/2018	Valid
	GW-RE0241-18	11/04/2018	10/10/2018	Valid
NE/2015/03	GW-RE0254-18	28/04/2018	15/05/2018	Expired on 15/05/2018
<b>Marine Dumping Permit</b>				
	EP/MD/18-129	16/03/2018	15/09/2018	Valid
NE/2015/02	EP/MD/18-139	15/05/2018	14/11/2018	Valid
	EP/MD/19-002	01/05/2018	31/05/2018	Expired on 31/05/2018
<b>Specified Process (SP) License</b>				
NE/2015/01	L-11-053	09/03/2018	08/03/2021	Valid

### Summary of EM&A Requirements

- 2.10 The EM&A programme requires construction noise monitoring, air quality monitoring, water quality monitoring, environmental site audit, etc. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
  - Action and Limit levels for all environmental parameters;
  - Event Action Plans;
  - Environmental mitigation measures, as recommended in the Project EIA Report.
- 2.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 10 of this report.
- 2.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the monitoring parameters of the required environmental monitoring works and audit works for the Project in May 2018.

### 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 <sup>(1)</sup>	Sitting-out Area at Cha Kwo Ling Village	Ground Level
AM4(A) <sup>(2) (*)</sup>	Cha Kwo Ling Public Cargo Working Area Administrative Office	Rooftop (3/F)
AM5(A) <sup>(*)</sup>	Tseung Kwan O DSD Desilting Compound	Ground Level
AM6(A) <sup>(*)</sup>	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	0
	Met One Instruments Model No.: AEROCET-531	0
	Handheld Particle Counter Hal-HPC300 / Hal-HPC301	7
HVS Sampler	TISCH Model: TE-5170	1
	GMW Model: GS2310	5
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	0
	Davis Weather Stations, Vantage Pro 2, Model No. 6152CUK	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 / Hal-HPC301)

- 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 and GMW Model: GS2310) completed 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<sup>3</sup>/min. and 1.4 m<sup>3</sup>/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 957 / 977	5
	BSWA 801	2
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 <sub>10</sub> (30 min) dB(A) L <sub>90</sub> (30 min) dB(A) L <sub>eq</sub> (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<sub>eq</sub>, L<sub>90</sub> and L<sub>10</sub> 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. Sixteen (16) Action Level exceedance was recorded due to the documented complaints received in this reporting month. No Limit Level exceedance was recorded in the reporting month.
- 4.10 Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 4.11 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

- 4.12 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, Contract No. NE/2015/03, Contract No. NE/2017/01 and Contract No. NE/2017/02

- 4.13 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<sub>5</sub>), 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.
- 5.5 According to the Environmental Review Report (ERR) for Variations of Environmental Permit (Ref: C45-03), water quality monitoring and audit programme was implemented for monitoring of oxygen depletion (e.g. Dissolved Oxygen (DO) level) in this embayed waters during the period when the fully enclosed barrier is installed. A “Proposal for Water Quality Monitoring in Temporary Marine Embayment” has been submitted to EPD in July 2017 to propose the monitoring frequency, parameter, location, etc. EPD has no further comment on the Proposal.

#### Groundwater Level Monitoring (Piezometer Monitoring)

- 5.6 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

- 5.7 Stream 1 – Stream 3 is designated for the groundwater quality monitoring according to EM&A Manual. The locations are 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

- 5.8 A total of twelve monitoring stations are designated for the water quality monitoring program according to EM&A Manual. One additional monitoring station (W1) is designated for monitoring of oxygen depletion in the embayed waters during the period when the fully enclosed barrier is installed. The locations are also summarized in **Table 5.2** and shown on **Figure 5** and **Figure 9**.

**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
W1	Ocean Shores (for WQM in temporary marine embayment)	844324	817791

**Monitoring Equipments**

- 5.9 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<sub>5</sub>, TOC, Total Nitrogen, Ammonia-N and Total Phosphate.

Dissolved Oxygen (DO) and Temperature Measuring Equipment

- 5.10 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.
- 5.11 It has a membrane electrode with automatic temperature compensation complete with a cable.
- 5.12 Sufficient stocks of spare electrodes and cables were available for replacement where necessary.
- 5.13 Salinity compensation was built-in in the DO equipment.

#### Turbidity

- 5.14 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

- 5.15 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

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

#### Water Sampler

- 5.17 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

- 5.18 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

- 5.19 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.
- 5.20 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.
- 5.21 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.
- 5.22 Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also made available so that monitoring can proceed

- uninterrupted even when some equipment is under maintenance, calibration, etc.
- 5.23 **Table 5.3** summarizes the equipment used in the water quality monitoring program. Copies of the calibration certificates of the equipment are shown in **Appendix B**.

**Table 5.3 Water Quality Monitoring Equipment**

Equipment	Model and Make	Qty.
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	1
Multi-parameter Water Quality System	YSI 6820-C-M	0
	Aquaread AP-2000-D	0
	YSI EXO1 Multiparameter Sondes	6
Monitoring Position Equipment	“Magellan” Handheld GPS Model GPS-320	1
Water Depth Detector	Fishfinder 140	1

**Monitoring Parameters and Frequency**

- 5.24 **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
<b>Groundwater Quality</b>			
Stream 1- Stream 3	<ul style="list-style-type: none"> <li>• DO, mg/L</li> <li>• DO Saturation, %</li> <li>• pH</li> <li>• Water Temperature (°C)</li> <li>• Turbidity, NTU</li> <li>• SS, mg/L</li> <li>• BOD<sub>5</sub>, mg O<sub>2</sub>/L</li> <li>• TOC, mg-TOC/L</li> <li>• Total Nitrogen, mg/L</li> <li>• Ammonia-N, mg NH<sub>3</sub>-N/L</li> <li>• Total Phosphate, mg-P/L</li> </ul>	Mid-depth	Biweekly  (When the tunnel construction works are found within 50m of the location, weekly.)
<b>Marine Water Quality</b>			
M1 M2 M3 M4 M5 M6 C1 C2 G1 G2 G3 G4	<p><i>In-situ:</i> Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity</p> <p><u>Laboratory Testing:</u> Suspended Solids (SS)</p>	<p><u>M1-M5, C1-C2, G1-G4</u></p> <ul style="list-style-type: none"> <li>• 3 water depths: 1m below water surface, mid-depth and 1m above sea bed.</li> <li>• If the water depth is less than 3m, mid-depth sampling only.</li> <li>• If the water depth is less than 6m, omit mid-depth sampling.</li> </ul> <p><u>M6</u></p> <ul style="list-style-type: none"> <li>• at the vertical level where the water abstraction point of the intake is located(i.e. approximately mid-depth level)</li> </ul>	3 days per week / 2 per monitoring day (1 for mid-ebb and 1 for mid-flood)

Monitoring Stations	Parameters, unit	Depth	Frequency
<b>Water Quality Monitoring in Temporary Marine Embayment</b>			
W1	<ul style="list-style-type: none"> <li>• DO, mg/L</li> <li>• DO Saturation, %</li> <li>• pH</li> <li>• Water Temperature (°C)</li> <li>• Salinity, ppt</li> </ul>	<ul style="list-style-type: none"> <li>• 3 water depths: 1m below water surface, mid-depth and 1m above sea bed.</li> <li>• If the water depth is less than 3m, mid-depth monitoring only.</li> <li>• If the water depth is less than 6m, omit mid-depth monitoring</li> </ul>	Weekly during the period when the fully enclosed barrier is installed

### Monitoring Methodology

#### Groundwater Quality

- 5.25 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.
- 5.26 For SS, BOD<sub>5</sub>, 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<sub>2</sub>SO<sub>4</sub> 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

- 5.27 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.
- 5.28 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

- 5.29 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 <sup>(1)</sup>	0.5 mg/L
BOD <sub>5</sub> (mg O <sub>2</sub> /L)	APHA 19ed 5210B	2 mg O <sub>2</sub> /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 <sub>3</sub> -N/L)	In-house method SOP057 (FIA)	0.05 mg NH <sub>3</sub> - N/L	--
Total Phosphorus (mg-P/L) <sup>(2)</sup>	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

- 5.30 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

- 5.31 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.
- 5.32 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

- 5.33 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 quality monitoring results, graphical presentations and laboratory testing reports are shown in **Appendix H**.
- 5.34 Other relevant data was also recorded, such as monitoring location / position, time, sampling depth, weather conditions and any special phenomena or work underway nearby.



- 5.35 Action and Limit Level for groundwater quality monitoring has been reviewed with consideration of monitoring results obtained from November 2016 to June 2017, as there was no tunnel boring or tunnel construction works from November 2016 to June 2017. A “Review Report for Action and Limit Levels of Groundwater Quality Monitoring” was submitted to EPD in August 2017. EPD has no further comment on the report and the updated Action and Limit Level is shown in **Appendix A**.

**Table 5.6 Summary of Groundwater Quality Monitoring Results**

Date	Location	Parameters (unit)								
		pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	SS (mg/L)	BOD <sub>5</sub> (mg O <sub>2</sub> /L)	TOC (mg-TOC/L)	Total Nitrogen (mg/L)	NH <sub>3</sub> -N (mg NH <sub>3</sub> -N/L)	Total Phosphorus (mg-P/L)
11 May 2018	Stream 1	8.2	8.4	1.1	<2.5	<2	5	1.3	<0.05	0.05
	Stream 2	8.2	8.5	1.7	4	<2	8	1.7	<0.05	<0.05
	Stream 3	7.8	7.8	1.8	<2.5	<2	6	1.7	<0.05	<0.05
24 May 2018	Stream 1	7.9	8	0.5	<2.5	<2	4	1	<0.05	<b><i><u>0.12</u></i></b>
	Stream 2	8.1	7.8	1.3	7	<2	8	1.2	0.08	<b><i><u>0.09</u></i></b>
	Stream 3	7.2	7.7	0.4	5.0	<2	6	1	<0.05	<b><i><u>0.17</u></i></b>
No. of Exceedance	Action Level	0	0	0	0	0	0	0	0	0
	Limit Level	0	0	0	0	0	0	0	0	3

Note: ***Bold Italic*** means Action Level exceedance

***Bold Italic with underline*** means Limit Level exceedance

- 5.36 All groundwater quality monitoring was conducted as scheduled in the reporting month. Three (3) Limit Level exceedances and no Action Level exceedance were recorded in the reporting month. And the Action & Limit Level exceedance for groundwater quality recorded on 24 May 2018 is still under investigation and the investigation details will be reported in the next reporting month.
- 5.37 The investigation details of the groundwater quality exceedance on 24 April 2018 are shown in **Appendix K**.

#### Marine Water Quality Monitoring

- 5.38 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.
- 5.39 Calculated Action and Limit Levels for Marine Water Quality is presented in **Appendix I**. No Action/Limit Level exceedance was recorded in the reporting period.

#### Groundwater Level Monitoring (Piezometer Monitoring)

- 5.40 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.
- 5.41 Tunnel construction activities are within +/- 50m of the piezometer gate in plan. Construction phase daily piezometer monitoring by the Contractor was not carried out in this reporting period as the monitoring point was being blocked by heavy overgrown vegetation. Piezometer monitoring is expected to begin in June 2018.

## 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 fourth post-translocation coral monitoring was carried out on 07 November 2017.
- 6.4 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 The post-translocation coral monitoring surveys were completed in November 2017.

## 7. CULTURAL HERITAGE

### Monitoring Requirement

- 7.1 According to the EP Conditions and EM&A Manual, monitoring of vibration impacts was conducted when the construction works are less than 100m from the Built Heritage in close proximity of the worksite, namely the Cha Kwo Ling Tin Hau temple. Tilting and settlement monitoring should be applied on the Cha Kwo Ling Tin Hau Temple. Construction works less than 100m from the Cha Kwo Ling Tin Hau temple commenced on 8 April 2017.
- 7.2 As stated in the “*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 vibration monitoring point and three building settlement monitoring points are proposed for monitoring of the cultural heritage. The building settlement markers are placed on the wall on three sides of the Temple, except the front, of the Cha Kwo Ling Tin Hau Temple and the vibration monitoring point is located within the Cha Kwo Ling Tin Hau Temple. Monitoring Location is shown in **Figure 8**.

### Monitoring Equipment

- 7.4 Building settlement is measured via a settlement marker attached to the wall of Cha Kwo Ling Tin Hau Temple by adhesive tape.
- 7.5 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)).
- 7.6 **Table 7.1** summarizes the equipment employed by the Contractor for cultural heritage monitoring. Copies of calibration certificates are attached in **Appendix B**.

**Table 7.1 Cultural Heritage Monitoring Equipment**

Equipment	Manufacturer and Model	Quantity
Digital Level for tilting	Leica Serial No.: 701133	1
iCivil-1011 Inclinometer for building settlement	iCivil-1011 Inclinometer Serial No.: HK110118 / HK110120	2
Vibrographs for vibration monitoring	Micromate Unite manufactured by InstanTel Model No.: 721A2501 MiniMate Plus manufactured by InstanTel Model No.: 716A0403	3

**Monitoring Methodology**

- 7.7 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 monitoring should be conducted by surveyors manually.

**Alert, Alarm and Action Levels**

- 7.8 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 <sup>(1)</sup>	1:2000	1:1500	1:1000

Remarks: (1) Building tilting measurement was replaced by building settlement point measurement. The tilting can be calculated by the ratio of the maximum settlement difference between 2 points and the distance between the 2 points.

**Results**

- 7.9 In the reporting month, cultural heritage monitoring was carried out by the Contractor at the aforesaid location on 25 occasions. No AAA Level exceedance was recorded in the reporting month. The monitoring results are presented in **Appendix T**.

**Mitigation Measures for Cultural Heritage**

- 7.10 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.
- 7.11 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 listed in “Implementation Schedule and Recommended Mitigation Measures” (shown in **Appendix N**). The summaries of observations and recommendations related to landscape and visual impacts, if any, are shown 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
Portable gas detector	ALTAIR 5X Multigas Detector (Serial No. 120848)	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**.

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**10. ENVIRONMENTAL AUDIT****Site Audits**

- 10.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix L**.
- 10.2 Joint weekly site audits by the representatives of the Engineer, Contractor and the ET were conducted in the reporting month as shown in below:
- Contract No. NE/2015/01: 2, 9, 16, 23, and 30 May 2018
  - Contract No. NE/2015/02: 3, 10, 16, 23 and 30 May 2018
  - Contract No. NE/2015/03: 4, 9, 16, 23 and 30 May 2018
  - Contract No. NE/2017/01: 2, 8, 16, 23 and 30 May 2018
  - Contract No. NE/2017/02: 7, 16, 23 and 30 May 2018

Monthly joint site inspection with the representative of IEC was conducted for NE/2015/01, NE/2015/02, NE/2015/03, NE/2017/01 and NE/2017/02 on 30, 23, 23, 30, 23 May 2018 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-compliance was identified. The observations and recommendations made during the audit sessions are summarized in **Appendix L**.



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**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**.

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**12. ENVIRONMENTAL NON-CONFORMANCE****Summary of Exceedances**

- 12.1 Sixteen (16) Action Level exceedances for noise monitoring were recorded due to the documented complaints received in this reporting month.
- 12.2 No Action Level and Three (3) Limit Level exceedances for groundwater quality monitoring were recorded in the reporting month.
- 12.3 Actions carried out in accordance with the Event and Action Plans in **Appendix M** are presented in **Appendix K – Summary of Exceedance**.

**Summary of Environmental Non-Compliance**

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

**Summary of Environmental Complaint**

- 12.5 Twenty-two (22) environmental complaints were received in the reporting month. The Cumulative Complaint Log is presented in **Appendix O**. The investigation status and result is also reported in **Appendix O**.

**Summary of Environmental Summon and Successful Prosecution**

- 12.6 No notification of summon or successful environmental prosecution was received in this reporting period. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix O**.

**13. FUTURE KEY ISSUES**

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

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

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

Contract No.	Project Title	Site Activities (June 2018)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation – Area 1G1, Area 1G2, Area 2, Area 3, Area 4 & Area 5
		Main Tunnel	1) Main Tunnel Excavation
		TKO Interchange	1) Haul Road Construction and Site Formation & Slope Works 2) Steel Platform for Bridge Construction
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Pre-bored works, sheet piling and interlocking pipe piles installation works at Portion IV & VII 2) Removal of existing seawall blocks at Portion IV & VII 3) Reconstruction of existing outfall and installation of DN2100 drainage system at Portion IV & VII 4) Pre-bored works at Portion V & VI 5) Waterproofing, backfilling works and wall construction at Portion VIII 6) Dredging at Portion IX 7) Seawall Construction at Portion IX 8) Placing sand blanket at non-dredged area at Portion IX	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	1) Pier Construction at East Pier 2) Pier Construction at West Pier	
NE/2017/01	Tseung Kwan O Interchange and Associated Works	1) Construction of Site Office 2) Temporary Platform and Ground Investigation	
NE/2017/02	Tseung Kwan O - Lam Tin Tunnel - Road P2/D4 and Associated Works	1) Trial pit 2) Underground utilities detection 3) Temporary traffic arrangement Setup 4) Site office erection 5) Communication Liaison Center erection 6) Modification of traffic island 7) Fencing erection 8) Predrilling 9) Construction of Temporary cycle track 10) Construction of drainage and watermain	

### **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 19<sup>th</sup> Environmental Monitoring and Audit (EM&A) Report which presents the EM&A works undertaken during the period in May 2018 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. Sixteen (16) Action Level exceedance was recorded due to the documented complaints received in this reporting month. No Limit Level exceedance was recorded in the reporting month.

#### Water Quality Monitoring

- 14.5 Groundwater quality monitoring was conducted as scheduled in the reporting month. No Action Level and Three (3) Limit Level exceedances were recorded in the reporting. The Action & Limit Level exceedance for groundwater quality recorded on 24 May 2018 is still under investigation and the investigation details will be reported in the next reporting month.
- 14.6 The investigation details of the groundwater quality exceedance on 24 April 2018 are shown in **Appendix K**.

#### Groundwater Level Monitoring

- 5.42 Tunnel construction activities are within +/- 50m of the piezometer gate in plan. Construction phase daily piezometer monitoring by the Contractor was not carried out in this reporting period as the monitoring point was being blocked by heavy overgrown vegetation. Piezometer monitoring is expected to begin in June 2018.
- 14.7 All marine water monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### Ecological Monitoring

- 14.8 The post-translocation coral monitoring surveys were completed in November 2017.

#### Monitoring on Cultural Heritage

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

#### Landscape and Visual Monitoring and Audit

- 14.10 No non-compliance of the landscape and visual impact was recorded in the reporting month.

Landfill Gas Monitoring

- 14.11 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

- 14.12 Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. During site inspections in the reporting month, no non-compliance was identified. The environmental deficiency observed during the reporting month are shown in **Appendix L**.

Complaint, Prosecution and Notification of Summons

- 14.13 Twenty-two (22) environmental complaints, no successful prosecution and notification of summon were received during the reporting period.

**Recommendations**

- 14.14 The following recommendations were made to the Contractor for the 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.
- To avoid dark smoke emitted from the generator.

*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.
- To maintain the sedimentation tank more frequently to ensure proper wastewater treatment 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.
- To provide drip tray to chemical containers to avoid any chemical leakage.
- To remove the oil stain and disposed of as chemical waste.
- To remove the stagnant water regularly found inside the drip tray.

*Landscape and Visual*

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

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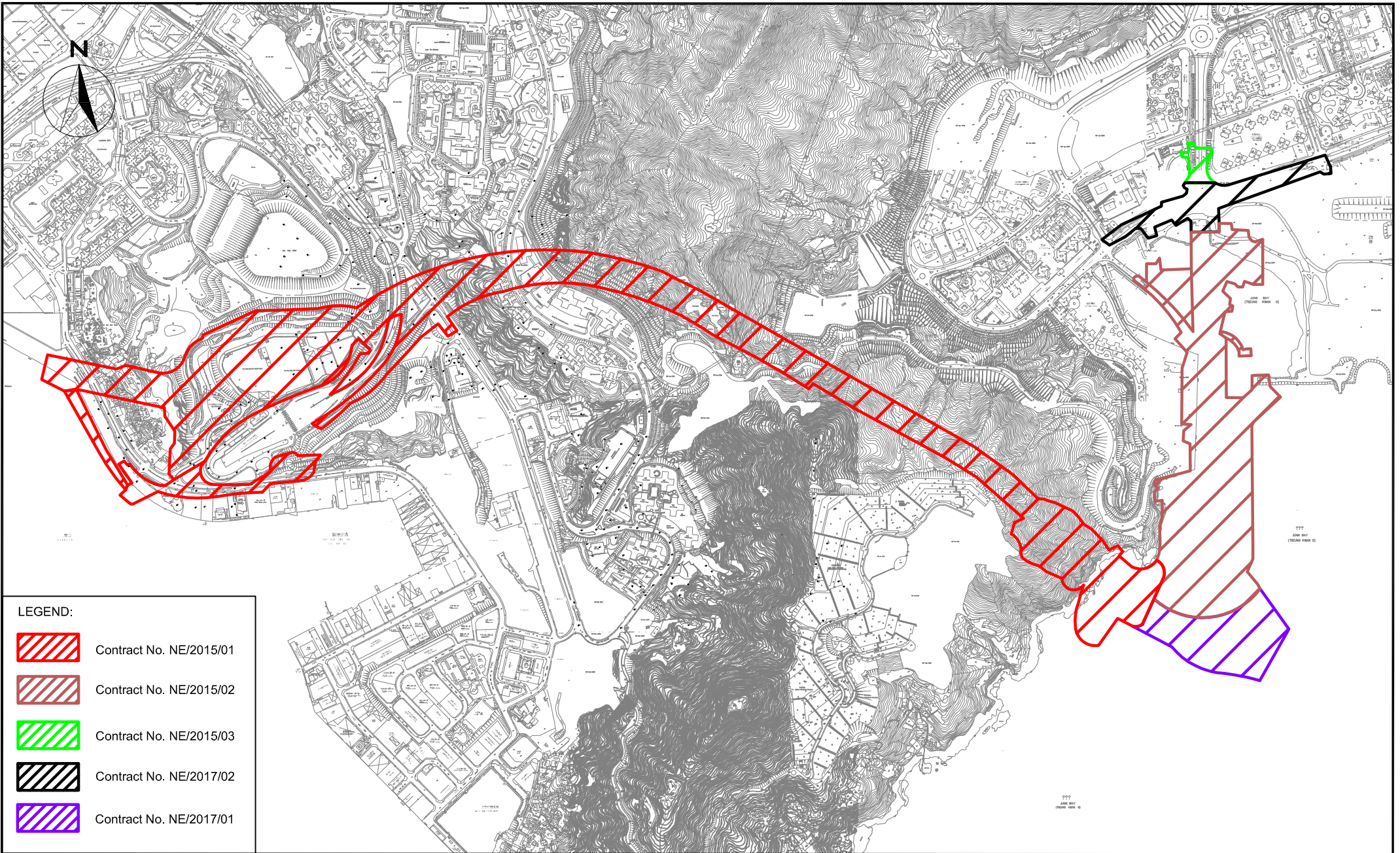
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## FIGURES




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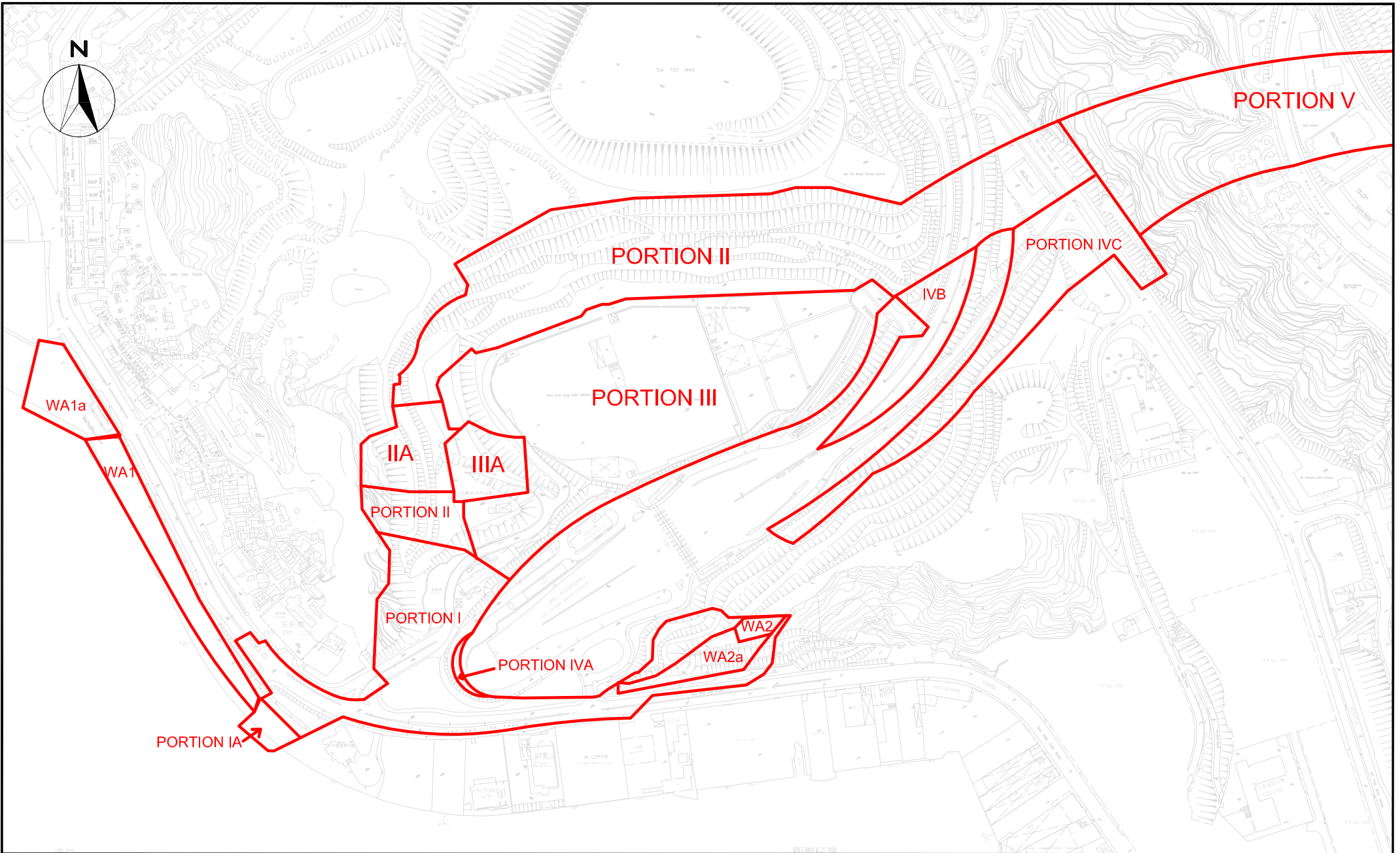
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	Contract No. NE/2015/02
	Contract No. NE/2015/03
	Contract No. NE/2017/02
	Contract No. NE/2017/01

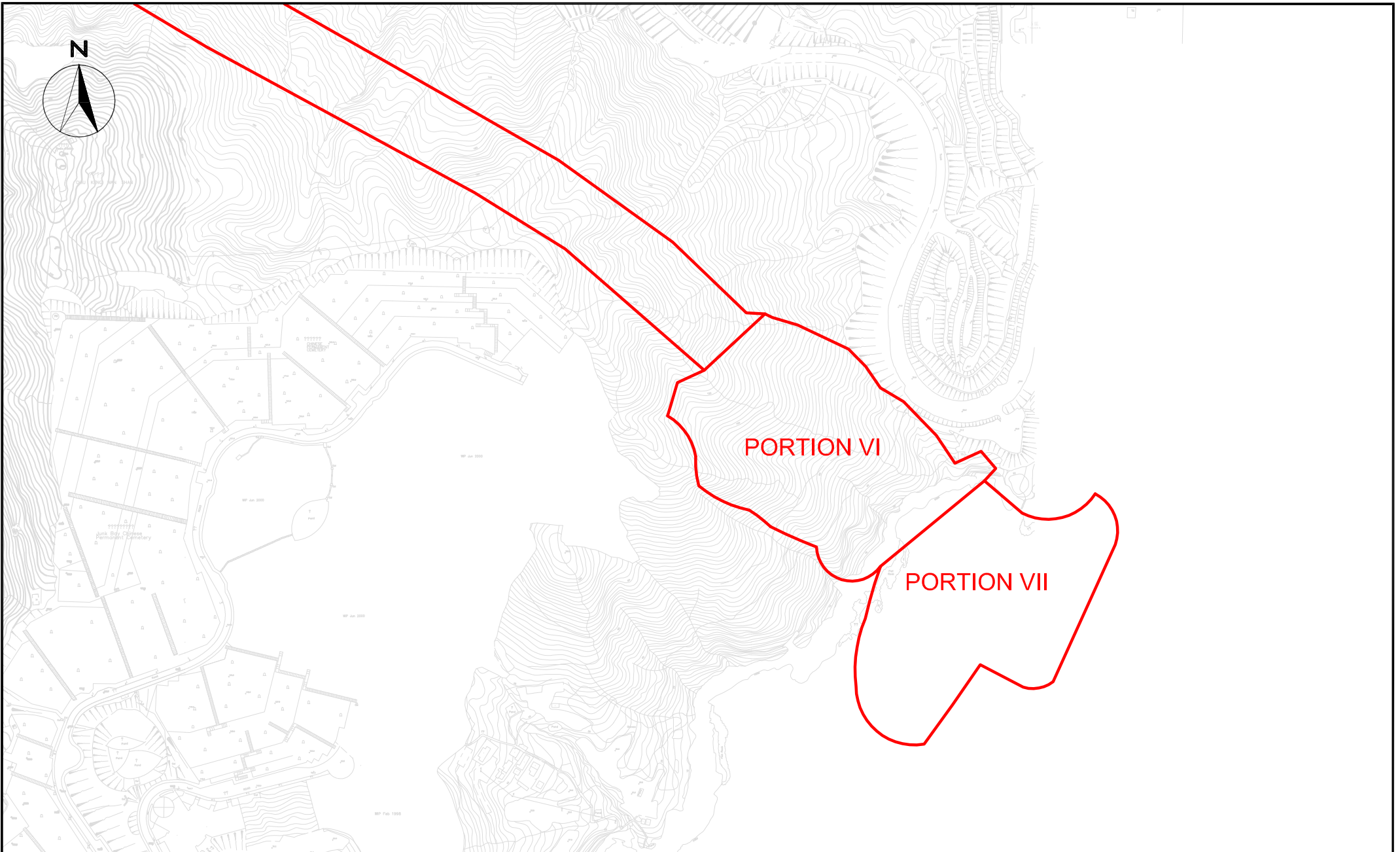
**CINOTECH**  
Cinotech Consultants Limited

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

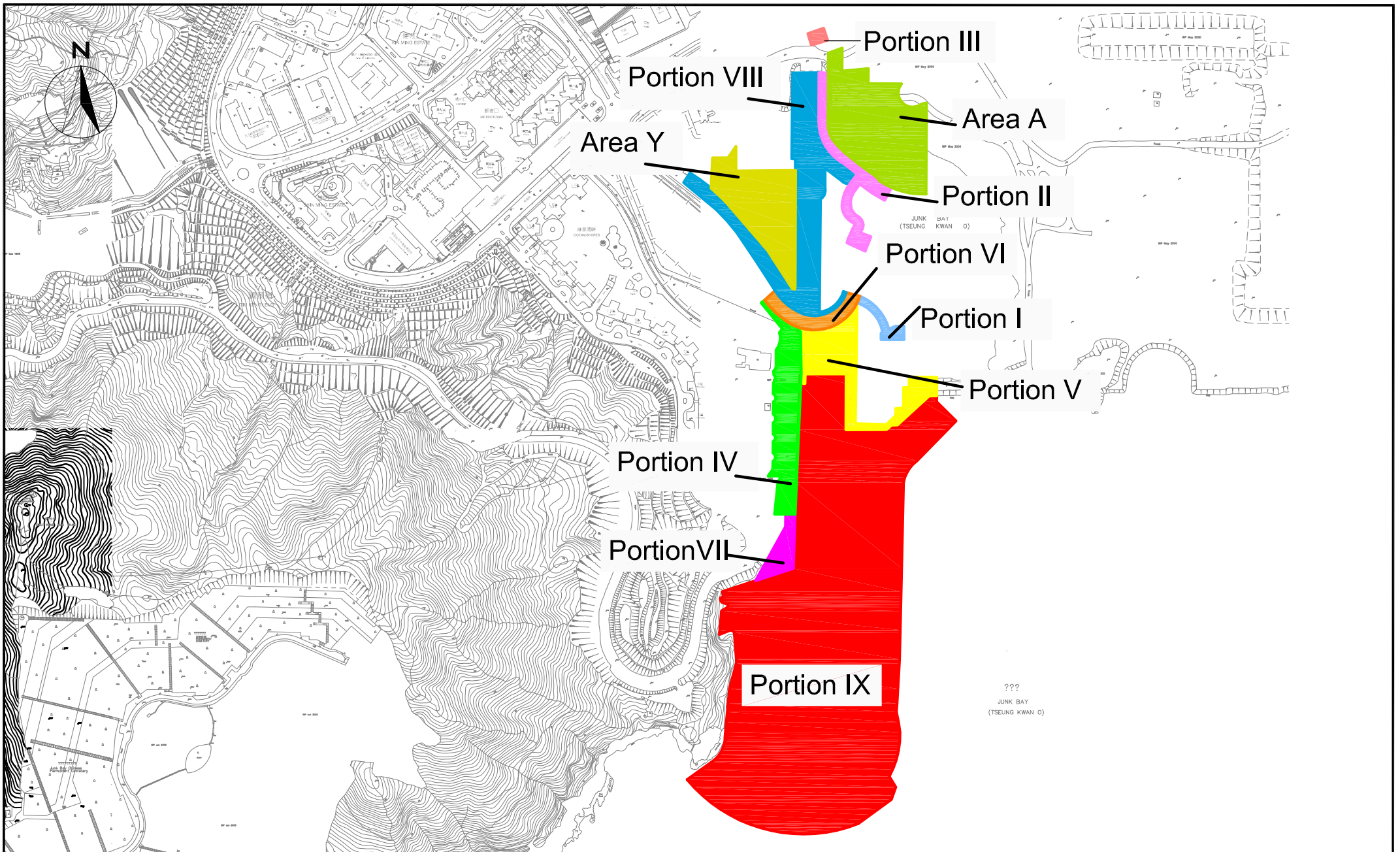
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JOB No.	MA16034	FIGURE NO.	1
		REV	-



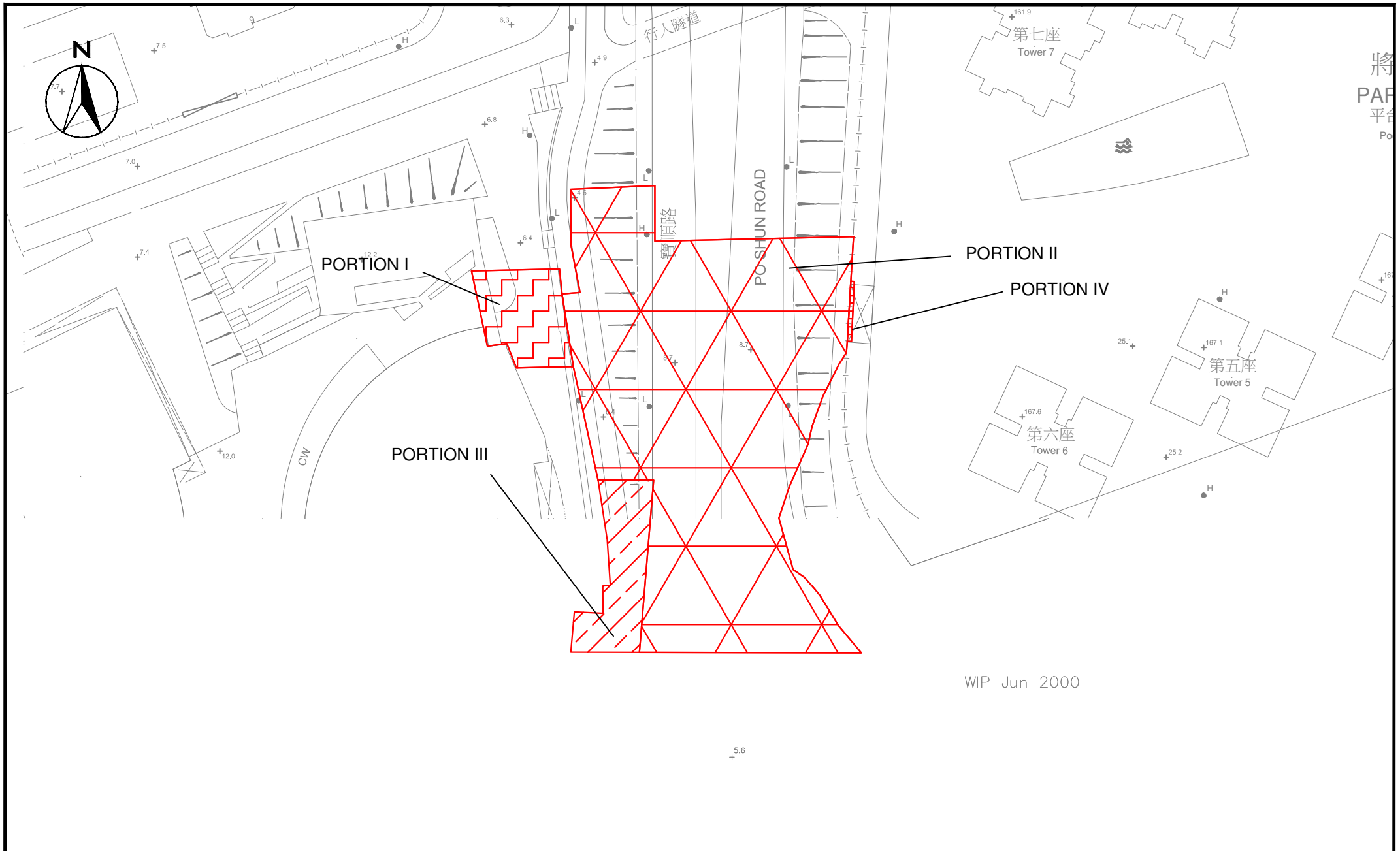
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JOB No.	MA16034	FIGURE NO.	1a	REV -



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		REV	-

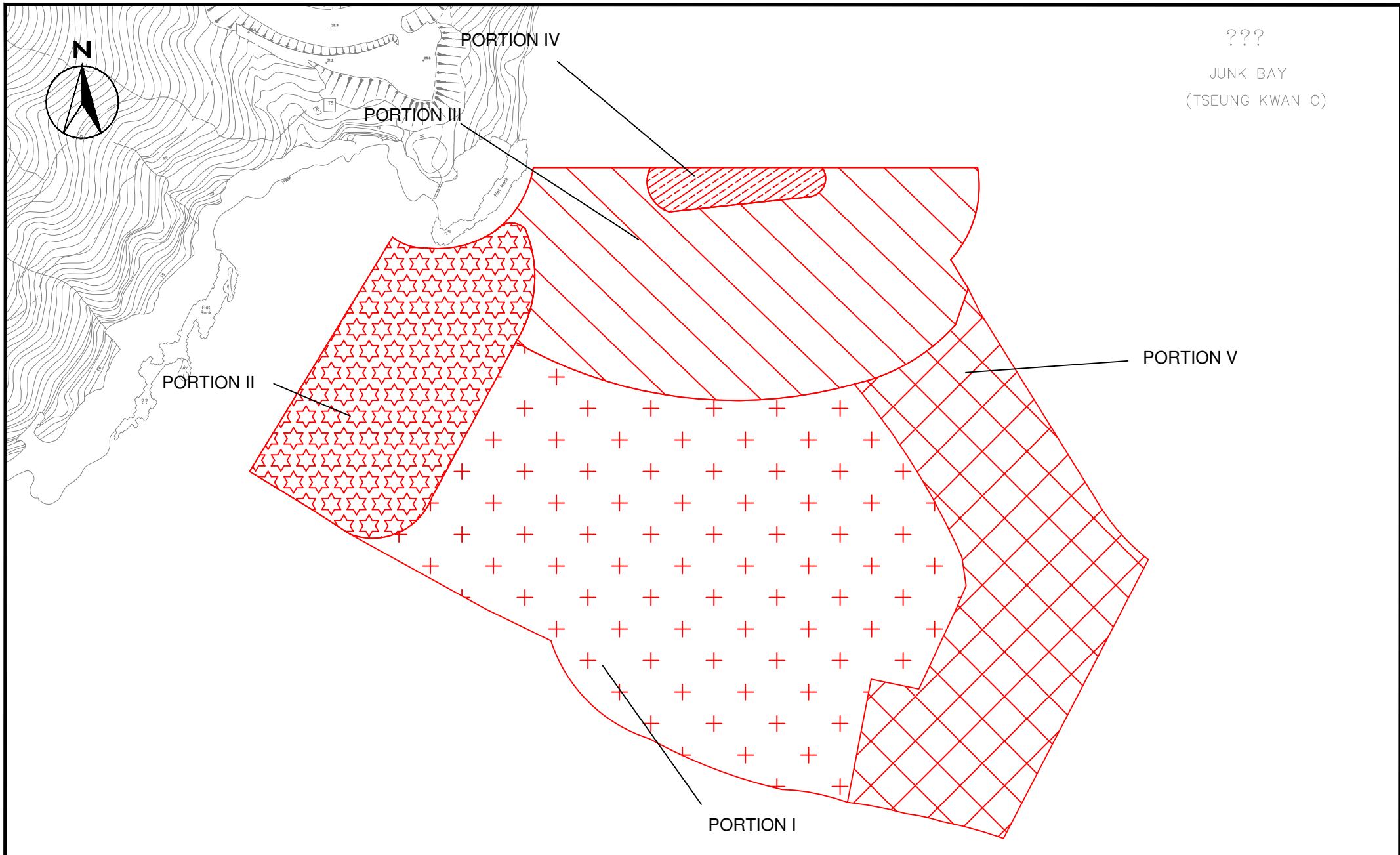


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WIP Jun 2000

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				-



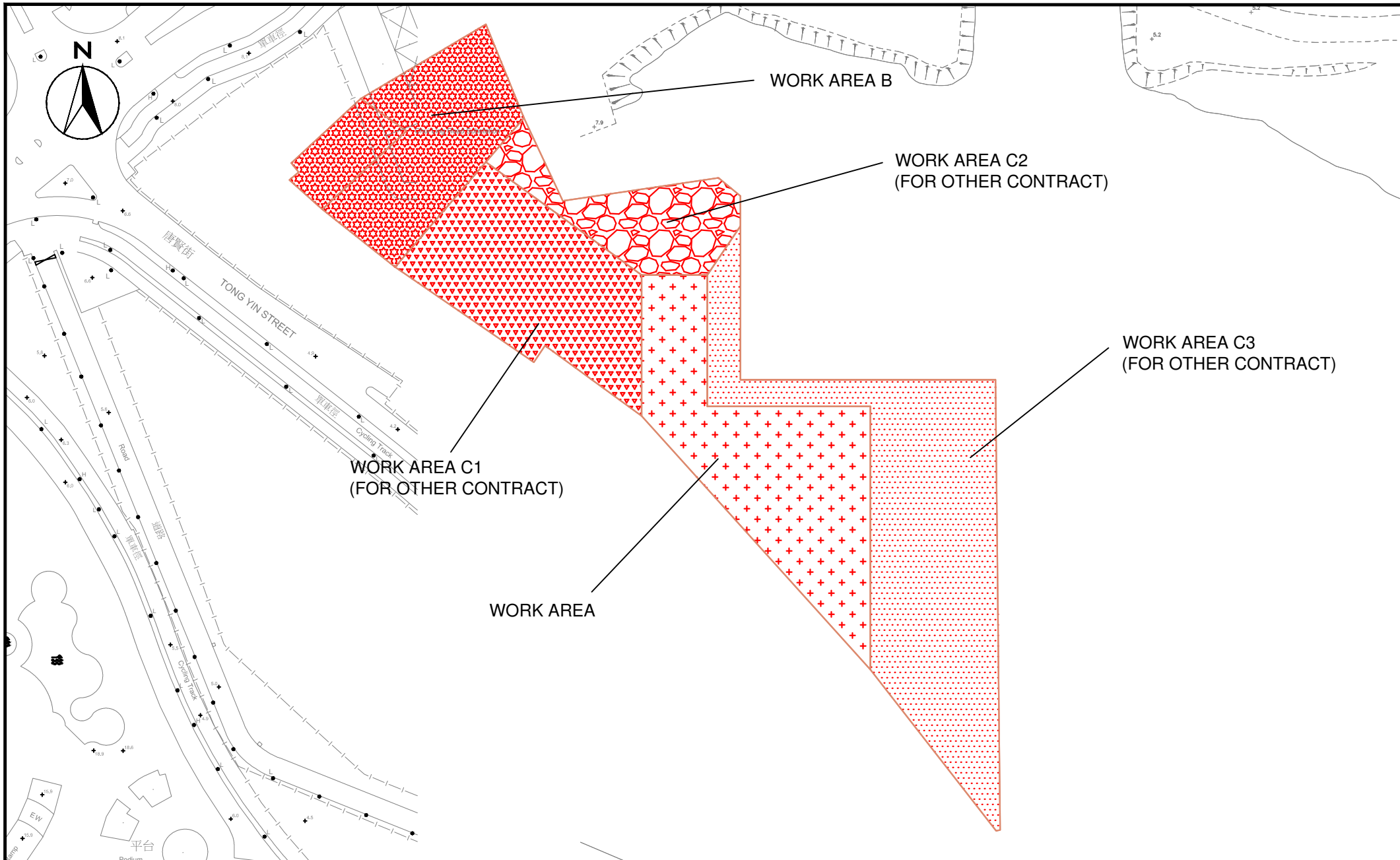
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				-



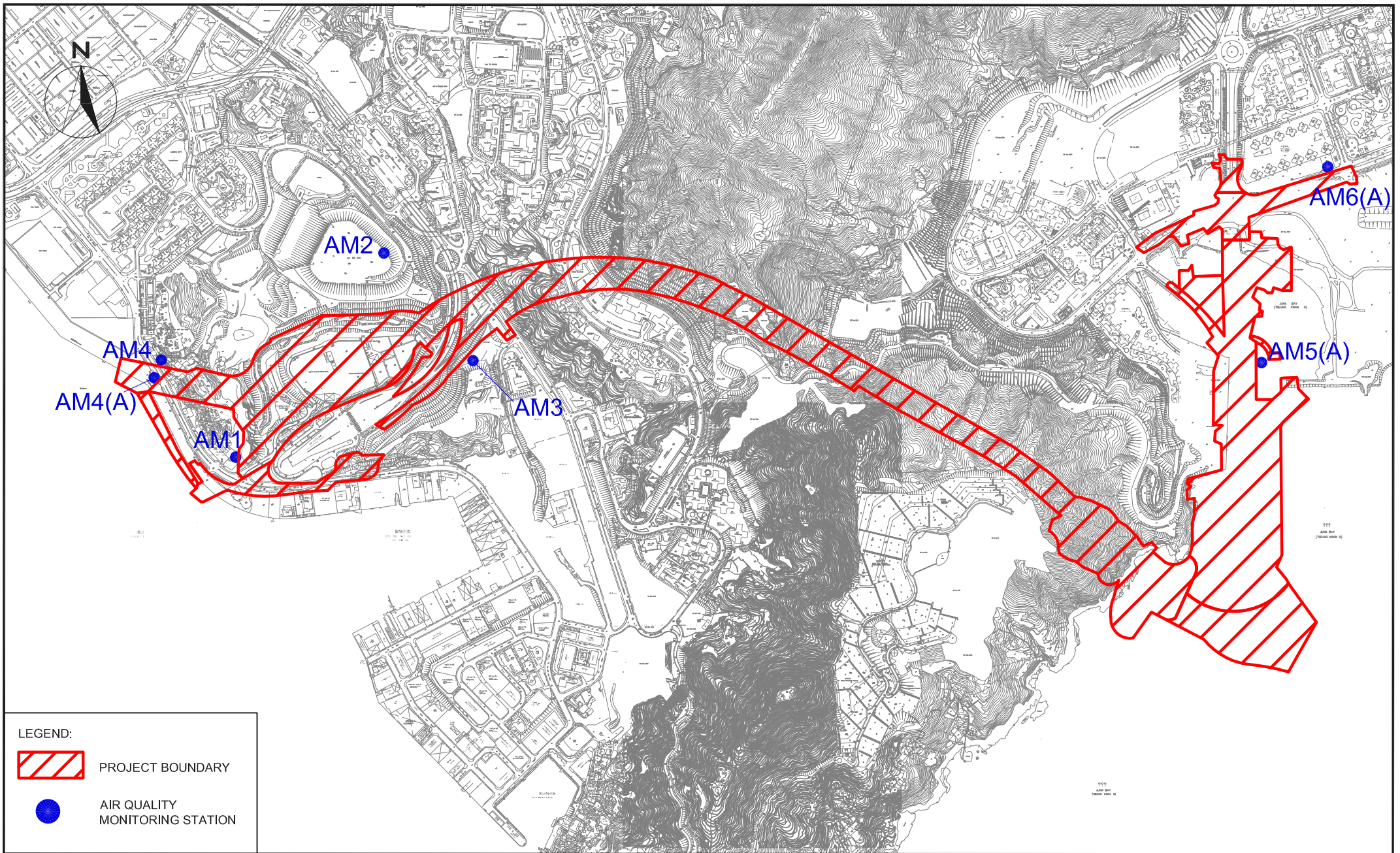
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				-







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CHECK	VC	DRAWN	AC	
JOB No.	MA16034	FIGURE NO.	1h	REV
				-



LEGEND:

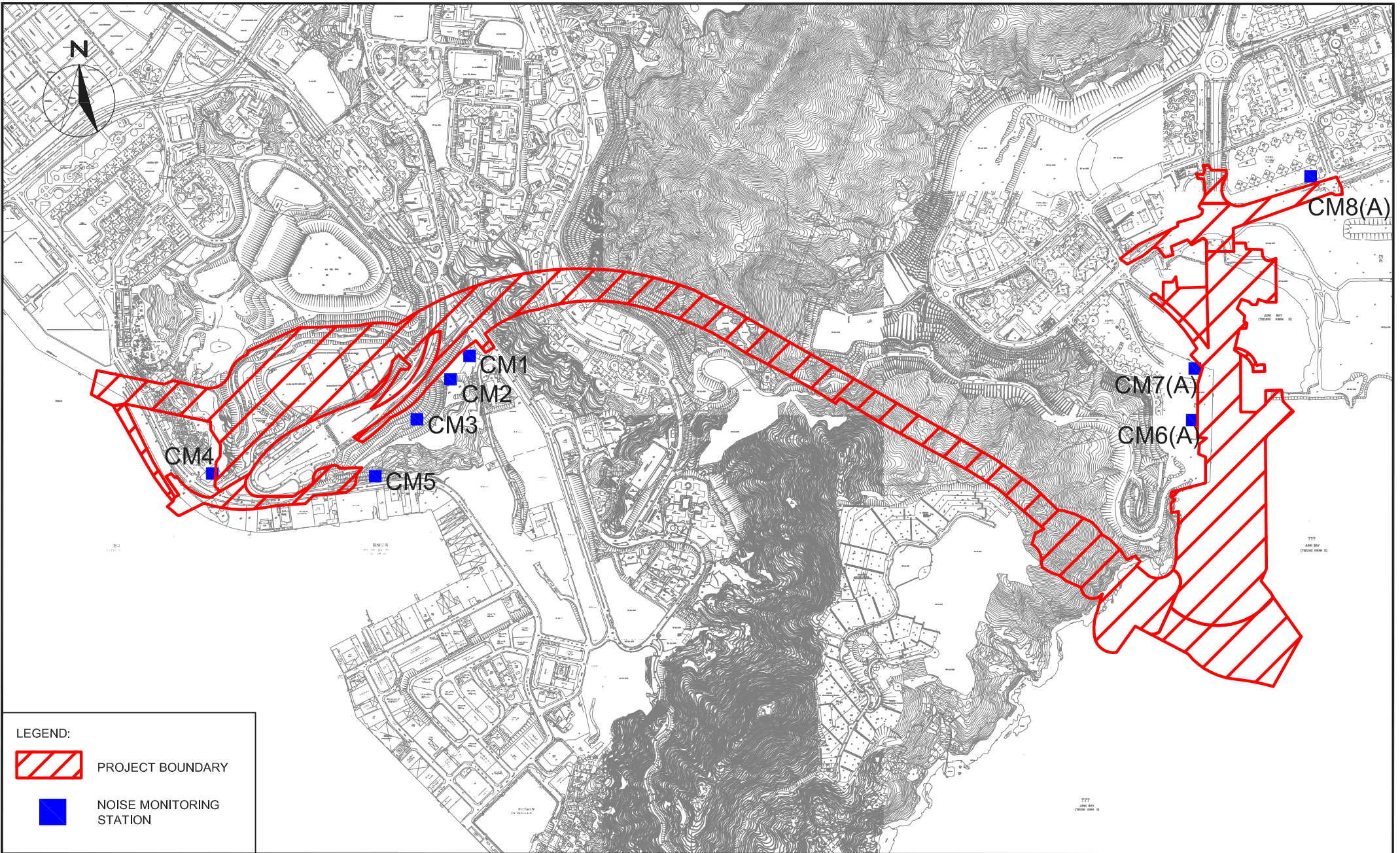


PROJECT BOUNDARY





AIR QUALITY MONITORING STATION

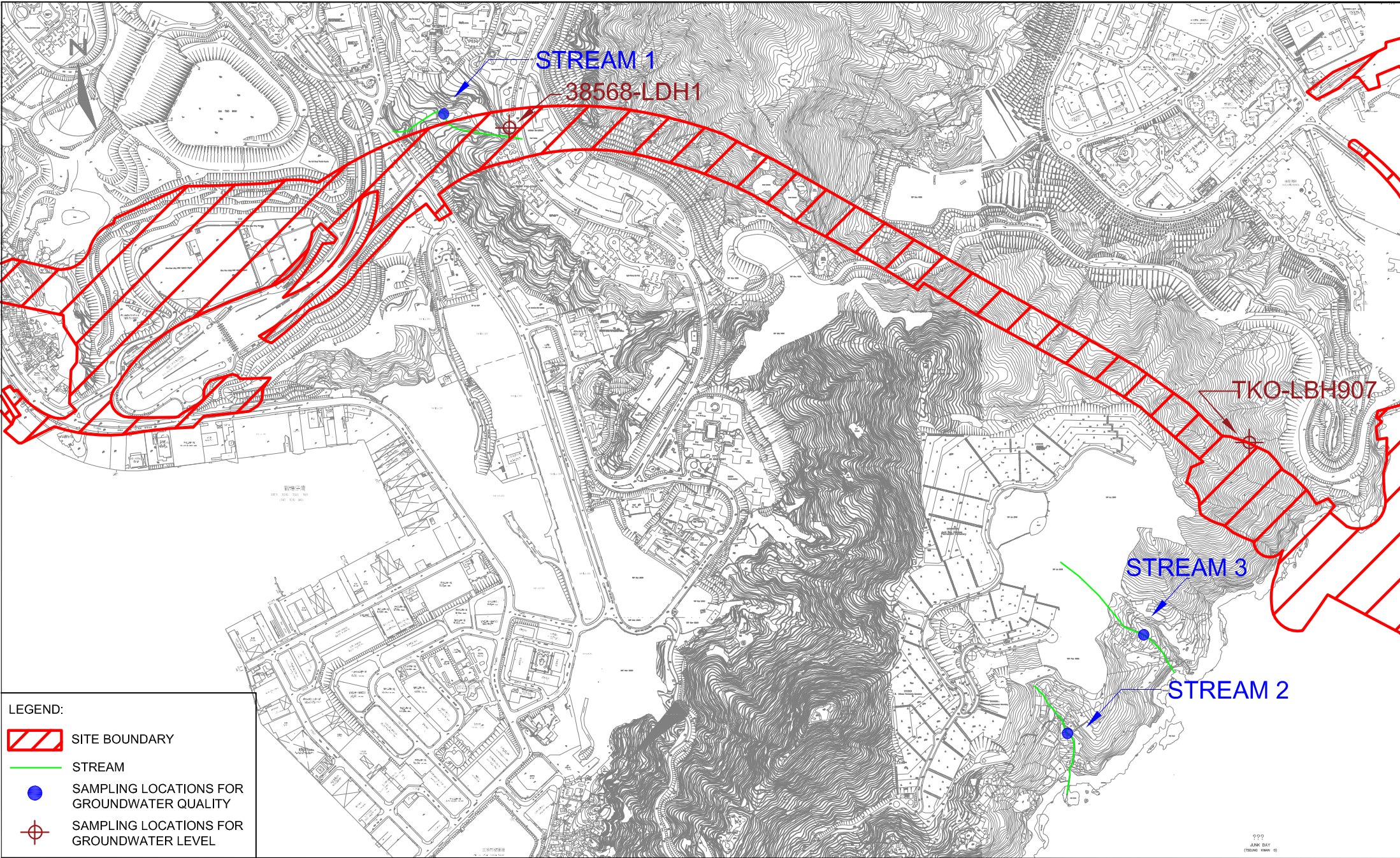
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LEGEND:

-  PROJECT BOUNDARY
-  NOISE MONITORING STATION

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JOB No.	MA16034	FIGURE NO.	3	REV -



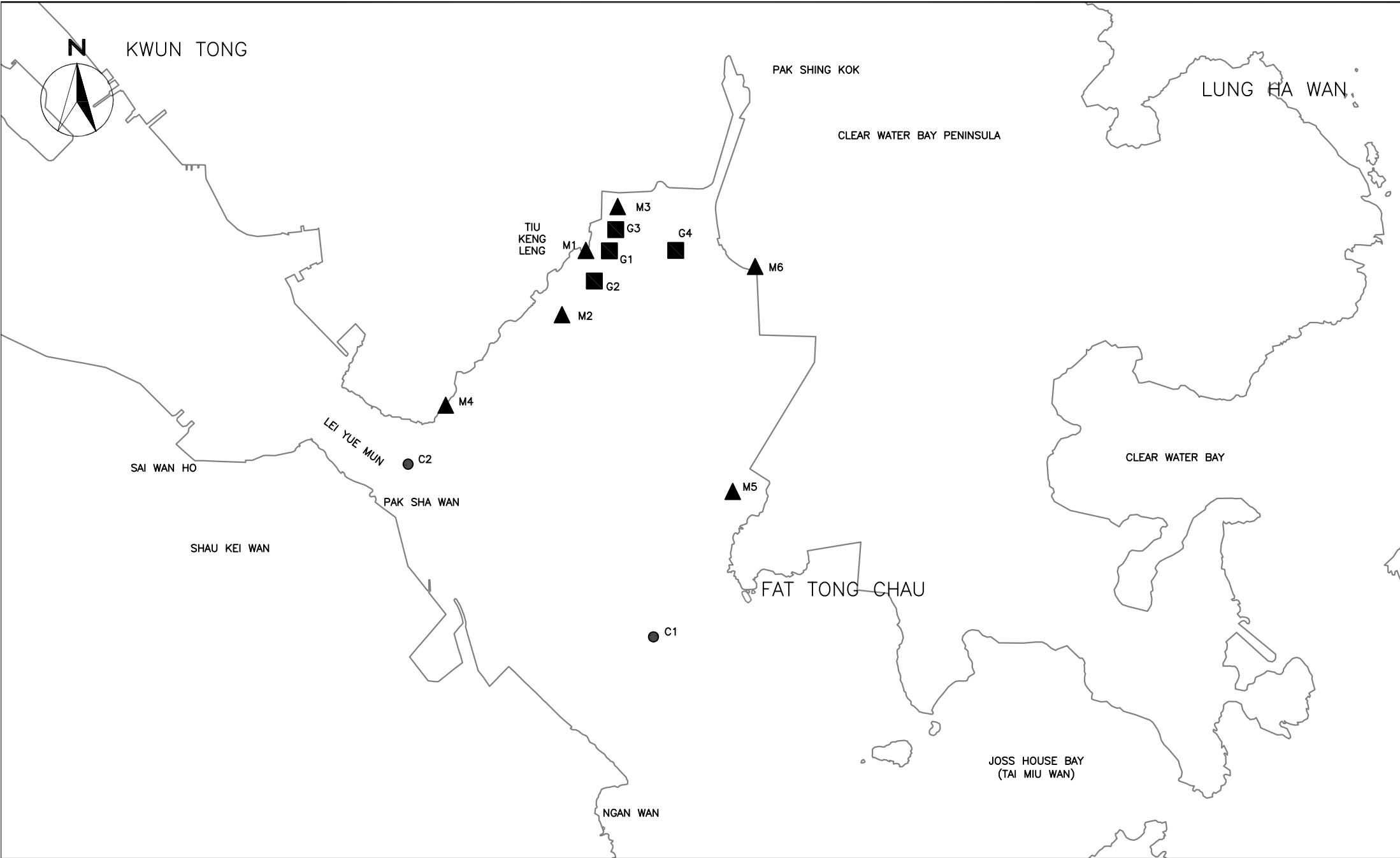
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-  SITE BOUNDARY
-  STREAM
-  SAMPLING LOCATIONS FOR GROUNDWATER QUALITY
-  SAMPLING LOCATIONS FOR GROUNDWATER LEVEL



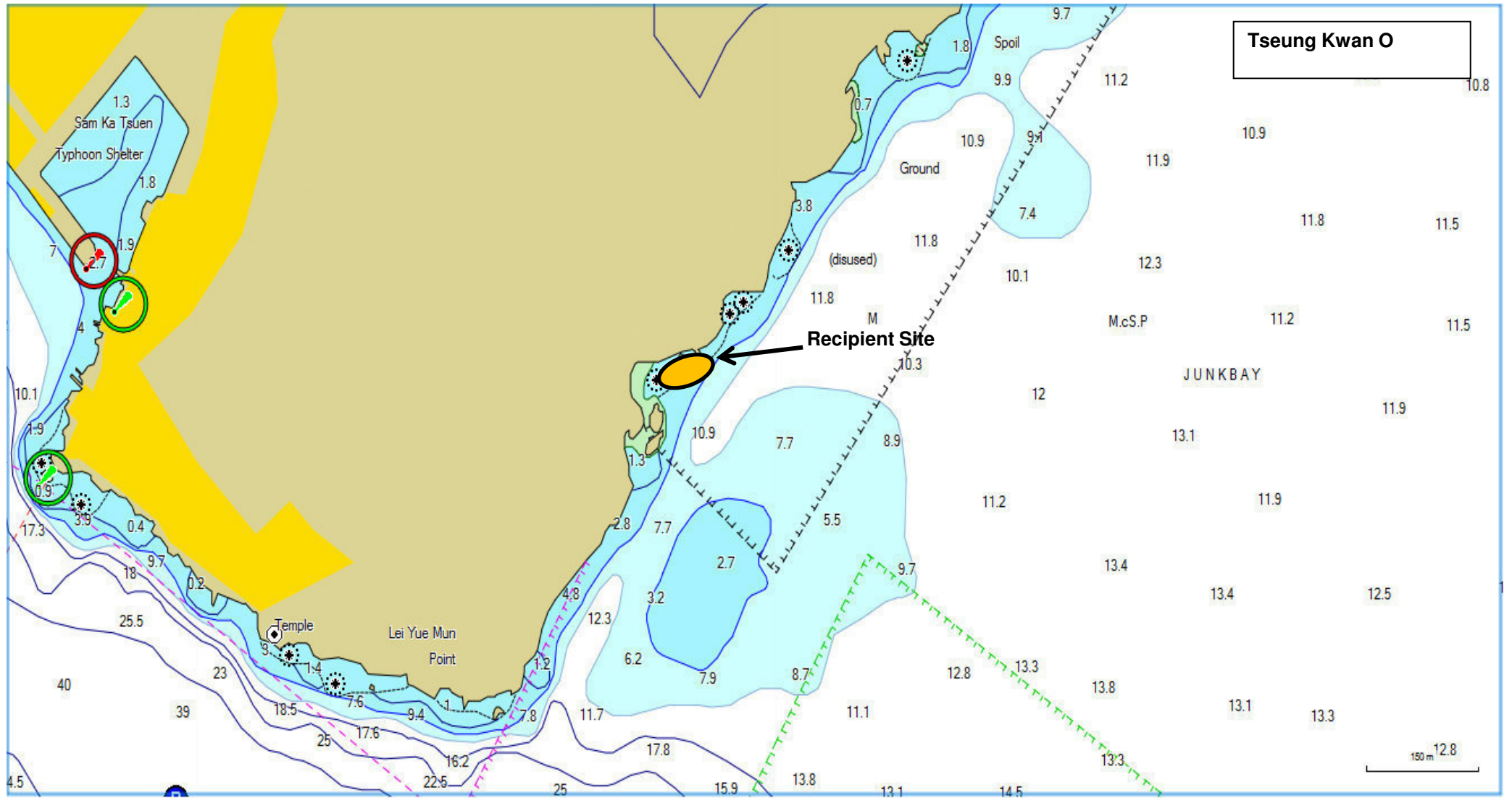
Agreement No. CE/59/2015 (EP)  
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel -  
 Design and Construction  
 Location of Streams for Groundwater Quality and Groundwater Level Monitoring

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JOB No.	MA16034	FIGURE NO.	4	REV
				-



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PROJECT NO.	MA16034	FIGURE NO.	5	REV —



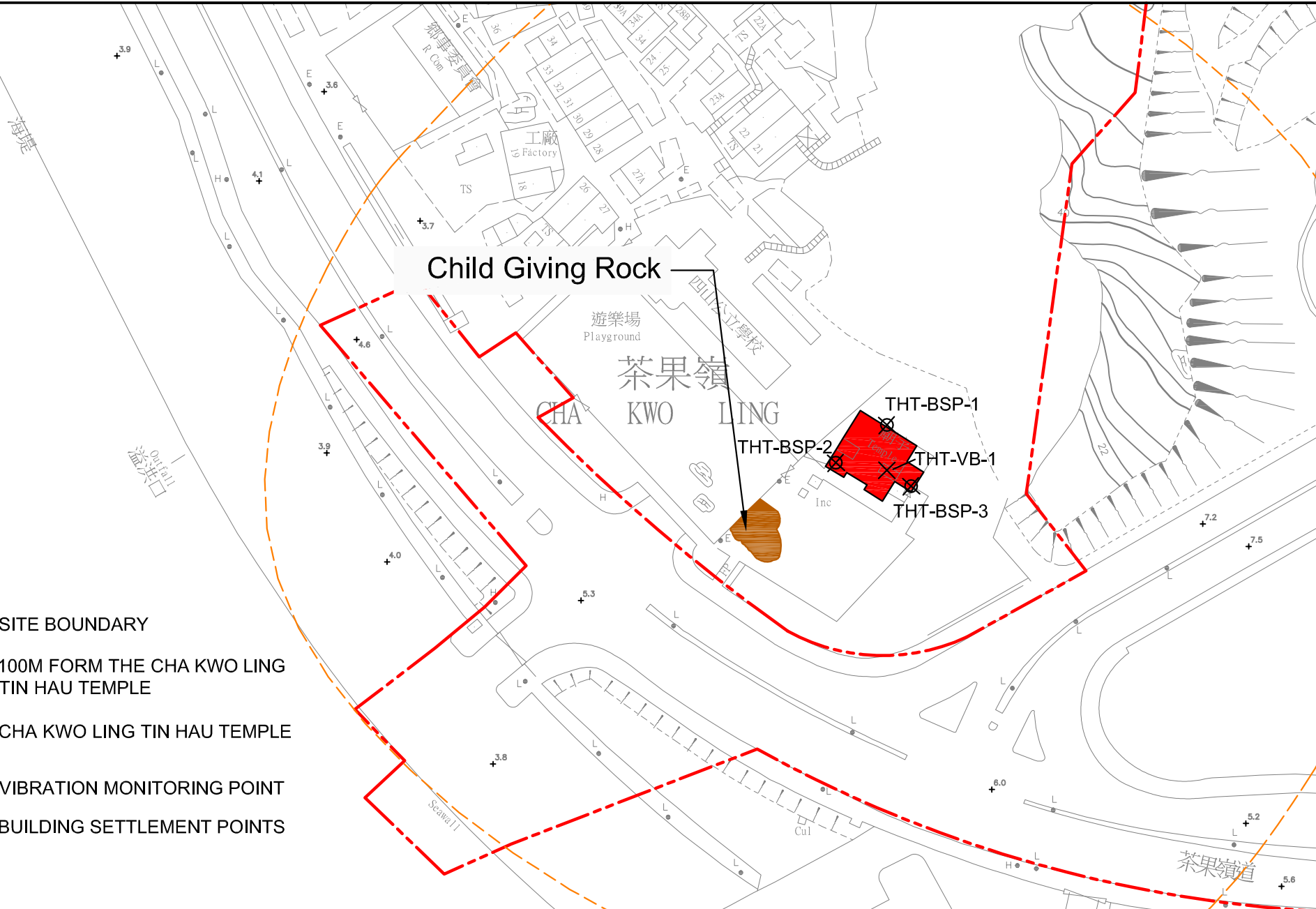
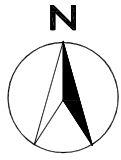


Title Agreement No. CE/59/2015 (EP)  
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction  
 Location of Post-translocation Coral Monitoring

Scale N.T.S  
 Date Mar-17

Project No. MA16034  
 Figure 7



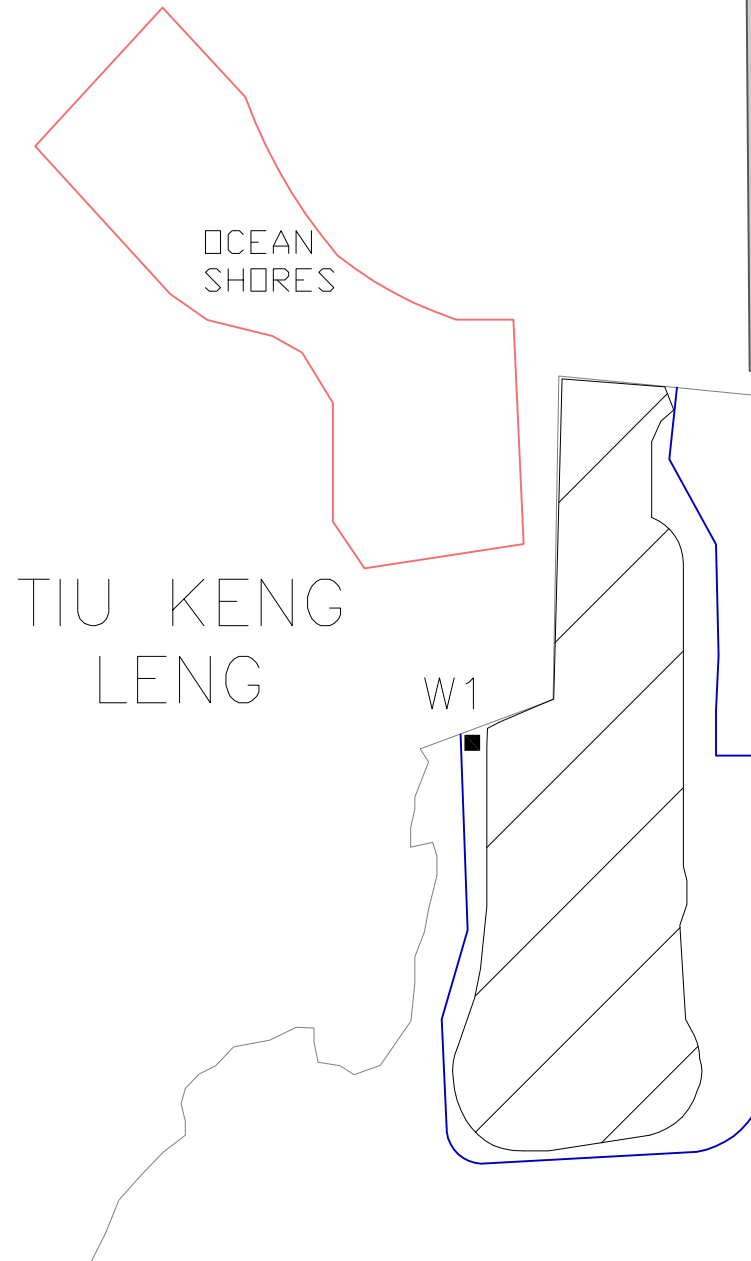
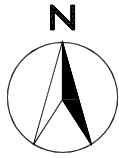


**LEGEND**

- SITE BOUNDARY
- 100M FORM THE CHA KWO LING TIN HAU TEMPLE
- CHA KWO LING TIN HAU TEMPLE
- × VIBRATION MONITORING POINT
- ⊗ BUILDING SETTLEMENT POINTS

SCALE	N.T.S.	DATE	FEB 2018	
CHECK	JF	DRAWN	AC	
JOB No.	MA16034	FIGURE NO.	8	REV -





# LEGEND



IMPACT STATIONS



LOCATION OF TEMPORARY MARINE EMBAYMENT BY STEEL COFFERDAM



RECLAMATION FOOTPRINT

CURRENT SHORELINE

SCALE	N.T.S	DATE	MAY 2017
CHECK	JF	DRAWN	JW
PROJECT NO.	MA16034	FIGURE NO.	9
		REV	—

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**APPENDIX A  
ACTION AND LIMIT LEVELS**

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## APPENDIX A – Action and Limit Levels

### Air Quality

#### *1-hr TSP*

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

#### *24-hr TSP*

Monitoring Stations	Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	Tin Hau Temple	173	260
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) <sup>(1)</sup>
1900-2300 on all days and 0700-2300 on general holidays (including Sundays)		60/65/70 dB(A) <sup>(2)(3)</sup>
2300-0700 on all days		45/50/55 dB(A) <sup>(2)(3)</sup>

<sup>1</sup> 70 dB(A) for schools and 65 dB(A) for schools during examination period.

<sup>2</sup> Acceptable Noise Levels for Area Sensitivity Rating of A/B/C

<sup>3</sup> 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*

<b>Parameters</b>	<b>Action</b>	<b>Limit</b>
DO in mg L <sup>-1</sup>	7.6	7.6
pH	6.0 – 8.9	6.0 – 9.0
BOD <sub>5</sub> in mg L <sup>-1</sup>	2.0	2.0
TOC in mg L <sup>-1</sup>	Stream 1 and Stream 2: 9	Stream 1 and Stream 2: 9
	Stream 3: 6	Stream 3: 6
Total Nitrogen in mg L <sup>-1</sup>	2.0	2.1
Ammonia-N in mg L <sup>-1</sup>	0.15	0.20
Total Phosphate in mg L <sup>-1</sup>	0.05	0.05
SS in mg L <sup>-1</sup>	7.6	12.1
Turbidity in NTU	2.1	2.3

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<sub>5</sub>), 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*

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

*Marine Water Quality*

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

Notes:

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

### *Water Quality Monitoring in Temporary Marine Embayment*

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 2)	Depth Average	<u>4.8 mg/L</u> <sup>(4)</sup>	<u>4 mg/L</u> <sup>(3)</sup>
	Bottom	<u>2.4 mg/L</u> <sup>(4)</sup>	<u>2 mg/L</u> <sup>(3)</sup>

Notes:

1. "depth-averaged" is calculated by taking the arithmetic means of reading of all sampling depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. Current Water Quality Objectives (WQOs) for marine waters of Hong Kong
4. As an alert for adverse water quality impact, the Action Level is set as 120% of the Current WQOs for marine waters of Hong Kong.

### Ecology

#### *Post-translocation Coral Monitoring*

Parameter	Action Level Definition	Limit Level Definition
<b>Mortality</b>	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%

### Alert, Alarm, Action Levels for Built Heritage Monitoring

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

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**APPENDIX B  
COPIES OF CALIBRATION  
CERTIFICATES**

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# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA16034/05/0011

Project No. AM1 - Tin Hau Temple

Date: 27-Apr-18

Next Due Date: 26-Jun-18

Operator: MH

Equipment No.: A-01-05

Model No.: GS2310

Serial No.: 10599

Ambient Condition			
Temperature, Ta (K)	297.3	Pressure, Pa (mmHg)	764.7

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	13-Feb-19	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.0	3.62	61.87	7.2	2.69
2	9.7	3.13	53.45	5.6	2.38
3	8.6	2.95	50.33	4.8	2.20
4	5.4	2.33	39.88	3.3	1.82
5	3.0	1.74	29.73	2.0	1.42

**By Linear Regression of Y on X**

Slope, mw = 0.0396

Intercept, bw = 0.2401

Correlation coefficient\* = 0.9992

\*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;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.74

Remarks: \_\_\_\_\_

Conducted by: Hei Man Kwan

Signature: \_\_\_\_\_

Date: 27/4/2018

Checked by: Wah Tang

Signature: \_\_\_\_\_

Date: 27/4/2018



# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA16034/08/0011

Project No. AM2 - Sai Tso Wan Recreation Ground

Date: 27-Apr-18

Next Due Date: 26-Jun-18

Operator: MH

Equipment No.: A-01-08

Model No.: GS2310

Serial No.: 1287

Ambient Condition			
Temperature, Ta (K)	297.6	Pressure, Pa (mmHg)	764.2

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	13-Feb-19	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.4	3.67	62.77	8.1	2.86
2	10.6	3.27	55.82	6.4	2.54
3	8.9	2.99	51.15	5.3	2.31
4	5.4	2.33	39.85	3.2	1.79
5	3.2	1.79	30.68	2.0	1.42

By Linear Regression of Y on X

Slope, mw = 0.0450

Intercept, bw = 0.0209

Correlation coefficient\* = 0.9996

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation

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

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

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

Therefore, Set Point;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.80

Remarks: \_\_\_\_\_

Conducted by: Lo Man Wai Signature: \_\_\_\_\_

Date: 27/4/2018

Checked by: Wk Tang Signature: \_\_\_\_\_

Date: 27/4/2018

# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA16034/03/0009

Project No. AM3 - Yau Lai Estate, Bik Lai House

Date: 27-Apr-18

Next Due Date: 26-Jun-18

Operator: MH

Equipment No.: A-01-03

Model No.: GS2310

Serial No.: 10379

Ambient Condition			
Temperature, Ta (K)	297.7	Pressure, Pa (mmHg)	764.9

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	13-Feb-19	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.4	3.53	60.40	7.5	2.75
2	10.6	3.27	55.84	6.7	2.60
3	7.4	2.73	46.66	4.6	2.15
4	5.4	2.33	39.86	3.4	1.85
5	3.2	1.80	30.68	2.1	1.45

**By Linear Regression of Y on X**

Slope, mw = 0.0444 Intercept, bw = 0.0898

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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.96

Remarks: \_\_\_\_\_

Conducted by: Lee Man Hev Signature: Lee Man Hev  
 Checked by: Wick Tang Signature: Wick Tang

Date: 27/4/2018  
 Date: 27/4/2018



# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA16034/37/0011

Project No. AM5(A) - Tseung Kwan O DSD Desilting Compound

Date: 27-Apr-18

Next Due Date: 26-Jun-18

Operator: MH

Equipment No.: A-01-37

Model No.: GS2310

Serial No.: 1704

Ambient Condition			
Temperature, Ta (K)	297.9	Pressure, Pa (mmHg)	764

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	13-Feb-19	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	17.2	4.16	71.06	9.2	3.04
2	14.0	3.75	64.11	7.7	2.78
3	10.8	3.30	56.31	5.9	2.44
4	6.7	2.60	44.36	3.8	1.95
5	4.2	2.06	35.12	2.7	1.65

**By Linear Regression of Y on X**

Slope, mw = 0.0394

Intercept, bw = 0.2367

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;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.71

Remarks: \_\_\_\_\_

Conducted by: Liz Kwai Yip Signature: \_\_\_\_\_

Date: 27/4/2018

Checked by: Wk. Tang Signature: \_\_\_\_\_

Date: 27/4/2018

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA16034/07/0010

Station AM6 - Park Central

Date: 26-Mar-18

Next Due Date: 25-May-18

Operator: MH

Equipment No.: A-01-07

Model No.: GS2310

Serial No.: 10592

Ambient Condition			
Temperature, Ta (K)	297.2	Pressure, Pa (mmHg)	765.4

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	13-Feb-19	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.6	3.42	58.48	7.7	2.79
2	9.7	3.13	53.48	6.4	2.54
3	7.4	2.73	46.71	4.9	2.22
4	5.3	2.31	39.53	3.6	1.91
5	3.5	1.88	32.13	2.3	1.52

By Linear Regression of Y on X

Slope, mw = 0.0475

Intercept, bw = 0.0101

Correlation coefficient\* = 0.9997

\*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;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.17

Remarks: \_\_\_\_\_

Conducted by: LEE MAN HUI Signature: \_\_\_\_\_

Date: 26-3-2018

Checked by: W.K. Tang Signature: \_\_\_\_\_

Date: 26-3-2018

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA16034/07/0011

Station AM6 - Park Central

Date: 25-May-18

Next Due Date: 24-Jul-18

Operator: MH

Equipment No.: A-01-07

Model No.: GS2310

Serial No.: 10592

Ambient Condition			
Temperature, Ta (K)	305.2	Pressure, Pa (mmHg)	757.9

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	13-Feb-19	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.4	3.33	56.93	7.3	2.67
2	9.6	3.06	52.24	6.2	2.46
3	7.4	2.68	45.75	4.9	2.18
4	5.4	2.29	39.19	3.4	1.82
5	3.3	1.79	30.63	2.2	1.46

**By Linear Regression of Y on X**

Slope, mw = 0.0463

Intercept, bw = 0.0355

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;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.22

Remarks: \_\_\_\_\_

Conducted by: Lee Man Hei Signature: \_\_\_\_\_

Date: 25/5/2018

Checked by: Wk Tang Signature: \_\_\_\_\_

Date: 25/5/2018

# Certificate of Calibration

Calibration Certification Information			
Cal. Date: February 13, 2018	Rootsmeter S/N: 438320	Ta: 293	°K
Operator: Jim Tisch		Pa: 763.3	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 2896		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4670	3.2	2.00
2	3	4	1	1.0380	6.4	4.00
3	5	6	1	0.9220	8.0	5.00
4	7	8	1	0.8840	8.8	5.50
5	9	10	1	0.7250	12.8	8.00

Data Tabulation						
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H (Ta/Pa)}$ (y-axis)	
1.0172	0.6934	1.4293	0.9958	0.6788	0.8762	
1.0129	0.9758	2.0213	0.9916	0.9553	1.2392	
1.0107	1.0962	2.2599	0.9895	1.0732	1.3854	
1.0097	1.1422	2.3702	0.9885	1.1182	1.4530	
1.0043	1.3853	2.8586	0.9832	1.3562	1.7524	
<b>QSTD</b>	m=	<b>2.06726</b>	<b>QA</b>	m=	<b>1.29448</b>	
	b=	<b>-0.00045</b>		b=	<b>-0.00028</b>	
	r=	<b>0.99992</b>		r=	<b>0.99992</b>	

Calculations			
Vstd=	$\Delta Vol \left( \frac{Pa - \Delta P}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)$	Va=	$\Delta Vol \left( \frac{Pa - \Delta P}{Pa} \right)$
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime
For subsequent flow rate calculations:			
Qstd=	$1/m \left( \left( \sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa=	$1/m \left( \left( \sqrt{\Delta H (Ta/Pa)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

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

## TEST REPORT

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

Test Report No.:	C/W/180127
Date of Issue:	2018-01-28
Date Received:	2018-01-27
Date Tested:	2018-01-27
Date Completed:	2018-01-28
Next Due Date:	2018-07-27

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

Page: 1 of 2

### Certificate of Calibration

**Item for calibration:**

Description	: Weather Stations, Vantage Pro2
Manufacturer	: Davis Instruments
Model No.	: 6152CUK
Serial No.	: AK130520007

**Test conditions:**

Room Temperature	: 21 degree Celsius
Relative Humidity	: 56 %

**Test Specifications:**

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

**Methodology:**

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

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



**PATRICK TSE**  
Laboratory Manager



**TEST REPORT**

Test Report No.:	C/W/180127
Date of Issue:	2018-01-28
Date Received:	2018-01-27
Date Tested:	2018-01-27
Date Completed:	2018-01-28
Next Due Date:	2018-07-27

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
45.3	45	0.3
90.1	90	0.1
135	135	0
180.1	180	0.1
225.2	225	0.2
270.2	270	0.2
315	315	0
360	360	0

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

**TEST REPORT**

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

Test Report No.:	28394
Date of Issue:	2018-02-25
Date Received:	2018-02-24
Date Tested:	2018-02-24 to 2018-02-25
Date Completed:	2018-02-25
Next Due Date:	2018-05-24

**ATTN:** Miss Mei Ling Tang

Page: 1 of 2

**Certificate of Calibration**

**Item for calibration:**

YSI EXO1 Multiparameter Sondes	Equipment No.: SW-08-03	
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO Optical DO Sensor, Ti	599100-01	16H102982
- EXO conductivity/Temperature Sensor, Ti	599870	16G102304
- EXO Turbidity Sensor, Ti	599101-01	16H102460
- EXO pH Sensor Assembly, Guarded, Ti	599701	16J100413

**Test conditions:**

Room Temperature : 17-22 degree Celsius  
Relative Humidity : 40-70%

**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

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PREPARED AND CHECKED BY:

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

  
**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

Test Report No.:	28394
Date of Issue:	2018-02-25
Date Received:	2018-02-24
Date Tested:	2018-02-24 to 2018-02-25
Date Completed:	2018-02-25
Next Due Date:	2018-05-24

Page: 2 of 2

**Certificate of Calibration**

**Results:**

**Conductivity performance checking**

	Instrument Readings ( $\mu\text{S}/\text{cm}$ )	Acceptance Criteria	Comment
KCl stock solution (12890 $\mu\text{S}/\text{cm}$ )	13000	12246-13534	Pass

**Temperature performance checking**

Reference thermometer- E431 Readings ( $^{\circ}\text{C}$ )	Instrument Readings ( $^{\circ}\text{C}$ )	Correction ( $^{\circ}\text{C}$ )	Comment
20.7	20.704	-0.004	N/A

**pH performance checking**

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.00	4.01	4.00 $\pm$ 0.10	Pass
pH QC buffer 6.86	6.89	6.86 $\pm$ 0.10	Pass
pH QC buffer 9.18	9.18	9.18 $\pm$ 0.10	Pass

**D.O. performance checking**

	Instrument Readings (mg/L)	Acceptance Criteria	Comment
Zero DO solution	0.05	<0.1mg/L	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.00	8.05	Difference between Titration value and instrument reading <0.2mg/L	Pass

**Turbidity performance checking**

Turbidity stock solution	Instrument Readings (NTU)	Acceptance Criteria	Comment
10 NTU	10.02	9.0-11.0	Pass
50 NTU	50.07	45.0-55.0	Pass
100 NTU	100.5	90.0-110.0	Pass

**Depth performance checking**

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

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

**TEST REPORT**

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

Test Report No.:	28394A
Date of Issue:	2018-02-25
Date Received:	2018-02-24
Date Tested:	2018-02-24 to 2018-02-25
Date Completed:	2018-02-25
Next Due Date:	2018-05-24

**ATTN:** Miss Mei Ling Tang

Page: 1 of 2

**Certificate of Calibration**

**Item for calibration:**

YSI EXO1 Multiparameter Sondes	Equipment No.: SW-08-06	
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 Turbidity Sensor, Ti	599101-01	16H102463
- EXO pH Sensor Assembly, Guarded, Ti	599701	16H102985

**Test conditions:**

Room Temperature : 17-22 degree Celsius  
Relative Humidity : 40-70%

**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

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*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

### TEST REPORT

Test Report No.:	28394A
Date of Issue:	2018-02-25
Date Received:	2018-02-24
Date Tested:	2018-02-24 to 2018-02-25
Date Completed:	2018-02-25
Next Due Date:	2018-05-24

Page: 2 of 2

#### Certificate of Calibration

**Results:**

**Conductivity performance checking**

	Instrument Readings ( $\mu\text{S}/\text{cm}$ )	Acceptance Criteria	Comment
KCl stock solution (12890 $\mu\text{S}/\text{cm}$ )	13000	12246-13534	Pass

**Temperature performance checking**

Reference thermometer- E431 Readings ( $^{\circ}\text{C}$ )	Instrument Readings ( $^{\circ}\text{C}$ )	Correction ( $^{\circ}\text{C}$ )	Comment
20.7	20.704	-0.004	N/A

**pH performance checking**

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.00	4.00	$4.00 \pm 0.10$	Pass
pH QC buffer 6.86	6.86	$6.86 \pm 0.10$	Pass
pH QC buffer 9.18	9.20	$9.18 \pm 0.10$	Pass

**D.O. performance checking**

	Instrument Readings (mg/L)	Acceptance Criteria	Comment
Zero DO solution	0.05	<0.1mg/L	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.00	8.03	Difference between Titration value and instrument reading <0.2mg/L	Pass

**Turbidity performance checking**

Turbidity stock solution	Instrument Readings (NTU)	Acceptance Criteria	Comment
10 NTU	10.03	9.0-11.0	Pass
50 NTU	50.05	45.0-55.0	Pass
100 NTU	100.4	90.0-110.0	Pass

**Depth performance checking**

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

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

**TEST REPORT**

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

Test Report No.:	28394B
Date of Issue:	2018-02-25
Date Received:	2018-02-24
Date Tested:	2018-02-24 to 2018-02-25
Date Completed:	2018-02-25
Next Due Date:	2018-05-24

**ATTN:** Miss Mei Ling Tang

Page: 1 of 2

**Certificate of Calibration**

**Item for calibration:**

YSI EXO1 Multiparameter Sondes	Equipment No.: SW-08-09	
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 Turbidity Sensor, Ti	599101-01	16H102467
- EXO pH Sensor Assembly, Guarded, Ti	599701	16J100419

**Test conditions:**

Room Temperature : 17-22 degree Celsius  
Relative Humidity : 40-70%

**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

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PREPARED AND CHECKED BY:

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

  
**PATRICK TSE**  
Laboratory Manager

### TEST REPORT

Test Report No.:	28394B
Date of Issue:	2018-02-25
Date Received:	2018-02-24
Date Tested:	2018-02-24 to 2018-02-25
Date Completed:	2018-02-25
Next Due Date:	2018-05-24

Page: 2 of 2

#### Certificate of Calibration

**Results:**

**Conductivity performance checking**

	Instrument Readings ( $\mu\text{S}/\text{cm}$ )	Acceptance Criteria	Comment
KCl stock solution (12890 $\mu\text{S}/\text{cm}$ )	13000	12246-13534	Pass

**Temperature performance checking**

Reference thermometer- E431 Readings ( $^{\circ}\text{C}$ )	Instrument Readings ( $^{\circ}\text{C}$ )	Correction ( $^{\circ}\text{C}$ )	Comment
20.7	20.704	-0.004	N/A

**pH performance checking**

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.00	4.07	4.00 $\pm$ 0.10	Pass
pH QC buffer 6.86	6.89	6.86 $\pm$ 0.10	Pass
pH QC buffer 9.18	9.22	9.18 $\pm$ 0.10	Pass

**D.O. performance checking**

	Instrument Readings (mg/L)	Acceptance Criteria	Comment
Zero DO solution	0.05	<0.1mg/L	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.00	8.01	Difference between Titration value and instrument reading <0.2mg/L	Pass

**Turbidity performance checking**

Turbidity stock solution	Instrument Readings (NTU)	Acceptance Criteria	Comment
10 NTU	10.23	9.0-11.0	Pass
50 NTU	50.18	45.0-55.0	Pass
100 NTU	100.4	90.0-110.0	Pass

**Depth performance checking**

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

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

**TEST REPORT**

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

Test Report No.:	28394C
Date of Issue:	2018-02-25
Date Received:	2018-02-24
Date Tested:	2018-02-24 to 2018-02-25
Date Completed:	2018-02-25
Next Due Date:	2018-05-24

**ATTN:** Miss Mei Ling Tang

Page: 1 of 2

**Certificate of Calibration**

**Item for calibration:**

YSI EXO1 Multiparameter Sondes	Equipment No.:	SW-08-20
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO Optical DO Sensor, Ti	599100-01	16J100944
- EXO conductivity/Temperature Sensor, Ti	599870	16H100178
- EXO Turbidity Sensor, Ti	599101-01	16J101097
- EXO pH Sensor Assembly, Guarded, Ti	599701	16J100706

**Test conditions:**

Room Temperature : 17-22 degree Celsius  
Relative Humidity : 40-70%

**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

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PREPARED AND CHECKED BY:

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

  
\_\_\_\_\_  
**PATRICK TSE**  
Laboratory Manager



## TEST REPORT

Test Report No.:	28394C
Date of Issue:	2018-02-25
Date Received:	2018-02-24
Date Tested:	2018-02-24 to 2018-02-25
Date Completed:	2018-02-25
Next Due Date:	2018-05-24

Page: 2 of 2

### Certificate of Calibration

**Results:**

**Conductivity performance checking**

	Instrument Readings ( $\mu\text{S}/\text{cm}$ )	Acceptance Criteria	Comment
KCl stock solution (12890 $\mu\text{S}/\text{cm}$ )	13000	12246-13534	Pass

**Temperature performance checking**

Reference thermometer- E431 Readings ( $^{\circ}\text{C}$ )	Instrument Readings ( $^{\circ}\text{C}$ )	Correction ( $^{\circ}\text{C}$ )	Comment
20.0	20.002	-0.002	N/A

**pH performance checking**

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.00	4.00	4.00 $\pm$ 0.10	Pass
pH QC buffer 6.86	6.88	6.86 $\pm$ 0.10	Pass
pH QC buffer 9.18	9.20	9.18 $\pm$ 0.10	Pass

**D.O. performance checking**

	Instrument Readings (mg/L)	Acceptance Criteria	Comment
Zero DO solution	0.05	<0.1mg/L	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.00	8.08	Difference between Titration value and instrument reading <0.2mg/L	Pass

**Turbidity performance checking**

Turbidity stock solution	Instrument Readings (NTU)	Acceptance Criteria	Comment
10 NTU	10.22	9.0-11.0	Pass
50 NTU	50.50	45.0-55.0	Pass
100 NTU	100.8	90.0-110.0	Pass

**Depth performance checking**

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

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

**TEST REPORT**

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

Test Report No.:	29025E
Date of Issue:	2018-05-25
Date Received:	2018-05-25
Date Tested:	2018-05-25
Date Completed:	2018-05-25
Next Due Date:	2018-08-24

**ATTN:** Miss Mei Ling Tang

Page: 1 of 2

**Certificate of Calibration**

**Item for calibration:**

YSI EXO1 Multiparameter Sondes	Equipment No.:	SW-08-26
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO Optical DO Sensor, Ti	599100-01	17B101535
- EXO conductivity/Temperature Sensor, Ti	599870	16H100227
- EXO Turbidity Sensor, Ti	599101-01	17K100336
- EXO pH Sensor Assembly, Guarded, Ti	599701	17K103107

**Test conditions:**

Room Temperature : 17-22 degree Celsius  
Relative Humidity : 40-70%

**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

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PREPARED AND CHECKED BY:

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



**PATRICK TSE**

Laboratory Manager

**TEST REPORT**

Test Report No.:	29025E
Date of Issue:	2018-05-25
Date Received:	2018-05-25
Date Tested:	2018-05-25
Date Completed:	2018-05-25
Next Due Date:	2018-08-24

Page: 2 of 2

**Certificate of Calibration**

**Results:**

**Conductivity performance checking**

	Instrument Readings ( $\mu\text{S}/\text{cm}$ )	Acceptance Criteria	Comment
KCl stock solution (12890 $\mu\text{S}/\text{cm}$ )	13000	12246-13534	Pass

**Temperature performance checking**

Reference thermometer- E431 Readings ( $^{\circ}\text{C}$ )	Instrument Readings ( $^{\circ}\text{C}$ )	Correction ( $^{\circ}\text{C}$ )	Comment
20.0	20.001	-0.001	N/A

**pH performance checking**

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.00	4.05	4.00 $\pm$ 0.10	Pass
pH QC buffer 6.86	6.88	6.86 $\pm$ 0.10	Pass
pH QC buffer 9.18	9.21	9.18 $\pm$ 0.10	Pass

**D.O. performance checking**

	Instrument Readings (mg/L)	Acceptance Criteria	Comment
Zero DO solution	0.05	<0.1mg/L	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.00	8.01	Difference between Titration value and instrument reading <0.2mg/L	Pass

**Turbidity performance checking**

Turbidity stock solution	Instrument Readings (NTU)	Acceptance Criteria	Comment
10 NTU	10.24	9.0-11.0	Pass
50 NTU	50.46	45.0-55.0	Pass
100 NTU	100.3	90.0-110.0	Pass

**Depth performance checking**

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

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

**TEST REPORT**

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

Test Report No.:	29025H
Date of Issue:	2018-05-25
Date Received:	2018-05-25
Date Tested:	2018-05-25
Date Completed:	2018-05-25
Next Due Date:	2018-08-24

**ATTN:** Miss Mei Ling Tang

Page: 1 of 2

**Certificate of Calibration**

**Item for calibration:**

YSI EXO1 Multiparameter Sondes	Equipment No.:	SW-08-164
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO Optical DO Sensor, Ti	599100-01	17K101623
- EXO conductivity/Temperature Sensor, Ti	599870	17H103446
- EXO Turbidity Sensor, Ti	599101-01	17K100331
- EXO pH Sensor Assembly, Guarded, Ti	599795-01	17K103099

**Test conditions:**

Room Temperature : 17-22 degree Celsius  
Relative Humidity : 40-70%

**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

### TEST REPORT

Test Report No.:	29025H
Date of Issue:	2018-05-25
Date Received:	2018-05-25
Date Tested:	2018-05-25
Date Completed:	2018-05-25
Next Due Date:	2018-08-24

Page: 2 of 2

#### Certificate of Calibration

**Results:**

**Conductivity performance checking**

	Instrument Readings ( $\mu\text{S}/\text{cm}$ )	Acceptance Criteria	Comment
KCl stock solution (12890 $\mu\text{S}/\text{cm}$ )	13000	12246-13534	Pass

**Temperature performance checking**

Reference thermometer- E431 Readings ( $^{\circ}\text{C}$ )	Instrument Readings ( $^{\circ}\text{C}$ )	Correction ( $^{\circ}\text{C}$ )	Comment
20.7	20.703	-0.003	N/A

**pH performance checking**

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.00	4.02	$4.00 \pm 0.10$	Pass
pH QC buffer 6.86	6.86	$6.86 \pm 0.10$	Pass
pH QC buffer 9.18	9.20	$9.18 \pm 0.10$	Pass

**D.O. performance checking**

	Instrument Readings (mg/L)	Acceptance Criteria	Comment
Zero DO solution	0.05	$<0.1\text{mg}/\text{L}$	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.00	8.01	Difference between Titration value and instrument reading $<0.2\text{mg}/\text{L}$	Pass

**Turbidity performance checking**

Turbidity stock solution	Instrument Readings (NTU)	Acceptance Criteria	Comment
10 NTU	10.33	9.0-11.0	Pass
50 NTU	50.36	45.0-55.0	Pass
100 NTU	100.2	90.0-110.0	Pass

**Depth performance checking**

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

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

**TEST REPORT**

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

Test Report No.:	28791
Date of Issue:	2018-04-23
Date Received:	2018-04-20
Date Tested:	2018-04-20
Date Completed:	2018-04-23
Next Due Date:	2018-06-22

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

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020408
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-01

**Test Conditions:**

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

**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)	1.199
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*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

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

Test Report No.:	28792
Date of Issue:	2018-04-23
Date Received:	2018-04-20
Date Tested:	2018-04-20
Date Completed:	2018-04-23
Next Due Date:	2018-06-22

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

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description : Handheld Particle Counter  
 Manufacturer : Hal Technology  
 Model No. : Hal-HPC300  
 Serial No. : 3020409  
 Flow rate : 0.1 cfm  
 Zero Count Test : 0 count per 5 minutes  
 Equipment No. : A-26-02

**Test Conditions:**

Room Temperature : 17-22 degree Celsius  
 Relative Humidity : 40-70%

**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)	1.183
-------------------------	-------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
 Laboratory Manager

**TEST REPORT**

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

Test Report No.:	28787
Date of Issue:	2018-04-16
Date Received:	2018-04-13
Date Tested:	2018-04-13
Date Completed:	2018-04-16
Next Due Date:	2018-06-15

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

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

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

**Test Conditions:**

Room Temperature : 17-22 degree Celsius  
 Relative Humidity : 40-70%

**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)	1.168
-------------------------	-------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
 Laboratory Manager



**TEST REPORT**

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

Test Report No.:	28787A
Date of Issue:	2018-04-16
Date Received:	2018-04-13
Date Tested:	2018-04-13
Date Completed:	2018-04-16
Next Due Date:	2018-06-15

**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. : 3011701016  
 Flow rate : 0.1 cfm  
 Zero Count Test : 0 count per 5 minutes  
 Equipment No. : A-27-03

**Test Conditions:**

Room Temperature : 17-22 degree Celsius  
 Relative Humidity : 40-70%

**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)	1.203
-------------------------	-------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
 Laboratory Manager

**TEST REPORT**

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

Test Report No.:	28788
Date of Issue:	2018-04-16
Date Received:	2018-04-13
Date Tested:	2018-04-13
Date Completed:	2018-04-16
Next Due Date:	2018-06-15

**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. : 3011701017  
 Flow rate : 0.1 cfm  
 Zero Count Test : 0 count per 5 minutes  
 Equipment No. : A-27-04

**Test Conditions:**

Room Temperature : 17-22 degree Celsius  
 Relative Humidity : 40-70%

**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)	1.158
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*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
 Laboratory Manager

**TEST REPORT**

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

Test Report No.:	28789
Date of Issue:	2018-04-16
Date Received:	2018-04-13
Date Tested:	2018-04-13
Date Completed:	2018-04-16
Next Due Date:	2018-06-15

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

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

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

**Test Conditions:**

Room Temperature : 17-22 degree Celsius  
 Relative Humidity : 40-70%

**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)	1.155
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*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

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

Test Report No.:	28790B
Date of Issue:	2018-04-16
Date Received:	2018-04-13
Date Tested:	2018-04-13
Date Completed:	2018-04-16
Next Due Date:	2018-06-15

**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 : 17-22 degree Celsius  
 Relative Humidity : 40-70%

**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)	1.152
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*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
 Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/170825
Date of Issue:	2017-08-28
Date Received:	2017-08-25
Date Tested:	2017-08-25
Date Completed:	2017-08-28
Next Due Date:	2018-08-27

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

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

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

**Test conditions:**

Room Temperature	: 23 degree Celsius
Relative Humidity	: 60 %

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

### TEST REPORT

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

Test Report No.:	C/N/170818
Date of Issue:	2017-08-21
Date Received:	2017-08-18
Date Tested:	2017-08-18
Date Completed:	2017-08-21
Next Due Date:	2018-08-20

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

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

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

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

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

Test Report No.:	C/N/170818A
Date of Issue:	2017-08-21
Date Received:	2017-08-18
Date Tested:	2017-08-18
Date Completed:	2017-08-21
Next Due Date:	2018-08-20

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

Page: 1 of 1

**Certificate of Calibration**

**Item for calibration:**

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

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/170915B
Date of Issue:	2017-09-18
Date Received:	2017-09-15
Date Tested:	2017-09-15
Date Completed:	2017-09-18
Next Due Date:	2018-09-17

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

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

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

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 60%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager



### TEST REPORT

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

Test Report No.:	C/N/170915C
Date of Issue:	2017-09-18
Date Received:	2017-09-15
Date Tested:	2017-09-15
Date Completed:	2017-09-18
Next Due Date:	2018-09-17

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

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 977
Serial No.	: 45482
Microphone No.	: 63626
Equipment No.	: N-08-14

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 60%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/171215
Date of Issue:	2017-12-18
Date Received:	2017-12-15
Date Tested:	2017-12-15
Date Completed:	2017-12-18
Next Due Date:	2018-12-17

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

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35924
Equipment No.	: N-13-01

**Test conditions:**

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/171215B
Date of Issue:	2017-12-18
Date Received:	2017-12-15
Date Tested:	2017-12-15
Date Completed:	2017-12-18
Next Due Date:	2018-12-17

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

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35927
Equipment No.	: N-13-03

**Test conditions:**

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/170929
Date of Issue:	2017-09-30
Date Received:	2017-09-29
Date Tested:	2017-09-29
Date Completed:	2017-09-30
Next Due Date:	2018-09-29

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

Page: 1 of 1

### Item for calibration:

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

### Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 60 %

### Methodology:

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

### Results:

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

PREPARED AND CHECKED BY:

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/170929B
Date of Issue:	2017-09-30
Date Received:	2017-09-29
Date Tested:	2017-09-29
Date Completed:	2017-09-30
Next Due Date:	2018-09-29

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

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

### Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 60 %

### Methodology:

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

### Results:

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

PREPARED AND CHECKED BY:

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/171103
Date of Issue:	2017-11-06
Date Received:	2017-11-03
Date Tested:	2017-11-03
Date Completed:	2017-11-06
Next Due Date:	2018-11-05

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

Page: 1 of 1

### Item for calibration:

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

### Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 64 %

### Methodology:

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

### Results:

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/170818C
Date of Issue:	2017-08-21
Date Received:	2017-08-18
Date Tested:	2017-08-18
Date Completed:	2017-08-21
Next Due Date:	2018-08-20

**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 Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

**Methodology:**

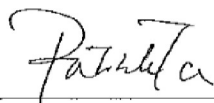
The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

**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

## CALIBRATION CERTIFICATE

Calibration Item: Micromate Unit (Calibration with Geophone  
UM13698)  
Model No.: 721A2501  
Serial No.: UM13698  
Calibration Date: 14 May 2018  
Next Calibration Date: 14 May 2019  
Method Used: In-house Method MM-001  
In-house Testing Procedure No.: MM-001

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

\*References are traceable to NIST or equivalent.

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

Authorized by: \_\_\_\_\_

(Leung Man Hin, Eric)

Date: 14 May 2018



## CALIBRATION CERTIFICATE

Calibration Item: Minimate Plus Unit (Calibration with Geophone  
BG15353)  
Model No.: 716A0403  
Serial No.: BE15891  
Calibration Date: 22 March 2018  
Next Calibration Date: 22 March 2019  
Method Used: In-house Method B3-001  
In-house Testing Procedure No.: B3-001

<b>Test References</b>	<b>Model</b>	<b>Serial No.</b>
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: \_\_\_\_\_

( Leung Man Hin, Eric )

Date: 22 March 2018

## CALIBRATION CERTIFICATE

Calibration Item: Minimate Plus Unit (Calibration with Geophone  
BG16957)  
Model No.: 716A0403  
Serial No.: BE17505  
Calibration Date: 22 March 2018  
Next Calibration Date: 22 March 2019  
Method Used: In-house Method B3-001  
In-house Testing Procedure No.: B3-001

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

\*References are traceable to NIST or equivalent.

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

Authorized by: \_\_\_\_\_

( Leung Man Hin, Eric )

Date: 22 March 2018



## CERTIFICATE OF CALIBRATION

Calibration Date: 1<sup>st</sup> September 2017

Model: iCivil-1011 Inclinometer

Serial No. : HK110118

Method Used: By direct measurement

### Laboratory Conditions:

Ambient Temperature: (23±2)°C

Relative Humidity: (50 ±20)%

Test Reference

Dual-Axis Digital Angle Protractor

Model

TLL-90S

Equipment ID

EPC001

### Calibration Result

X-Axis Measurement

Applied Angle (degree)	UUT Reading (degree)	Error (degree)
10.011	9.943	-0.068
5.005	4.976	-0.029
1.003	0.995	-0.008
0.001	-0.002	-0.003
-1.005	-0.996	0.009
-5.015	-4.976	0.039
-10.009	-9.940	0.069

Remarks:

1. The above calibration data applies only to the instrument described above.

Checked By:

Date: 1<sup>st</sup> September 2017

\*\*\* End of Report\*\*\*



## CERTIFICATE OF CALIBRATION

Calibration Date: 1<sup>st</sup> September 2017

Model: iCivil-1011 Inclinometer

Serial No. : HK110120

Method Used: By direct measurement

### Laboratory Conditions:

Ambient Temperature: (23±2)°C

Relative Humidity: (50 ±20)%

Test Reference

Dual-Axis Digital Angle Protractor

Model

TLL-90S

Equipment ID

EPC001

### Calibration Result

X-Axis Measurement

Applied Angle (degree)	UUT Reading (degree)	Error (degree)
10.005	9.945	-0.06
5.007	4.978	-0.029
1.003	0.998	-0.005
0.001	-0.001	-0.002
-1.008	-0.998	0.01
-5.010	-4.974	0.036
-10.001	-9.943	0.058

Remarks:

1. The above calibration data applies only to the instrument described above.

Checked By:

Date: 1<sup>st</sup> September 2017

\*\*\* End of Report\*\*\*



# YSF Corporation Limited

5/A., Blk 1 Kin Ho Ind Bldg 20-24, Au Pui Wan St,  
Fo Tan, Shatin, N.T. Hong Kong

Phone: 852-8109 8368 Fax: 852-3007 4857

## CERTIFICATE OF CALIBRATION

Certificate No.	: CS-CC- 170820	Customer	: Leighton-China State Joint Venture
Manufacturer	: Leica	Address	: 39/F., Sun Hung Kai Centre, 30 Harbour Road, Hong Kong
Equipment	: Digital Level	Calibration Interval	: 12 months
Model	: LS15 0.3mm	Reference Document	: CS/ME/ 3(HKST)
Serial No.	: 701133	Report No.	: CS-CR- 170820
Calibration Date	: 14th September, 2017		
Expire Date	: 13th September, 2018		

The instrument has been checked and calibrated according to document procedures and using standards and instruments which are traceable to international accepted standards. The standards and instruments used in the calibration are calibrated on a schedule which is adjusted to maintain traceability at the required accuracy level, or have been derived from the ratio type of self-calibration techniques. This is established by our Quality Management System, audited to ISO9001 :2008 by an independent national accredited body.

The specified calibration interval is a recommendation. Depending on the type of use ambient conditions or accuracy requirements, other calibration intervals may be applicable. The user shall be responsible that calibration is carried out at adequate intervals.

YSF Corporation Ltd. hereby certifies this instrument meets or exceeds all published specifications of the manufacturer at present inforce. This calibration certificate may only be distributed in a complete and unchanged form. Unsigned calibration certificates are invalid.

Calibrated by

Wayne

Wayne Ng, Service Engineer  
14th September, 2017

CKL/CSL/170820

Checked by



Wallace Yu, Service Manager  
14th September, 2017



# YSF Corporation Ltd.

## Calibration Report

Certificate No. : CS-CC-170820 Certificate Report No. : CS-CR-170820

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Client : Leighton-China State Joint Venture

Address : 39/F., Sun Hung Kai Centre, 30 Harbour Road, Hong Kong

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Item Calibrated : **Name/Description:** Digital Level

**Manufacturer:** Leica

**Model:** LS15 0.3mm **Eqt. No:** 701133

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Reference Standard : 5198266

Calibration check according to customer's requirement.

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Calibration Method : Procedure CS02

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### Calibration Conditions

Temperature : (  $31 \pm 3^{\circ}\text{C}$  )

Relative Humidity : 84% RH

Date of Test : 14th September, 2017

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Test Results : **PASS** (All calibration points were within the tolerances as shown in the attached calibration results.)

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Calibrated by : Wayne  
Wayne Ng, Service Engineer  
Date: 14th September, 2017

HKCS Approved Signatory: [Signature]  
Wallace Yu, Service Manager  
Date: 14th September, 2017

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- Notes:
- 1, The test equipment used for calibration are traceable to national standards/international system of units(SI)
  - 2, The values given in this calibration certificate only to the values measured at the time of test & any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. YSF Corporation Ltd. shall not be liable for any loss/damage resulting from the use of the equipment.
  - 3, The test results apply to the above Unit-Under-Test only.
  - 4, This certificate shall not be reproduced, except on full, without approval of YSF Corporation Ltd.
-



# YSF Corporation Ltd.

## Calibration Report

Certificate Report No.:CS-CR-170820

Certificate No. :CS-CC-170820

Client : Leighton-China State Joint Venture

Address : 39/F., Sun Hung Kai Centre, 30 Harbour Road, Hong Kong

Item Calibrated :Name/Description: Digital Level

Manufacturer: Leica

Model: LS15 0.3mm

Eqt. No: 701133

Inspection Item	Result
Line of sight leveling	Pass
Compensation accuracy	Pass
Stadia spacing	Pass
Circular bubble level accuracy	Pass
Focusing	Pass
Hori. Motion	Pass

**Overall Inspection Result : PASS**

Served by :

*Wayne*

Wayne Ng, Service Engineer

Date: 14th September, 2017

We hereby confirm the inspection has been completed and complied with the specifications required.

**YSF Corporation Ltd.**

*Wallace Yu*  
Wallace Yu, Service Manager

Date: 14th September, 2017



The Safety Company

MSA Corporate Center • 1000 Cranberry Woods Drive • Cranberry Township, PA 16066

www.msasafety.com

Telephone: (800) MSA-2222

ALTAIR5X
CERTIFICATE OF CALIBRATION

Serial Number: 120848

Part Number: A-ALT5X-A-N-K-D-1-0-0-T-0-0-0

Sales Order Number:



Factory Calibration Date: 08/18/17

Set Points

Table with 7 columns: Gas (METHANE, O2, CO, H2S, NH3), Range, Low Set Point, High Set Point, STEL, TWA, Calibrated Value, Cylinder Lot #.

All applicable inspections, testing, and calibrations were performed using NIST traceable equipment, where available, in accordance with MSA's ISO 9001 Certified Quality System.

Process Certified By:

Calibrated By: E. Weber

Signature of Jim Hoffman
JIM HOFFMAN
QUALITY ENGINEER





The Safety Company

MSA Corporate Center • 1000 Cranberry Woods Drive • Cranberry Township, PA 16066

www.msasafety.com

Telephone: (800) MSA-2222

### ALTAIR5X CERTIFICATE OF CALIBRATION

Serial Number: 120847

Part Number: A-ALT5X-A-N-K-D-1-0-0-T-0-0-0

Sales Order Number:



Factory Calibration Date: 08/18/17

#### Set Points

↓ (Low)						
↑ (High)						
STEL						
TWA						
Calibrated Value	Methane 1.45 %VOL	O2 15.00 %VOL	CO 60.4 PPM	H2S 21.0 PPM	NH3 25 PPM	
Cylinder Lot #	1027601826B	1027601826B	1027601826B	1027601826B	201397	

All applicable inspections, testing, and calibrations were performed using NIST traceable equipment, where available, in accordance with MSA's ISO 9001 Certified Quality System. Each material, component, and/or instrument must be installed, operated and maintained in strict accordance with its labels, cautions, warnings, instructions, and within the limitations stated in the supplied instruction manual. Routine calibration checks, equipment inspections, and applicable preventative maintenance measures must be performed to verify that the materials, components, and/or instruments are operating properly. Failure to perform these tasks on a routine basis, or suggested intervals, with specified equipment or methods, may result in inaccurate readings.

Process Certified By:

Calibrated By: E. Weber

JIM HOFFMAN  
QUALITY ENGINEER

LOCATION: 1000 Cranberry Woods Drive • Cranberry Township, PA 16066-5296

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**APPENDIX C**  
**WEATHER INFORMATION**

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

**I. General Information**

<b>Date</b>	<b>Mean Air Temperature (°C)</b>	<b>Mean Relative Humidity (%)</b>	<b>Precipitation (mm)</b>
1 May 2018	25.4 – 30.6	80	Trace
2 May 2018	25.6 – 31.8	75	-
3 May 2018	22.9 – 33.5	80	1.9
4 May 2018	22.1 – 25.1	82	0.8
5 May 2018	23.6 – 27.7	82	Trace
6 May 2018	25.4 – 31.0	80	1.0
7 May 2018	24.4 – 29.6	82	6.7
8 May 2018	23.7 – 27.1	91	28.4
9 May 2018	22.8 – 25.7	88	5.4
10 May 2018	22.2 – 23.9	89	8.0
11 May 2018	22.3 – 25.3	86	1.0
12 May 2018	24.2 – 30.6	82	-
13 May 2018	25.3 – 31.5	79	-
14 May 2018	26.6 – 31.9	77	-
15 May 2018	27.1 – 32.3	76	-
16 May 2018	26.1 – 32.2	74	-
17 May 2018	27.4 – 33.1	75	-
18 May 2018	27.7 – 33.4	74	-
19 May 2018	27.8 – 33.4	74	-

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

**I. General Information**

<b>Date</b>	<b>Mean Air Temperature (°C)</b>	<b>Mean Relative Humidity (%)</b>	<b>Precipitation (mm)</b>
20 May 2018	27.8 – 34.5	72	-
21 May 2018	28.1 – 34.7	71	-
22 May 2018	27.9 – 34.8	69	-
23 May 2018	27.6 – 35.1	69	-
24 May 2018	28.4 – 33.5	73	-
25 May 2018	27.6 – 33.1	71	Trace
26 May 2018	28.8 – 34.7	72	0.9
27 May 2018	26.9 – 33.4	76	3.4
28 May 2018	27.8 – 34.5	72	-
29 May 2018	28.3 – 35.3	69	-
30 May 2018	29.0 – 35.4	69	-
31 May 2018	28.9 – 34.8	70	-

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

\*\* Trace means rainfall less than 0.05 mm

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Speed m/s</b>	<b>Direction</b>
1-May-2018	00:00	1.5	ENE
1-May-2018	01:00	1.5	SSE
1-May-2018	02:00	1.5	SE
1-May-2018	03:00	1.8	W
1-May-2018	04:00	1.2	WSW
1-May-2018	05:00	1.3	SSW
1-May-2018	06:00	1.2	ESE
1-May-2018	07:00	1.4	E
1-May-2018	08:00	1.5	SSE
1-May-2018	09:00	1.8	SSW
1-May-2018	10:00	2.1	ESE
1-May-2018	11:00	2.2	W
1-May-2018	12:00	2.6	SSW
1-May-2018	13:00	2.7	SSE
1-May-2018	14:00	2.5	ESE
1-May-2018	15:00	2.4	E
1-May-2018	16:00	2.4	ESE
1-May-2018	17:00	2.1	SW
1-May-2018	18:00	1.8	SW
1-May-2018	19:00	1.5	W
1-May-2018	20:00	1.5	SW
1-May-2018	21:00	1.8	N
1-May-2018	22:00	1.8	N
1-May-2018	23:00	1.7	N
2-May-2018	00:00	1.7	WNW
2-May-2018	01:00	1.5	N
2-May-2018	02:00	1.5	N
2-May-2018	03:00	1.3	WNW
2-May-2018	04:00	1.3	ESE
2-May-2018	05:00	1.2	WNW
2-May-2018	06:00	1.1	SSW
2-May-2018	07:00	1.3	NW
2-May-2018	08:00	1.4	WNW
2-May-2018	09:00	1.7	W
2-May-2018	10:00	2.1	N
2-May-2018	11:00	2.3	W
2-May-2018	12:00	2.4	NNE

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

**II. Mean Wind Speed and Wind Direction**

2-May-2018	13:00	2.2	NNE
2-May-2018	14:00	2.3	NNE
2-May-2018	15:00	2.2	NNE
2-May-2018	16:00	1.9	NNE
2-May-2018	17:00	1.9	NE
2-May-2018	18:00	1.8	ENE
2-May-2018	19:00	1.5	NE
2-May-2018	20:00	1.7	NE
2-May-2018	21:00	1.7	NE
2-May-2018	22:00	1.5	NE
2-May-2018	23:00	1.6	ENE
3-May-2018	00:00	1.7	ENE
3-May-2018	01:00	1.6	ESE
3-May-2018	02:00	1.5	NE
3-May-2018	03:00	1.4	SE
3-May-2018	04:00	1.4	SE
3-May-2018	05:00	1.3	SE
3-May-2018	06:00	1	W
3-May-2018	07:00	1.1	ENE
3-May-2018	08:00	1.3	NE
3-May-2018	09:00	1.6	NE
3-May-2018	10:00	1.9	NE
3-May-2018	11:00	1.9	NE
3-May-2018	12:00	2.2	NE
3-May-2018	13:00	2.5	NE
3-May-2018	14:00	2.1	NE
3-May-2018	15:00	2.2	ENE
3-May-2018	16:00	2.3	NE
3-May-2018	17:00	2.3	NE
3-May-2018	18:00	2	N
3-May-2018	19:00	1.8	N
3-May-2018	20:00	1.4	W
3-May-2018	21:00	1.6	W
3-May-2018	22:00	1.5	WSW
3-May-2018	23:00	1.7	WSW
4-May-2018	00:00	2.1	SSW
4-May-2018	01:00	2.1	ENE
4-May-2018	02:00	2.2	SW

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

**II. Mean Wind Speed and Wind Direction**

4-May-2018	03:00	2.3	SW
4-May-2018	04:00	1.7	SW
4-May-2018	05:00	1.7	W
4-May-2018	06:00	1.8	E
4-May-2018	07:00	1.8	ENE
4-May-2018	08:00	2	WSW
4-May-2018	09:00	2.1	NE
4-May-2018	10:00	2.6	WSW
4-May-2018	11:00	2.4	W
4-May-2018	12:00	2.5	W
4-May-2018	13:00	2.7	SSW
4-May-2018	14:00	2.4	WSW
4-May-2018	15:00	2.7	WSW
4-May-2018	16:00	2.5	SW
4-May-2018	17:00	2.5	W
4-May-2018	18:00	2.3	W
4-May-2018	19:00	2.1	NE
4-May-2018	20:00	2	WSW
4-May-2018	21:00	1.8	W
4-May-2018	22:00	2.3	W
4-May-2018	23:00	2.3	W
5-May-2018	00:00	2.2	W
5-May-2018	01:00	2	NNE
5-May-2018	02:00	2	ENE
5-May-2018	03:00	1.8	ENE
5-May-2018	04:00	1.7	ENE
5-May-2018	05:00	1.5	ENE
5-May-2018	06:00	1.4	NE
5-May-2018	07:00	1.4	NE
5-May-2018	08:00	1.6	NE
5-May-2018	09:00	2.1	NE
5-May-2018	10:00	2.5	ENE
5-May-2018	11:00	2.4	ENE
5-May-2018	12:00	2.8	ENE
5-May-2018	13:00	2.7	ENE
5-May-2018	14:00	2.8	ENE
5-May-2018	15:00	2.7	ESE
5-May-2018	16:00	2.3	ESE

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

**II. Mean Wind Speed and Wind Direction**

5-May-2018	17:00	2.4	ENE
5-May-2018	18:00	2.1	ENE
5-May-2018	19:00	1.7	ESE
5-May-2018	20:00	1.9	NNE
5-May-2018	21:00	1.9	ENE
5-May-2018	22:00	1.9	SSW
5-May-2018	23:00	2.1	WNW
6-May-2018	00:00	2	SW
6-May-2018	01:00	2.2	SW
6-May-2018	02:00	2	W
6-May-2018	03:00	1.8	WSW
6-May-2018	04:00	1.9	W
6-May-2018	05:00	1.8	NE
6-May-2018	06:00	1.6	E
6-May-2018	07:00	1.5	WSW
6-May-2018	08:00	1.7	SSW
6-May-2018	09:00	1.9	SSW
6-May-2018	10:00	2.2	SSW
6-May-2018	11:00	2.3	NE
6-May-2018	12:00	2.5	NE
6-May-2018	13:00	2.7	ENE
6-May-2018	14:00	2.4	ENE
6-May-2018	15:00	2.4	ENE
6-May-2018	16:00	2.3	N
6-May-2018	17:00	2.5	NE
6-May-2018	18:00	2	NE
6-May-2018	19:00	1.8	ESE
6-May-2018	20:00	1.9	SE
6-May-2018	21:00	1.8	NE
6-May-2018	22:00	1.8	ESE
6-May-2018	23:00	1.8	SE
7-May-2018	00:00	1.9	NW
7-May-2018	01:00	2	NE
7-May-2018	02:00	1.9	ESE
7-May-2018	03:00	1.6	ESE
7-May-2018	04:00	1.4	NE
7-May-2018	05:00	1.6	N
7-May-2018	06:00	1.8	N



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

**II. Mean Wind Speed and Wind Direction**

7-May-2018	07:00	1.6	ENE
7-May-2018	08:00	1.6	ESE
7-May-2018	09:00	1.7	SE
7-May-2018	10:00	2.1	SW
7-May-2018	11:00	2.3	NE
7-May-2018	12:00	2.2	ENE
7-May-2018	13:00	2	ENE
7-May-2018	14:00	1.9	NNE
7-May-2018	15:00	2.3	ENE
7-May-2018	16:00	2.1	ENE
7-May-2018	17:00	2	NE
7-May-2018	18:00	1.8	ENE
7-May-2018	19:00	1.4	NNE
7-May-2018	20:00	1.3	NNE
7-May-2018	21:00	1.6	NE
7-May-2018	22:00	1.8	NNE
7-May-2018	23:00	1.6	SSE
8-May-2018	00:00	1.5	SSE
8-May-2018	01:00	1.5	SE
8-May-2018	02:00	1.4	SE
8-May-2018	03:00	1.4	S
8-May-2018	04:00	1.5	SE
8-May-2018	05:00	1.5	SE
8-May-2018	06:00	1.2	SE
8-May-2018	07:00	1.4	ENE
8-May-2018	08:00	1.8	ENE
8-May-2018	09:00	2.1	NE
8-May-2018	10:00	2.4	ENE
8-May-2018	11:00	2.5	ENE
8-May-2018	12:00	2.8	ENE
8-May-2018	13:00	2.7	ENE
8-May-2018	14:00	2.8	ENE
8-May-2018	15:00	2.9	NE
8-May-2018	16:00	2.6	E
8-May-2018	17:00	2.4	E
8-May-2018	18:00	2.1	NNE
8-May-2018	19:00	2.1	NE
8-May-2018	20:00	1.8	SSE

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

**II. Mean Wind Speed and Wind Direction**

8-May-2018	21:00	1.8	NE
8-May-2018	22:00	1.7	NE
8-May-2018	23:00	1.6	E
9-May-2018	00:00	1.4	NE
9-May-2018	01:00	1.3	E
9-May-2018	02:00	1.5	ENE
9-May-2018	03:00	1.6	ENE
9-May-2018	04:00	1.6	ENE
9-May-2018	05:00	1.4	NE
9-May-2018	06:00	1.4	ENE
9-May-2018	07:00	1.2	ENE
9-May-2018	08:00	1.6	NNE
9-May-2018	09:00	1.8	NNE
9-May-2018	10:00	2.3	ENE
9-May-2018	11:00	2.4	ESE
9-May-2018	12:00	2.5	NE
9-May-2018	13:00	2.4	NE
9-May-2018	14:00	2.3	NNE
9-May-2018	15:00	2.5	NNE
9-May-2018	16:00	2.5	NNE
9-May-2018	17:00	2.2	ESE
9-May-2018	18:00	1.9	ENE
9-May-2018	19:00	1.8	ENE
9-May-2018	20:00	1.7	E
9-May-2018	21:00	1.6	E
9-May-2018	22:00	1.4	NNE
9-May-2018	23:00	1.2	ENE
10-May-2018	00:00	1.3	ENE
10-May-2018	01:00	1.6	ENE
10-May-2018	02:00	1.5	ESE
10-May-2018	03:00	1.5	NE
10-May-2018	04:00	1.4	ENE
10-May-2018	05:00	1.3	S
10-May-2018	06:00	1.2	E
10-May-2018	07:00	1.1	ESE
10-May-2018	08:00	1.3	NE
10-May-2018	09:00	1.7	ENE
10-May-2018	10:00	2	N

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

**II. Mean Wind Speed and Wind Direction**

10-May-2018	11:00	2.3	ENE
10-May-2018	12:00	2.5	ENE
10-May-2018	13:00	2.6	NNE
10-May-2018	14:00	2.4	NNE
10-May-2018	15:00	2.4	NNE
10-May-2018	16:00	2.3	NE
10-May-2018	17:00	2.4	NNE
10-May-2018	18:00	2.1	NNE
10-May-2018	19:00	1.9	NNE
10-May-2018	20:00	1.6	ENE
10-May-2018	21:00	1.4	NE
10-May-2018	22:00	1.6	ENE
10-May-2018	23:00	1.6	E
11-May-2018	00:00	1.6	ENE
11-May-2018	01:00	1.7	NE
11-May-2018	02:00	1.8	ESE
11-May-2018	03:00	1.7	ENE
11-May-2018	04:00	1.6	SSE
11-May-2018	05:00	1.6	ENE
11-May-2018	06:00	1.6	NE
11-May-2018	07:00	1.6	ENE
11-May-2018	08:00	1.9	ENE
11-May-2018	09:00	2.2	NNE
11-May-2018	10:00	2.3	NE
11-May-2018	11:00	2.2	NE
11-May-2018	12:00	2.4	E
11-May-2018	13:00	2.5	ENE
11-May-2018	14:00	2.8	NNE
11-May-2018	15:00	2.7	ENE
11-May-2018	16:00	2.5	NNE
11-May-2018	17:00	2.2	NNE
11-May-2018	18:00	1.9	ESE
11-May-2018	19:00	1.8	ENE
11-May-2018	20:00	1.7	WSW
11-May-2018	21:00	1.9	SSE
11-May-2018	22:00	1.8	SE
11-May-2018	23:00	1.7	WSW
12-May-2018	00:00	1.8	SSE

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

**II. Mean Wind Speed and Wind Direction**

12-May-2018	01:00	1.6	ENE
12-May-2018	02:00	1.7	ENE
12-May-2018	03:00	1.6	ENE
12-May-2018	04:00	1.6	NNE
12-May-2018	05:00	1.5	NE
12-May-2018	06:00	1.4	ENE
12-May-2018	07:00	1.5	NNE
12-May-2018	08:00	1.6	ENE
12-May-2018	09:00	1.9	NE
12-May-2018	10:00	2	NE
12-May-2018	11:00	2.3	NNE
12-May-2018	12:00	2.2	ENE
12-May-2018	13:00	2.5	SW
12-May-2018	14:00	2.3	W
12-May-2018	15:00	2.3	WSW
12-May-2018	16:00	2	NE
12-May-2018	17:00	1.9	ESE
12-May-2018	18:00	1.8	ESE
12-May-2018	19:00	1.6	SW
12-May-2018	20:00	1.4	ESE
12-May-2018	21:00	1.4	ESE
12-May-2018	22:00	1.4	WNW
12-May-2018	23:00	1.4	ENE
13-May-2018	00:00	1.2	ENE
13-May-2018	01:00	1.3	SSE
13-May-2018	02:00	1.2	SW
13-May-2018	03:00	1.3	N
13-May-2018	04:00	1.3	WSW
13-May-2018	05:00	1.1	SSW
13-May-2018	06:00	1.1	NE
13-May-2018	07:00	1.1	NE
13-May-2018	08:00	1.5	NE
13-May-2018	09:00	1.9	ENE
13-May-2018	10:00	2.1	ESE
13-May-2018	11:00	2.5	ESE
13-May-2018	12:00	2.7	SE
13-May-2018	13:00	2.5	SW
13-May-2018	14:00	2.3	NE

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

**II. Mean Wind Speed and Wind Direction**

13-May-2018	15:00	2.1	SSW
13-May-2018	16:00	2.1	WNW
13-May-2018	17:00	2.1	WSW
13-May-2018	18:00	1.8	WSW
13-May-2018	19:00	1.6	W
13-May-2018	20:00	1.4	W
13-May-2018	21:00	1.3	N
13-May-2018	22:00	1.4	NE
13-May-2018	23:00	1.5	SSW
14-May-2018	00:00	1.4	WSW
14-May-2018	01:00	1.3	WSW
14-May-2018	02:00	1.3	SE
14-May-2018	03:00	1.4	ENE
14-May-2018	04:00	1.4	NE
14-May-2018	05:00	1.3	ENE
14-May-2018	06:00	1.2	SSE
14-May-2018	07:00	1.2	NNE
14-May-2018	08:00	1.4	W
14-May-2018	09:00	1.9	NW
14-May-2018	10:00	2.4	NNE
14-May-2018	11:00	2.6	WNW
14-May-2018	12:00	2.6	WNW
14-May-2018	13:00	2.3	WNW
14-May-2018	14:00	2.4	WNW
14-May-2018	15:00	2.3	SW
14-May-2018	16:00	2.1	W
14-May-2018	17:00	2	WSW
14-May-2018	18:00	1.8	SW
14-May-2018	19:00	1.6	SSW
14-May-2018	20:00	1.5	SE
14-May-2018	21:00	1.7	ENE
14-May-2018	22:00	1.8	N
14-May-2018	23:00	1.4	WNW
15-May-2018	00:00	1.7	W
15-May-2018	01:00	1.5	N
15-May-2018	02:00	1.5	ENE
15-May-2018	03:00	1.4	ESE
15-May-2018	04:00	1.5	E

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

**II. Mean Wind Speed and Wind Direction**

15-May-2018	05:00	1.3	NNE
15-May-2018	06:00	1.1	ENE
15-May-2018	07:00	1.2	SSE
15-May-2018	08:00	1.2	SSE
15-May-2018	09:00	1.6	S
15-May-2018	10:00	1.8	SSW
15-May-2018	11:00	1.9	WSW
15-May-2018	12:00	2	WSW
15-May-2018	13:00	1.9	SW
15-May-2018	14:00	1.9	SSW
15-May-2018	15:00	2	W
15-May-2018	16:00	2	N
15-May-2018	17:00	1.9	ENE
15-May-2018	18:00	1.7	ESE
15-May-2018	19:00	1.4	WNW
15-May-2018	20:00	1.3	W
15-May-2018	21:00	1.4	NE
15-May-2018	22:00	1.3	ENE
15-May-2018	23:00	1.1	NE
16-May-2018	00:00	1.2	N
16-May-2018	01:00	1.1	SSE
16-May-2018	02:00	1.1	SSW
16-May-2018	03:00	1.2	WNW
16-May-2018	04:00	1.3	WSW
16-May-2018	05:00	1.2	E
16-May-2018	06:00	1	S
16-May-2018	07:00	1.2	W
16-May-2018	08:00	1.4	SSW
16-May-2018	09:00	1.9	SW
16-May-2018	10:00	2	WSW
16-May-2018	11:00	2.2	ENE
16-May-2018	12:00	2.3	NNE
16-May-2018	13:00	2.3	WSW
16-May-2018	14:00	2.5	W
16-May-2018	15:00	2.3	ESE
16-May-2018	16:00	2.4	ESE
16-May-2018	17:00	2.4	E
16-May-2018	18:00	2	NE

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

**II. Mean Wind Speed and Wind Direction**

16-May-2018	19:00	1.8	W
16-May-2018	20:00	1.4	WNW
16-May-2018	21:00	1.3	ENE
16-May-2018	22:00	1	ENE
16-May-2018	23:00	1	SW
17-May-2018	00:00	1.3	N
17-May-2018	01:00	1.5	W
17-May-2018	02:00	1.4	NE
17-May-2018	03:00	1.2	NNE
17-May-2018	04:00	1.1	N
17-May-2018	05:00	1.3	NNE
17-May-2018	06:00	1.5	ENE
17-May-2018	07:00	1.4	ENE
17-May-2018	08:00	1.5	SSW
17-May-2018	09:00	1.8	ESE
17-May-2018	10:00	2	W
17-May-2018	11:00	2.3	WNW
17-May-2018	12:00	2.5	W
17-May-2018	13:00	2.4	W
17-May-2018	14:00	2.2	NNE
17-May-2018	15:00	2.4	SSE
17-May-2018	16:00	2.5	ESE
17-May-2018	17:00	2.1	NE
17-May-2018	18:00	1.9	NNE
17-May-2018	19:00	1.6	ENE
17-May-2018	20:00	1.7	NE
17-May-2018	21:00	1.7	ESE
17-May-2018	22:00	1.7	SSE
17-May-2018	23:00	1.5	NE
18-May-2018	00:00	1.3	NE
18-May-2018	01:00	1.3	SE
18-May-2018	02:00	1.1	ESE
18-May-2018	03:00	1.5	SSW
18-May-2018	04:00	1.5	SE
18-May-2018	05:00	1.6	NE
18-May-2018	06:00	1.3	ENE
18-May-2018	07:00	1.4	ENE
18-May-2018	08:00	1.9	ENE

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

**II. Mean Wind Speed and Wind Direction**

18-May-2018	09:00	2.3	SSW
18-May-2018	10:00	2.9	N
18-May-2018	11:00	3	NNW
18-May-2018	12:00	3.1	SSW
18-May-2018	13:00	3	SE
18-May-2018	14:00	3	NE
18-May-2018	15:00	3.1	SE
18-May-2018	16:00	3	SE
18-May-2018	17:00	2.9	SSW
18-May-2018	18:00	2.6	W
18-May-2018	19:00	2.4	SW
18-May-2018	20:00	2.1	ENE
18-May-2018	21:00	2	E
18-May-2018	22:00	2.2	SW
18-May-2018	23:00	2.3	ESE
19-May-2018	00:00	2.4	ENE
19-May-2018	01:00	2.1	N
19-May-2018	02:00	2.2	SSE
19-May-2018	03:00	2.1	WSW
19-May-2018	04:00	2.2	N
19-May-2018	05:00	2.1	NNE
19-May-2018	06:00	1.6	W
19-May-2018	07:00	1.7	SSW
19-May-2018	08:00	2	WSW
19-May-2018	09:00	2.4	WSW
19-May-2018	10:00	2.5	SW
19-May-2018	11:00	2.3	SSW
19-May-2018	12:00	2.4	SW
19-May-2018	13:00	2.2	SSW
19-May-2018	14:00	2.1	SSW
19-May-2018	15:00	2.2	WNW
19-May-2018	16:00	2.1	NW
19-May-2018	17:00	2.3	W
19-May-2018	18:00	2.2	WNW
19-May-2018	19:00	1.9	WNW
19-May-2018	20:00	1.7	WNW
19-May-2018	21:00	1.7	WNW
19-May-2018	22:00	1.8	SSW



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

**II. Mean Wind Speed and Wind Direction**

19-May-2018	23:00	1.8	SW
20-May-2018	00:00	2	S
20-May-2018	01:00	2.2	WSW
20-May-2018	02:00	2.2	SSW
20-May-2018	03:00	2	WSW
20-May-2018	04:00	1.9	WSW
20-May-2018	05:00	2	W
20-May-2018	06:00	2.1	WSW
20-May-2018	07:00	2	W
20-May-2018	08:00	2.1	WNW
20-May-2018	09:00	2.5	SW
20-May-2018	10:00	2.8	E
20-May-2018	11:00	3.1	WSW
20-May-2018	12:00	3.2	SW
20-May-2018	13:00	3.4	WNW
20-May-2018	14:00	3.2	WSW
20-May-2018	15:00	3.1	WSW
20-May-2018	16:00	2.7	NNE
20-May-2018	17:00	3.1	SW
20-May-2018	18:00	2.8	W
20-May-2018	19:00	2.9	WSW
20-May-2018	20:00	1.9	WSW
20-May-2018	21:00	2.2	WSW
20-May-2018	22:00	2.3	SW
20-May-2018	23:00	2.5	WSW
21-May-2018	00:00	2.6	NNE
21-May-2018	01:00	1.9	SW
21-May-2018	02:00	1.9	WSW
21-May-2018	03:00	2.2	WSW
21-May-2018	04:00	2.3	NNE
21-May-2018	05:00	2	N
21-May-2018	06:00	2.1	N
21-May-2018	07:00	2.6	ENE
21-May-2018	08:00	2.9	NE
21-May-2018	09:00	3.3	NE
21-May-2018	10:00	2.9	N
21-May-2018	11:00	3.2	E
21-May-2018	12:00	3.5	NW

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

**II. Mean Wind Speed and Wind Direction**

21-May-2018	13:00	3.6	WNW
21-May-2018	14:00	3.5	N
21-May-2018	15:00	3.5	NNW
21-May-2018	16:00	3.5	WNW
21-May-2018	17:00	3.3	N
21-May-2018	18:00	3.4	NE
21-May-2018	19:00	2.9	N
21-May-2018	20:00	2.7	NE
21-May-2018	21:00	2.6	WNW
21-May-2018	22:00	2.5	WNW
21-May-2018	23:00	2.3	SW
22-May-2018	00:00	2.4	SSW
22-May-2018	01:00	2.1	NE
22-May-2018	02:00	2	NE
22-May-2018	03:00	2.1	WSW
22-May-2018	04:00	2.3	ENE
22-May-2018	05:00	2	WNW
22-May-2018	06:00	1.6	SSE
22-May-2018	07:00	2.1	S
22-May-2018	08:00	2.4	ENE
22-May-2018	09:00	2.8	NNE
22-May-2018	10:00	2.8	SSE
22-May-2018	11:00	2.8	E
22-May-2018	12:00	3	ESE
22-May-2018	13:00	2.7	ESE
22-May-2018	14:00	2.8	ENE
22-May-2018	15:00	2.7	WSW
22-May-2018	16:00	2.9	ESE
22-May-2018	17:00	2.7	ENE
22-May-2018	18:00	2	N
22-May-2018	19:00	1.6	SSE
22-May-2018	20:00	1.6	ESE
22-May-2018	21:00	1.8	ENE
22-May-2018	22:00	1.7	SSE
22-May-2018	23:00	1.6	ESE
23-May-2018	00:00	1.7	NE
23-May-2018	01:00	1.8	NE
23-May-2018	02:00	1.9	SW

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

**II. Mean Wind Speed and Wind Direction**

23-May-2018	03:00	1.8	N
23-May-2018	04:00	1.7	NE
23-May-2018	05:00	1.7	NE
23-May-2018	06:00	1.7	SSW
23-May-2018	07:00	1.6	NNE
23-May-2018	08:00	1.5	WSW
23-May-2018	09:00	1.7	WNW
23-May-2018	10:00	2.3	E
23-May-2018	11:00	2.5	W
23-May-2018	12:00	2.5	NNE
23-May-2018	13:00	2.8	ENE
23-May-2018	14:00	2.8	NNE
23-May-2018	15:00	2.5	NNE
23-May-2018	16:00	2.7	NNE
23-May-2018	17:00	2.5	NNE
23-May-2018	18:00	2.4	NNE
23-May-2018	19:00	2.2	NNE
23-May-2018	20:00	2	NNE
23-May-2018	21:00	1.8	ESE
23-May-2018	22:00	1.7	ESE
23-May-2018	23:00	1.6	ESE
24-May-2018	00:00	1.5	ESE
24-May-2018	01:00	1.6	ENE
24-May-2018	02:00	1.5	ENE
24-May-2018	03:00	1.6	ENE
24-May-2018	04:00	1.6	ENE
24-May-2018	05:00	1.8	N
24-May-2018	06:00	1.5	ENE
24-May-2018	07:00	1.5	NNE
24-May-2018	08:00	1.7	SE
24-May-2018	09:00	2.1	SE
24-May-2018	10:00	2.2	ENE
24-May-2018	11:00	2.5	NE
24-May-2018	12:00	2.5	NE
24-May-2018	13:00	2.7	NNW
24-May-2018	14:00	2.6	NNW
24-May-2018	15:00	2.5	SSW
24-May-2018	16:00	2.5	NE

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

**II. Mean Wind Speed and Wind Direction**

24-May-2018	17:00	2.5	E
24-May-2018	18:00	2	NE
24-May-2018	19:00	1.8	NE
24-May-2018	20:00	1.6	SE
24-May-2018	21:00	1.8	WNW
24-May-2018	22:00	1.4	NNE
24-May-2018	23:00	1.4	NNE
25-May-2018	00:00	1.5	NNE
25-May-2018	01:00	1.4	NE
25-May-2018	02:00	1.4	NNE
25-May-2018	03:00	1.4	NNE
25-May-2018	04:00	1.2	E
25-May-2018	05:00	1.2	ENE
25-May-2018	06:00	1.1	NE
25-May-2018	07:00	1.1	NNE
25-May-2018	08:00	1.3	ESE
25-May-2018	09:00	1.6	SSE
25-May-2018	10:00	2	ESE
25-May-2018	11:00	2.1	NNE
25-May-2018	12:00	2.4	N
25-May-2018	13:00	2.2	NNE
25-May-2018	14:00	2.2	WNW
25-May-2018	15:00	2.2	WNW
25-May-2018	16:00	1.9	NE
25-May-2018	17:00	1.6	ENE
25-May-2018	18:00	1.5	ENE
25-May-2018	19:00	1.2	ESE
25-May-2018	20:00	1.4	N
25-May-2018	21:00	1.1	E
25-May-2018	22:00	1.3	SSE
25-May-2018	23:00	1.3	SSE
26-May-2018	00:00	1.2	SSE
26-May-2018	01:00	1	W
26-May-2018	02:00	1.1	WNW
26-May-2018	03:00	1	WNW
26-May-2018	04:00	0.9	E
26-May-2018	05:00	0.9	NE
26-May-2018	06:00	0.8	NE

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

**II. Mean Wind Speed and Wind Direction**

26-May-2018	07:00	1	NNE
26-May-2018	08:00	1.4	NNE
26-May-2018	09:00	1.6	NE
26-May-2018	10:00	2.1	SE
26-May-2018	11:00	2.1	N
26-May-2018	12:00	2.3	N
26-May-2018	13:00	2.6	W
26-May-2018	14:00	2.5	NE
26-May-2018	15:00	2.2	ENE
26-May-2018	16:00	2.3	NNE
26-May-2018	17:00	2	SSW
26-May-2018	18:00	1.7	S
26-May-2018	19:00	1.5	SSW
26-May-2018	20:00	1.3	NE
26-May-2018	21:00	1.4	N
26-May-2018	22:00	1.2	NNE
26-May-2018	23:00	1.2	N
27-May-2018	00:00	1.2	N
27-May-2018	01:00	1.1	W
27-May-2018	02:00	1.1	NNE
27-May-2018	03:00	1.1	N
27-May-2018	04:00	1	N
27-May-2018	05:00	1.2	SE
27-May-2018	06:00	1	S
27-May-2018	07:00	0.9	WSW
27-May-2018	08:00	1.2	NW
27-May-2018	09:00	1.8	WNW
27-May-2018	10:00	1.9	WNW
27-May-2018	11:00	2	WNW
27-May-2018	12:00	2.3	W
27-May-2018	13:00	2.4	WSW
27-May-2018	14:00	2.3	SW
27-May-2018	15:00	2.1	SW
27-May-2018	16:00	2	NW
27-May-2018	17:00	1.9	W
27-May-2018	18:00	1.5	WNW
27-May-2018	19:00	1.4	W
27-May-2018	20:00	1.6	W

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

**II. Mean Wind Speed and Wind Direction**

27-May-2018	21:00	1.7	WNW
27-May-2018	22:00	1.4	WNW
27-May-2018	23:00	1.5	WNW
28-May-2018	00:00	1.4	W
28-May-2018	01:00	1.3	SW
28-May-2018	02:00	1.2	W
28-May-2018	03:00	1.5	SW
28-May-2018	04:00	1.4	SW
28-May-2018	05:00	1.3	SW
28-May-2018	06:00	1.3	W
28-May-2018	07:00	1.2	W
28-May-2018	08:00	1.4	WSW
28-May-2018	09:00	1.6	WSW
28-May-2018	10:00	1.9	W
28-May-2018	11:00	1.9	W
28-May-2018	12:00	1.9	WNW
28-May-2018	13:00	2.2	WNW
28-May-2018	14:00	2	N
28-May-2018	15:00	2.2	WSW
28-May-2018	16:00	2.2	W
28-May-2018	17:00	2.2	SW
28-May-2018	18:00	2.4	SW
28-May-2018	19:00	2.1	WSW
28-May-2018	20:00	2	WSW
28-May-2018	21:00	2	SW
28-May-2018	22:00	2	WSW
28-May-2018	23:00	2	WSW
29-May-2018	00:00	2.3	WSW
29-May-2018	01:00	2	WNW
29-May-2018	02:00	2.2	WNW
29-May-2018	03:00	2.5	W
29-May-2018	04:00	2.1	WNW
29-May-2018	05:00	2.8	SE
29-May-2018	06:00	2.7	SE
29-May-2018	07:00	2	SE
29-May-2018	08:00	2.2	NE
29-May-2018	09:00	2.4	NNE
29-May-2018	10:00	2.1	WSW

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

**II. Mean Wind Speed and Wind Direction**

29-May-2018	11:00	2.3	WSW
29-May-2018	12:00	2.6	ESE
29-May-2018	13:00	2.4	SSE
29-May-2018	14:00	2.5	SSE
29-May-2018	15:00	2.6	SSE
29-May-2018	16:00	2.5	ESE
29-May-2018	17:00	1.9	SSE
29-May-2018	18:00	1.6	SSE
29-May-2018	19:00	1.5	S
29-May-2018	20:00	1.4	SSE
29-May-2018	21:00	1.3	SSE
29-May-2018	22:00	1.4	ESE
29-May-2018	23:00	1.1	SSE
30-May-2018	00:00	1.2	SSE
30-May-2018	01:00	1.3	S
30-May-2018	02:00	1.1	S
30-May-2018	03:00	1.4	S
30-May-2018	04:00	1.3	SSE
30-May-2018	05:00	1.4	ESE
30-May-2018	06:00	1.2	ENE
30-May-2018	07:00	1.3	SE
30-May-2018	08:00	1.5	ESE
30-May-2018	09:00	1.8	ESE
30-May-2018	10:00	2	S
30-May-2018	11:00	2.3	ESE
30-May-2018	12:00	2.6	E
30-May-2018	13:00	2.5	ENE
30-May-2018	14:00	2.6	NE
30-May-2018	15:00	2.5	SSW
30-May-2018	16:00	2.2	ENE
30-May-2018	17:00	1.9	NW
30-May-2018	18:00	1.6	WNW
30-May-2018	19:00	1.4	WNW
30-May-2018	20:00	1.4	W
30-May-2018	21:00	1.3	WNW
30-May-2018	22:00	1.3	ENE
30-May-2018	23:00	1.5	ENE
31-May-2018	00:00	1.5	ENE

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

**II. Mean Wind Speed and Wind Direction**

31-May-2018	01:00	1.8	ESE
31-May-2018	02:00	1.9	E
31-May-2018	03:00	2	ESE
31-May-2018	04:00	2.2	E
31-May-2018	05:00	2.5	SE
31-May-2018	06:00	2.2	E
31-May-2018	07:00	2	ESE
31-May-2018	08:00	1.9	SE
31-May-2018	09:00	1.7	E
31-May-2018	10:00	1.6	S
31-May-2018	11:00	1.5	SSE
31-May-2018	12:00	1.5	S
31-May-2018	13:00	1.7	SSE
31-May-2018	14:00	1.7	S
31-May-2018	15:00	1.7	WNW
31-May-2018	16:00	1.4	W
31-May-2018	17:00	1.4	W
31-May-2018	18:00	1.3	SW
31-May-2018	19:00	1.4	SW
31-May-2018	20:00	1.3	W
31-May-2018	21:00	1.2	WNW
31-May-2018	22:00	1.2	W
31-May-2018	23:00	1.2	SSW



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**APPENDIX D  
ENVIRONMENTAL MONITORING  
SCHEDULES**

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**Agreement No. CE/59/2015 (EP)**  
**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction**  
**Impact Air Quality and Noise Monitoring Schedule (May 2018)**

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

**Agreement No. CE/59/2015 (EP)**  
**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction**  
**Impact Water Quality Monitoring Schedule (May 2018)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		<b>1-May</b>	2-May	3-May	4-May	5-May
			Mid-Flood 07:16 Mid-Ebb 13:44		Mid-Flood 08:10 Mid-Ebb 14:56	
<b>6-May</b>	7-May	8-May	9-May	10-May	11-May	12-May
	Mid-Flood# 04:40 Mid-Ebb 17:15		Mid-Flood 12:39 Mid-Ebb 19:34		Mid-Ebb 10:01 Mid-Flood 15:10	
<b>13-May</b>	14-May	15-May	16-May	17-May	18-May	19-May
	Mid-Ebb 11:39 Mid-Flood 17:57		Mid-Ebb 12:58 Mid-Flood 19:34		Mid-Flood 07:39 Mid-Ebb 14:28	
<b>20-May</b>	21-May	<b>22-May</b>	23-May	24-May	25-May	26-May
	Mid-Flood 10:02 Mid-Ebb 17:24		Mid-Flood 12:52 Mid-Ebb 19:48		Mid-Ebb 09:43 Mid-Flood 15:38	
<b>27-May</b>	28-May	29-May	30-May	31-May		
	Mid-Ebb 11:41 Mid-Flood 18:17		Mid-Ebb 12:50 Mid-Flood 19:46			

Monitoring Station:

C1, C2, G1, G2, G3, G4, M1, M2, M3, M4, M5, M6

Remark(#): It is proposed that there is no need for mid-flood monitoring on 7 May 2018 based on the following reasons:

- a) There will be no marine works within the suitable tidal conditions (within  $\pm 1.5$  hour of the predicted mid-ebb or mid-flood tides).
- b) The above condition described in point a) occurs for 2 or more consecutive days.

**Agreement No. CE/59/2015 (EP)**  
**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction**  
**Impact Groundwater Quality Monitoring Schedule (May 2018)**

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

Monitoring Location:  
Stream 1, Stream 2, Stream 3

**Agreement No. CE/59/2015 (EP)**  
**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction**  
**Impact Water Quality Monitoring Schedule in Temporary Marine Embayment (May 2018)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		<b>1-May</b>	2-May	3-May	4-May	5-May
				Mid-Flood 07:44 Mid-Ebb 14:20		
<b>6-May</b>	7-May	8-May	9-May	10-May	11-May	12-May
					Mid-Ebb 10:01 Mid-Flood 15:10	
<b>13-May</b>	14-May	15-May	16-May	17-May	18-May	19-May
		Mid-Ebb 12:17 Mid-Flood 18:46				
<b>20-May</b>	21-May	<b>22-May</b>	23-May	24-May	25-May	26-May
				Mid-Ebb 08:47 Mid-Flood 14:27		
<b>27-May</b>	28-May	29-May	30-May	31-May		
	Mid-Ebb 11:41 Mid-Flood 18:17					

Monitoring Station:  
W1

**Agreement No. CE/59/2015 (EP)**  
**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction**  
**Tentative Impact Air Quality and Noise Monitoring Schedule (June 2018)**

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

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<sup>(1)</sup> - Sitting-out Area at Cha Kwo Ling Village  
AM4(A)<sup>(2)</sup> - 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 Water Quality Monitoring Schedule (June 2018)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jun	2-Jun
					Mid-Flood 07:08 Mid-Ebb 13:59	
<b>3-Jun</b>	4-Jun	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun
	Mid-Flood 08:22 Mid-Ebb 15:45		Mid-Flood 10:16 Mid-Ebb 17:24		Mid-Ebb 08:29 Mid-Flood 13:28	
<b>10-Jun</b>	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
	Mid-Ebb 10:33 Mid-Flood 16:52		Mid-Ebb 11:55 Mid-Flood 18:38		Mid-Ebb 13:29 Mid-Flood 20:26	
<b>17-Jun</b>	<b>18-Jun</b>	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun
		Mid-Flood 10:02 Mid-Ebb 17:06		Mid-Flood 12:39 Mid-Ebb 19:15		Mid-Ebb 09:21 Mid-Flood 15:31
<b>24-Jun</b>	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun
	Mid-Ebb 10:50 Mid-Flood 17:31		Mid-Ebb 12:00 Mid-Flood 19:04		Mid-Ebb 13:08 Mid-Flood 20:21	

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

Monitoring Station:

C1, C2, G1, G2, G3, G4, M1, M2, M3, M4, M5, M6

**Agreement No. CE/59/2015 (EP)**  
**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction**  
**Tentative Impact Groundwater Quality Monitoring Schedule (June 2018)**

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

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

Monitoring Location:

Stream 1, Stream 2, Stream 3



**Agreement No. CE/59/2015 (EP)**  
**Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction**  
**Tentative Impact Water Quality Monitoring Schedule in Temporary Marine Embayment (June 2018)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jun	2-Jun
<b>3-Jun</b>	4-Jun	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun
		Mid-Flood 09:08 Mid-Ebb 16:33				
<b>10-Jun</b>	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
		Mid-Ebb 11:13 Mid-Flood 17:46				
<b>17-Jun</b>	<b>18-Jun</b>	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun
			Mid-Flood 10:02 Mid-Ebb 17:06			
<b>24-Jun</b>	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun
		Mid-Ebb 11:26 Mid-Flood 18:20				

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

Monitoring Station:

W1

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

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## Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
3-May-18	9:00	Sunny	226.5
3-May-18	10:00	Sunny	237.1
3-May-18	11:00	Sunny	236.7
8-May-18	9:00	Rainy	95.5
8-May-18	10:00	Rainy	90.5
8-May-18	11:00	Rainy	104.6
14-May-18	13:00	Sunny	24.0
14-May-18	14:00	Sunny	25.2
14-May-18	15:00	Sunny	21.6
18-May-18	8:50	Sunny	179.1
18-May-18	9:50	Sunny	188.4
18-May-18	10:50	Sunny	197.4
24-May-18	9:00	Sunny	125.8
24-May-18	10:00	Sunny	130.1
24-May-18	11:00	Sunny	132.4
30-May-18	9:00	Sunny	21.6
30-May-18	10:00	Sunny	20.4
30-May-18	11:00	Sunny	24.0
Average			115.6
Maximum			237.1
Minimum			20.4

Location AM2 - Sai Tso Wan Recreation Ground			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
3-May-18	13:00	Sunny	155.4
3-May-18	14:00	Sunny	150.3
3-May-18	15:00	Sunny	146.9
8-May-18	13:05	Cloudy	111.2
8-May-18	14:05	Cloudy	103.1
8-May-18	15:05	Cloudy	106.1
14-May-18	13:00	Sunny	14.2
14-May-18	14:00	Sunny	17.7
14-May-18	15:00	Sunny	16.6
18-May-18	13:00	Sunny	154.7
18-May-18	14:00	Sunny	150.9
18-May-18	15:00	Sunny	148.7
24-May-18	13:00	Sunny	113.3
24-May-18	14:00	Sunny	114.7
24-May-18	15:00	Sunny	118.0
30-May-18	13:00	Sunny	26.0
30-May-18	14:00	Sunny	23.7
30-May-18	15:00	Sunny	26.0
Average			94.3
Maximum			155.4
Minimum			14.2

## Appendix E - 1-hour TSP Monitoring Results

Location AM3 - Yau Lai Estate Bik Lai House			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
3-May-18	9:00	Sunny	245.0
3-May-18	10:00	Sunny	239.7
3-May-18	11:00	Sunny	243.1
8-May-18	13:00	Cloudy	131.4
8-May-18	14:00	Cloudy	139.6
8-May-18	15:00	Cloudy	127.6
14-May-18	9:00	Sunny	20.1
14-May-18	10:00	Sunny	18.9
14-May-18	11:00	Sunny	17.7
18-May-18	14:00	Sunny	198.5
18-May-18	15:00	Sunny	219.5
18-May-18	16:00	Sunny	223.1
24-May-18	13:00	Sunny	126.5
24-May-18	14:00	Sunny	129.9
24-May-18	15:00	Sunny	136.2
30-May-18	9:00	Sunny	28.4
30-May-18	10:00	Sunny	28.4
30-May-18	11:00	Sunny	27.2
Average			127.8
Maximum			245.0
Minimum			17.7

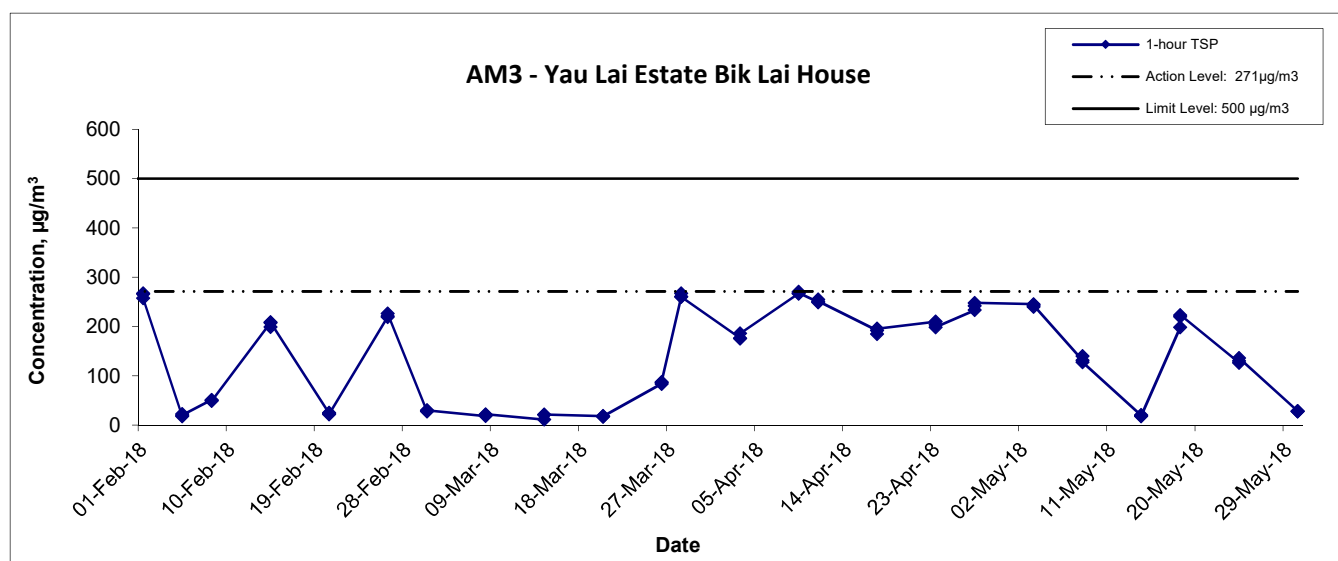
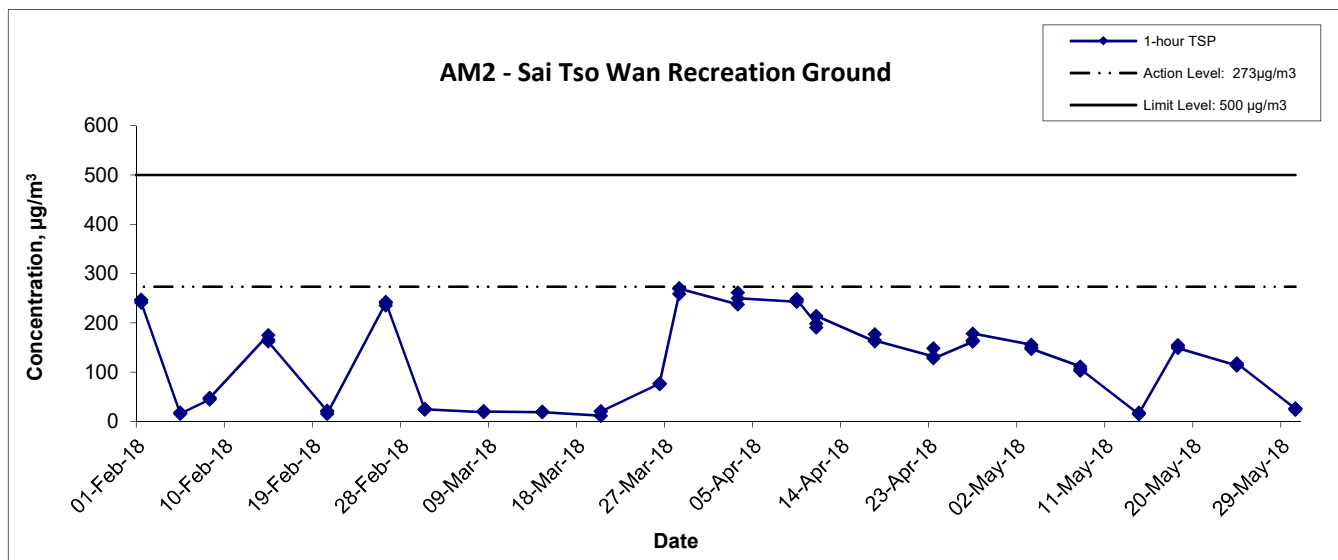
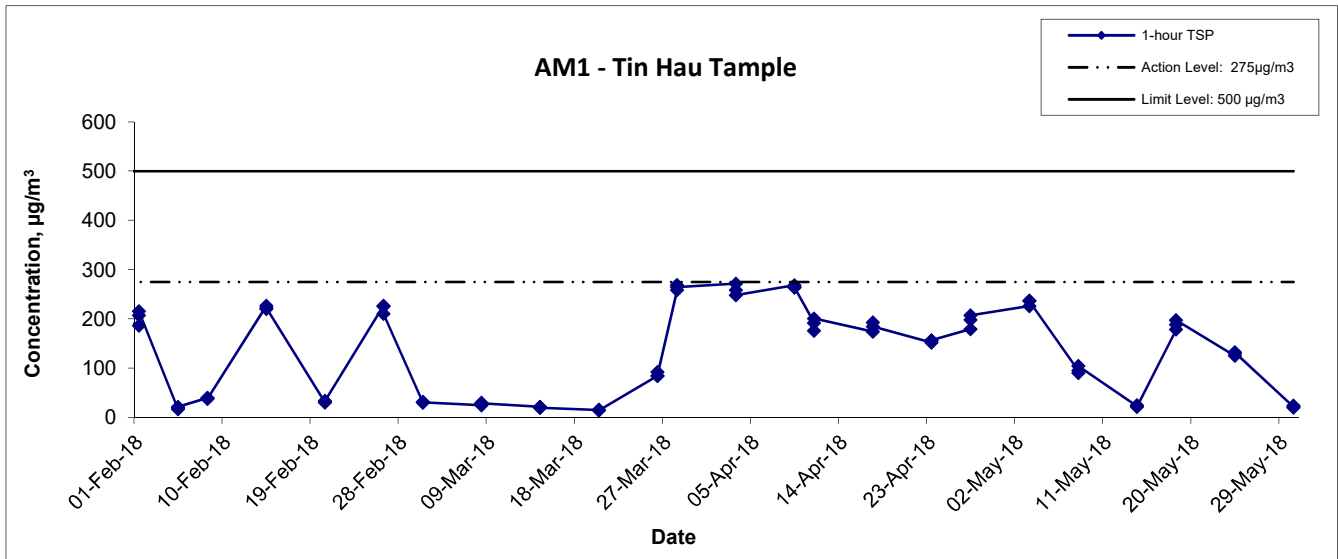
Location AM4 - Sitting-out Area at Cha Kwo Ling Village			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
3-May-18	13:00	Sunny	244.3
3-May-18	14:00	Sunny	238.3
3-May-18	15:00	Sunny	242.2
8-May-18	9:00	Rainy	73.0
8-May-18	10:00	Rainy	122.9
8-May-18	11:00	Rainy	95.9
14-May-18	9:00	Sunny	30.0
14-May-18	10:00	Sunny	31.2
14-May-18	11:00	Sunny	32.3
18-May-18	9:00	Sunny	149.9
18-May-18	10:00	Sunny	151.2
18-May-18	11:00	Sunny	153.7
24-May-18	9:00	Sunny	152.8
24-May-18	10:00	Sunny	158.4
24-May-18	11:00	Sunny	151.7
30-May-18	13:00	Sunny	21.6
30-May-18	14:00	Sunny	25.2
30-May-18	15:00	Sunny	25.2
Average			116.7
Maximum			244.3
Minimum			21.6

## Appendix E - 1-hour TSP Monitoring Results

Location AM5(A) - Tseung Kwan O DSD Desilting Compound			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
4-May-18	13:00	Cloudy	203.4
4-May-18	14:00	Cloudy	195.8
4-May-18	15:00	Cloudy	194.8
9-May-18	13:00	Rainy	242.1
9-May-18	14:00	Rainy	239.6
9-May-18	15:00	Rainy	236.4
15-May-18	13:00	Sunny	119.2
15-May-18	14:00	Sunny	121.8
15-May-18	15:00	Sunny	117.1
21-May-18	13:10	Sunny	137.9
21-May-18	14:10	Sunny	133.1
21-May-18	15:10	Sunny	132.1
25-May-18	9:00	Sunny	178.4
25-May-18	10:00	Sunny	179.2
25-May-18	11:00	Sunny	183.2
31-May-18	13:00	Sunny	84.5
31-May-18	14:00	Sunny	81.4
31-May-18	15:00	Sunny	75.6
Average			158.6
Maximum			242.1
Minimum			75.6

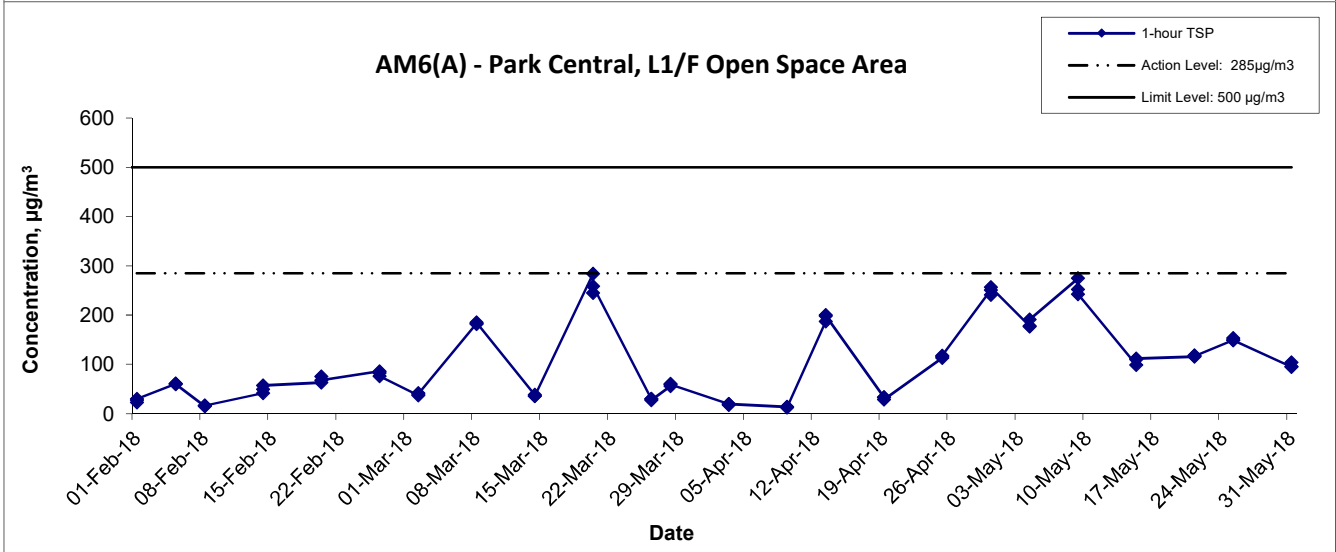
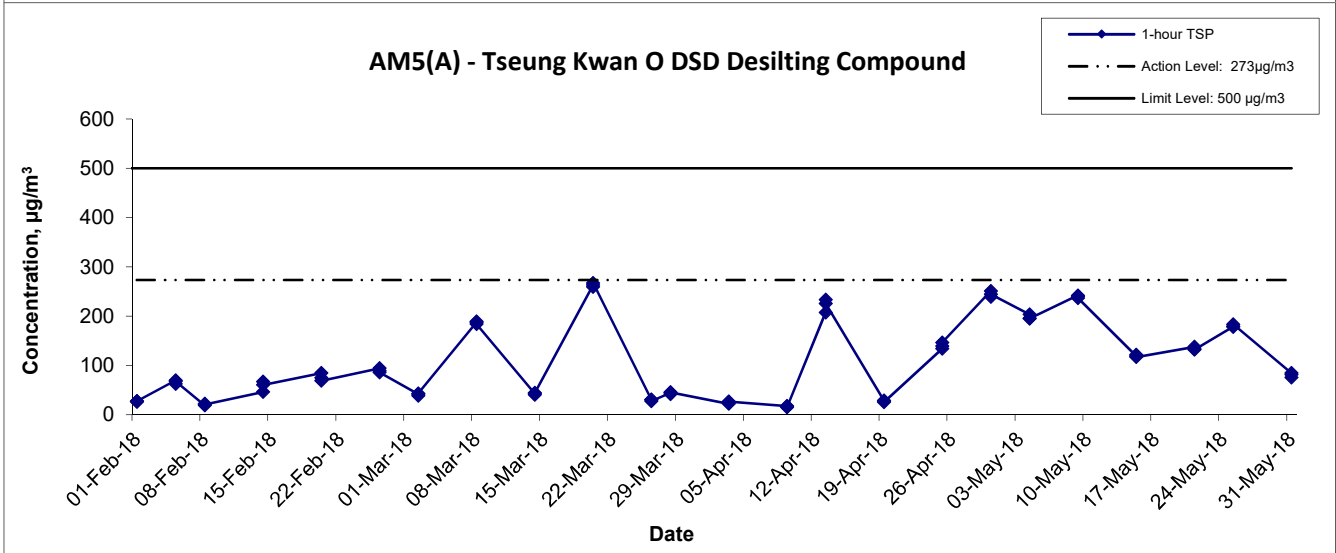
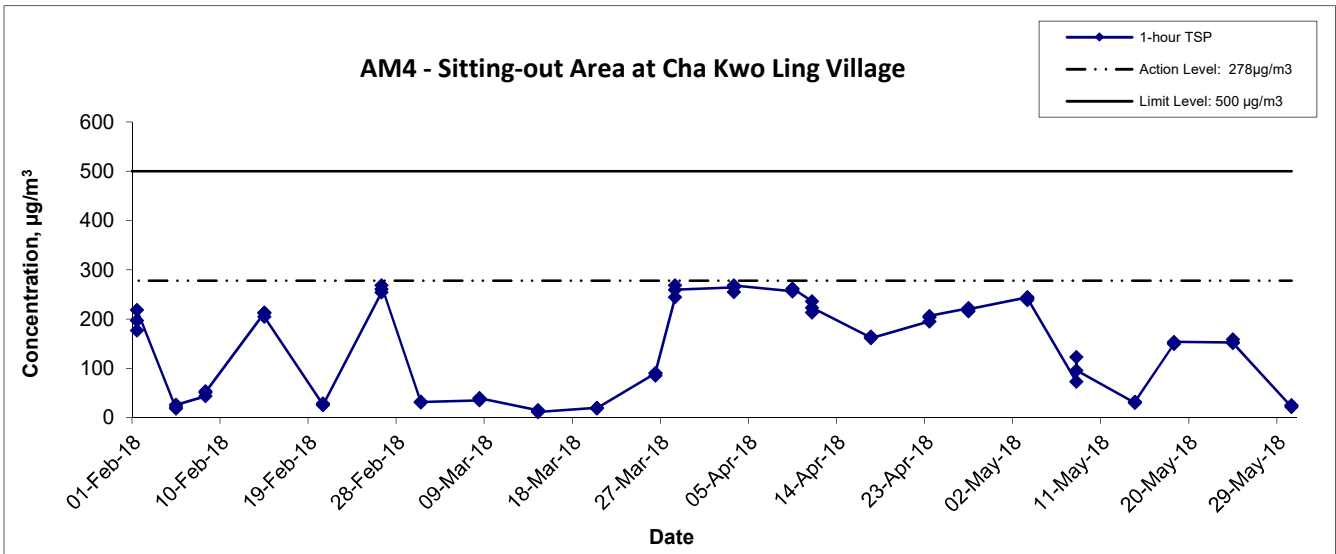
Location AM6(A) - Park Central, L1/F Open Space Area			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
4-May-18	9:00	Cloudy	178.2
4-May-18	10:00	Cloudy	177.0
4-May-18	11:00	Cloudy	191.1
9-May-18	9:00	Rainy	274.8
9-May-18	10:00	Rainy	252.3
9-May-18	11:00	Rainy	242.4
15-May-18	13:00	Sunny	98.8
15-May-18	14:00	Sunny	110.1
15-May-18	15:00	Sunny	112.2
21-May-18	9:00	Sunny	116.1
21-May-18	10:00	Sunny	118.6
21-May-18	11:00	Sunny	117.4
25-May-18	13:00	Sunny	149.8
25-May-18	14:00	Sunny	153.2
25-May-18	15:00	Sunny	148.9
31-May-18	9:00	Sunny	95.2
31-May-18	10:00	Sunny	95.8
31-May-18	11:00	Sunny	104.0
Average			152.0
Maximum			274.8
Minimum			95.2

### 1-hr TSP Concentration Levels



Title	Agreement No. CE/59/2015 (EP)	Scale	Project	CINOTECH
	Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction	N.T.S	No. MA16034	
Graphical Presentation of 1-hour TSP Monitoring Results		Date	Appendix	
		May-18	E	

### 1-hr TSP Concentration Levels



Title	Agreement No. CE/59/2015 (EP)	Scale	Project	CINOTECH
	Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction	N.T.S	No. MA16034	
Graphical Presentation of 1-hour TSP Monitoring Results		Date	Appendix	
		May-18	E	

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

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## 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 <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
2-May-18	Sunny	302.1	762.9	3.3517	3.5230	0.1713	3443.0	3467.0	24.0	1.20	1.20	1.20	1722.7	99.4
7-May-18	Cloudy	301.1	759.2	3.3558	3.5234	0.1676	3467.0	3491.0	24.0	1.20	1.19	1.20	1721.2	97.4
11-May-18	Cloudy	297.5	764.3	2.7953	2.9912	0.1959	3491.0	3515.0	24.0	1.21	1.21	1.21	1739.7	112.6
17-May-18	Sunny	302.3	759.5	3.2771	3.4268	0.1497	3515.0	3539.0	24.0	1.19	1.19	1.19	1717.6	87.2
23-May-18	Sunny	303.3	760.9	3.3016	3.4606	0.1590	3539.0	3563.0	24.0	1.19	1.19	1.19	1716.2	92.6
29-May-18	Sunny	304.9	760.1	3.2768	3.4271	0.1503	3563.0	3587.0	24.0	1.19	1.19	1.19	1710.0	87.9
													Min	87.2
													Max	112.6
													Average	96.2

### 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 <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
2-May-18	Sunny	302.5	762.6	3.3467	3.4356	0.0889	24407.3	24431.3	24.0	1.21	1.21	1.21	1736.2	51.2
7-May-18	Cloudy	301.6	759.5	3.6226	3.6890	0.0664	24431.3	24455.3	24.0	1.21	1.20	1.21	1735.3	38.3
11-May-18	Cloudy	298.3	764.0	3.3490	3.5252	0.1762	24455.3	24479.3	24.0	1.22	1.22	1.22	1750.2	100.7
17-May-18	Sunny	301.8	758.9	3.2749	3.3737	0.0988	24479.3	24503.3	24.0	1.20	1.20	1.20	1734.0	57.0
23-May-18	Sunny	303.2	760.3	3.2821	3.4067	0.1246	24503.3	24527.3	24.0	1.20	1.20	1.20	1731.6	72.0
29-May-18	Sunny	305.3	760.5	3.2891	3.3752	0.0861	24527.3	24551.3	24.0	1.20	1.20	1.20	1725.8	49.9
													Min	38.3
													Max	100.7
													Average	61.5

### 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 <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
2-May-18	Sunny	302.4	762.7	3.3437	3.4225	0.0788	12974.7	12998.7	24.0	1.21	1.21	1.21	1743.1	45.2
7-May-18	Cloudy	301.7	759.2	3.3661	3.4060	0.0399	12998.7	13022.7	24.0	1.21	1.21	1.21	1741.0	22.9
11-May-18	Cloudy	297.2	763.5	2.7838	2.8427	0.0589	13022.7	13046.7	24.0	1.22	1.22	1.22	1760.0	33.5
17-May-18	Sunny	302.5	759.7	3.6565	3.6844	0.0279	13046.7	13070.7	24.0	1.21	1.21	1.21	1739.2	16.0
23-May-18	Sunny	303.0	761.6	3.3006	3.3474	0.0468	13070.7	13094.7	24.0	1.21	1.21	1.21	1740.0	26.9
29-May-18	Sunny	304.8	760.2	3.2942	3.3468	0.0526	13094.7	13118.7	24.0	1.20	1.20	1.20	1732.9	30.4
													Min	16.0
													Max	45.2
													Average	29.1

## 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 <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
2-May-18	Sunny	303.2	762.2	3.3406	3.5805	0.2399	9961.2	9985.2	24.0	1.21	1.21	1.21	1737.8	138.0
7-May-18	Cloudy	302.3	759.3	3.3472	3.5393	0.1921	9985.2	10009.2	24.0	1.21	1.21	1.21	1737.1	110.6
11-May-18	Cloudy	298.4	764.1	3.3408	3.6312	0.2904	10009.2	10033.2	24.0	1.22	1.22	1.22	1754.0	165.6
17-May-18	Sunny	302.7	759.6	3.2831	3.4360	0.1529	10033.2	10057.2	24.0	1.21	1.21	1.21	1736.3	88.1
23-May-18	Sunny	303.5	761.7	3.3083	3.6297	0.3214	10057.2	10081.2	24.0	1.21	1.21	1.21	1736.4	185.1
29-May-18	Sunny	305.3	759.5	3.2733	3.5203	0.2470	10081.2	10105.2	24.0	1.20	1.20	1.20	1728.7	142.9
													Min	88.1
													Max	185.1
													Average	138.4

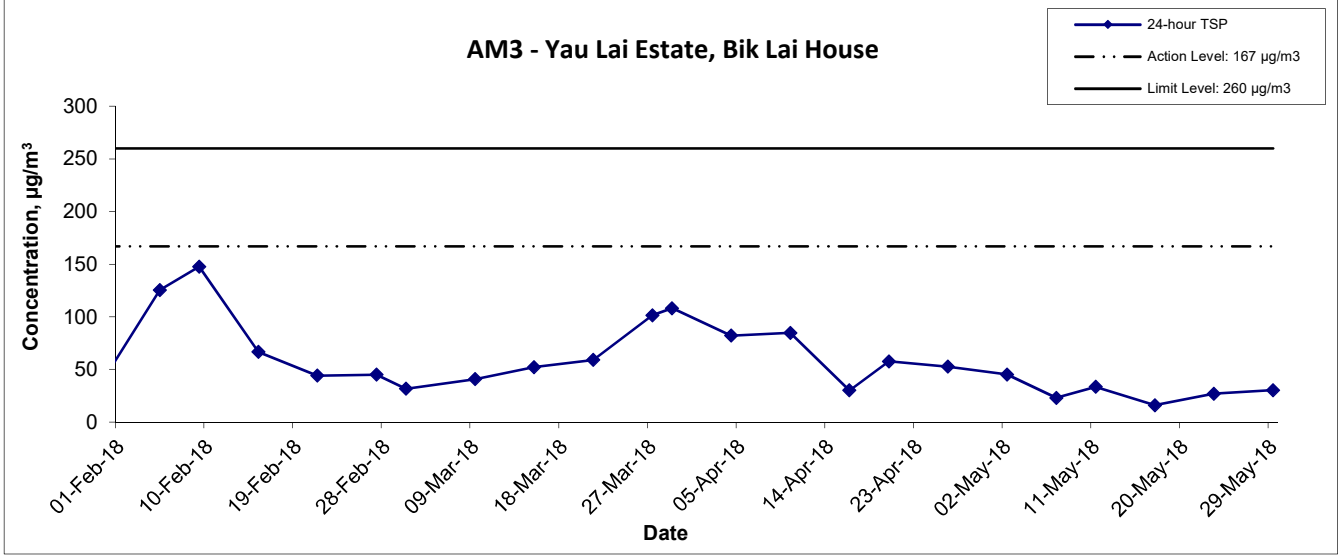
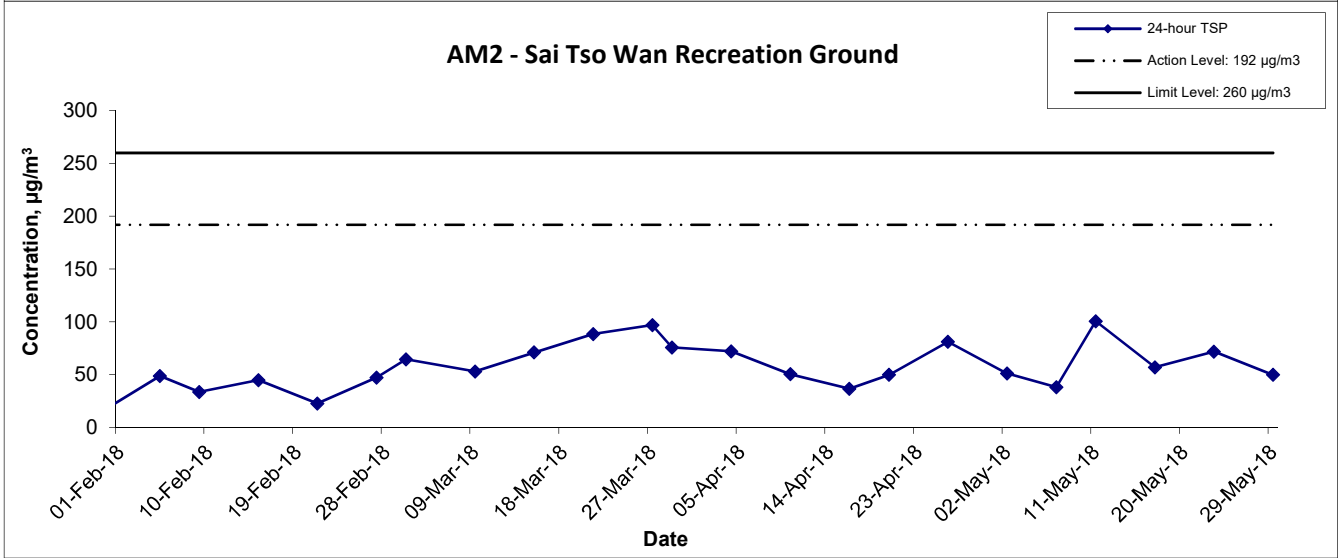
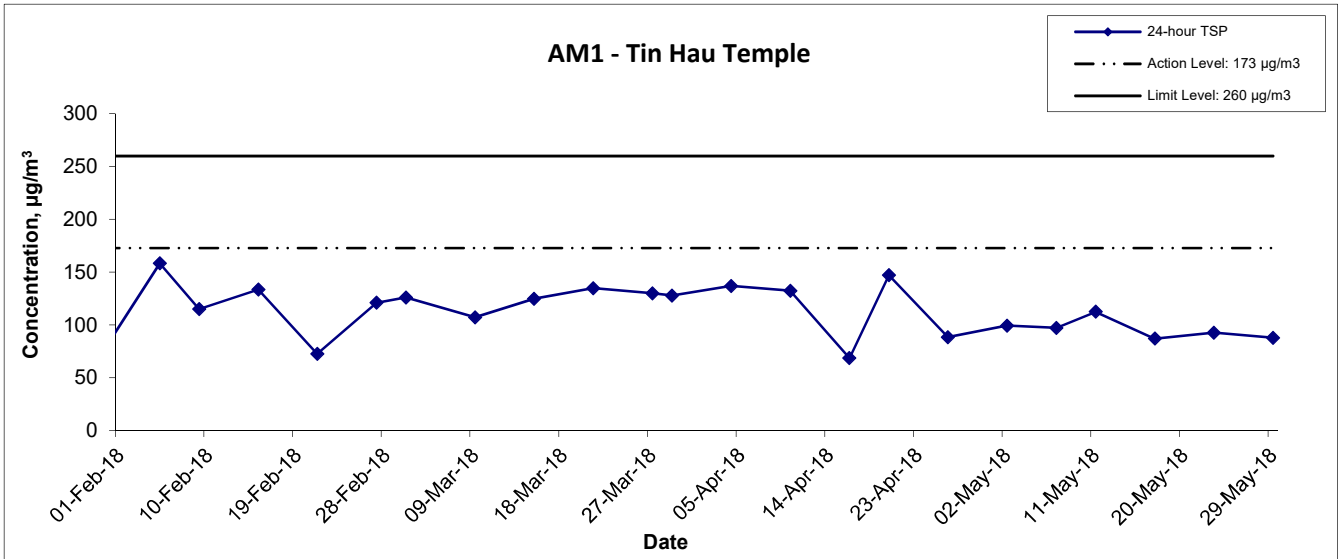
### Location AM5(A) - Tseung Kwan O DSD Desilting Compound

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 <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
2-May-18	Sunny	302.6	762.8	2.7794	2.8536	0.0742	26290.9	26314.9	24.0	1.20	1.20	1.20	1733.2	42.8
7-May-18	Cloudy	302.5	759.2	3.3575	3.4189	0.0614	26314.9	26338.9	24.0	1.20	1.20	1.20	1728.8	35.5
11-May-18	Cloudy	297.7	764.6	3.3515	3.4521	0.1006	26338.9	26362.9	24.0	1.22	1.22	1.22	1751.7	57.4
17-May-18	Sunny	302.1	761.1	3.6229	3.6728	0.0499	26362.9	26386.9	24.0	1.20	1.20	1.20	1732.6	28.8
23-May-18	Sunny	302.2	760.7	3.6209	3.6803	0.0594	26386.9	26410.9	24.0	1.20	1.20	1.20	1731.8	34.3
29-May-18	Sunny	305.6	759.6	3.2834	3.3334	0.0500	26410.9	26434.9	24.0	1.19	1.19	1.19	1719.3	29.1
													Min	28.8
													Max	57.4
													Average	38.0

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

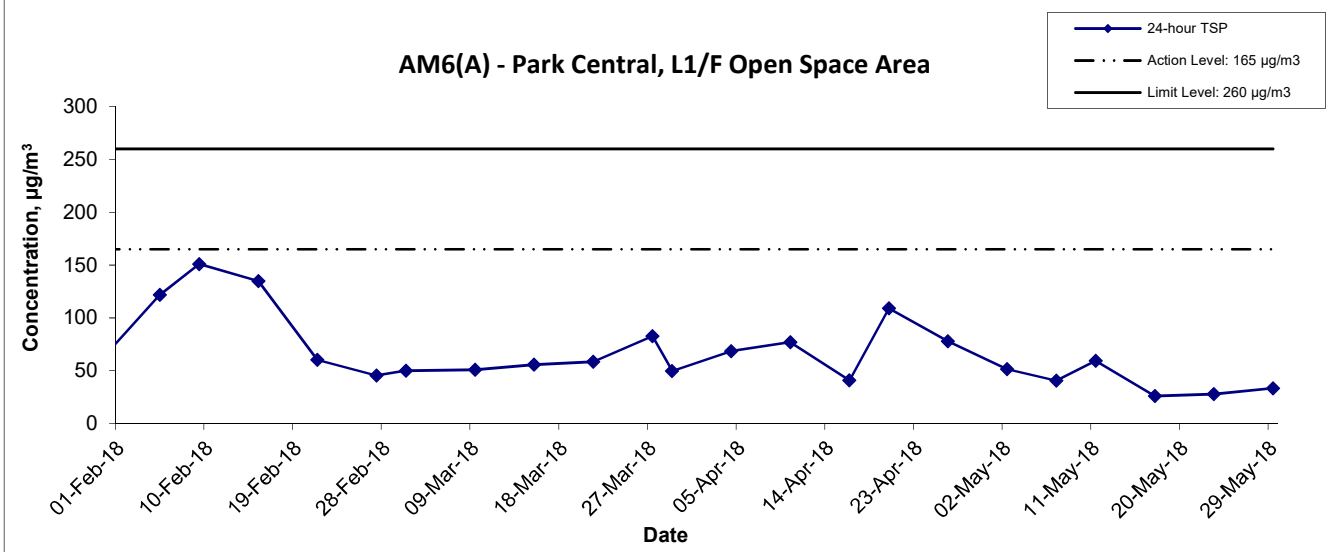
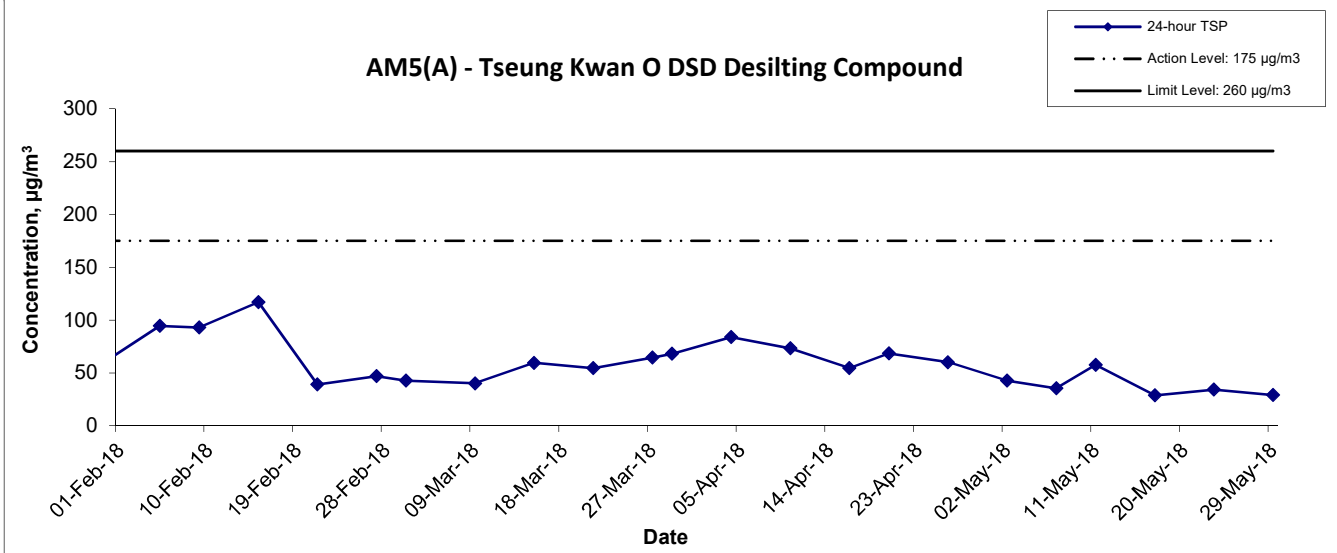
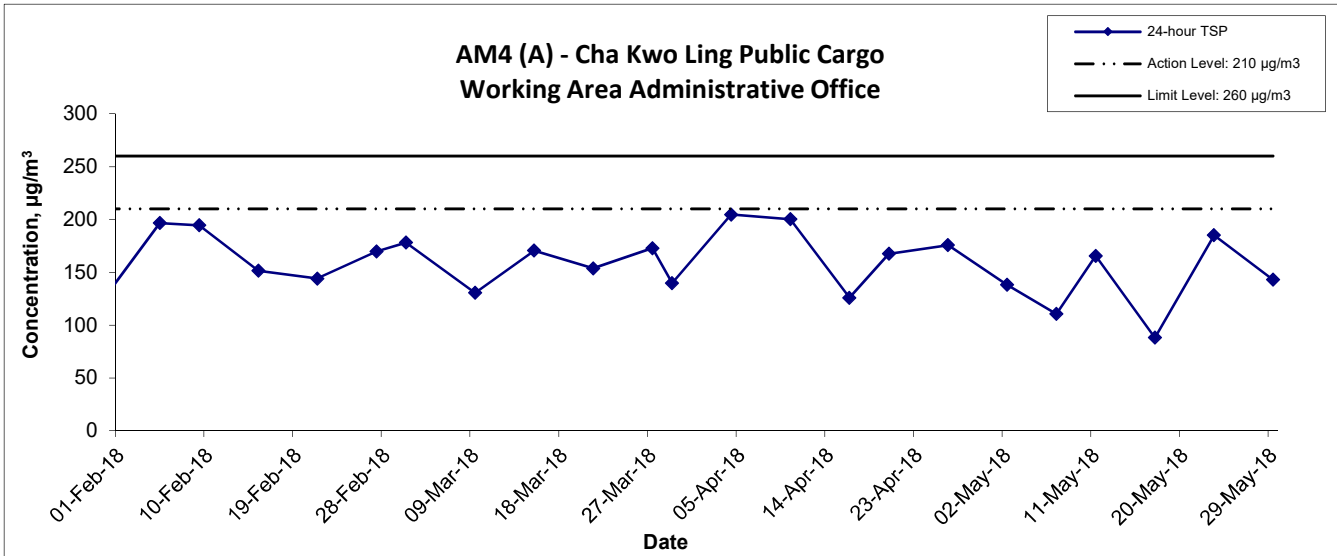
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
2-May-18	Sunny	303.0	763.3	2.8057	2.8951	0.0894	16763.8	16787.8	24.0	1.21	1.21	1.21	1738.8	51.4
7-May-18	Cloudy	302.6	760.2	3.3513	3.4216	0.0703	16787.8	16811.8	24.0	1.21	1.21	1.21	1736.4	40.5
11-May-18	Cloudy	298.3	764.7	3.3470	3.4510	0.1040	16811.8	16835.8	24.0	1.22	1.22	1.22	1754.1	59.3
17-May-18	Sunny	302.5	761.7	3.2837	3.3289	0.0452	16835.8	16859.8	24.0	1.21	1.21	1.21	1738.3	26.0
23-May-18	Sunny	303.4	760.4	3.6389	3.6875	0.0486	16859.8	16883.8	24.0	1.20	1.20	1.20	1734.3	28.0
29-May-18	Sunny	304.8	759.2	3.6289	3.6871	0.0582	16883.8	16907.8	24.0	1.22	1.22	1.22	1751.4	33.2
													Min	26.0
													Max	59.3
													Average	39.7

### 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	
	Date May 18	Appendix F	

### 24-hr TSP Concentration Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction  Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA16034	<b>CINOTECH</b>
	Date May 18	Appendix F	

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

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## 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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
3-May-18	10:05	Sunny	73.0	75.2	70.1	65.5	72.1
8-May-18	14:10	Cloudy	72.4	74.8	69.4		71.4
14-May-18	10:00	Sunny	72.9	73.7	69.6		72.0
24-May-18	16:05	Sunny	72.5	74.6	69.7		71.5
30-May-18	09:45	Sunny	66.2	68.7	61.3		57.9

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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
3-May-18	09:05	Sunny	73.0	75.5	70.1	63.6	72.5
8-May-18	13:30	Cloudy	74.7	77.2	71.3		74.3
14-May-18	09:10	Sunny	73.8	74.2	70.5		73.4
24-May-18	13:30	Sunny	72.8	75.1	70.4		72.2
30-May-18	09:00	Sunny	65.0	66.9	62.2		59.4

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
3-May-18	10:00	Sunny	74.5	76.7	71.4	65.6	73.9
11-May-18	11:00	Cloudy	66.0	68.0	61.0		55.4
15-May-18	10:45	Sunny	74.3	76.5	71.5		73.7
24-May-18	14:30	Sunny	68.4	71.7	56.2		65.2
28-May-18	10:30	Sunny	69.0	70.4	64.8		66.3

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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
3-May-18	10:00	Sunny	61.5	64.5	58.9	62.0	61.5 Measured $\leq$ Baseline
8-May-18	09:00	Rainy	70.8	72.5	69.3		70.2
14-May-18	13:05	Sunny	65.6	66.8	61.4		63.1
24-May-18	09:15	Sunny	64.7	66.2	60.3		61.4
30-May-18	11:30	Sunny	64.6	65.9	56.7		61.1

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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
3-May-18	09:00	Sunny	67.2	69.2	64.4	68.2	67.2 Measured $\leq$ Baseline
11-May-18	09:35	Cloudy	69.7	70.4	65.8		64.4
15-May-18	11:30	Sunny	70.9	73.2	66.5		67.6
24-May-18	10:00	Sunny	69.6	73.1	66.4		64.0
28-May-18	11:30	Sunny	68.6	69.5	63.7		58.0

## Appendix G - Noise Monitoring Results

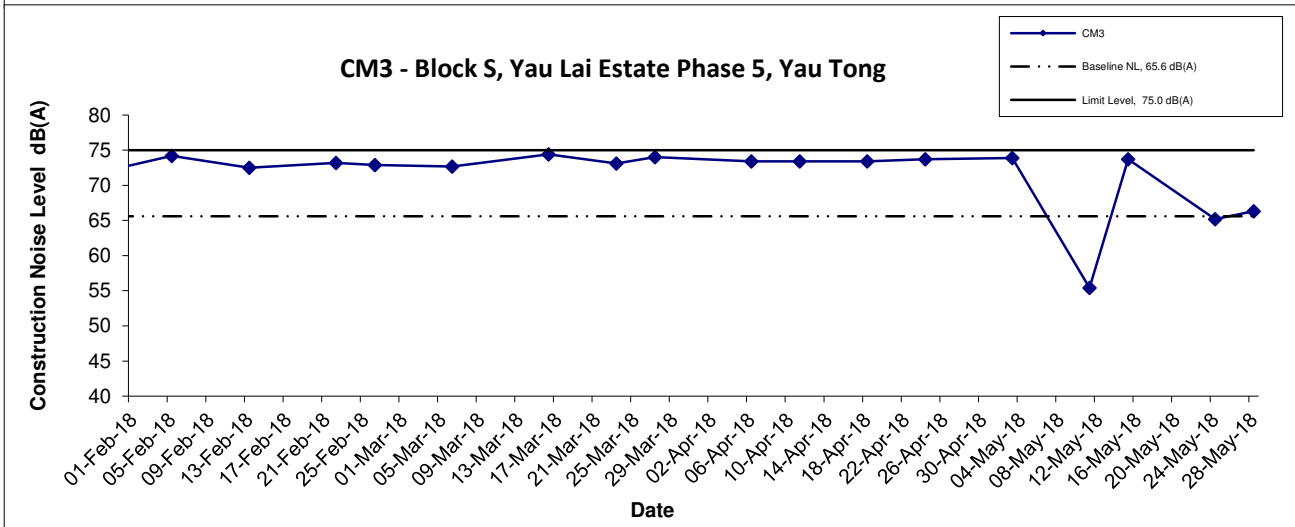
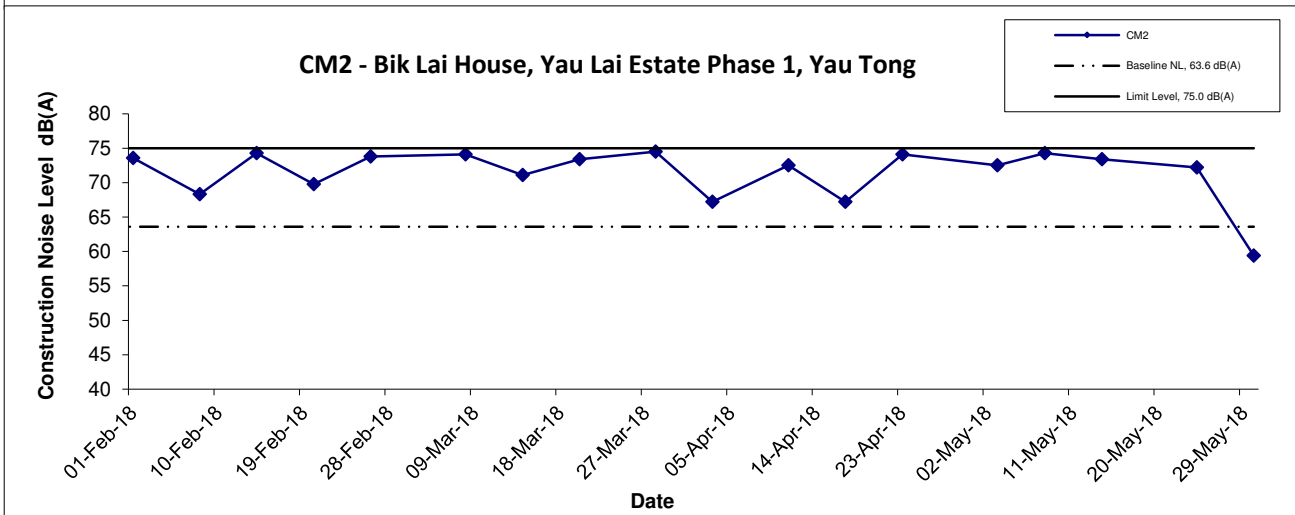
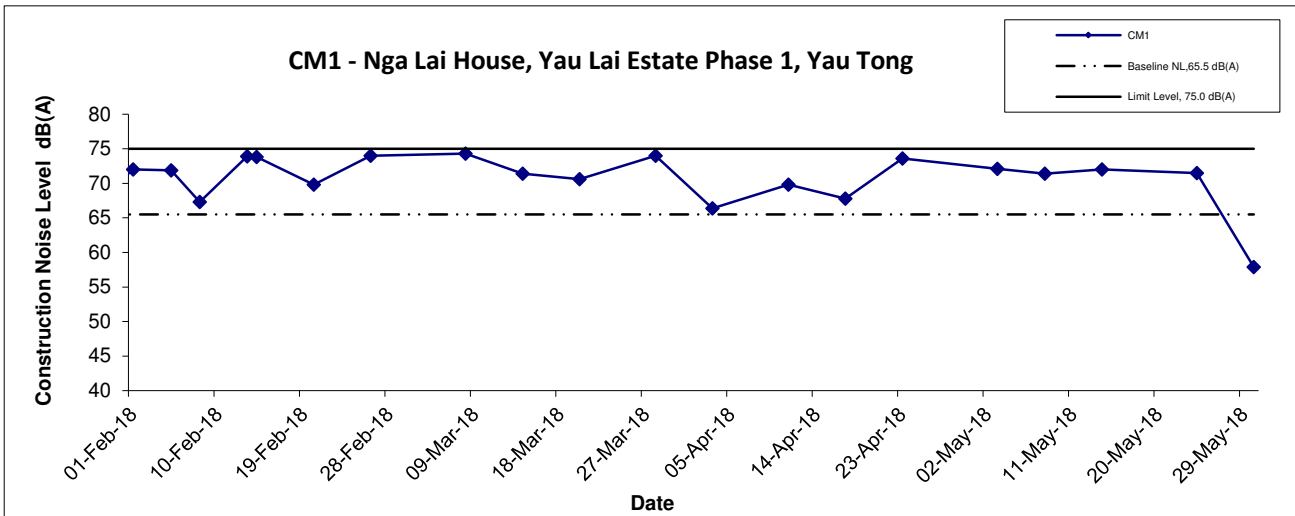
(0700-1900 hrs on Normal Weekdays)

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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
9-May-18	14:10	Rainy	69.2	72.6	62.7	61.9	68.3
15-May-18	14:20	Sunny	67.5	69.1	60.5		66.1
25-May-18	10:20	Sunny	70.8	75.1	62.8		70.2
31-May-18	13:30	Sunny	63.7	65.9	59.3		59.0

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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
9-May-18	15:05	Rainy	70.1	73.0	64.9	58.3	69.8
15-May-18	13:25	Sunny	70.3	72.8	61.7		70.0
25-May-18	09:30	Sunny	68.1	72.7	59.8		67.6
31-May-18	14:00	Sunny	75.1	76.8	68.1		75.0

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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
9-May-18	10:45	Cloudy	67.5	69.7	58.9	69.1	67.5 Measured ≤ Baseline
15-May-18	15:00	Sunny	67.2	70.5	60.9		67.2 Measured ≤ Baseline
25-May-18	13:00	Sunny	63.9	67.0	60.5		63.9 Measured ≤ Baseline
31-May-18	10:00	Sunny	65.4	68.6	57.7		65.4 Measured ≤ Baseline

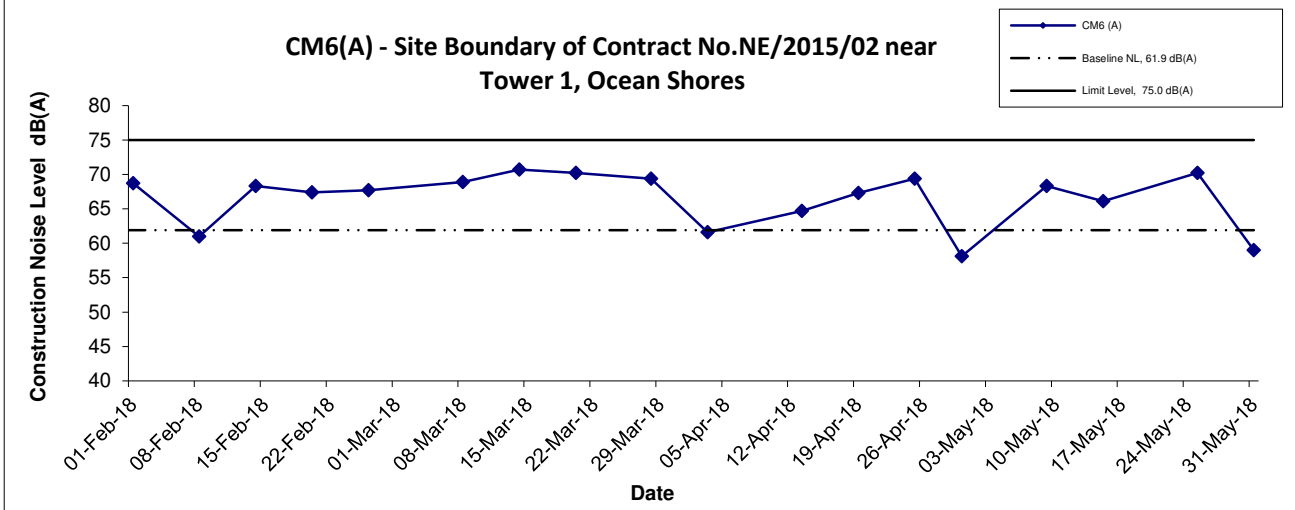
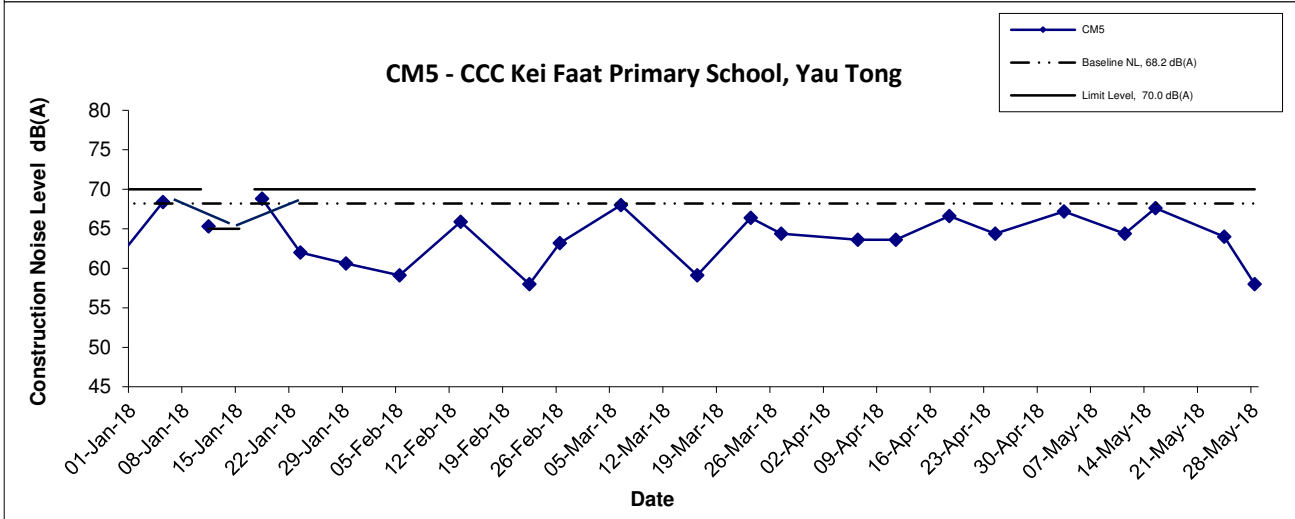
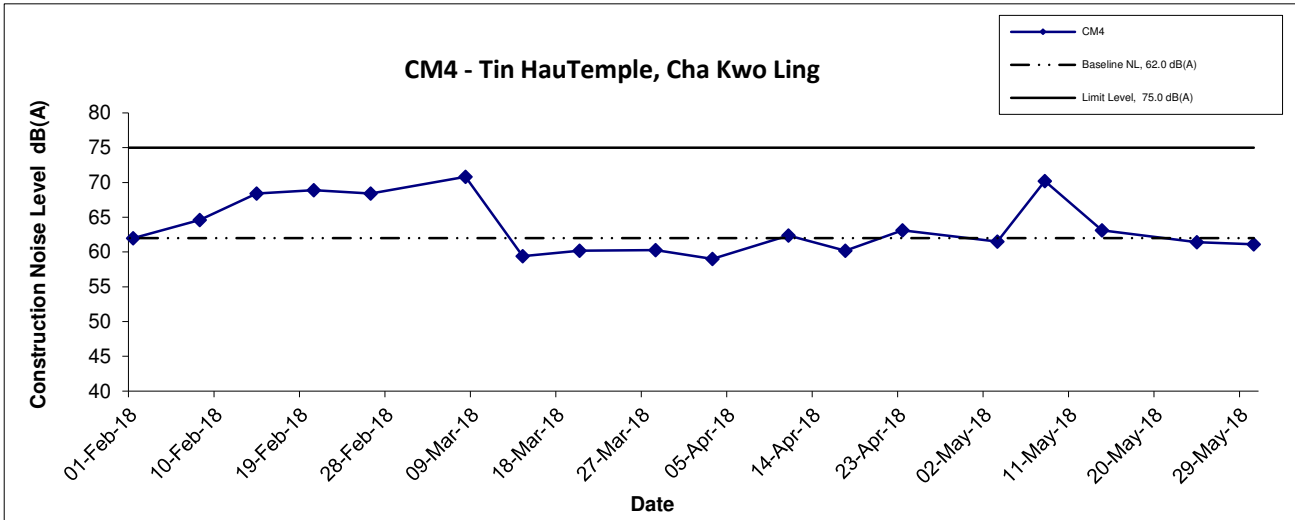
## Noise Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction  Graphical Presentation of Construction Noise Monitoring Results	Scale  N.T.S	Project No. MA16034	
	Date  May 18	Appendix  G	

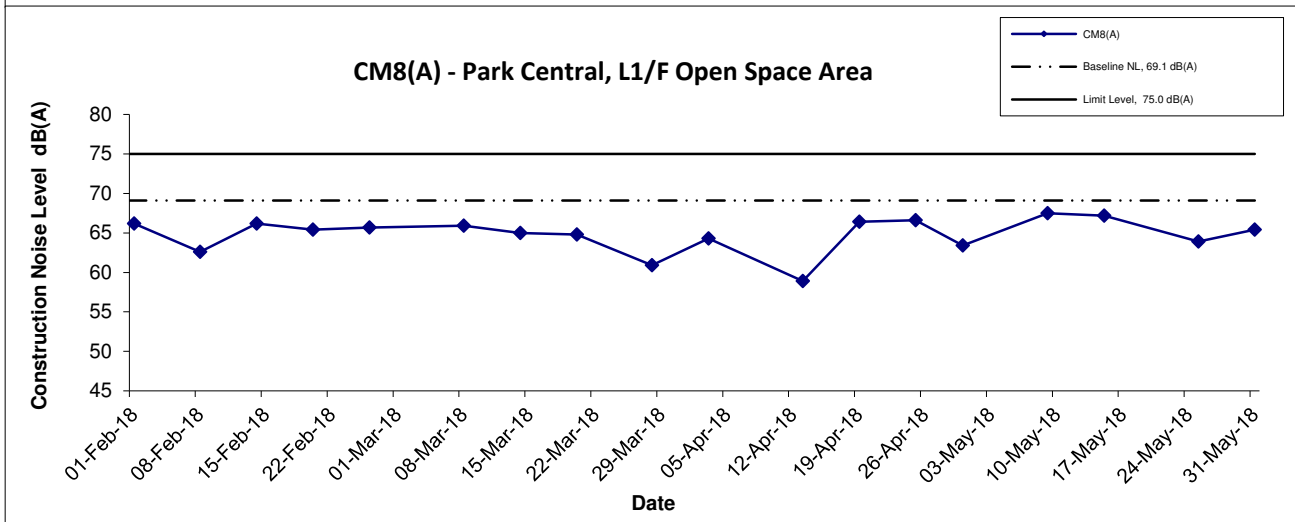
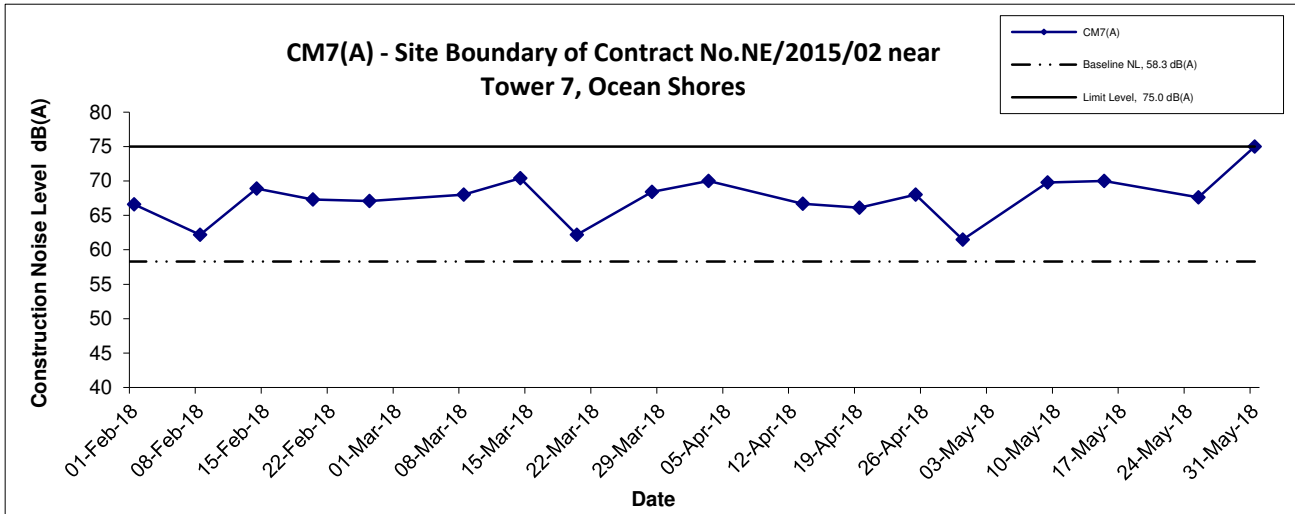


## Noise Levels



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	Project	CINOTECH
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## Noise Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction  Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 18	Appendix G	

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

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

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
11-May-18	Fine	13:51	Middle	24.1	24.1	8.2	8.2	1.1	1.1	100.2	100.3	8.4	8.4	1.1	1.1
				24.1		8.2		1.1		100.3		8.4		1.1	
24-May-18	Sunny	14:12	Middle	35.3	35.3	7.9	7.9	1.4	1.4	116.7	116.7	8.0	8.0	0.5	0.5
				35.3		7.9		1.4		116.7		8.0		0.5	

**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
11-May-18	Fine	14:09	Middle	23.2	23.2	8.2	8.2	0.2	0.2	100.0	100.0	8.5	8.5	1.7	1.7
				23.2		8.2		0.2		100.0		8.5		1.7	
24-May-18	Sunny	14:13	Middle	37.0	37.0	8.1	8.1	0.3	0.3	116.3	116.3	7.8	7.8	1.2	1.3
				37.0		8.1		0.3		116.2		7.8		1.3	

**Groundwater Quality Monitoring Results at Stream 3**

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
11-May-18	Fine	14:23	Middle	23.9	23.9	7.8	7.8	0.1	0.1	92.4	92.4	7.8	7.8	1.8	1.8
				23.9		7.8		0.1		92.4		7.8		1.7	
24-May-18	Sunny	14:15	Middle	34.9	34.9	7.2	7.2	0.1	0.1	111.2	111.3	7.7	7.7	0.4	0.4
				34.9		7.2		0.1		111.3		7.7		0.4	

**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 <sub>5</sub> (mg O <sub>2</sub> /L)	TOC (mg-TOC/L)	Total Nitrogen (mg/L)	NH <sub>3</sub> -N (mg NH <sub>3</sub> -N/L)	Total Phosphorus (mg-P/L)
Stream 1	11-May-18	8.2	8.4	1.1	<2.5	<2	5	1.3	<0.05	0.05
	24-May-18	7.9	8	0.5	<2.5	<2	4	1	<0.05	0.12
Stream 2	11-May-18	8.2	8.5	1.7	4	<2	8	1.7	<0.05	<0.05
	24-May-18	8.1	7.8	1.3	7	<2	8	1.2	0.08	0.09
Stream 3	11-May-18	7.8	7.8	1.8	<2.5	<2	6	1.7	<0.05	<0.05
	24-May-18	7.2	7.7	0.4	5.0	<2	6	1	<0.05	0.17

## TEST REPORT

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

Report No.:	28878
Date of Issue:	2018-05-23
Date Received:	2018-05-11
Date Tested:	2018-05-11
Date Completed:	2018-05-23

**ATTN:** Ms. Mei Ling Tang

Page: 1 of 1

**Sample Description** : 3 liquid samples as received from client said to be groundwater  
**Laboratory No.** : 28878  
**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)/20180511  
**Sampling Date** : 2018-05-11

### Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	*0.5 mg/L
2	Biochemical Oxygen Demand	APHA 19ed 5210B	2 mg O <sub>2</sub> /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 <sub>3</sub> -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.	28878-1	28878-2	28878-3
Total Suspended Solids (mg/L)	<2.5	4	<2.5
Biochemical Oxygen Demand (mg O <sub>2</sub> /L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	5	8	6
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	1.3	1.7	1.7
Ammonia (mg NH <sub>3</sub> -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

## TEST REPORT

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

Report No.:	28954
Date of Issue:	2018-06-04
Date Received:	2018-05-24
Date Tested:	2018-05-24
Date Completed:	2018-06-04

**ATTN:** Ms. Mei Ling Tang

Page: 1 of 1

**Sample Description** : 3 liquid samples as received from client said to be groundwater  
**Laboratory No.** : 28954  
**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)/20180516  
**Sampling Date** : 2018-05-24

### 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 <sub>2</sub> /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 <sub>3</sub> -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.	28954-1	28954-2	28954-3
Total Suspended Solids (mg/L)	<2.5	7	5
Biochemical Oxygen Demand (mg O <sub>2</sub> /L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	4	8	6
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	1.0	1.2	1.0
Ammonia (mg NH <sub>3</sub> -N/L)	<0.05	0.08	<0.05
Total Phosphorus (mg-P/L)	0.12	0.09	0.17

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

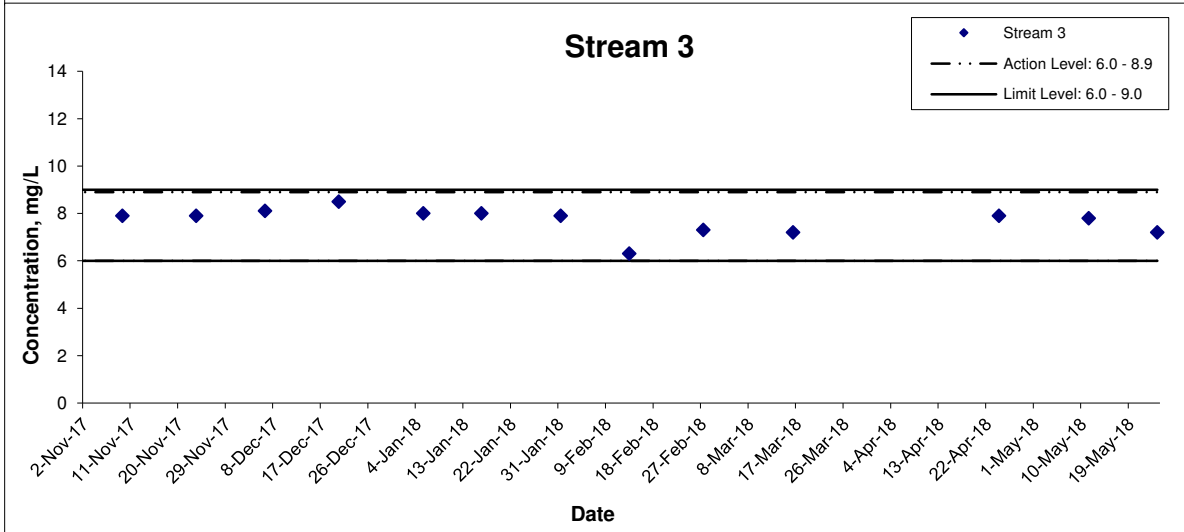
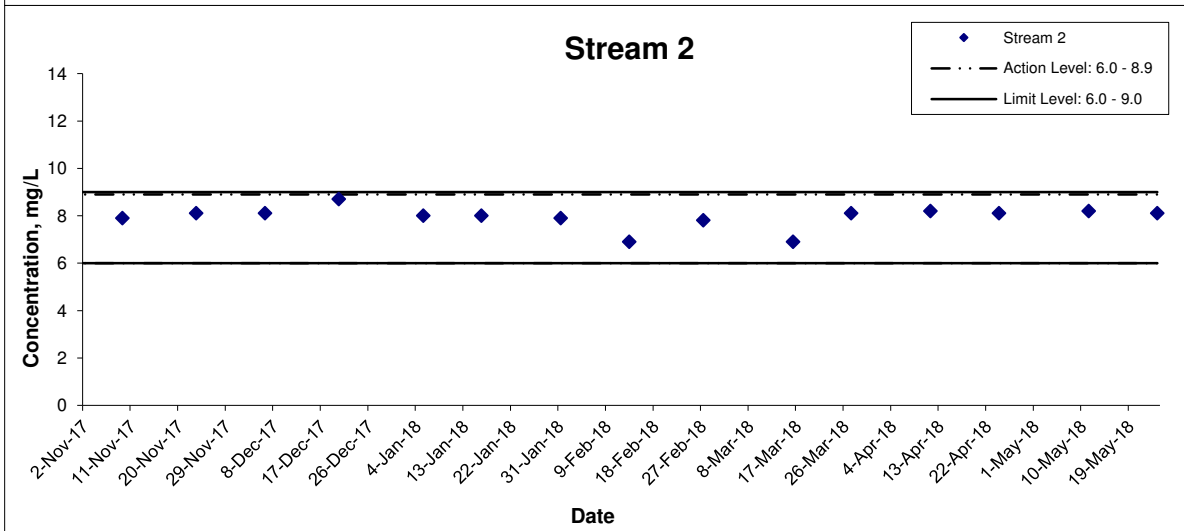
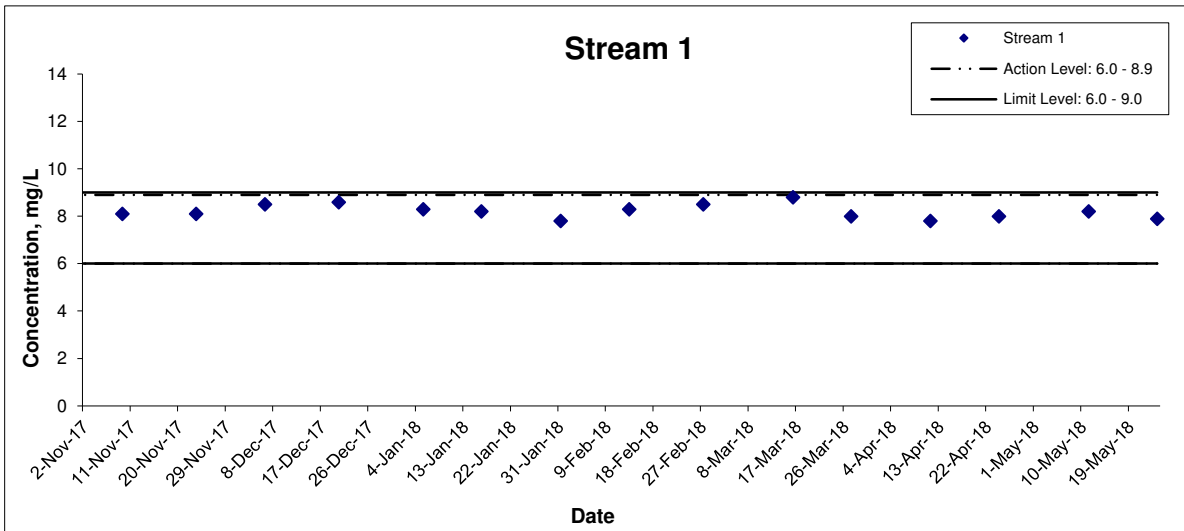
\*\*\*\*\*END OF REPORT\*\*\*\*\*

PREPARED AND CHECKED BY:

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

  
**PATRICK TSE**  
 Laboratory Manager

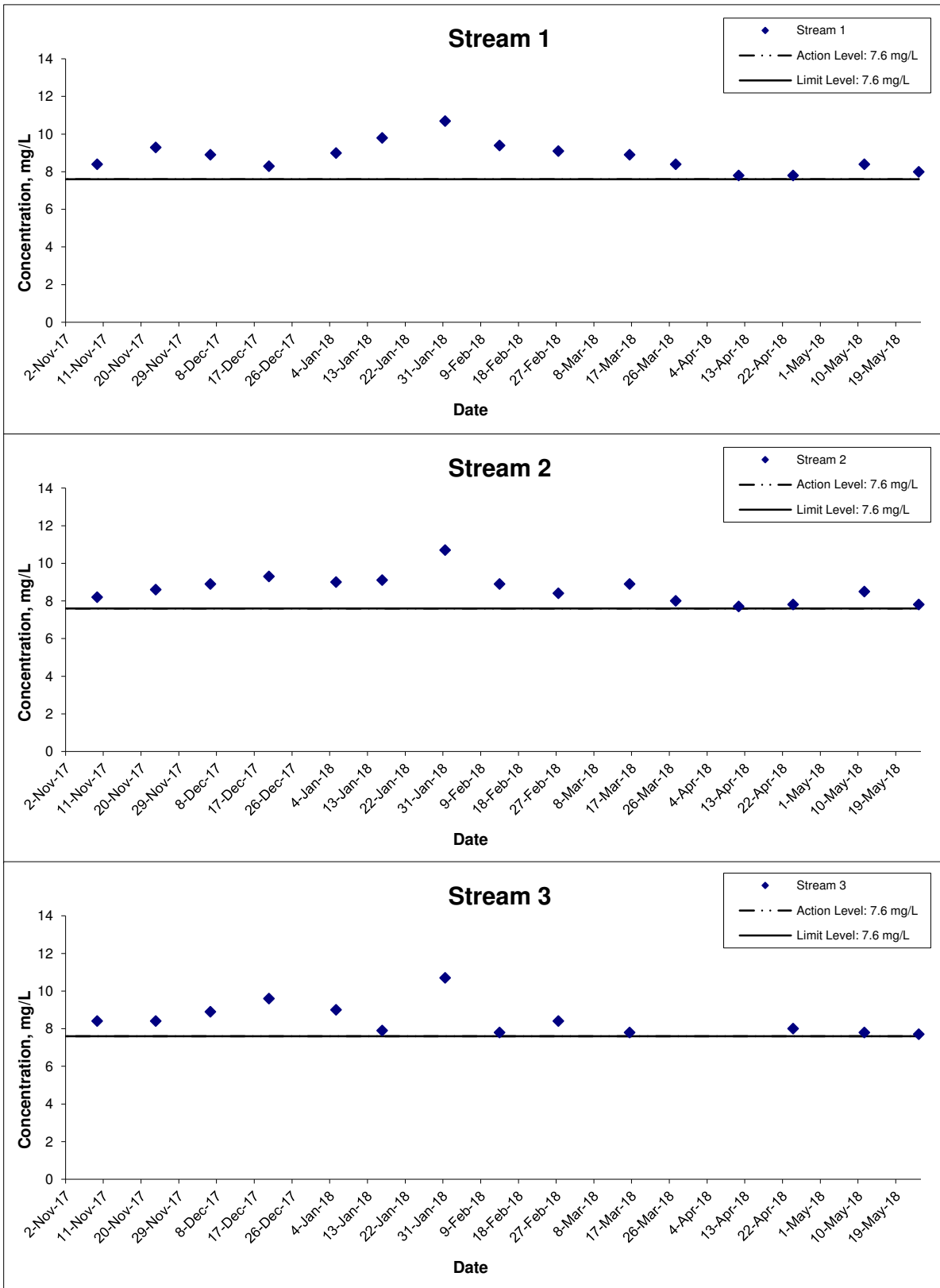
# pH



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	
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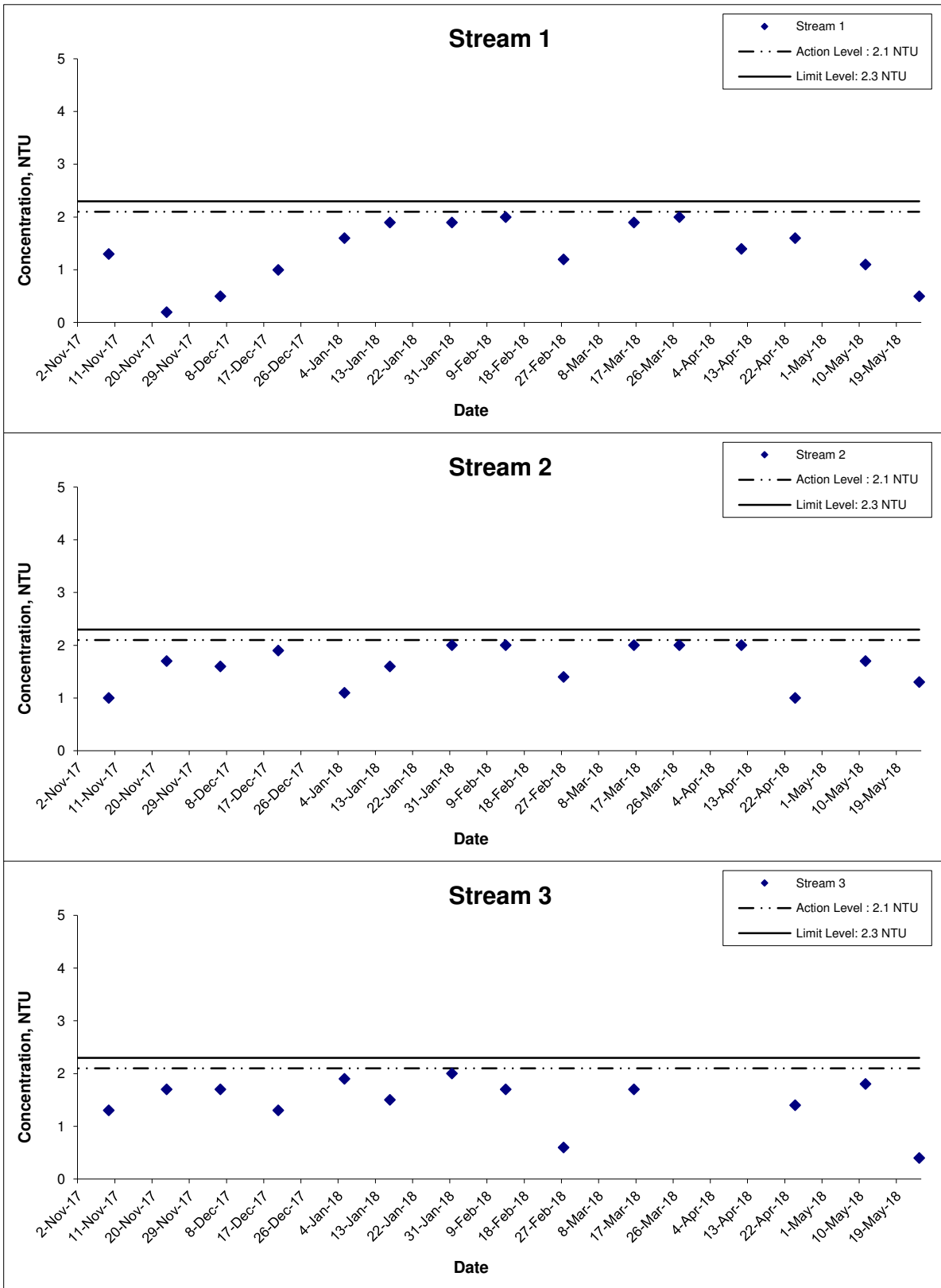


## Dissolved Oxygen



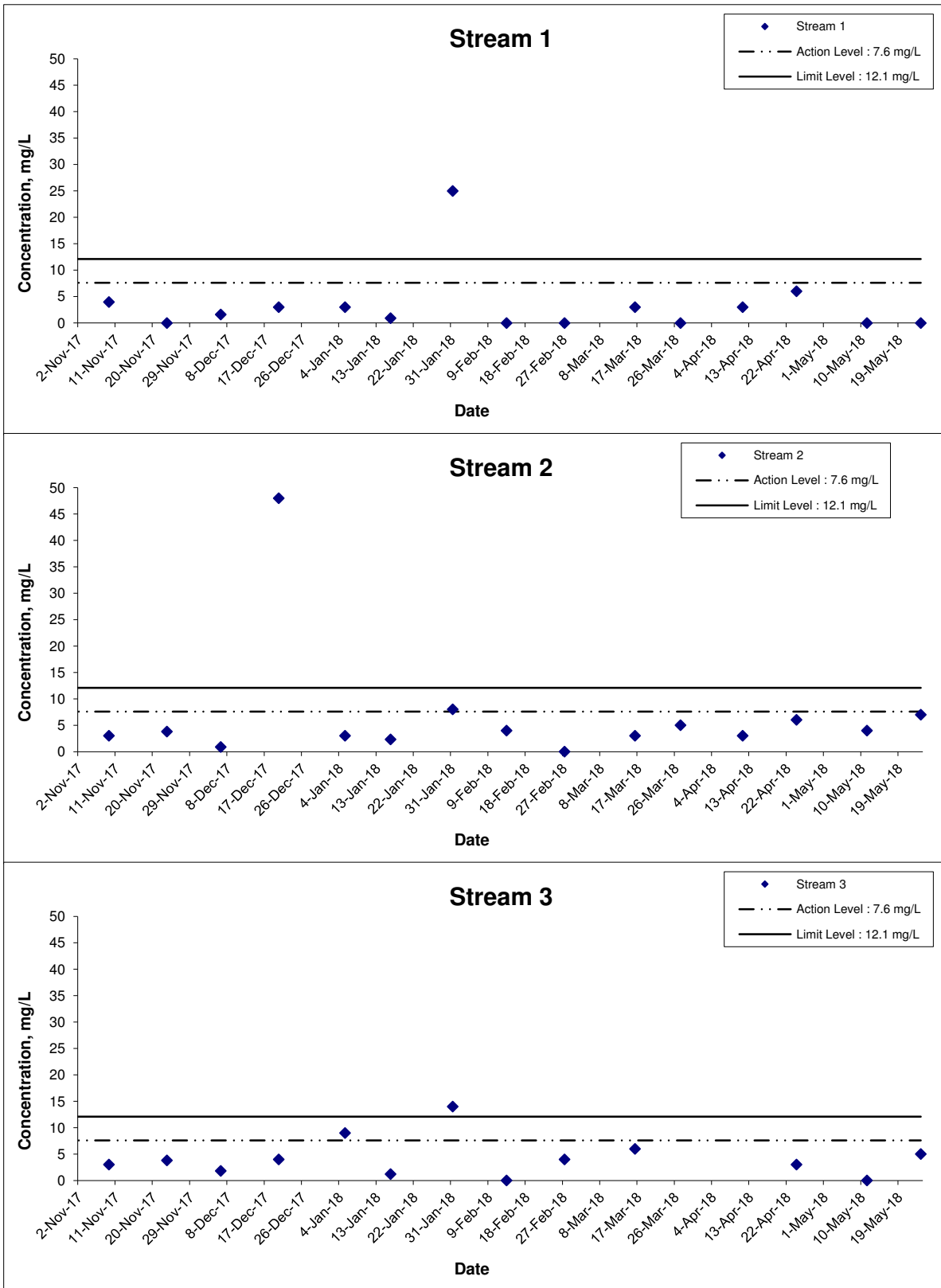
Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  Graphical Presentation of Groundwater Quality Monitoring Result	Scale N.T.S	Project No. MA16034	
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## Turbidity



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	
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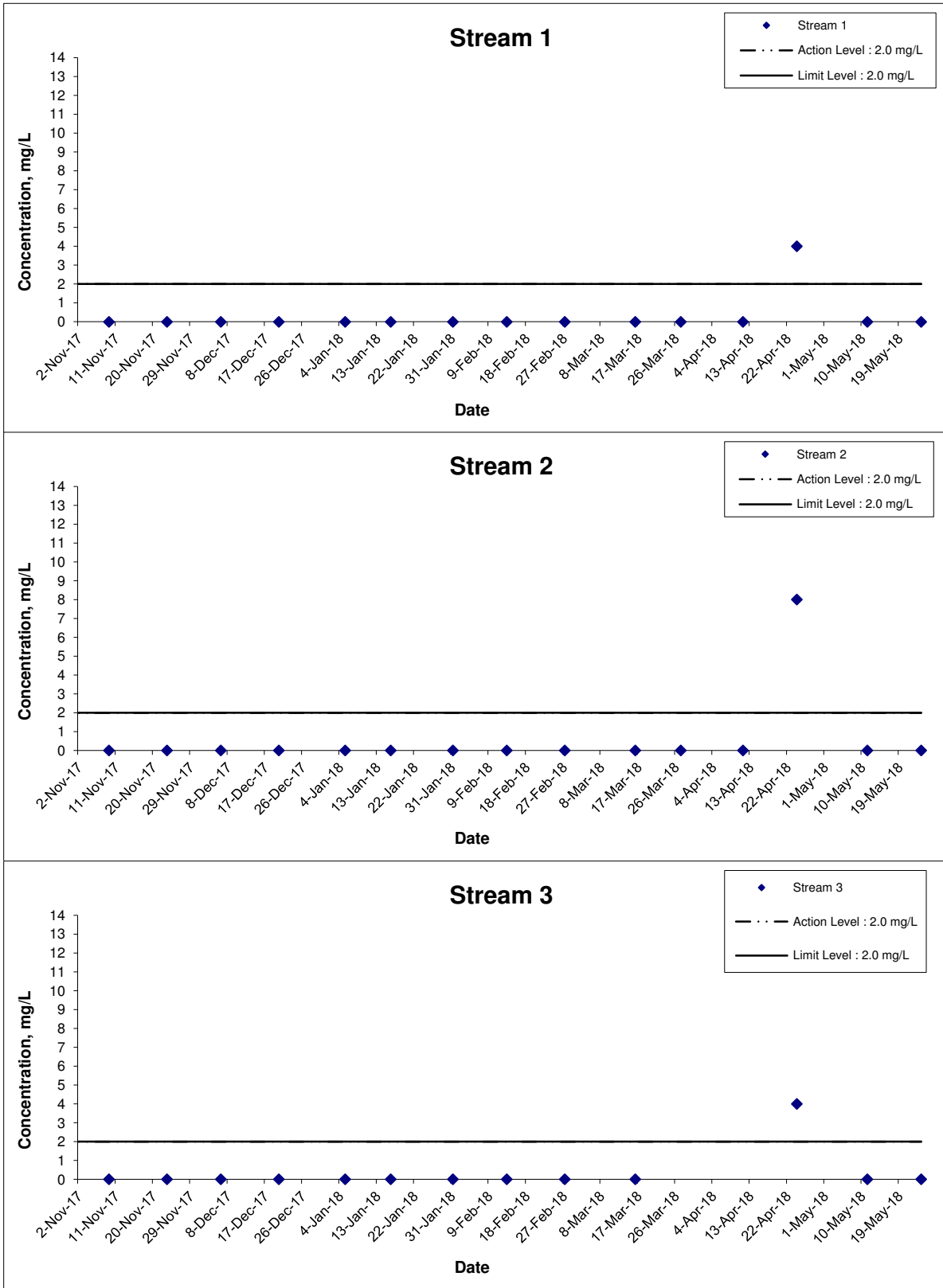
## Suspended Solids



Remarks: The graphical point at zero concentration is presented as <2.5 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 May 18	Appendix H	

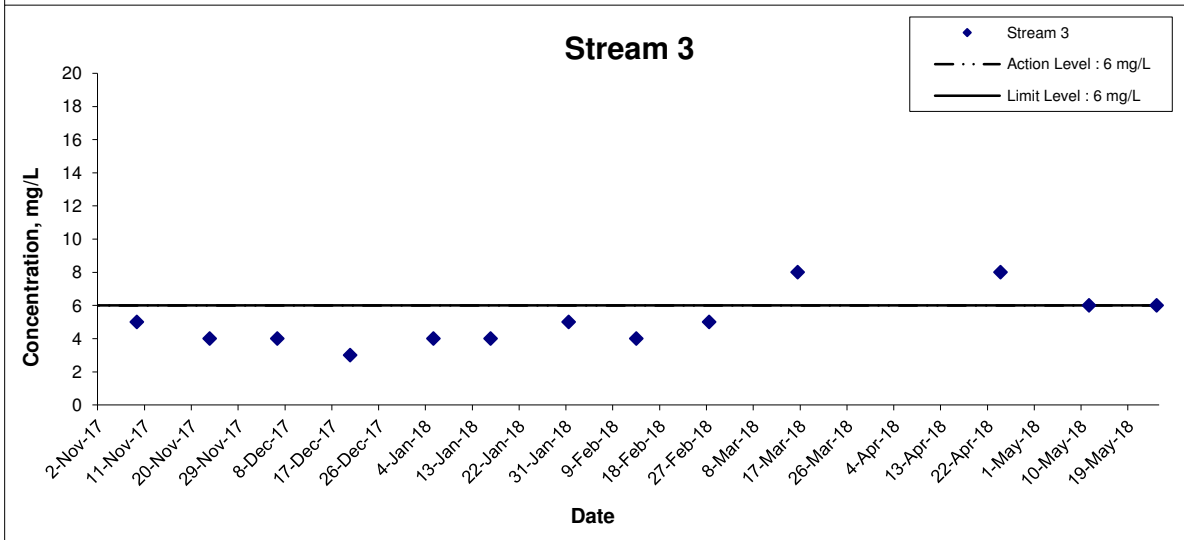
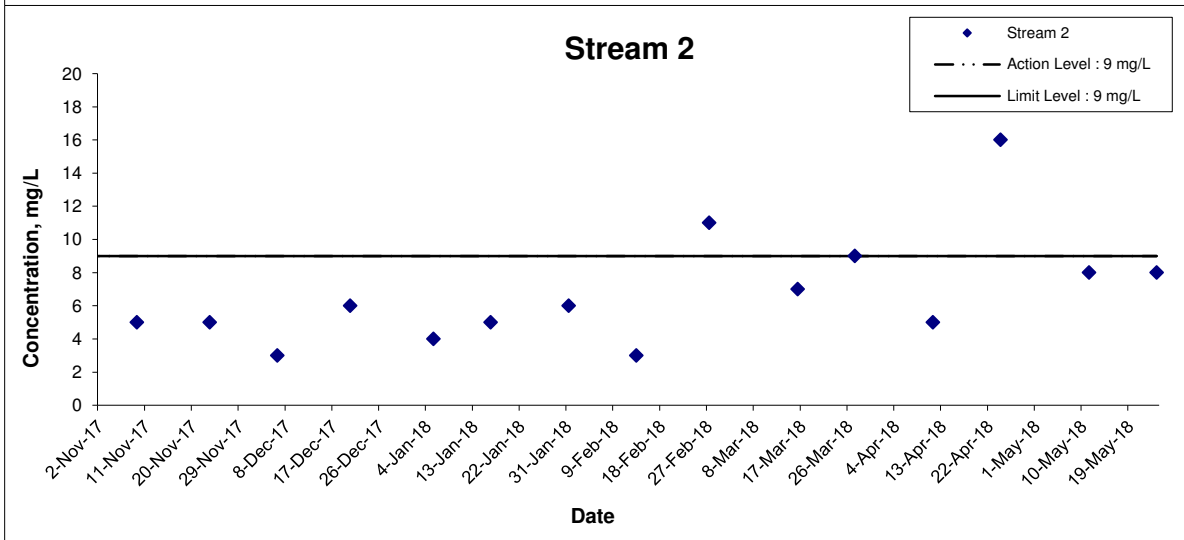
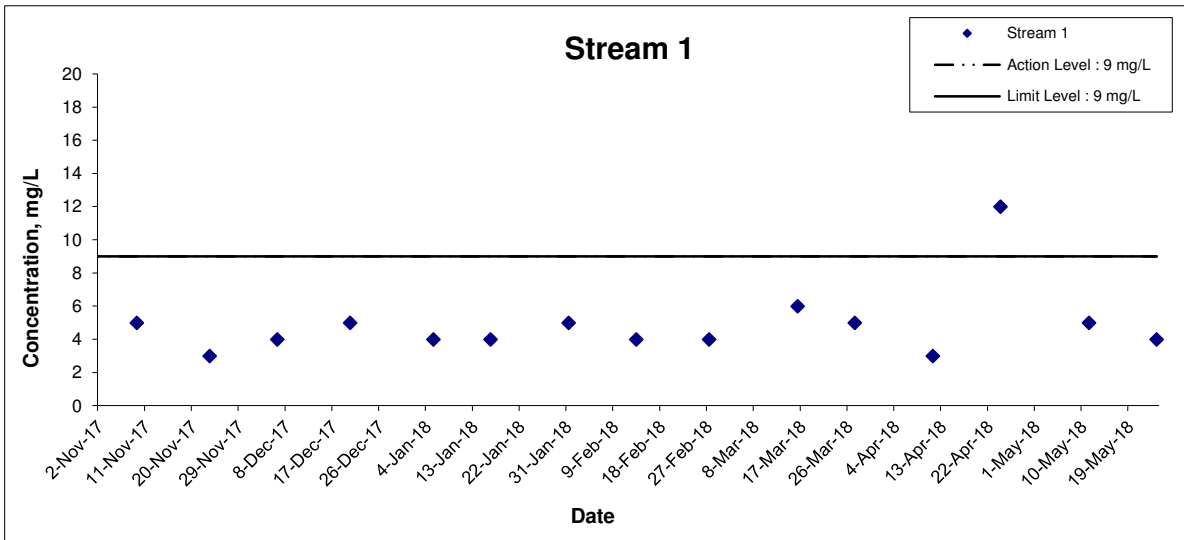
## 5-day Biochemical Oxygen Demand (BOD<sub>5</sub>)



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

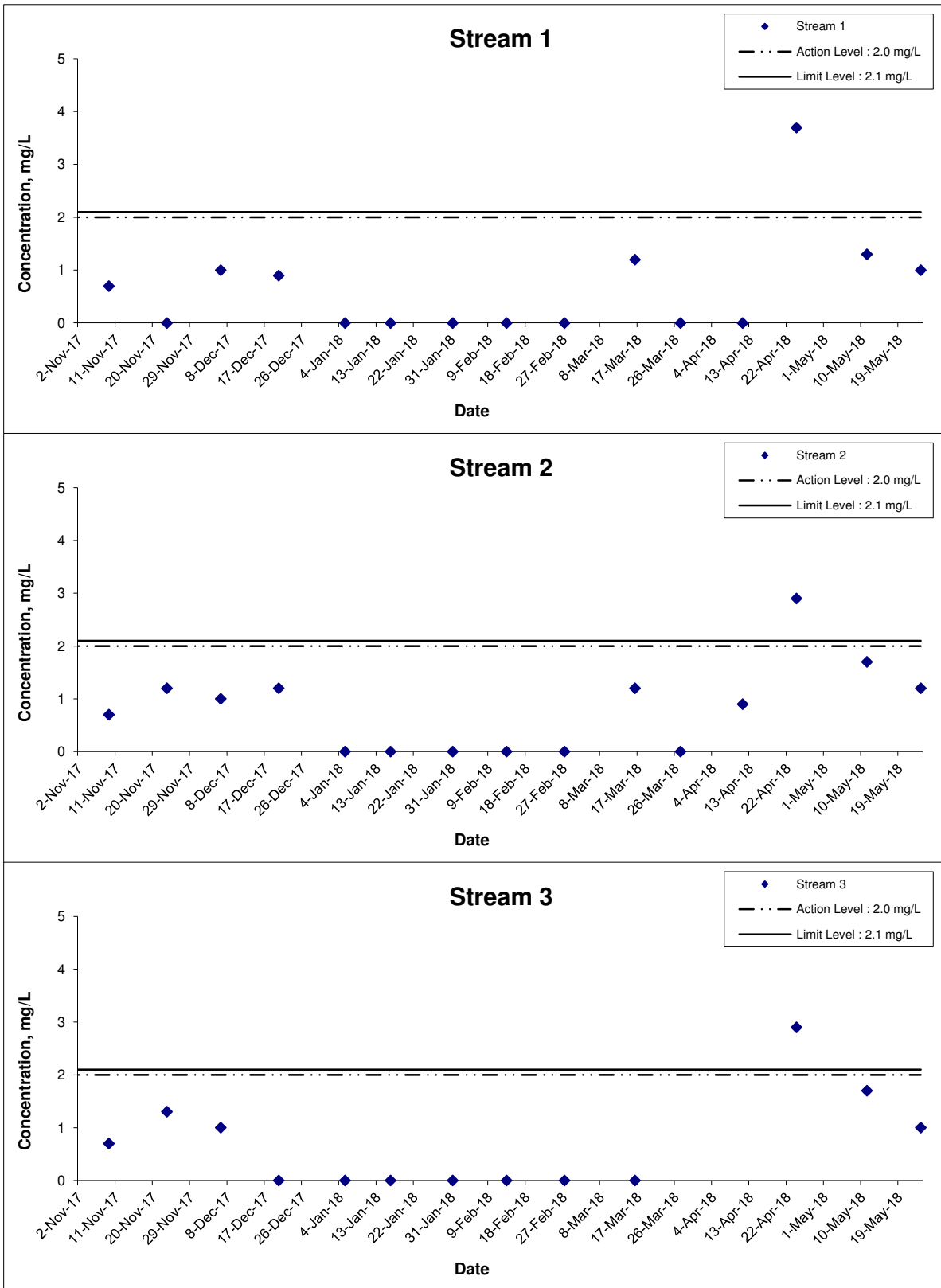
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## Total Organic Carbon (TOC)



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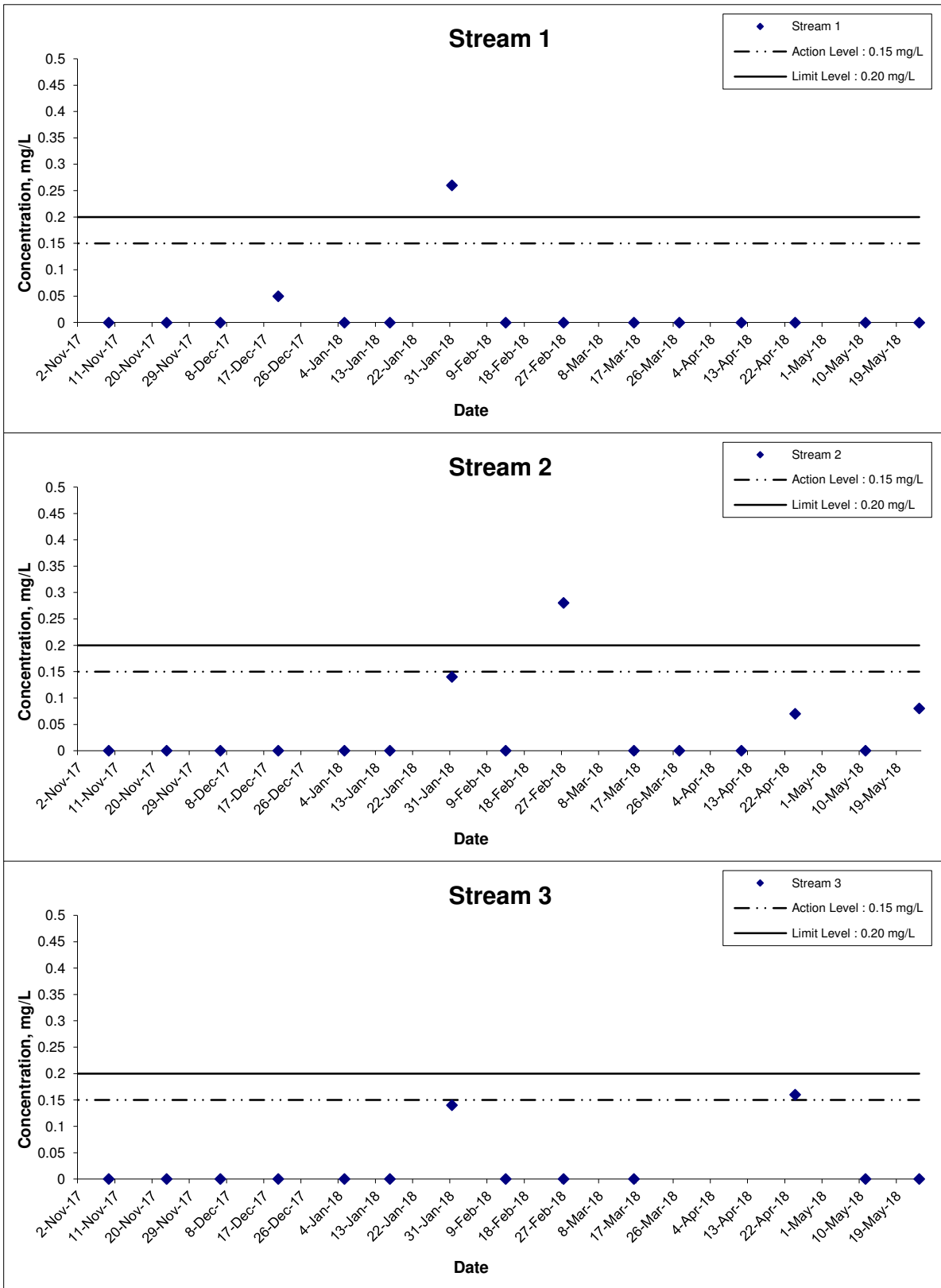
## Total Nitrogen



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	
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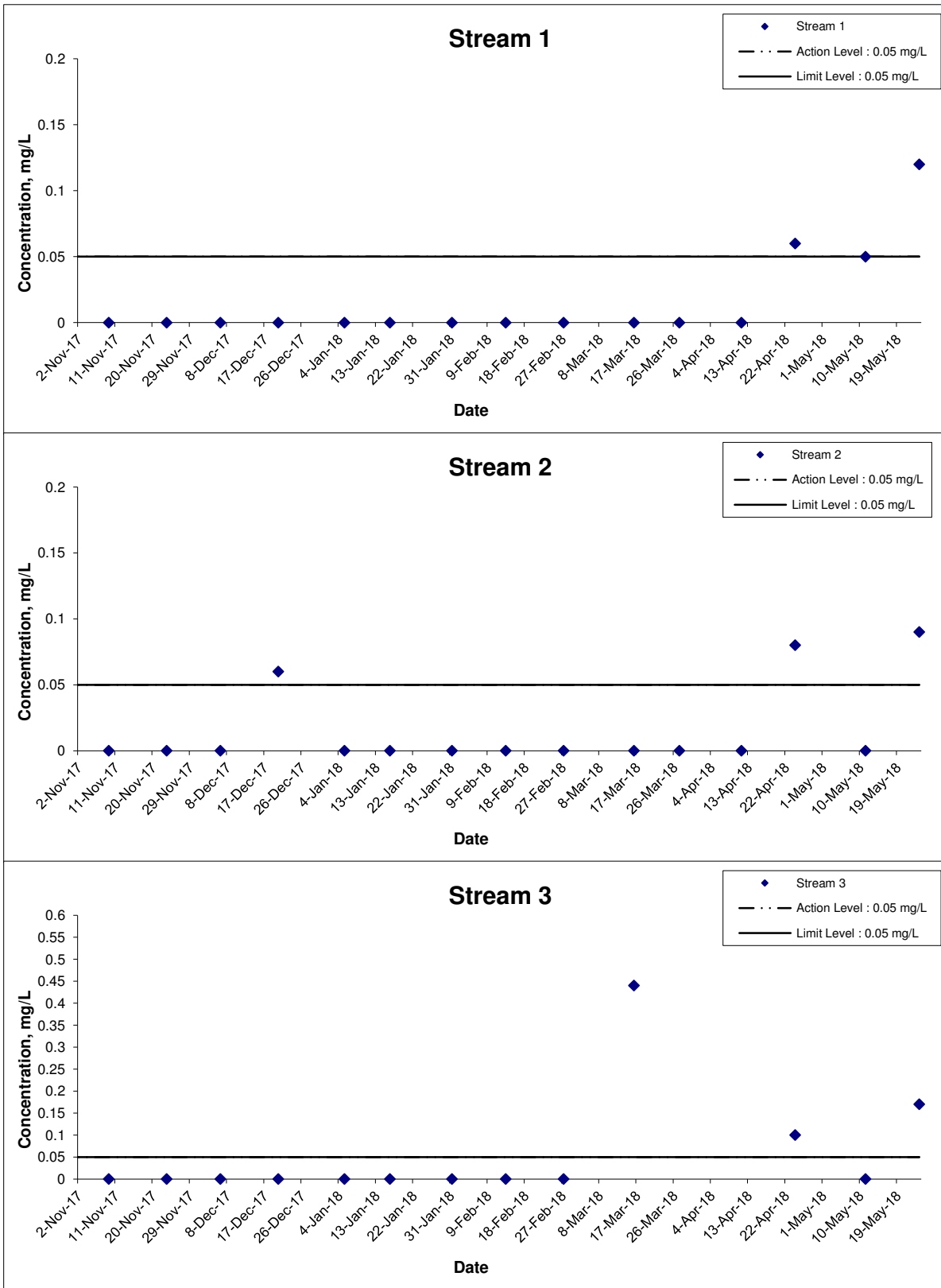
## Ammonia-Nitrogen



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	
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## Total Phosphate



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

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

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**Appendix I - Action and Limit Levels for Marine Water Quality on 2 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 3.0 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 3.3 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.6 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.2 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.6 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.2 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.4 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 8.1 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 02 May 2018**

**(Mid-Ebb Tide)**

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	14:34	Surface	1	24.4 24.4	24.4	8.0 8.0	8.0	33.1 33.1	33.1	95.5 95.5	95.5	6.6 6.6	6.6	6.7	1.7 1.8	1.8	1.9	4.0 3.9	4.0	4.0
				Middle	10	24.1 24.2	24.2	8.0 8.0	8.0	33.4 33.4	33.4	95.5 96.8	96.2	6.6 6.7	6.7		2.0 1.8	1.9		4.1 4.2	4.2	
				Bottom	19	24.1 24.1	24.1	8.0 8.0	8.0	33.5 33.5	33.5	95.9 96.1	96.0	6.7 6.7	6.7		1.9 2.3	2.1		3.8 3.9	3.9	
C2	Sunny	Moderate	13:32	Surface	1	24.8 24.7	24.8	7.9 7.9	7.9	32.9 32.8	32.9	94.5 94.3	94.4	6.5 6.5	6.5	6.5	1.4 1.6	1.5	2.1	5.5 5.5	5.5	5.4
				Middle	16	24.4 24.2	24.3	8.0 8.0	8.0	33.1 33.2	33.2	91.9 92.2	92.1	6.4 6.4	6.4		2.2 2.5	2.4		4.6 4.6	4.6	
				Bottom	31	24.3 24.1	24.2	8.0 8.0	8.0	33.2 33.4	33.3	91.7 92.5	92.1	6.4 6.4	6.4		2.4 2.6	2.5		6.1 6.3	6.2	
G1	Sunny	Moderate	14:01	Surface	1	25.3 25.4	25.4	8.0 8.0	8.0	33.3 33.3	33.3	107.9 109.7	108.8	7.4 7.5	7.5	7.4	0.8 0.7	0.8	1.0	5.6 5.4	5.5	4.5
				Middle	4	24.3 24.2	24.3	8.0 8.0	8.0	33.5 33.5	33.5	105.3 104.3	104.8	7.3 7.2	7.3		1.0 1.0	1.0		4.5 4.3	4.4	
				Bottom	7	24.1 24.1	24.1	8.1 8.1	8.1	33.6 33.6	33.6	105.1 102.5	103.8	7.3 7.1	7.2		1.1 1.2	1.2		3.5 3.5	3.5	
G2	Sunny	Moderate	13:52	Surface	1	25.2 24.9	25.1	8.0 8.0	8.0	33.3 33.3	33.3	108.7 109.5	109.1	7.4 7.5	7.5	7.5	0.8 0.8	0.8	0.8	5.2 5.3	5.3	4.2
				Middle	5	24.3 24.4	24.4	8.1 8.1	8.1	33.5 33.4	33.5	107.6 108.0	107.8	7.4 7.5	7.5		0.8 0.8	0.8		3.6 3.8	3.7	
				Bottom	9	24.1 24.1	24.1	8.1 8.1	8.1	33.6 33.5	33.6	106.0 106.6	106.3	7.4 7.4	7.4		0.8 0.7	0.8		3.7 3.6	3.7	
G3	Sunny	Moderate	14:06	Surface	1	25.1 25.2	25.2	8.0 8.0	8.0	33.3 33.3	33.3	108.9 108.2	108.6	7.4 7.4	7.4	7.2	0.9 0.8	0.9	2.2	4.8 4.8	4.8	5.6
				Middle	4	24.3 24.4	24.4	8.0 8.0	8.0	33.4 33.4	33.4	99.9 101.4	100.7	6.9 7.0	7.0		3.0 3.1	3.1		5.6 5.7	5.7	
				Bottom	7	23.9 23.9	23.9	8.1 8.0	8.1	33.8 33.7	33.8	99.4 98.8	99.1	6.9 6.9	6.9		2.5 2.8	2.7		6.3 6.4	6.4	
G4	Sunny	Moderate	14:15	Surface	1	25.4 25.5	25.5	8.0 8.0	8.0	33.2 33.2	33.2	110.9 111.2	111.1	7.5 7.6	7.6	7.5	0.6 0.6	0.6	1.2	2.9 2.9	2.9	3.1
				Middle	4	24.2 24.2	24.2	8.1 8.1	8.1	33.5 33.5	33.5	107.0 106.9	107.0	7.4 7.4	7.4		1.3 1.4	1.4		2.8 2.8	2.8	
				Bottom	7	24.0 24.0	24.0	8.1 8.1	8.1	33.7 33.7	33.7	106.0 106.4	106.2	7.4 7.4	7.4		1.6 1.7	1.7		3.7 3.7	3.7	
M1	Sunny	Moderate	13:57	Surface	1	25.2 25.3	25.3	8.0 8.0	8.0	33.3 33.3	33.3	110.8 110.6	110.7	7.6 7.5	7.6	7.6	0.7 0.7	0.7	0.8	3.6 3.6	3.6	3.7
				Middle	3	24.9 24.9	24.9	8.0 8.0	8.0	33.4 33.4	33.4	108.6 109.2	108.9	7.4 7.5	7.5		0.9 0.9	0.9		4.1 4.0	4.1	
				Bottom	5	24.3 24.2	24.3	8.0 8.1	8.1	33.5 33.5	33.5	106.2 106.9	106.6	7.4 7.4	7.4		0.9 0.9	0.9		3.5 3.5	3.5	
M2	Sunny	Moderate	13:48	Surface	1	24.8 25.0	24.9	8.0 8.0	8.0	33.4 33.4	33.4	108.4 109.7	109.1	7.4 7.5	7.5	7.5	0.7 0.7	0.7	1.2	2.7 2.8	2.8	3.2
				Middle	5.5	24.2 24.2	24.2	8.0 8.1	8.1	33.5 33.5	33.5	106.7 106.5	106.6	7.4 7.4	7.4		0.9 0.9	0.9		4.3 4.1	4.2	
				Bottom	10	23.9 23.9	23.9	8.1 8.1	8.1	33.7 33.7	33.7	101.2 100.7	101.0	7.0 7.0	7.0		2.0 2.0	2.0		2.5 2.6	2.6	
M3	Sunny	Moderate	14:10	Surface	1	24.5 24.6	24.6	8.0 8.0	8.0	33.2 33.2	33.2	97.1 99.4	98.3	6.7 6.9	6.8	6.9	3.5 3.2	3.4	2.7	5.6 5.7	5.7	6.3
				Middle	4	24.2 24.2	24.2	8.0 8.0	8.0	33.6 33.5	33.6	99.1 100.1	99.6	6.9 6.9	6.9		2.0 2.0	2.0		6.9 6.9	6.9	
				Bottom	7	23.9 23.9	23.9	8.1 8.1	8.1	33.7 33.8	33.8	100.4 100.4	100.4	7.0 7.0	7.0		2.8 2.4	2.6		6.3 6.3	6.3	
M4	Sunny	Moderate	13:40	Surface	1	24.4 24.3	24.4	8.0 8.1	8.1	33.5 33.5	33.5	107.6 108.9	108.3	7.4 7.5	7.5	7.4	0.9 0.8	0.9	1.5	5.0 4.8	4.9	4.2
				Middle	5	24.2 24.2	24.2	8.0 8.1	8.1	33.6 33.5	33.6	103.9 106.6	105.3	7.2 7.4	7.3		1.5 1.2	1.4		3.2 3.1	3.2	
				Bottom	9	23.9 24.0	24.0	8.0 8.0	8.0	33.7 33.6	33.7	97.2 100.0	98.6	6.8 6.9	6.9		2.3 2.0	2.2		4.6 4.6	4.6	
M5	Sunny	Moderate	14:27	Surface	1	24.6 24.5	24.6	8.1 8.1	8.1	33.3 33.4	33.4	108.7 107.6	108.2	7.5 7.4	7.5	7.4	0.8 0.9	0.9	1.1	3.3 3.2	3.3	3.4
				Middle	5.5	24.4 24.5	24.5	8.1 8.1	8.1	33.4 33.4	33.4	105.7 104.7	105.2	7.3 7.2	7.3		0.9 1.1	1.0		3.2 3.1	3.2	
				Bottom	10	24.4 24.4	24.4	8.0 8.0	8.0	33.4 33.4	33.4	100.2 101.3	100.8	6.9 7.0	7.0		1.4 1.4	1.4		3.5 3.6	3.6	
M6	Sunny	Moderate	14:21	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	0.6	-	-	2.6
				Middle	1.5	26.5 26.5	26.5	8.0 8.0	8.0	33.1 33.1	33.1	112.2 112.1	112.2	7.5 7.5	7.5		0.6 0.6	0.6		2.6 2.6	2.6	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

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

**Appendix I - Action and Limit Levels for Marine Water Quality on 2 May 2018 (Mid-Flood Tide)**

<b><u>Parameter</u></b> <b><u>(unit)</u></b>	<b><u>Depth</u></b>	<b><u>Action Level</u></b>	<b><u>Limit Level</u></b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<b><u>4.9 mg/L</u></b>	<b><u>4.6 mg/L</u></b>
	Bottom	<b><u>4.2 mg/L</u></b>	<b><u>3.6 mg/L</u></b>
	<b><u>Station M6</u></b>		
	Intake Level	<b><u>5.0 mg/L</u></b>	<b><u>4.7 mg/L</u></b>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<b><u>19.3 NTU</u></b> or 120% of upstream control station's Turbidity at the same tide of the same day <b><u>CI: 2.4 NTU</u></b>	<b><u>22.2 NTU</u></b> or 130% of upstream control station's Turbidity at the same tide of the same day <b><u>CI: 2.6 NTU</u></b>
	<b><u>Station M6</u></b>		
	Intake Level	<b><u>19.0 NTU</u></b>	<b><u>19.4 NTU</u></b>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<b><u>6.0 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.0 mg/L</u></b>	<b><u>6.9 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.5 mg/L</u></b>
<b><u>Stations M1-M5</u></b>			
Surface		<b><u>6.2 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.0 mg/L</u></b>	<b><u>7.4 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.5 mg/L</u></b>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<b><u>6.9 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.8 mg/L</u></b>	<b><u>7.9 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.4 mg/L</u></b>
<b><u>Station M6</u></b>			
Intake Level		<b><u>8.3 mg/L</u></b>	<b><u>8.6 mg/L</u></b>

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction**  
**Water Quality Monitoring Results on 02 May 2018**

**(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	07:54	Surface	1	24.3 24.3	24.3	8.0 8.0	8.0	33.3 33.3	33.3	101.8 102.6	102.2	7.1 7.1	7.1	7.1	7.1	0.6 0.7	0.7	1.2	4.9 5.0	5.0	5.5
				Middle	10	24.1 24.1	24.1	8.1 8.1	8.1	33.6 33.6	33.6	101.1 101.5	101.3	7.0 7.0	7.0	7.0		1.0 1.0	1.0		5.7 5.7	5.7	
				Bottom	19	23.7 23.8	23.8	8.1 8.1	8.1	33.9 33.9	33.9	97.8 98.5	98.2	6.8 6.9	6.9	6.9		2.0 1.9	2.0		5.7 5.7	5.7	
C2	Sunny	Moderate	06:59	Surface	1	24.3 24.2	24.3	7.9 8.0	8.0	33.2 33.2	33.2	96.0 95.7	95.9	6.7 6.6	6.7	6.7	0.8 0.9	0.9	1.3	3.0 2.9	3.0	4.4	
				Middle	16	24.0 24.0	24.0	8.0 8.0	8.0	33.5 33.5	33.5	95.9 95.4	95.7	6.7 6.6	6.7		6.7	1.1 1.1		1.1	3.4 3.4		3.4
				Bottom	31	23.9 23.9	23.9	8.0 8.0	8.0	33.8 33.7	33.8	96.1 95.7	95.9	6.7 6.7	6.7		6.7	1.9 2.1		2.0	6.7 6.7		6.7
G1	Sunny	Moderate	07:24	Surface	1	24.7 24.6	24.7	8.0 8.0	8.0	33.3 33.3	33.3	100.9 101.1	101.0	6.9 7.0	7.0	6.9	0.7 0.7	0.7	1.4	2.7 2.6	2.7	3.7	
				Middle	4	24.1 24.1	24.1	8.0 8.0	8.0	33.5 33.5	33.5	97.5 97.8	97.7	6.8 6.8	6.8		6.8	1.6 1.6		1.6	3.4 4.0		4.0
				Bottom	7	23.9 23.9	23.9	8.0 8.0	8.0	33.7 33.7	33.7	97.7 97.4	97.6	6.8 6.8	6.8		6.8	1.9 2.1		2.0	4.4 4.5		4.5
G2	Sunny	Moderate	07:16	Surface	1	24.7 24.6	24.7	8.0 8.0	8.0	33.3 33.3	33.3	102.4 102.3	102.4	7.1 7.1	7.1	7.0	0.6 0.7	0.7	1.3	5.7 5.5	5.6	4.5	
				Middle	5	24.1 24.2	24.2	8.0 8.0	8.0	33.5 33.5	33.5	98.8 99.8	99.3	6.9 6.9	6.9		6.9	1.3 1.2		1.3	3.9 4.1		4.0
				Bottom	9	24.0 24.0	24.0	8.0 8.0	8.0	33.7 33.6	33.7	97.5 97.7	97.6	6.8 6.8	6.8		6.8	1.8 1.8		1.8	3.9 4.0		4.0
G3	Sunny	Moderate	07:29	Surface	1	24.8 24.6	24.7	8.0 8.0	8.0	33.2 33.3	33.3	100.0 100.1	100.1	6.9 6.9	6.9	6.9	0.8 0.9	0.9	1.4	4.3 4.3	4.3	3.7	
				Middle	4.5	24.4 24.3	24.4	8.0 8.0	8.0	33.3 33.4	33.4	98.0 96.7	97.4	6.8 6.7	6.8		6.8	1.5 1.5		1.4	2.9 2.8		2.9
				Bottom	8	24.2 24.0	24.1	8.0 8.0	8.0	33.5 33.6	33.6	95.6 95.6	95.6	6.6 6.6	6.6		6.6	1.8 1.8		1.8	3.9 3.9		3.9
G4	Sunny	Moderate	07:38	Surface	1	24.7 24.4	24.6	8.0 8.0	8.0	33.2 33.3	33.3	102.6 100.9	101.8	7.1 7.0	7.1	7.0	0.6 0.7	0.7	1.3	5.9 5.9	5.9	5.5	
				Middle	4	24.2 24.1	24.2	8.0 8.0	8.0	33.4 33.4	33.4	98.8 97.6	98.2	6.9 6.8	6.9		6.9	1.0 1.2		1.1	5.9 5.9		5.9
				Bottom	7	23.9 23.9	23.9	8.0 8.0	8.0	33.7 33.7	33.7	96.3 95.9	96.1	6.7 6.7	6.7		6.7	2.1 2.0		2.1	4.6 4.5		4.6
M1	Sunny	Moderate	07:21	Surface	1	24.5 24.4	24.5	8.0 8.0	8.0	33.4 33.4	33.4	97.6 97.5	97.6	6.7 6.7	6.7	6.8	0.9 1.1	1.0	1.3	3.8 3.6	3.7	4.7	
				Middle	3	24.1 24.1	24.1	8.0 8.0	8.0	33.5 33.5	33.5	97.1 97.6	97.4	6.7 6.8	6.8		6.8	1.3 1.3		1.3	6.4 6.3		6.4
				Bottom	5	24.0 24.0	24.0	8.0 8.0	8.0	33.6 33.6	33.6	97.3 97.3	97.3	6.8 6.8	6.8		6.8	1.7 1.6		1.7	4.0 4.0		4.0
M2	Sunny	Moderate	07:11	Surface	1	24.5 24.5	24.5	8.0 8.0	8.0	33.5 33.5	33.5	99.4 99.8	99.6	6.9 6.9	6.9	6.9	0.9 0.9	0.9	1.2	3.0 3.0	3.0	6.1	
				Middle	5.5	24.1 24.1	24.1	8.0 8.0	8.0	33.5 33.6	33.6	99.6 100.0	99.8	6.9 6.9	6.9		6.9	0.9 0.9		0.9	8.5 8.5		8.5
				Bottom	10	23.9 23.9	23.9	8.0 8.0	8.0	33.7 33.8	33.8	100.3 99.3	99.8	7.0 6.9	7.0		7.0	1.8 1.8		1.8	6.7 6.6		6.7
M3	Sunny	Moderate	07:33	Surface	1	24.5 24.6	24.6	8.0 8.0	8.0	33.3 33.2	33.3	101.1 101.5	101.3	7.0 7.0	7.0	6.9	0.7 0.7	0.7	1.0	3.4 3.5	3.5	3.3	
				Middle	4	24.4 24.3	24.4	8.0 8.0	8.0	33.3 33.3	33.3	99.9 93.2	96.6	6.9 6.5	6.7		6.7	0.8 0.9		0.9	3.0 2.9		3.0
				Bottom	7	24.2 24.1	24.2	8.0 8.0	8.0	33.4 33.5	33.5	95.6 91.2	93.4	6.6 6.3	6.5		6.5	1.3 1.5		1.4	3.4 3.5		3.5
M4	Sunny	Moderate	07:06	Surface	1	24.5 24.5	24.5	8.0 8.0	8.0	33.2 33.2	33.2	97.9 98.6	98.3	6.8 6.8	6.8	6.8	0.8 0.9	0.9	1.3	3.5 3.6	3.6	3.6	
				Middle	5	24.1 24.2	24.2	8.0 8.0	8.0	33.5 33.4	33.5	97.7 98.2	98.0	6.8 6.8	6.8		6.8	1.2 1.1		1.2	2.6 2.7		2.7
				Bottom	9	24.0 24.0	24.0	8.0 8.0	8.0	33.6 33.6	33.6	97.1 97.2	97.2	6.7 6.8	6.8		6.8	1.9 1.7		1.8	4.3 4.4		4.4
M5	Sunny	Moderate	07:48	Surface	1	24.3 24.3	24.3	8.0 8.0	8.0	33.3 33.3	33.3	100.2 100.1	100.2	6.9 6.9	6.9	6.9	0.9 0.9	0.9	1.3	3.7 3.7	3.7	4.1	
				Middle	5.5	24.1 24.1	24.1	8.0 8.0	8.0	33.4 33.4	33.4	99.3 99.2	99.3	6.9 6.9	6.9		6.9	1.1 1.1		1.1	3.5 3.6		3.6
				Bottom	10	23.9 23.8	23.9	8.1 8.1	8.1	33.8 33.8	33.8	100.2 99.2	99.7	7.0 6.9	7.0		7.0	2.0 1.9		2.0	4.9 4.9		4.9
M6	Sunny	Moderate	07:43	Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-	0.8	-	-	4.8	
				Middle	1.4	24.3 24.3	24.3	8.0 8.0	8.0	33.3 33.3	33.3	99.0 99.0	99.0	6.9 6.9	6.9		6.9	0.7 0.8		0.8	4.8 4.7		4.8
				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 4 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 4.0 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 4.3 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.2 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.2 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.5 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.0 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 04 May 2018**

**(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	14:48	Surface	1	24.2 24.2	24.2	8.4 8.4	8.4	33.8 33.8	33.8	118.9 119.6	119.3	8.2 8.3	8.3	8.2	0.7 0.7	0.7	1.7	4.1 4.0	4.1	4.2
				Middle	9.5	24.2 24.2	24.2	8.4 8.4	8.4	33.9 33.9	33.9	115.4 116.9	116.2	8.0 8.1	8.1		0.7 0.6	0.7		4.3 4.3	4.3	
				Bottom	18	24.1 24.1	24.1	8.3 8.4	8.4	34.0 34.0	34.0	108.0 107.9	108.0	7.5 7.5	7.5		3.7 3.7	3.7		4.0 4.1	4.1	
C2	Cloudy	Moderate	13:50	Surface	1	24.1 24.1	24.1	8.6 8.5	8.6	33.8 33.8	33.8	104.6 105.0	104.8	7.3 7.3	7.3	7.3	1.1 1.2	1.2	1.9	5.2 5.1	5.2	4.5
				Middle	17	24.1 24.1	24.1	8.6 8.5	8.6	33.8 33.8	33.8	104.3 104.5	104.4	7.2 7.2	7.2		1.2 1.3	1.3		3.6 3.6	3.6	
				Bottom	33	24.1 24.0	24.1	8.6 8.5	8.6	33.8 33.8	33.8	104.4 104.2	104.3	7.2 7.2	7.2		3.3 3.3	3.3		4.6 4.6	4.6	
G1	Cloudy	Moderate	14:16	Surface	1	24.1 24.1	24.1	8.3 8.4	8.4	33.6 33.6	33.6	116.0 115.5	115.8	8.0 8.0	8.0	7.9	1.4 1.4	1.4	1.5	4.6 4.6	4.6	5.0
				Middle	4	24.1 24.1	24.1	8.3 8.3	8.3	33.7 33.7	33.7	112.2 112.4	112.3	7.8 7.8	7.8		1.3 1.5	1.4		5.3 5.2	5.3	
				Bottom	7	24.1 24.1	24.1	8.3 8.3	8.3	33.8 33.8	33.8	107.8 108.8	108.3	7.5 7.5	7.5		1.9 1.7	1.8		5.1 5.1	5.1	
G2	Cloudy	Moderate	14:06	Surface	1	24.1 24.1	24.1	8.4 8.4	8.4	33.7 33.7	33.7	114.6 115.3	115.0	7.9 8.0	8.0	8.0	1.3 1.3	1.3	1.6	5.1 5.1	5.1	5.7
				Middle	5	24.1 24.1	24.1	8.4 8.4	8.4	33.8 33.8	33.8	114.4 114.5	114.5	7.9 7.9	7.9		1.2 1.3	1.3		7.8 7.7	7.8	
				Bottom	9	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.9	33.9	105.9 107.8	106.9	7.3 7.5	7.4		2.1 2.1	2.1		4.3 4.3	4.3	
G3	Cloudy	Moderate	14:23	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.5 33.5	33.5	116.0 112.1	114.1	8.1 7.8	8.0	7.7	1.3 1.6	1.5	1.9	4.8 4.7	4.8	5.0
				Middle	4.5	24.0 24.0	24.0	8.3 8.3	8.3	33.8 33.8	33.8	106.8 103.8	105.3	7.4 7.2	7.3		1.4 1.6	1.5		5.3 5.3	5.3	
				Bottom	8	23.9 23.9	23.9	8.3 8.3	8.3	33.9 33.9	33.9	99.7 96.5	99.7	6.9 6.7	6.8		2.6 2.7	2.7		5.0 5.0	5.0	
G4	Cloudy	Moderate	14:32	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.8 33.8	33.8	114.6 114.8	114.7	7.9 8.0	8.0	8.0	1.4 1.3	1.4	1.7	3.4 3.5	3.5	5.0
				Middle	4	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.9	33.9	114.1 114.7	114.4	7.9 7.9	7.9		1.3 1.4	1.4		6.8 7.2	7.0	
				Bottom	7	24.0 24.0	24.0	8.3 8.3	8.3	34.0 34.0	34.0	101.2 103.7	102.5	7.0 7.2	7.1		2.2 2.2	2.2		4.6 4.6	4.6	
M1	Cloudy	Moderate	14:12	Surface	1	24.1 24.1	24.1	8.4 8.4	8.4	33.6 33.7	33.7	113.6 113.4	113.5	7.9 7.9	7.9	7.9	1.7 1.7	1.7	1.7	4.7 4.5	4.6	5.0
				Middle	3	24.1 24.1	24.1	8.3 8.4	8.4	33.7 33.7	33.7	113.7 113.5	113.6	7.9 7.9	7.9		1.7 1.7	1.7		5.8 5.8	5.8	
				Bottom	5	24.1 24.1	24.1	8.3 8.4	8.4	33.7 33.7	33.7	112.1 113.4	112.8	7.8 7.9	7.9		1.8 1.6	1.7		4.7 4.7	4.7	
M2	Cloudy	Moderate	14:01	Surface	1	24.1 24.1	24.1	8.4 8.4	8.4	33.8 33.8	33.8	116.3 117.1	116.7	8.1 8.1	8.1	8.0	1.1 1.1	1.1	1.5	5.7 5.5	5.6	5.0
				Middle	5.5	24.1 24.1	24.1	8.4 8.4	8.4	33.8 33.9	33.9	113.6 113.2	113.4	7.9 7.8	7.9		1.3 1.4	1.4		4.8 4.6	4.7	
				Bottom	10	24.1 24.1	24.1	8.3 8.4	8.4	33.9 33.9	33.9	109.4 110.4	109.9	7.6 7.6	7.6		1.8 1.9	1.9		4.4 4.8	4.6	
M3	Cloudy	Moderate	14:27	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.4 33.4	33.4	105.6 110.9	108.3	7.3 7.7	7.5	7.3	1.3 1.3	1.3	1.8	4.9 4.9	4.9	4.5
				Middle	4.5	24.0 24.0	24.0	8.3 8.3	8.3	33.9 33.8	33.9	101.4 101.2	101.3	7.0 7.0	7.0		1.1 1.1	1.1		4.4 4.3	4.4	
				Bottom	8	23.9 23.9	23.9	8.3 8.3	8.3	33.9 33.9	33.9	91.9 92.3	92.1	6.4 6.4	6.4		3.1 3.0	3.1		4.2 4.3	4.3	
M4	Cloudy	Moderate	13:56	Surface	1	24.1 24.1	24.1	8.4 8.4	8.4	33.8 33.8	33.8	108.6 107.6	108.1	7.5 7.5	7.5	7.5	1.3 1.4	1.4	1.5	4.1 4.1	4.1	3.6
				Middle	4.5	24.1 24.1	24.1	8.4 8.4	8.4	33.8 33.8	33.8	107.1 106.9	107.0	7.4 7.4	7.4		1.2 1.4	1.3		2.9 2.9	2.9	
				Bottom	8	24.0 24.1	24.1	8.4 8.4	8.4	33.9 33.9	33.9	105.3 106.1	105.7	7.3 7.4	7.4		1.9 1.6	1.8		3.6 3.7	3.7	
M5	Cloudy	Moderate	14:43	Surface	1	24.0 24.1	24.1	8.3 8.3	8.3	33.8 33.8	33.8	110.0 112.6	111.3	7.6 7.8	7.7	7.6	1.3 1.2	1.3	1.7	5.8 6.0	5.9	4.9
				Middle	6	24.0 24.0	24.0	8.3 8.3	8.3	33.9 33.9	33.9	106.4 106.7	106.6	7.4 7.4	7.4		1.8 1.9	1.9		4.3 4.3	4.3	
				Bottom	11	24.0 24.0	24.0	8.3 8.3	8.3	33.9 33.9	33.9	105.9 105.8	105.9	7.3 7.3	7.3		1.8 2.1	2.0		4.5 4.5	4.5	
M6	Cloudy	Moderate	14:39	Surface	-	-	-	-	-	-	-	-	-	-	8.1	-	-	1.1	-	-	3.1	
				Middle	2	24.1 24.1	24.1	8.3 8.3	8.3	33.8 33.8	33.8	116.3 116.3	116.3	8.1 8.1		8.1	1.1 1.1		1.1	3.1 3.0		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 4 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<b><u>4.9 mg/L</u></b>	<b><u>4.6 mg/L</u></b>
	Bottom	<b><u>4.2 mg/L</u></b>	<b><u>3.6 mg/L</u></b>
	<b><u>Station M6</u></b>		
	Intake Level	<b><u>5.0 mg/L</u></b>	<b><u>4.7 mg/L</u></b>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<b><u>19.3 NTU</u></b> or 120% of upstream control station's Turbidity at the same tide of the same day <b><u>CI: 3.0 NTU</u></b>	<b><u>22.2 NTU</u></b> or 130% of upstream control station's Turbidity at the same tide of the same day <b><u>CI: 3.3 NTU</u></b>
	<b><u>Station M6</u></b>		
	Intake Level	<b><u>19.0 NTU</u></b>	<b><u>19.4 NTU</u></b>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<b><u>6.0 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.0 mg/L</u></b>	<b><u>6.9 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.5 mg/L</u></b>
<b><u>Stations M1-M5</u></b>			
Surface		<b><u>6.2 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.0 mg/L</u></b>	<b><u>7.4 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.5 mg/L</u></b>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<b><u>6.9 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.4 mg/L</u></b>	<b><u>7.9 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 8.1 mg/L</u></b>
<b><u>Station M6</u></b>			
Intake Level	<b><u>8.3 mg/L</u></b>	<b><u>8.6 mg/L</u></b>	

Notes:

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



**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 04 May 2018**

**(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	08:47	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.9	33.9	112.6 113.2	112.9	7.8 7.8	7.8	7.8	1.5 1.4	1.5	1.8	5.8 5.8	5.8	5.9
				Middle	9.5	24.1 24.1	24.1	8.3 8.3	8.3	33.9 34.0	34.0	109.3 110.7	110.0	7.6 7.7	7.7	7.7	1.5 1.3	1.4		5.6 5.6	5.6	
				Bottom	18	24.0 24.0	24.0	8.3 8.3	8.3	34.1 34.1	34.1	105.5 104.4	105.0	7.3 7.2	7.3	7.3	2.6 2.3	2.5		6.1 6.3	6.2	
C2	Cloudy	Moderate	07:51	Surface	1	24.1 24.1	24.1	8.5 8.4	8.5	33.8 33.8	33.8	105.5 106.5	106.0	7.3 7.4	7.4	7.4	1.3 1.3	1.3	1.8	4.2 4.1	4.2	4.9
				Middle	17	24.0 24.0	24.0	8.5 8.4	8.5	33.9 33.9	33.9	104.6 104.3	104.5	7.3 7.2	7.3	7.3	2.0 2.1	2.1		3.7 3.6	3.7	
				Bottom	33	24.0 24.0	24.0	8.5 8.4	8.5	33.9 34.0	34.0	104.4 104.2	104.3	7.2 7.2	7.2	7.2	2.1 2.1	2.1		6.7 6.7	6.7	
G1	Cloudy	Moderate	08:18	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.6 33.6	33.6	111.7 112.2	112.0	7.7 7.8	7.8	7.7	1.0 1.1	1.1	1.6	4.8 4.7	4.8	4.1
				Middle	4	24.1 24.1	24.1	8.3 8.3	8.3	33.7 33.8	33.8	106.4 107.8	107.1	7.4 7.5	7.5	7.5	2.0 1.9	2.0		4.9 4.9	4.9	
				Bottom	7	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.9	33.9	105.9 106.3	106.1	7.3 7.4	7.4	7.4	1.7 1.8	1.8		2.7 2.7	2.7	
G2	Cloudy	Moderate	08:09	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.6 33.6	33.6	111.1 111.5	111.3	7.7 7.7	7.7	7.7	1.3 1.4	1.4	1.6	5.5 5.5	5.5	4.5
				Middle	5	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.9	33.9	107.6 107.3	107.5	7.5 7.4	7.5	7.5	1.3 1.6	1.5		3.7 3.7	3.7	
				Bottom	9	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.9	33.9	105.7 105.8	105.8	7.3 7.3	7.3	7.3	1.8 1.8	1.8		4.2 4.2	4.2	
G3	Cloudy	Moderate	08:23	Surface	1	24.2 24.2	24.2	8.3 8.3	8.3	33.4 33.3	33.4	111.5 110.0	110.8	7.7 7.6	7.7	7.7	1.4 1.5	1.5	1.6	5.2 5.1	5.2	4.5
				Middle	4.5	24.0 23.9	24.0	8.2 8.2	8.2	33.9 33.9	33.9	100.0 99.7	99.9	6.9 6.9	6.9	6.9	1.6 1.7	1.7		4.8 4.9	4.9	
				Bottom	8	24.0 23.9	24.0	8.2 8.3	8.3	33.9 33.9	33.9	100.6 100.0	100.3	7.0 6.9	7.0	7.0	1.4 1.7	1.6		3.5 3.5	3.5	
G4	Cloudy	Moderate	08:33	Surface	1	24.1 24.2	24.2	8.3 8.3	8.3	33.7 33.7	33.7	110.5 111.6	111.1	7.7 7.7	7.7	7.7	1.4 1.4	1.4	1.9	3.4 3.3	3.4	4.1
				Middle	4	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.8	33.9	107.7 109.9	108.8	7.5 7.6	7.6	7.6	1.5 1.4	1.5		3.6 3.7	3.7	
				Bottom	7	24.0 24.0	24.0	8.2 8.3	8.3	33.9 33.9	33.9	99.8 101.5	100.7	6.9 7.0	7.0	7.0	2.7 2.8	2.8		5.2 5.0	5.1	
M1	Cloudy	Moderate	08:14	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.6 33.6	33.6	106.5 107.5	107.0	7.4 7.5	7.5	7.5	2.0 1.8	1.9	1.7	4.0 4.0	4.0	5.0
				Middle	3	24.1 24.1	24.1	8.2 8.3	8.3	33.7 33.7	33.7	104.5 106.2	105.4	7.2 7.4	7.3	7.3	1.5 1.5	1.5		4.5 4.7	4.6	
				Bottom	5	24.0 24.1	24.1	8.3 8.3	8.3	33.8 33.9	33.9	104.4 106.2	105.3	7.2 7.4	7.3	7.3	1.7 1.9	1.8		6.3 6.3	6.3	
M2	Cloudy	Moderate	08:03	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.7 33.7	33.7	112.2 112.6	112.4	7.8 7.8	7.8	7.8	1.2 1.3	1.3	1.5	5.4 5.8	5.6	4.8
				Middle	5.5	24.1 24.1	24.1	8.3 8.3	8.3	33.8 33.8	33.8	110.9 111.0	111.0	7.7 7.7	7.7	7.7	1.4 1.4	1.4		5.0 5.0	5.0	
				Bottom	10	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.9	33.9	109.6 109.3	109.5	7.6 7.6	7.6	7.6	1.7 2.0	1.9		3.8 3.9	3.9	
M3	Cloudy	Moderate	08:28	Surface	1	24.1 24.1	24.1	8.2 8.3	8.3	33.5 33.5	33.5	105.8 106.5	106.2	7.3 7.4	7.4	7.4	1.6 1.5	1.6	1.8	4.6 4.7	4.7	4.6
				Middle	4.5	24.0 24.0	24.0	8.2 8.2	8.2	33.9 33.9	33.9	97.7 98.7	98.2	6.8 6.9	6.9	6.9	1.9 1.7	1.8		2.8 2.8	2.8	
				Bottom	8	23.9 23.9	23.9	8.2 8.2	8.2	33.9 33.9	33.9	97.3 97.0	97.2	6.8 6.7	6.8	6.8	2.1 2.0	2.1		6.2 6.3	6.3	
M4	Cloudy	Moderate	07:57	Surface	1	24.1 24.1	24.1	8.3 8.3	8.3	33.8 33.8	33.8	113.2 113.1	113.2	7.8 7.8	7.8	7.8	1.3 1.2	1.3	1.4	4.0 4.0	4.0	3.6
				Middle	4.5	24.2 24.2	24.2	8.3 8.3	8.3	33.9 33.9	33.9	111.1 111.9	111.5	7.7 7.7	7.7	7.7	1.4 1.3	1.4		3.5 3.6	3.6	
				Bottom	8	24.1 24.1	24.1	8.3 8.3	8.3	33.9 33.9	33.9	110.1 110.8	110.5	7.6 7.7	7.7	7.7	1.7 1.5	1.6		3.2 3.2	3.2	
M5	Cloudy	Moderate	08:42	Surface	1	24.0 24.0	24.0	8.3 8.3	8.3	33.9 33.8	33.9	105.2 107.6	106.4	7.3 7.5	7.4	7.4	1.5 1.3	1.4	1.6	2.9 2.9	2.9	3.4
				Middle	6	24.0 24.0	24.0	8.2 8.3	8.3	33.9 33.9	33.9	104.2 105.9	105.1	7.2 7.3	7.3	7.3	1.7 1.4	1.6		3.1 3.0	3.1	
				Bottom	11	24.0 24.0	24.0	8.2 8.3	8.3	33.9 33.9	33.9	103.2 103.9	103.6	7.2 7.2	7.2	7.2	1.6 1.7	1.7		4.2 4.3	4.3	
M6	Cloudy	Moderate	08:38	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	-	-	4.7
				Middle	2	24.1 24.1	24.1	8.3 8.3	8.3	33.8 33.8	33.8	109.7 109.7	109.7	7.6 7.6	7.6	7.6	1.3 1.3	1.3		4.7 4.7	4.7	
				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 7 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.3 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.5 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.0 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.5 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.0 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.5 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.7 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 8.3 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 07 May 2018**

**(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	Rough	17:15	Surface	1	25.0 25.0	25.0	8.7 8.7	8.7	33.2 33.3	33.3	119.5 121.9	120.7	8.2 8.3	8.3	8.0	1.7 2.0	1.9	2.0	5.2 5.0	5.1	4.9
				Middle	9	24.5 24.6	24.6	8.7 8.6	8.7	33.7 33.7	33.7	108.5 113.2	110.9	7.5 7.8	7.7		2.1 2.0	2.1		3.4 3.5	3.5	
				Bottom	17	24.4 24.5	24.5	8.7 8.6	8.7	33.8 33.7	33.8	106.1 109.5	107.8	7.3 7.5	7.4		2.0 2.0	2.0		6.2 6.2	6.2	
C2	Cloudy	Rough	15:50	Surface	1	25.2 25.2	25.2	8.6 8.6	8.6	32.9 32.9	32.9	131.8 132.7	132.3	9.0 9.1	9.1	8.7	1.3 1.3	1.3	1.7	5.0 4.9	5.0	5.5
				Middle	16.5	24.8 24.8	24.8	8.5 8.5	8.5	33.4 33.4	33.4	118.2 119.5	118.9	8.1 8.2	8.2		1.9 1.9	1.9		5.0 5.0	5.0	
				Bottom	32	24.4 24.3	24.4	8.4 8.4	8.4	33.8 33.8	33.8	106.7 104.3	105.5	7.4 7.2	7.3		1.9 1.9	1.9		6.3 6.4	6.4	
G1	Cloudy	Rough	16:38	Surface	1	25.0 24.9	25.0	8.6 8.7	8.7	33.5 33.6	33.6	126.0 126.0	126.0	8.6 8.6	8.6	8.6	1.5 1.4	1.5	1.4	3.5 3.4	3.5	3.6
				Middle	4	24.8 24.8	24.8	8.7 8.7	8.7	33.6 33.6	33.6	123.4 123.1	123.3	8.5 8.4	8.5		1.3 1.5	1.4		3.7 3.8	3.8	
				Bottom	7	24.8 24.8	24.8	8.7 8.6	8.7	33.6 33.6	33.6	121.3 121.1	121.2	8.3 8.3	8.3		1.2 1.5	1.4		3.5 3.5	3.5	
G2	Cloudy	Rough	16:28	Surface	1	25.0 25.0	25.0	8.7 8.7	8.7	33.6 33.6	33.6	125.9 127.5	126.7	8.6 8.7	8.7	8.7	1.3 1.3	1.3	1.3	4.4 4.3	4.4	5.9
				Middle	5	24.9 24.9	24.9	8.7 8.7	8.7	33.6 33.6	33.6	126.2 126.6	126.4	8.6 8.7	8.7		1.2 1.5	1.4		7.0 6.7	6.9	
				Bottom	9	24.9 24.7	24.8	8.7 8.7	8.7	33.6 33.6	33.6	125.2 117.9	121.6	8.6 8.1	8.4		1.2 1.4	1.3		6.4 6.3	6.4	
G3	Cloudy	Rough	16:45	Surface	1	25.2 25.3	25.3	8.7 8.7	8.7	33.4 33.3	33.4	137.5 140.6	139.1	9.4 9.6	9.5	9.2	1.5 1.5	1.5	1.5	3.1 2.9	3.0	3.5
				Middle	4	24.9 25.0	25.0	8.7 8.7	8.7	33.5 33.5	33.5	128.6 131.3	130.0	8.8 9.0	8.9		1.5 1.5	1.5		3.0 3.0	3.0	
				Bottom	7	24.8 24.8	24.8	8.7 8.7	8.7	33.6 33.6	33.6	124.9 123.7	124.3	8.6 8.5	8.6		1.5 1.4	1.5		4.4 4.3	4.4	
G4	Cloudy	Rough	16:56	Surface	1	25.5 25.6	25.6	8.7 8.7	8.7	33.1 33.0	33.1	144.2 140.9	142.6	9.8 9.6	9.7	9.7	1.0 1.0	1.0	1.4	3.1 3.0	3.1	3.8
				Middle	4	25.1 25.3	25.2	8.7 8.7	8.7	33.5 33.3	33.4	141.9 141.4	141.7	9.7 9.6	9.7		1.3 1.1	1.2		3.8 3.9	3.9	
				Bottom	7	24.9 25.0	25.0	8.7 8.7	8.7	33.6 33.6	33.6	127.5 130.5	129.0	8.7 8.9	8.8		2.0 2.0	2.0		4.3 4.2	4.3	
M1	Cloudy	Rough	16:34	Surface	1	25.2 25.0	25.1	8.6 8.7	8.7	33.4 33.6	33.5	125.9 127.5	126.7	8.6 8.7	8.7	8.7	1.3 1.5	1.4	1.5	3.1 3.1	3.1	3.8
				Middle	3	25.0 25.0	25.0	8.7 8.7	8.7	33.6 33.6	33.6	127.7 128.0	127.9	8.7 8.7	8.7		1.5 1.5	1.5		5.1 5.3	5.2	
				Bottom	5	24.8 24.9	24.9	8.7 8.7	8.7	33.6 33.6	33.6	120.8 121.3	121.1	8.3 8.3	8.3		1.5 1.5	1.5		3.1 3.0	3.1	
M2	Cloudy	Rough	16:20	Surface	1	24.9 25.0	25.0	8.8 8.7	8.8	33.6 33.6	33.6	130.4 132.8	131.6	8.9 9.1	9.0	9.0	1.2 1.3	1.3	1.5	2.7 2.7	2.7	3.1
				Middle	6	24.9 24.9	24.9	8.8 8.7	8.8	33.6 33.6	33.6	130.5 132.3	131.4	8.9 9.0	9.0		1.2 1.4	1.3		3.7 3.7	3.7	
				Bottom	11	24.8 24.7	24.8	8.8 8.8	8.8	33.6 33.6	33.6	119.9 119.6	119.8	8.2 8.2	8.2		1.7 1.8	1.8		3.0 2.9	3.0	
M3	Cloudy	Rough	16:50	Surface	1	25.3 25.3	25.3	8.7 8.7	8.7	33.3 33.4	33.4	144.1 144.9	144.5	9.8 9.9	9.9	9.7	1.3 1.4	1.4	1.4	3.8 3.9	3.9	4.6
				Middle	4	25.1 25.1	25.1	8.7 8.7	8.7	33.5 33.5	33.5	140.1 137.8	139.0	9.6 9.4	9.5		1.4 1.3	1.4		4.2 4.3	4.3	
				Bottom	7	24.9 25.0	25.0	8.7 8.7	8.7	33.5 33.5	33.5	128.0 131.3	129.7	8.8 9.0	8.9		1.3 1.3	1.3		5.6 5.7	5.7	
M4	Cloudy	Rough	16:06	Surface	1	24.9 24.9	24.9	8.4 8.4	8.4	33.5 33.6	33.6	126.0 128.9	127.5	8.6 8.8	8.7	8.7	1.3 1.3	1.3	1.6	3.7 3.8	3.8	3.4
				Middle	5	24.9 24.9	24.9	8.5 8.4	8.5	33.6 33.6	33.6	128.4 123.3	125.9	8.8 8.4	8.6		1.5 1.5	1.5		3.1 3.1	3.1	
				Bottom	9	24.6 24.6	24.6	8.4 8.4	8.4	33.7 33.7	33.7	112.1 112.4	112.3	7.7 7.7	7.7		1.8 1.9	1.9		3.4 3.4	3.4	
M5	Cloudy	Rough	17:08	Surface	1	24.8 24.8	24.8	8.7 8.7	8.7	33.4 33.4	33.4	119.4 121.6	120.5	8.2 8.3	8.3	8.3	1.7 1.7	1.7	1.5	3.1 3.2	3.2	4.4
				Middle	5.5	24.8 24.8	24.8	8.7 8.7	8.7	33.4 33.4	33.4	121.4 121.6	121.5	8.3 8.3	8.3		1.4 1.4	1.4		3.9 3.9	3.9	
				Bottom	10	24.8 24.8	24.8	8.7 8.6	8.7	33.4 33.4	33.4	121.1 121.1	121.1	8.3 8.3	8.3		1.4 1.4	1.4		5.9 6.0	6.0	
M6	Cloudy	Rough	17:03	Surface	-	-	-	-	-	-	-	-	-	-	-	8.9	-	-	1.3	-	-	5.1
				Middle	2.1	24.9 24.9	24.9	8.7 8.7	8.7	33.6 33.6	33.6	130.3 130.5	130.4	8.9 8.9	8.9		1.2 1.3	1.3		5.1 5.0	5.1	
				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 9 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.0 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.1 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.9 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.9 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.7 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.3 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction**  
**Water Quality Monitoring Results on 09 May 2018**

**(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	Rough	19:13	Surface	1	24.6	24.6	8.6	8.6	33.4	33.4	107.7	108.0	7.4	7.5	7.4	0.6	0.7	0.8	4.2	4.2	4.5
				Middle	10	24.6	24.6	8.6	8.6	33.5	33.5	107.1	106.2	7.4	7.3	7.4	0.6	0.6		5.4	5.5	
				Bottom	19	24.4	24.4	8.6	8.6	33.9	33.9	105.3	96.1	6.6	6.6	6.6	1.1	1.2		3.7	3.7	
C2	Rainy	Rough	18:12	Surface	1	24.8	24.8	8.5	8.5	33.0	33.0	109.7	109.7	7.5	7.5	7.2	0.4	0.4	1.0	5.4	5.3	5.3
				Middle	16	24.7	24.7	8.6	8.6	33.4	33.4	100.8	100.5	6.9	6.9	6.9	0.8	0.9		5.1	5.1	
				Bottom	31	24.6	24.6	8.5	8.5	33.5	33.5	99.4	99.3	6.8	6.8	6.8	1.6	1.6		5.6	5.6	
G1	Rainy	Rough	18:45	Surface	1	24.8	24.8	8.6	8.7	33.1	33.1	101.7	101.4	7.0	7.0	6.8	0.6	0.6	1.1	5.7	5.7	5.3
				Middle	4	24.5	24.5	8.6	8.7	33.6	33.6	95.4	95.0	6.6	6.6	6.6	1.1	1.2		4.6	4.7	
				Bottom	7	24.4	24.4	8.6	8.7	33.8	33.8	92.2	91.5	6.4	6.4	6.4	1.6	1.6		4.7	5.4	
G2	Rainy	Rough	18:31	Surface	1	24.8	24.8	8.7	8.7	33.0	33.0	109.3	108.8	7.5	7.5	7.3	0.6	0.6	1.1	4.8	4.7	5.1
				Middle	5	24.6	24.7	8.6	8.7	33.5	33.5	100.8	102.1	6.9	7.0	7.0	1.0	1.0		5.4	5.4	
				Bottom	9	24.4	24.5	8.6	8.6	33.8	33.8	91.8	92.7	6.3	6.4	6.4	1.7	1.8		5.2	5.1	
G3	Rainy	Rough	18:50	Surface	1	24.7	24.7	8.6	8.6	33.1	33.2	102.7	101.8	7.1	7.0	6.8	0.9	0.9	1.0	5.0	4.9	5.4
				Middle	4	24.6	24.6	8.6	8.6	33.5	33.5	95.9	96.0	6.6	6.6	6.6	1.0	1.1		5.0	5.0	
				Bottom	7	24.5	24.5	8.6	8.6	33.7	33.7	93.7	93.6	6.5	6.5	6.5	0.9	0.9		6.2	6.2	
G4	Rainy	Rough	18:59	Surface	1	24.8	24.8	8.6	8.6	33.2	33.2	106.6	107.1	7.3	7.4	7.1	0.7	0.7	0.9	4.2	4.2	4.3
				Middle	4	24.6	24.7	8.6	8.6	33.5	33.5	99.2	99.3	6.8	6.8	6.8	0.6	0.6		3.7	3.6	
				Bottom	7	24.4	24.5	8.6	8.6	33.7	33.7	94.0	95.4	6.5	6.6	6.6	1.3	1.3		5.1	5.1	
M1	Rainy	Rough	18:36	Surface	1	24.8	24.8	8.6	8.6	33.1	33.1	101.4	101.7	7.0	7.0	6.9	0.6	0.7	0.8	3.1	3.1	3.5
				Middle	3	24.7	24.7	8.6	8.6	33.4	33.5	100.9	99.0	6.9	6.8	6.8	0.7	0.7		3.3	3.3	
				Bottom	5	24.5	24.5	8.6	8.6	33.6	33.7	94.7	94.8	6.5	6.5	6.5	1.1	1.1		4.1	4.1	
M2	Rainy	Rough	18:26	Surface	1	24.7	24.7	8.6	8.7	33.2	33.2	108.3	108.3	7.4	7.4	7.4	0.7	0.7	0.7	3.7	3.7	3.4
				Middle	5.5	24.7	24.7	8.6	8.7	33.4	33.4	104.6	105.6	7.2	7.3	7.3	0.6	0.6		3.2	3.3	
				Bottom	10	24.5	24.5	8.6	8.7	33.6	33.7	96.4	94.8	6.6	6.6	6.6	0.9	0.9		3.2	3.3	
M3	Rainy	Rough	18:55	Surface	1	24.7	24.7	8.6	8.6	33.1	33.1	92.2	92.0	6.4	6.4	6.4	2.0	2.1	1.4	4.4	4.3	3.5
				Middle	4	24.6	24.6	8.6	8.6	33.6	33.6	92.9	93.0	6.4	6.4	6.4	1.0	1.0		3.2	3.2	
				Bottom	7	24.5	24.5	8.6	8.6	33.7	33.7	90.1	89.2	6.2	6.2	6.2	1.1	1.2		3.0	3.0	
M4	Rainy	Rough	18:20	Surface	1	24.8	24.8	8.6	8.6	33.1	33.1	111.5	112.4	7.7	7.8	7.8	0.5	0.5	0.6	3.3	3.3	3.4
				Middle	5	24.8	24.8	8.6	8.7	33.2	33.2	111.9	112.3	7.7	7.7	7.7	0.5	0.6		2.9	2.9	
				Bottom	9	24.6	24.7	8.6	8.7	33.4	33.3	103.8	108.1	7.1	7.4	7.4	0.6	0.6		4.1	4.1	
M5	Rainy	Rough	19:09	Surface	1	24.5	24.5	8.6	8.6	33.5	33.5	100.3	99.8	6.9	6.9	6.9	1.2	1.2	1.4	3.6	3.5	3.6
				Middle	5.5	24.5	24.5	8.6	8.6	33.6	33.6	97.9	98.2	6.7	6.8	6.8	1.1	1.4		3.3	2.9	
				Bottom	10	24.5	24.5	8.6	8.6	33.6	33.6	96.3	96.5	6.6	6.6	6.6	1.5	1.5		4.4	4.3	
M6	Rainy	Rough	19:04	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	-	-	5.4
				Middle	1.4	24.6	24.6	8.6	8.6	33.6	33.6	95.7	95.7	6.6	6.6	6.6	1.3	1.3		5.3	5.4	
				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 9 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 1.6 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 1.7 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.7 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.7 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.1 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.6 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 09 May 2018**

**(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	Rough	12:48	Surface	1	24.7 24.7	24.7	8.6 8.6	8.6	33.3 33.3	33.3	106.8 106.8	106.8	7.3 7.3	7.3	7.2	0.6 0.6	0.6	0.9	5.9 5.9	5.9	5.2
				Middle	10	24.5 24.5	24.5	8.6 8.6	8.6	33.8 33.8	33.8	102.0 101.7	101.9	7.0 7.0	7.0		0.8 0.8	0.8		4.8 4.6	4.7	
				Bottom	19	24.5 24.5	24.5	8.6 8.6	8.6	33.8 33.8	33.8	96.3 96.3	96.3	6.6 6.6	6.6		1.3 1.3	1.3		5.1 5.0	5.1	
C2	Rainy	Rough	11:36	Surface	1	24.9 24.9	24.9	8.6 8.6	8.6	32.9 32.9	32.9	111.5 111.8	111.7	7.7 7.7	7.7	7.1	0.5 0.6	0.6	1.1	4.5 4.4	4.5	4.3
				Middle	16	24.4 24.4	24.4	8.6 8.6	8.6	33.8 33.8	33.8	93.7 93.1	93.4	6.5 6.4	6.5		1.4 1.4	1.4		3.5 3.7	3.6	
				Bottom	31	24.4 24.4	24.4	8.6 8.6	8.6	33.8 33.8	33.8	92.3 92.4	92.4	6.4 6.4	6.4		1.4 1.4	1.4		4.8 4.6	4.7	
G1	Rainy	Rough	12:12	Surface	1	24.9 24.9	24.9	8.7 8.7	8.7	32.9 32.9	32.9	113.5 112.1	112.8	7.7 7.7	7.8	7.8	0.6 0.6	0.6	0.7	5.3 5.3	5.3	5.2
				Middle	4	24.9 24.9	24.9	8.7 8.7	8.7	33.0 33.0	33.0	112.5 111.4	112.0	7.7 7.7	7.7		0.6 0.6	0.6		5.9 5.7	5.8	
				Bottom	7	24.6 24.6	24.6	8.7 8.7	8.7	33.5 33.6	33.6	99.0 98.5	98.8	6.8 6.8	6.8		0.8 0.8	0.8		4.3 4.4	4.4	
G2	Rainy	Rough	12:00	Surface	1	25.0 25.0	25.0	8.7 8.7	8.7	32.9 32.9	32.9	116.3 116.8	116.6	8.0 8.0	8.0	7.7	0.5 0.5	0.5	0.7	4.8 4.6	4.7	3.9
				Middle	5	24.8 24.8	24.8	8.7 8.7	8.7	33.1 33.1	33.1	107.1 108.4	107.8	7.4 7.4	7.4		0.8 0.9	0.9		4.1 4.1	4.1	
				Bottom	9	24.5 24.5	24.5	8.6 8.6	8.6	33.7 33.7	33.7	98.2 98.1	98.2	6.8 6.8	6.8		0.8 0.7	0.8		2.8 2.9	2.9	
G3	Rainy	Rough	12:17	Surface	1	24.9 24.9	24.9	8.6 8.7	8.7	33.0 33.0	33.0	113.5 113.6	113.6	7.8 7.8	7.8	7.8	0.6 0.7	0.7	0.8	5.1 5.1	5.1	3.9
				Middle	4	24.9 24.9	24.9	8.6 8.7	8.7	33.0 33.0	33.0	113.1 113.9	113.5	7.8 7.8	7.8		0.7 0.7	0.7		2.7 2.7	2.7	
				Bottom	7	24.7 24.7	24.7	8.6 8.6	8.6	33.4 33.4	33.4	100.1 101.1	100.6	6.9 7.0	7.0		0.9 0.9	0.9		3.9 3.8	3.9	
G4	Rainy	Rough	12:27	Surface	1	24.9 24.9	24.9	8.6 8.6	8.6	33.1 33.1	33.1	112.6 111.6	112.1	7.7 7.7	7.7	7.5	0.5 0.5	0.5	0.5	3.0 2.9	3.0	4.7
				Middle	4	24.8 24.8	24.8	8.6 8.6	8.6	33.3 33.2	33.3	105.9 105.9	105.9	7.3 7.3	7.3		0.5 0.5	0.5		7.4 7.3	7.4	
				Bottom	7	24.6 24.6	24.6	8.6 8.6	8.6	33.5 33.5	33.5	102.3 101.5	101.9	7.0 7.0	7.0		0.5 0.6	0.6		3.6 3.6	3.6	
M1	Rainy	Rough	12:05	Surface	1	24.9 25.0	25.0	8.7 8.7	8.7	32.9 32.9	32.9	115.2 115.8	115.5	7.9 7.9	7.9	7.9	0.6 0.6	0.6	0.7	4.4 4.3	4.4	6.2
				Middle	3	24.9 24.9	24.9	8.7 8.7	8.7	33.0 33.0	33.0	114.2 115.5	114.9	7.8 7.9	7.9		0.6 0.6	0.6		9.9 9.6	9.8	
				Bottom	5	24.9 24.8	24.9	8.6 8.7	8.7	33.1 33.1	33.1	107.7 106.4	107.1	7.4 7.3	7.4		0.8 0.7	0.8		4.4 4.3	4.4	
M2	Rainy	Rough	11:55	Surface	1	25.0 25.0	25.0	8.6 8.7	8.7	33.0 33.0	33.0	120.2 120.6	120.4	8.2 8.3	8.3	8.1	0.6 0.6	0.6	0.8	6.0 5.9	6.0	5.1
				Middle	5.5	24.9 24.8	24.9	8.6 8.6	8.6	33.1 33.2	33.2	114.4 112.0	113.2	7.9 7.7	7.8		0.6 0.7	0.7		4.4 4.5	4.5	
				Bottom	10	24.4 24.4	24.4	8.6 8.6	8.6	33.8 33.8	33.8	93.8 96.1	95.0	6.5 6.6	6.6		1.2 1.1	1.2		4.8 4.5	4.7	
M3	Rainy	Rough	12:22	Surface	1	24.9 24.9	24.9	8.7 8.6	8.7	32.9 32.8	32.9	114.1 109.1	111.6	7.8 7.5	7.7	7.6	0.6 0.6	0.6	0.8	3.7 3.8	3.8	4.8
				Middle	4	24.8 24.9	24.9	8.7 8.7	8.7	33.1 33.1	33.1	107.6 108.7	108.2	7.4 7.5	7.5		0.8 0.9	0.9		6.4 6.6	6.5	
				Bottom	7	24.6 24.6	24.6	8.6 8.6	8.6	33.5 33.5	33.5	99.3 99.6	99.5	6.8 6.9	6.9		0.9 0.9	0.9		4.3 4.1	4.2	
M4	Rainy	Rough	11:46	Surface	1	24.9 24.9	24.9	8.6 8.7	8.7	32.9 32.8	32.9	112.9 112.8	112.9	7.8 7.7	7.8	7.8	0.6 0.6	0.6	0.6	3.9 4.0	4.0	4.0
				Middle	5	24.9 24.9	24.9	8.6 8.7	8.7	32.9 32.9	32.9	112.2 111.5	111.9	7.7 7.7	7.7		0.5 0.6	0.6		4.2 4.2	4.2	
				Bottom	9	24.9 24.9	24.9	8.6 8.7	8.7	32.9 32.9	32.9	109.2 107.3	108.3	7.5 7.4	7.5		0.6 0.7	0.7		3.8 3.6	3.7	
M5	Rainy	Rough	12:35	Surface	1	24.7 24.7	24.7	8.6 8.6	8.6	33.3 33.3	33.3	106.0 105.4	105.7	7.3 7.2	7.3	7.1	0.7 0.7	0.7	0.8	4.6 4.7	4.7	4.3
				Middle	5.5	24.5 24.5	24.5	8.6 8.6	8.6	33.7 33.7	33.7	99.0 98.6	98.8	6.8 6.8	6.8		0.8 0.8	0.8		4.7 4.7	4.7	
				Bottom	10	24.5 24.5	24.5	8.6 8.6	8.6	33.7 33.7	33.7	97.0 97.4	97.2	6.7 6.7	6.7		0.8 0.9	0.9		3.4 3.4	3.4	
M6	Rainy	Rough	12:32	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	0.7	-	-	5.4
				Middle	1.3	24.8 24.9	24.9	8.6 8.6	8.6	33.3 33.3	33.3	108.9 108.8	108.9	7.5 7.5	7.5		0.7 0.7	0.7		5.5 5.3	5.4	
				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 11 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.6 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.9 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.4 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.9 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.3 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 8.0 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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



**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction**  
**Water Quality Monitoring Results on 11 May 2018**

**(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	Rough	10:45	Surface	1	24.4 24.4	24.4	8.2 8.2	8.2	33.6 33.6	33.6	94.4 94.9	94.7	6.5 6.6	6.6	6.6	1.3 1.3	1.3	1.5	5.4 5.1	5.3	6.3
				Middle	9	24.3 24.3	24.3	8.2 8.2	8.2	33.6 33.6	33.6	94.7 95.2	95.0	6.5 6.6	6.6		1.3 1.2	1.3		7.3 7.5	7.4	
				Bottom	17	24.3 24.3	24.3	8.2 8.2	8.2	33.7 33.7	33.7	94.8 94.7	94.8	6.6 6.5	6.6		1.9 2.1	2.0		6.3 6.3	6.3	
C2	Cloudy	Rough	09:17	Surface	1	24.3 24.3	24.3	8.1 8.1	8.1	33.5 33.5	33.5	96.7 96.5	96.6	6.7 6.7	6.7	6.7	1.0 1.0	1.0	1.3	5.2 5.4	5.3	5.1
				Middle	16.5	24.3 24.3	24.3	8.1 8.1	8.1	33.6 33.5	33.6	95.3 95.5	95.4	6.6 6.6	6.6		1.0 1.0	1.0		3.9 3.8	3.9	
				Bottom	32	24.4 24.4	24.4	8.1 8.1	8.1	33.6 33.6	33.6	94.6 94.3	94.5	6.5 6.5	6.5		1.9 2.0	2.0		6.2 5.9	6.1	
G1	Cloudy	Rough	10:00	Surface	1	24.3 24.3	24.3	8.2 8.2	8.2	33.1 33.1	33.1	92.7 92.7	92.7	6.4 6.4	6.4	6.4	0.5 0.5	0.5	1.3	5.1 5.1	5.1	5.3
				Middle	4	24.4 24.4	24.4	8.2 8.2	8.2	33.6 33.6	33.6	90.4 91.0	90.7	6.2 6.3	6.3		1.5 1.4	1.5		4.5 4.7	4.6	
				Bottom	7	24.4 24.4	24.4	8.2 8.2	8.2	33.6 33.6	33.6	89.3 88.2	88.8	6.2 6.1	6.2		1.9 1.9	1.9		6.1 6.5	6.3	
G2	Cloudy	Rough	09:44	Surface	1	24.3 24.3	24.3	8.1 8.2	8.2	33.5 33.5	33.5	95.1 95.0	95.1	6.6 6.6	6.6	6.5	0.8 0.8	0.8	1.3	4.9 5.0	5.0	5.3
				Middle	5	24.4 24.4	24.4	8.1 8.2	8.2	33.5 33.5	33.5	93.3 93.1	93.2	6.4 6.4	6.4		1.2 1.2	1.2		4.9 5.0	5.0	
				Bottom	9	24.4 24.4	24.4	8.1 8.2	8.2	33.6 33.6	33.6	90.4 91.3	90.9	6.2 6.3	6.3		1.8 1.9	1.9		5.8 5.7	5.8	
G3	Cloudy	Rough	10:07	Surface	1	24.4 24.4	24.4	8.1 8.2	8.2	33.1 33.1	33.1	90.0 89.4	89.7	6.2 6.2	6.2	6.2	0.9 0.9	0.9	1.1	3.4 3.3	3.4	3.4
				Middle	4	24.4 24.4	24.4	8.1 8.2	8.2	33.5 33.5	33.5	89.3 88.6	89.0	6.2 6.1	6.2		1.2 1.3	1.3		4.3 4.3	4.3	
				Bottom	7	24.4 24.4	24.4	8.1 8.2	8.2	33.5 33.5	33.5	87.6 87.1	87.4	6.1 6.0	6.1		1.1 1.3	1.2		2.5 2.5	2.5	
G4	Cloudy	Rough	10:23	Surface	1	24.5 24.5	24.5	8.1 8.2	8.2	33.5 33.5	33.5	90.2 90.3	90.3	6.2 6.2	6.2	6.2	1.2 1.1	1.2	1.6	2.6 2.5	2.6	3.4
				Middle	4	24.4 24.4	24.4	8.1 8.2	8.2	33.5 33.5	33.5	90.2 90.3	90.3	6.2 6.2	6.2		1.2 1.2	1.2		2.6 2.6	2.6	
				Bottom	7	24.4 24.4	24.4	8.1 8.2	8.2	33.6 33.6	33.6	81.4 88.7	85.1	5.6 6.1	5.9		2.3 2.3	2.3		4.9 4.9	4.9	
M1	Cloudy	Rough	09:52	Surface	1	24.4 24.4	24.4	8.1 8.1	8.1	33.5 33.4	33.5	92.1 90.9	91.5	6.4 6.3	6.4	6.4	1.3 1.1	1.2	1.6	2.4 2.5	2.5	2.9
				Middle	3	24.4 24.4	24.4	8.1 8.2	8.2	33.5 33.5	33.5	91.6 91.4	91.5	6.3 6.3	6.3		1.6 1.6	1.6		3.4 3.4	3.4	
				Bottom	5	24.4 24.4	24.4	8.1 8.2	8.2	33.6 33.5	33.6	90.7 91.3	91.0	6.3 6.3	6.3		2.1 2.1	2.1		2.9 2.9	2.9	
M2	Cloudy	Rough	09:36	Surface	1	24.3 24.3	24.3	8.1 8.2	8.2	33.5 33.5	33.5	95.7 95.2	95.5	6.6 6.6	6.6	6.6	0.5 0.5	0.5	0.7	3.5 3.4	3.5	4.5
				Middle	6	24.3 24.3	24.3	8.2 8.2	8.2	33.5 33.5	33.5	93.5 92.1	92.8	6.5 6.4	6.5		0.7 0.8	0.8		5.6 5.7	5.7	
				Bottom	11	24.3 24.3	24.3	8.2 8.2	8.2	33.5 33.5	33.5	93.2 92.5	92.9	6.4 6.4	6.4		0.7 0.7	0.7		4.2 4.4	4.3	
M3	Cloudy	Rough	10:13	Surface	1	24.4 24.4	24.4	8.2 8.2	8.2	33.4 33.3	33.4	92.4 91.7	92.1	6.4 6.3	6.4	6.4	1.2 1.1	1.2	1.2	4.3 4.4	4.4	5.5
				Middle	4	24.4 24.4	24.4	8.2 8.2	8.2	33.4 33.5	33.5	92.3 91.8	92.1	6.4 6.3	6.4		1.0 0.9	1.0		5.3 5.4	5.4	
				Bottom	7	24.4 24.4	24.4	8.2 8.2	8.2	33.6 33.6	33.6	87.4 84.8	86.1	6.0 5.8	5.9		1.2 1.3	1.3		6.6 6.7	6.7	
M4	Cloudy	Rough	09:26	Surface	1	24.3 24.3	24.3	8.2 8.2	8.2	33.5 33.5	33.5	96.6 96.0	96.3	6.7 6.6	6.7	6.6	0.7 0.7	0.7	1.0	5.7 5.7	5.7	5.4
				Middle	5	24.3 24.3	24.3	8.2 8.1	8.2	33.6 33.6	33.6	94.2 94.5	94.4	6.5 6.5	6.5		1.0 1.1	1.1		5.4 5.4	5.4	
				Bottom	9	24.3 24.3	24.3	8.2 8.2	8.2	33.6 33.6	33.6	92.8 92.7	92.8	6.4 6.4	6.4		1.2 1.2	1.2		5.2 5.2	5.2	
M5	Cloudy	Rough	10:38	Surface	1	24.4 24.4	24.4	8.1 8.2	8.2	33.6 33.6	33.6	92.1 92.2	92.2	6.4 6.4	6.4	6.4	1.4 1.4	1.4	1.6	6.0 6.2	6.1	5.8
				Middle	5.5	24.4 24.4	24.4	8.1 8.2	8.2	33.6 33.6	33.6	90.9 90.7	90.8	6.3 6.3	6.3		1.7 1.6	1.7		4.9 4.9	4.9	
				Bottom	10	24.3 24.3	24.3	8.1 8.2	8.2	33.7 33.6	33.7	91.7 91.6	91.7	6.3 6.3	6.3		1.6 1.7	1.7		6.4 6.3	6.4	
M6	Cloudy	Rough	10:33	Surface	-	-	-	-	-	-	-	-	-	-	6.3	-	-	0.8	-	-	6.8	
				Middle	2.1	24.4 24.4	24.4	8.1 8.1	8.1	33.6 33.6	33.6	91.2 92.0	91.6	6.3 6.3		6.3	0.8 0.8		0.8	6.8 6.7		6.8
				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 11 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 5.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 5.9 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.7 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.3 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.7 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.3 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.7 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 8.3 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level		<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 11 May 2018**

**(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	Rough	15:44	Surface	1	24.4 24.4	24.4	7.9 8.0	8.0	33.6 33.7	33.7	97.7 97.2	97.5	6.7 6.7	6.7	6.7	6.7	6.7	1.3 1.2	1.3	2.9	5.5 5.6	5.6	5.9
				Middle	9	24.3 24.3	24.3	7.9 7.9	7.9	33.7 33.7	33.7	94.8 94.0	94.4	6.6 6.5	6.6	6.6	6.6	6.6	2.6 3.2	2.9		5.9 5.7	5.8	
				Bottom	17	24.3 24.3	24.3	7.9 7.9	7.9	33.7 33.7	33.7	93.4 93.5	93.5	6.5 6.5	6.5	6.5	6.5	6.5	4.5 4.4	4.5		6.3 6.4	6.4	
C2	Fine	Rough	14:26	Surface	1	24.3 24.3	24.3	8.1 8.1	8.1	33.4 33.3	33.4	94.1 93.2	93.7	6.5 6.5	6.5	6.5	6.5	6.5	0.8 0.9	0.9	1.5	5.6 5.6	5.6	5.2
				Middle	16.5	24.3 24.3	24.3	8.2 8.2	8.2	33.5 33.5	33.5	92.5 92.6	92.6	6.4 6.4	6.4	6.4	6.4	6.4	1.4 1.4	1.4		5.4 5.5	5.5	
				Bottom	32	24.3 24.3	24.3	8.2 8.1	8.2	33.6 33.6	33.6	92.7 92.6	92.7	6.4 6.4	6.4	6.4	6.4	6.4	2.3 2.2	2.3		4.6 4.5	4.6	
G1	Fine	Rough	15:01	Surface	1	24.5 24.6	24.6	8.0 8.0	8.0	33.5 33.5	33.5	92.9 92.3	92.6	6.4 6.4	6.4	6.4	6.4	6.4	0.9 0.9	0.9	1.0	5.5 5.4	5.5	5.1
				Middle	4	24.5 24.4	24.5	8.0 8.0	8.0	33.5 33.5	33.5	92.8 93.1	93.0	6.4 6.4	6.4	6.4	6.4	6.4	0.9 0.9	0.9		7.1 7.0	7.1	
				Bottom	7	24.4 24.4	24.4	8.0 8.0	8.0	33.6 33.5	33.6	91.1 92.8	92.0	6.3 6.4	6.4	6.4	6.4	6.4	1.1 1.1	1.1		2.6 2.5	2.6	
G2	Fine	Rough	14:50	Surface	1	24.4 24.5	24.5	7.9 8.0	8.0	33.3 33.3	33.3	94.7 94.2	94.5	6.5 6.5	6.5	6.5	6.5	6.5	0.9 1.0	1.0	1.0	5.4 5.5	5.5	5.0
				Middle	5	24.4 24.4	24.4	7.9 8.0	8.0	33.5 33.5	33.5	93.9 93.7	93.8	6.5 6.5	6.5	6.5	6.5	6.5	1.1 1.1	1.1		4.3 4.4	4.4	
				Bottom	9	24.3 24.3	24.3	7.9 8.0	8.0	33.5 33.5	33.5	95.1 95.6	95.4	6.6 6.6	6.6	6.6	6.6	6.6	1.0 0.9	1.0		5.0 5.1	5.1	
G3	Fine	Rough	15:08	Surface	1	24.5 24.5	24.5	8.0 8.0	8.0	33.4 33.4	33.4	92.5 90.5	91.5	6.4 6.2	6.4	6.3	6.3	6.3	1.3 1.3	1.3	1.6	4.0 3.8	3.9	4.0
				Middle	4	24.4 24.4	24.4	8.0 8.0	8.0	33.5 33.5	33.5	92.1 89.3	90.7	6.4 6.2	6.4	6.3	6.3	6.3	1.2 1.1	1.2		3.3 3.3	3.3	
				Bottom	7	24.4 24.4	24.4	8.0 8.0	8.0	33.6 33.6	33.6	90.0 87.9	89.0	6.2 6.1	6.2	6.2	6.2	6.2	2.2 2.1	2.2		5.0 4.8	4.9	
G4	Fine	Rough	15:24	Surface	1	24.5 24.6	24.6	7.9 7.9	7.9	33.6 33.6	33.6	92.4 92.6	92.5	6.4 6.4	6.4	6.4	6.4	6.4	1.7 1.4	1.6	1.9	5.4 5.5	5.5	6.7
				Middle	4	24.4 24.5	24.5	7.9 8.0	8.0	33.6 33.6	33.6	92.4 92.1	92.3	6.4 6.3	6.4	6.4	6.4	6.4	1.9 1.7	1.8		8.1 8.1	8.1	
				Bottom	7	24.4 24.4	24.4	7.9 8.0	8.0	33.6 33.6	33.6	91.3 91.9	91.6	6.3 6.3	6.3	6.3	6.3	6.3	2.3 2.2	2.3		6.5 6.4	6.5	
M1	Fine	Rough	14:56	Surface	1	24.4 24.4	24.4	7.9 8.0	8.0	33.5 33.5	33.5	91.6 90.9	91.3	6.3 6.3	6.3	6.3	6.3	6.3	1.4 1.3	1.4	1.8	4.1 4.0	4.1	4.4
				Middle	3	24.4 24.4	24.4	7.9 8.0	8.0	33.5 33.5	33.5	90.9 90.7	90.8	6.3 6.3	6.3	6.3	6.3	6.3	1.8 1.5	1.7		4.3 4.3	4.3	
				Bottom	5	24.4 24.4	24.4	7.9 8.0	8.0	33.5 33.5	33.5	89.8 90.1	90.0	6.2 6.2	6.2	6.2	6.2	6.2	2.3 2.0	2.2		4.8 4.6	4.7	
M2	Fine	Rough	14:43	Surface	1	24.4 24.4	24.4	7.9 8.0	8.0	33.3 33.3	33.3	94.8 94.9	94.9	6.6 6.6	6.6	6.6	6.6	6.6	0.7 0.7	0.7	0.7	5.9 6.0	6.0	5.4
				Middle	6	24.4 24.4	24.4	7.9 8.0	8.0	33.5 33.5	33.5	94.1 94.1	94.1	6.5 6.5	6.5	6.5	6.5	6.5	0.8 0.8	0.8		3.8 3.9	3.9	
				Bottom	11	24.4 24.4	24.4	7.9 8.0	8.0	33.5 33.5	33.5	95.3 95.6	95.5	6.6 6.6	6.6	6.6	6.6	6.6	0.6 0.7	0.7		6.0 6.3	6.2	
M3	Fine	Rough	15:15	Surface	1	24.5 24.5	24.5	7.9 8.0	8.0	33.3 33.3	33.3	91.2 90.2	90.7	6.3 6.2	6.3	6.3	6.3	6.3	0.8 0.8	0.8	1.2	3.4 3.4	3.4	3.7
				Middle	4	24.5 24.5	24.5	7.9 8.0	8.0	33.6 33.5	33.6	89.4 91.4	90.4	6.2 6.3	6.3	6.3	6.3	6.3	0.9 0.8	0.9		3.8 3.7	3.8	
				Bottom	7	24.4 24.4	24.4	7.9 7.9	7.9	33.6 33.6	33.6	81.4 81.4	81.4	5.6 5.6	5.6	5.6	5.6	5.6	1.9 1.9	1.9		3.7 3.8	3.8	
M4	Fine	Rough	14:35	Surface	1	24.4 24.4	24.4	8.0 8.0	8.0	33.4 33.4	33.4	97.5 96.9	97.2	6.7 6.7	6.7	6.7	6.7	6.7	0.6 0.5	0.6	0.9	4.1 4.3	4.2	3.9
				Middle	5	24.4 24.4	24.4	8.0 8.0	8.0	33.6 33.6	33.6	95.8 95.9	95.9	6.6 6.6	6.6	6.6	6.6	6.6	0.8 0.7	0.8		4.8 4.7	4.8	
				Bottom	9	24.4 24.4	24.4	8.0 8.0	8.0	33.6 33.6	33.6	94.8 94.8	94.8	6.5 6.5	6.5	6.5	6.5	6.5	1.3 1.4	1.4		2.5 2.7	2.6	
M5	Fine	Rough	15:36	Surface	1	24.5 24.5	24.5	7.9 7.9	7.9	33.6 33.6	33.6	97.4 97.3	97.4	6.7 6.7	6.7	6.7	6.7	6.7	1.0 1.1	1.1	1.8	2.2 2.2	2.2	2.8
				Middle	5.5	24.4 24.4	24.4	7.9 7.9	7.9	33.7 33.7	33.7	95.8 95.2	95.5	6.6 6.6	6.6	6.6	6.6	6.6	1.8 2.0	1.9		1.0 1.1	1.1	
				Bottom	10	24.4 24.4	24.4	7.9 7.9	7.9	33.6 33.7	33.7	94.5 94.7	94.6	6.5 6.5	6.5	6.5	6.5	6.5	2.3 2.4	2.4		5.1 5.0	5.1	
M6	Fine	Rough	15:31	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	-	-	7.9	
				Middle	2	24.4 24.4	24.4	8.0 8.0	8.0	33.6 33.6	33.6	92.2 92.4	92.3	6.4 6.4	6.4	6.4	6.4	6.4	1.7 1.6		1.7	7.9 7.8		7.9
				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 14 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 4.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 4.8 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.1 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.6 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.1 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.4 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level		<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 14 May 2018**

**(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	12:46	Surface	1	28.0 28.2	28.1	8.4 8.4	8.4	34.6 34.6	34.6	123.6 121.8	122.7	8.6 8.5	8.6	8.0	1.3 1.4	1.4	2.1	4.5 4.6	4.6	4.1
				Middle	9	26.9 26.8	26.9	8.4 8.4	8.4	35.7 34.9	35.3	105.6 105.7	105.7	7.4 7.4	7.4		1.3 1.3	1.3		5.1 5.1	5.1	
				Bottom	17	23.9 24.0	24.0	8.3 8.3	8.3	38.6 35.6	37.1	94.5 95.4	95.0	6.6 6.7	6.7		3.5 3.8	3.7		2.7 2.7	2.7	
C2	Sunny	Moderate	11:20	Surface	1	27.5 27.5	27.5	8.4 8.5	8.5	34.5 34.6	34.6	112.8 111.5	112.2	7.9 7.8	7.9	7.4	1.4 1.4	1.4	2.5	4.6 4.7	4.7	5.0
				Middle	16.5	26.5 26.5	26.5	8.3 8.4	8.4	35.1 35.1	35.1	97.3 100.2	98.8	6.8 7.0	6.9		2.4 2.5	2.5		4.5 4.6	4.6	
				Bottom	32	25.2 25.0	25.1	8.4 8.4	8.4	35.0 35.3	35.2	89.0 89.8	89.4	6.3 6.3	6.3		3.7 3.6	3.7		5.7 5.6	5.7	
G1	Sunny	Moderate	12:04	Surface	1	27.4 27.4	27.4	8.5 8.5	8.5	34.7 34.7	34.7	124.3 120.1	122.2	8.6 8.4	8.5	8.5	1.4 1.4	1.4	2.3	3.7 3.6	3.7	4.7
				Middle	4	26.9 26.9	26.9	8.4 8.4	8.4	35.2 35.2	35.2	122.2 120.7	121.5	8.5 8.4	8.5		1.6 1.8	1.7		4.1 4.0	4.1	
				Bottom	7	26.2 26.2	26.2	8.3 8.3	8.3	35.6 35.4	35.5	108.9 107.7	108.3	7.6 7.5	7.6		3.6 3.9	3.8		6.1 6.3	6.2	
G2	Sunny	Moderate	11:51	Surface	1	27.3 27.3	27.3	8.4 8.4	8.4	34.8 34.8	34.8	126.5 125.7	126.1	8.8 8.7	8.8	8.3	1.4 1.3	1.4	1.9	4.5 4.3	4.4	4.8
				Middle	5	26.8 26.8	26.8	8.4 8.4	8.4	35.4 35.4	35.4	112.3 111.6	112.0	7.8 7.8	7.8		1.9 1.9	1.9		4.1 4.2	4.2	
				Bottom	9	26.1 26.1	26.1	8.3 8.3	8.3	35.6 35.7	35.7	99.3 102.5	100.9	6.9 7.2	7.1		2.4 2.5	2.5		5.8 6.0	5.9	
G3	Sunny	Moderate	12:14	Surface	1	27.6 27.7	27.7	8.5 8.5	8.5	34.2 34.1	34.2	114.7 99.1	106.9	8.0 6.9	7.5	7.6	1.5 1.5	1.5	1.9	2.9 3.0	3.0	3.6
				Middle	4	27.0 27.0	27.0	8.4 8.4	8.4	35.0 35.0	35.0	109.7 109.9	109.8	7.6 7.6	7.6		1.9 1.9	1.9		4.6 4.6	4.6	
				Bottom	7	26.7 26.7	26.7	8.4 8.4	8.4	35.5 35.5	35.5	100.3 102.2	101.3	7.0 7.1	7.1		2.3 2.2	2.3		3.1 3.1	3.1	
G4	Sunny	Moderate	12:25	Surface	1	28.0 27.4	27.7	8.5 8.4	8.5	34.3 34.8	34.6	123.2 121.6	122.4	8.5 8.4	8.5	8.4	1.5 1.4	1.5	2.3	4.2 4.2	4.2	3.7
				Middle	4.5	27.0 27.0	27.0	8.4 8.4	8.4	35.2 35.2	35.2	120.0 119.9	120.0	8.3 8.3	8.3		1.5 1.6	1.6		3.2 3.3	3.3	
				Bottom	8	26.3 26.3	26.3	8.3 8.3	8.3	35.4 35.4	35.4	99.8 100.6	100.2	7.0 7.0	7.0		3.7 3.8	3.8		3.6 3.7	3.7	
M1	Sunny	Moderate	11:58	Surface	1	27.3 27.3	27.3	8.5 8.5	8.5	34.7 34.7	34.7	124.5 118.6	121.6	8.6 8.3	8.5	8.4	1.4 1.5	1.5	1.7	2.7 2.7	2.7	4.2
				Middle	3	27.0 27.1	27.1	8.4 8.4	8.4	35.0 35.0	35.0	119.5 119.7	119.6	8.3 8.3	8.3		1.7 1.7	1.7		4.0 4.0	4.0	
				Bottom	5	26.8 26.6	26.8	8.4 8.4	8.4	35.4 35.3	35.4	108.3 107.7	108.0	7.5 7.5	7.5		1.7 1.9	1.8		5.8 5.7	5.8	
M2	Sunny	Moderate	11:42	Surface	1	27.3 27.3	27.3	8.4 8.4	8.4	34.7 34.7	34.7	126.1 123.9	125.0	8.8 8.6	8.7	8.3	1.5 1.4	1.5	2.7	4.4 4.3	4.4	4.3
				Middle	5.5	26.4 26.4	26.4	8.3 8.4	8.4	36.1 35.2	35.7	111.4 114.2	112.8	7.8 7.9	7.9		3.2 3.2	3.2		4.2 4.1	4.2	
				Bottom	10	26.0 25.9	26.0	8.3 8.3	8.3	35.6 35.8	35.7	92.1 96.5	94.3	6.5 6.8	6.7		3.3 3.6	3.5		4.2 4.1	4.2	
M3	Sunny	Moderate	12:18	Surface	1	27.7 27.6	27.7	8.4 8.4	8.4	34.3 34.4	34.4	108.1 105.3	106.7	7.5 7.3	7.4	7.5	1.4 1.5	1.5	2.1	5.3 5.2	5.3	4.6
				Middle	4	26.8 27.0	26.9	8.4 8.4	8.4	35.2 35.2	35.2	104.5 111.1	107.8	7.3 7.7	7.5		2.0 2.0	2.0		4.6 4.7	4.7	
				Bottom	7	26.6 26.7	26.7	8.3 8.4	8.4	35.7 35.6	35.7	102.3 101.4	101.9	7.2 7.1	7.2		2.7 2.8	2.8		3.8 3.8	3.8	
M4	Sunny	Moderate	11:29	Surface	1	27.4 27.4	27.4	8.4 8.5	8.5	34.6 34.6	34.6	120.9 119.3	120.1	8.5 8.4	8.5	7.8	1.4 1.4	1.4	1.6	4.2 4.2	4.2	3.5
				Middle	5	27.3 27.1	27.2	8.4 8.4	8.4	34.8 35.0	34.9	98.1 103.1	100.6	6.9 7.2	7.1		1.5 1.6	1.6		2.6 2.6	2.6	
				Bottom	9	27.2 27.0	27.1	8.4 8.4	8.4	35.0 35.2	35.1	91.7 94.2	93.0	6.4 6.6	6.5		1.5 1.8	1.7		3.7 3.6	3.7	
M5	Sunny	Moderate	12:37	Surface	1	27.4 27.5	27.5	8.4 8.4	8.4	34.7 34.7	34.7	121.8 120.7	121.3	8.5 8.4	8.5	8.4	1.7 1.4	1.6	2.2	4.5 4.4	4.5	3.6
				Middle	5.5	27.1 27.2	27.2	8.4 8.4	8.4	35.0 34.9	35.0	118.4 116.4	117.4	8.2 8.1	8.2		1.5 1.4	1.5		3.5 3.4	3.5	
				Bottom	10	26.4 26.4	26.4	8.4 8.4	8.4	35.1 35.1	35.1	118.8 117.4	118.1	8.2 8.1	8.2		3.5 3.6	3.6		2.9 2.9	2.9	
M6	Sunny	Moderate	12:31	Surface	-	-	-	-	-	-	-	-	-	-	7.1	-	-	1.4	-	-	4.1	
				Middle	1.6	27.3 27.3	27.3	8.4 8.4	8.4	34.8 34.8	34.8	102.3 101.9	102.1	7.1 7.1		7.1	1.4 1.4		1.4	4.2 3.9		4.1
				Bottom	-	-	-	-	-	-	-	-	-	-		-	-		-	0.0 0.0		0.0

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

**Appendix I - Action and Limit Levels for Marine Water Quality on 14 May 2018 (Mid-Flood Tide)**

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

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 14 May 2018**

**(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	18:06	Surface	1	27.3 27.2	27.3	8.4 8.4	8.4	34.4 34.6	34.5	113.4 112.2	112.8	7.9 8.0	7.9	7.9	1.8 1.8	1.8	2.9	4.4 4.4	4.4	4.9
				Middle	9	26.0 26.3	26.2	8.3 8.3	8.3	35.4 35.3	35.4	115.3 111.8	113.6	8.0 7.8	7.9	7.9	2.9 2.6	2.8		4.9 4.9	4.9	
				Bottom	17	25.0 24.4	24.7	8.4 8.3	8.4	35.2 35.7	35.5	110.7 108.7	109.7	7.7 7.5	7.6	7.6	4.0 4.1	4.1		5.4 5.5	5.5	
C2	Sunny	Moderate	16:37	Surface	1	27.3 27.3	27.3	8.4 8.4	8.4	34.7 34.8	34.8	121.3 120.9	121.1	8.4 8.3	8.4	8.1	1.5 1.5	1.5	2.9	3.7 3.6	3.7	3.7
				Middle	16.5	25.9 25.6	25.8	8.3 8.3	8.3	35.6 35.2	35.4	104.9 118.0	111.5	7.3 8.2	7.8	8.1	3.2 3.3	3.3		3.0 3.0	3.0	
				Bottom	32	25.3 25.2	25.3	8.3 8.3	8.3	35.7 35.0	35.4	96.5 96.9	96.7	6.7 6.8	6.8	6.8	3.9 4.0	4.0		4.5 4.3	4.4	
G1	Sunny	Moderate	17:19	Surface	1	28.5 28.4	28.5	8.4 8.4	8.4	34.6 34.6	34.6	122.7 124.0	123.4	8.4 8.5	8.5	8.3	1.9 1.8	1.9	1.8	4.4 4.4	4.4	3.8
				Middle	3.5	27.7 28.0	27.9	8.4 8.4	8.4	34.8 34.7	34.8	118.0 115.5	116.8	8.1 8.0	8.1	8.1	1.5 1.5	1.5		4.1 4.2	4.2	
				Bottom	6	27.0 27.0	27.0	8.4 8.4	8.4	35.2 35.1	35.2	112.2 113.4	112.8	7.8 7.9	7.9	7.9	2.0 2.1	2.1		2.9 2.9	2.9	
G2	Sunny	Moderate	17:08	Surface	1	27.9 28.4	28.2	8.4 8.4	8.4	34.7 34.6	34.7	123.9 123.5	123.7	8.5 8.5	8.5	8.3	1.4 1.4	1.4	1.7	4.4 4.4	4.4	3.4
				Middle	4.5	27.2 27.2	27.2	8.4 8.5	8.5	34.9 34.9	34.9	117.2 116.6	116.9	8.1 8.1	8.1	8.1	1.4 1.5	1.5		3.0 3.0	3.0	
				Bottom	8	26.6 26.9	26.8	8.4 8.4	8.4	35.8 35.3	35.6	115.3 114.7	115.0	8.0 8.0	8.0	8.0	2.1 2.1	2.1		2.9 2.8	2.9	
G3	Sunny	Moderate	17:27	Surface	1	28.7 28.8	28.8	8.4 8.4	8.4	34.2 34.2	34.2	109.2 107.7	108.5	7.6 7.5	7.6	7.3	1.5 1.5	1.5	1.6	4.5 4.5	4.5	4.2
				Middle	3.5	27.6 27.6	27.6	8.4 8.4	8.4	34.7 34.7	34.7	100.3 100.8	100.6	7.0 7.0	7.0	7.0	1.4 1.5	1.5		4.5 4.6	4.6	
				Bottom	6	27.1 27.0	27.1	8.4 8.4	8.4	35.0 35.1	35.1	103.4 102.9	103.2	7.2 7.2	7.2	7.2	1.8 1.8	1.8		3.3 3.4	3.4	
G4	Sunny	Moderate	17:38	Surface	1	28.0 28.1	28.1	8.4 8.4	8.4	34.7 34.7	34.7	121.2 119.2	120.2	8.3 8.2	8.3	8.1	1.5 1.4	1.5	2.2	5.0 5.0	5.1	5.1
				Middle	4	27.5 27.5	27.5	8.4 8.4	8.4	34.8 34.8	34.8	113.3 111.4	111.9	7.8 7.7	7.8	8.1	1.5 1.5	1.5		5.1 5.2	5.2	
				Bottom	7	26.3 26.3	26.3	8.3 8.3	8.3	35.4 35.4	35.4	113.9 114.1	114.0	7.9 7.9	7.9	7.9	3.7 3.6	3.7		5.2 4.9	5.1	
M1	Sunny	Moderate	17:15	Surface	1	28.3 28.4	28.4	8.4 8.4	8.4	34.6 34.6	34.6	115.9 120.8	118.4	8.0 8.3	8.2	8.1	1.5 1.5	1.5	1.5	2.6 2.6	2.6	3.9
				Middle	3	27.6 27.9	27.8	8.4 8.4	8.4	34.7 34.7	34.7	115.5 113.8	114.7	8.0 7.9	8.0	8.0	1.4 1.4	1.5		4.4 4.4	4.4	
				Bottom	5	27.1 27.1	27.1	8.4 8.5	8.5	35.0 35.0	35.0	104.6 106.4	105.5	7.3 7.4	7.4	7.4	1.5 1.7	1.6		4.8 4.6	4.7	
M2	Sunny	Moderate	16:58	Surface	1	27.9 28.8	28.4	8.4 8.4	8.4	34.7 34.4	34.6	118.8 121.6	120.2	8.2 8.3	8.3	8.2	1.6 1.5	1.6	1.7	3.7 3.6	3.7	3.9
				Middle	5.5	27.0 27.0	27.0	8.4 8.5	8.5	35.2 35.2	35.2	114.5 115.8	115.2	7.9 8.0	8.0	8.0	1.7 1.6	1.7		3.5 3.5	3.5	
				Bottom	10	26.9 26.9	26.9	8.4 8.4	8.4	35.3 35.3	35.3	97.6 99.1	98.4	6.8 6.9	6.9	6.9	1.8 1.9	1.9		4.5 4.5	4.5	
M3	Sunny	Moderate	17:31	Surface	1	28.8 27.1	28.0	8.4 8.4	8.4	34.2 33.2	33.7	110.8 108.7	109.8	7.7 7.5	7.6	7.1	1.5 1.6	1.6	1.8	2.9 2.9	2.9	3.1
				Middle	3.5	27.6 26.3	27.0	8.4 8.4	8.4	34.6 33.3	34.0	94.6 93.3	94.0	6.6 6.5	6.6	7.1	1.6 1.6	1.6		2.7 2.7	2.7	
				Bottom	6	27.0 25.6	26.3	8.4 8.4	8.4	35.1 33.8	34.5	104.3 104.1	104.2	7.3 7.3	7.3	7.3	2.1 2.0	2.1		3.6 3.5	3.6	
M4	Sunny	Moderate	16:46	Surface	1	28.9 27.1	28.0	8.4 8.4	8.4	34.5 34.2	34.4	119.6 118.8	119.2	8.3 8.2	8.3	8.1	1.4 1.4	1.4	2.2	4.4 4.4	4.4	4.1
				Middle	5	27.1 27.1	27.1	8.5 8.5	8.5	35.1 35.1	35.1	113.2 113.5	113.4	7.9 7.9	7.9	8.1	1.5 1.5	1.5		3.3 3.3	3.3	
				Bottom	9	26.7 27.0	26.9	8.4 8.4	8.4	35.6 35.3	35.5	107.7 111.0	109.4	7.5 7.7	7.6	7.6	3.6 3.6	3.6		4.6 4.7	4.7	
M5	Sunny	Moderate	17:55	Surface	1	27.7 27.7	27.7	8.4 8.4	8.4	35.0 35.0	35.0	115.5 114.1	114.8	8.0 7.9	8.0	7.8	1.3 1.3	1.3	2.2	3.1 3.1	3.1	4.2
				Middle	5.5	27.3 27.3	27.3	8.4 8.5	8.5	35.5 35.5	35.5	108.4 107.6	108.0	7.5 7.5	7.5	7.8	1.4 1.5	1.5		4.2 4.2	4.2	
				Bottom	10	25.6 25.6	25.6	8.3 8.3	8.3	35.4 35.4	35.4	96.6 97.1	96.9	6.7 6.8	6.8	6.8	3.6 4.0	3.8		5.2 5.2	5.2	
M6	Sunny	Moderate	17:45	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	4.0
				Middle	2.1	27.1 27.1	27.1	8.4 8.4	8.4	35.2 35.1	35.2	115.4 115.9	115.7	8.0 8.0	8.0	8.0	1.2 1.1	1.2		3.9 4.0	4.0	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	0.0 0.0	

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

**Appendix I - Action and Limit Levels for Marine Water Quality on 16 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 7.8 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 8.5 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.7 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.7 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.4 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 8.1 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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



**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 16 May 2018**

**(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	13:30	Surface	1	25.8 25.8	25.8	8.0 8.0	8.0	32.0 31.9	32.0	87.3 87.3	87.3	5.9 5.9	5.9	5.9	2.1 2.0	2.1	3.8	5.5 5.3	5.4	6.3
				Middle	9	25.5 25.5	25.5	8.0 8.0	8.0	32.5 32.5	32.5	85.3 85.3	85.3	5.8 5.8	5.8		2.5 2.4	2.5		6.9 6.8	6.9	
				Bottom	17	24.6 24.6	24.6	8.2 8.2	8.2	33.9 33.9	33.9	89.5 89.6	89.6	6.1 6.2	6.2		6.5 6.8	6.7		6.7 6.7	6.7	
C2	Sunny	Calm	12:01	Surface	1	26.1 26.1	26.1	8.9 8.9	8.9	31.3 31.3	31.3	86.9 86.7	86.8	5.9 5.9	5.9	5.8	2.4 2.4	2.4	4.5	5.7 6.0	5.9	5.9
				Middle	17	25.2 25.2	25.2	8.3 8.2	8.3	33.0 32.9	33.0	84.1 83.9	84.0	5.7 5.7	5.7		4.5 4.5	4.5		5.6 5.6	5.6	
				Bottom	33	25.0 25.0	25.0	8.2 8.2	8.2	33.5 33.5	33.5	89.8 90.0	89.9	6.1 6.2	6.2		6.5 6.5	6.5		6.3 6.0	6.2	
G1	Sunny	Calm	12:48	Surface	1	26.2 26.2	26.2	8.1 8.1	8.1	33.2 33.2	33.2	105.2 104.7	105.0	7.1 7.0	7.1	6.8	1.5 1.5	1.5	2.3	4.6 4.9	4.8	5.5
				Middle	4	25.7 25.6	25.7	8.1 8.2	8.2	33.2 33.2	33.2	96.7 95.9	96.3	6.5 6.5	6.5		2.3 2.5	2.4		5.5 5.6	5.6	
				Bottom	7	25.4 25.4	25.4	8.2 8.2	8.2	33.3 33.3	33.3	93.9 93.9	93.9	6.4 6.4	6.4		2.9 2.8	2.9		6.1 5.9	6.0	
G2	Sunny	Calm	12:33	Surface	1	26.5 26.6	26.6	8.0 8.0	8.0	33.3 33.3	33.3	110.7 110.8	110.8	7.4 7.4	7.4	7.0	2.0 2.0	2.0	2.6	4.5 4.5	4.5	5.7
				Middle	5	25.6 25.6	25.6	8.1 8.1	8.1	33.4 33.4	33.4	97.8 96.9	97.4	6.6 6.6	6.6		2.8 2.6	2.7		6.0 5.8	5.9	
				Bottom	9	25.2 25.2	25.2	8.2 8.2	8.2	33.6 33.6	33.6	98.2 98.3	98.3	6.7 6.7	6.7		3.2 3.0	3.1		6.8 6.8	6.8	
G3	Sunny	Calm	12:53	Surface	1	26.5 26.6	26.6	8.1 8.1	8.1	33.2 33.2	33.2	109.0 111.9	110.5	7.3 7.5	7.4	7.2	1.6 1.3	1.5	2.1	4.4 4.5	4.5	5.4
				Middle	4	26.1 26.1	26.1	8.1 8.1	8.1	33.3 33.3	33.3	103.6 103.8	103.7	7.0 7.0	7.0		1.8 1.8	1.8		7.5 7.2	7.4	
				Bottom	7	25.2 25.3	25.3	8.2 8.2	8.2	33.6 33.6	33.6	95.5 95.3	95.4	6.5 6.5	6.5		3.1 2.9	3.0		4.3 4.4	4.4	
G4	Sunny	Calm	13:09	Surface	1	26.0 25.9	25.9	8.1 8.1	8.1	33.0 33.0	33.0	96.4 96.3	96.4	6.5 6.5	6.5	6.6	2.2 2.2	2.2	2.7	5.2 5.4	5.3	5.7
				Middle	4	25.8 25.8	25.8	8.1 8.1	8.1	33.2 33.2	33.2	97.5 97.7	97.7	6.6 6.6	6.6		2.4 2.1	2.3		7.8 7.8	7.8	
				Bottom	7	25.6 25.6	25.6	8.1 8.1	8.1	33.3 33.3	33.3	94.5 94.6	94.6	6.4 6.4	6.4		3.6 3.6	3.6		3.9 3.9	3.9	
M1	Sunny	Calm	12:42	Surface	1	25.9 26.0	26.0	8.1 8.1	8.1	33.3 33.4	33.4	101.7 102.2	102.0	6.8 6.9	6.9	6.9	1.4 1.4	1.4	1.7	4.4 4.5	4.5	5.0
				Middle	3	26.0 25.9	26.0	8.1 8.1	8.1	33.4 33.4	33.4	102.6 101.9	102.3	6.9 6.9	6.9		1.4 1.6	1.5		5.3 5.2	5.3	
				Bottom	5	25.7 25.7	25.7	8.1 8.1	8.1	33.4 33.5	33.5	99.5 99.2	99.4	6.7 6.7	6.7		2.0 2.1	2.1		5.3 5.0	5.2	
M2	Sunny	Calm	12:25	Surface	1	26.0 26.0	26.0	8.1 8.1	8.1	33.4 33.4	33.4	106.4 106.0	106.2	7.2 7.1	7.2	7.0	2.0 2.0	2.0	3.0	5.2 5.5	5.4	5.4
				Middle	6	25.5 25.5	25.5	8.1 8.1	8.1	33.4 33.4	33.4	98.8 98.1	98.5	6.7 6.7	6.7		2.5 2.5	2.5		5.2 5.0	5.1	
				Bottom	11	25.0 25.0	25.0	8.2 8.2	8.2	33.7 33.7	33.7	94.2 94.4	94.3	6.4 6.5	6.5		4.6 4.3	4.5		5.6 5.6	5.6	
M3	Sunny	Calm	13:01	Surface	1	26.5 26.3	26.4	8.1 8.1	8.1	33.2 32.8	33.0	109.7 101.9	105.8	7.3 6.8	7.1	7.0	1.7 1.6	1.7	2.3	4.7 4.5	4.6	5.4
				Middle	4	25.9 25.8	25.9	8.1 8.2	8.2	33.4 33.4	33.4	102.8 102.3	102.6	6.9 6.9	6.9		1.5 1.6	1.6		5.6 5.9	5.8	
				Bottom	7	24.9 24.8	24.9	8.2 8.2	8.2	33.8 33.8	33.8	89.0 88.6	88.8	6.1 6.1	6.1		3.5 3.6	3.6		5.7 5.8	5.8	
M4	Sunny	Calm	12:15	Surface	1	25.7 25.7	25.7	8.0 8.0	8.0	32.4 32.4	32.4	88.2 88.1	88.2	6.0 6.0	6.0	6.1	4.0 4.1	4.1	3.4	4.3 4.1	4.2	5.1
				Middle	5	25.7 25.7	25.7	8.0 8.1	8.1	32.7 32.8	32.8	89.5 90.9	90.2	6.1 6.2	6.2		4.1 4.0	4.1		4.9 4.7	4.8	
				Bottom	9	25.9 25.8	25.9	8.1 8.1	8.1	33.4 33.4	33.4	105.0 105.5	105.3	7.1 7.1	7.1		1.8 1.9	1.9		6.3 6.4	6.4	
M5	Sunny	Calm	13:22	Surface	1	25.7 25.8	25.8	8.0 8.0	8.0	32.3 32.2	32.3	91.1 89.5	90.3	6.2 6.1	6.2	6.1	1.8 2.0	1.9	2.6	5.8 5.3	5.6	4.6
				Middle	5.5	25.7 25.7	25.7	8.0 8.0	8.0	32.4 32.4	32.4	86.4 86.3	86.4	5.9 5.9	5.9		2.5 2.4	2.5		4.0 4.1	4.1	
				Bottom	10	25.1 24.9	25.0	8.1 8.1	8.1	33.3 33.6	33.5	86.5 88.2	87.4	5.9 6.0	6.0		3.1 3.6	3.4		4.1 4.3	4.2	
M6	Sunny	Calm	13:17	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	2.4	-	-	7.9
				Middle	2	26.0 26.0	26.0	8.1 8.1	8.1	33.1 33.1	33.1	99.4 99.1	99.3	6.7 6.7	6.7		2.4 2.4	2.4		7.9 7.9	7.9	
				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 16 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 5.2 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 5.6 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.2 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.8 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.2 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.8 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.3 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.9 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 16 May 2018**

**(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	19:49	Surface	1	25.7 25.8	25.8	8.0 8.0	8.0	32.1 32.1	32.1	87.0 86.7	86.9	5.9 5.9	5.9	5.9	1.9 1.9	1.9	2.9	5.2 5.2	5.2	5.4
				Middle	9	25.5 25.5	25.5	8.0 8.0	8.0	32.5 32.5	32.5	85.5 85.5	85.5	5.8 5.8	5.8		2.4 2.3	2.4		4.9 4.8	4.9	
				Bottom	17	24.6 24.6	24.6	8.2 8.2	8.2	33.9 33.9	33.9	89.0 89.5	89.3	6.1 6.1	6.1		4.3 4.3	4.3		6.1 6.1	6.1	
C2	Sunny	Calm	18:17	Surface	1	26.0 26.0	26.0	8.0 8.0	8.0	31.3 31.4	31.4	86.5 86.4	86.5	5.9 5.9	5.9	6.0	2.5 2.4	2.5	3.3	5.6 5.2	5.4	5.3
				Middle	16.5	25.1 25.1	25.1	8.1 8.1	8.1	33.3 33.2	33.3	89.0 89.2	89.1	6.1 6.1	6.1		3.3 3.4	3.4		5.3 5.3	5.3	
				Bottom	32	25.0 25.0	25.0	8.1 8.1	8.1	33.4 33.4	33.4	90.1 90.4	90.3	6.2 6.2	6.2		4.0 4.1	4.1		5.2 5.1	5.2	
G1	Sunny	Calm	19:06	Surface	1	26.1 26.0	26.1	8.1 8.1	8.1	33.2 33.2	33.2	102.8 102.6	102.7	6.9 6.9	6.9	6.9	1.8 2.0	1.9	2.2	3.3 3.2	3.3	4.0
				Middle	4	25.9 25.8	25.9	8.1 8.1	8.1	33.2 33.2	33.2	100.5 99.2	99.9	6.8 6.7	6.8		2.0 2.0	2.0		5.2 5.1	5.2	
				Bottom	7	25.5 25.5	25.5	8.1 8.1	8.1	33.3 33.3	33.3	94.8 94.7	94.8	6.4 6.4	6.4		2.7 2.5	2.6		3.4 3.5	3.5	
G2	Sunny	Calm	18:49	Surface	1	26.6 26.5	26.6	8.0 8.0	8.0	33.2 33.2	33.2	110.8 110.8	110.8	7.4 7.4	7.4	7.1	1.9 2.1	2.0	2.5	5.8 5.8	5.8	4.8
				Middle	5	25.6 25.6	25.6	8.1 8.1	8.1	33.4 33.4	33.4	100.1 98.2	99.2	6.8 6.6	6.7		2.7 2.7	2.7		3.7 3.6	3.7	
				Bottom	9	25.3 25.4	25.4	8.2 8.2	8.2	33.6 33.6	33.6	98.8 99.1	99.0	6.7 6.7	6.7		2.9 2.7	2.8		4.8 5.0	4.9	
G3	Sunny	Calm	19:13	Surface	1	26.6 26.4	26.5	8.1 8.1	8.1	33.1 33.2	33.2	109.3 110.3	109.8	7.3 7.3	7.4	7.2	2.0 1.6	1.8	2.3	5.4 5.0	5.2	5.1
				Middle	4	26.1 26.1	26.1	8.1 8.1	8.1	33.3 33.3	33.3	103.8 103.1	103.5	7.0 6.9	7.0		1.8 1.9	1.9		5.1 5.1	5.1	
				Bottom	7	25.4 25.4	25.4	8.2 8.2	8.2	33.5 33.5	33.5	96.5 96.3	96.4	6.6 6.5	6.6		3.0 3.1	3.1		4.9 5.0	5.0	
G4	Sunny	Calm	19:29	Surface	1	25.8 25.8	25.8	8.1 8.1	8.1	33.0 33.0	33.0	96.1 95.3	95.7	6.5 6.4	6.5	6.6	2.6 2.3	2.5	2.7	4.6 4.9	4.8	5.4
				Middle	4	25.8 25.6	25.8	8.1 8.1	8.1	33.2 33.2	33.2	96.6 97.0	96.8	6.5 6.6	6.6		2.6 2.7	2.7		5.8 5.9	5.9	
				Bottom	7	25.7 25.7	25.7	8.1 8.1	8.1	33.2 33.2	33.2	96.1 97.0	96.6	6.5 6.6	6.6		2.9 2.7	2.8		5.7 5.5	5.6	
M1	Sunny	Calm	18:58	Surface	1	26.0 26.0	26.0	8.1 8.1	8.1	33.4 33.4	33.4	102.5 102.5	102.5	6.9 6.9	6.9	6.9	2.4 2.3	2.4	1.9	5.3 5.5	5.4	5.8
				Middle	3	25.9 25.8	25.9	8.1 8.1	8.1	33.4 33.4	33.4	101.5 100.8	101.2	6.8 6.8	6.8		1.7 1.7	1.7		6.5 6.5	6.5	
				Bottom	5	25.8 25.6	25.8	8.1 8.1	8.1	33.4 33.4	33.4	100.9 100.8	100.9	6.8 6.8	6.8		1.7 1.7	1.7		5.5 5.3	5.4	
M2	Sunny	Calm	18:40	Surface	1	26.3 26.3	26.3	8.0 8.0	8.0	33.4 33.4	33.4	107.0 107.7	107.4	7.2 7.2	7.2	6.9	1.8 1.8	1.8	2.6	4.6 4.6	4.6	4.8
				Middle	6	25.5 25.5	25.5	8.1 8.1	8.1	33.4 33.2	33.3	97.4 97.0	97.2	6.6 6.6	6.6		2.5 2.2	2.4		3.8 3.7	3.8	
				Bottom	11	25.1 25.1	25.1	8.1 8.1	8.1	33.7 33.7	33.7	96.1 96.1	96.1	6.6 6.6	6.6		3.6 3.5	3.6		5.8 6.1	6.0	
M3	Sunny	Calm	19:21	Surface	1	26.4 26.4	26.4	8.1 8.1	8.1	33.2 33.1	33.2	107.6 103.6	105.6	7.2 6.9	7.1	7.1	1.7 1.7	1.7	2.2	4.0 4.1	4.1	4.8
				Middle	4	25.9 25.9	25.9	8.1 8.1	8.1	33.4 33.4	33.4	103.8 104.0	103.9	7.0 7.0	7.0		1.5 1.5	1.5		4.1 4.1	4.1	
				Bottom	7	25.3 25.0	25.2	8.2 8.2	8.2	33.6 33.7	33.7	94.7 93.5	94.1	6.4 6.4	6.4		3.2 3.5	3.4		6.1 6.4	6.3	
M4	Sunny	Calm	18:30	Surface	1	25.8 25.8	25.8	8.0 8.0	8.0	32.5 32.6	32.6	90.0 90.0	90.0	6.1 6.1	6.1	6.6	3.9 3.8	3.9	2.9	5.5 5.5	5.5	5.8
				Middle	5	26.2 26.2	26.2	8.1 8.1	8.1	33.2 33.2	33.2	104.4 105.2	104.8	7.0 7.1	7.1		2.2 2.2	2.2		5.5 5.5	5.5	
				Bottom	9	25.5 25.3	25.4	8.1 8.1	8.1	33.6 33.6	33.6	100.9 99.7	100.3	6.8 6.8	6.8		2.4 2.5	2.5		6.2 6.5	6.4	
M5	Sunny	Calm	19:42	Surface	1	25.8 25.8	25.8	8.0 8.0	8.0	32.2 32.2	32.2	87.1 86.8	87.0	5.9 5.9	5.9	5.9	2.1 2.2	2.2	2.7	5.8 5.7	5.8	5.6
				Middle	5.5	25.7 25.7	25.7	8.0 8.0	8.0	32.3 32.3	32.3	86.1 86.1	86.1	5.9 5.9	5.9		2.4 2.4	2.4		6.0 5.8	5.9	
				Bottom	10	24.8 24.6	24.7	8.1 8.2	8.2	33.7 33.9	33.8	87.1 88.9	88.0	6.0 6.1	6.1		3.2 3.8	3.5		5.1 5.1	5.1	
M6	Sunny	Calm	19:36	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	2.6	-	-	8.0
				Middle	2.1	25.9 25.9	25.9	8.1 8.1	8.1	33.1 33.1	33.1	99.6 99.4	99.5	6.7 6.7	6.7		2.6 2.5	2.6		7.8 8.1	8.0	
				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 18 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 4.0 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 4.3 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.5 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.5 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.9 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 8.6 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 18 May 2018**

**(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	15:05	Surface	1	26.3 26.2	26.3	8.1 8.1	8.1	32.2 32.2	32.2	84.1 83.5	83.8	5.7 5.6	5.7	5.8	3.0	3.1	3.0	3.1	3.1	3.1	3.8	3.8	4.6			
				Middle	10	25.4 25.5	25.5	8.1 8.1	8.1	33.5 33.4	33.5	85.7 84.1	84.9	5.8 5.7	5.8		3.2 3.0									3.1	4.2 4.0	4.1
				Bottom	19	25.4 25.5	25.5	8.1 8.1	8.1	33.5 33.4	33.5	85.9 85.4	85.7	5.8 5.8	5.8		3.2 3.1									3.2	5.8 5.8	5.8
C2	Sunny	Calm	13:52	Surface	1	26.5 26.4	26.5	7.9 7.9	7.9	31.9 31.9	31.9	83.7 83.8	83.8	5.6 5.6	5.6	5.7	1.5	1.5	1.5	1.5	1.7	6.6	6.6	6.4				
				Middle	16.5	25.2 25.4	25.3	8.0 8.0	8.0	33.8 33.5	33.7	84.9 84.6	84.8	5.8 5.7	5.8		1.7 1.7								1.7	6.7 7.0	6.9	
				Bottom	32	25.2 25.2	25.2	8.0 8.0	8.0	33.8 33.8	33.8	85.7 85.1	85.4	5.8 5.8	5.8		3.3 3.2								3.3	6.6 6.6	6.6	
G1	Sunny	Calm	14:24	Surface	1	26.7 26.6	26.7	8.1 8.1	8.1	33.1 33.2	33.2	94.9 94.3	94.6	6.3 6.3	6.3	6.3	1.0	1.0	1.0	1.0	1.0	8.4	8.3	5.7				
				Middle	4	26.0 26.1	26.1	8.1 8.1	8.1	33.5 33.4	33.5	92.2 92.8	92.5	6.2 6.2	6.2		1.0 0.9								1.0	5.7 5.8	5.8	
				Bottom	7	25.4 25.5	25.5	8.1 8.1	8.1	33.8 33.8	33.8	90.2 90.1	90.2	6.1 6.1	6.1		1.0 0.9								1.0	2.9 2.8	2.9	
G2	Sunny	Calm	14:13	Surface	1	26.4 26.4	26.4	8.1 8.1	8.1	33.2 33.2	33.2	94.4 94.1	94.3	6.3 6.3	6.3	6.3	1.5	1.5	1.5	1.5	1.5	5.0	5.0	4.9				
				Middle	4	25.9 25.5	25.7	8.1 8.1	8.1	33.5 33.7	33.6	92.1 90.7	91.4	6.2 6.1	6.2		1.4 1.4								1.5	4.9 5.0	5.0	
				Bottom	7	25.3 25.3	25.3	8.1 8.1	8.1	33.9 33.9	33.9	90.1 89.9	90.0	6.1 6.1	6.1		1.7 1.6								1.7	5.5 5.6	5.6	
G3	Sunny	Calm	14:31	Surface	1	27.5 27.3	27.4	8.0 8.0	8.0	32.6 32.7	32.7	95.1 94.2	94.7	6.3 6.2	6.3	6.3	1.9	1.9	1.9	1.9	1.2	7.4	7.4	5.8				
				Middle	4	26.8 26.9	26.9	8.1 8.1	8.1	33.2 33.0	33.1	94.5 93.5	94.0	6.3 6.2	6.3		1.2 1.2								1.2	5.7 7.5	7.4	
				Bottom	7	25.4 25.2	25.3	8.1 8.1	8.1	33.9 34.0	34.0	87.5 88.0	87.8	5.9 6.0	6.0		1.3 1.2								1.3	4.3 4.3	4.3	
G4	Sunny	Calm	14:44	Surface	1	26.8 26.8	26.8	8.1 8.1	8.1	33.1 33.0	33.1	95.7 95.0	95.4	6.4 6.3	6.4	6.4	1.2	1.2	1.2	1.3	1.3	6.0	6.1	5.5				
				Middle	4	26.6 26.5	26.6	8.1 8.1	8.1	33.1 33.1	33.1	94.5 93.4	94.0	6.3 6.2	6.3		1.3 1.2								1.3	6.0 6.2	6.1	
				Bottom	7	25.4 25.7	25.6	8.1 8.1	8.1	33.9 33.7	33.8	90.1 89.1	89.6	6.1 6.0	6.1		1.5 1.5								1.5	6.7 6.7	6.7	
M1	Sunny	Calm	14:19	Surface	1	26.7 26.6	26.7	8.1 8.1	8.1	33.2 33.2	33.2	94.7 93.7	94.2	6.3 6.2	6.3	6.2	1.5	1.5	1.5	1.3	1.3	4.4	4.4	4.9				
				Middle	4	25.8 25.9	25.9	8.1 8.1	8.1	33.6 33.5	33.6	90.5 90.3	90.4	6.1 6.1	6.1		1.3 1.2								1.3	4.4 4.4	4.4	
				Bottom	7	25.4 25.3	25.4	8.1 8.1	8.1	33.8 33.8	33.8	89.6 89.4	89.5	6.1 6.1	6.1		1.4 1.4								1.4	6.0 6.0	6.0	
M2	Sunny	Calm	14:07	Surface	1	26.7 26.3	26.5	8.0 8.0	8.0	33.0 33.2	33.1	94.2 93.2	93.7	6.3 6.2	6.3	6.2	1.1	1.1	1.1	1.5	1.4	5.0	5.1	5.4				
				Middle	5.5	25.2 25.3	25.3	8.1 8.1	8.1	33.9 33.9	33.9	89.0 89.4	89.2	6.1 6.1	6.1		1.3 1.3								1.4	6.5 6.4	6.5	
				Bottom	10	24.8 24.8	24.8	8.1 8.1	8.1	34.3 34.3	34.3	87.4 87.5	87.5	6.0 6.0	6.0		1.9 1.8								1.9	4.6 4.7	4.7	
M3	Sunny	Calm	14:37	Surface	1	27.6 27.3	27.5	8.0 8.1	8.1	32.4 32.7	32.6	94.5 95.2	94.9	6.2 6.3	6.3	6.3	1.2	1.2	1.2	1.1	1.1	5.7	5.7	5.6				
				Middle	3	26.9 26.9	26.9	8.1 8.1	8.1	33.0 33.1	33.1	94.5 94.5	94.5	6.3 6.3	6.3		1.1 1.0								1.1	5.7 5.7	5.7	
				Bottom	5	26.8 26.3	26.6	8.1 8.1	8.1	33.1 33.3	33.2	94.7 88.9	91.8	6.3 5.9	6.1		1.7 1.7								1.7	5.2 5.2	5.2	
M4	Sunny	Calm	14:01	Surface	1	25.9 25.9	25.9	8.0 8.0	8.0	33.1 33.1	33.1	88.2 88.8	88.5	6.0 6.0	6.0	6.1	1.7	1.8	1.8	2.3	2.3	4.5	4.6	5.5				
				Middle	5.5	25.9 25.9	25.9	8.0 8.0	8.0	33.3 33.4	33.4	89.8 89.9	89.9	6.1 6.1	6.1		2.3 2.3								2.3	5.9 5.9	5.9	
				Bottom	10	25.3 25.7	25.5	8.0 8.1	8.1	33.9 33.5	33.7	88.9 90.8	89.9	6.0 6.1	6.1		2.6 2.7								2.7	6.0 6.0	6.0	
M5	Sunny	Calm	14:57	Surface	1	25.9 25.8	25.9	8.1 8.1	8.1	33.1 33.2	33.2	88.2 87.6	87.9	6.0 5.9	6.0	6.0	1.2	1.2	1.2	1.1	1.1	4.5	4.6	4.8				
				Middle	6	25.8 25.8	25.8	8.1 8.1	8.1	33.2 33.2	33.2	87.4 87.2	87.3	5.9 5.9	5.9		1.0 1.1								1.1	5.4 5.3	5.4	
				Bottom	11	25.7 25.8	25.8	8.1 8.1	8.1	33.3 33.3	33.3	87.1 87.0	87.1	5.9 5.9	5.9		1.0 1.0								1.0	4.4 4.3	4.4	
M6	Sunny	Calm	14:52	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	-	-	-	-	-	3.0				
				Middle	2	26.8 26.8	26.8	8.1 8.1	8.1	33.0 33.0	33.0	95.3 95.1	95.2	6.3 6.3	6.3		2.2 2.2								2.2	3.0 3.0	3.0	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-								-	-	-	-

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

**Appendix I - Action and Limit Levels for Marine Water Quality on 18 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 3.6 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 3.9 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.6 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.1 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.6 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.1 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.7 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.3 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 18 May 2018**

**(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	08:55	Surface	1	25.9 25.8	25.9	8.1 8.1	8.1	33.0 33.0	33.0	87.6 88.1	87.9	5.9 6.0	6.0	6.0	2.0 2.1	2.1	2.7	4.6 4.7	4.7	4.8
				Middle	10	25.2 25.2	25.2	8.1 8.1	8.1	33.9 33.9	33.9	88.0 88.1	88.1	6.0 6.0	6.0		2.9 2.8	2.9		3.9 4.0	4.0	
				Bottom	19	24.6 24.6	24.6	8.1 8.1	8.1	34.5 34.5	34.5	85.9 85.9	85.9	5.9 5.9	5.9		3.0 3.0	3.0		5.8 5.3	5.6	
C2	Sunny	Calm	07:32	Surface	1	25.8 25.8	25.8	8.0 8.1	8.1	32.8 32.8	32.8	85.2 85.7	85.5	5.8 5.8	5.8	5.8	1.9 2.2	2.1	2.4	3.6 3.5	3.6	5.5
				Middle	16	25.4 25.4	25.4	8.1 8.1	8.1	33.5 33.5	33.5	85.2 85.6	85.4	5.8 5.8	5.8		2.2 2.5	2.4		7.1 7.0	7.1	
				Bottom	31	25.3 25.4	25.4	8.1 8.1	8.1	33.5 33.5	33.5	85.3 85.5	85.4	5.8 5.8	5.8		2.7 2.9	2.8		5.5 5.8	5.7	
G1	Sunny	Calm	08:11	Surface	1	25.9 25.8	25.9	8.1 8.1	8.1	33.0 33.1	33.1	89.5 87.7	88.6	6.0 5.9	6.0	6.0	1.3 1.3	1.3	1.4	4.9 5.0	5.0	5.4
				Middle	4	25.7 25.6	25.7	8.1 8.1	8.1	33.2 33.4	33.3	88.1 86.4	87.3	6.0 5.9	6.0		1.3 1.4	1.4		4.7 4.7	4.7	
				Bottom	7	25.0 25.2	25.1	8.1 8.1	8.1	34.1 33.9	34.0	86.9 85.2	86.1	5.9 5.8	5.9		1.6 1.5	1.6		6.4 6.5	6.5	
G2	Sunny	Calm	07:58	Surface	1	25.7 25.5	25.6	8.1 8.1	8.1	33.2 33.4	33.3	87.9 87.1	87.5	5.9 5.9	5.9	5.9	1.0 0.9	1.0	1.1	4.0 4.2	4.1	4.0
				Middle	4.5	25.1 25.3	25.2	8.1 8.1	8.1	33.9 33.7	33.8	87.3 86.7	87.0	5.9 5.9	5.9		1.3 1.2	1.3		4.0 4.0	4.0	
				Bottom	8	24.9 25.0	25.0	8.1 8.1	8.1	34.1 34.0	34.1	87.5 86.8	87.2	6.0 5.9	6.0		1.1 1.0	1.1		3.9 3.8	3.9	
G3	Sunny	Calm	08:17	Surface	1	25.8 25.8	25.8	8.1 8.1	8.1	33.1 33.1	33.1	88.7 88.0	88.4	6.0 5.9	6.0	6.0	2.4 2.2	2.3	2.5	5.3 5.3	5.3	5.6
				Middle	4	25.7 25.7	25.7	8.1 8.1	8.1	33.3 33.2	33.3	87.2 87.5	87.3	5.9 5.9	5.9		2.3 2.5	2.4		5.2 5.2	5.2	
				Bottom	7	25.5 25.3	25.4	8.1 8.1	8.1	33.5 33.8	33.7	86.4 85.6	86.0	5.9 5.8	5.9		2.6 2.8	2.7		6.2 6.2	6.2	
G4	Sunny	Calm	08:33	Surface	1	26.0 25.9	26.0	8.1 8.1	8.1	32.9 32.9	32.9	88.7 87.5	88.1	6.0 5.9	6.0	6.0	1.1 1.1	1.1	1.7	4.2 4.2	4.2	5.3
				Middle	4	25.4 25.6	25.5	8.1 8.1	8.1	33.6 33.3	33.5	86.1 86.5	86.3	5.8 5.9	5.9		1.4 1.4	1.4		5.0 5.2	5.1	
				Bottom	7	25.0 25.0	25.0	8.1 8.1	8.1	34.1 34.0	34.1	86.5 86.2	86.4	5.9 5.9	5.9		2.7 2.6	2.7		6.3 6.7	6.5	
M1	Sunny	Calm	08:05	Surface	1	25.9 25.8	25.9	8.1 8.1	8.1	33.1 33.2	33.2	89.9 88.0	89.0	6.1 5.9	6.0	5.9	1.4 1.4	1.4	1.7	3.6 3.7	3.7	4.9
				Middle	4	25.2 25.2	25.2	8.1 8.1	8.1	33.9 33.9	33.9	85.3 85.1	85.2	5.8 5.8	5.8		1.6 1.8	1.7		5.7 5.9	5.8	
				Bottom	7	25.0 25.1	25.1	8.1 8.1	8.1	34.1 34.0	34.1	86.0 85.1	85.6	5.9 5.8	5.9		2.0 2.0	2.0		5.2 5.2	5.2	
M2	Sunny	Calm	07:49	Surface	1	25.7 25.7	25.7	8.1 8.1	8.1	33.1 33.1	33.1	88.0 87.2	87.6	6.0 5.9	6.0	6.0	1.0 1.0	1.0	1.9	4.2 4.0	4.1	4.7
				Middle	5.5	25.3 25.2	25.3	8.1 8.1	8.1	33.6 33.8	33.7	86.9 86.8	86.9	5.9 5.9	5.9		1.2 1.1	1.2		6.4 6.2	6.3	
				Bottom	10	24.8 24.7	24.8	8.1 8.1	8.1	34.4 34.4	34.4	87.4 87.6	87.5	6.0 6.0	6.0		3.3 3.7	3.5		3.7 3.6	3.7	
M3	Sunny	Calm	08:22	Surface	1	26.0 26.0	26.0	8.1 8.1	8.1	33.1 33.0	33.1	88.7 87.8	88.3	6.0 5.9	6.0	5.9	1.4 1.4	1.4	1.6	4.5 4.4	4.5	5.0
				Middle	4	25.5 25.3	25.4	8.1 8.1	8.1	33.6 33.7	33.7	84.8 84.8	84.8	5.7 5.8	5.8		1.5 1.8	1.7		4.7 4.8	4.8	
				Bottom	7	25.1 25.1	25.1	8.1 8.1	8.1	33.9 34.0	34.0	85.7 85.8	85.8	5.8 5.8	5.8		1.8 1.7	1.8		5.8 5.5	5.7	
M4	Sunny	Calm	07:40	Surface	1	25.4 25.4	25.4	8.1 8.1	8.1	33.5 33.6	33.6	87.8 87.3	87.6	6.0 5.9	6.0	6.0	1.2 1.2	1.2	1.4	2.8 2.8	2.8	4.9
				Middle	5.5	25.3 25.3	25.3	8.1 8.1	8.1	33.7 33.7	33.7	87.1 86.9	87.0	5.9 5.9	5.9		1.5 1.4	1.5		6.3 6.3	6.3	
				Bottom	10	25.2 25.2	25.2	8.1 8.1	8.1	33.8 33.7	33.8	86.8 86.7	86.8	5.9 5.9	5.9		1.6 1.6	1.6		5.7 5.5	5.6	
M5	Sunny	Calm	08:49	Surface	1	26.0 25.9	26.0	8.1 8.1	8.1	33.0 33.0	33.0	88.9 89.2	89.1	6.0 6.0	6.0	6.0	2.7 2.7	2.7	2.7	5.4 5.4	5.4	6.1
				Middle	6	25.5 25.6	25.6	8.1 8.1	8.1	33.4 33.4	33.4	87.1 87.2	87.2	5.9 5.9	5.9		2.7 2.7	2.7		7.3 7.4	7.4	
				Bottom	11	24.9 24.8	24.9	8.1 8.1	8.1	34.2 34.3	34.3	87.1 87.1	87.1	5.9 5.9	5.9		2.7 2.7	2.7		5.5 5.4	5.5	
M6	Sunny	Calm	08:42	Surface	-	-	-	-	-	-	-	-	-	-	-	5.7	-	-	2.2	-	-	8.2
				Middle	2.1	25.7 25.7	25.7	8.1 8.1	8.1	33.3 33.3	33.3	83.9 83.8	83.9	5.7 5.7	5.7		2.2 2.2	2.2		8.1 8.2	8.2	
				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 21 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 5.2 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 5.6 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.7 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.3 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.7 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.3 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.6 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 8.2 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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



**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 21 May 2018**

**(Mid-Ebb Tide)**

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	17:28	Surface	1	26.1 26.0	26.1	8.2 8.2	8.2	31.8 32.0	31.9	98.8 97.8	98.3	6.3 6.3	6.3	6.3	2.1 2.1	2.1	3.2	5.4 5.6	5.5	5.2
				Middle	9.5	24.8 25.0	24.9	8.1 8.1	8.1	32.8 32.7	32.8	100.5 97.4	99.0	6.4 6.2	6.3		3.1	5.4 5.3		5.4		
				Bottom	18	23.7 23.2	23.5	8.0 8.0	8.0	32.5 33.0	32.8	96.5 94.7	95.6	6.1 6.0	6.1		4.4	4.4		4.5 4.7	4.6	
C2	Sunny	Moderate	15:59	Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	32.1 32.1	32.1	105.8 105.4	105.6	6.7 6.7	6.7	6.5	1.9 1.9	1.9	3.3	5.7 5.5	5.6	5.9
				Middle	17.5	24.7 24.4	24.6	8.1 8.1	8.1	32.9 32.5	32.7	91.4 102.8	97.1	5.9 6.5	6.2		3.7	3.7		5.7 5.8	5.8	
				Bottom	34	24.1 23.9	24.0	8.1 8.1	8.1	33.1 32.3	32.7	84.1 84.5	84.3	5.4 5.4	5.4		4.3 4.3	4.3		6.3 6.3	6.3	
G1	Sunny	Moderate	16:41	Surface	1	27.3 27.2	27.3	8.3 8.3	8.3	31.9 32.0	32.0	106.9 108.1	107.5	6.8 6.8	6.8	6.7	2.2 2.2	2.2	2.2	4.5 4.5	4.5	3.9
				Middle	3.5	26.5 26.7	26.6	8.3 8.3	8.3	32.1 32.0	32.1	102.8 100.7	101.8	6.5 6.4	6.5		1.9	1.9		2.6 2.6	2.6	
				Bottom	6	25.7 25.8	25.8	8.2 8.2	8.2	32.6 32.5	32.6	97.8 98.8	98.3	6.2 6.3	6.3		2.4 2.5	2.5		4.5 4.5	4.6	
G2	Sunny	Moderate	16:30	Surface	1	26.7 27.1	26.9	8.3 8.3	8.3	32.0 31.9	32.0	108.0 107.6	107.8	6.8 6.8	6.8	6.7	1.8 1.8	1.8	2.0	5.9 5.9	5.9	5.5
				Middle	4.5	26.0 26.0	26.0	8.3 8.2	8.3	32.3 32.3	32.3	102.1 101.6	101.9	6.5 6.5	6.5		1.9	1.9		3.8 4.0	3.9	
				Bottom	8	25.4 25.7	25.6	8.1 8.2	8.2	33.2 32.6	32.9	100.5 100.0	100.3	6.4 6.4	6.4		2.4 2.4	2.4		6.9 6.7	6.8	
G3	Sunny	Moderate	16:49	Surface	1	27.5 27.6	27.6	8.3 8.3	8.3	31.6 31.5	31.6	95.2 93.9	94.6	6.1 6.0	6.1	5.9	1.9 1.8	1.9	2.0	5.7 5.6	5.7	5.0
				Middle	3.5	26.4 26.4	26.4	8.3 8.3	8.3	32.1 32.0	32.1	87.4 87.9	87.7	5.6 5.6	5.6		1.9	1.9		5.2 5.2	5.2	
				Bottom	6	25.9 25.8	25.9	8.2 8.2	8.2	32.4 32.4	32.4	90.1 89.6	89.9	5.8 5.7	5.8		2.2 2.2	2.2		4.0 3.9	4.0	
G4	Sunny	Moderate	17:00	Surface	1	26.8 26.9	26.9	8.3 8.3	8.3	32.0 32.0	32.0	105.6 103.9	104.8	6.7 6.6	6.7	6.5	1.8 1.8	1.8	2.9	3.2 3.2	3.2	4.1
				Middle	4	26.3 26.2	26.3	8.3 8.3	8.3	32.1 32.1	32.1	97.9 97.1	97.5	6.3 6.2	6.3		1.9	1.9		4.5 4.5	4.5	
				Bottom	7	25.0 25.0	25.0	8.1 8.1	8.1	32.8 32.8	32.8	99.3 99.4	99.4	6.3 6.3	6.3		5.1 4.9	5.0		4.6 4.6	4.6	
M1	Sunny	Moderate	16:37	Surface	1	27.1 27.2	27.2	8.3 8.3	8.3	32.0 32.0	32.0	101.1 105.3	103.2	6.4 6.7	6.6	6.5	1.8 1.8	1.8	1.9	5.4 5.4	5.4	5.8
				Middle	3	26.4 26.6	26.5	8.3 8.3	8.3	32.1 32.0	32.1	100.7 99.2	100.0	6.4 6.3	6.4		1.8	1.8		6.0 6.1	6.1	
				Bottom	5	25.8 25.9	25.9	8.2 8.2	8.2	32.4 32.3	32.4	91.2 92.7	92.0	5.8 5.9	5.9		1.9 2.0	2.0		6.1 5.9	6.0	
M2	Sunny	Moderate	16:20	Surface	1	26.7 27.6	27.2	8.3 8.3	8.3	32.0 31.8	31.9	103.5 106.0	104.8	6.6 6.7	6.7	6.6	1.9 1.8	1.9	2.1	5.8 5.9	5.9	4.9
				Middle	4.5	25.7 25.8	25.8	8.2 8.2	8.2	32.5 32.5	32.5	99.8 100.9	100.4	6.4 6.4	6.4		2.1	2.1		5.5 5.5	5.6	
				Bottom	8	25.7 25.7	25.7	8.2 8.2	8.2	32.6 32.6	32.6	85.1 86.4	85.8	5.4 5.5	5.5		2.2 2.2	2.2		3.3 3.3	3.3	
M3	Sunny	Moderate	16:53	Surface	1	27.5 25.8	26.7	8.3 8.3	8.3	31.6 30.5	31.1	96.6 94.7	95.7	6.2 6.0	6.1	5.7	1.9 1.9	1.9	2.1	5.8 5.7	5.8	4.7
				Middle	3.5	26.4 25.1	25.8	8.3 8.3	8.3	32.0 30.7	31.4	82.5 81.3	81.9	5.3 5.2	5.3		2.0	2.0		3.9 3.9	3.9	
				Bottom	6	25.8 24.4	25.1	8.2 8.2	8.2	32.4 31.1	31.8	90.9 90.7	90.8	5.8 5.8	5.8		2.4 2.4	2.4		4.4 4.4	4.4	
M4	Sunny	Moderate	16:08	Surface	1	27.7 25.9	26.8	8.3 8.2	8.3	31.8 31.5	31.7	104.2 103.5	103.9	6.6 6.6	6.6	6.5	1.8 1.8	1.8	2.6	3.0 2.9	3.0	3.9
				Middle	5	25.9 25.9	25.9	8.2 8.2	8.2	32.5 32.5	32.5	98.7 98.9	98.8	6.3 6.3	6.3		1.9	1.9		4.8 4.6	4.7	
				Bottom	9	25.5 25.7	25.6	8.2 8.2	8.2	33.0 32.7	32.9	93.9 96.7	95.3	6.0 6.2	6.1		4.0 4.0	4.0		4.1 3.9	4.0	
M5	Sunny	Moderate	17:17	Surface	1	26.5 26.4	26.5	8.3 8.3	8.3	32.3 32.3	32.3	100.7 99.4	100.1	6.4 6.3	6.4	6.2	1.7 1.7	1.7	2.6	2.5 2.5	2.5	3.7
				Middle	5.5	26.0 26.1	26.1	8.2 8.2	8.2	32.9 32.8	32.9	94.5 93.8	94.2	6.0 6.0	6.0		1.8 1.9	1.9		2.9 2.8	2.9	
				Bottom	10	24.4 24.4	24.4	8.1 8.1	8.1	32.8 32.8	32.8	84.2 84.6	84.4	5.4 5.4	5.4		4.0 4.3	4.2		5.6 5.6	5.6	
M6	Sunny	Moderate	17:06	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	2.6	-	-	6.9
				Middle	2.1	25.8 25.9	25.9	8.2 8.2	8.2	32.5 32.4	32.5	100.6 101.1	100.9	6.4 6.4	6.4		2.7 2.5	2.6		6.8 6.9	6.9	
				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 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 7.2 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 7.8 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.6 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.6 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.5 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.0 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 21 May 2018**

**(Mid-Flood Tide)**

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	11:18	Surface	1	26.7 26.9	26.8	8.3 8.3	8.3	32.0 31.9	32.0	107.8 106.1	107.0	6.9 6.8	6.9	6.4	1.7 1.7	1.7	3.1	5.2 4.9	5.1	5.0
				Middle	10	25.7 25.6	25.7	8.2 8.2	8.2	33.0 32.3	32.7	92.0 92.1	92.1	5.9 5.9	5.9		1.6 1.7	1.7		4.5 4.5	4.5	
				Bottom	19	22.7 22.7	22.7	8.0 8.0	8.0	36.0 33.0	34.5	82.4 83.2	82.8	5.3 5.3	5.3		5.8 6.1	6.0		5.4 5.3	5.4	
C2	Sunny	Moderate	09:52	Surface	1	26.3 26.3	26.3	8.2 8.2	8.2	31.9 31.9	31.9	98.4 97.2	97.8	6.3 6.2	6.3	5.9	1.7 1.7	1.7	3.5	3.2 3.2	3.2	6.7
				Middle	17	25.3 25.3	25.3	8.1 8.1	8.1	32.4 32.5	32.5	84.8 87.3	86.1	5.4 5.6	5.5		2.8 2.8	2.8		11.5 11.3	11.4	
				Bottom	33	23.9 23.8	23.9	8.0 8.0	8.0	32.4 32.6	32.5	77.5 78.2	77.9	5.0 5.0	5.0		6.0 5.9	6.0		5.5 5.4	5.5	
G1	Sunny	Moderate	10:36	Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	32.0 32.0	32.0	108.4 104.7	106.6	6.9 6.7	6.8	6.8	1.7 1.8	1.8	2.6	4.7 4.6	4.7	4.7
				Middle	4.5	25.7 25.7	25.7	8.2 8.2	8.2	32.6 32.6	32.6	106.5 105.2	105.9	6.8 6.7	6.8		1.9 2.2	2.1		5.2 5.3	5.3	
				Bottom	8	24.9 25.0	25.0	8.1 8.1	8.1	32.9 32.8	32.9	94.9 93.9	94.4	6.1 6.0	6.1		4.0 4.0	4.0		4.1 4.2	4.2	
G2	Sunny	Moderate	10:22	Surface	1	26.0 26.0	26.0	8.2 8.2	8.2	32.1 32.1	32.1	110.2 109.5	109.9	7.1 7.0	7.1	6.7	1.7 1.7	1.7	2.2	4.9 5.1	5.0	5.4
				Middle	5	25.6 25.6	25.6	8.2 8.2	8.2	32.7 32.7	32.7	97.9 97.3	97.6	6.3 6.2	6.3		2.2 2.2	2.2		5.2 5.3	5.3	
				Bottom	9	24.9 24.9	24.9	8.1 8.1	8.1	33.0 33.0	33.0	86.6 89.3	88.0	5.5 5.7	5.6		2.7 2.9	2.8		5.9 6.1	6.0	
G3	Sunny	Moderate	10:45	Surface	1	26.4 26.5	26.5	8.2 8.2	8.2	31.6 31.4	31.5	100.0 86.4	93.2	6.4 5.5	6.0	6.1	1.8 1.8	1.8	2.2	4.9 5.0	5.0	4.7
				Middle	4	25.7 25.8	25.8	8.2 8.2	8.2	32.4 32.3	32.4	95.6 95.8	95.7	6.1 6.1	6.1		2.3 2.2	2.3		3.5 3.6	3.6	
				Bottom	7	25.4 25.4	25.4	8.1 8.1	8.1	32.9 32.9	32.9	87.4 89.1	88.3	5.6 5.7	5.7		2.7 2.5	2.6		3.4 5.6	5.5	
G4	Sunny	Moderate	10:56	Surface	1	26.7 26.1	26.4	8.3 8.2	8.3	31.6 32.1	31.9	107.4 106.0	106.7	6.9 6.8	6.9	6.8	1.8 1.7	1.8	3.0	2.6 2.5	2.6	6.2
				Middle	4.5	25.7 25.7	25.7	8.2 8.2	8.2	32.6 32.6	32.6	104.6 104.5	104.6	6.7 6.7	6.7		1.9 1.9	1.9		10.6 10.6	10.6	
				Bottom	8	25.0 25.0	25.0	8.1 8.1	8.1	32.7 32.8	32.8	86.9 87.6	87.3	5.6 5.6	5.6		5.1 5.2	5.2		5.4 5.4	5.4	
M1	Sunny	Moderate	10:30	Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	32.1 32.1	32.1	108.5 103.4	106.0	6.9 6.6	6.8	6.8	1.8 1.8	1.8	2.0	3.6 3.5	3.6	6.4
				Middle	3	25.8 25.8	25.8	8.2 8.2	8.2	32.4 32.4	32.4	104.1 104.4	104.3	6.7 6.7	6.7		2.1 2.0	2.1		10.9 11.2	11.1	
				Bottom	5	25.6 25.6	25.6	8.2 8.2	8.2	32.8 32.6	32.7	94.4 93.9	94.2	6.0 6.0	6.0		2.0 2.2	2.1		4.5 4.5	4.5	
M2	Sunny	Moderate	10:14	Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	32.1 32.1	32.1	109.9 108.0	109.0	7.1 6.9	7.0	6.7	1.9 1.8	1.9	3.1	4.8 4.6	4.7	4.7
				Middle	5.5	25.2 25.2	25.2	8.1 8.1	8.1	33.4 32.5	33.0	97.1 99.5	98.3	6.2 6.4	6.3		3.6 3.5	3.6		4.8 4.7	4.8	
				Bottom	10	24.7 24.7	24.7	8.1 8.1	8.1	33.0 33.1	33.1	80.2 84.1	82.2	5.1 5.4	5.3		3.7 4.0	3.9		4.6 4.7	4.7	
M3	Sunny	Moderate	10:50	Surface	1	26.4 26.4	26.4	8.3 8.4	8.4	31.6 31.8	31.7	94.2 91.8	93.0	6.0 5.9	6.0	6.0	1.8 1.8	1.8	2.5	4.1 4.1	4.1	3.4
				Middle	4	25.6 25.7	25.7	8.2 8.3	8.3	32.5 32.5	32.5	91.1 96.8	94.0	5.8 6.2	6.0		2.4 2.3	2.4		2.6 2.7	2.7	
				Bottom	7	25.3 25.4	25.4	8.1 8.3	8.2	33.0 33.0	33.0	89.2 88.4	88.8	5.7 5.7	5.7		3.1 3.2	3.2		3.4 3.4	3.4	
M4	Sunny	Moderate	10:00	Surface	1	26.2 26.2	26.2	8.2 8.2	8.2	32.0 32.0	32.0	105.4 104.0	104.7	6.8 6.7	6.8	6.3	1.8 1.7	1.8	1.9	2.7 2.7	2.7	3.2
				Middle	5	26.1 25.9	26.0	8.2 8.2	8.2	32.1 32.4	32.3	85.5 89.9	87.7	5.5 5.8	5.7		1.8 1.9	1.9		3.0 2.9	3.0	
				Bottom	9	25.9 25.8	25.9	8.2 8.2	8.2	32.3 32.5	32.4	79.9 82.1	81.0	5.1 5.3	5.2		1.9 2.1	2.0		3.9 3.9	3.9	
M5	Sunny	Moderate	11:09	Surface	1	26.2 26.3	26.3	8.2 8.2	8.2	32.1 32.0	32.1	106.1 105.2	105.7	6.8 6.7	6.8	6.7	2.1 1.8	2.0	3.3	4.1 4.2	4.2	5.0
				Middle	6	25.9 26.0	26.0	8.2 8.2	8.2	32.3 32.3	32.3	103.2 101.4	102.3	6.6 6.5	6.6		1.8 1.7	1.8		6.6 6.7	6.7	
				Bottom	11	25.2 25.2	25.2	8.1 8.1	8.1	32.4 32.5	32.5	103.5 102.4	103.0	6.6 6.5	6.6		5.9 6.0	6.0		4.0 4.0	4.0	
M6	Sunny	Moderate	11:03	Surface	-	-	-	-	-	-	-	-	-	-	5.7	-	-	1.8	-	-	4.2	
				Middle	2.1	26.1 26.1	26.1	8.2 8.2	8.2	32.2 32.2	32.2	89.2 88.8	89.0	5.7 5.7		5.7	1.8 1.8		1.8	4.1 4.2		4.2
				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 23 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 3.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 3.6 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.5 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.5 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.0 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.5 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 23 May 2018**

**(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	19:22	Surface	1	27.1 26.9	27.0	8.3 8.3	8.3	31.6 31.8	31.7	105.6 103.4	104.5	7.0 6.9	7.0	6.5	1.3 1.3	1.3	1.9	5.2 5.1	5.2	4.5
				Middle	9	25.5 25.3	25.4	8.2 8.2	8.2	33.4 33.6	33.5	87.7 84.8	86.3	6.0 5.8	5.9	1.4 1.3	1.4	4.7 4.7		4.7		
				Bottom	17	24.8 24.9	24.9	8.2 8.2	8.2	34.0 34.0	34.0	79.9 79.0	79.5	5.5 5.4	5.5	2.9 2.8	2.9	3.5 3.5		3.5		
C2	Sunny	Calm	18:20	Surface	1	27.1 27.2	27.2	8.2 8.2	8.2	31.4 31.3	31.4	104.2 104.7	104.5	7.0 7.0	7.0	6.2	0.6 0.6	0.6	1.7	5.5 5.2	5.4	5.6
				Middle	16.5	25.1 25.1	25.1	8.2 8.2	8.2	33.8 33.8	33.8	78.3 80.0	79.2	5.3 5.5	5.4	1.6 1.6	1.6	5.5 5.8		5.7		
				Bottom	32	24.9 25.0	25.0	8.2 8.2	8.2	33.9 33.9	33.9	77.0 78.0	77.5	5.3 5.3	5.3	2.8 2.7	2.8	5.8 5.7		5.8		
G1	Sunny	Calm	18:48	Surface	1	27.8 27.8	27.8	8.3 8.3	8.3	32.1 32.1	32.1	134.8 133.7	134.3	8.9 8.8	8.9	8.5	0.2 0.2	0.2	0.8	5.5 5.5	5.5	5.3
				Middle	4	27.4 27.1	27.3	8.3 8.3	8.3	32.2 32.4	32.3	121.9 119.8	120.9	8.1 7.9	8.0	0.4 0.4	0.4	5.5 5.8		5.7		
				Bottom	7	25.5 25.0	25.3	8.3 8.3	8.3	33.5 33.9	33.7	82.6 83.2	82.9	5.6 5.7	5.7	1.7 1.8	1.8	4.8 4.6		4.7		
G2	Sunny	Calm	18:39	Surface	1	27.9 27.9	27.9	8.3 8.3	8.3	32.0 32.0	32.0	131.0 129.9	130.5	8.6 8.5	8.6	8.0	0.5 0.5	0.5	1.1	4.7 4.6	4.7	4.1
				Middle	5	26.8 26.8	26.8	8.3 8.3	8.3	32.7 32.7	32.7	110.9 110.5	110.7	7.4 7.4	7.4	1.1 1.1	1.1	4.8 4.8		4.8		
				Bottom	9	25.3 25.7	25.5	8.3 8.3	8.3	33.6 33.4	33.5	82.3 86.5	84.4	5.6 5.9	5.8	1.8 1.7	1.8	2.9 2.9		2.9		
G3	Sunny	Calm	18:54	Surface	1	28.1 28.1	28.1	8.3 8.3	8.3	32.0 32.0	32.0	139.6 139.7	139.7	9.1 9.1	9.1	8.5	0.4 0.4	0.4	1.4	5.1 4.9	5.0	4.3
				Middle	4	26.8 26.9	26.9	8.3 8.3	8.3	32.6 32.6	32.6	113.9 118.4	116.2	7.6 7.9	7.8	0.8 0.8	0.8	4.3 5.3		4.8		
				Bottom	7	25.1 25.2	25.2	8.3 8.3	8.3	33.8 33.8	33.8	79.1 83.1	81.1	5.4 5.7	5.6	2.9 2.8	2.9	3.1 3.3		3.2		
G4	Sunny	Calm	19:05	Surface	1	28.1 28.1	28.1	8.3 8.3	8.3	32.0 32.0	32.0	149.6 149.5	149.6	9.8 9.8	9.8	9.5	0.7 0.6	0.7	1.2	3.2 3.3	3.3	5.0
				Middle	4	27.8 27.6	27.7	8.3 8.3	8.3	32.1 32.2	32.2	141.3 136.9	139.1	9.3 9.0	9.2	0.7 0.7	0.7	7.6 7.4		7.5		
				Bottom	7	25.2 25.2	25.2	8.3 8.3	8.3	33.7 33.7	33.7	83.9 77.2	80.6	5.7 5.3	5.5	2.2 2.2	2.2	4.3 4.2		4.3		
M1	Sunny	Calm	18:44	Surface	1	27.8 27.9	27.9	8.3 8.3	8.3	32.0 32.0	32.0	129.2 132.4	130.8	8.5 8.7	8.6	8.7	0.4 0.4	0.4	0.6	4.6 4.6	4.6	4.9
				Middle	3	27.7 27.7	27.7	8.3 8.3	8.3	32.1 32.0	32.1	130.3 132.1	131.2	8.6 8.7	8.7	0.5 0.5	0.5	5.3 5.4		5.4		
				Bottom	5	26.7 26.6	26.8	8.3 8.3	8.3	32.6 32.7	32.7	113.9 111.8	112.9	7.6 7.4	7.5	1.0 0.9	1.0	4.7 4.9		4.8		
M2	Sunny	Calm	18:34	Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	32.1 32.1	32.1	136.4 136.1	136.3	8.9 8.9	8.9	7.9	0.4 0.4	0.4	0.8	4.8 4.9	4.9	5.0
				Middle	6	25.9 26.3	26.1	8.2 8.2	8.2	33.1 32.9	33.0	95.4 106.0	100.7	6.4 7.1	6.8	0.7 0.7	0.7	6.2 6.3		6.3		
				Bottom	11	25.3 25.3	25.3	8.2 8.2	8.2	33.6 33.6	33.6	84.2 83.7	84.0	5.7 5.7	5.7	1.3 1.2	1.3	3.9 3.9		3.9		
M3	Sunny	Calm	18:59	Surface	1	28.2 28.2	28.2	8.3 8.3	8.3	32.0 32.0	32.0	146.1 143.9	145.0	9.5 9.4	9.5	9.2	0.4 0.4	0.4	1.1	4.9 4.8	4.9	4.6
				Middle	4	27.7 27.7	27.7	8.3 8.3	8.3	32.2 32.2	32.2	132.2 134.2	133.2	8.7 8.8	8.8	0.5 0.5	0.5	5.3 5.1		5.2		
				Bottom	7	25.2 25.2	25.2	8.3 8.3	8.3	33.8 33.8	33.8	80.2 78.9	79.6	5.5 5.4	5.5	2.4 2.4	2.4	3.6 3.6		3.6		
M4	Sunny	Calm	18:27	Surface	1	28.1 28.2	28.2	8.2 8.2	8.2	32.0 32.0	32.0	141.4 143.9	142.7	9.2 9.4	9.3	8.7	0.4 0.4	0.4	1.2	4.9 5.0	5.0	5.1
				Middle	5	27.1 26.8	27.0	8.2 8.2	8.2	32.4 32.6	32.5	122.7 118.8	120.8	8.1 7.9	8.0	0.8 0.8	0.8	3.5 3.7		3.6		
				Bottom	9	25.1 25.4	25.3	8.2 8.2	8.2	33.9 33.6	33.8	83.1 94.9	89.0	5.7 6.4	6.1	2.4 2.4	2.4	6.8 6.5		6.7		
M5	Sunny	Calm	19:15	Surface	1	27.3 27.3	27.3	8.3 8.3	8.3	32.0 32.0	32.0	124.1 122.5	123.3	8.2 8.1	8.2	8.2	0.5 0.4	0.5	0.7	4.5 4.5	4.5	5.4
				Middle	5	26.9 27.1	27.0	8.3 8.3	8.3	32.5 32.3	32.4	118.1 123.4	120.8	7.9 8.2	8.1	0.6 0.5	0.6	5.6 5.5		5.6		
				Bottom	9	25.3 25.3	25.3	8.3 8.3	8.3	33.6 33.6	33.6	90.9 85.5	88.2	6.2 5.8	6.0	0.9 0.8	0.9	6.0 6.0		6.0		
M6	Sunny	Calm	19:11	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	7.3
				Middle	2	27.9 28.0	28.0	8.3 8.3	8.3	32.0 32.0	32.0	142.1 143.0	142.6	9.3 9.4	9.4	0.4 0.4	0.4	7.3 7.2		7.3		
				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 23 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 3.6 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 3.9 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.1 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.6 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 6.1 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.6 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.0 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.5 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 23 May 2018**

**(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	13:19	Surface	1	27.0 26.8	26.9	8.3 8.3	8.3	32.1 32.2	32.2	110.5 111.9	111.2	7.4 7.5	7.5	6.7	0.5 0.6	0.6	1.6	5.1 5.1	5.1	5.4
				Middle	9	25.4 25.4	25.4	8.2 8.3	8.3	33.5 33.4	33.5	85.4 85.4	85.4	5.8 5.8	5.8		1.2 1.3	1.3		5.4 5.4	5.4	
				Bottom	17	24.8 24.8	24.8	8.2 8.2	8.2	34.1 34.1	34.1	79.4 79.7	79.6	5.4 5.5	5.5		2.9 3.1	3.0		5.9 5.7	5.8	
C2	Sunny	Calm	12:11	Surface	1	26.7 26.9	26.8	8.1 8.1	8.1	31.6 31.5	31.6	92.0 93.0	92.5	6.2 6.2	6.2	5.8	0.7 0.8	0.8	1.8	5.0 5.1	5.1	5.1
				Middle	16.5	25.1 25.1	25.1	8.2 8.2	8.2	33.7 33.8	33.8	79.2 79.6	79.4	5.4 5.4	5.4		2.4 2.2	2.3		4.3 4.2	4.3	
				Bottom	32	25.0 25.0	25.0	8.2 8.2	8.2	33.9 33.9	33.9	77.7 77.6	77.7	5.3 5.3	5.3		2.3 2.1	2.2		5.8 5.9	5.9	
G1	Sunny	Calm	12:43	Surface	1	27.4 27.5	27.5	8.3 8.3	8.3	32.0 32.0	32.0	118.0 118.9	118.5	7.8 7.9	7.9	7.8	0.5 0.5	0.5	0.7	5.4 5.4	5.4	5.0
				Middle	4	26.7 26.9	26.8	8.3 8.3	8.3	32.3 32.1	32.2	108.5 118.1	113.3	7.3 7.9	7.6		0.4 0.4	0.4		4.4 4.8	4.6	
				Bottom	7	25.5 25.6	25.6	8.3 8.3	8.3	33.4 33.3	33.4	81.5 82.6	82.1	5.5 5.6	5.6		1.3 1.1	1.2		4.9 4.9	4.9	
G2	Sunny	Calm	12:31	Surface	1	27.1 27.2	27.2	8.3 8.3	8.3	32.1 32.1	32.1	114.4 115.4	114.9	7.6 7.7	7.7	7.4	0.2 0.2	0.2	0.6	4.2 4.3	4.3	4.9
				Middle	5	26.6 26.7	26.7	8.3 8.3	8.3	32.3 32.3	32.3	103.4 108.0	105.7	6.9 7.2	7.1		0.4 0.4	0.4		4.5 4.7	4.6	
				Bottom	9	25.3 25.3	25.3	8.2 8.2	8.2	33.6 33.6	33.6	82.5 82.3	82.4	5.6 5.6	5.6		1.1 1.2	1.2		5.7 5.6	5.7	
G3	Sunny	Calm	12:49	Surface	1	27.7 27.7	27.7	8.3 8.3	8.3	32.0 32.0	32.0	118.0 117.0	117.5	7.8 7.7	7.8	7.7	0.4 0.4	0.4	1.1	3.1 3.0	3.1	4.3
				Middle	4	27.1 27.1	27.1	8.3 8.3	8.3	32.1 32.1	32.1	112.4 111.6	112.0	7.5 7.4	7.5		1.8 1.8	1.8		5.0 5.0	5.0	
				Bottom	7	25.9 25.8	25.9	8.3 8.3	8.3	33.0 33.1	33.1	88.0 87.1	87.6	5.9 5.9	5.9		1.2 1.2	1.2		4.8 4.9	4.9	
G4	Sunny	Calm	12:59	Surface	1	27.5 27.6	27.6	8.3 8.3	8.3	32.0 32.0	32.0	119.6 118.6	119.1	7.9 7.8	7.9	7.5	0.2 0.2	0.2	0.8	5.0 5.0	5.0	5.4
				Middle	4	26.4 26.7	26.6	8.3 8.3	8.3	32.5 32.3	32.4	102.7 109.6	106.2	6.9 7.3	7.1		0.4 0.4	0.4		4.8 4.9	4.9	
				Bottom	7	25.4 25.4	25.4	8.2 8.2	8.2	33.4 33.5	33.5	77.1 73.6	75.4	5.2 5.0	5.1		1.9 1.9	1.9		6.2 6.2	6.2	
M1	Sunny	Calm	12:37	Surface	1	27.6 27.6	27.6	8.2 8.3	8.3	32.0 32.0	32.0	118.3 114.8	116.6	7.8 7.6	7.7	7.3	0.2 0.2	0.2	0.6	3.2 3.3	3.3	4.2
				Middle	3	26.9 26.8	26.9	8.3 8.3	8.3	32.2 32.2	32.2	103.6 103.2	103.4	6.9 6.9	6.9		0.4 0.4	0.4		4.8 4.8	4.8	
				Bottom	5	25.9 25.7	25.8	8.2 8.3	8.3	33.0 33.2	33.1	82.0 80.1	81.1	5.5 5.4	5.5		1.1 1.0	1.1		4.4 4.6	4.5	
M2	Sunny	Calm	12:27	Surface	1	27.1 27.1	27.1	8.2 8.2	8.2	32.1 32.1	32.1	119.9 115.9	117.9	8.0 7.7	7.9	7.7	0.5 0.5	0.5	0.6	3.3 3.5	3.4	4.8
				Middle	6	26.8 26.6	26.7	8.3 8.3	8.3	32.2 32.3	32.3	117.5 105.8	111.7	7.9 7.1	7.5		0.5 0.5	0.5		4.5 4.5	4.5	
				Bottom	11	25.4 25.4	25.4	8.2 8.2	8.2	33.5 33.5	33.5	86.2 87.3	86.8	5.9 5.9	5.9		0.8 0.9	0.9		6.6 6.4	6.5	
M3	Sunny	Calm	12:53	Surface	1	27.8 27.9	27.9	8.3 8.3	8.3	31.8 31.8	31.8	117.7 117.3	117.5	7.7 7.7	7.7	7.8	0.4 0.4	0.4	0.8	3.8 3.9	3.9	3.6
				Middle	4	27.0 27.0	27.0	8.3 8.3	8.3	32.1 32.1	32.1	117.2 118.2	117.7	7.8 7.9	7.9		0.5 0.5	0.5		3.8 3.9	3.9	
				Bottom	7	25.6 25.6	25.6	8.3 8.3	8.3	33.2 33.2	33.2	86.7 85.8	86.3	5.9 5.8	5.9		1.3 1.4	1.4		3.0 3.0	3.0	
M4	Sunny	Calm	12:21	Surface	1	27.4 27.3	27.4	8.2 8.2	8.2	32.0 32.1	32.1	113.6 114.2	113.9	7.5 7.6	7.6	7.2	0.2 0.2	0.2	0.9	5.4 5.7	5.6	6.8
				Middle	4.5	26.5 26.4	26.5	8.2 8.2	8.2	32.5 32.6	32.6	97.6 102.8	100.2	6.5 6.9	6.7		0.5 0.6	0.6		8.3 8.4	8.4	
				Bottom	8	25.6 25.6	25.6	8.2 8.2	8.2	33.3 33.3	33.3	87.7 85.6	86.7	5.9 5.8	5.9		2.0 2.0	2.0		6.5 6.5	6.5	
M5	Sunny	Calm	13:11	Surface	1	27.5 27.5	27.5	8.2 8.2	8.2	31.8 31.8	31.8	106.6 106.7	106.7	7.0 7.1	7.1	6.6	0.4 0.4	0.4	1.4	4.7 4.8	4.8	3.6
				Middle	5.5	25.7 25.5	25.6	8.2 8.2	8.2	33.1 33.4	33.3	88.9 86.5	87.7	6.0 5.9	6.0		1.2 1.2	1.2		2.6 2.7	2.7	
				Bottom	10	24.9 24.9	24.9	8.2 8.2	8.2	34.0 34.0	34.0	79.9 80.3	80.1	5.5 5.5	5.5		2.5 2.5	2.5		3.5 3.2	3.4	
M6	Sunny	Calm	13:05	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	0.4	-	-	5.7
				Middle	2.1	26.5 26.5	26.5	8.2 8.3	8.3	32.4 32.4	32.4	108.1 107.8	108.0	7.2 7.2	7.2		0.4 0.4	0.4		5.8 5.6	5.7	
				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 25 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.8 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 3.0 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.2 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.2 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.7 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.3 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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



**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction**  
**Water Quality Monitoring Results on 25 May 2018**

**(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	11:01	Surface	1	27.1 27.2	27.2	8.3 8.3	8.3	32.0 32.0	32.0	122.4 122.2	122.3	8.1 8.1	8.1	6.9	1.1 1.1	1.1	1.7	4.6 4.7	4.7	4.8
				Middle	9	25.2 25.2	25.2	8.1 8.1	8.1	34.3 34.3	34.3	82.0 82.4	82.2	5.6 5.6	5.6	1.9 1.9	1.9	1.9	4.8 4.9	4.9		
				Bottom	17	25.1 25.2	25.2	8.1 8.1	8.1	34.5 34.4	34.5	79.3 79.9	79.6	5.4 5.4	5.4	2.1 1.9	2.0	2.0	4.8 4.9	4.9		
C2	Sunny	Moderate	09:22	Surface	1	26.9 26.9	26.9	8.2 8.2	8.2	32.3 32.2	32.3	114.1 115.2	114.7	7.6 7.7	7.7	6.6	1.1 1.1	1.1	1.8	5.1 5.2	5.2	5.3
				Middle	16.5	25.2 25.1	25.2	8.1 8.1	8.1	34.3 34.3	34.3	80.5 80.2	80.4	5.5 5.4	5.5	2.2 2.0	2.1	2.1	5.2 5.0	5.1		
				Bottom	32	25.0 25.0	25.0	8.1 8.1	8.1	34.5 34.5	34.5	77.4 78.0	77.7	5.3 5.3	5.3	2.3 2.3	2.3	2.3	5.6 5.6	5.6		
G1	Sunny	Moderate	09:56	Surface	1	27.1 26.9	27.0	8.3 8.3	8.3	32.9 33.0	33.0	141.6 132.8	137.2	9.4 8.8	9.1	8.0	0.9 0.9	0.9	1.0	4.2 4.1	4.2	4.7
				Middle	4	26.2 26.2	26.2	8.2 8.2	8.2	33.6 33.6	33.6	101.5 102.1	101.8	6.8 6.8	6.8	1.1 1.1	1.1	1.1	4.1 4.1	4.1		
				Bottom	7	25.6 25.6	25.6	8.1 8.1	8.1	34.0 34.0	34.0	86.5 86.5	86.5	5.8 5.8	5.8	1.1 1.1	1.1	1.1	5.9 5.9	5.9		
G2	Sunny	Moderate	09:44	Surface	1	27.4 27.6	27.5	8.3 8.4	8.4	32.7 32.7	32.7	146.6 147.4	147.0	9.7 9.7	9.7	8.5	0.7 0.6	0.7	1.1	3.6 3.4	3.5	4.0
				Middle	5	26.1 26.2	26.2	8.2 8.2	8.2	33.6 33.5	33.6	103.8 108.5	106.2	7.0 7.3	7.2	1.1 1.3	1.2	1.2	3.3 3.4	3.4		
				Bottom	9	25.3 25.3	25.3	8.1 8.1	8.1	34.3 34.3	34.3	79.0 76.4	77.7	5.4 5.2	5.3	1.3 1.5	1.4	1.4	5.0 5.2	5.1		
G3	Sunny	Moderate	10:30	Surface	1	27.9 27.8	27.9	8.4 8.4	8.4	32.6 32.6	32.6	150.3 150.7	150.5	9.9 9.9	9.9	8.8	0.5 0.6	0.6	1.2	5.2 5.1	5.2	5.2
				Middle	4	26.9 26.3	26.6	8.3 8.2	8.3	33.1 33.6	33.4	126.8 103.4	115.1	8.4 6.9	7.7	1.2 1.5	1.4	1.4	3.8 3.8	3.8		
				Bottom	7	25.5 25.3	25.4	8.1 8.1	8.1	34.2 34.2	34.2	79.0 79.5	79.3	5.3 5.4	5.4	1.4 1.5	1.5	1.5	6.5 6.4	6.5		
G4	Sunny	Moderate	10:43	Surface	1	27.5 27.6	27.6	8.4 8.4	8.4	32.6 32.6	32.6	152.0 152.1	152.1	10.0 10.0	10.0	9.5	0.7 0.7	0.7	0.9	5.7 5.6	5.7	6.1
				Middle	4	26.9 26.8	26.9	8.3 8.3	8.3	33.1 33.2	33.2	135.0 133.9	134.5	9.0 8.9	9.0	0.9 0.9	0.9	0.9	6.6 6.6	6.6		
				Bottom	7	25.4 25.4	25.4	8.1 8.1	8.1	34.1 34.1	34.1	84.9 84.8	84.8	5.7 5.7	5.7	1.1 1.1	1.1	1.1	6.1 6.1	6.1		
M1	Sunny	Moderate	09:50	Surface	1	27.0 26.8	26.9	8.3 8.3	8.3	32.9 33.0	33.0	130.5 126.9	128.7	8.7 8.4	8.6	8.1	0.9 0.9	0.9	1.1	5.1 5.0	5.1	4.9
				Middle	3	26.2 26.5	26.4	8.2 8.2	8.2	33.5 33.2	33.4	106.1 117.3	111.7	7.1 7.8	7.5	1.0 1.1	1.1	1.1	4.2 4.2	4.2		
				Bottom	5	25.7 25.9	25.8	8.2 8.2	8.2	33.9 33.8	33.9	89.6 97.5	93.6	6.0 6.6	6.3	1.4 1.4	1.4	1.4	5.4 5.4	5.4		
M2	Sunny	Moderate	09:37	Surface	1	27.3 27.4	27.4	8.3 8.3	8.3	32.7 32.6	32.7	140.8 140.6	140.7	9.3 9.3	9.3	8.3	0.6 0.6	0.6	1.1	4.3 4.0	4.2	5.0
				Middle	6	26.2 26.2	26.2	8.2 8.2	8.2	33.5 33.5	33.5	108.3 108.7	108.5	7.3 7.3	7.3	1.1 1.1	1.1	1.1	5.4 5.4	5.4		
				Bottom	11	25.5 25.3	25.4	8.1 8.1	8.1	34.2 34.3	34.3	79.1 76.3	77.7	5.3 5.2	5.3	1.5 1.7	1.6	1.6	5.5 5.5	5.5		
M3	Sunny	Moderate	10:36	Surface	1	27.8 27.9	27.9	8.4 8.3	8.4	32.5 32.4	32.5	149.6 149.4	149.5	9.8 9.8	9.8	8.6	0.6 0.6	0.6	1.3	4.8 4.6	4.7	5.3
				Middle	4	26.8 26.8	26.8	8.2 8.2	8.2	33.2 33.3	33.3	111.3 110.8	111.1	7.4 7.4	7.4	2.0 2.1	2.1	2.1	5.5 5.6	5.6		
				Bottom	7	25.4 25.4	25.4	8.1 8.1	8.1	34.2 34.2	34.2	81.6 82.0	81.8	5.5 5.5	5.5	1.2 1.3	1.3	1.3	5.5 5.8	5.7		
M4	Sunny	Moderate	09:30	Surface	1	27.3 27.4	27.4	8.3 8.3	8.3	32.6 32.6	32.6	140.8 141.1	141.0	9.3 9.3	9.3	9.1	0.7 0.6	0.7	0.9	3.0 3.0	3.0	4.5
				Middle	5	26.8 26.8	26.8	8.3 8.3	8.3	32.9 32.9	32.9	132.1 131.5	131.8	8.8 8.8	8.8	0.9 0.9	0.9	0.9	4.0 3.9	4.0		
				Bottom	9	26.6 26.6	26.6	8.3 8.3	8.3	33.0 33.0	33.0	122.3 123.3	122.8	8.2 8.2	8.2	1.0 0.9	1.0	1.0	6.4 6.5	6.5		
M5	Sunny	Moderate	10:55	Surface	1	26.7 26.8	26.8	8.3 8.3	8.3	32.9 32.9	32.9	127.8 128.2	128.0	8.5 8.5	8.5	7.4	1.1 1.1	1.1	1.1	5.9 5.9	5.9	5.4
				Middle	5.5	25.8 25.8	25.8	8.2 8.2	8.2	33.8 33.8	33.8	92.3 92.2	92.3	6.2 6.2	6.2	1.0 1.0	1.0	1.0	4.6 4.6	4.6		
				Bottom	10	25.4 25.4	25.4	8.1 8.1	8.1	34.2 34.2	34.2	83.5 83.6	83.6	5.6 5.7	5.7	1.2 1.2	1.2	1.2	5.6 5.6	5.6		
M6	Sunny	Moderate	10:50	Surface	-	-	-	-	-	-	-	-	-	-	-	9.3	-	-	0.7	-	-	5.6
				Middle	2.1	27.0 27.0	27.0	8.3 8.3	8.3	32.9 33.0	33.0	140.0 139.8	139.9	9.3 9.3	9.3	0.7 0.6	0.7	0.7	5.6 5.5	5.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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

**Appendix I - Action and Limit Levels for Marine Water Quality on 25 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<b><u>4.9 mg/L</u></b>	<b><u>4.6 mg/L</u></b>
	Bottom	<b><u>4.2 mg/L</u></b>	<b><u>3.6 mg/L</u></b>
	<b><u>Station M6</u></b>		
	Intake Level	<b><u>5.0 mg/L</u></b>	<b><u>4.7 mg/L</u></b>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<b><u>19.3 NTU</u></b> or 120% of upstream control station's Turbidity at the same tide of the same day <b><u>CI: 3.4 NTU</u></b>	<b><u>22.2 NTU</u></b> or 130% of upstream control station's Turbidity at the same tide of the same day <b><u>CI: 3.6 NTU</u></b>
	<b><u>Station M6</u></b>		
	Intake Level	<b><u>19.0 NTU</u></b>	<b><u>19.4 NTU</u></b>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<b><u>6.0 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.5 mg/L</u></b>	<b><u>6.9 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.0 mg/L</u></b>
<b><u>Stations M1-M5</u></b>			
Surface		<b><u>6.2 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.5 mg/L</u></b>	<b><u>7.4 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.0 mg/L</u></b>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<b><u>6.9 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 8.2 mg/L</u></b>	<b><u>7.9 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 8.8 mg/L</u></b>
<b><u>Station M6</u></b>			
Intake Level	<b><u>8.3 mg/L</u></b>	<b><u>8.6 mg/L</u></b>	

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 25 May 2018**

**(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	15:39	Surface	1	27.2	27.2	8.3	8.3	32.3	32.3	136.5	136.6	9.1	9.1	7.7	1.4	1.4	1.9	5.3	5.4	6.4
				Middle	9	25.7	25.7	8.2	8.2	33.6	33.7	90.7	91.3	6.1	6.2		1.4	1.5		6.9	7.1	
				Bottom	17	24.8	24.8	8.1	8.1	34.7	34.7	79.4	79.5	5.4	5.4		2.7	2.8		6.7	6.8	
C2	Sunny	Moderate	14:30	Surface	1	27.2	27.2	8.2	8.2	31.6	31.7	117.6	117.9	7.8	7.9	7.3	1.1	1.1	1.3	5.7	5.7	5.2
				Middle	16.5	25.9	25.9	8.2	8.2	33.7	33.8	98.1	99.9	6.6	6.8		1.2	1.2		3.4	3.5	
				Bottom	32	25.6	25.7	8.2	8.2	34.0	34.0	92.3	92.5	6.2	6.2		1.5	1.6		6.3	6.4	
G1	Sunny	Moderate	15:03	Surface	1	27.6	27.6	8.4	8.4	32.8	32.8	165.4	163.9	10.9	10.8	10.0	1.8	1.8	1.6	4.4	4.5	4.4
				Middle	4	26.8	26.8	8.3	8.3	33.1	33.1	138.8	138.7	9.2	9.2		1.5	1.5		4.6	4.5	
				Bottom	7	26.1	26.2	8.2	8.2	33.6	33.6	108.6	108.8	7.3	7.3		1.4	1.4		4.1	4.1	
G2	Sunny	Moderate	14:50	Surface	1	27.3	27.3	8.4	8.4	32.9	33.0	153.5	153.5	10.1	10.1	9.2	1.1	1.1	1.1	4.9	4.9	5.4
				Middle	5	26.3	26.3	8.3	8.3	33.4	33.5	122.5	121.6	8.2	8.1		1.1	1.2		4.5	4.5	
				Bottom	9	25.8	25.8	8.2	8.2	33.8	33.8	95.9	95.3	6.5	6.5		1.0	1.1		6.7	6.7	
G3	Sunny	Moderate	15:08	Surface	1	27.9	27.9	8.4	8.4	32.6	32.7	172.4	172.5	11.3	11.3	10.7	0.8	0.8	1.1	5.0	5.1	4.9
				Middle	4	27.2	27.2	8.4	8.4	32.9	32.9	153.3	153.2	10.1	10.1		1.2	1.2		4.7	4.7	
				Bottom	7	25.9	25.9	8.2	8.2	33.9	33.9	95.8	98.0	6.4	6.6		1.2	1.2		4.9	5.0	
G4	Sunny	Moderate	15:20	Surface	1	27.9	27.9	8.4	8.4	32.9	32.9	162.2	161.9	10.6	10.6	10.1	0.9	1.0	1.3	5.5	5.6	5.7
				Middle	4	26.8	26.8	8.3	8.4	32.9	32.9	144.4	144.6	9.6	9.6		1.3	1.3		5.5	5.4	
				Bottom	7	25.6	25.6	8.2	8.2	34.0	34.0	91.8	92.1	6.2	6.2		1.6	1.6		6.0	6.0	
M1	Sunny	Moderate	14:58	Surface	1	27.7	27.7	8.4	8.4	32.8	32.9	163.1	162.3	10.7	10.7	10.2	0.8	0.9	1.1	4.3	4.4	4.8
				Middle	3	27.1	27.1	8.4	8.4	33.0	33.0	144.0	144.4	9.5	9.6		1.1	1.2		5.0	5.0	
				Bottom	5	26.4	26.4	8.3	8.3	33.4	33.4	121.5	121.3	8.1	8.1		1.2	1.2		4.9	4.9	
M2	Sunny	Moderate	14:45	Surface	1	27.8	27.8	8.4	8.4	32.8	32.8	168.2	168.3	11.0	11.0	9.3	1.7	1.8	1.3	3.4	3.5	5.3
				Middle	6	26.0	26.1	8.2	8.2	33.7	33.7	108.2	112.3	7.3	7.6		1.0	1.1		5.9	6.0	
				Bottom	11	25.7	25.7	8.2	8.2	33.9	33.9	95.2	94.1	6.4	6.4		1.0	1.0		6.4	6.5	
M3	Sunny	Moderate	15:13	Surface	1	27.8	27.8	8.4	8.4	32.3	32.3	156.8	157.5	10.3	10.4	10.4	0.8	0.8	1.2	5.5	5.5	6.0
				Middle	4	27.2	27.4	8.4	8.4	32.9	32.9	148.4	155.2	9.8	10.3		1.1	1.2		5.6	5.7	
				Bottom	7	27.1	27.1	8.3	8.4	33.0	33.0	144.7	146.6	9.6	9.7		1.6	1.6		6.5	6.7	
M4	Sunny	Moderate	14:36	Surface	1	28.3	28.4	8.4	8.4	32.7	32.7	169.6	170.8	11.0	11.1	10.1	0.6	0.6	0.9	3.5	3.5	5.1
				Middle	5	26.8	26.9	8.3	8.3	33.2	33.2	135.9	136.5	9.0	9.1		0.9	1.0		6.7	6.7	
				Bottom	9	25.7	25.6	8.2	8.2	34.0	34.1	100.2	97.6	6.8	6.6		1.0	1.1		5.2	5.2	
M5	Sunny	Moderate	15:32	Surface	1	27.1	27.0	8.3	8.3	32.7	32.7	135.8	135.5	9.0	9.0	7.9	1.3	1.3	1.7	4.6	4.7	4.6
				Middle	5	26.0	26.0	8.2	8.2	33.4	33.4	100.1	100.3	6.7	6.8		1.7	1.7		4.3	4.4	
				Bottom	9	25.2	25.2	8.1	8.1	34.3	34.4	83.0	82.1	5.6	5.6		2.0	2.1		4.7	4.7	
M6	Sunny	Moderate	15:26	Surface	-	-	-	-	-	-	-	-	-	-	10.3	-	-	1.7	-	-	4.7	
				Middle	2	27.4	27.4	8.4	8.4	32.8	32.8	155.3	155.7	10.2		10.3	1.7		1.7	4.7		4.7
				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 28 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.6 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 2.9 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.0 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.5 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 5.0 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 5.5 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.2 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.8 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction**  
**Water Quality Monitoring Results on 28 May 2018**

**(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	12:47	Surface	1	26.6 26.2	26.4	8.2 8.1	8.2	31.5 32.0	31.8	99.3 93.5	96.4	6.7 6.3	6.5	6.0	1.3 1.4	1.4	1.6	4.6 4.6	4.6	5.2
				Middle	9	24.6 24.5	24.6	8.1 8.1	8.1	33.7 33.7	33.7	80.1 79.3	79.7	5.5 5.5	5.5		1.7 1.5	1.6		5.8 5.8	5.8	
				Bottom	17	24.3 24.1	24.2	8.1 8.1	8.1	33.9 34.0	34.0	77.3 76.8	77.1	5.3 5.3	5.3		1.6 1.8	1.7		5.3 5.3	5.3	
C2	Sunny	Calm	11:12	Surface	1	27.0 26.7	26.9	8.2 8.2	8.2	31.0 31.4	31.2	108.7 101.8	105.3	7.3 6.9	7.1	6.3	1.0 1.0	1.0	1.9	4.3 4.1	4.2	4.9
				Middle	16.5	24.5 24.9	24.7	8.1 8.1	8.1	33.8 33.5	33.7	77.4 80.7	79.1	5.3 5.5	5.4		2.7 2.4	2.6		4.3 4.4	4.4	
				Bottom	32	24.6 24.3	24.5	8.1 8.1	8.1	33.7 33.9	33.8	77.6 77.3	77.5	5.3 5.3	5.3		2.2 2.2	2.2		5.9 6.0	6.0	
G1	Sunny	Calm	12:00	Surface	1	27.5 27.6	27.6	8.3 8.3	8.3	32.2 32.2	32.2	147.0 145.0	146.0	9.7 9.6	9.7	7.9	0.8 0.9	0.9	1.5	3.3 3.3	3.3	5.3
				Middle	4	25.3 25.3	25.3	8.1 8.1	8.1	33.3 33.3	33.3	86.3 90.1	88.2	5.9 6.1	6.0		1.0 1.0	1.0		8.2 8.2	8.2	
				Bottom	7	24.5 24.5	24.5	8.1 8.1	8.1	33.9 33.9	33.9	72.4 72.8	72.6	5.0 5.0	5.0		2.5 2.8	2.7		4.2 4.2	4.3	
G2	Sunny	Calm	11:45	Surface	1	26.8 26.8	26.8	8.2 8.3	8.3	32.5 32.5	32.5	117.7 126.6	122.2	8.4 8.1	8.1	7.2	0.8 0.8	0.8	1.3	4.3 4.0	4.2	5.5
				Middle	5	25.2 25.2	25.2	8.1 8.1	8.1	33.4 33.3	33.4	89.1 90.2	89.7	6.1 6.2	6.2		0.8 0.9	0.9		6.2 5.8	6.0	
				Bottom	9	24.4 24.4	24.4	8.1 8.1	8.1	34.0 34.0	34.0	74.0 74.2	74.1	5.1 5.1	5.1		2.2 2.1	2.2		6.5 6.3	6.4	
G3	Sunny	Calm	12:09	Surface	1	27.8 27.7	27.8	8.3 8.3	8.3	31.9 32.0	32.0	143.9 151.9	147.9	9.5 10.0	9.8	9.0	0.9 0.8	0.9	1.1	4.5 4.5	4.5	4.5
				Middle	4	27.1 26.7	26.9	8.3 8.2	8.3	32.3 32.6	32.5	133.4 111.8	122.6	8.9 7.5	8.2		1.1 1.1	1.1		6.4 6.3	6.4	
				Bottom	7	25.0 25.1	25.1	8.1 8.1	8.1	33.5 33.5	33.5	78.9 81.8	80.4	5.4 5.6	5.5		1.1 1.3	1.2		2.7 2.7	2.7	
G4	Sunny	Calm	12:25	Surface	1	26.7 26.9	26.8	8.3 8.3	8.3	32.3 32.3	32.3	132.4 131.7	132.1	8.9 8.8	8.9	8.5	0.9 0.9	0.9	1.0	3.6 3.5	3.6	4.3
				Middle	4	26.1 26.0	26.1	8.3 8.2	8.3	32.7 32.7	32.7	121.1 116.2	119.7	8.2 8.0	8.1		1.0 1.0	1.0		3.6 3.8	3.7	
				Bottom	7	25.4 25.3	25.4	8.2 8.1	8.2	33.2 33.4	33.3	95.5 81.1	88.3	6.5 5.5	6.0		1.0 1.0	1.0		5.6 5.5	5.6	
M1	Sunny	Calm	11:53	Surface	1	27.7 27.5	27.6	8.3 8.3	8.3	32.1 32.2	32.2	151.5 149.6	150.6	10.0 9.9	10.0	8.7	0.8 0.9	0.9	1.0	3.8 3.7	3.8	4.4
				Middle	3	26.0 25.8	25.9	8.2 8.2	8.2	33.0 33.1	33.1	107.5 107.9	107.7	7.3 7.3	7.3		0.9 1.1	1.0		4.3 4.2	4.3	
				Bottom	5	25.3 25.3	25.3	8.1 8.1	8.1	33.3 33.3	33.3	92.1 91.5	91.8	6.3 6.2	6.3		1.0 1.1	1.1		5.1 5.1	5.1	
M2	Sunny	Calm	11:35	Surface	1	26.6 27.0	26.8	8.3 8.3	8.3	32.5 32.2	32.4	141.9 146.3	144.1	9.5 9.7	9.6	7.7	0.9 0.9	0.9	1.5	2.7 2.7	2.7	3.4
				Middle	6	24.8 24.9	24.9	8.1 8.1	8.1	33.7 33.6	33.7	83.5 83.5	83.5	5.7 5.7	5.7		1.0 0.9	1.0		3.0 2.9	3.0	
				Bottom	11	24.3 24.3	24.3	8.1 8.1	8.1	34.0 34.0	34.0	75.8 76.3	76.1	5.2 5.3	5.3		2.6 2.6	2.6		4.4 4.3	4.4	
M3	Sunny	Calm	12:16	Surface	1	27.8 27.7	27.8	8.3 8.3	8.3	31.8 31.8	31.8	144.9 140.3	142.6	9.5 9.2	9.4	7.8	1.0 1.2	1.1	1.5	4.8 4.6	4.7	4.6
				Middle	4	26.2 26.3	26.3	8.1 8.1	8.1	32.7 32.6	32.7	90.8 88.7	89.8	6.1 6.0	6.1		1.1 1.2	1.2		4.9 4.7	4.8	
				Bottom	7	24.7 24.8	24.8	8.1 8.1	8.1	33.9 33.8	33.9	70.0 70.0	70.0	4.8 4.8	4.8		2.1 2.3	2.2		4.4 4.4	4.4	
M4	Sunny	Calm	11:26	Surface	1	26.7 26.8	26.8	8.3 8.3	8.3	32.3 32.3	32.3	133.6 133.5	133.6	8.9 8.9	8.9	8.3	0.9 1.0	1.0	1.1	5.0 5.0	5.0	4.2
				Middle	5	26.0 26.0	26.0	8.2 8.2	8.2	32.7 32.8	32.8	112.3 113.3	112.8	7.6 7.7	7.7		1.0 1.1	1.1		4.3 4.2	4.3	
				Bottom	9	25.2 25.3	25.3	8.1 8.1	8.1	33.4 33.3	33.4	89.4 91.2	90.3	6.1 6.2	6.2		1.4 1.2	1.3		3.2 3.2	3.2	
M5	Sunny	Calm	12:38	Surface	1	26.3 26.3	26.3	8.2 8.2	8.2	32.1 32.1	32.1	103.3 103.9	103.6	7.0 7.0	7.0	7.0	1.4 1.4	1.4	1.5	3.7 3.6	3.7	5.1
				Middle	5.5	26.1 26.1	26.1	8.2 8.2	8.2	32.3 32.4	32.4	102.2 102.4	102.3	6.9 6.9	6.9		1.4 1.4	1.4		7.1 7.2	7.2	
				Bottom	10	25.9 26.0	26.0	8.2 8.2	8.2	32.5 32.5	32.5	99.6 100.7	100.2	6.7 6.8	6.8		1.7 1.7	1.7		4.2 4.4	4.3	
M6	Sunny	Calm	12:33	Surface	-	-	-	-	-	-	-	-	-	-	-	8.8	-	-	0.9	-	-	4.5
				Middle	2.1	26.4 26.3	26.4	8.3 8.3	8.3	32.5 32.5	32.5	129.5 130.4	130.0	8.7 8.8	8.8		0.9 0.9	0.9		4.5 4.4	4.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	

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

**Appendix I - Action and Limit Levels for Marine Water Quality on 28 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>CI: 4.7 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>CI: 5.1 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.8 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.2 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 5.8 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 6.2 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>CI: 7.3 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>CI: 7.9 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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

**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction**  
**Water Quality Monitoring Results on 28 May 2018**

**(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	18:19	Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	31.5 31.7	31.6	119.3 119.1	119.2	8.0 8.0	8.0	7.2	1.3 1.1	1.2	2.1	4.7 4.8	4.8	5.2
				Middle	9	24.4 25.3	24.9	8.1 8.2	8.2	33.9 33.3	33.6	81.4 101.6	91.5	5.6 6.9	6.3		1.2 1.2	1.2		4.7 4.7	4.7	
				Bottom	17	24.0 24.0	24.0	8.1 8.1	8.1	34.1 34.1	34.1	76.7 77.5	77.1	5.3 5.4	5.4		3.8 3.9	3.9		6.2 6.0	6.1	
C2	Sunny	Calm	17:03	Surface	1	26.4 27.3	26.9	8.2 8.2	8.2	32.5 31.6	32.1	127.7 133.3	130.5	8.6 8.9	8.8	7.4	1.3 1.2	1.3	2.1	3.8 3.6	3.7	3.8
				Middle	16.5	25.1 25.1	25.1	8.1 8.1	8.1	33.3 33.3	33.3	86.6 88.3	87.5	5.9 6.0	6.0		1.6 1.5	1.6		3.2 3.3	3.3	
				Bottom	32	24.3 24.3	24.3	8.1 8.1	8.1	33.8 33.8	33.8	75.7 77.2	76.5	5.2 5.3	5.3		3.3 3.5	3.4		4.4 4.6	4.5	
G1	Sunny	Calm	17:44	Surface	1	26.9 27.0	27.0	8.3 8.3	8.3	32.2 32.2	32.2	131.0 134.0	132.5	8.7 8.9	8.8	8.3	1.1 1.1	1.1	2.3	5.1 5.5	5.3	5.4
				Middle	4	26.1 26.5	26.3	8.2 8.2	8.2	32.4 32.4	32.4	109.1 121.7	115.4	7.4 8.2	7.8		1.2 1.2	1.2		4.8 5.8	5.8	
				Bottom	7	24.5 24.5	24.5	8.1 8.1	8.1	33.9 33.9	33.9	74.3 75.3	74.8	5.1 5.2	5.2		4.4 4.5	4.5		4.9 5.1	5.0	
G2	Sunny	Calm	17:33	Surface	1	26.6 26.4	26.5	8.3 8.2	8.3	32.3 32.4	32.4	129.1 119.6	124.4	8.6 8.0	8.3	7.4	1.3 1.3	1.3	2.7	4.1 4.2	4.2	5.1
				Middle	5	25.8 25.6	25.7	8.1 8.1	8.1	32.8 33.0	32.9	96.1 93.5	94.8	6.5 6.3	6.4		2.5 2.5	2.5		5.3 5.3	5.3	
				Bottom	9	24.5 24.5	24.5	8.1 8.1	8.1	33.9 33.9	33.9	72.5 71.6	72.1	5.0 4.9	5.0		4.6 4.1	4.4		5.8 6.0	5.9	
G3	Sunny	Calm	17:49	Surface	1	27.0 27.1	27.1	8.3 8.3	8.3	32.2 32.2	32.2	144.9 144.9	144.9	9.6 9.6	9.6	9.2	1.1 1.1	1.1	1.9	3.3 3.4	3.4	4.5
				Middle	4	26.6 26.9	26.8	8.2 8.3	8.3	32.3 32.3	32.3	124.9 135.8	130.4	8.4 9.1	8.8		1.3 1.2	1.3		4.8 4.8	4.8	
				Bottom	7	24.9 24.6	24.8	8.1 8.1	8.1	33.6 33.8	33.7	80.1 76.4	78.3	5.5 5.2	5.4		3.3 3.4	3.4		5.3 5.4	5.4	
G4	Sunny	Calm	18:01	Surface	1	26.9 26.9	26.9	8.3 8.3	8.3	32.2 32.2	32.2	133.1 132.7	132.9	8.9 8.8	8.9	8.4	1.0 1.1	1.1	1.5	4.7 4.7	4.7	5.0
				Middle	4	26.2 26.2	26.2	8.2 8.2	8.2	32.6 32.6	32.6	115.2 116.2	115.7	7.7 7.8	7.8		1.5 1.6	1.6		4.9 5.0	5.0	
				Bottom	7	24.9 25.0	25.0	8.1 8.1	8.1	33.3 33.3	33.3	86.4 88.0	87.2	5.9 6.0	6.0		1.6 1.7	1.7		5.2 5.3	5.3	
M1	Sunny	Calm	17:40	Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	32.4 32.4	32.4	128.5 129.1	128.8	8.6 8.6	8.6	8.5	1.4 1.2	1.3	1.9	4.6 4.5	4.6	5.0
				Middle	3	26.5 26.5	26.5	8.2 8.2	8.2	32.5 32.5	32.5	122.1 123.6	122.9	8.2 8.3	8.3		1.4 1.4	1.4		5.3 5.4	5.4	
				Bottom	5	25.8 25.7	25.8	8.1 8.1	8.1	32.9 33.0	33.0	97.5 96.4	97.0	6.6 6.5	6.6		2.9 2.8	2.9		5.2 5.0	5.1	
M2	Sunny	Calm	17:28	Surface	1	26.7 26.8	26.8	8.2 8.2	8.2	32.5 32.5	32.5	127.3 126.4	126.9	8.5 8.4	8.5	7.0	1.6 1.4	1.5	3.1	2.8 2.8	2.8	4.2
				Middle	6	24.8 25.0	24.9	8.1 8.1	8.1	33.7 33.5	33.6	76.7 79.7	78.2	5.3 5.4	5.4		3.5 3.6	3.6		3.1 3.1	3.1	
				Bottom	11	24.5 24.5	24.5	8.1 8.1	8.1	33.9 33.9	33.9	71.4 71.1	71.3	4.9 4.9	4.9		4.3 4.2	4.3		6.8 6.7	6.8	
M3	Sunny	Calm	17:55	Surface	1	27.1 27.3	27.2	8.3 8.3	8.3	32.0 32.0	32.0	140.0 150.8	145.4	9.3 10.0	9.7	8.9	1.4 1.3	1.4	2.1	4.0 4.0	4.0	5.2
				Middle	4	26.4 26.4	26.4	8.2 8.2	8.2	32.3 32.3	32.3	118.6 120.0	119.3	8.0 8.1	8.1		1.4 1.4	1.4		5.2 5.4	5.3	
				Bottom	7	25.2 25.1	25.2	8.1 8.1	8.1	33.3 33.5	33.4	85.9 83.1	84.5	5.9 5.7	5.8		3.4 3.7	3.6		6.3 6.1	6.2	
M4	Sunny	Calm	17:10	Surface	1	26.7 26.7	26.7	8.3 8.3	8.3	32.5 32.5	32.5	134.4 134.7	134.6	9.0 9.0	9.0	8.3	1.3 1.3	1.3	1.6	5.2 5.0	5.1	5.1
				Middle	5	25.8 26.0	25.9	8.2 8.2	8.2	33.0 32.9	33.0	107.9 114.8	111.4	7.3 7.7	7.5		1.9 1.8	1.9		4.0 4.2	4.1	
				Bottom	9	25.6 25.8	25.7	8.1 8.2	8.2	33.1 33.0	33.1	101.7 107.7	104.7	6.9 7.3	7.1		1.6 1.7	1.7		6.1 6.2	6.2	
M5	Sunny	Calm	18:11	Surface	1	26.6 26.6	26.6	8.2 8.2	8.2	31.9 31.9	31.9	116.3 116.6	116.5	7.8 7.8	7.8	7.2	1.3 1.3	1.3	1.9	5.3 5.3	5.3	5.8
				Middle	5.5	25.2 25.4	25.3	8.1 8.2	8.2	33.2 33.1	33.2	93.9 97.3	95.6	6.4 6.6	6.5		1.7 2.0	1.9		5.9 6.2	6.1	
				Bottom	10	24.5 24.4	24.5	8.1 8.1	8.1	33.7 33.7	33.7	78.8 78.7	78.8	5.4 5.4	5.4		2.3 2.6	2.5		6.0 6.1	6.1	
M6	Sunny	Calm	18:07	Surface	-	-	-	-	-	-	-	-	-	-	-	8.7	-	-	1.2	-	-	7.1
				Middle	2.1	26.9 26.9	26.9	8.3 8.3	8.3	32.2 32.2	32.2	129.5 131.0	130.3	8.6 8.7	8.7		1.2 1.1	1.2		7.1 7.1	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 30 May 2018 (Mid-Ebb Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day <u>C2: 3.4 NTU</u>	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day <u>C2: 3.6 NTU</u>
	<b><u>Station M6</u></b>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>	<u>6.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.4 mg/L</u>
<b><u>Stations M1-M5</u></b>			
Surface		<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 6.8 mg/L</u>	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.4 mg/L</u>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day <u>C2: 7.3 mg/L</u>	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day <u>C2: 7.9 mg/L</u>
<b><u>Station M6</u></b>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

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



**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction**  
**Water Quality Monitoring Results on 30 May 2018**

**(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	12:37	Surface	1	26.3 26.4	26.4	8.2 8.2	8.2	32.9 32.7	32.8	103.3 100.7	102.0	6.9 6.8	6.9	6.4	1.9 1.9	1.9	2.4	4.8 4.7	4.8	5.6
				Middle	9	24.4 25.2	24.8	8.2 8.2	8.2	34.3 33.7	34.0	81.7 90.7	86.2	5.6 6.2	5.9		2.6 2.6	2.6		5.6 5.5	5.6	
				Bottom	17	24.3 24.4	24.4	8.2 8.2	8.2	34.3 34.3	34.3	80.4 82.1	81.3	5.5 5.6	5.6		2.6 2.7	2.7		6.4 6.5	6.5	
C2	Sunny	Calm	11:26	Surface	1	26.7 26.4	26.6	8.1 8.2	8.2	32.6 32.8	32.7	103.2 101.9	102.6	6.9 6.8	6.9	6.2	1.8 1.8	1.8	2.5	5.6 5.7	5.7	5.4
				Middle	16	24.0 23.9	24.0	8.1 8.1	8.1	34.5 34.6	34.6	77.8 77.8	77.8	5.4 5.4	5.4		2.9 2.9	2.9		4.3 4.4	4.4	
				Bottom	31	23.8 23.8	23.8	8.1 8.1	8.1	34.6 34.6	34.6	76.6 76.6	76.6	5.3 5.3	5.3		2.8 2.8	2.8		6.0 6.1	6.1	
G1	Sunny	Calm	12:02	Surface	1	27.1 27.3	27.2	8.4 8.4	8.4	33.2 33.1	33.2	140.7 142.6	141.7	9.3 9.4	9.4	8.1	1.5 1.6	1.6	1.4	5.4 5.6	5.5	5.0
				Middle	4	25.4 25.4	25.4	8.2 8.2	8.2	33.8 33.9	33.9	101.0 98.9	100.0	6.8 6.7	6.8		1.9 1.7	1.8		5.7 5.5	5.6	
				Bottom	7	24.9 25.0	25.0	8.2 8.2	8.2	34.0 34.0	34.0	91.3 93.1	92.2	6.2 6.4	6.3		0.7 0.7	0.7		4.0 4.0	4.0	
G2	Sunny	Calm	11:49	Surface	1	27.0 27.0	27.0	8.4 8.3	8.4	33.2 33.2	33.2	135.5 137.3	136.4	9.0 9.1	9.1	7.7	0.6 0.7	0.7	1.3	5.3 5.4	5.4	4.7
				Middle	5	24.9 24.7	24.8	8.2 8.2	8.2	34.0 34.1	34.1	92.6 90.0	91.3	6.3 6.2	6.3		0.7 0.7	0.7		5.6 5.6	5.6	
				Bottom	9	24.1 24.3	24.2	8.1 8.1	8.1	34.6 34.5	34.6	75.8 73.7	74.8	5.2 5.1	5.2		2.6 2.6	2.6		3.1 3.1	3.1	
G3	Sunny	Calm	12:08	Surface	1	27.1 27.0	27.1	8.3 8.3	8.3	33.1 33.2	33.2	129.0 133.5	131.3	8.5 8.8	8.7	8.1	0.8 0.8	0.8	1.2	4.8 4.6	4.7	4.5
				Middle	4	26.1 26.1	26.1	8.3 8.3	8.3	33.6 33.6	33.6	104.3 117.3	110.9	7.0 7.9	7.5		1.4 1.4	1.4		5.2 5.2	5.2	
				Bottom	7	24.7 24.7	24.7	8.2 8.1	8.2	34.3 34.3	34.3	80.7 81.6	81.2	5.5 5.6	5.6		1.4 1.5	1.5		3.4 3.5	3.5	
G4	Sunny	Calm	12:18	Surface	1	27.3 27.2	27.3	8.4 8.3	8.4	33.2 33.2	33.2	131.7 135.3	133.5	8.7 8.9	8.8	8.0	1.4 1.5	1.5	1.6	3.9 3.7	3.8	4.7
				Middle	4.5	25.6 26.1	25.9	8.2 8.3	8.3	33.5 33.5	33.7	95.0 118.3	106.7	6.4 7.9	7.2		1.1 1.0	1.1		5.2 5.0	5.1	
				Bottom	8	24.4 24.6	24.5	8.2 8.2	8.2	34.4 34.3	34.4	79.3 84.7	82.0	5.4 5.8	5.6		2.3 2.0	2.2		5.4 5.1	5.3	
M1	Sunny	Calm	11:54	Surface	1	27.1 27.2	27.2	8.3 8.3	8.3	33.2 33.2	33.2	131.1 130.2	130.7	8.7 8.6	8.7	8.3	0.7 0.7	0.7	0.7	5.4 5.6	5.5	4.1
				Middle	3	25.8 26.1	26.0	8.3 8.3	8.3	33.6 33.5	33.6	113.8 117.7	115.8	7.7 7.9	7.8		0.7 0.7	0.7		2.8 2.6	2.7	
				Bottom	5	25.4 25.5	25.5	8.2 8.2	8.2	33.8 33.8	33.8	101.5 103.0	102.3	6.9 7.0	7.0		0.7 0.7	0.7		3.9 4.0	4.0	
M2	Sunny	Calm	11:42	Surface	1	26.1 26.3	26.2	8.3 8.3	8.3	33.3 33.2	33.3	127.0 127.8	127.4	8.5 8.6	8.6	7.0	0.9 0.9	0.9	1.6	5.8 5.6	5.7	4.4
				Middle	6	24.5 24.5	24.5	8.1 8.1	8.1	34.3 34.3	34.3	79.1 78.9	79.0	5.4 5.4	5.4		0.9 1.1	1.0		4.1 4.1	4.1	
				Bottom	11	23.9 23.9	23.9	8.1 8.1	8.1	34.6 34.6	34.6	75.7 74.2	75.0	5.2 5.1	5.2		2.8 2.9	2.9		3.5 3.4	3.5	
M3	Sunny	Calm	12:13	Surface	1	27.5 27.6	27.6	8.3 8.3	8.3	33.0 32.9	33.0	136.1 131.6	133.9	9.0 8.6	8.8	7.6	0.6 0.6	0.6	0.9	3.2 3.2	3.2	4.4
				Middle	4	25.4 25.2	25.3	8.2 8.2	8.2	33.9 34.1	34.0	94.1 94.6	94.4	6.4 6.4	6.4		1.0 1.1	1.1		6.1 5.9	6.0	
				Bottom	7	24.6 24.6	24.6	8.2 8.2	8.2	34.3 34.3	34.3	82.4 83.6	83.0	5.6 5.7	5.7		1.1 1.1	1.1		4.0 3.9	4.0	
M4	Sunny	Calm	11:34	Surface	1	26.3 26.6	26.5	8.3 8.3	8.3	33.4 33.3	33.4	121.3 119.9	120.6	8.1 8.0	8.1	8.1	0.9 0.8	0.9	1.5	4.1 4.0	4.1	4.6
				Middle	5	26.0 26.0	26.0	8.3 8.3	8.3	33.4 33.5	33.5	122.2 118.3	120.3	8.2 8.0	8.1		0.7 0.8	0.8		4.5 4.5	4.5	
				Bottom	9	24.5 24.6	24.6	8.2 8.2	8.2	34.4 34.3	34.4	83.9 88.7	86.3	5.8 6.1	6.0		2.6 2.8	2.7		5.3 5.2	5.3	
M5	Sunny	Calm	12:29	Surface	1	25.6 25.7	25.7	8.2 8.2	8.2	33.7 33.5	33.6	96.7 97.3	97.0	6.5 6.6	6.6	6.6	1.0 1.1	1.1	1.3	5.6 5.6	5.6	5.3
				Middle	5.5	25.5 25.5	25.5	8.2 8.2	8.2	33.7 33.6	33.7	96.1 95.5	95.8	6.5 6.5	6.5		1.1 1.0	1.1		5.1 4.9	5.0	
				Bottom	10	24.7 24.9	24.8	8.2 8.2	8.2	34.1 34.0	34.1	83.9 85.8	84.9	5.8 5.9	5.9		1.7 1.7	1.7		5.1 5.2	5.2	
M6	Sunny	Calm	12:24	Surface	-	-	-	-	-	-	-	-	-	-	-	9.1	-	-	0.7	-	-	4.1
				Middle	1.3	26.3 26.3	26.3	8.3 8.3	8.3	33.4 33.4	33.4	136.4 134.8	135.6	9.1 9.0	9.1		0.7 0.6	0.7		4.0 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 30 May 2018 (Mid-Flood Tide)**

<b>Parameter (unit)</b>	<b>Depth</b>	<b>Action Level</b>	<b>Limit Level</b>
DO in mg/L (See Note 1 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Depth Average	<b><u>4.9 mg/L</u></b>	<b><u>4.6 mg/L</u></b>
	Bottom	<b><u>4.2 mg/L</u></b>	<b><u>3.6 mg/L</u></b>
	<b><u>Station M6</u></b>		
	Intake Level	<b><u>5.0 mg/L</u></b>	<b><u>4.7 mg/L</u></b>
Turbidity in NTU (See Note 2 and 4)	<b><u>Stations G1-G4, M1-M5</u></b>		
	Bottom	<b><u>19.3 NTU</u></b> or 120% of upstream control station's Turbidity at the same tide of the same day <b><u>CI: 3.6 NTU</u></b>	<b><u>22.2 NTU</u></b> or 130% of upstream control station's Turbidity at the same tide of the same day <b><u>CI: 3.9 NTU</u></b>
	<b><u>Station M6</u></b>		
	Intake Level	<b><u>19.0 NTU</u></b>	<b><u>19.4 NTU</u></b>
	SS in mg/L (See Note 2 and 4)	<b><u>Stations G1-G4</u></b>	
Surface		<b><u>6.0 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.7 mg/L</u></b>	<b><u>6.9 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.3 mg/L</u></b>
<b><u>Stations M1-M5</u></b>			
Surface		<b><u>6.2 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 6.7 mg/L</u></b>	<b><u>7.4 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 7.3 mg/L</u></b>
<b><u>Stations G1-G4, M1-M5</u></b>			
Bottom		<b><u>6.9 mg/L</u></b> or 120% of upstream control station's SS at the same tide of the same day <b><u>CI: 8.0 mg/L</u></b>	<b><u>7.9 mg/L</u></b> or 130% of upstream control station's SS at the same tide of the same day <b><u>CI: 8.7 mg/L</u></b>
<b><u>Station M6</u></b>			
Intake Level	<b><u>8.3 mg/L</u></b>	<b><u>8.6 mg/L</u></b>	

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.

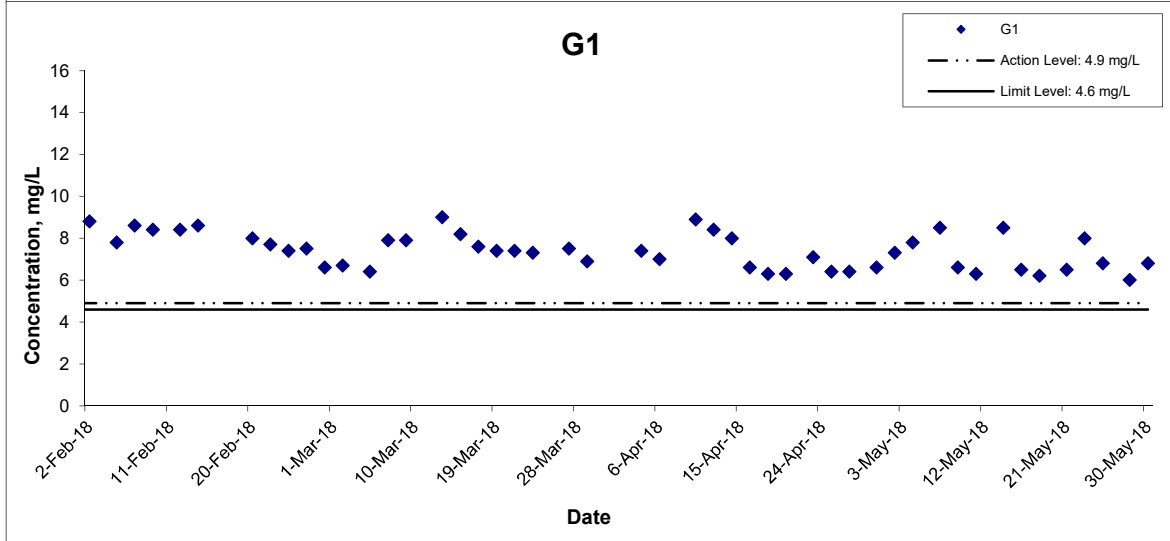
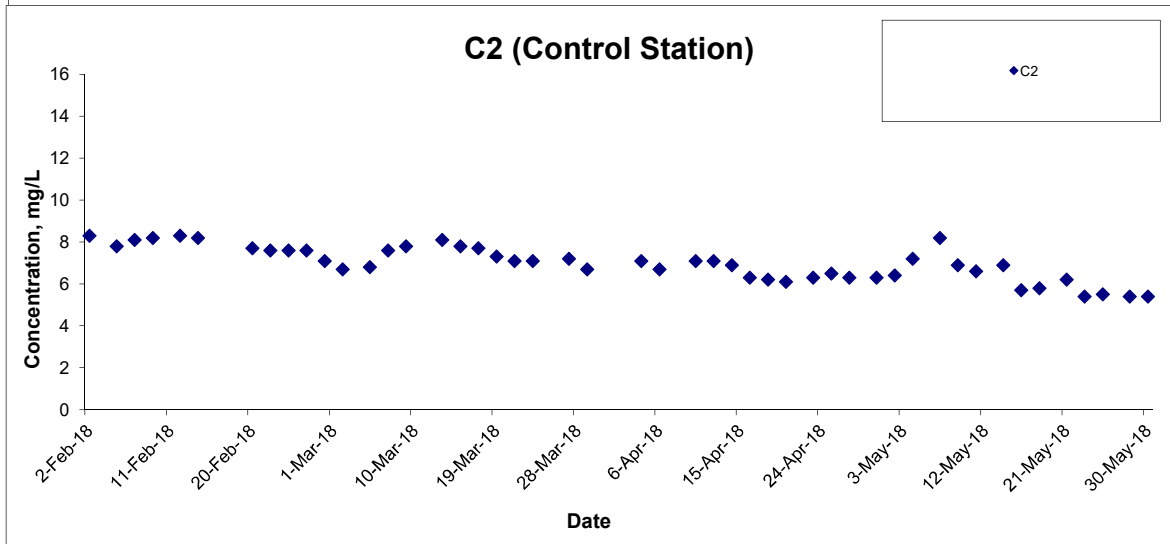
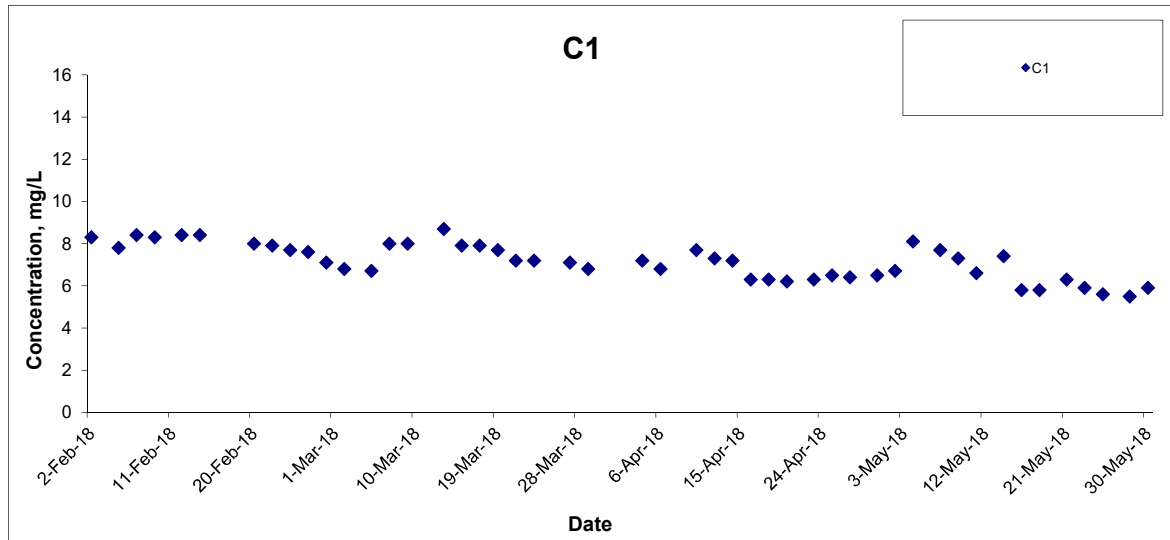
**Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
Water Quality Monitoring Results on 30 May 2018**

**(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	19:13	Surface	1	26.4 26.4	26.4	8.2 8.2	8.2	32.5 32.6	32.6	95.3 94.7	95.0	6.4 6.4	6.4	6.3	1.2 1.3	1.3	1.9	5.5 5.6	5.6	5.9
				Middle	9	26.0 26.0	26.0	8.2 8.2	8.2	32.9 32.9	32.9	91.4 91.3	91.4	6.2 6.2	6.2		1.3 1.3	1.3		5.5 5.3	5.4	
				Bottom	17	24.1 24.1	24.1	8.2 8.2	8.2	34.6 34.6	34.6	80.7 80.2	80.5	5.6 5.5	5.6		2.8 3.1	3.0		6.8 6.5	6.7	
C2	Fine	Calm	18:17	Surface	1	26.8 26.9	26.9	8.1 8.2	8.2	32.2 32.1	32.2	97.6 98.0	97.8	6.5 6.5	6.5	6.3	1.4 1.4	1.4	2.3	4.7 4.7	4.7	5.1
				Middle	16.5	25.0 25.1	25.1	8.1 8.2	8.2	33.9 33.9	33.9	87.5 86.8	87.2	6.0 5.9	6.0		1.9 2.1	2.0		5.4 5.4	5.4	
				Bottom	32	24.9 24.3	24.6	8.1 8.1	8.1	33.9 34.3	34.1	83.7 77.4	80.6	5.7 5.3	5.5		3.6 3.1	3.4		4.9 5.2	5.1	
G1	Fine	Calm	18:43	Surface	1	26.5 26.4	26.5	8.3 8.3	8.3	33.2 33.2	33.2	119.5 117.2	118.4	8.0 7.8	7.9	7.6	1.2 1.3	1.3	1.6	4.7 4.7	4.7	5.4
				Middle	4	26.0 26.1	26.1	8.2 8.2	8.2	33.2 33.2	33.2	106.3 106.9	106.6	7.2 7.2	7.2		1.7 1.7	1.7		5.9 6.0	6.0	
				Bottom	7	26.0 25.9	26.0	8.2 8.2	8.2	33.3 33.3	33.3	102.9 101.7	102.3	6.9 6.8	6.9		1.7 1.8	1.8		5.5 5.5	5.5	
G2	Fine	Calm	18:35	Surface	1	26.4 26.3	26.4	8.3 8.3	8.3	33.3 33.3	33.3	117.0 115.4	116.2	7.8 7.7	7.8	7.4	1.3 1.3	1.3	2.2	5.1 5.1	5.1	5.1
				Middle	5	25.9 25.9	25.9	8.2 8.2	8.2	33.3 33.3	33.3	101.0 102.7	101.9	6.8 6.9	6.9		2.1 2.0	2.1		5.1 5.1	5.1	
				Bottom	9	25.7 25.7	25.7	8.2 8.2	8.2	33.5 33.5	33.5	95.8 96.2	96.0	6.5 6.5	6.5		3.1 3.1	3.1		5.0 5.2	5.1	
G3	Fine	Calm	18:49	Surface	1	26.5 26.6	26.6	8.3 8.3	8.3	33.2 33.2	33.2	124.6 124.6	124.6	8.3 8.3	8.3	8.1	1.3 1.1	1.2	1.4	4.6 4.6	4.6	5.1
				Middle	4	26.2 26.3	26.3	8.3 8.3	8.3	33.3 33.3	33.3	113.8 121.5	117.7	7.6 8.1	7.9		1.3 1.2	1.3		4.4 4.4	4.4	
				Bottom	7	26.1 26.1	26.1	8.2 8.3	8.3	33.3 33.3	33.3	108.2 109.8	109.0	7.3 7.4	7.4		1.8 1.6	1.7		6.3 6.5	6.4	
G4	Fine	Calm	18:58	Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	33.0 33.0	33.0	98.8 98.2	97.5	6.5 6.6	6.6	6.8	1.3 1.2	1.3	2.1	5.4 5.4	5.4	4.8
				Middle	4.5	26.1 26.1	26.1	8.2 8.2	8.2	33.1 33.1	33.1	101.7 104.3	103.0	6.8 7.0	6.9		1.6 1.3	1.5		2.8 2.8	2.8	
				Bottom	8	25.8 25.9	25.9	8.2 8.2	8.2	33.5 33.5	33.5	100.9 103.1	102.0	6.8 6.9	6.9		3.4 3.3	3.4		6.2 6.3	6.3	
M1	Fine	Calm	18:39	Surface	1	26.6 26.5	26.6	8.3 8.3	8.3	33.2 33.3	33.3	111.3 113.3	112.3	7.4 7.6	7.5	7.5	1.2 1.1	1.2	1.7	4.2 4.2	4.2	4.0
				Middle	3	26.2 26.3	26.3	8.3 8.3	8.3	33.3 33.2	33.3	110.0 111.9	111.0	7.4 7.5	7.5		1.4 1.3	1.4		3.1 3.3	3.2	
				Bottom	5	26.0 26.0	26.0	8.2 8.2	8.2	33.3 33.4	33.4	104.1 105.5	104.8	7.0 7.1	7.1		2.4 2.5	2.5		4.6 4.4	4.5	
M2	Fine	Calm	18:30	Surface	1	26.3 26.1	26.2	8.3 8.2	8.3	33.3 33.3	33.3	119.2 111.4	115.3	8.0 7.5	7.8	7.3	1.3 1.3	1.3	2.2	4.5 4.7	4.6	5.3
				Middle	6	25.8 25.8	25.8	8.2 8.2	8.2	33.4 33.4	33.4	99.3 97.4	98.4	6.7 6.6	6.7		2.6 2.5	2.6		6.2 6.1	6.2	
				Bottom	11	24.4 24.4	24.4	8.1 8.2	8.2	34.4 34.4	34.4	76.5 75.6	76.1	5.3 5.2	5.3		2.8 2.8	2.8		5.2 5.2	5.2	
M3	Fine	Calm	18:52	Surface	1	26.7 26.6	26.7	8.3 8.3	8.3	33.1 33.1	33.1	117.0 123.2	120.1	7.8 8.2	8.0	8.0	1.2 1.2	1.2	1.6	4.1 4.1	4.1	4.9
				Middle	4	26.5 26.4	26.5	8.3 8.3	8.3	33.2 33.2	33.2	119.6 119.3	119.5	8.0 8.0	8.0		1.2 1.3	1.3		5.4 5.5	5.5	
				Bottom	7	26.2 26.2	26.2	8.3 8.3	8.3	33.4 33.4	33.4	114.1 112.0	113.1	7.6 7.5	7.6		2.3 2.0	2.2		5.1 4.8	5.0	
M4	Fine	Calm	18:24	Surface	1	26.2 26.2	26.2	8.3 8.3	8.3	33.4 33.4	33.4	116.6 115.7	116.2	7.8 7.8	7.8	7.4	1.4 1.3	1.4	2.2	5.4 5.3	5.4	5.7
				Middle	5	25.8 25.8	25.8	8.2 8.2	8.2	33.5 33.5	33.5	104.5 103.9	104.2	7.0 7.0	7.0		2.3 2.0	2.2		5.6 5.7	5.7	
				Bottom	9	24.7 25.6	25.2	8.2 8.2	8.2	34.2 33.6	33.9	83.8 99.1	91.5	5.7 6.7	6.2		3.1 3.1	3.1		6.2 6.0	6.1	
M5	Fine	Calm	19:07	Surface	1	26.4 26.4	26.4	8.2 8.2	8.2	32.6 32.6	32.6	96.3 96.6	96.5	6.5 6.5	6.5	6.3	1.5 1.3	1.4	1.9	5.0 5.0	5.0	5.5
				Middle	5.5	26.0 25.9	26.0	8.2 8.2	8.2	32.9 33.0	33.0	89.7 88.3	89.0	6.1 6.0	6.1		1.8 1.6	1.7		5.0 5.1	5.1	
				Bottom	10	24.1 24.1	24.1	8.2 8.2	8.2	34.5 34.5	34.5	78.2 78.8	78.5	5.4 5.4	5.4		2.7 2.7	2.7		6.3 6.2	6.3	
M6	Fine	Calm	19:03	Surface	-	-	-	-	-	-	-	-	-	-	-	7.8	-	-	1.1	-	-	6.8
				Middle	1.2	26.7 26.6	26.7	8.3 8.3	8.3	33.1 33.1	33.1	117.5 116.7	117.1	7.8 7.8	7.8		1.1 1.1	1.1		6.8 6.7	6.8	
				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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Graphical Presentation of Water Quality Monitoring Results

**Scale**

N.T.S

**Date**

May 18

**Project No.**

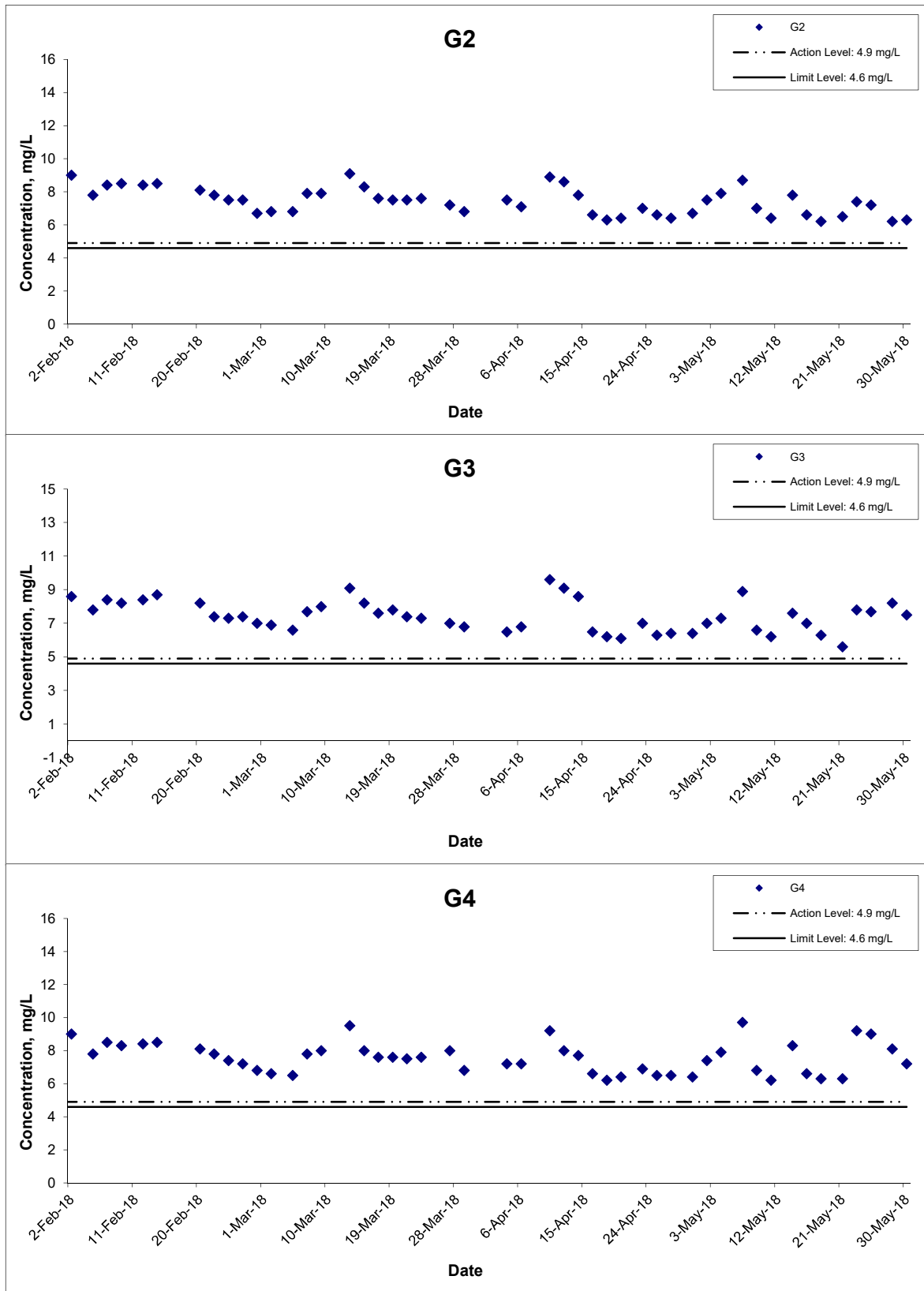
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## Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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Scale N.T.S

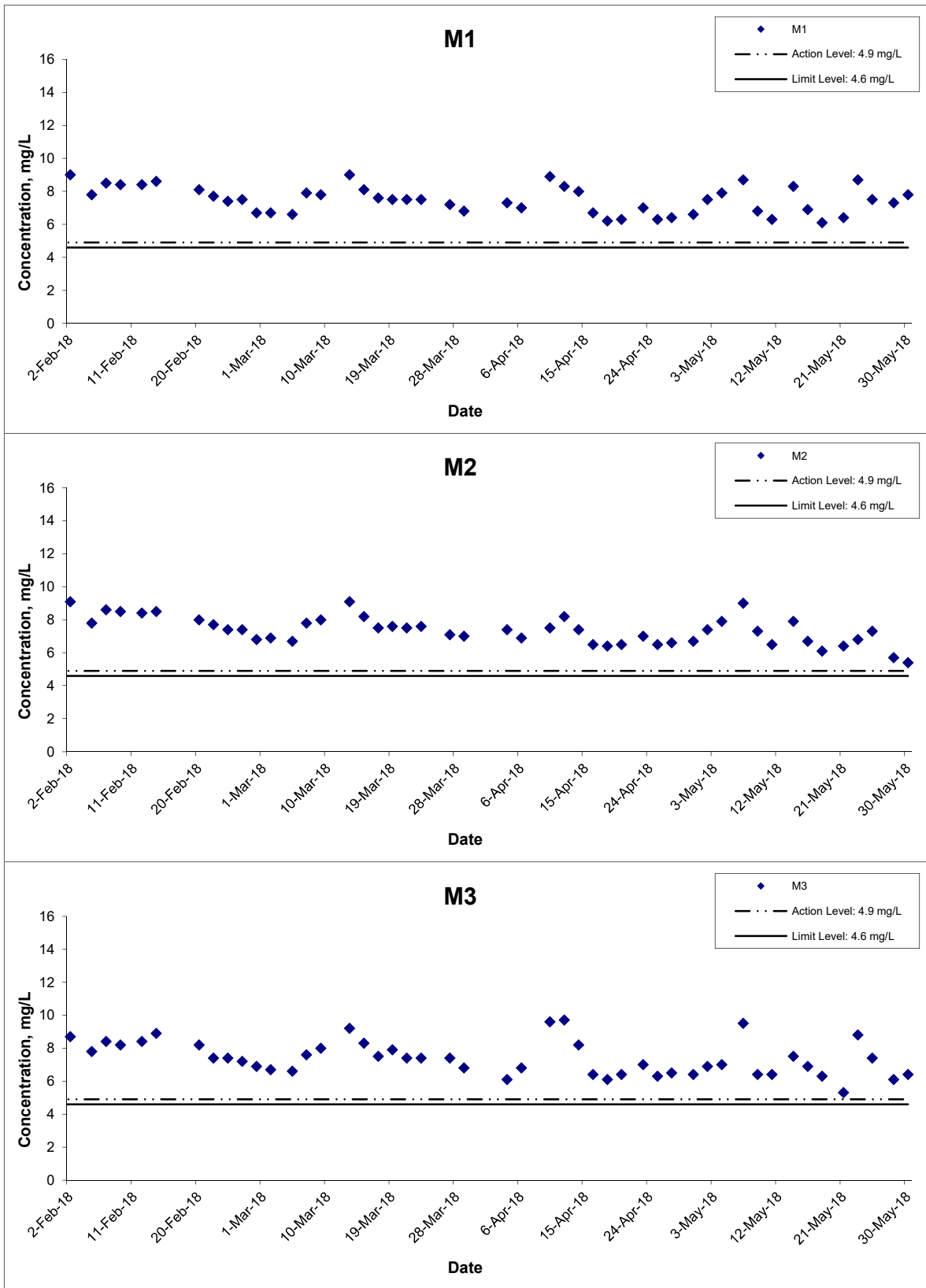
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## Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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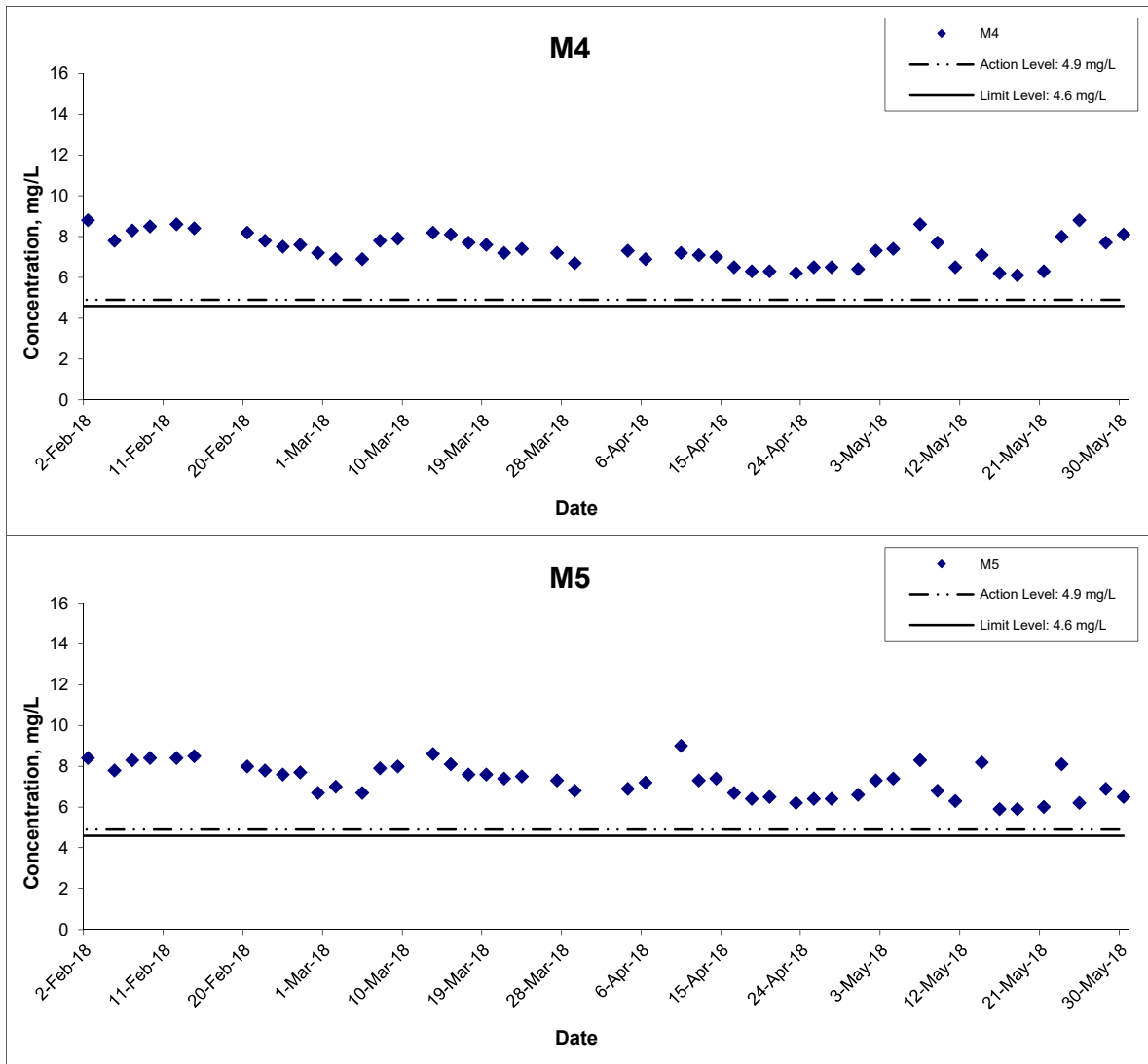
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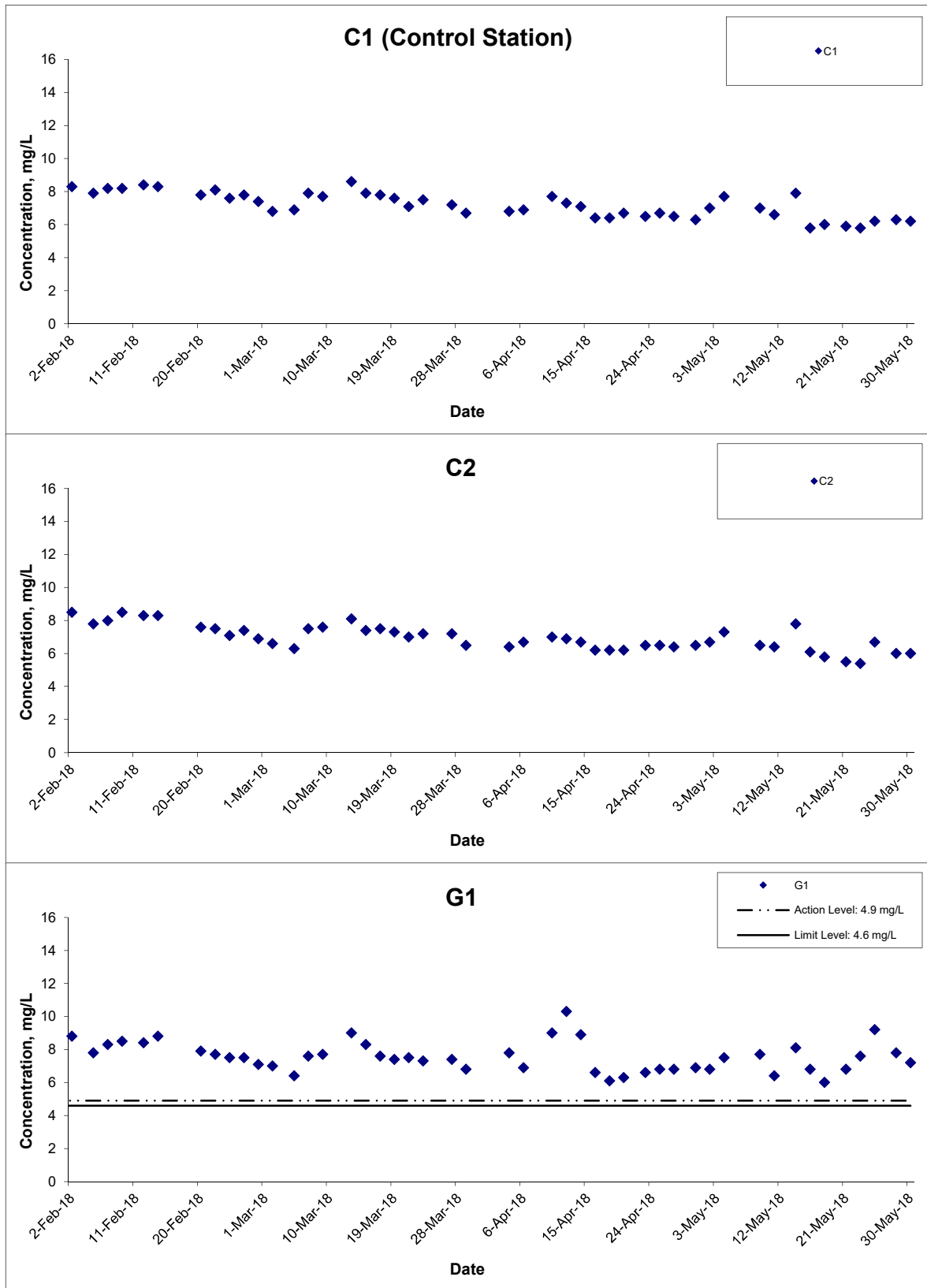


## Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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



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

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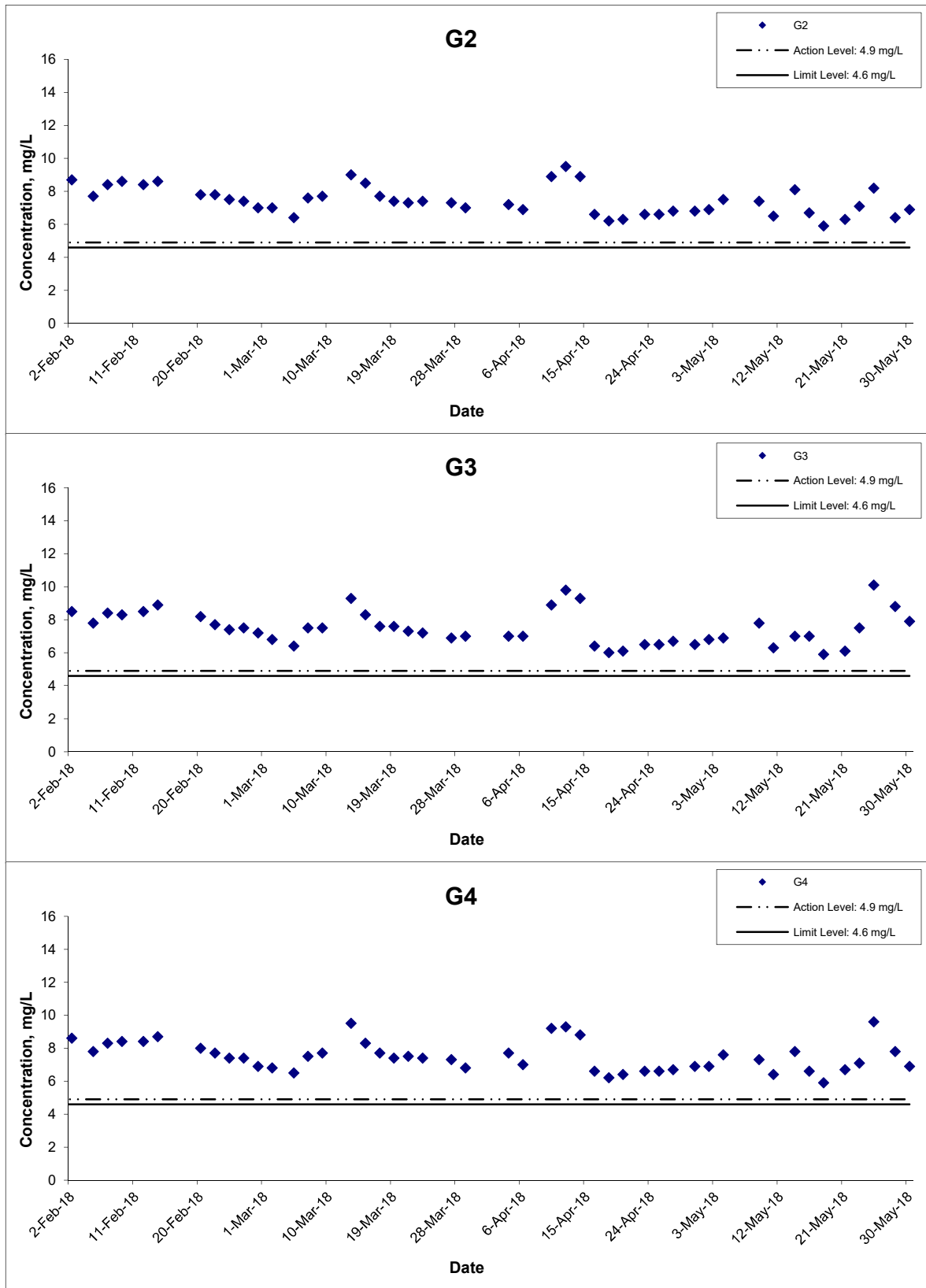
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## Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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

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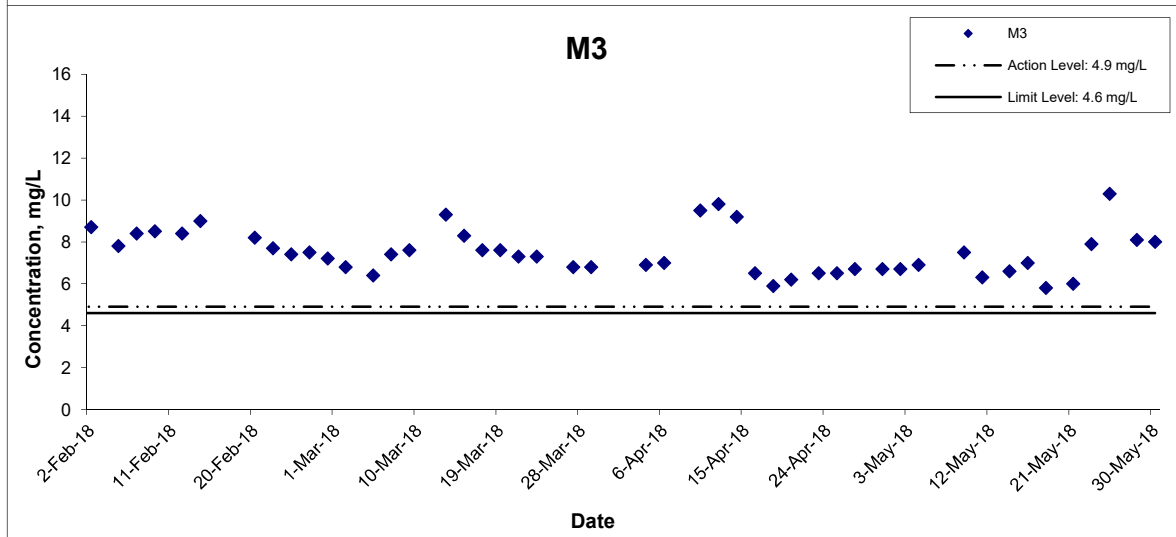
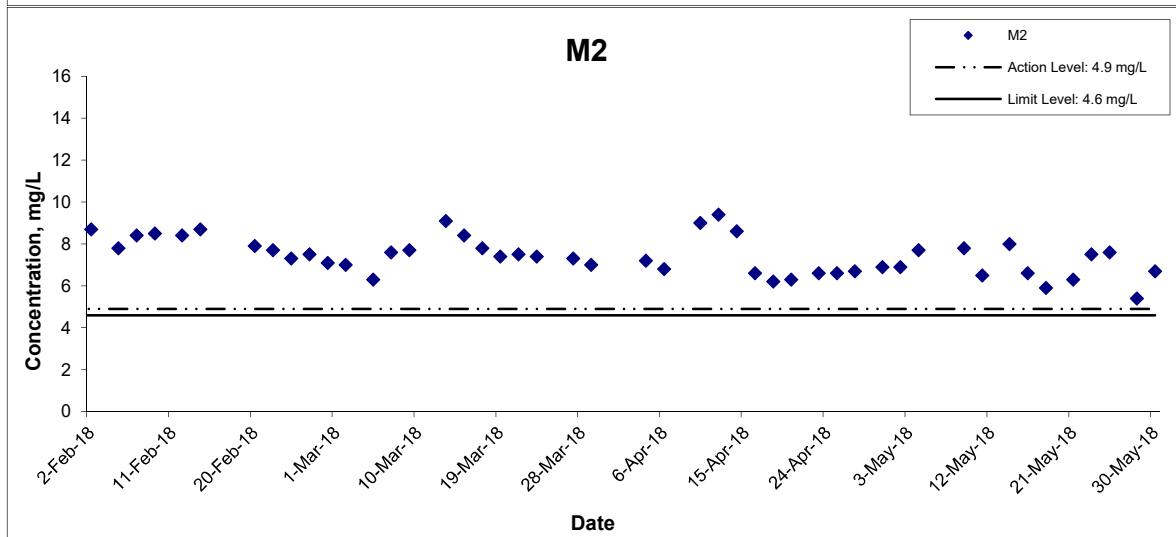
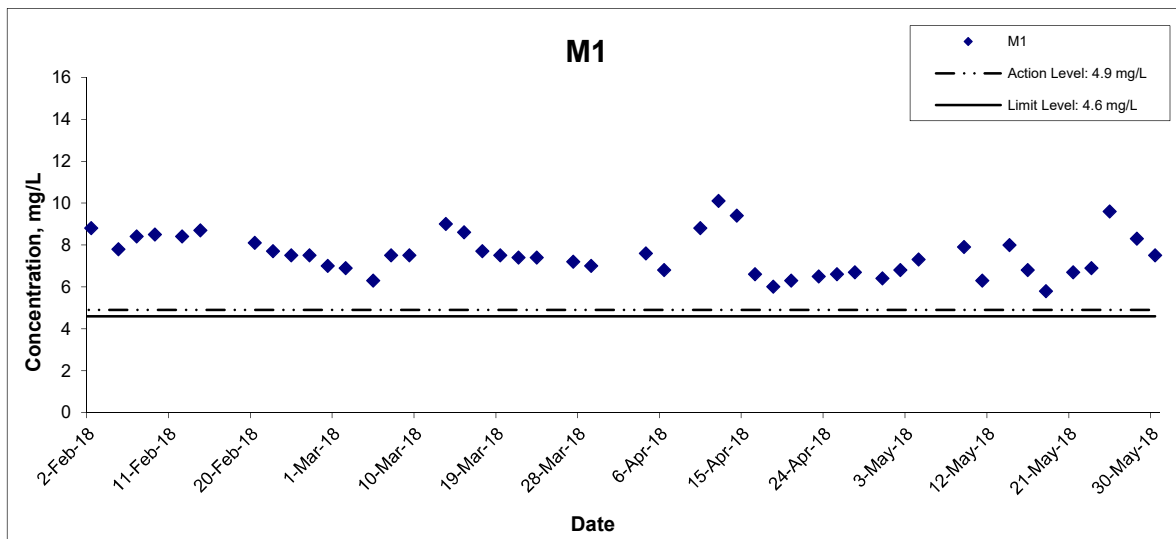
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## Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



**Title**

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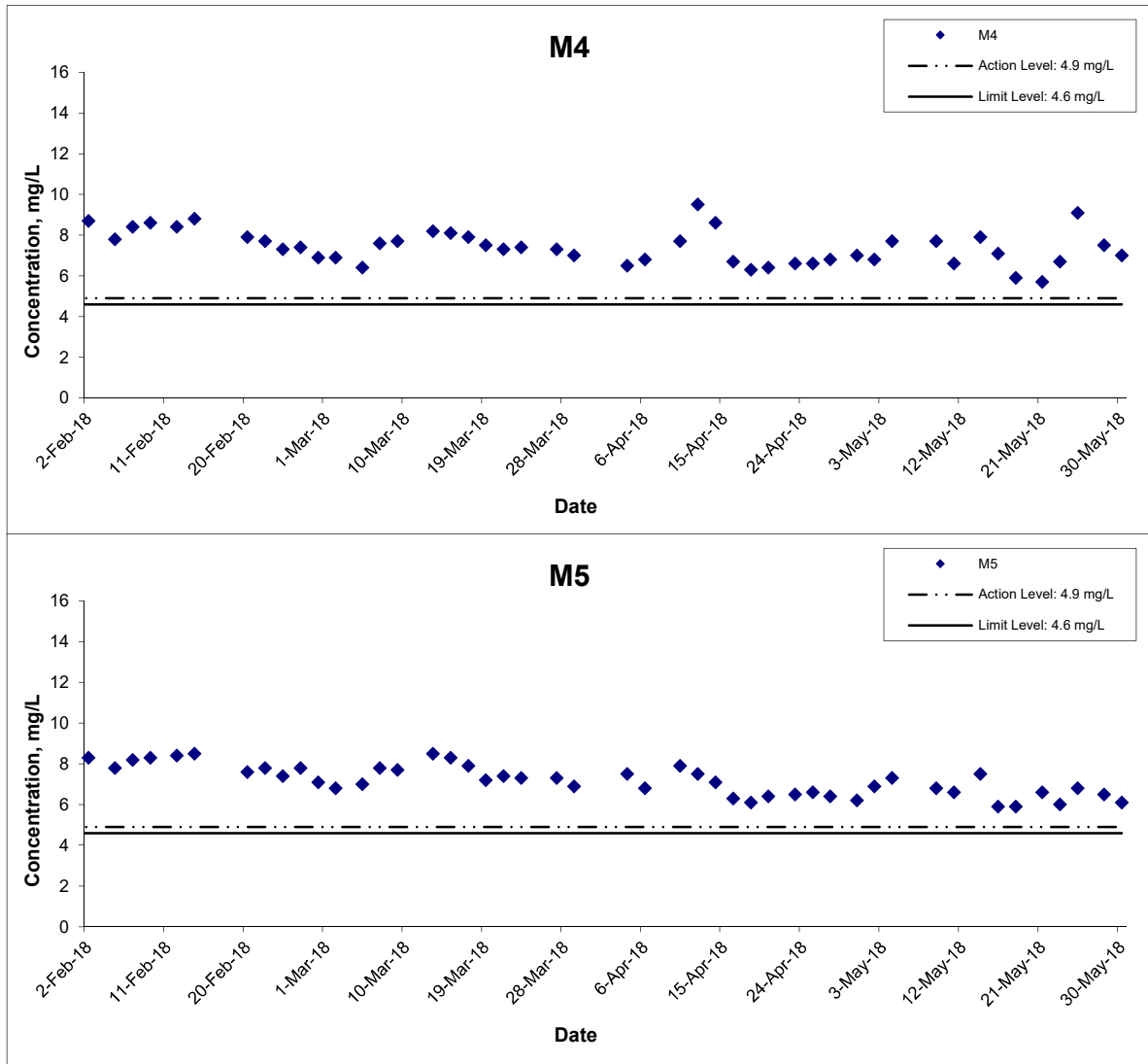
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## Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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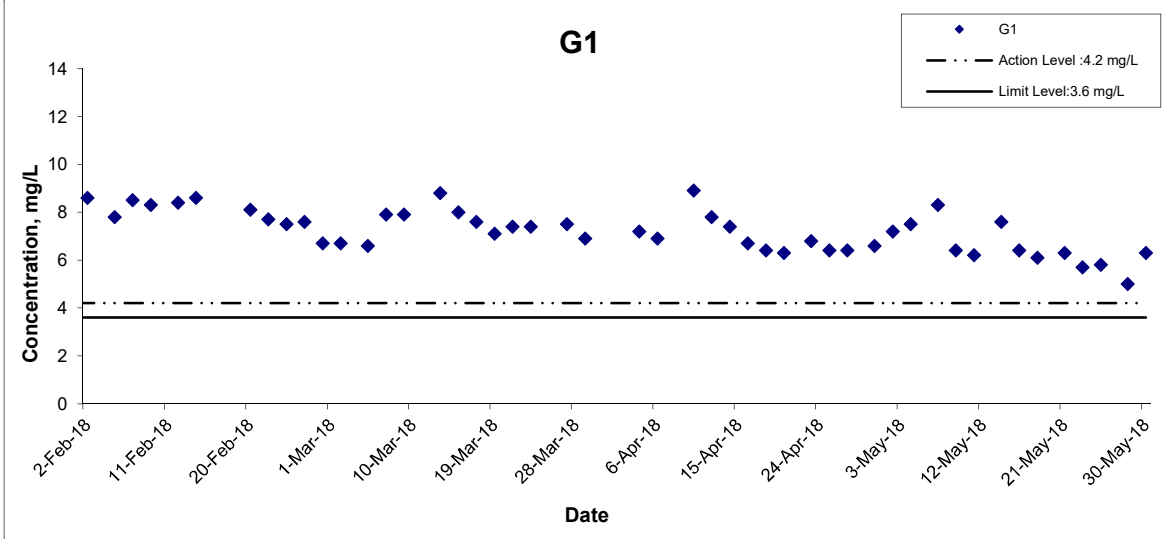
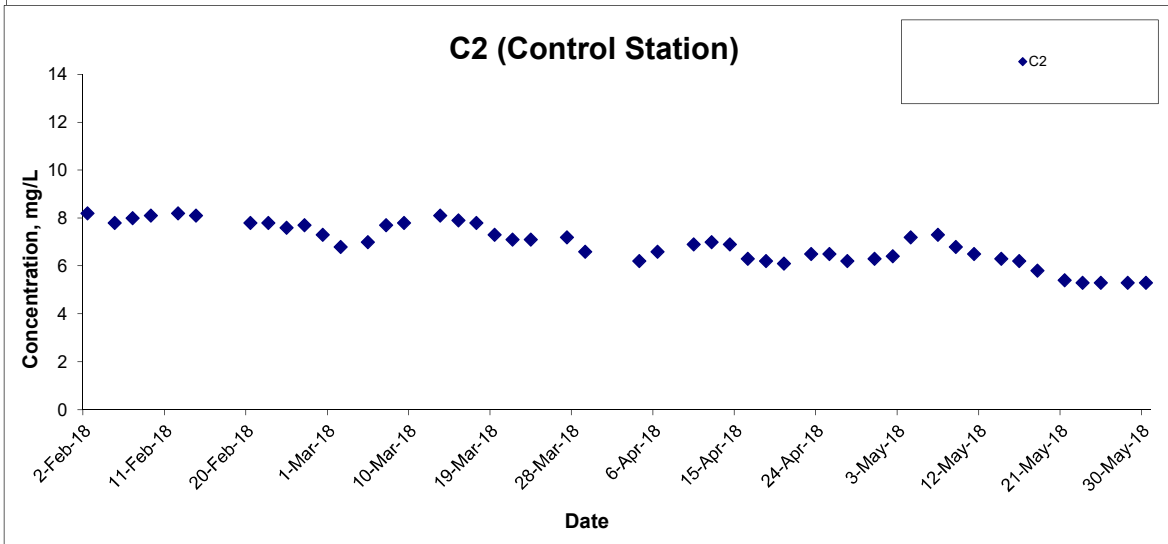
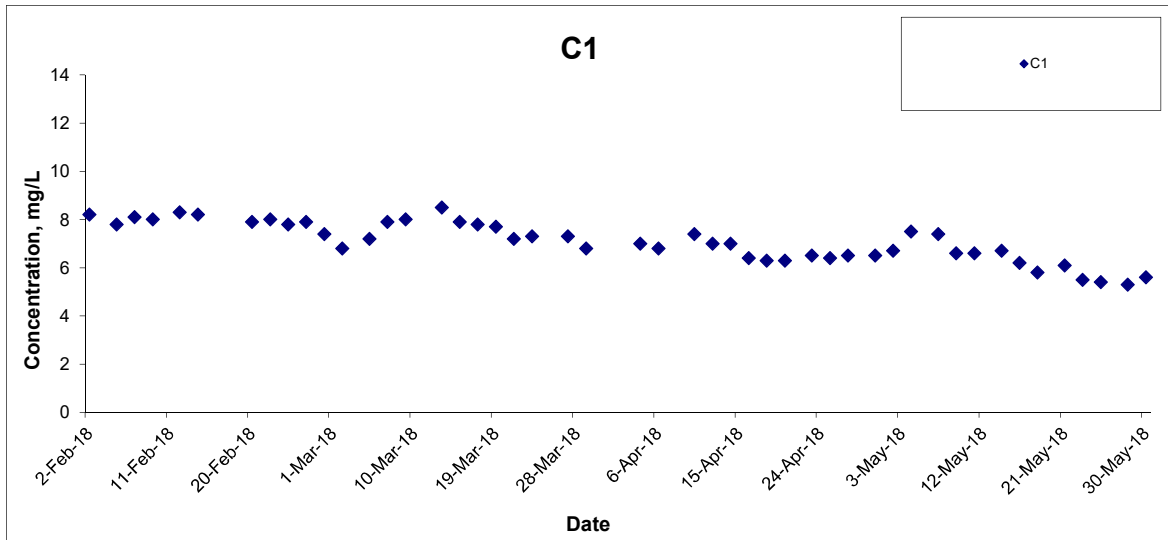
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## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



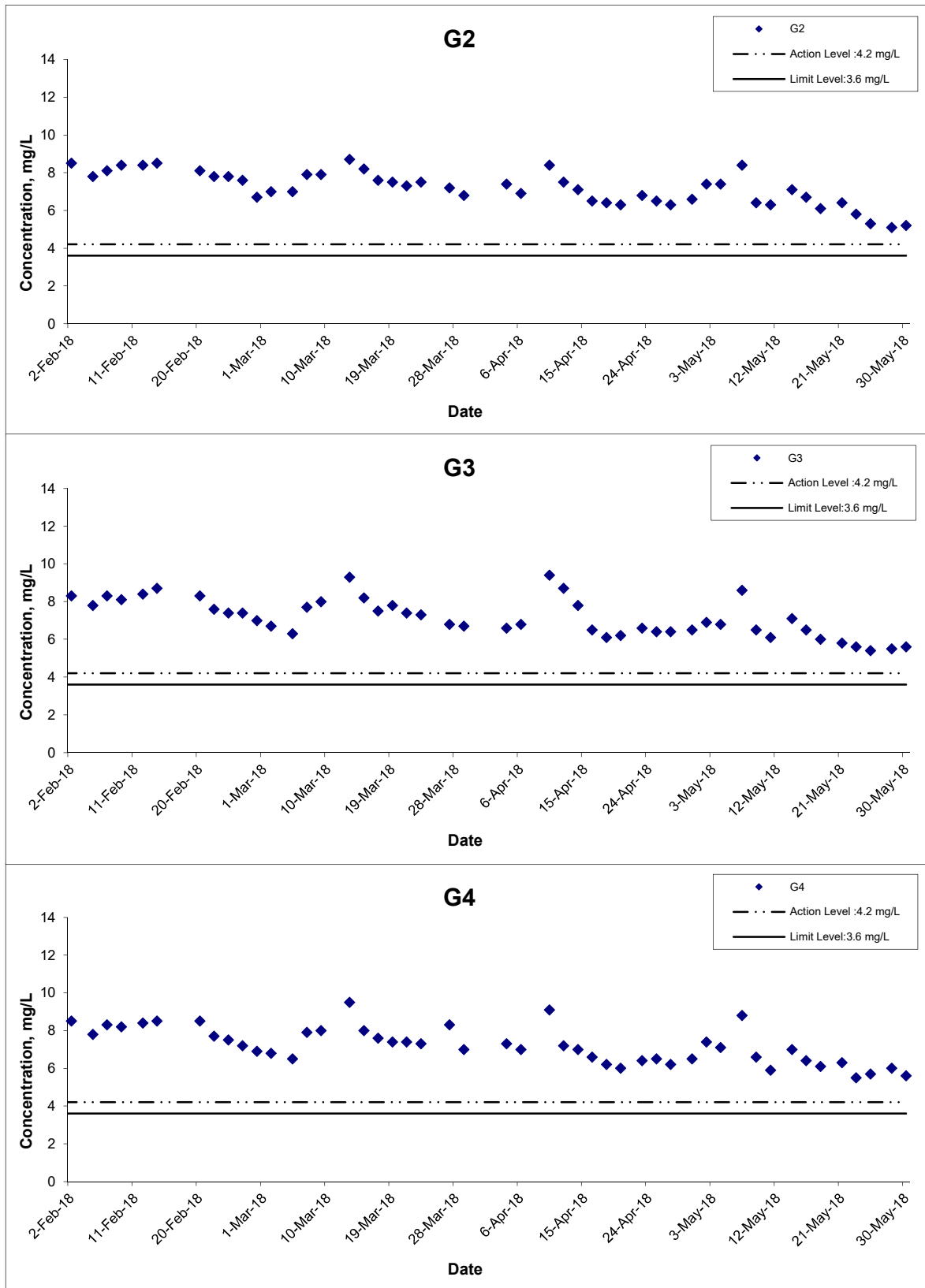
**Title**  
 Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  
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## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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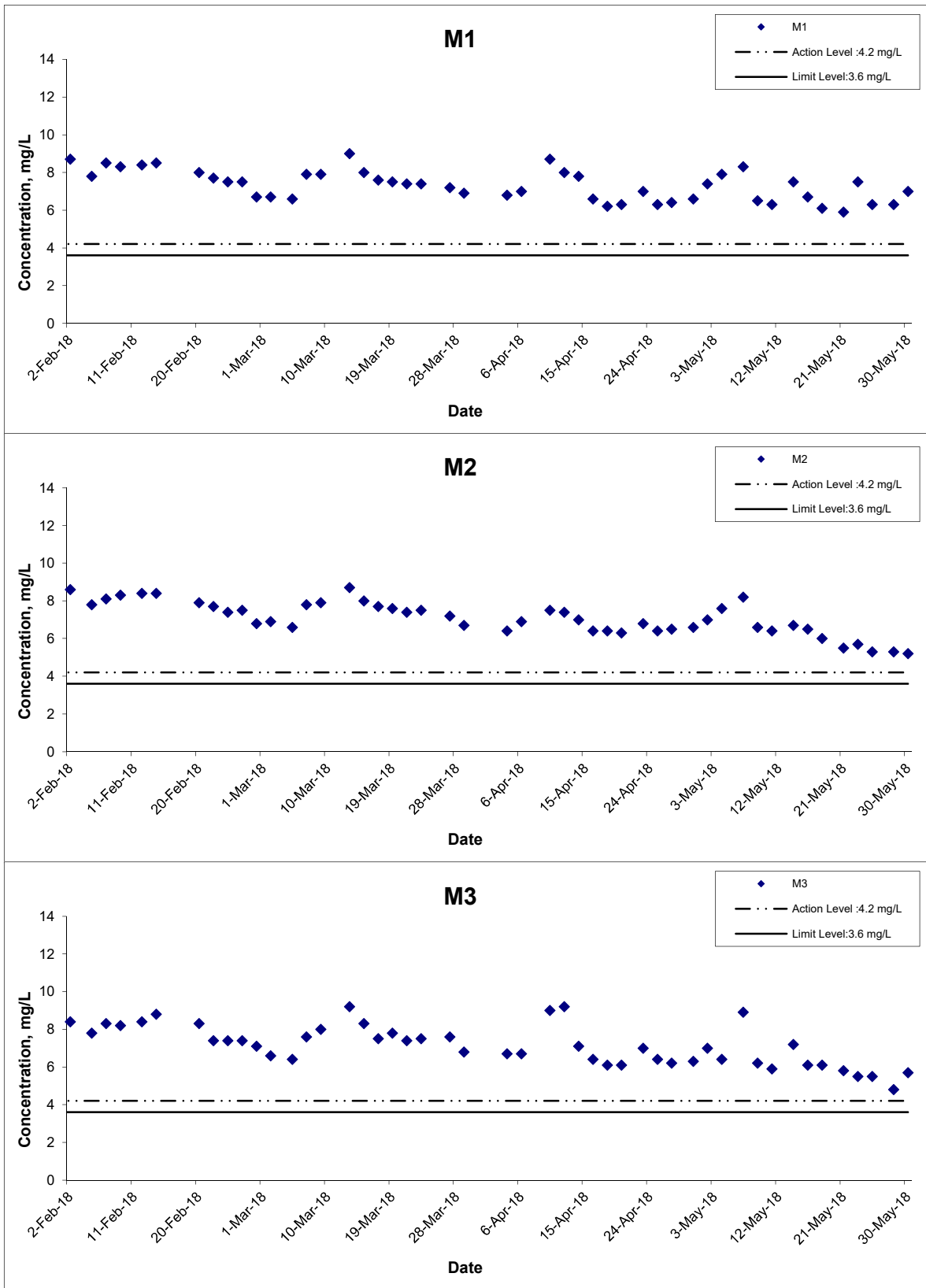
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## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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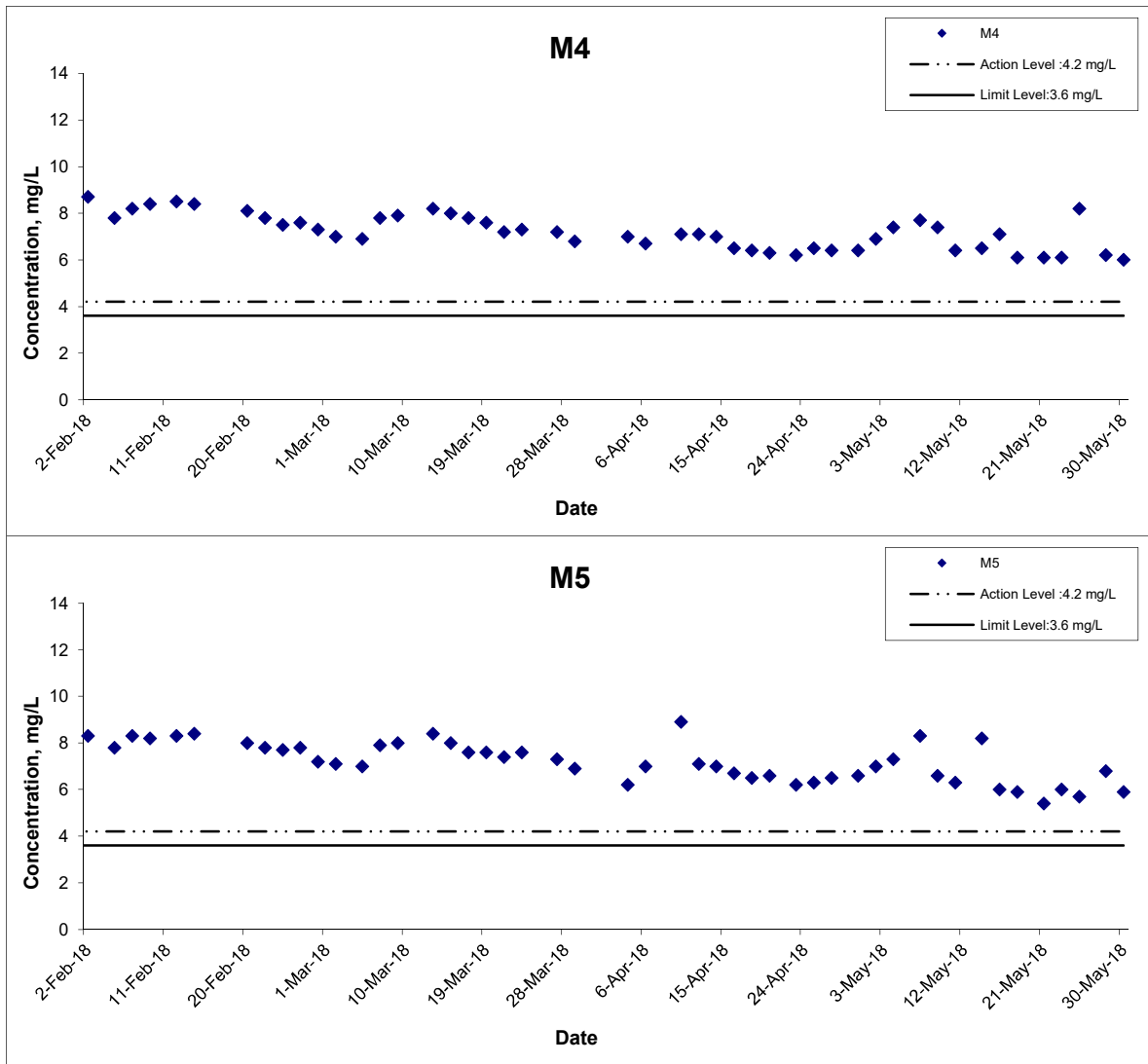
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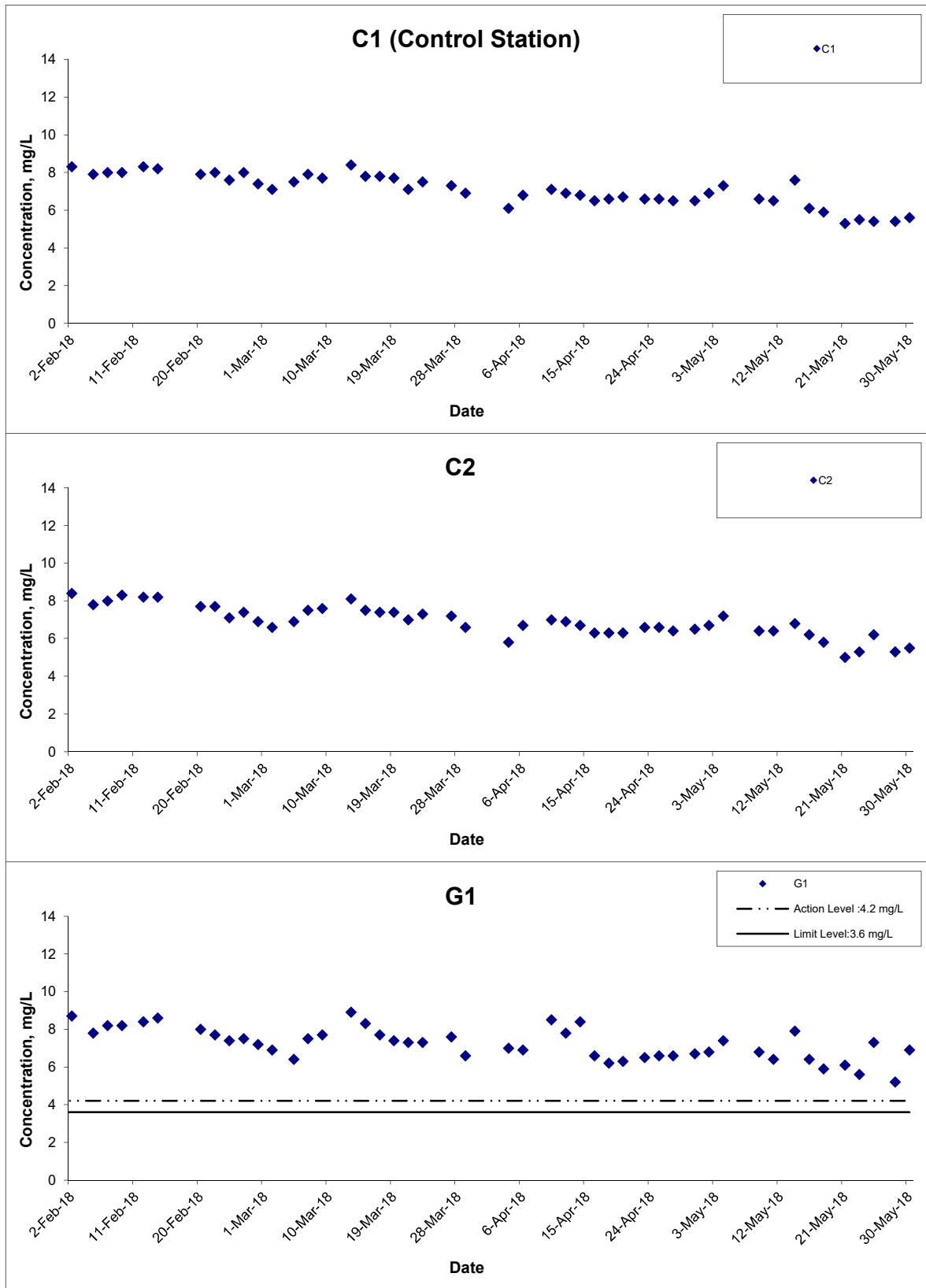


## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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## Dissolved Oxygen (Bottom) at Mid-Flood Tide



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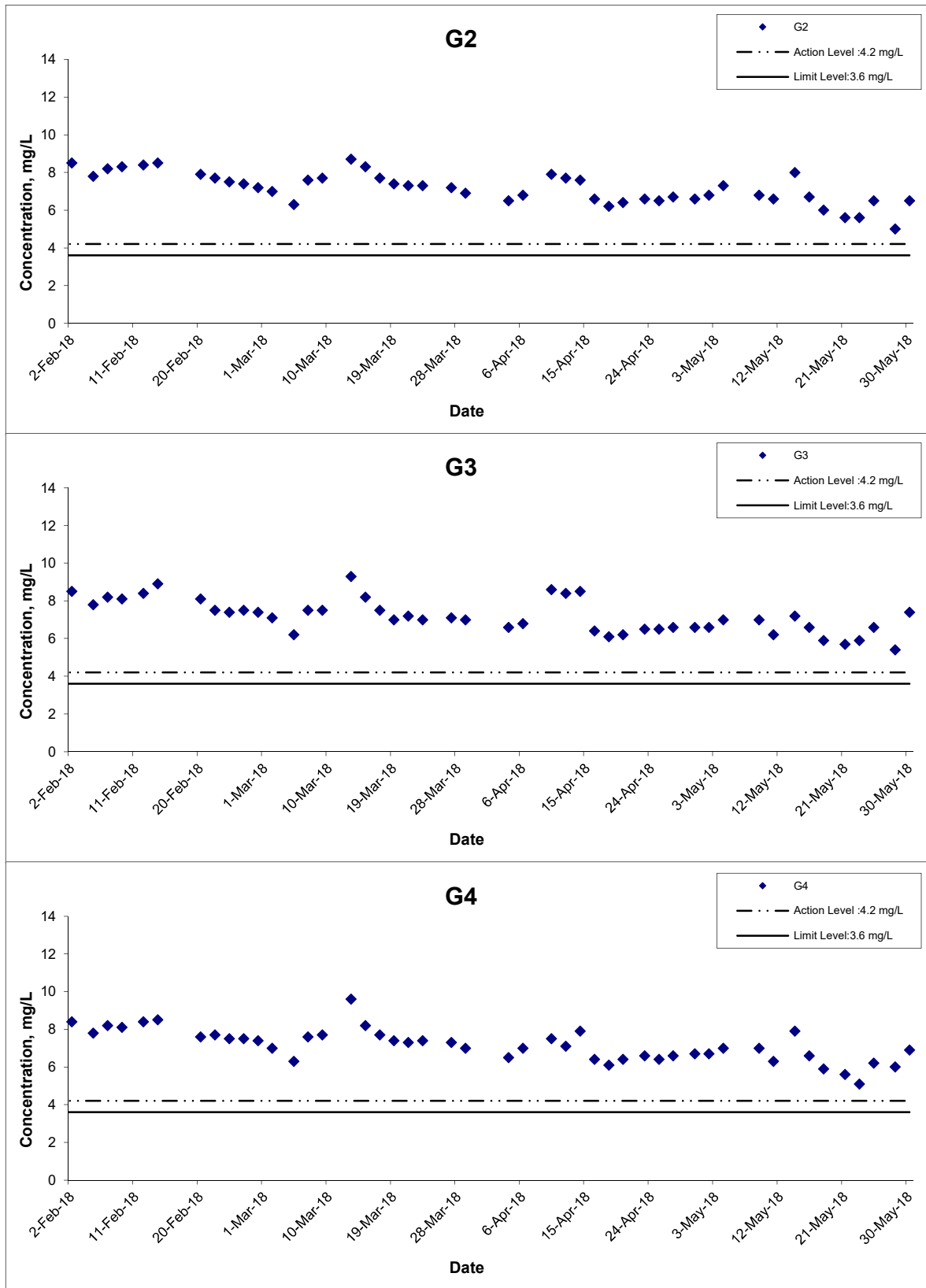
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## Dissolved Oxygen (Bottom) at Mid-Flood Tide



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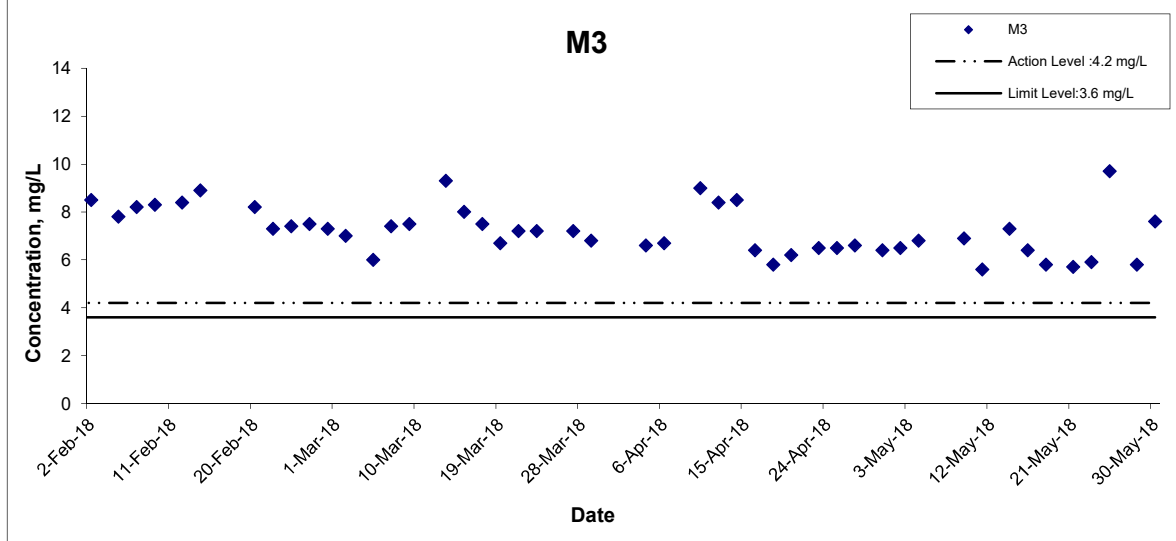
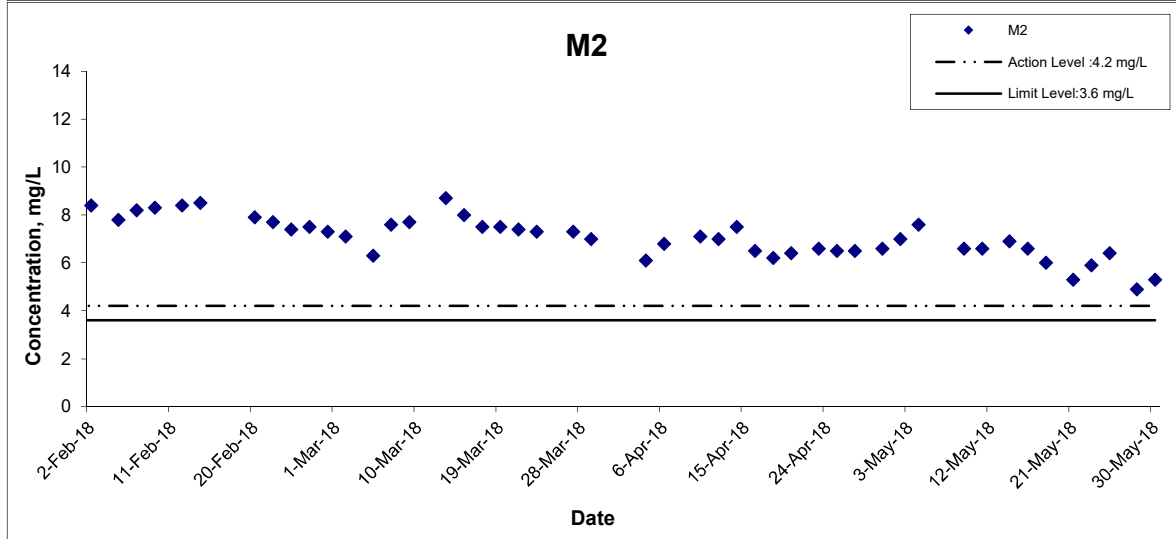
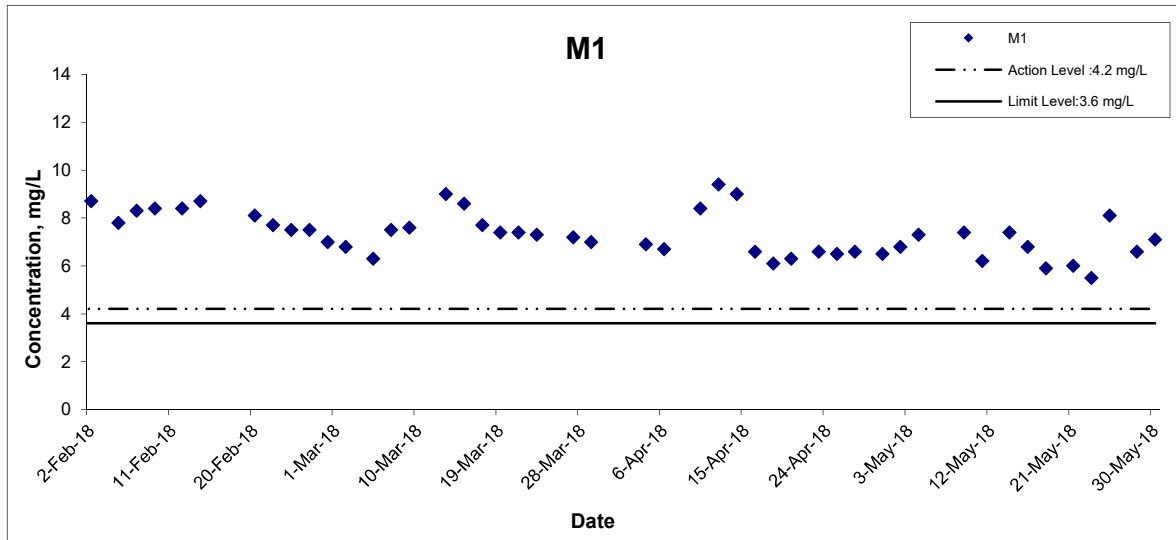
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## Dissolved Oxygen (Bottom) at Mid-Flood Tide



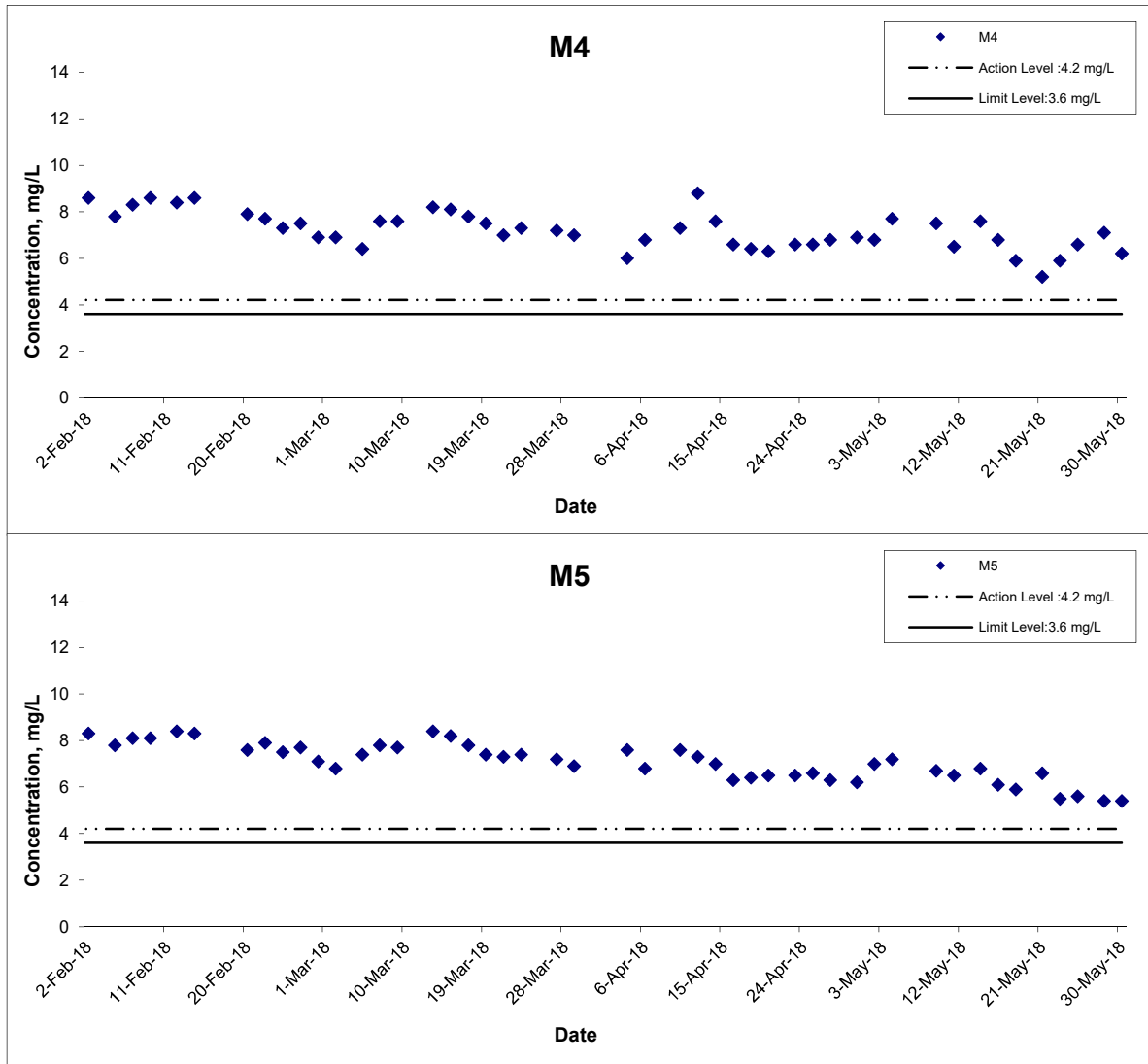
**Title**  
 Agreement No. CE 59/2015(EP) Environmental Team for  
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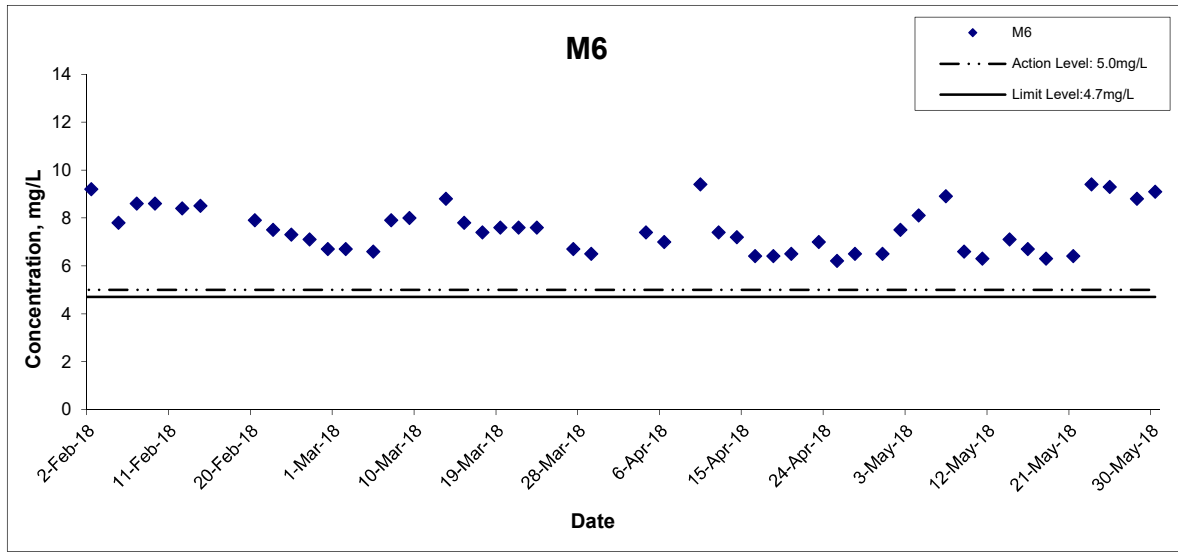


## Dissolved Oxygen (Bottom) at Mid-Flood Tide



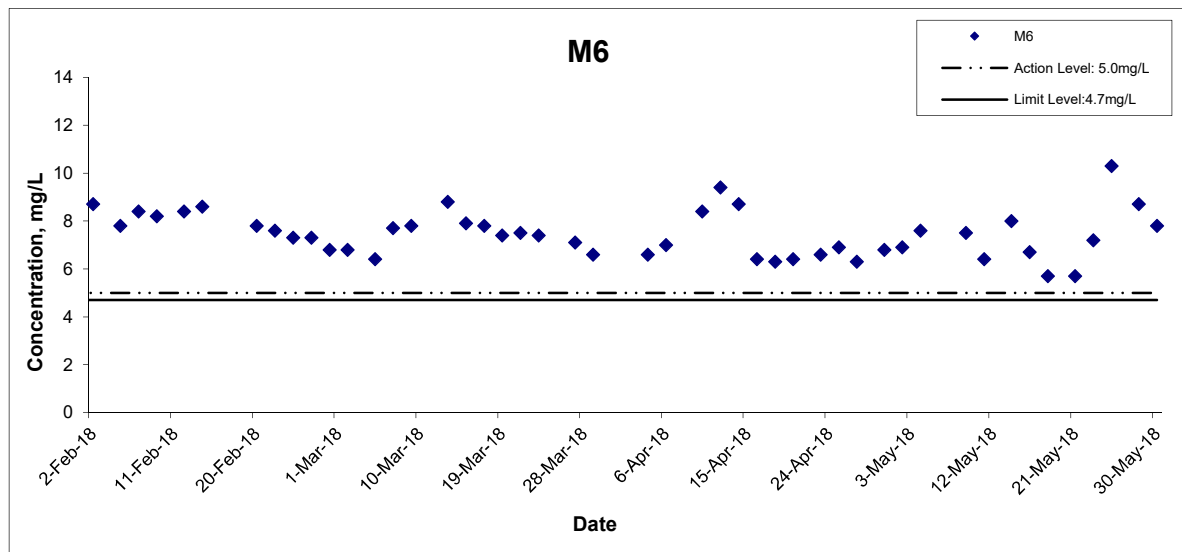
Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 18	Appendix I	

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



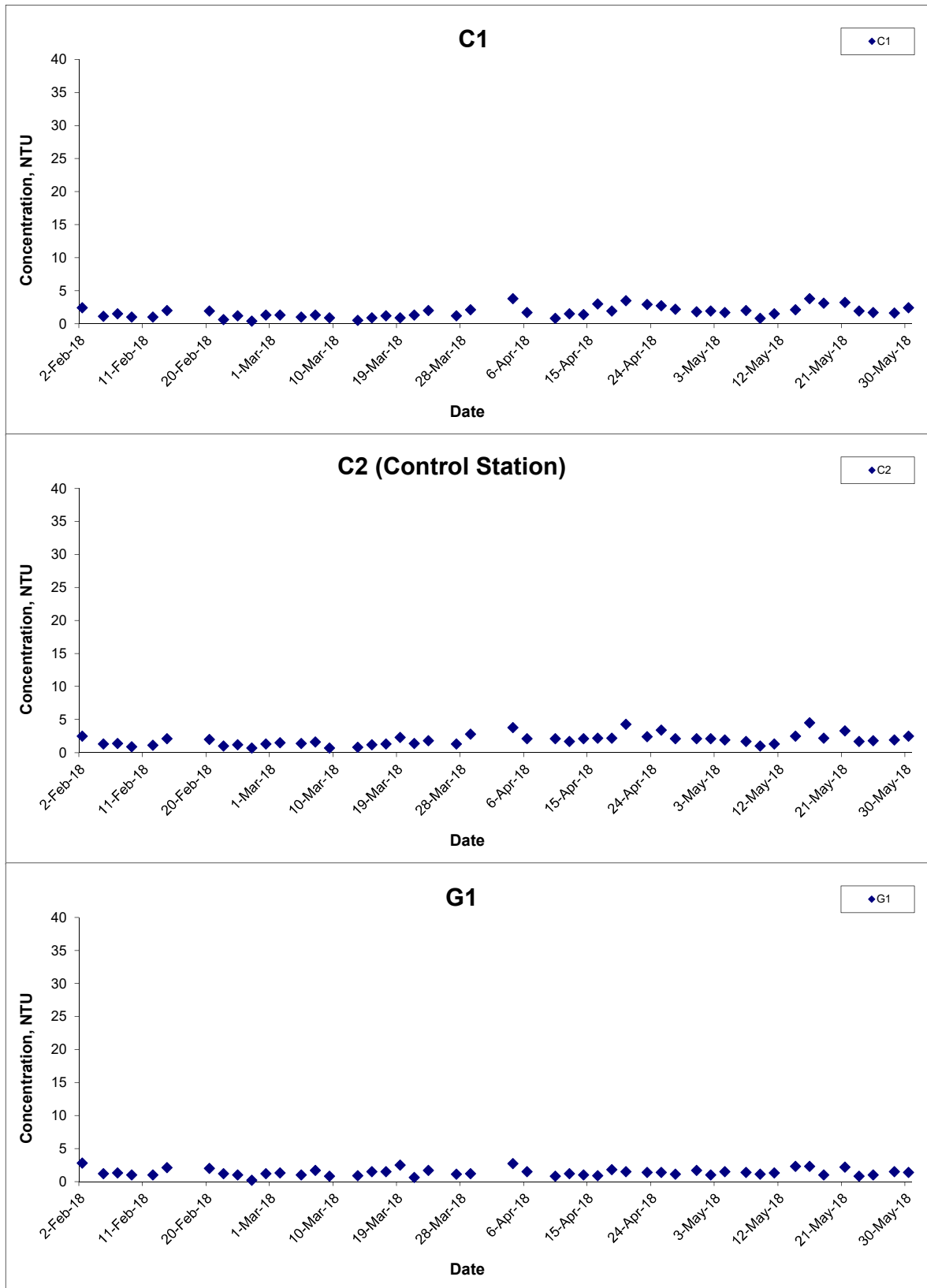
Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	<b>CINOTECH</b>
	Graphical Presentation of Water Quality Monitoring Results	Date	May 18	Appendix	I	

## Dissolved Oxygen (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	Scale	N.T.S	Project No.	MA16034	<b>CINOTECH</b>
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## Turbidity (Depth-averaged) at Mid-Ebb Tide



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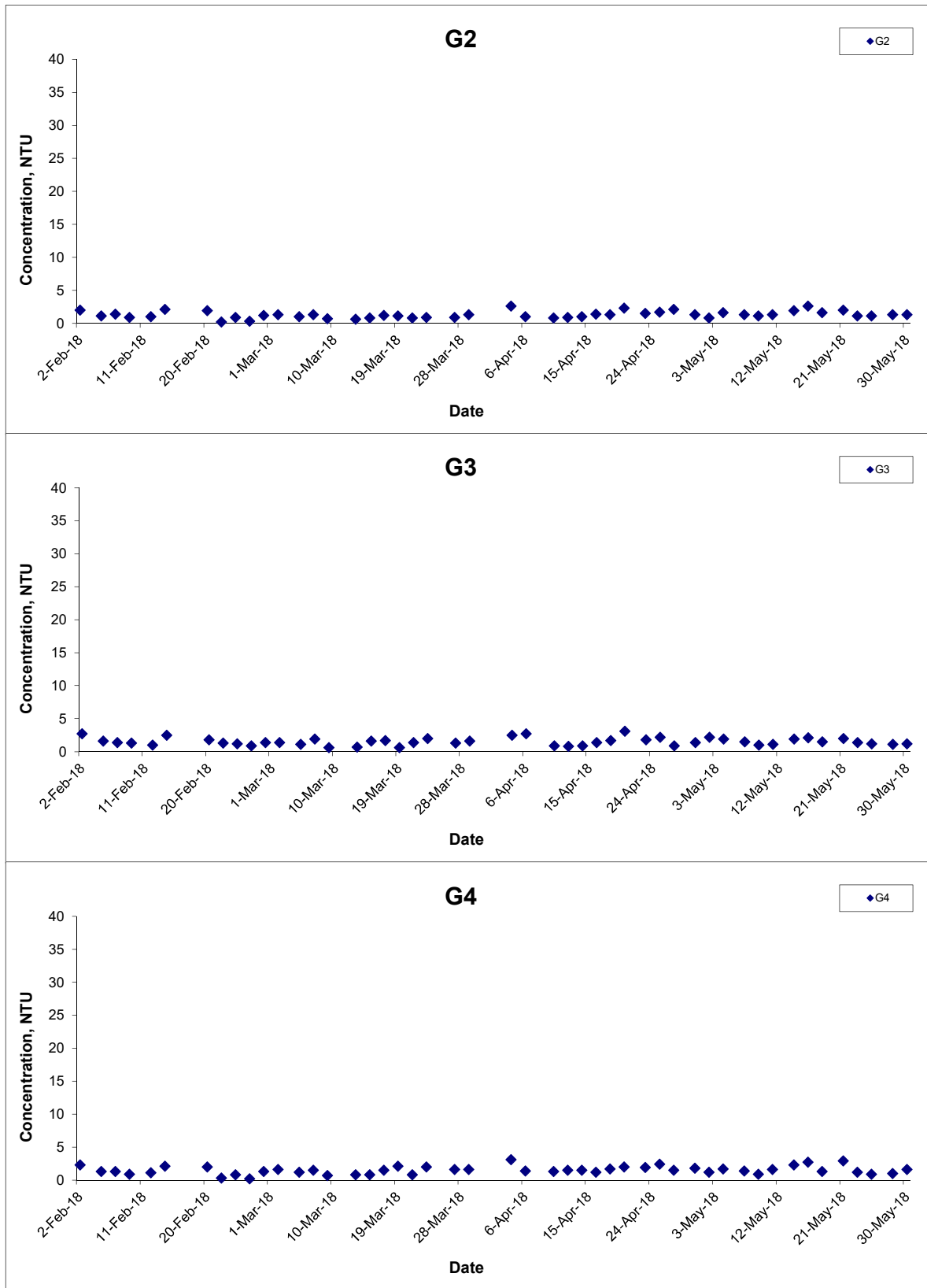
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## Turbidity (Depth-averaged) at Mid-Ebb Tide



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Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

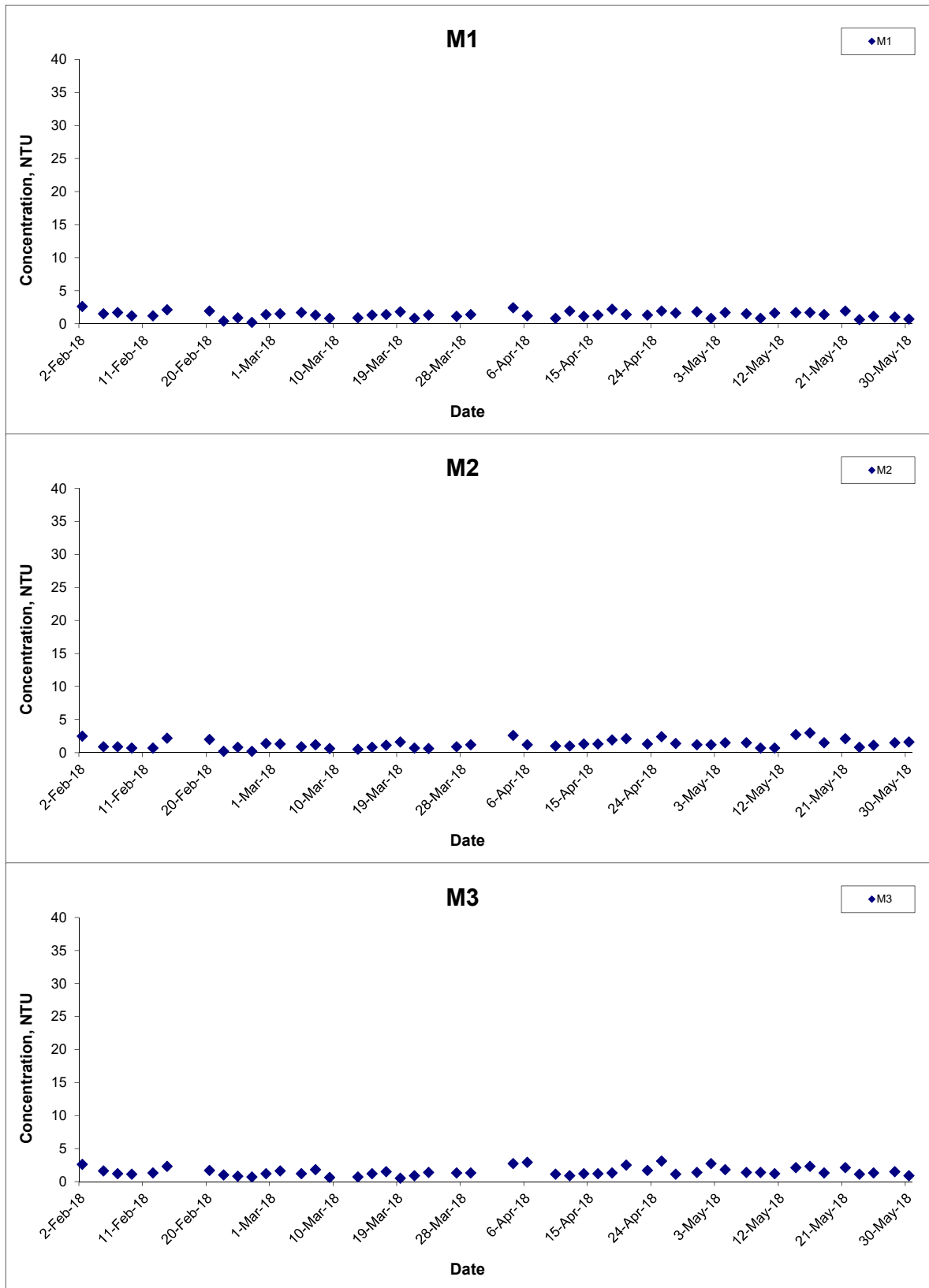
Date May 18

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## Turbidity (Depth-averaged) at Mid-Ebb Tide



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

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

Date May 18

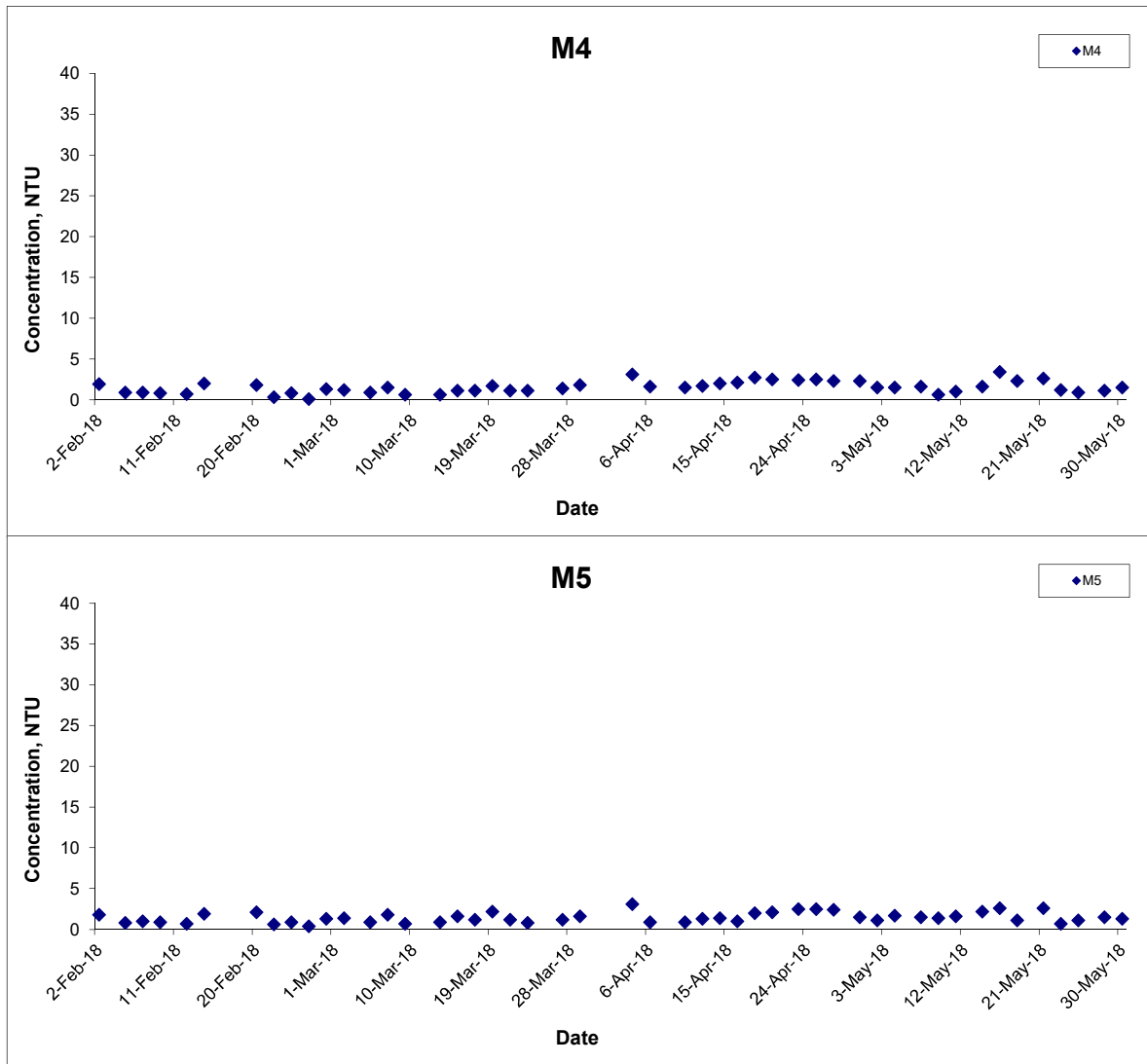
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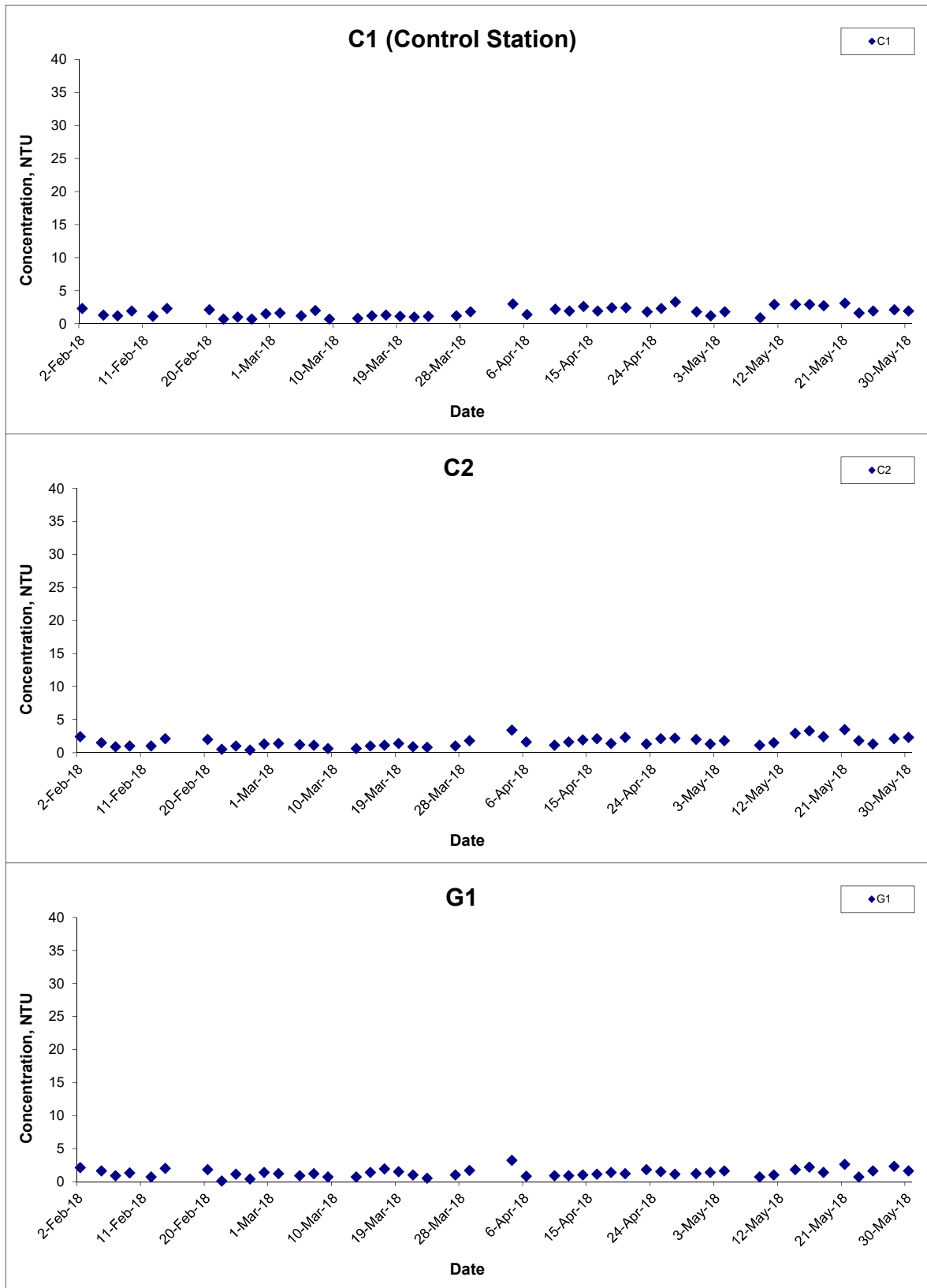


## Turbidity (Depth-averaged) at Mid-Ebb Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 18	Appendix I	

## Turbidity (Depth-averaged) at Mid-Flood Tide



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

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

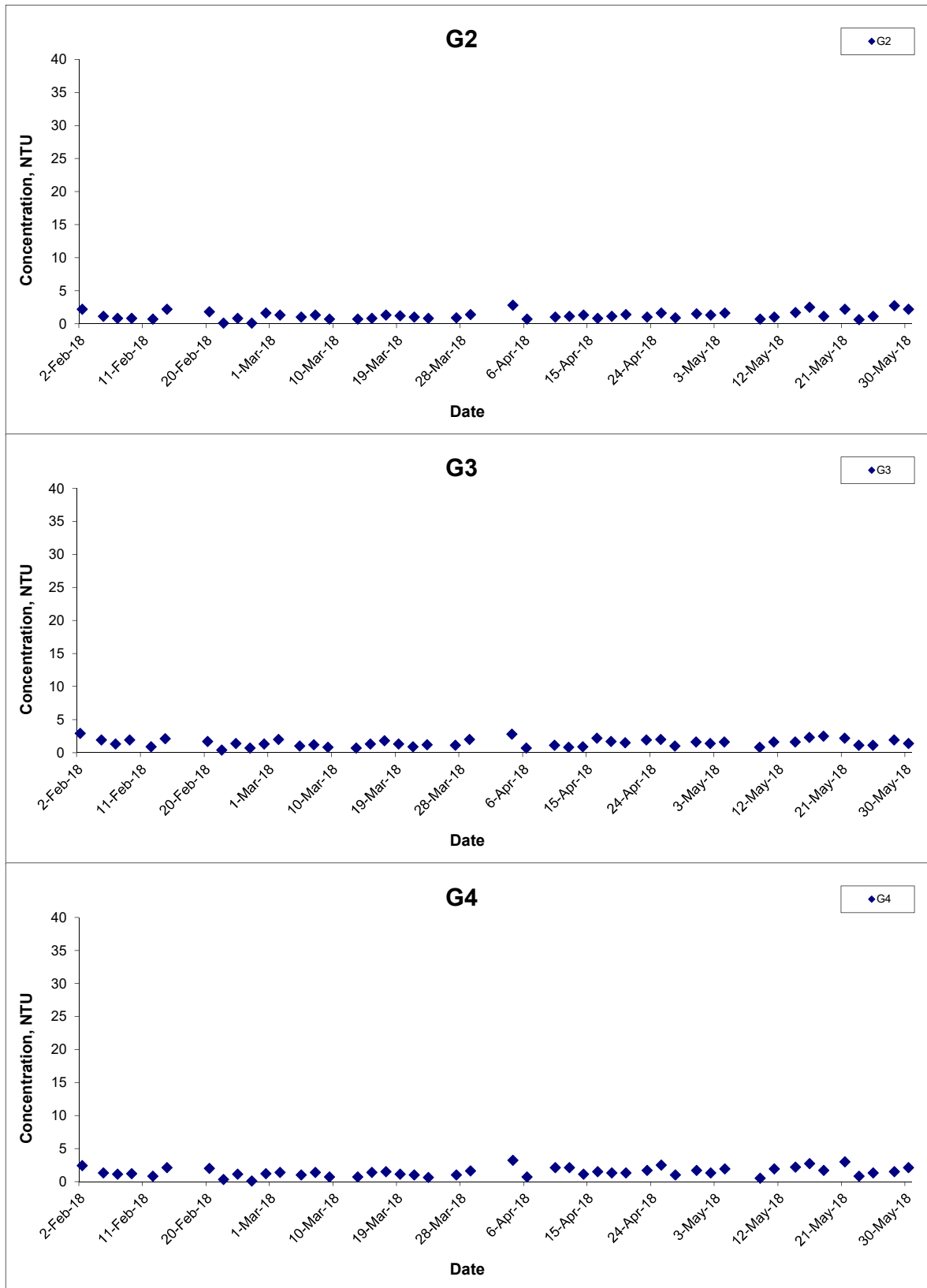
Date May 18

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## Turbidity (Depth-averaged) at Mid-Flood Tide



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

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

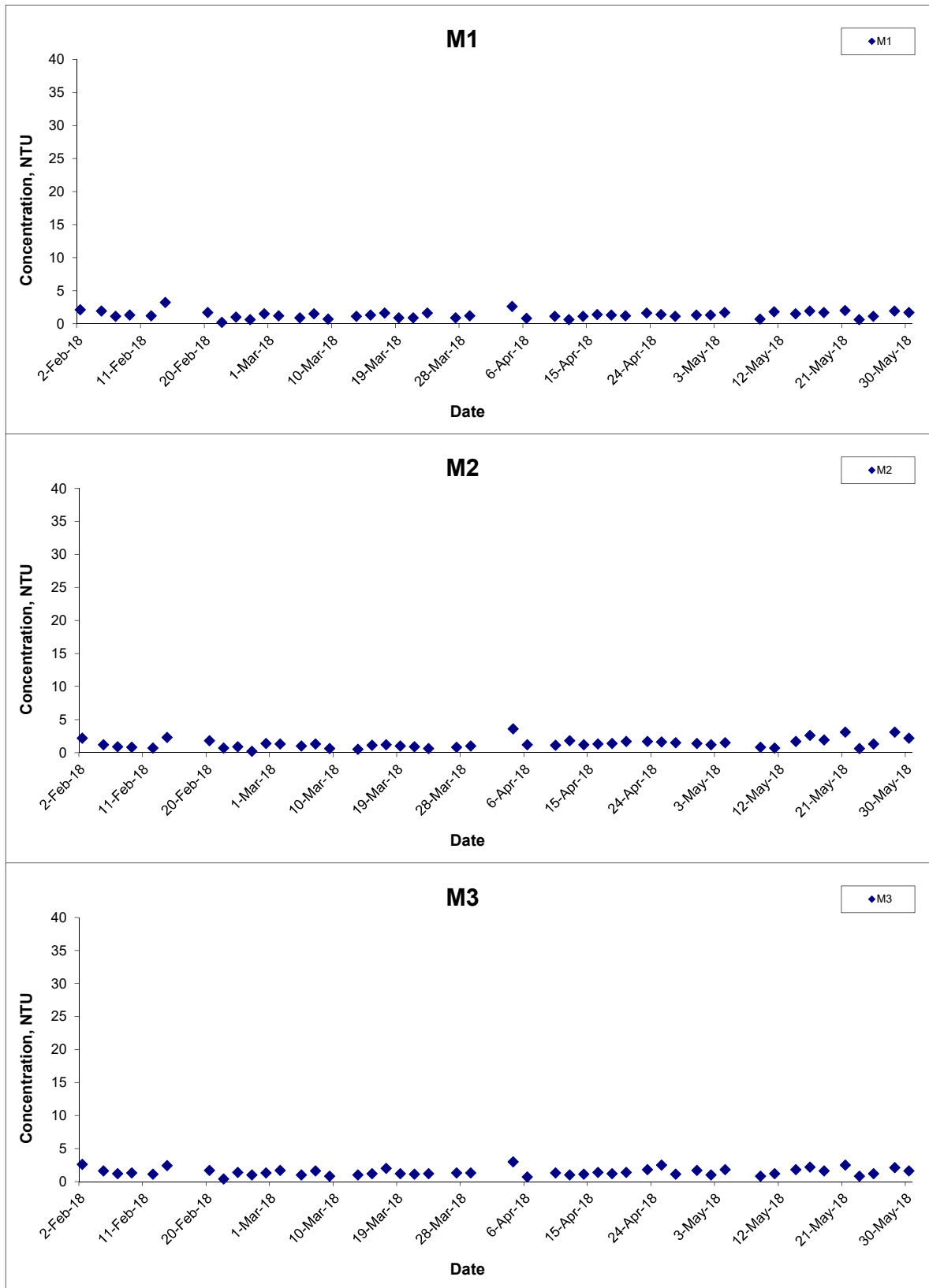
Date May 18

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## Turbidity (Depth-averaged) at Mid-Flood Tide



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

Graphical Presentation of Water Quality Monitoring Results

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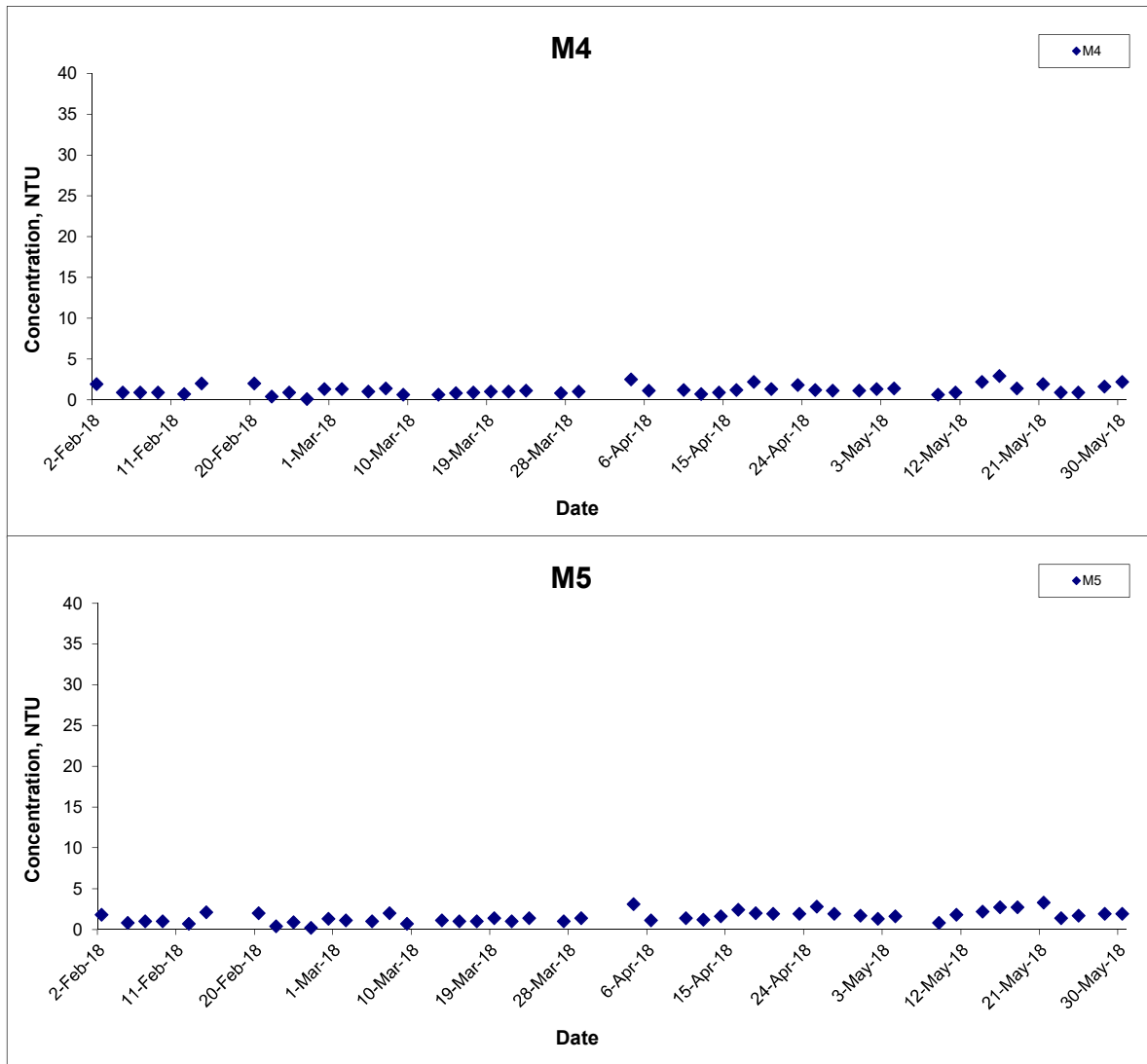
Date May 18

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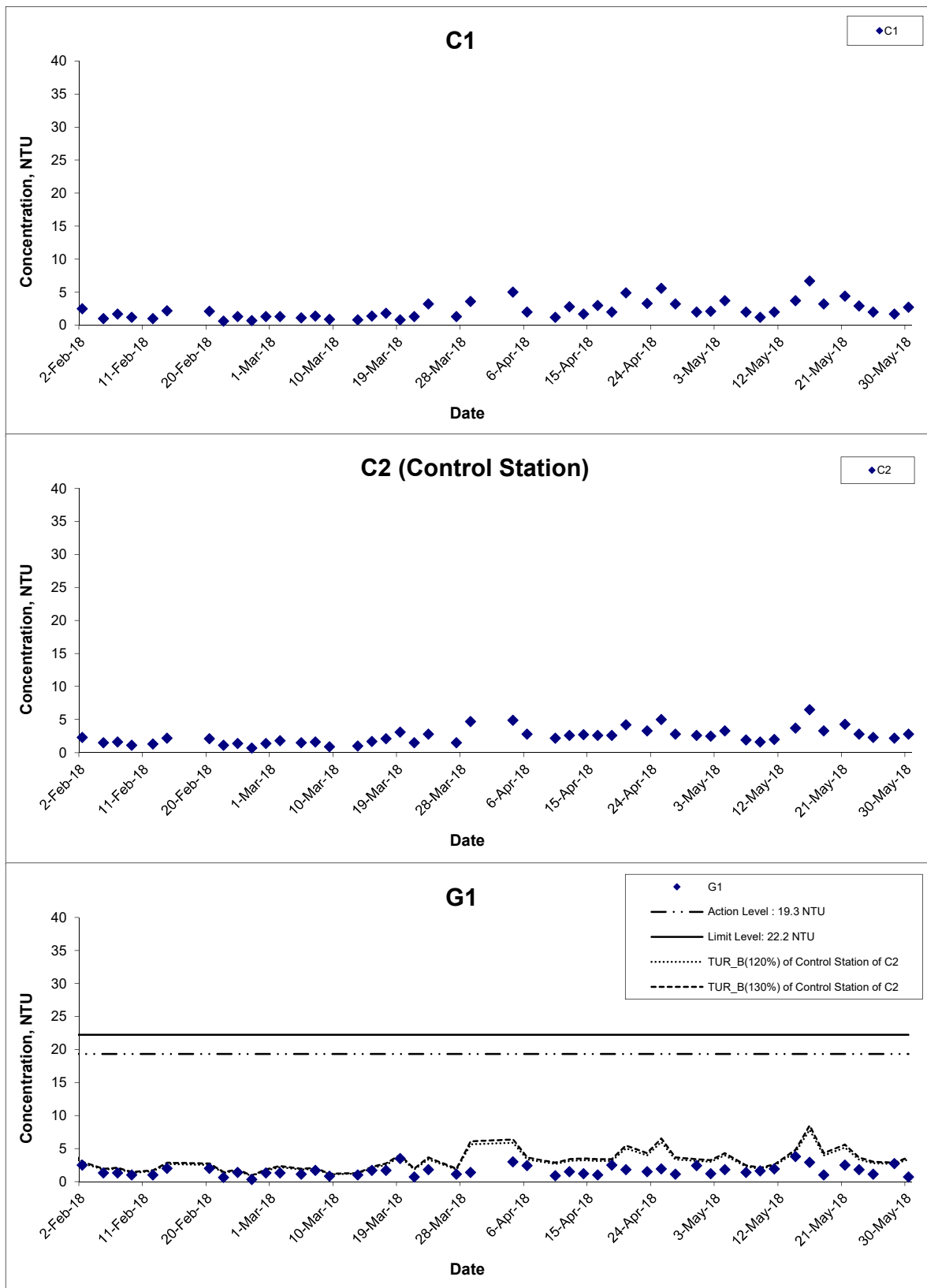


## Turbidity (Depth-averaged) at Mid-Flood Tide



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## Turbidity (Bottom) at Mid-Ebb Tide



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

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Scale N.T.S

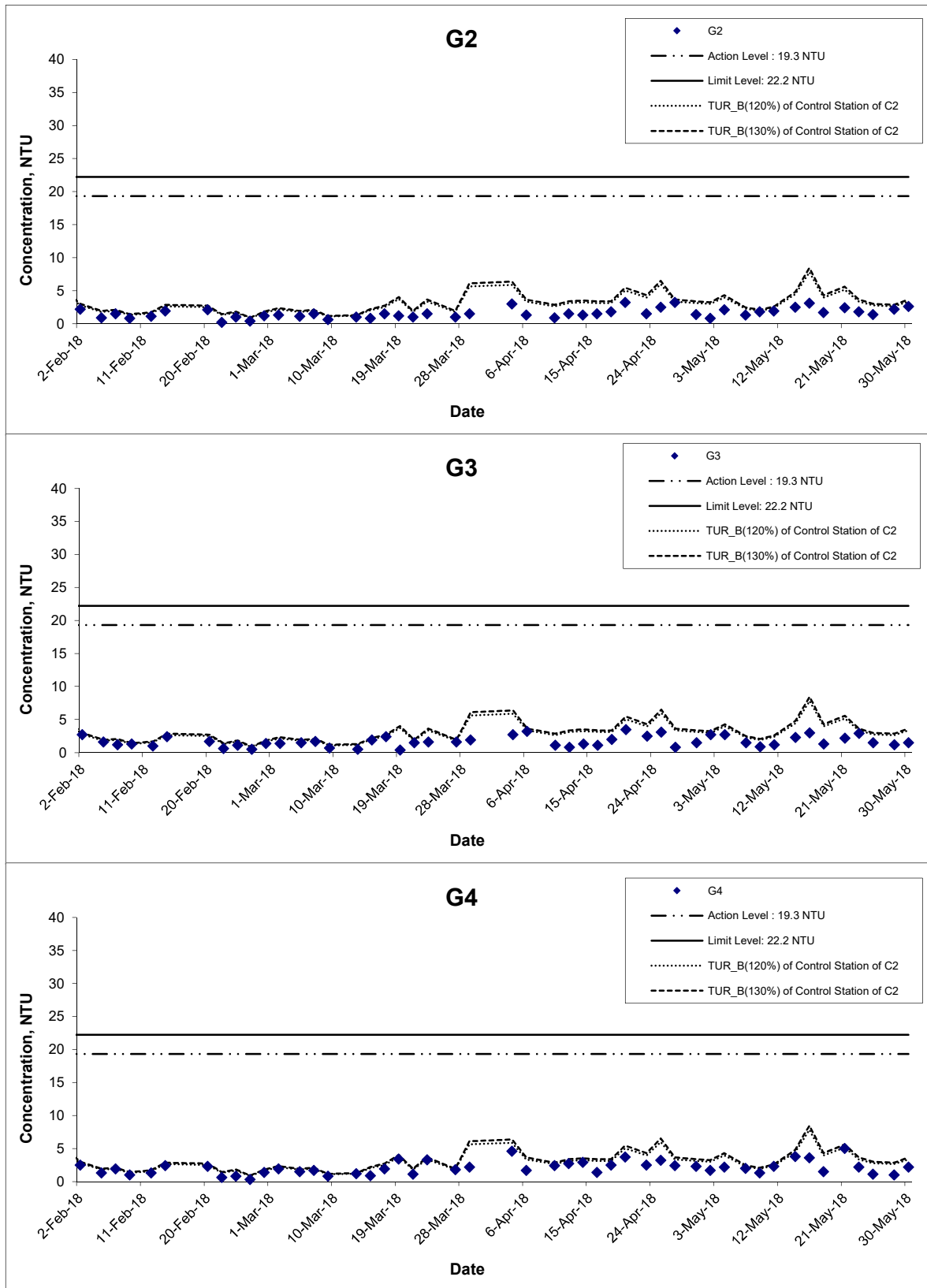
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## Turbidity (Bottom) at Mid-Ebb Tide



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

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Scale N.T.S

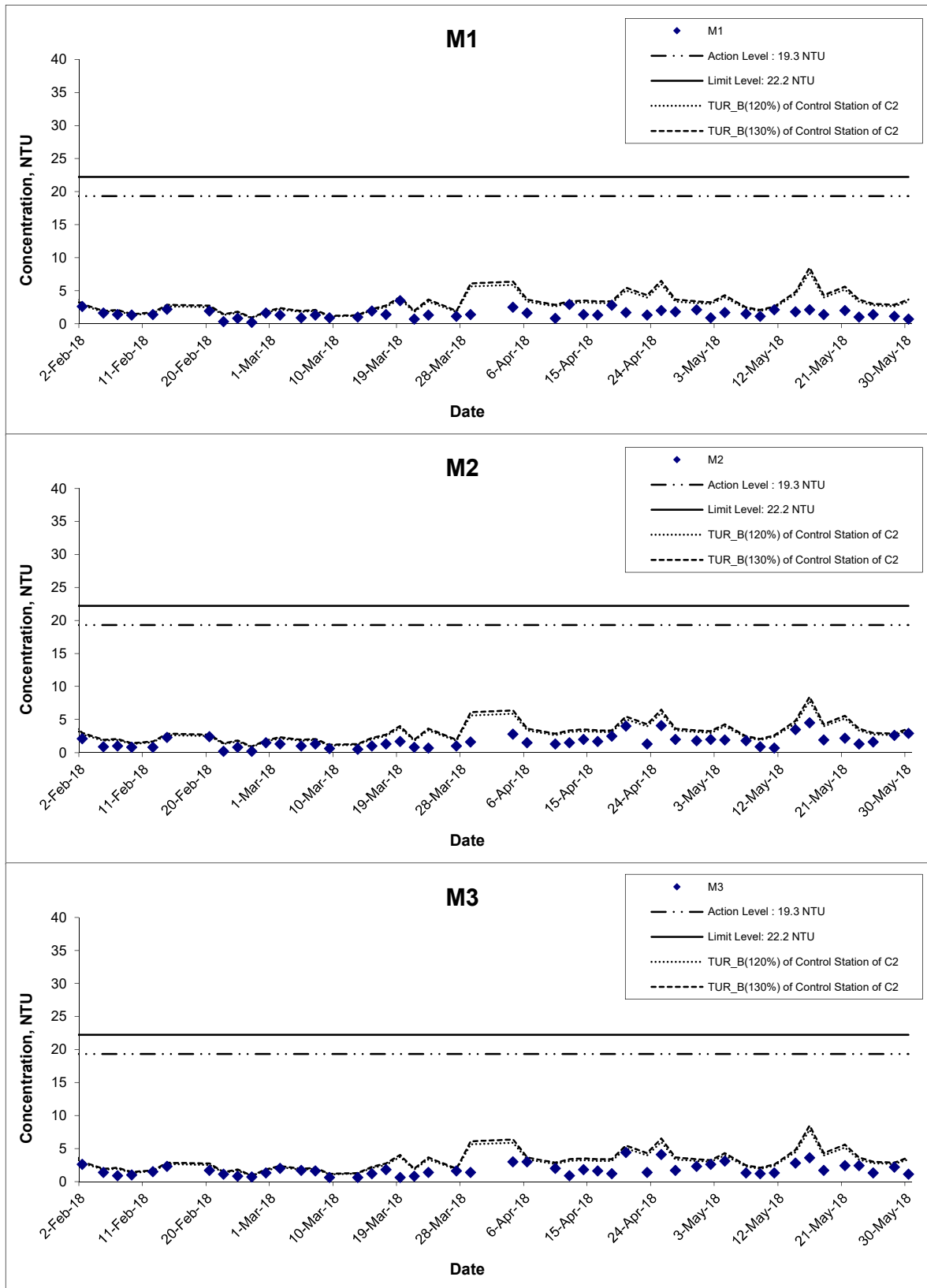
Date May 18

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## Turbidity (Bottom) at Mid-Ebb Tide



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

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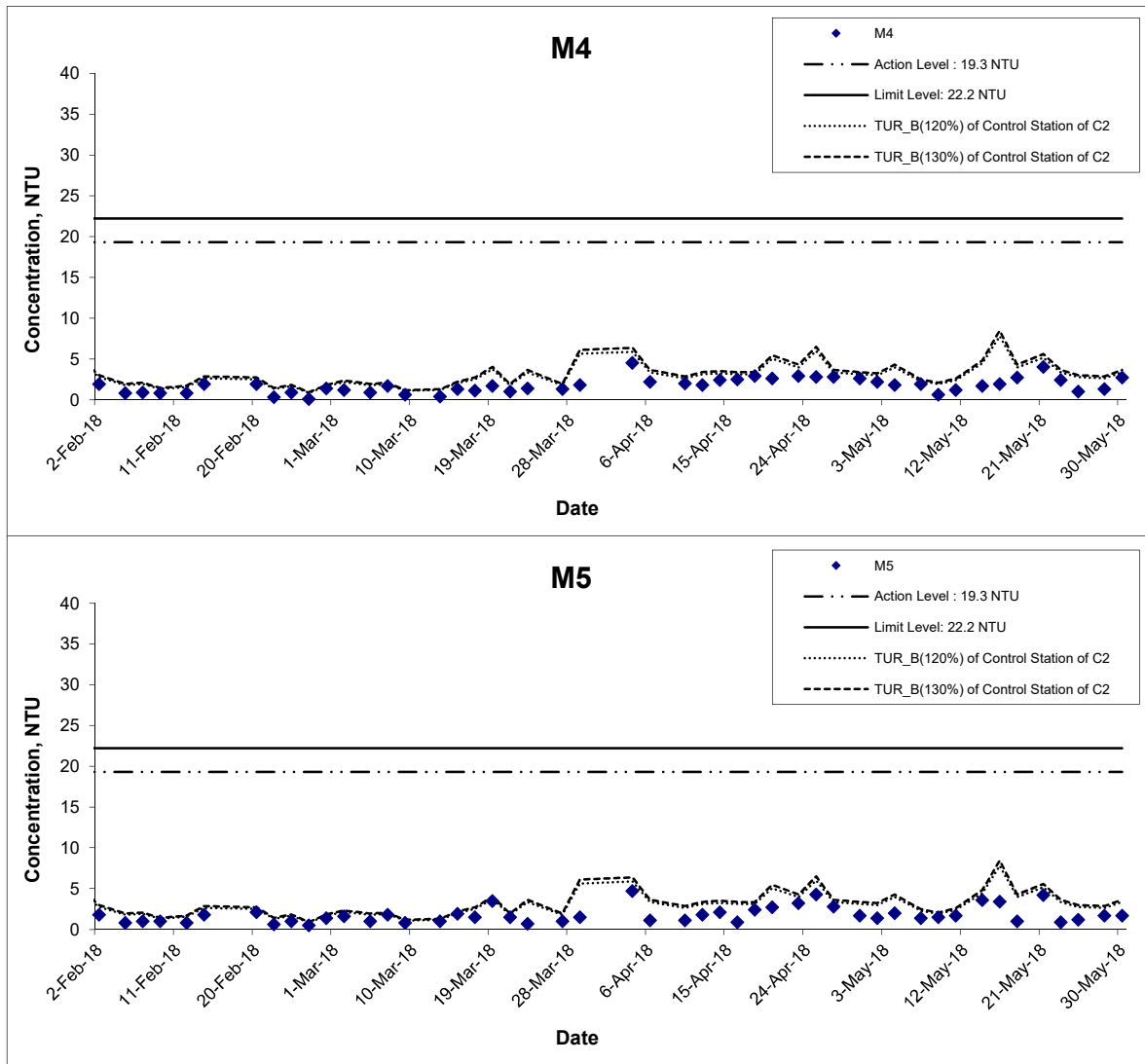
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## Turbidity (Bottom) at Mid-Ebb Tide



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

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Scale N.T.S

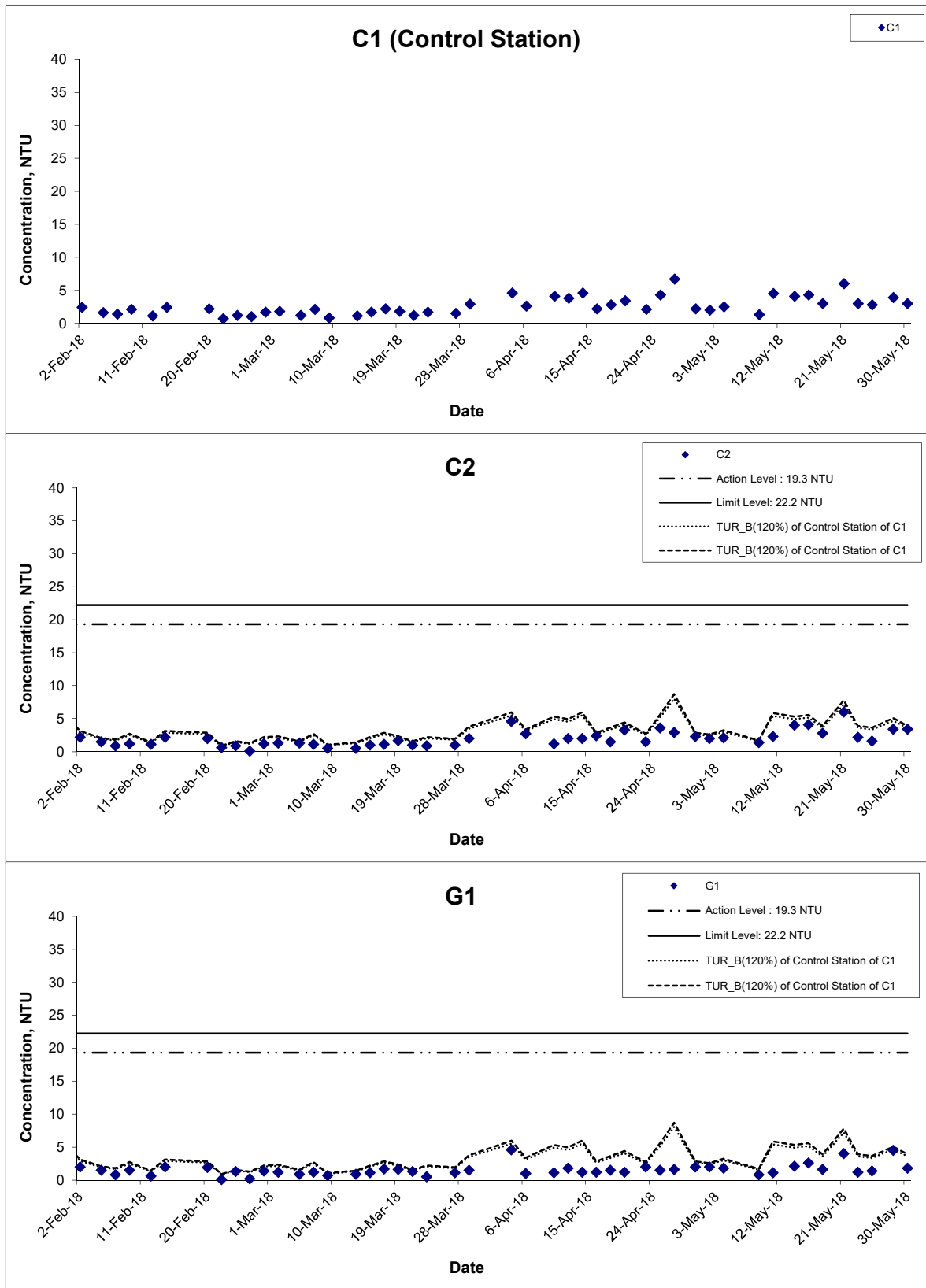
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## Turbidity (Bottom) at Mid-Flood Tide



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

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Scale N.T.S

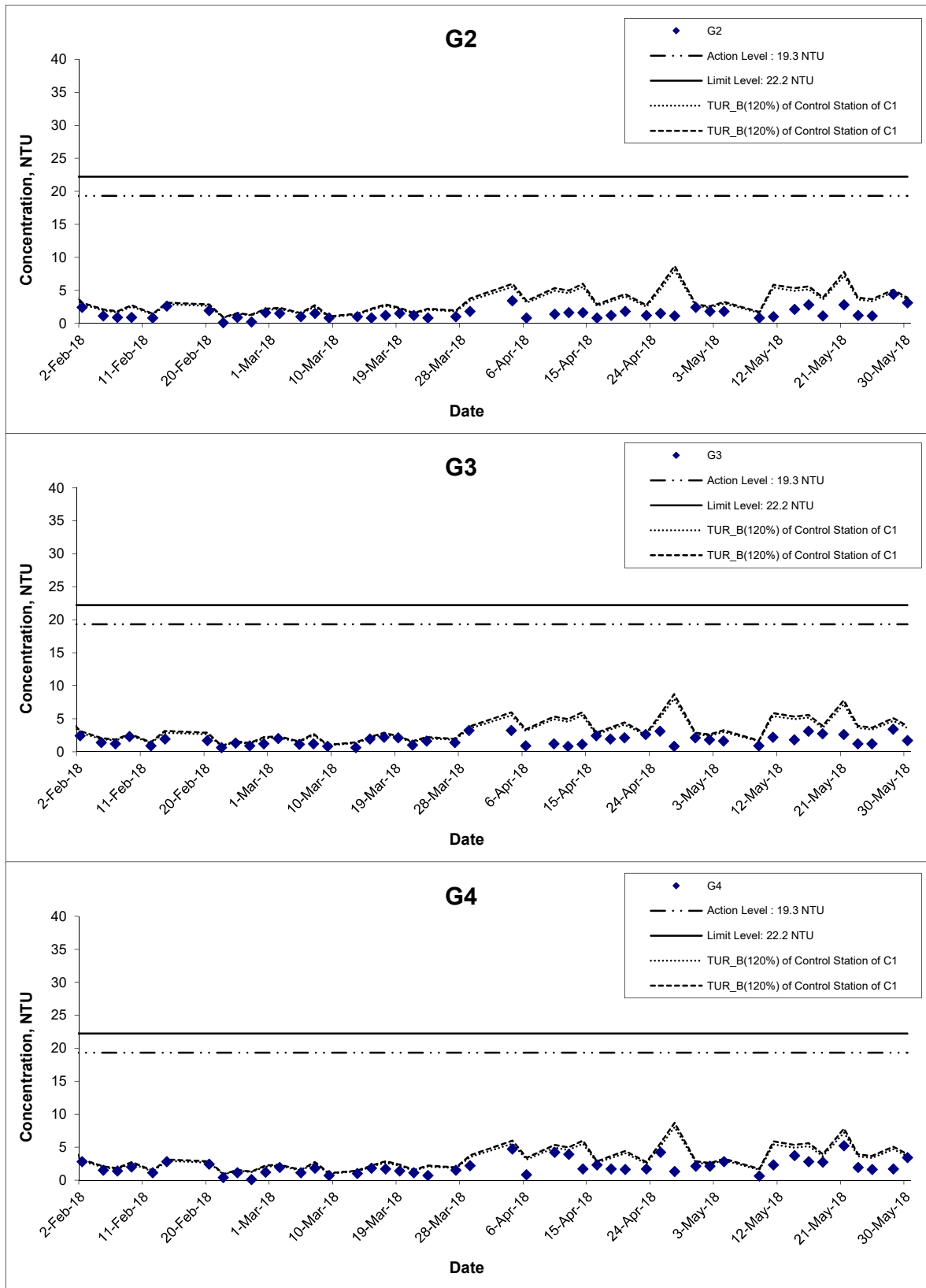
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## Turbidity (Bottom) at Mid-Flood Tide



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

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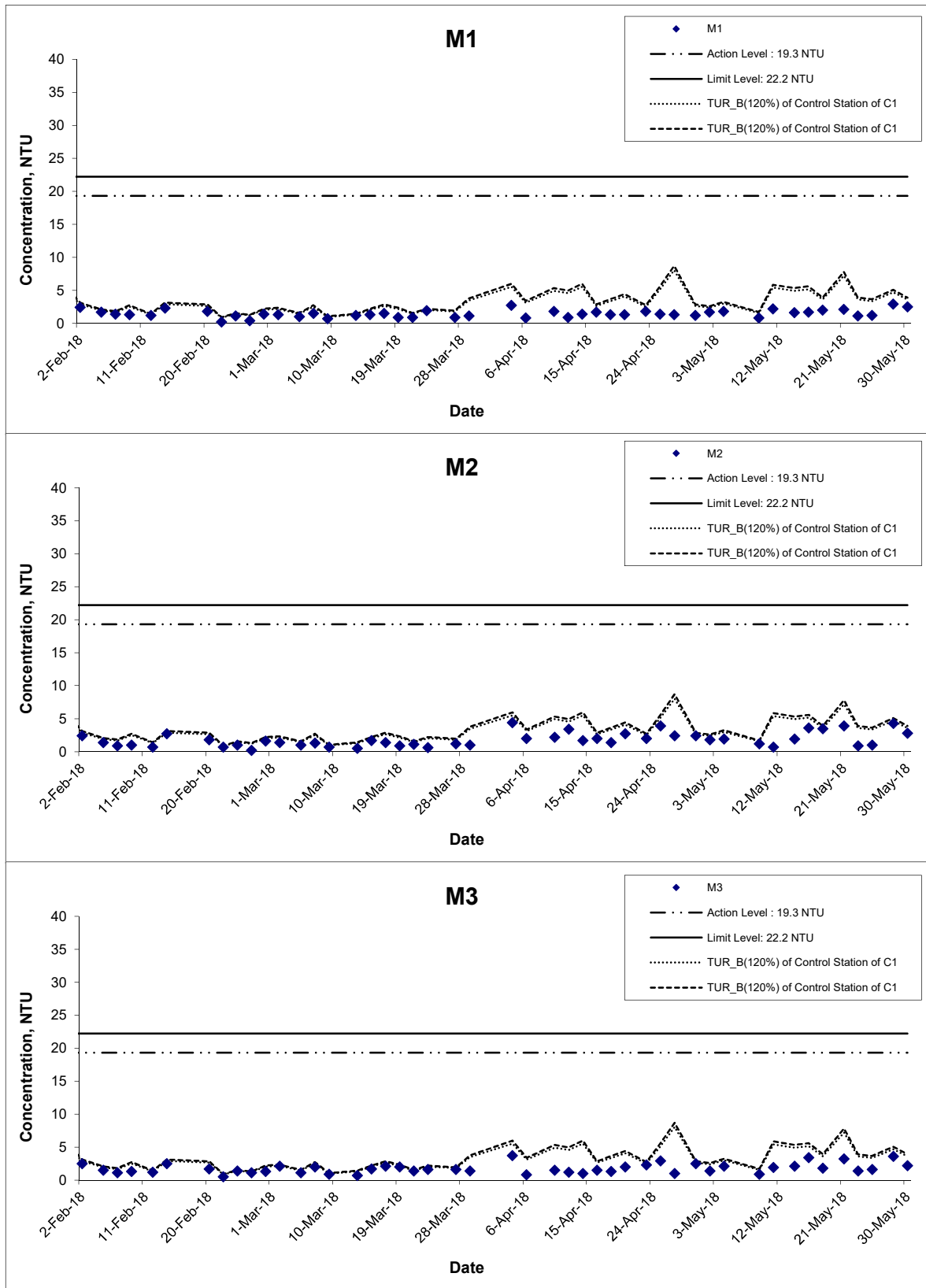
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## Turbidity (Bottom) at Mid-Flood Tide



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

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Scale N.T.S

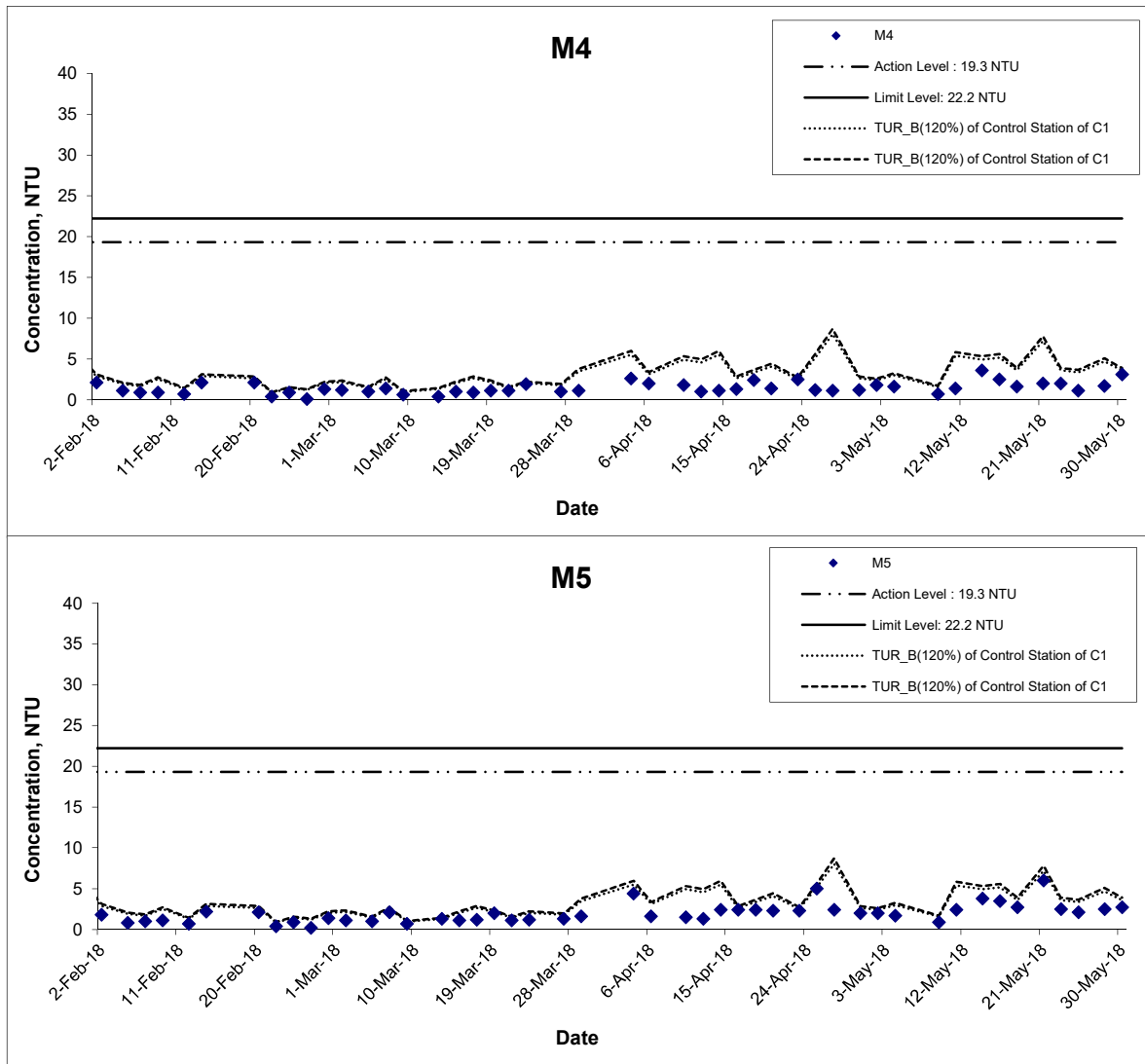
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## Turbidity (Bottom) at Mid-Flood Tide



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

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

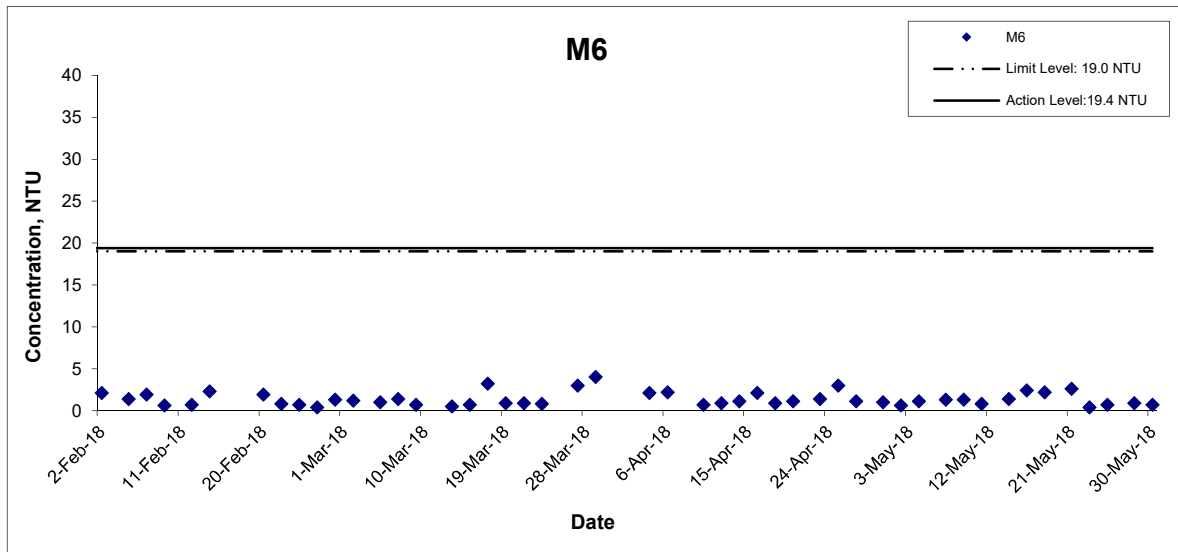
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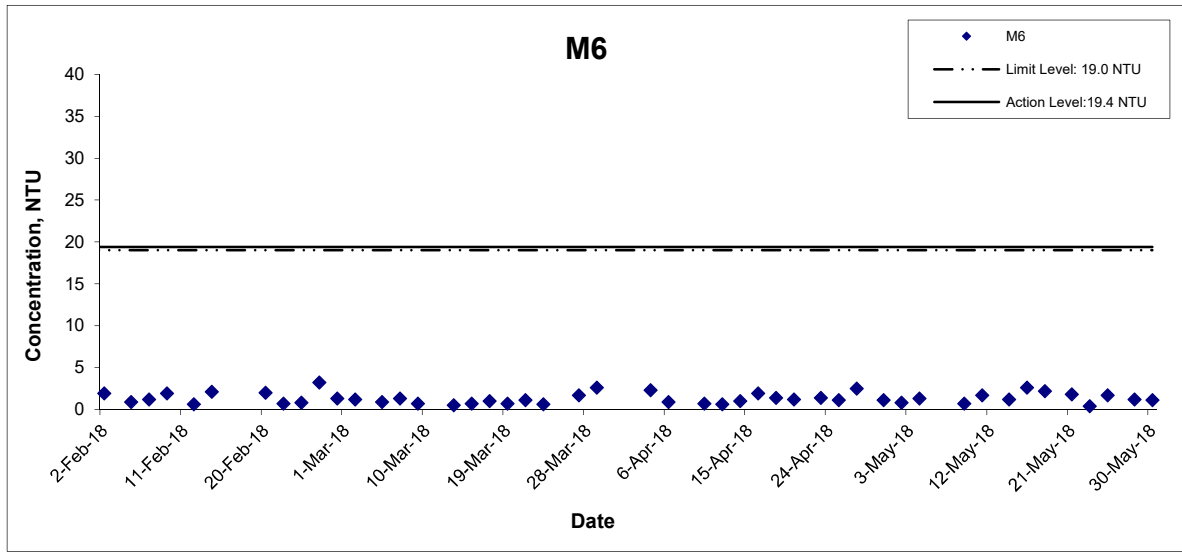
**CINOTECH**

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



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	
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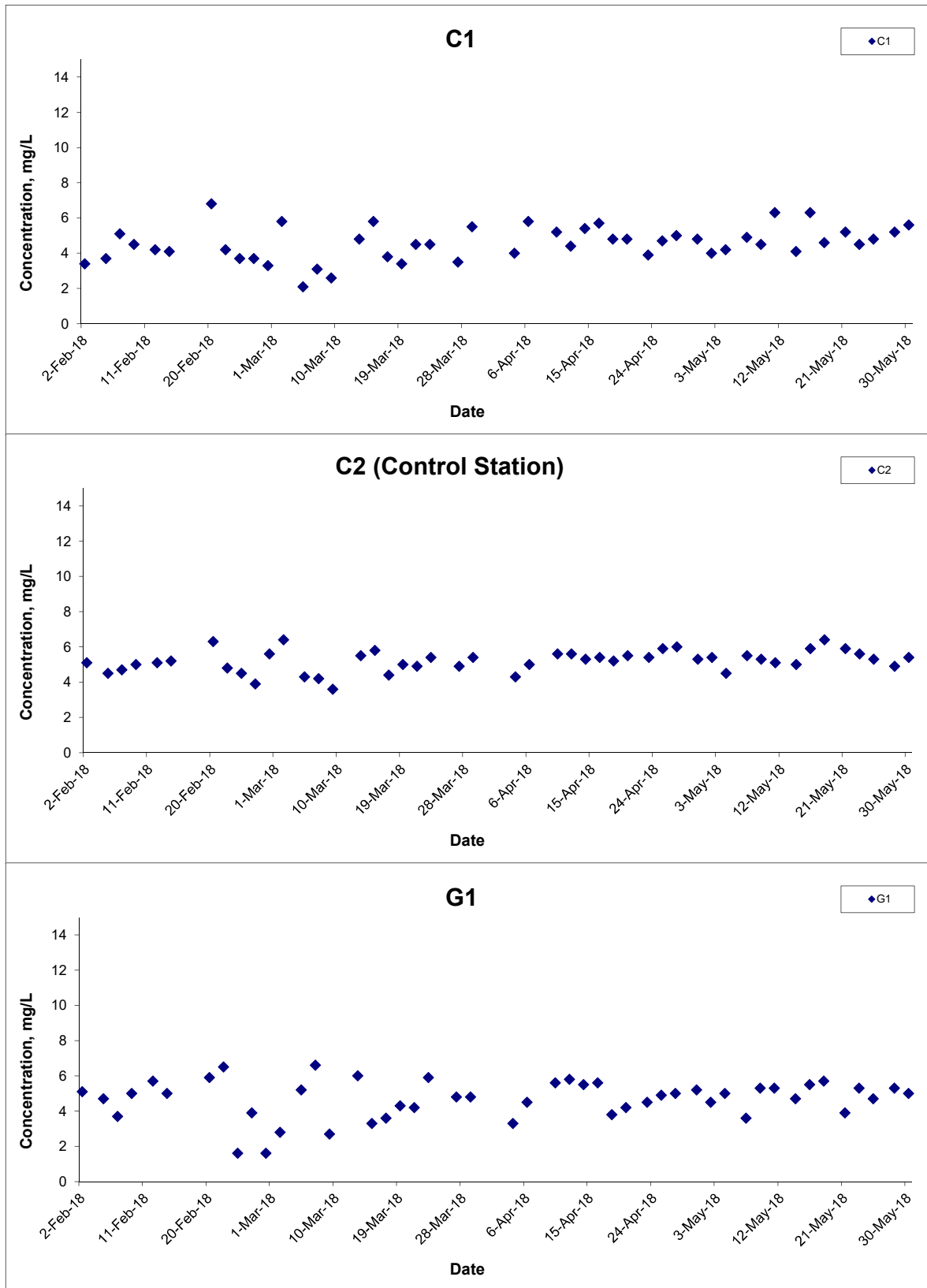
## Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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	Project No.	MA16034
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## Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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

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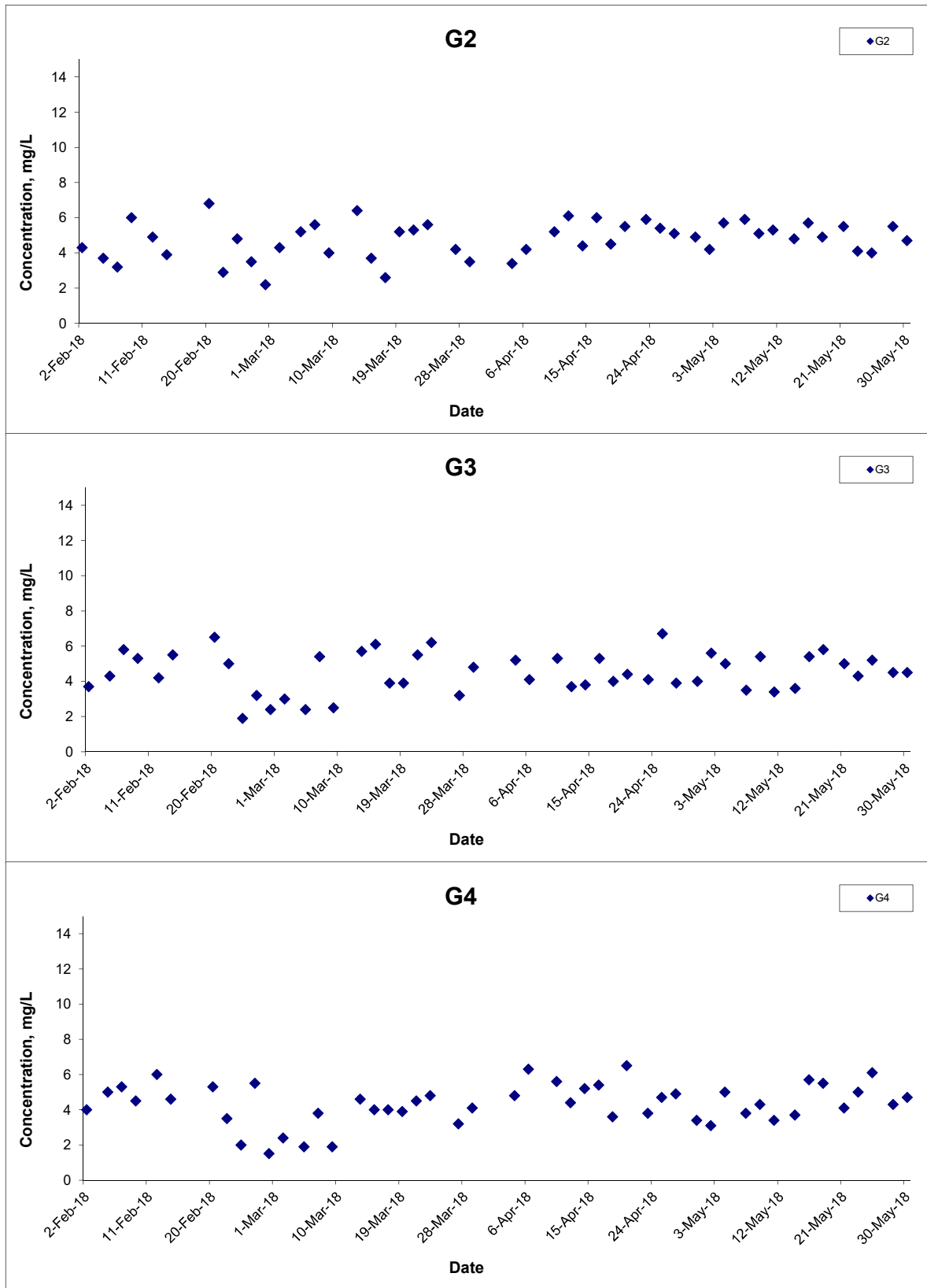
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## Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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

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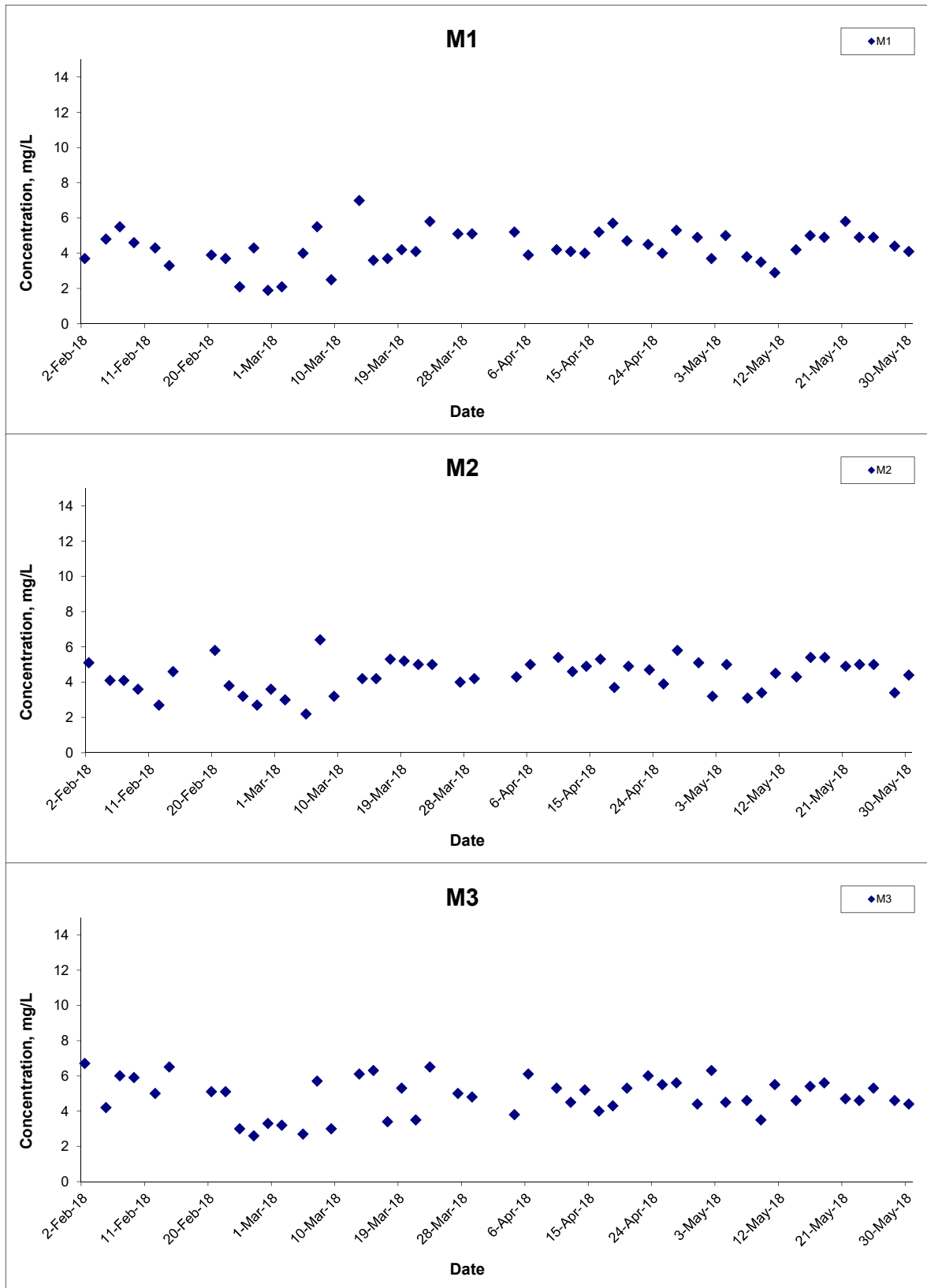
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## Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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

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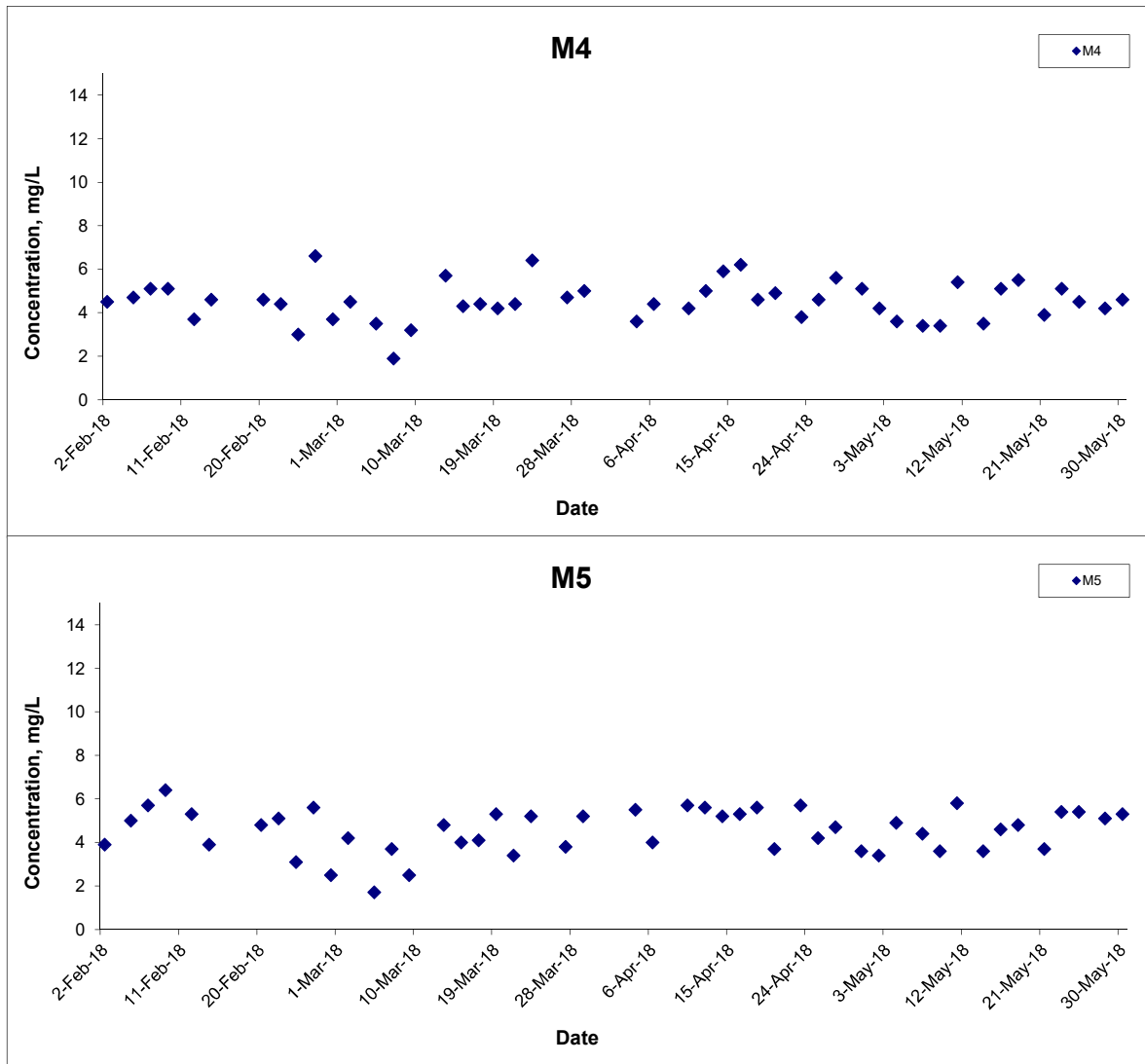
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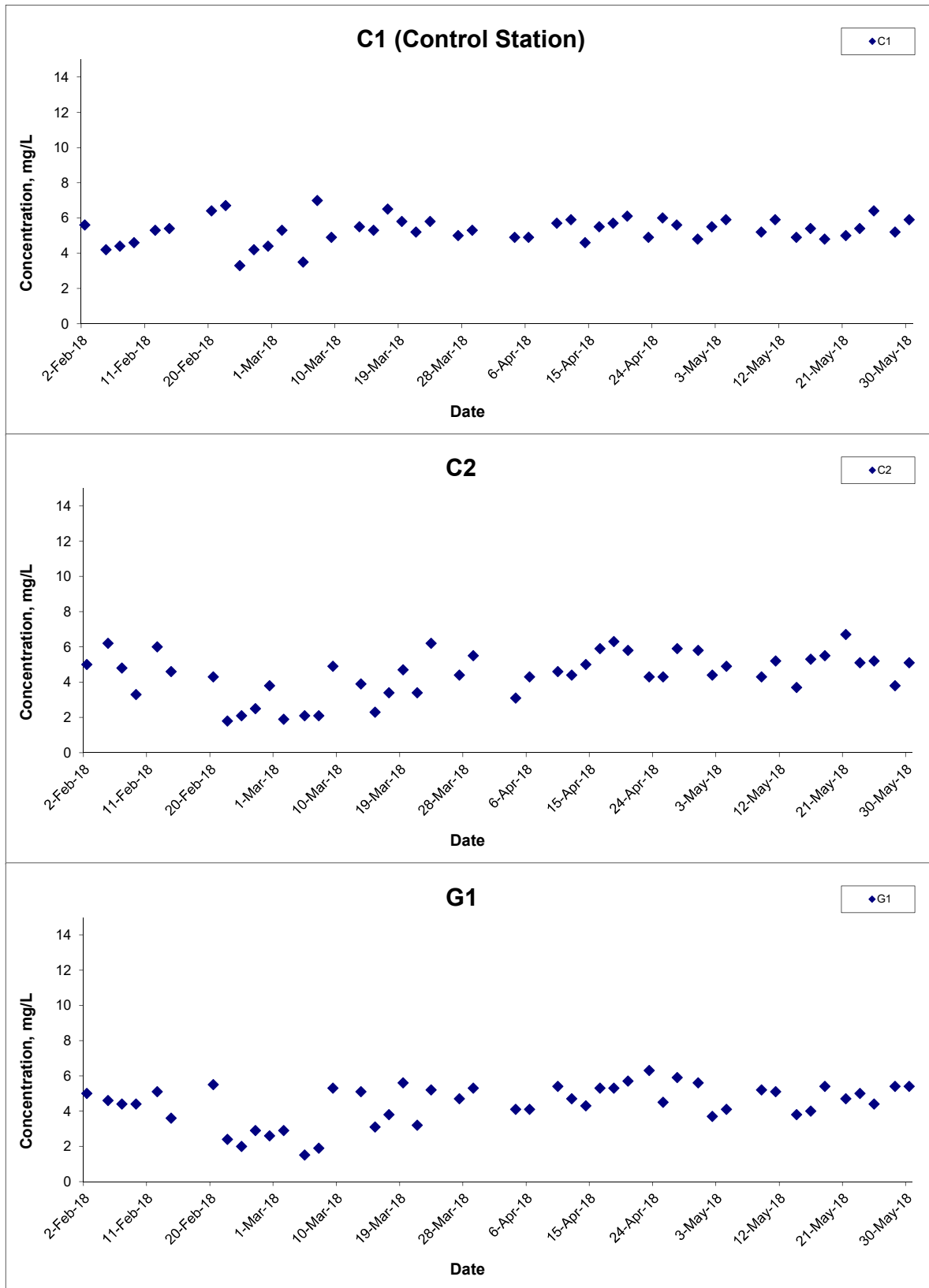


## Suspended Solids (Depth-averaged) at Mid-Ebb Tide



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction	Scale	N.T.S	Project No.	MA16034	CINOTECH
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## Suspended Solids (Depth-averaged) at Mid-Flood Tide



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

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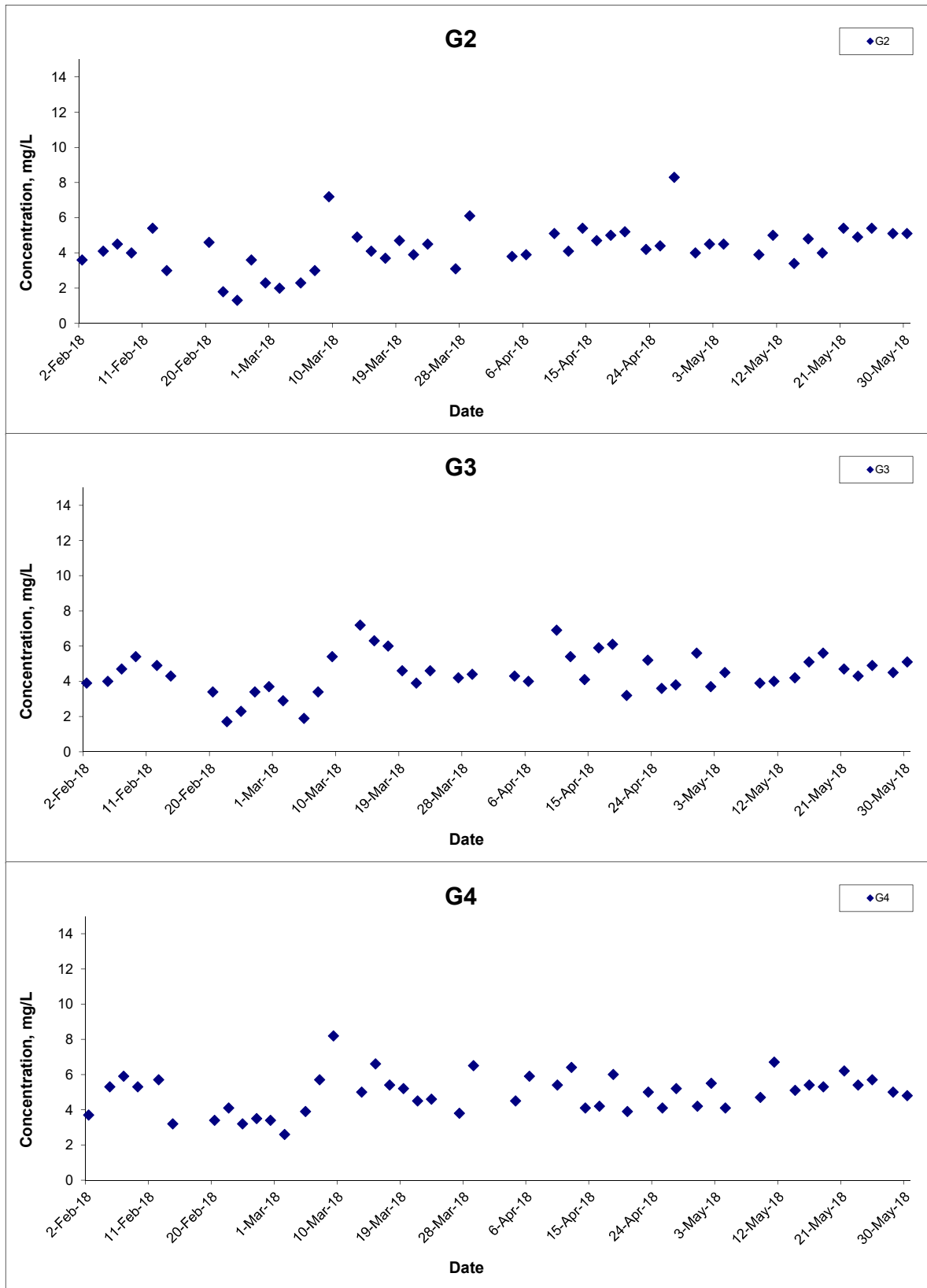
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## Suspended Solids (Depth-averaged) at Mid-Flood Tide



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

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Scale N.T.S

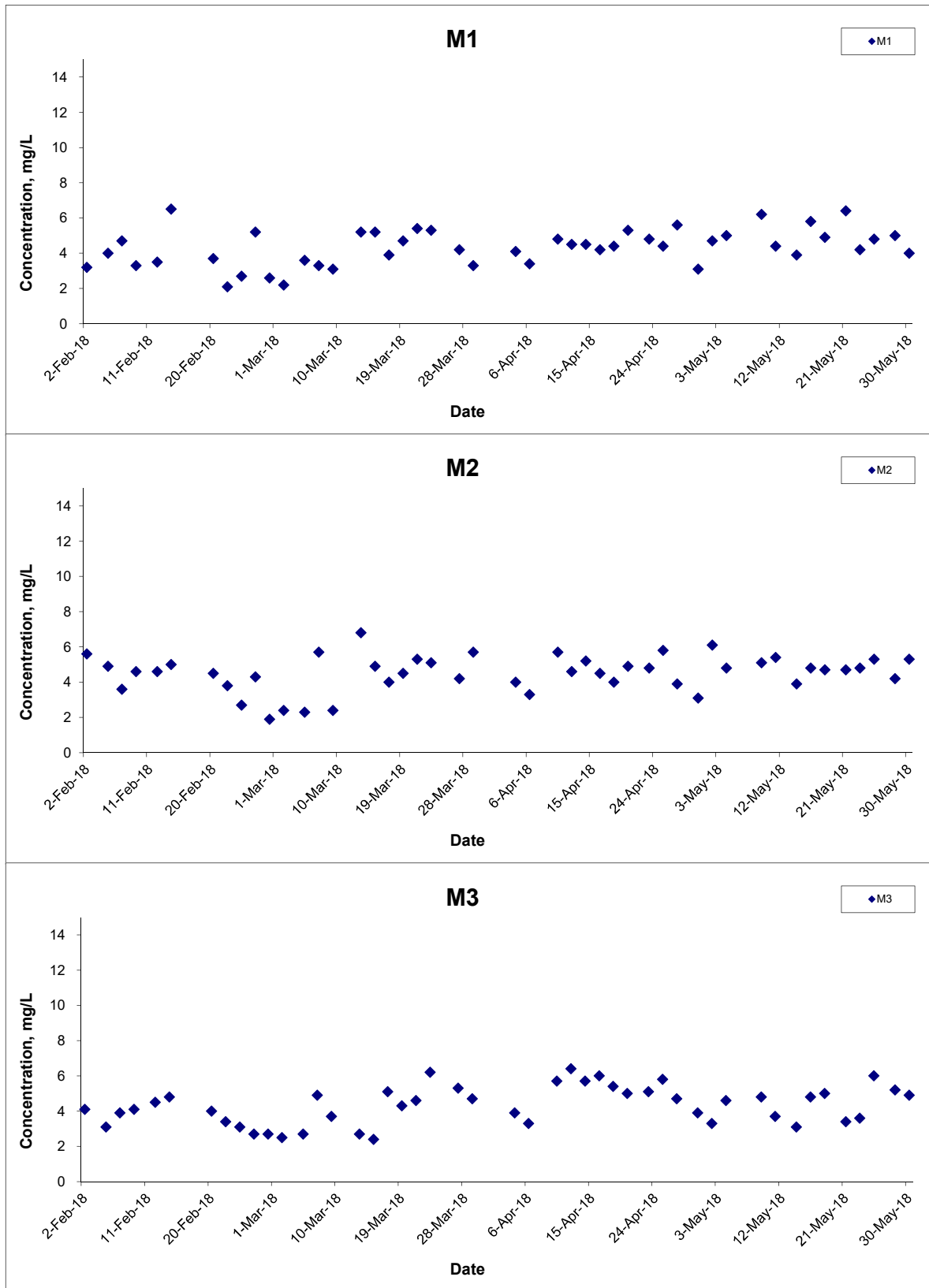
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## Suspended Solids (Depth-averaged) at Mid-Flood Tide



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

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Scale N.T.S

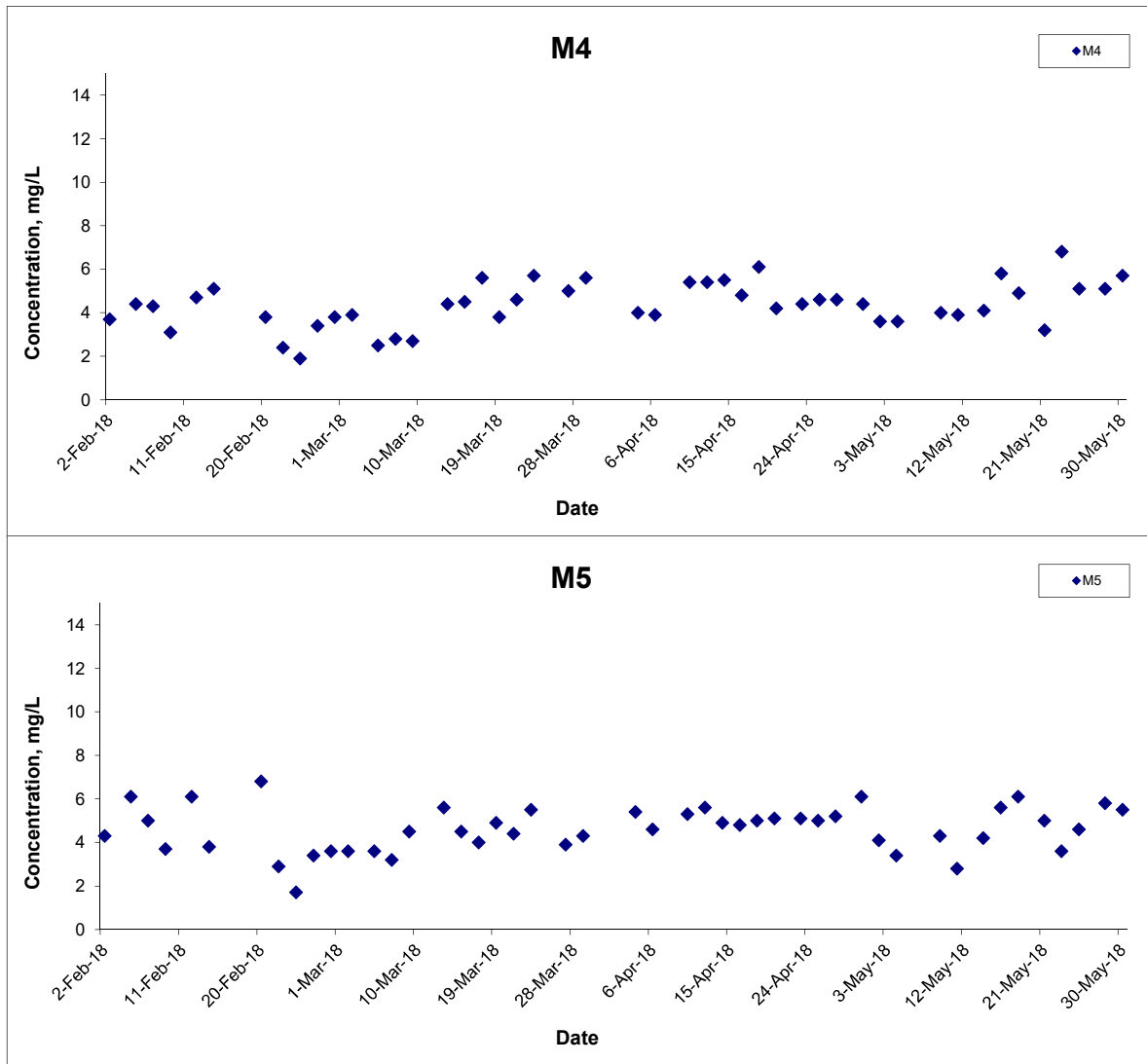
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## Suspended Solids (Depth-averaged) at Mid-Flood Tide



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

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

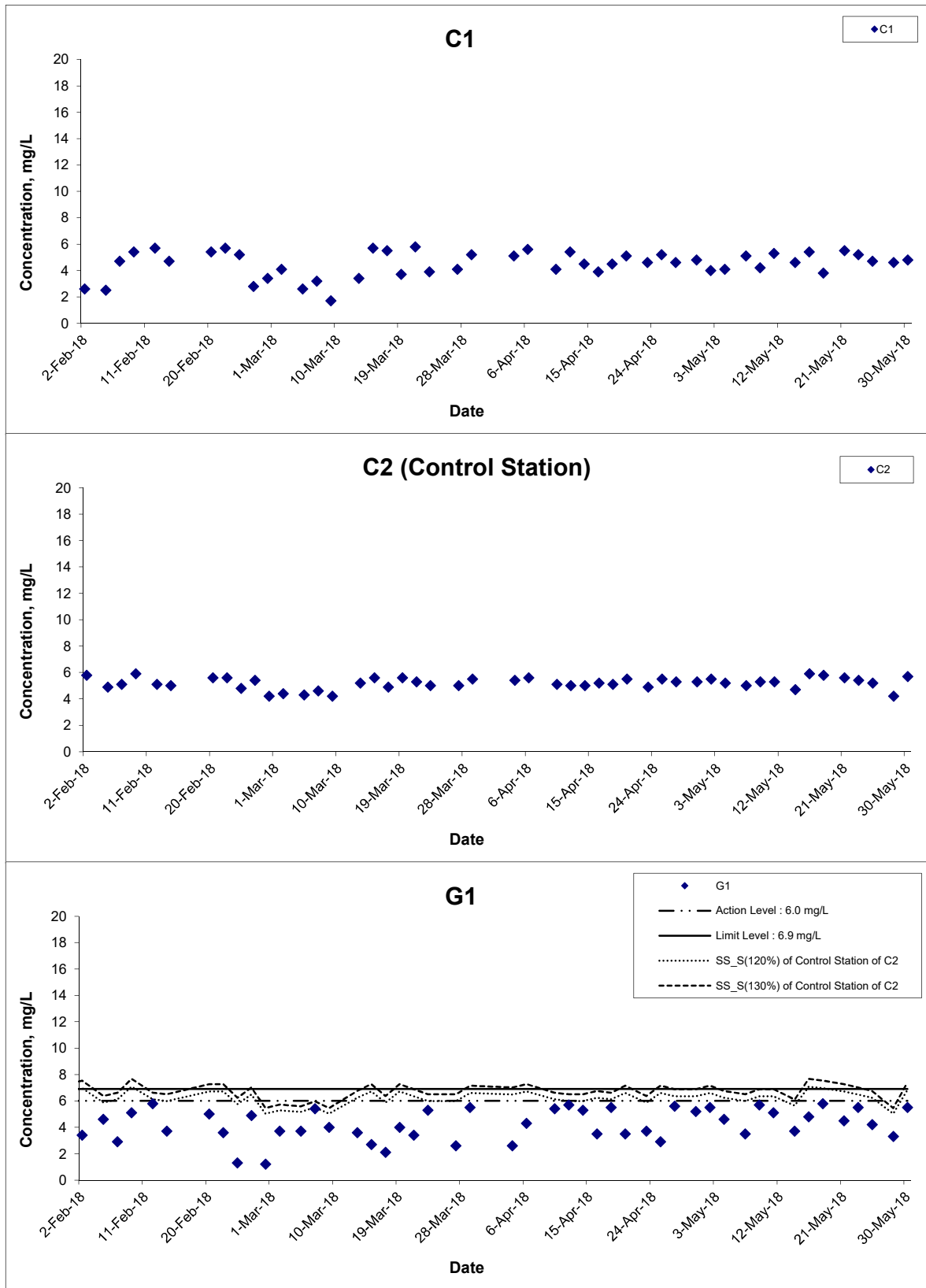
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## Suspended Solids (Surface) at Mid-Ebb Tide



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

Graphical Presentation of Water Quality Monitoring Results

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Date May 18

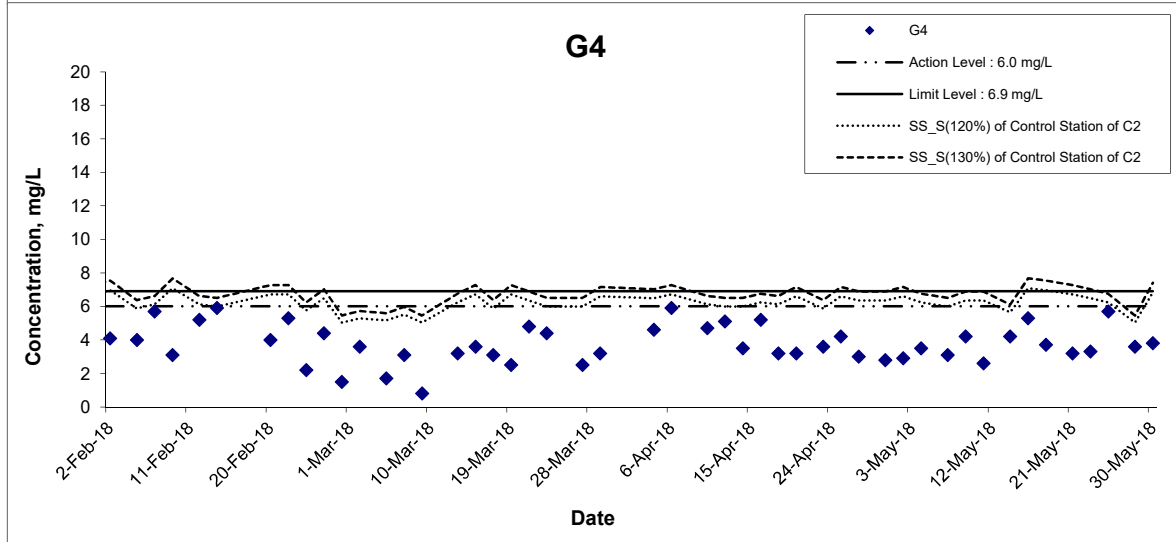
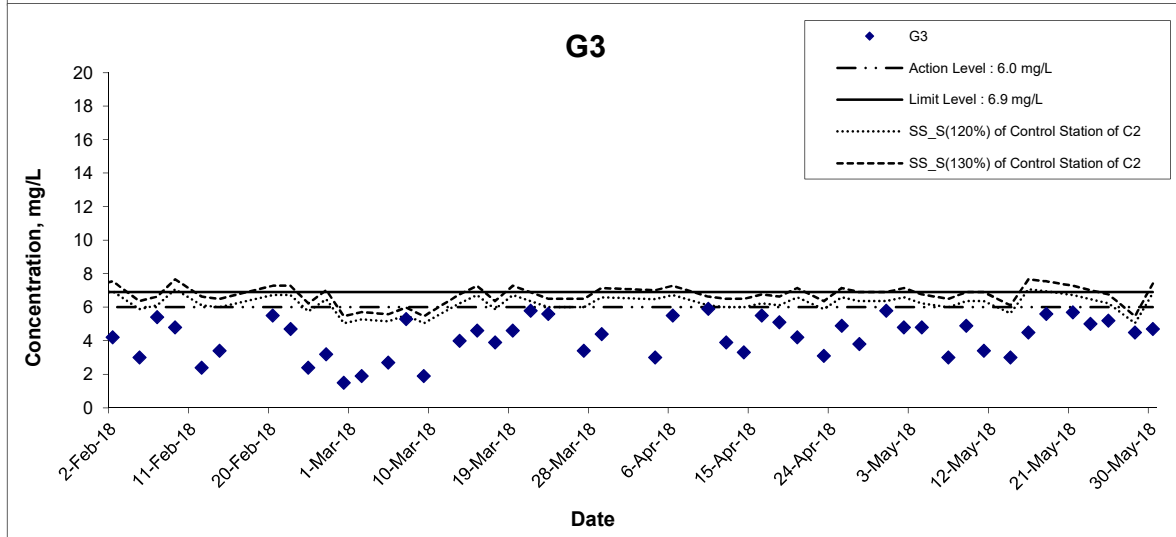
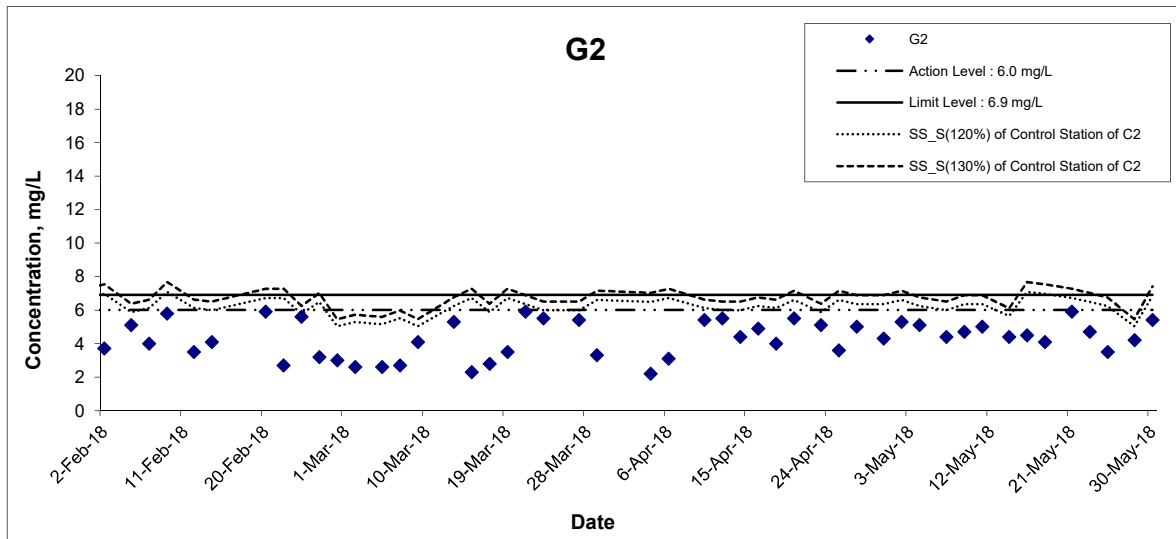
Project No. MA16034

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## Suspended Solids (Surface) at Mid-Ebb Tide



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

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

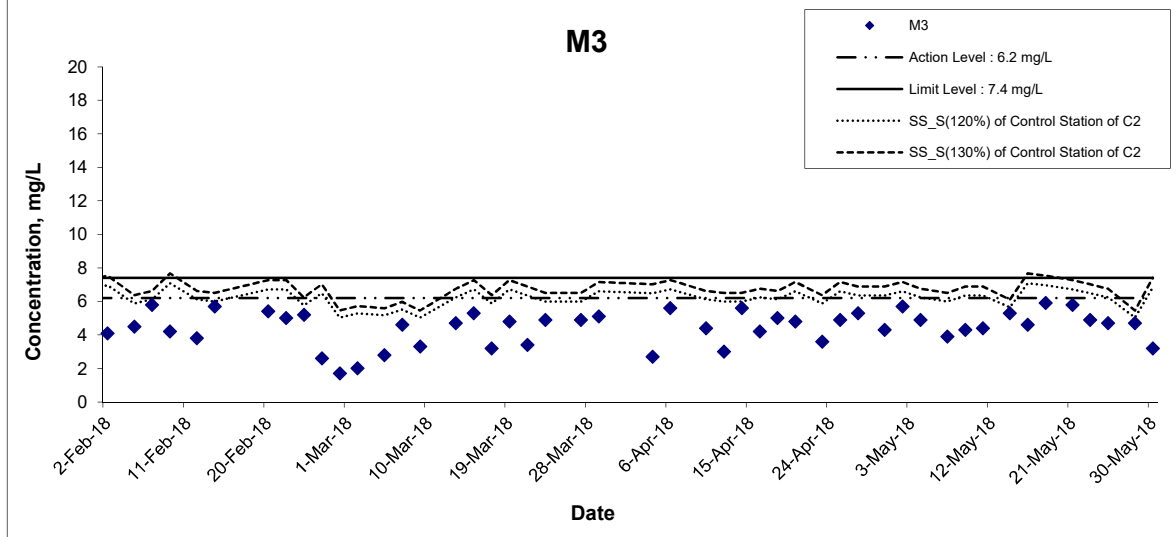
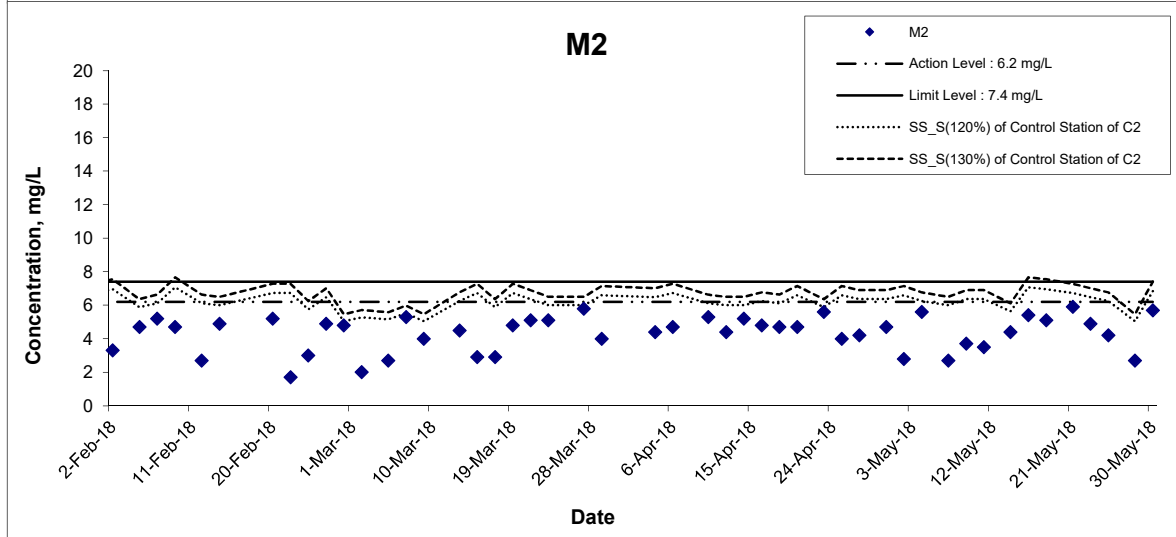
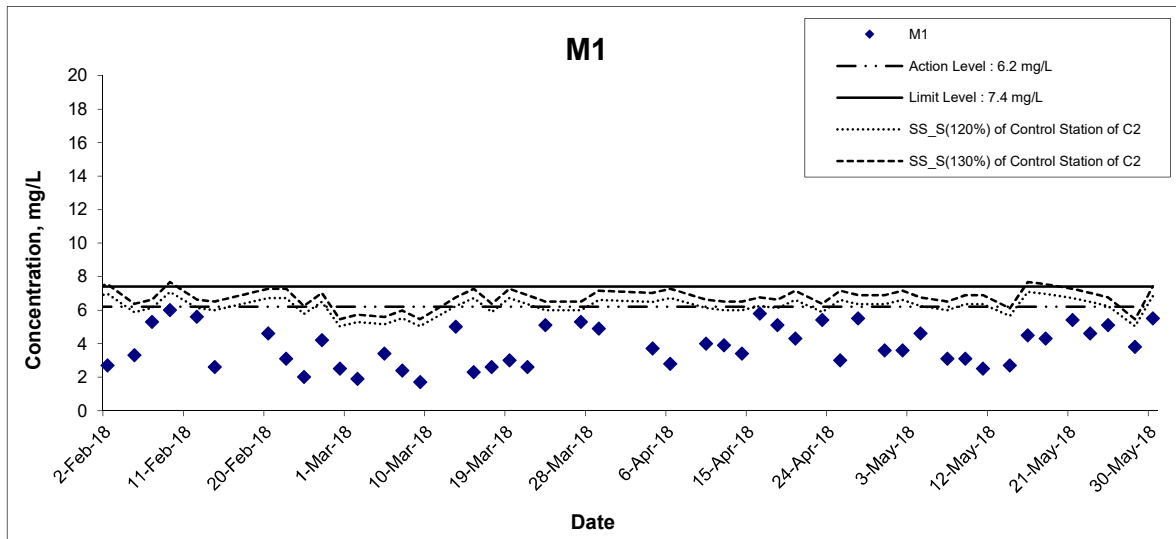
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## Suspended Solids (Surface) at Mid-Ebb Tide



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

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Scale N.T.S

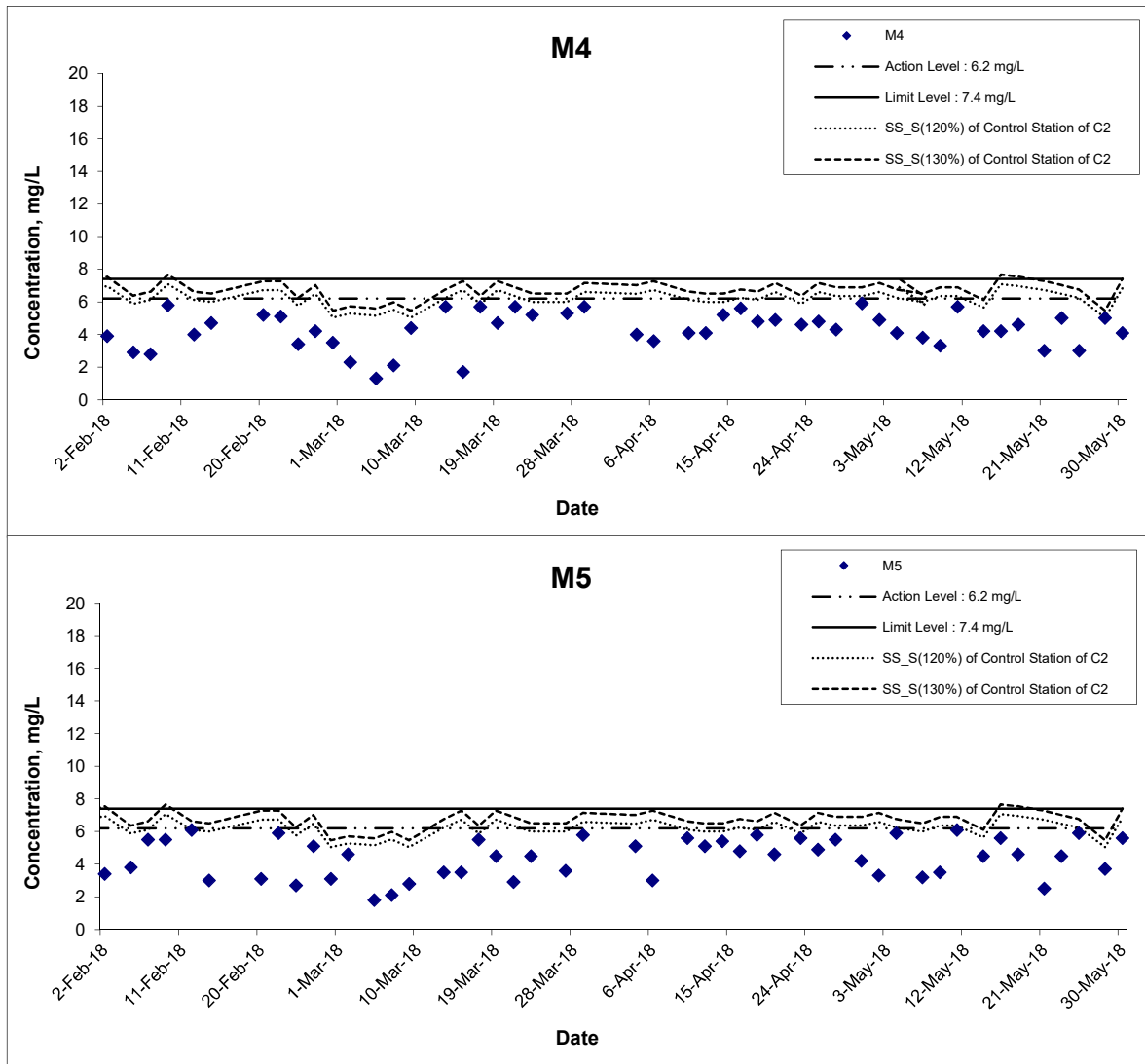
Date May 18

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## Suspended Solids (Surface) at Mid-Ebb Tide



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

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Scale N.T.S

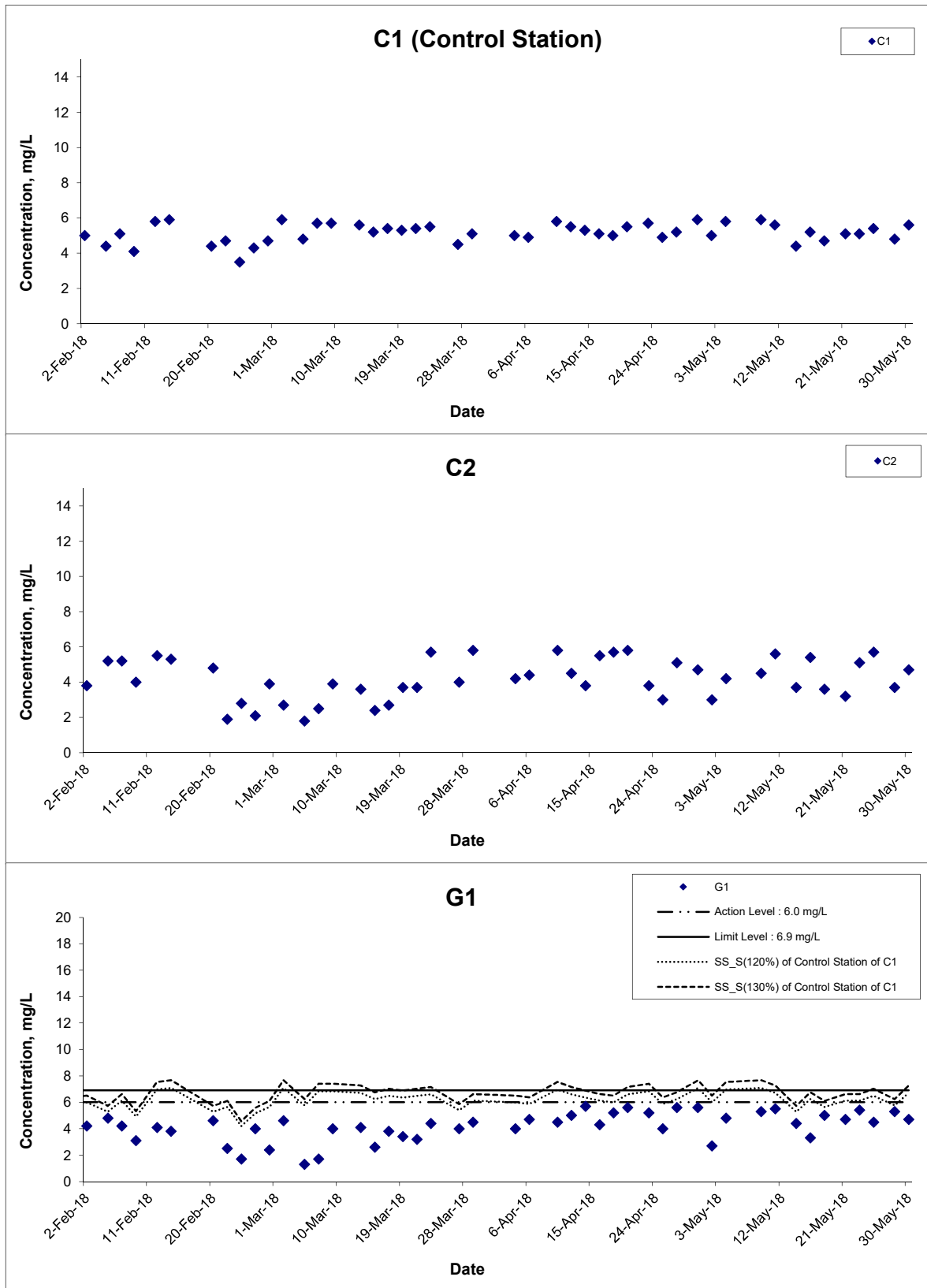
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## Suspended Solids (Surface) at Mid-Flood Tide



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

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Scale N.T.S

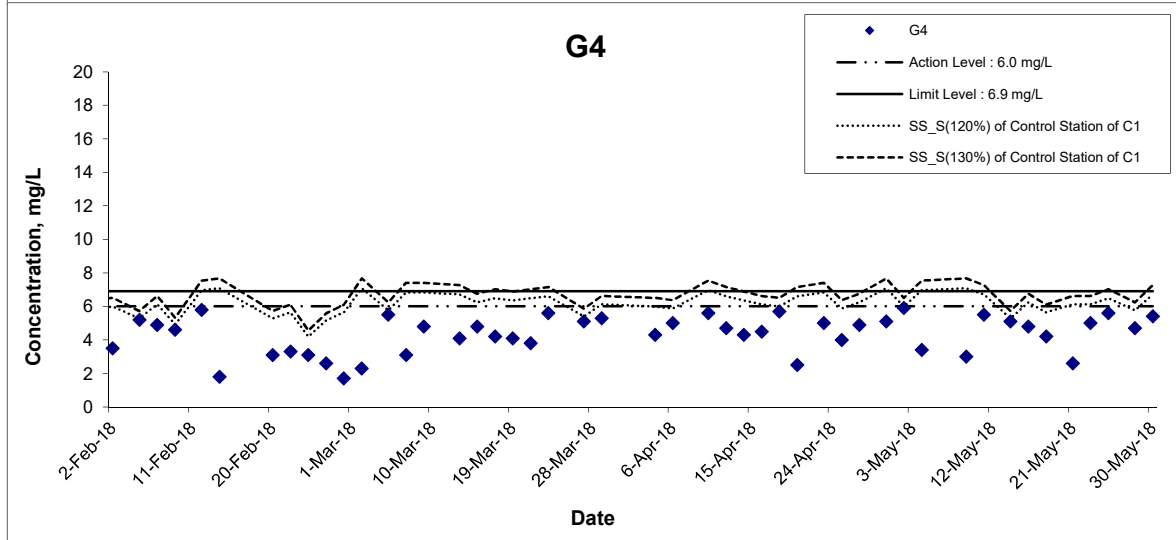
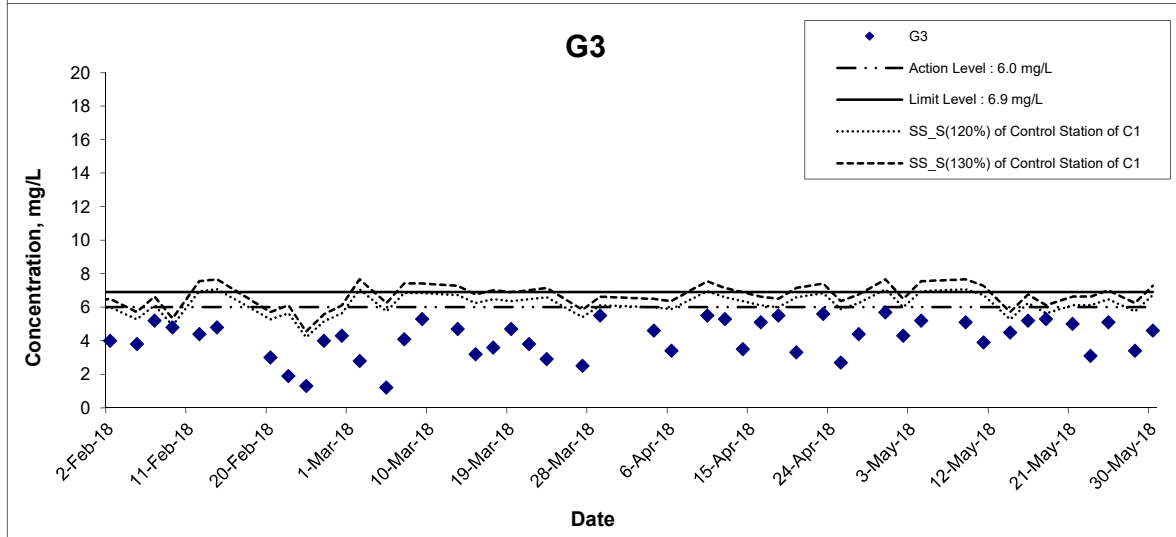
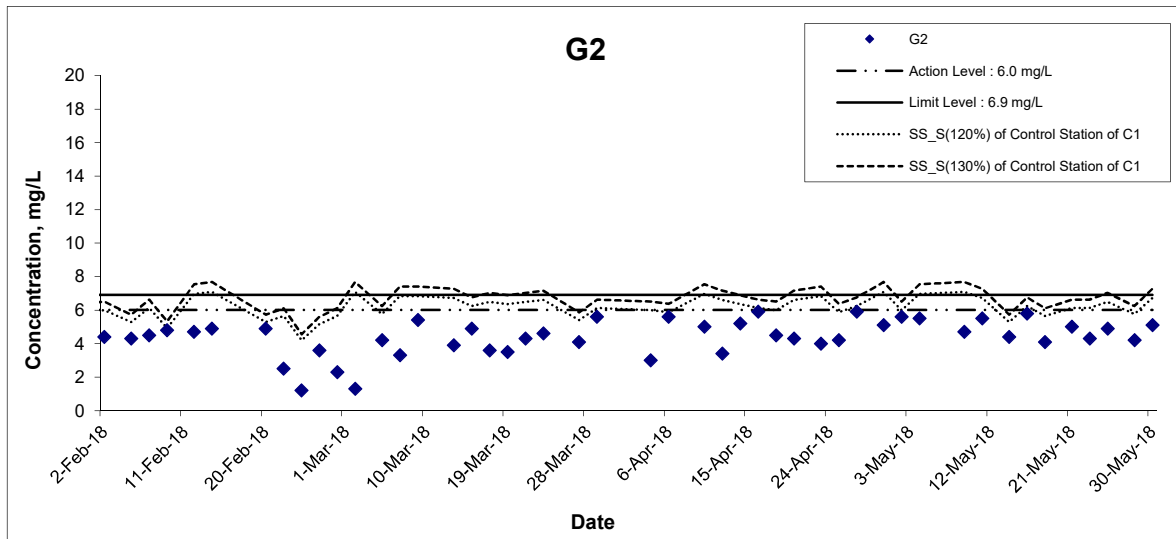
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## Suspended Solids (Surface) at Mid-Flood Tide



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

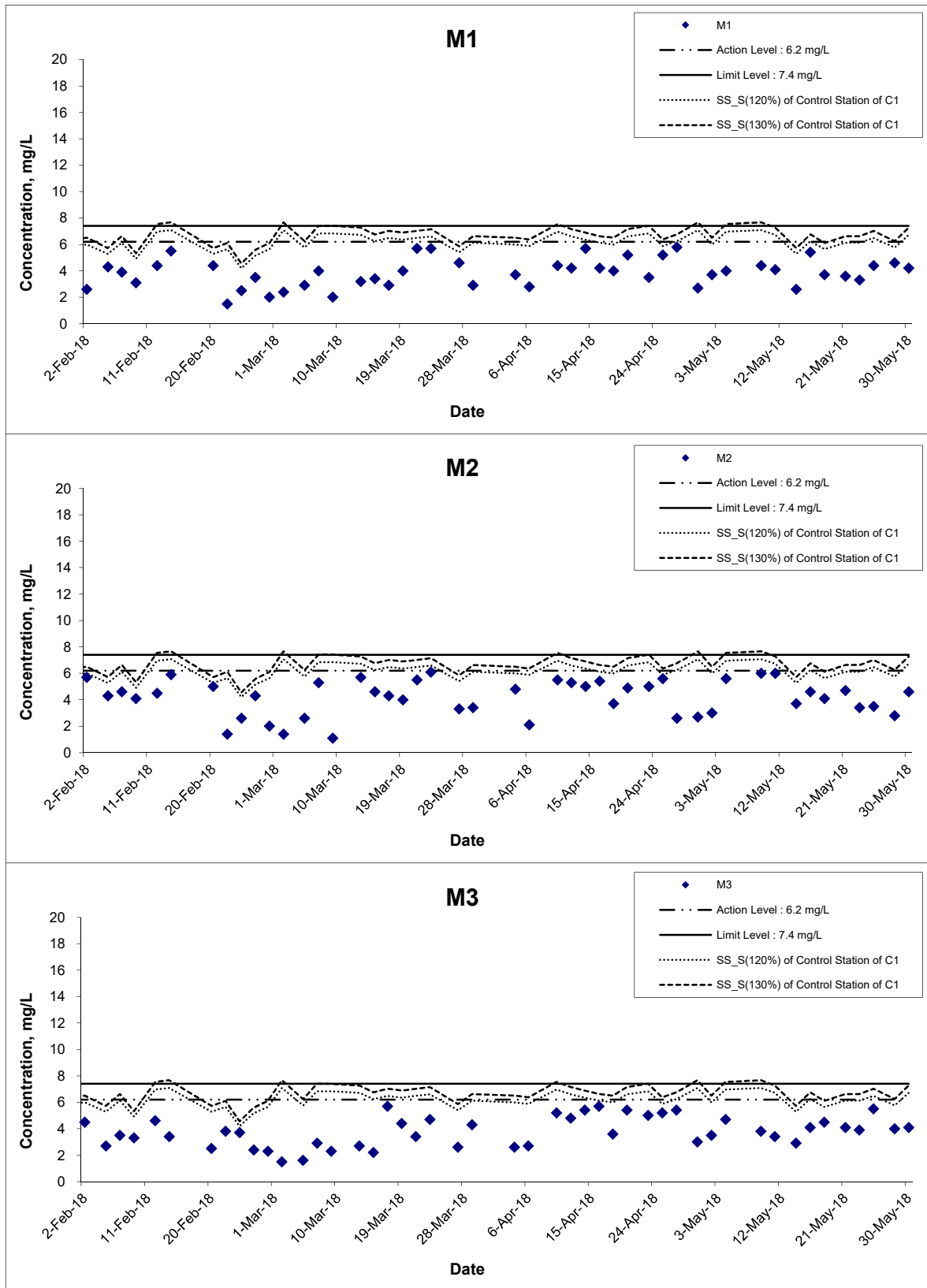
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## Suspended Solids (Surface) at Mid-Flood Tide



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

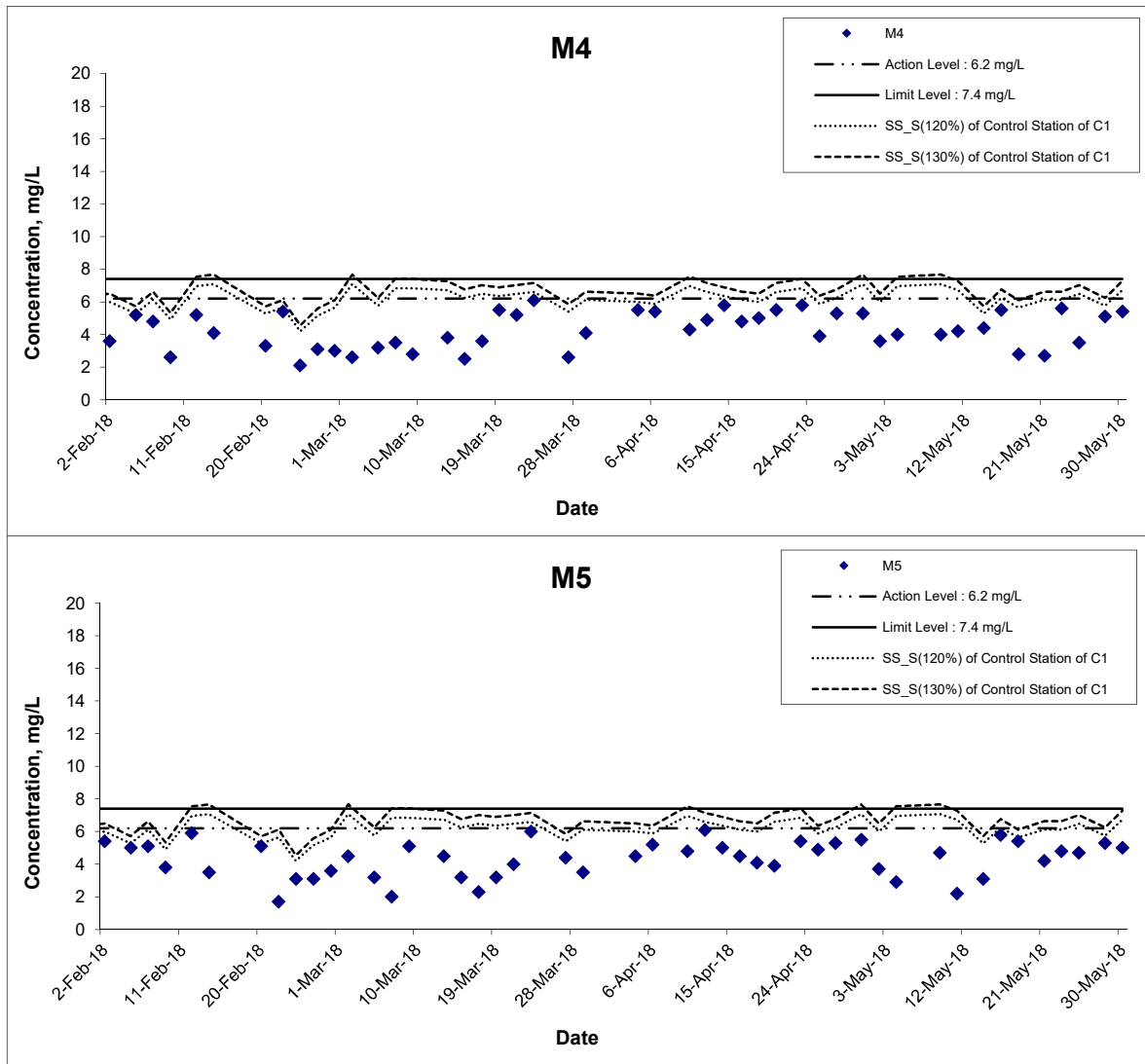
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## Suspended Solids (Surface) at Mid-Flood Tide



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

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Scale N.T.S

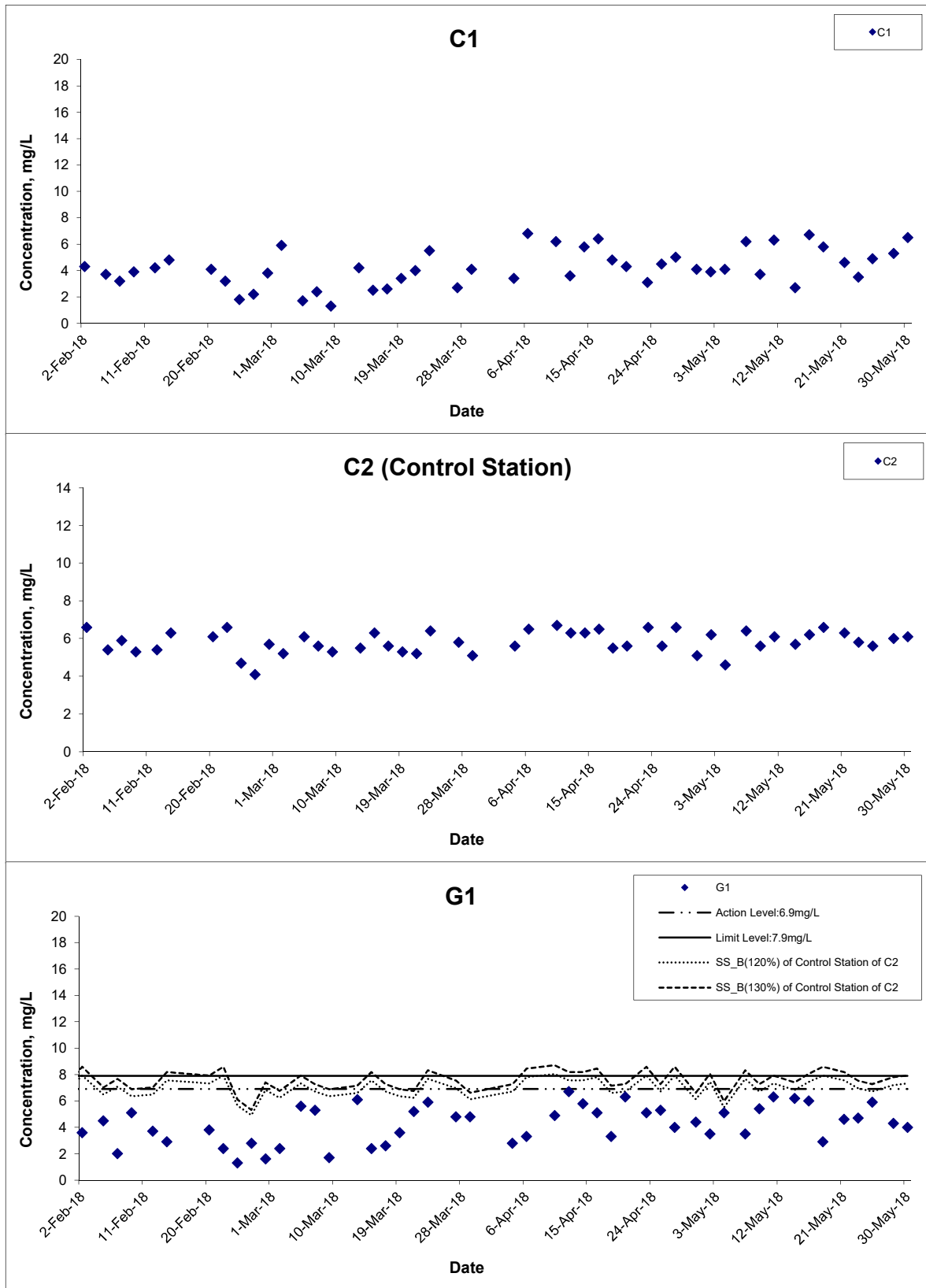
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## Suspended Solids (Bottom) at Mid-Ebb Tide



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

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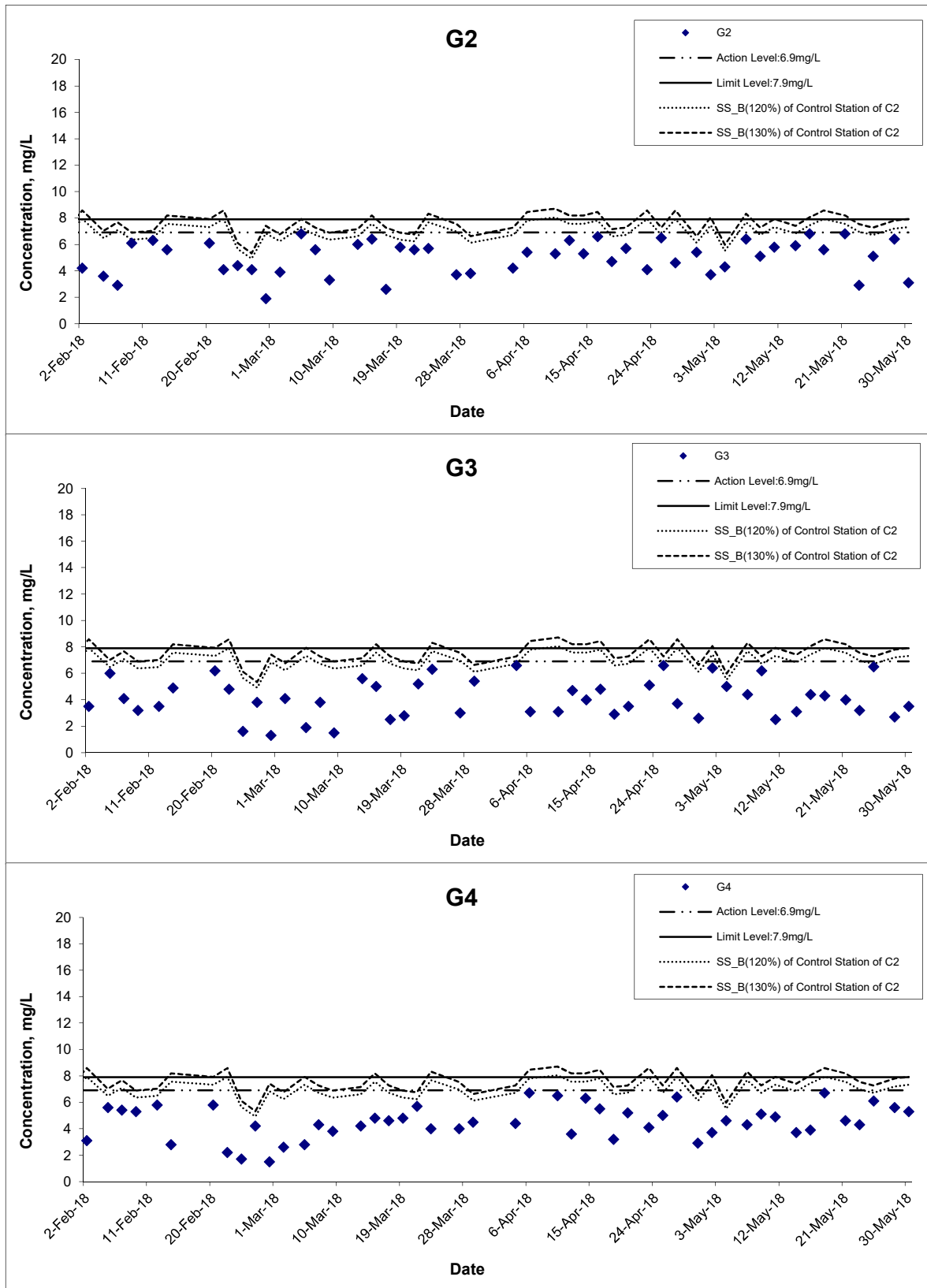
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## Suspended Solids (Bottom) at Mid-Ebb Tide



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Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

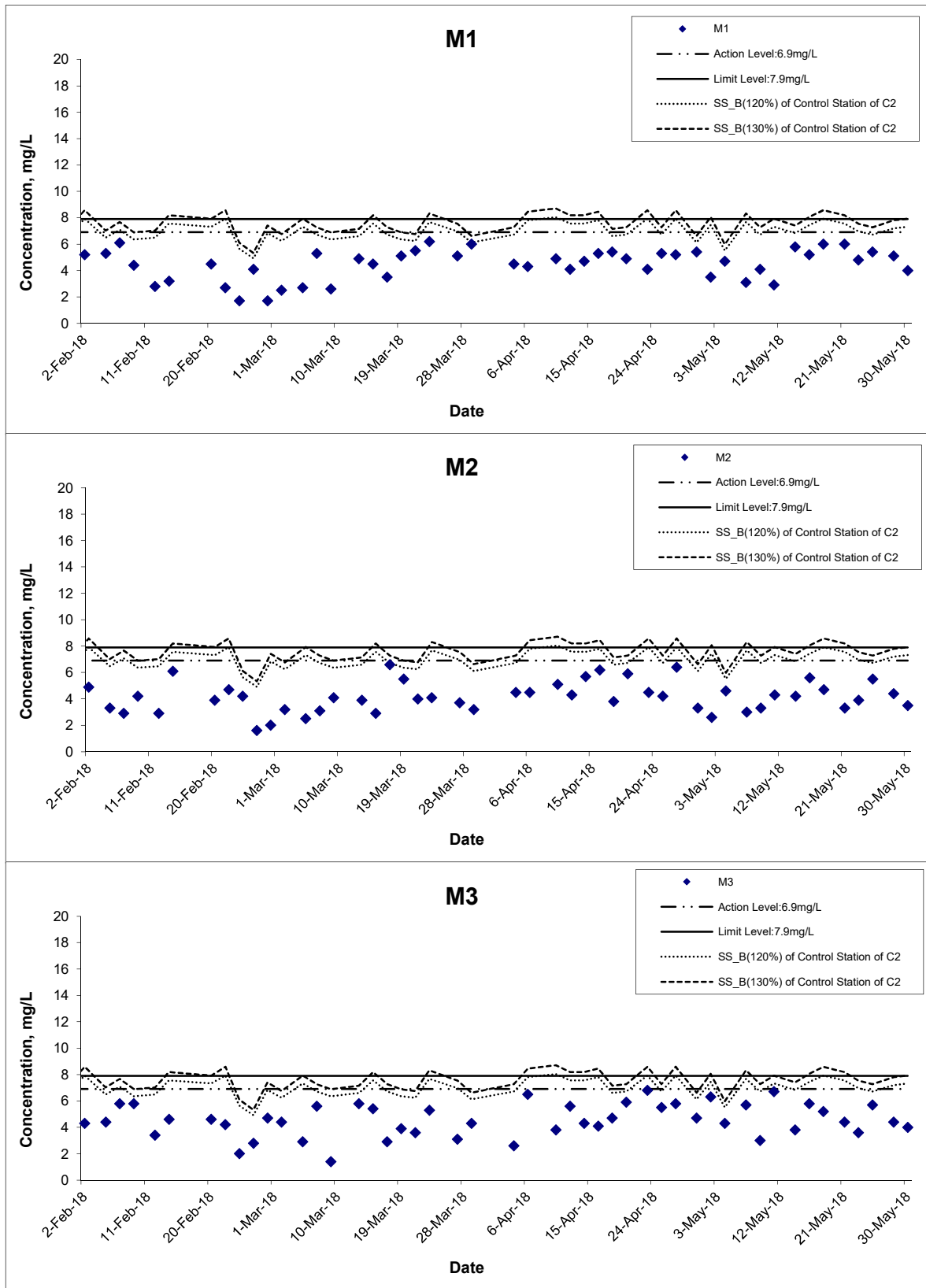
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## Suspended Solids (Bottom) at Mid-Ebb Tide



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

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Scale N.T.S

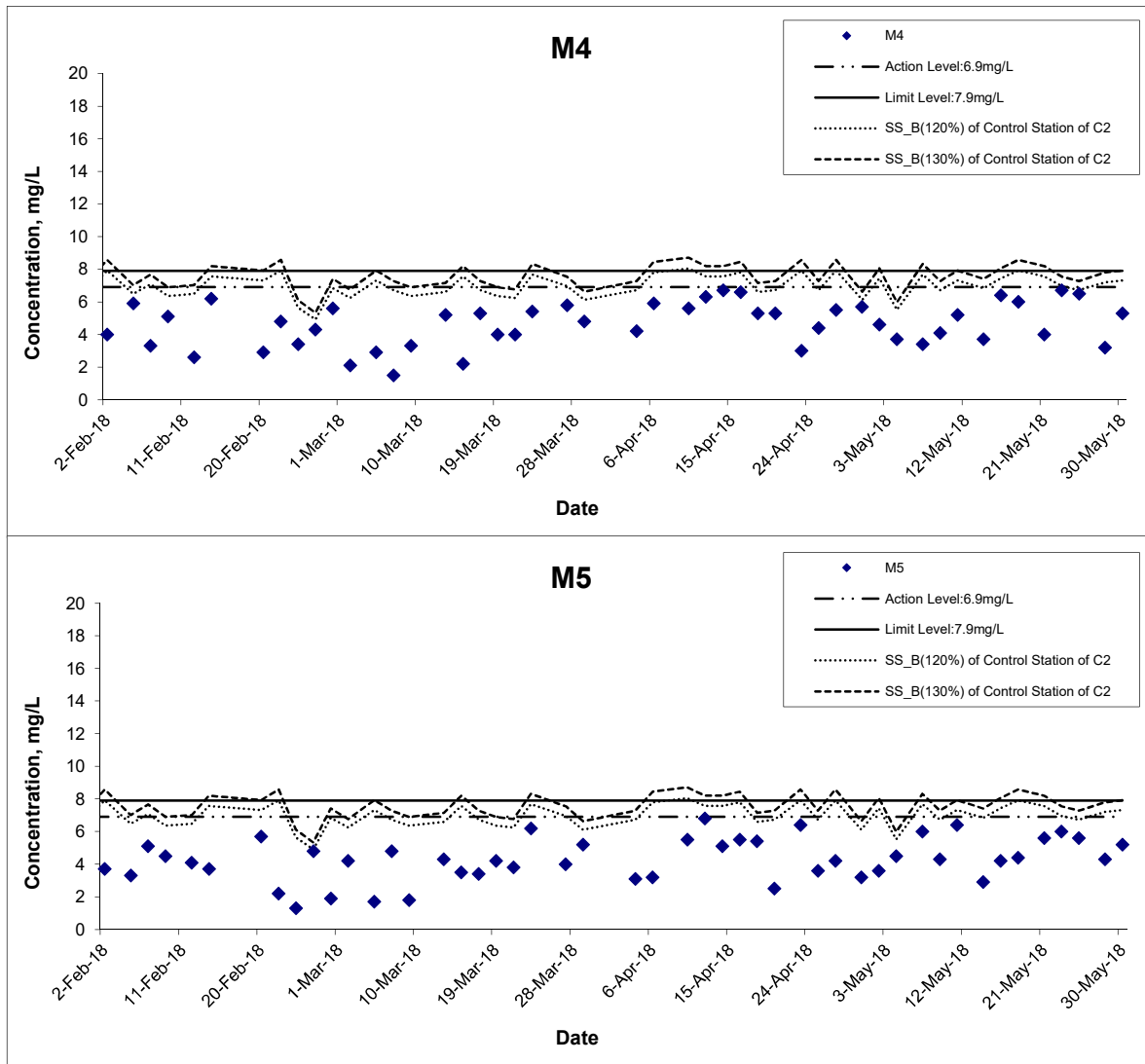
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## Suspended Solids (Bottom) at Mid-Ebb Tide



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

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Scale N.T.S

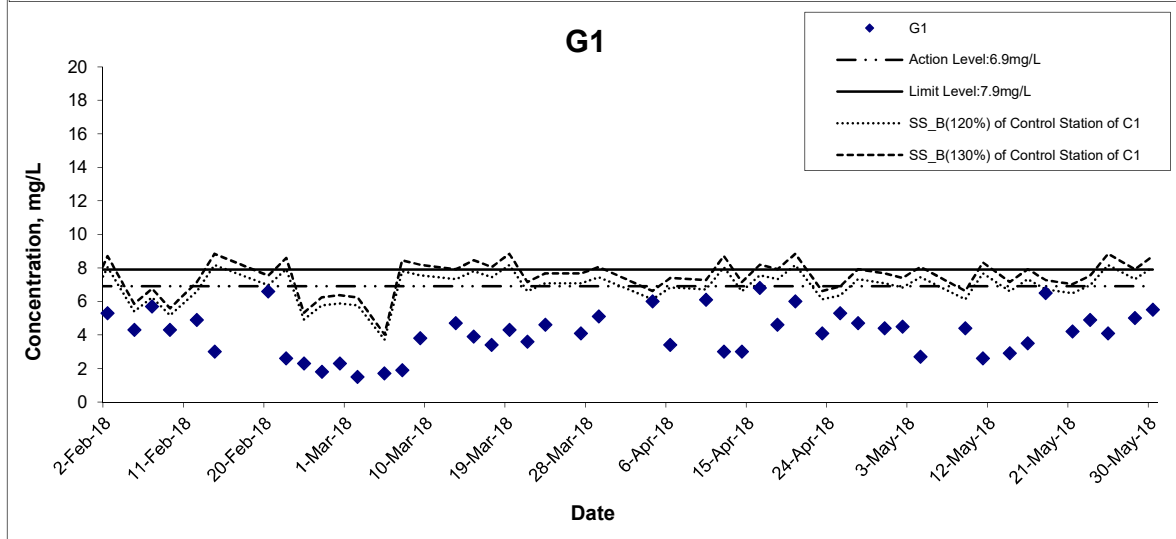
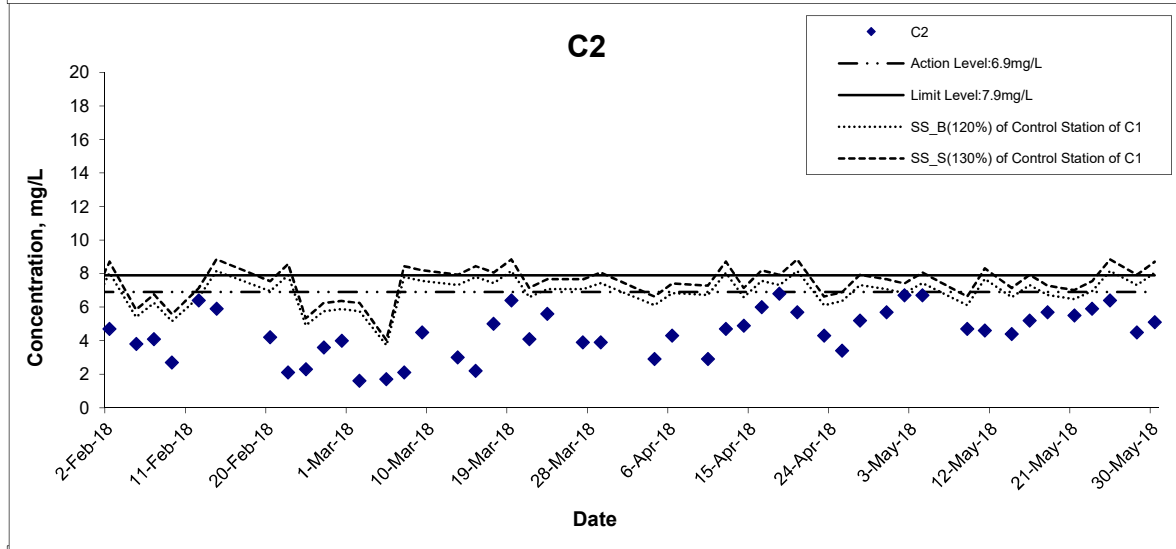
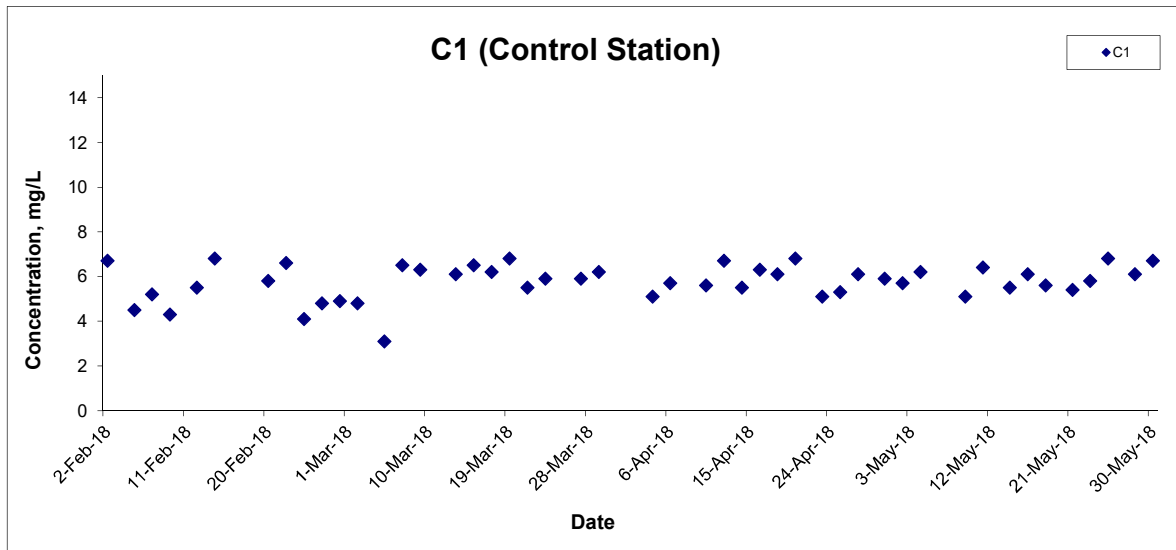
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## Suspended Solids (Bottom) at Mid-Flood Tide



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Scale N.T.S

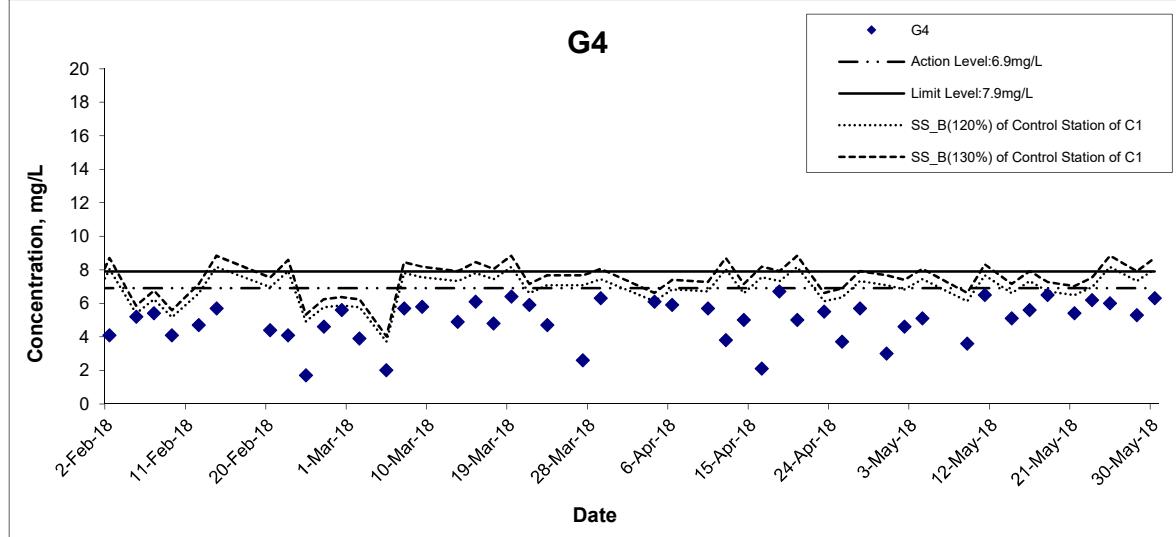
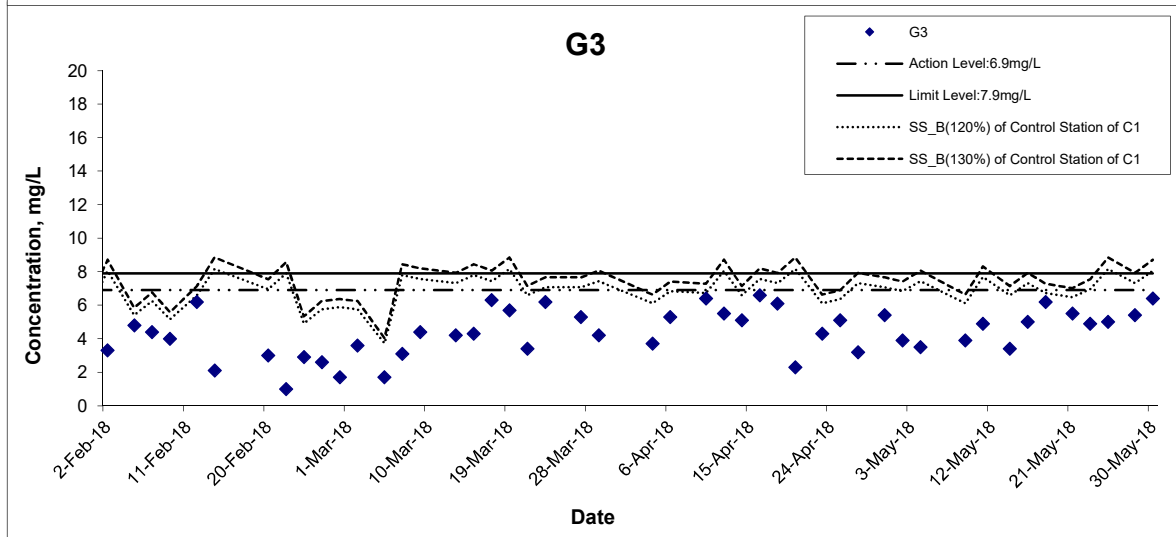
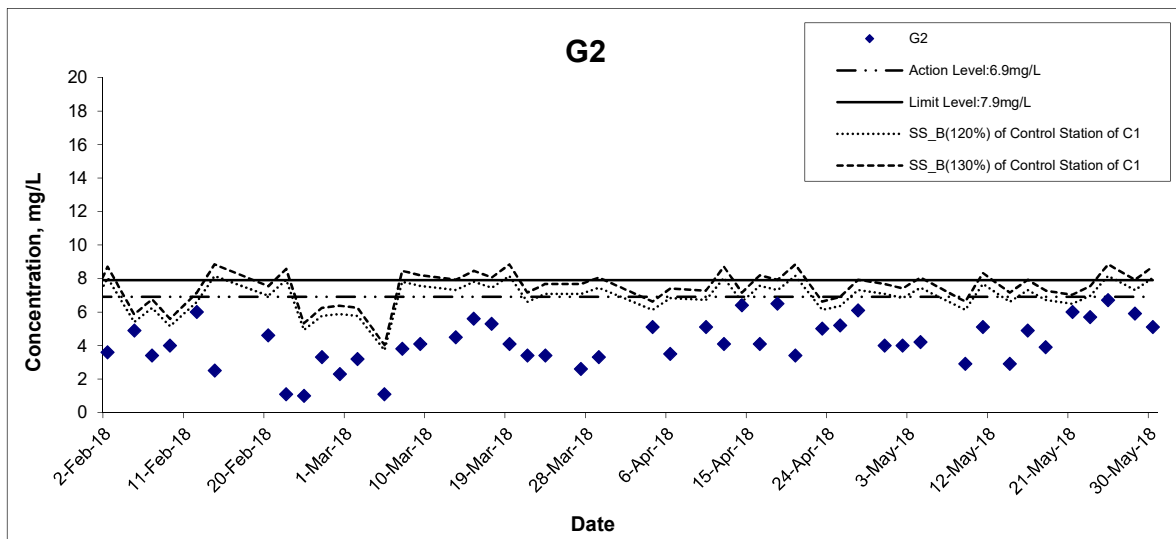
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## Suspended Solids (Bottom) at Mid-Flood Tide



**Title**

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**Date**

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**Project No.**

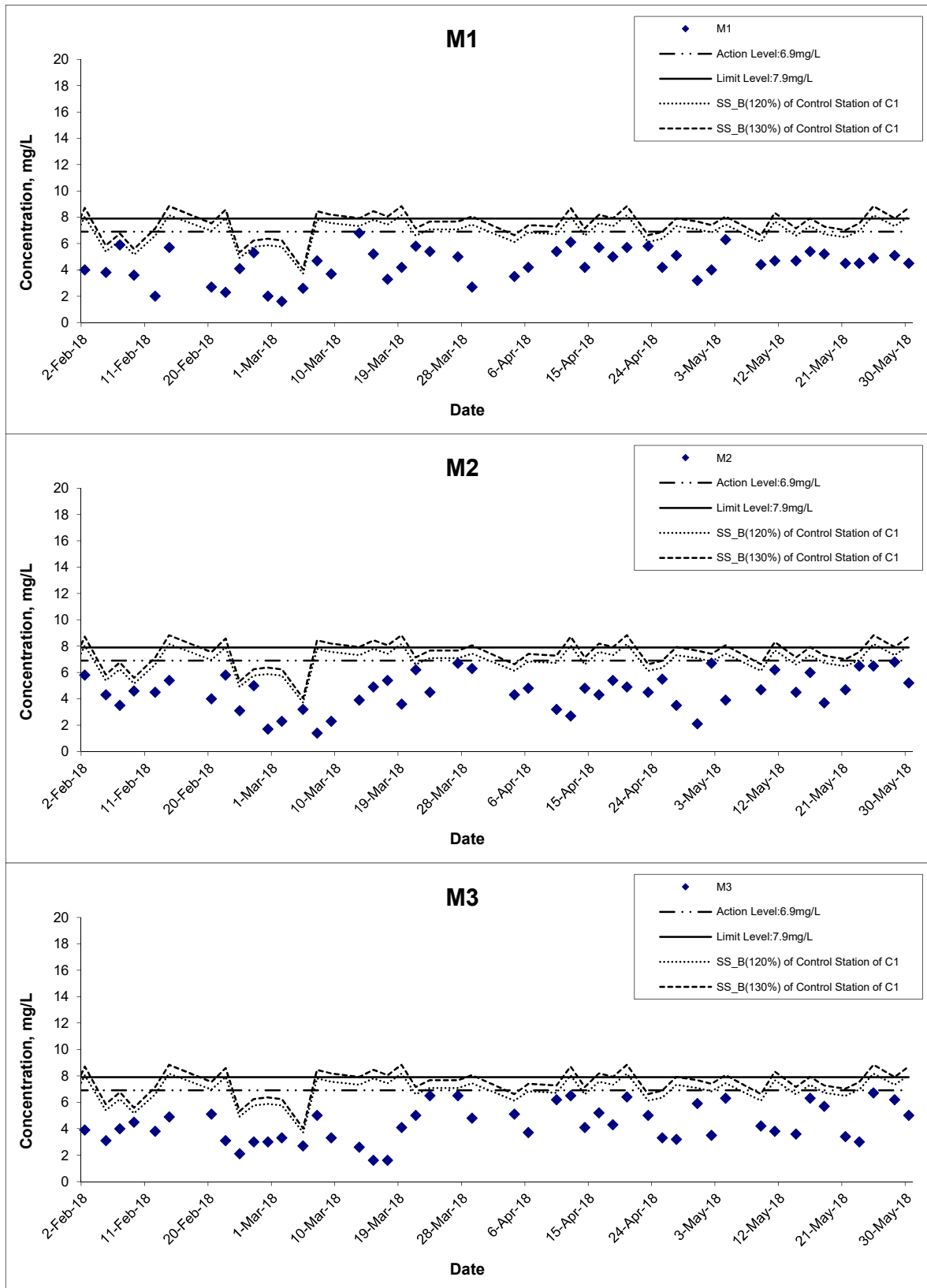
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## Suspended Solids (Bottom) at Mid-Flood Tide



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

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Scale N.T.S

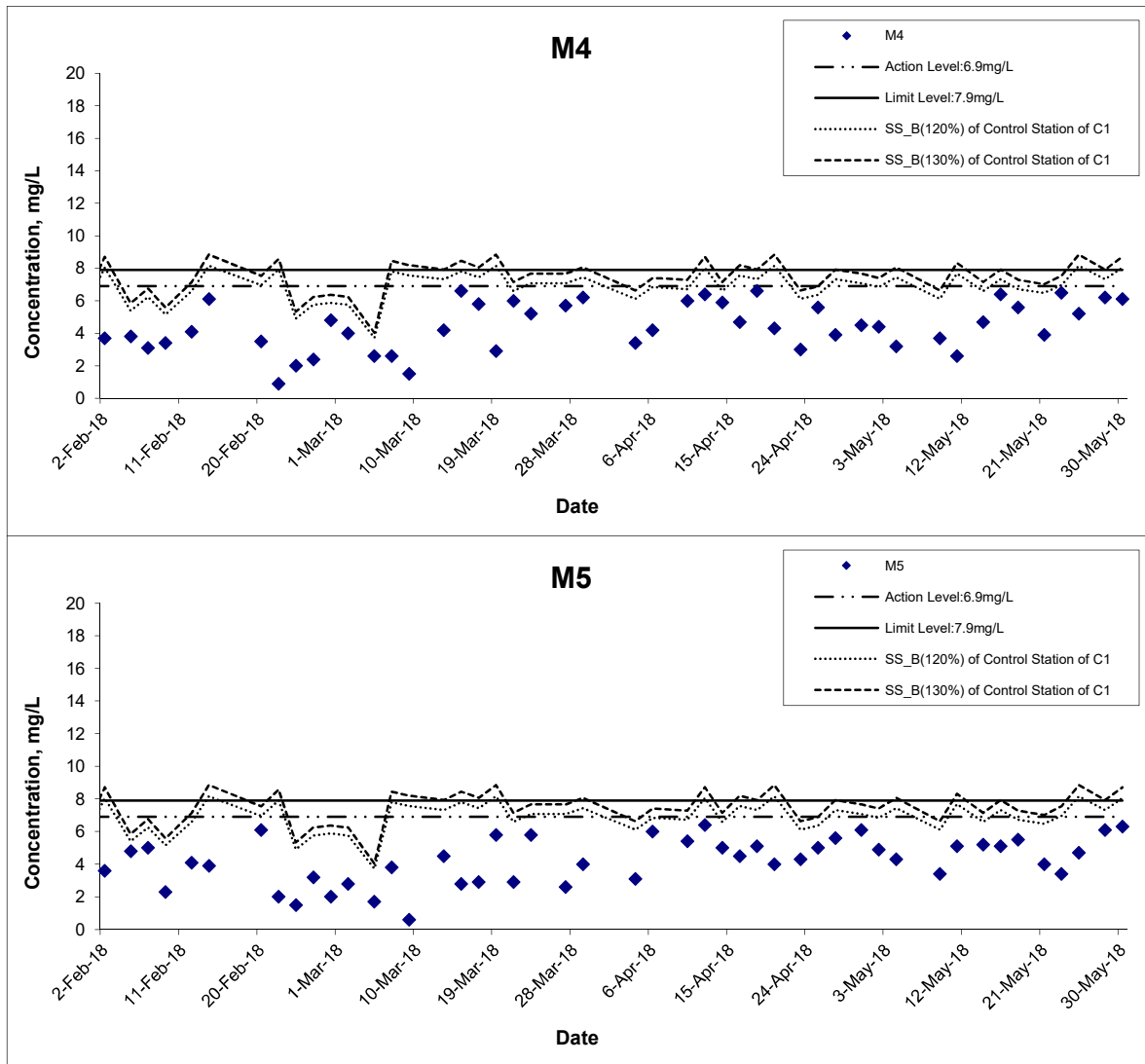
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## Suspended Solids (Bottom) at Mid-Flood Tide



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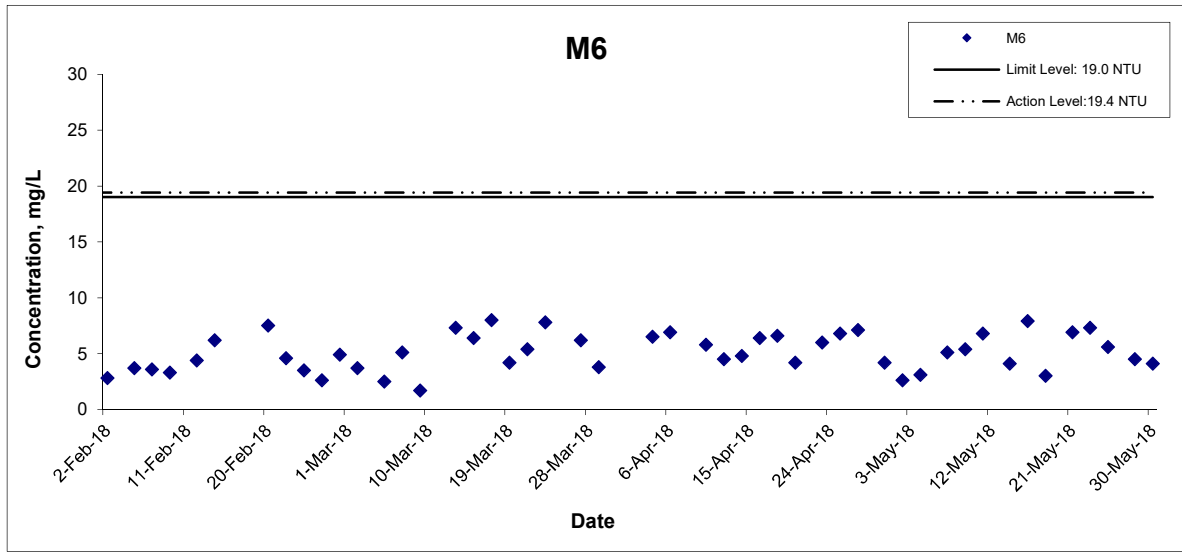
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**CINOTECH**

## Suspended Solids (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide

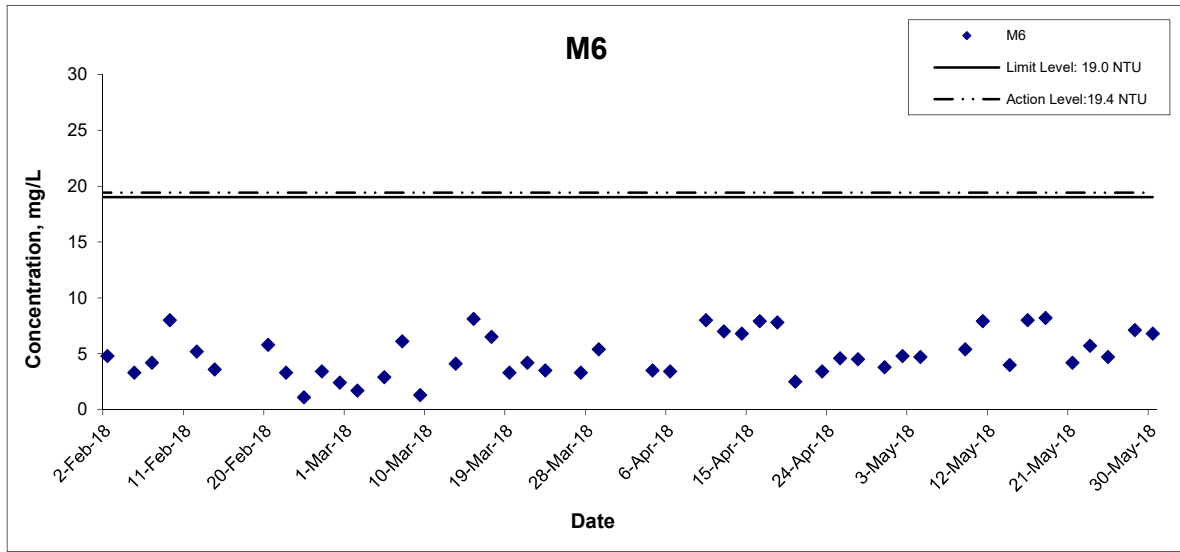


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## Suspended Solids (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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**Water Quality Monitoring Results at W1 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*
3-May-18	Sunny	Calm	14:28	Surface	1	25.0 25.0	25.0	8.0 8.0	8.0	33.1 33.1	33.1	91.7 91.8	91.8	6.3 6.3	6.3	6.3
				Middle	0	0.0 0.0	0.0	0.0 0.0	0.0	0.0 0.0	0.0	0.0 0.0	0.0	0.0 0.0	0.0	
				Bottom	3.1	25.0 25.0	25.0	8.0 8.0	8.0	33.1 33.1	33.1	91.4 91.4	91.4	6.3 6.3	6.3	
11-May-18	Cloudy	Calm	09:29	Surface	1	24.4 24.4	24.4	8.0 8.0	8.0	32.5 32.5	32.5	86.0 84.5	85.3	6.0 5.9	6.0	6.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	2.6	24.4 24.4	24.4	8.0 8.0	8.0	32.5 32.5	32.5	84.4 84.2	84.3	5.9 5.8	5.9	
15-May-18	Sunny	Calm	12:12	Surface	1	26.4 26.4	26.4	8.1 8.1	8.1	31.8 31.8	31.8	95.6 96.2	95.9	6.4 6.5	6.5	6.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	2.2	26.2 26.2	26.2	8.1 8.1	8.1	31.8 31.8	31.8	93.9 93.7	93.8	6.4 6.3	6.4	
24-May-18	Sunny	Calm	09:27	Surface	1	27.9 27.8	27.9	8.1 8.1	8.1	33.0 32.9	33.0	107.2 107.0	107.1	7.0 7.0	7.0	7.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	2.6	27.7 27.7	27.7	8.1 8.1	8.1	33.0 33.0	33.0	102.6 102.3	102.5	6.7 6.7	6.7	
28-May-18	Sunny	Calm	11:26	Surface	1	27.8 27.7	27.8	8.1 8.1	8.1	32.8 32.7	32.8	106.2 108.0	107.1	6.7 6.8	6.8	6.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	3.3	27.8 27.6	27.7	8.1 8.1	8.1	32.9 32.7	32.8	103.6 103.3	103.5	6.6 6.8	6.7	

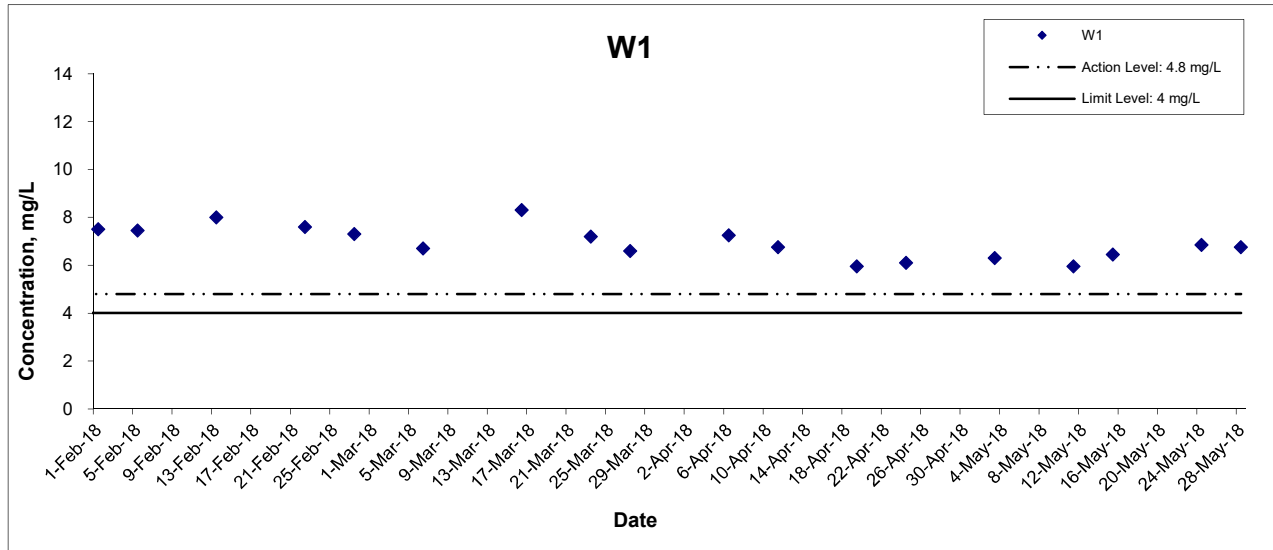
**Water Quality Monitoring Results at W1 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*
3-May-18	Sunny	Calm	08:32	Surface	1	25.1 25.0	25.1	8.0 8.0	8.0	33.1 33.1	33.1	91.1 91.1	91.1	6.2 6.2	6.2	6.2
				Middle	0	0.0 0.0	0.0	0.0 0.0	0.0	0.0 0.0	0.0	0.0 0.0	0.0	0.0 0.0	0.0	
				Bottom	3.3	25.1 25.1	25.1	7.9 8.0	8.0	33.1 33.1	33.1	91.0 90.9	91.0	6.2 6.2	6.2	
11-May-18	Fine	Calm	15:45	Surface	1	24.4 24.4	24.4	8.0 8.0	8.0	32.5 32.5	32.5	84.4 84.3	84.4	5.9 5.9	5.9	5.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	2.6	24.4 24.4	24.4	8.0 8.0	8.0	32.5 32.5	32.5	84.3 84.2	84.3	5.9 5.8	5.9	
15-May-18	Sunny	Calm	17:18	Surface	1	26.2 26.1	26.2	8.0 8.0	8.0	32.0 31.9	32.0	93.2 93.9	93.6	6.3 6.4	6.4	6.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	2	26.1 26.0	26.1	8.0 8.1	8.1	31.9 31.9	31.9	93.1 93.0	93.1	6.3 6.3	6.3	
24-May-18	Sunny	Calm	14:56	Surface	1	27.9 27.9	27.9	8.1 8.1	8.1	33.0 33.0	33.0	108.0 108.1	108.1	7.1 7.1	7.1	7.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	3	27.3 27.3	27.3	8.1 8.1	8.1	33.1 33.1	33.1	96.2 95.9	96.1	6.3 6.3	6.3	
28-May-18	Sunny	Calm	17:58	Surface	1	27.8 27.0	27.4	8.1 8.1	8.1	32.7 32.7	32.7	104.0 104.3	104.2	6.8 6.8	6.8	6.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	3.9	27.6 27.2	27.4	8.1 8.1	8.1	32.8 32.7	32.8	100.2 101.1	100.7	6.7 6.8	6.8	

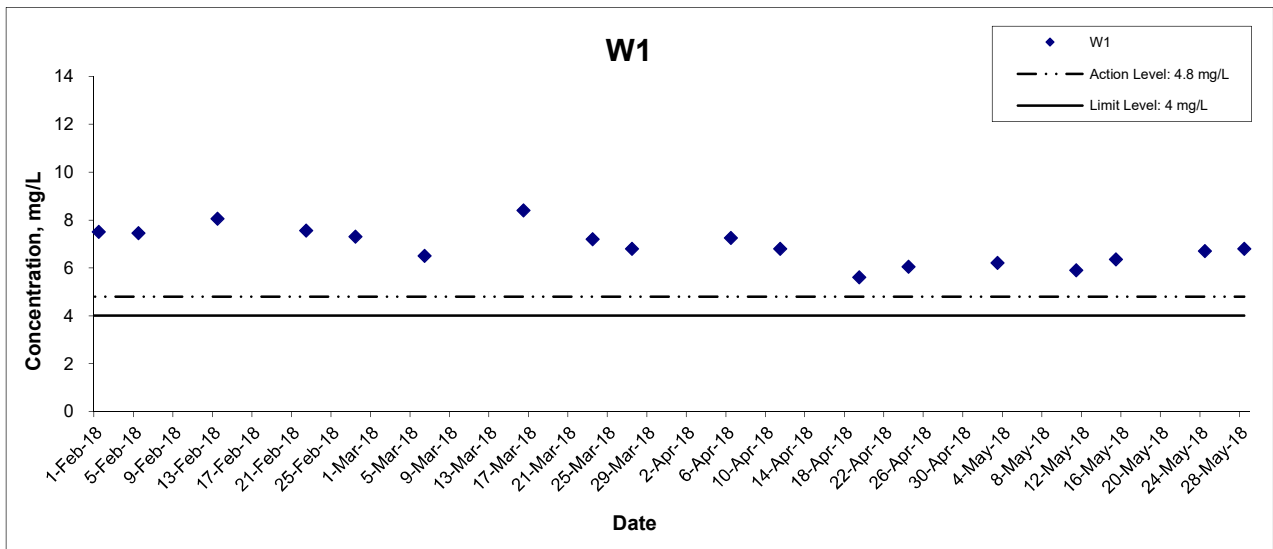
Remarks: \*DA: Depth-Averaged

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

### Dissolved Oxygen (Depth-Averaged) at Mid-Ebb Tide

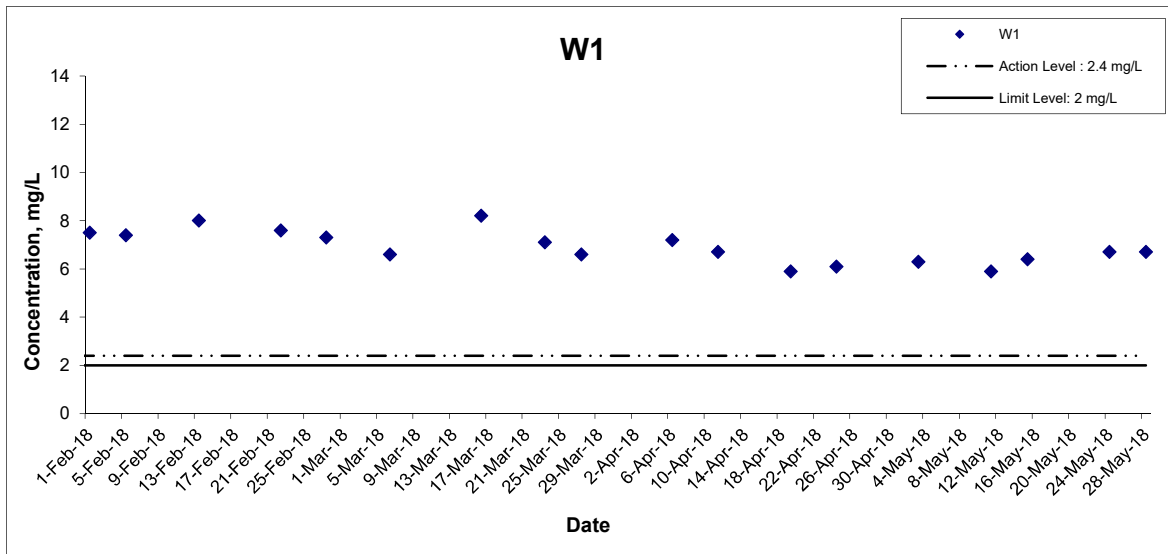


### Dissolved Oxygen (Depth-Averaged) at Mid-Flood Tide

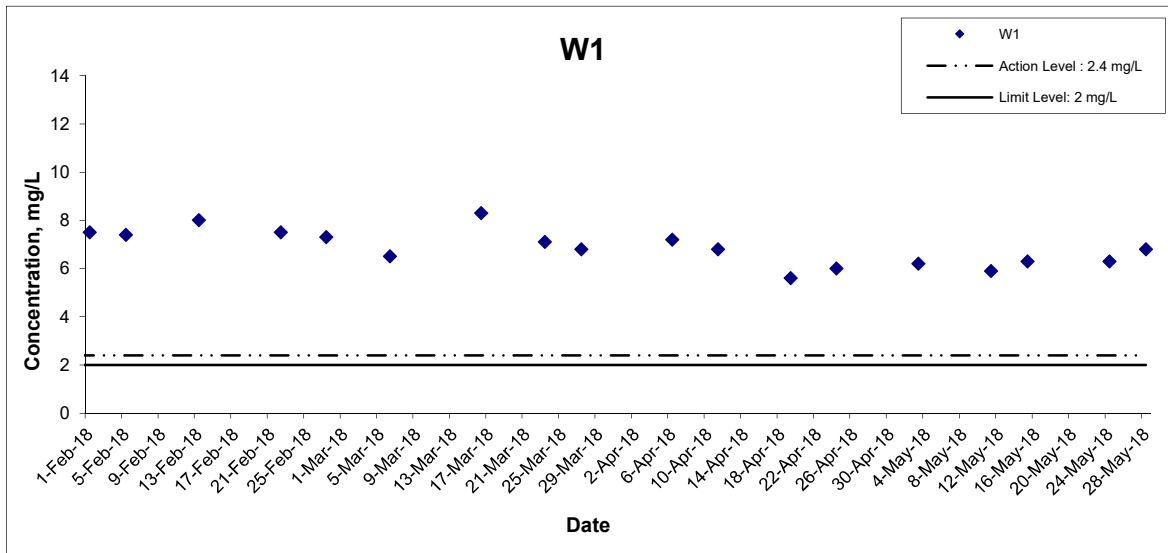


Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  Graphical Presentation of Additional Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 18	Appendix I	

### Dissolved Oxygen (Bottom) at Mid-Ebb Tide



### Dissolved Oxygen (Bottom) at Mid-Flood Tide



Title Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction  Graphical Presentation of Additional Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date May 18	Appendix I	

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**APPENDIX J  
QUALITY CONTROL REPORTS FOR  
LABORATORY ANALYSIS**

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## TEST REPORT

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

Report No.:	QC28878
Date of Issue:	2018-05-23
Date Received:	2018-05-11
Date Tested:	2018-05-11
Date Completed:	2018-05-23

**ATTN:** Ms. Mei Ling Tang  
**QC report:**

Page: 1 of 2

**Method Blank**

Parameter	MB 1	Acceptance
Suspended Solids (SS) (mg/L)	<0.5	<0.5
Biochemical Oxygen Demand	N/A	N/A
Total Organic Carbon (mg-TOC/L)	<0.2	<0.2
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (mg NH <sub>3</sub> -N/L)	<0.01	<0.01
Total Phosphorus (mg-P/L)	<0.01	<0.01

**Method QC**

Parameter	MQC1	Acceptance
Suspended Solids (SS) (%)	98	80-120
Biochemical Oxygen Demand (mg O <sub>2</sub> /L)	185	170-220
Total Organic Carbon (%)	98	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	96	80-120
Total Phosphorus (%)	98	80-120

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 28878.

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

Report No.:	QC28878
Date of Issue:	2018-05-23
Date Received:	2018-05-11
Date Tested:	2018-05-11
Date Completed:	2018-05-23

Page: 2 of 2

### QC report:

#### Sample Duplicate

Parameter	28878-3 chk	Acceptance
Suspended Solids (SS) (%)	N/A	RPD $\leq$ 20%
Biochemical Oxygen Demand (%)	N/A	RPD $\leq$ 20%
Total Organic Carbon (%)	5	RPD $\leq$ 20%
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	N/A	RPD $\leq$ 20%
Total Phosphorus (%)	N/A	RPD $\leq$ 20%

#### Sample Spike

Parameter	28878-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	88	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	102	80-120
Total Phosphorus (%)	101	80-120

Remarks: 1)  $\leq$  less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 28878.

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

## TEST REPORT

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

Report No.:	QC28954
Date of Issue:	2018-06-04
Date Received:	2018-05-24
Date Tested:	2018-05-24
Date Completed:	2018-06-04

**ATTN:** Ms. Mei Ling Tang  
**QC report:**

Page: 1 of 2

**Method Blank**

Parameter	MB 1	Acceptance
Suspended Solids (SS) (mg/L)	<0.5	<0.5
Biochemical Oxygen Demand	N/A	N/A
Total Organic Carbon (mg-TOC/L)	<0.2	<0.2
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (mg NH <sub>3</sub> -N/L)	<0.01	<0.01
Total Phosphorus (mg-P/L)	<0.01	<0.01

**Method QC**

Parameter	MQC1	Acceptance
Suspended Solids (SS) (%)	99	80-120
Biochemical Oxygen Demand (mg O <sub>2</sub> /L)	184	170-220
Total Organic Carbon (%)	96	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	102	80-120
Total Phosphorus (%)	103	80-120

Remarks: 1) <= less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 28954.

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager



## TEST REPORT

Report No.:	QC28954
Date of Issue:	2018-06-04
Date Received:	2018-05-24
Date Tested:	2018-05-24
Date Completed:	2018-06-04

Page: 2 of 2

### QC report:

#### Sample Duplicate

Parameter	28954-3 chk	Acceptance
Suspended Solids (SS) (%)	4	RPD $\leq$ 20%
Biochemical Oxygen Demand (%)	N/A	RPD $\leq$ 20%
Total Organic Carbon (%)	1	RPD $\leq$ 20%
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	N/A	RPD $\leq$ 20%
Total Phosphorus (%)	3	RPD $\leq$ 20%

#### Sample Spike

Parameter	28954-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	86	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	103	80-120
Total Phosphorus (%)	101	80-120

Remarks: 1)  $\leq$  less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 28954.

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

**TEST REPORT**

**QC REPORT**

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

Report No.:	22810
Date of Issue:	2018/5/3
Date Received:	2018/5/2
Date Tested:	2018/5/2
Date Completed:	2018/5/3

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/2

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180502

\*\*\*\*\*

Total Suspended Solids Sampling Point	Duplicate Analysis			QC Recovery, %
	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.0	4.9	1	108

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

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28821
Date of Issue:	2018/5/7
Date Received:	2018/5/4
Date Tested:	2018/5/4
Date Completed:	2018/5/7

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/4

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180504

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.1	4.1	0	98

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

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28828
Date of Issue:	2018/5/8
Date Received:	2018/5/7
Date Tested:	2018/5/7
Date Completed:	2018/5/8

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/7

Number of Sample: 68

Custody No.: MA16034-CE/59/2015(EP)180507

\*\*\*\*\*

Total Suspended Solids Sampling Point	Duplicate Analysis			QC Recovery, %
	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.7	3.7	1	97

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

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28842
Date of Issue:	2018/5/10
Date Received:	2018/5/9
Date Tested:	2018/5/9
Date Completed:	2018/5/10

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/9

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180509

\*\*\*\*\*

Total Suspended Solids Sampling Point	Duplicate Analysis			QC Recovery, %
	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.3	3.3	1	103

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

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28855
Date of Issue:	2018/5/14
Date Received:	2018/5/11
Date Tested:	2018/5/11
Date Completed:	2018/5/14

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/11

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180511

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.7	5.7	1	89

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

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28871
Date of Issue:	2018/5/15
Date Received:	2018/5/14
Date Tested:	2018/5/14
Date Completed:	2018/5/15

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/14

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180514

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.2	4.2	1	101

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

PREPARED AND CHECKED BY:

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



**PATRICK TSE**

Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28888
Date of Issue:	2018/5/17
Date Received:	2018/5/16
Date Tested:	2018/5/16
Date Completed:	2018/5/17

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/16

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180516

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.3	4.1	6	104

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

PREPARED AND CHECKED BY:

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



**PATRICK TSE**

Laboratory Manager



**TEST REPORT**

**QC REPORT**

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

Report No.:	28902
Date of Issue:	2018/5/21
Date Received:	2018/5/18
Date Tested:	2018/5/18
Date Completed:	2018/5/21

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/18

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180518

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.5	4.6	3	100

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

PREPARED AND CHECKED BY:

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28917
Date of Issue:	2018/5/23
Date Received:	2018/5/21
Date Tested:	2018/5/21
Date Completed:	2018/5/23

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/21

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180521

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.0	3.1	3	100

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

PREPARED AND CHECKED BY:

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



**PATRICK TSE**

Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28929
Date of Issue:	2018/5/24
Date Received:	2018/5/23
Date Tested:	2018/5/23
Date Completed:	2018/5/24

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/23

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180523

\*\*\*\*\*

Total Suspended Solids Sampling Point	Duplicate Analysis			QC Recovery, %
	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.9	4.9	1	105

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

PREPARED AND CHECKED BY:

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



**PATRICK TSE**

Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28945
Date of Issue:	2018/5/28
Date Received:	2018/5/25
Date Tested:	2018/5/25
Date Completed:	2018/5/28

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -  
Design and Construction Agreement No. CE/59/2015 (EP)  
Project No.: MA16034  
Sampling Date: 2018/5/25  
Number of Sample: 136  
Custody No.: MA16034-CE/59/2015(EP)180525

\*\*\*\*\*

Total Suspended Solids Sampling Point	Duplicate Analysis			QC Recovery, %
	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.0	3.1	4	98

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

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28961
Date of Issue:	2018/5/29
Date Received:	2018/5/28
Date Tested:	2018/5/28
Date Completed:	2018/5/29

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel -  
Design and Construction Agreement No. CE/59/2015 (EP)  
Project No.: MA16034  
Sampling Date: 2018/5/28  
Number of Sample: 136  
Custody No.: MA16034-CE/59/2015(EP)180528

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.0	4.9	3	101

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

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**QC REPORT**

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

Report No.:	28977
Date of Issue:	2018/5/31
Date Received:	2018/5/30
Date Tested:	2018/5/30
Date Completed:	2018/5/31

**ATTN: Ms. Mei Ling Tang**

Page: 1 of 1

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

Project No.: MA16034

Sampling Date: 2018/5/30

Number of Sample: 136

Custody No.: MA16034-CE/59/2015(EP)180530

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.1	4.1	2	102

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

PREPARED AND CHECKED BY:

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



**PATRICK TSE**

Laboratory Manager

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**APPENDIX K  
SUMMARY OF EXCEEDANCE**

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

**Appendix K – Summary of Exceedance**

**Reporting Period: May 2018**

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

**(B) Exceedance Report for Construction Noise**

**Action Level for Construction Noise**

**(Sixteen (16) Action Level exceedances were recorded due to the documented complaints received in this reporting month.)**

**Limit Level for Construction Noise**

**(NIL in the reporting month)**

**(C) Exceedance Report for Water Quality**

**(No exceedance for marine water quality monitoring in the reporting month)**

**(Three (3) Limit Level exceedances in groundwater quality monitoring as followed:**

<b>Date</b>	<b>Monitoring Location</b>	<b>Monitoring Parameter</b>	<b>Monitoring Results</b>	<b>Action Level</b>	<b>Limit Level</b>
24 May 2018	Stream 1	Total Phosphorus	0.12 mg-P/L	0.05	0.05
24 May 2018	Stream 2	Total Phosphorus	0.09 mg-P/L	0.05	0.05
24 May 2018	Stream 3	Total Phosphorus	0.17 mg-P/L	0.05	0.05

Note: The Action & Limit Level exceedance for groundwater quality recorded on 24 May 2018 is still under investigation and the investigation details will be reported in the next reporting month.

**(D) Exceedance Report for Ecology**  
**(NIL in the reporting month)**

**(E) Exceedance Report for Cultural Heritage**  
**(NIL in the reporting month)**

**(F) Exceedance Report for Landfill Gas**  
**(NIL in the reporting month)**



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

**- Investigation Report for Environmental Quality Action & Limit Exceedances**

Monitoring Parameter: Ground Water Quality

Date of Monitoring: 24 April 2018

**Part A Investigation of Exceedances**

**1. Summary of Exceedance Records**

Date	Monitoring Parameter	Exceedance Level		Exceedance Records at		
		Action	Limit	Stream 1	Stream 2	Stream 3
24-Apr-18	5-day Biochemical Oxygen Demand (BOD <sub>5</sub> ) (mg O <sub>2</sub> /L)	2	2	<b>4</b>	<b>8</b>	<b>4</b>
	Total Organic Carbon (TOC) (mg-TOC/L)	6	6	<b>12</b>	<b>16</b>	<b>8</b>
	Total Nitrogen (TN) (mg N/L)	2	2.1	<b>3.7</b>	<b>2.9</b>	<b>2.9</b>
	Ammonia-N (NH <sub>3</sub> ) (NH <sub>3</sub> -N/L)	0.15	0.2	NA	NA	<b>0.16</b>
	Total Phosphate (TP) (mg-P/L)	0.05	0.05	<b>0.06</b>	<b>0.08</b>	<b>0.1</b>

**Note:** **Bold** means Action Level exceedance

**Bold Italic** means Limit Level exceedance

**2. Summary of Construction Activities in the Vicinity of the Monitoring Locations**

Stream 1	According to the Contractor, main tunnel face excavation was the major construction works conducted on 24 April 2018. The construction activities for main tunnel excavation included blasting, mucking, scaling, shotcrete and blast hole drilling (please refer to Photo 1 & Photo 2). The blasting time was 01:44am on 24 April 2018. The location of tunnel construction activities on 24 April 2018 is shown in Figure 1. Sampling location at Stream 1 is about 70m <b>upstream</b> from the tunnel face excavation site.
Stream 2	No construction activity
Stream 3	No construction activity



Photo 1



Photo 2

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

**- Investigation Report for Environmental Quality Action & Limit Exceedances**

**3. Justification of Exceedances**

Location	Monitoring Parameter	Exceedance Level (Action/Limit)	Justification	Exceedances due to the Project
Stream 1	BOD <sub>5</sub>	Limit	1. Monitoring location is at about 70m upstream of the tunnel excavation site. 2. No exceedance of major concern of parameters from construction sites, including pH, dissolved oxygen, turbidity and suspended solids, were recorded on 24 April, 2018.	No
	TOC			
	TN			
	TP			
Stream 2	BOD <sub>5</sub>	Limit	No tunnel construction activities in the vicinity of the monitoring location.	No
	TOC			
	TN			
	TP			
Stream 3	BOD <sub>5</sub>	Limit	No tunnel construction activities in the vicinity of the monitoring location.	No
	TOC			
	NH <sub>3</sub>	Action		
	TP	Limit		

**Part B – Conclusions:**

1. There is no direct evidence to show that the exceedances at the 3 streams were due to the Project, based on the justification in the above table. The exceedances are considered probably due to non-project factors, such as domestic sewage (as observed and reported in the EIA Report) and adverse weather (rainfall recorded before and on 24 April 2018 (Ref.: Daily Rainfall Distribution extracted from HKO))
2. No increase in monitoring frequency for groundwater quality monitoring and no further action are required.

**Part C – Recommendations**

The ET has reminded the Contractor to implement the recommended mitigation measures in the “Implementation Schedule and Recommended Mitigation Measures” of the EM&A Manual for the control of potential impacts from the following concerns:

1. Groundwater drawdown and contamination; and
2. Construction site runoff and land-based construction.

Reviewed by: Dr. Priscilla Choy  
 (Environmental Team Leader)

Date: 17 May 2018

Signature: 

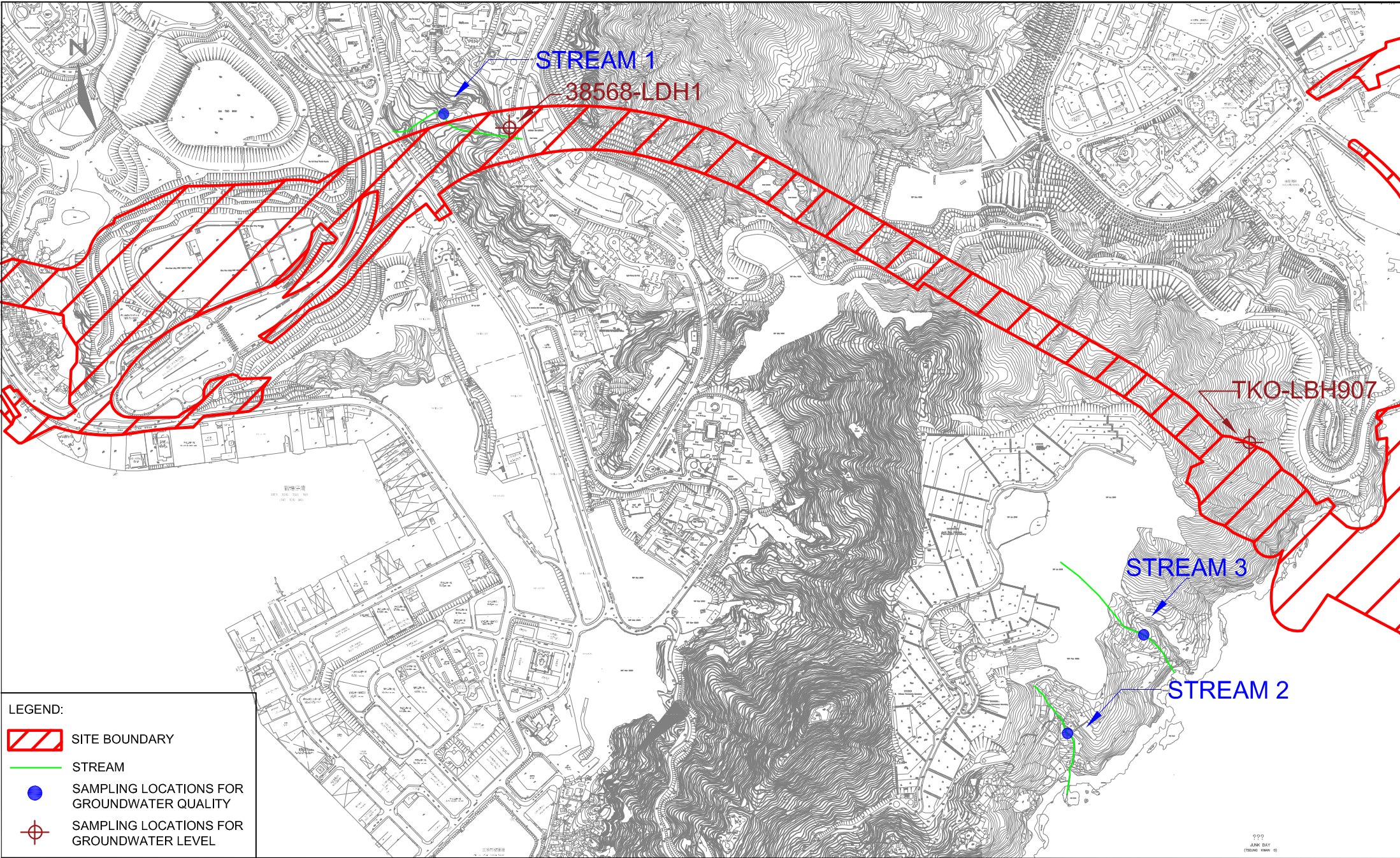
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**LOCATION PLAN**

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**LEGEND:**

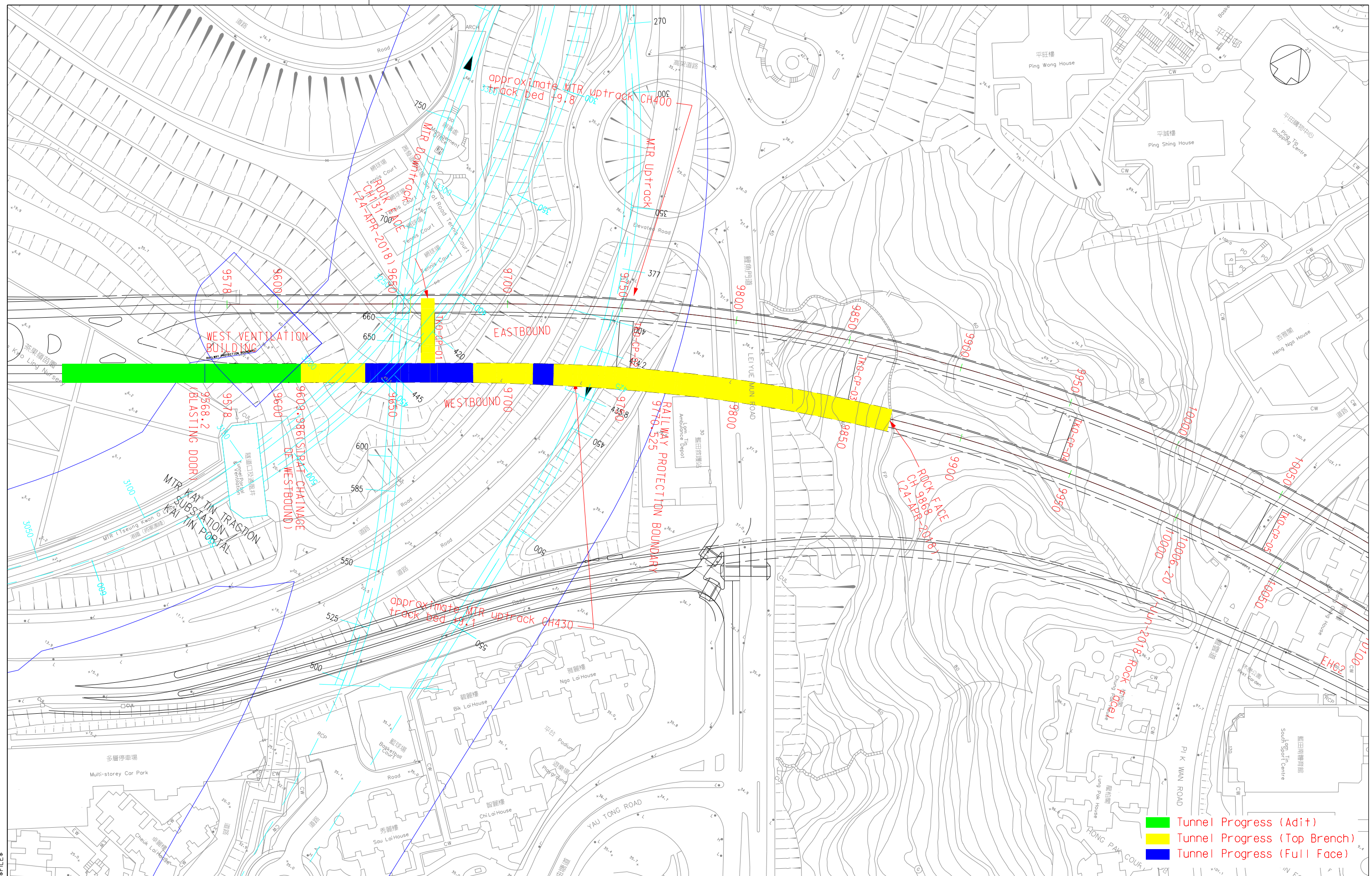
-  SITE BOUNDARY
-  STREAM
-  SAMPLING LOCATIONS FOR GROUNDWATER QUALITY
-  SAMPLING LOCATIONS FOR GROUNDWATER LEVEL



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

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

**FIGURE 1**



\$FILES\$  
\$TIMES\$  
\$DATES\$

ORIGINATOR	TITLE
AECOM AISA LTD	TSEUNG KWAN O - LAM TIN TUNNEL

AECOM		SURVEYED BY	
SCALE 1:1500@A3		DATE	
CAD REF		DRAWING No.	REV
		DRAFT1	

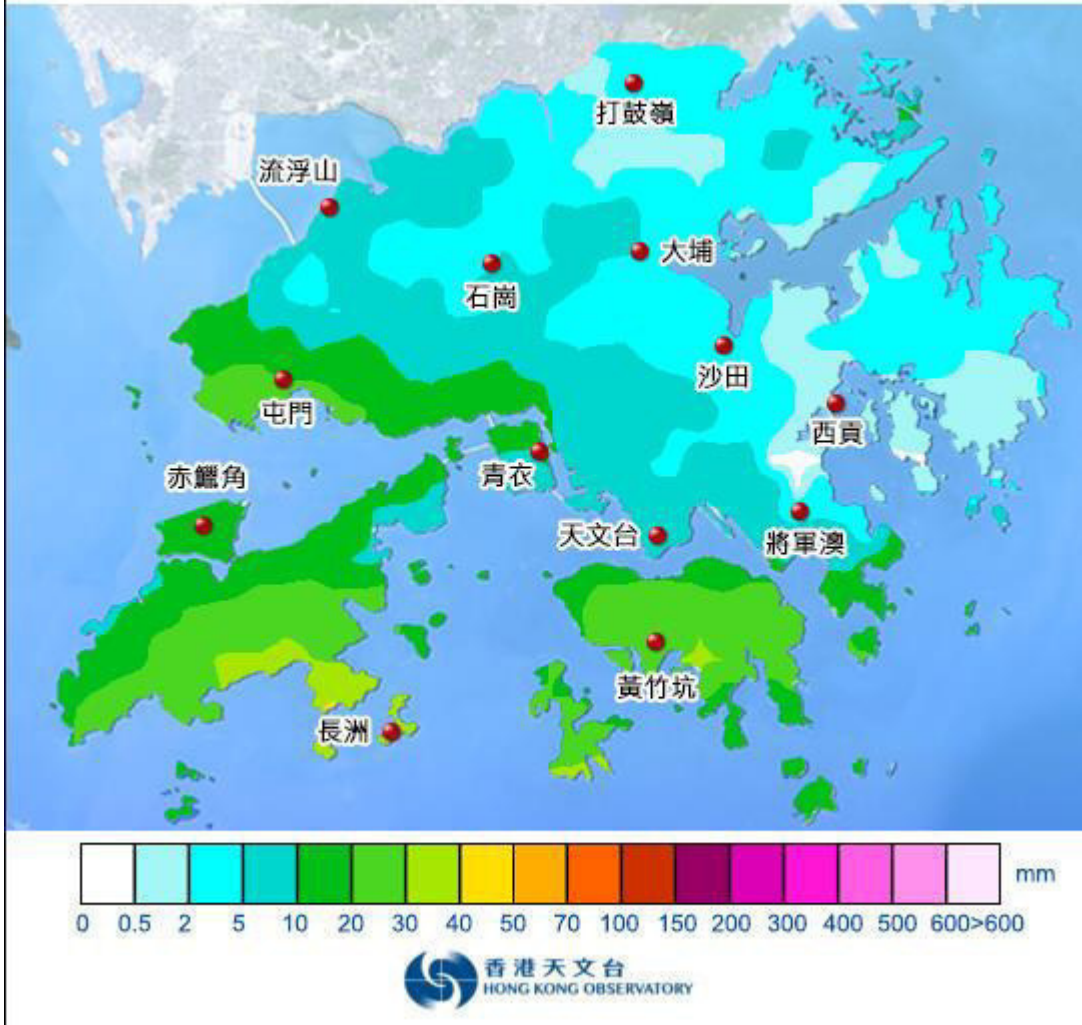
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**APPENDIX A  
DAILY RAINFALL DISTRIBUTION  
EXTRACTED FROM HKO**

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Daily Rainfall Distribution:

2018年 4 月 24 日的總雨量 (基於雨量計及雷達數據)



Rainfall recorded in Sai Kung region on 24 April 2018			
Time	Rainfall (mm)	Amber Rainstorm Warning Signal	Thunderstorm Warning
23:45-00:45	0-1mm	-	-
00:45-01:45	-	-	-
01:45-02:45	-	-	-
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	0-1mm	-	✓
10:45-11:45	0-10mm	-	✓
11:45-12:45	0-1mm	-	✓
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	-	-	-



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**APPENDIX B  
GROUNDWATER QUALITY  
MONITORING RESULTS**

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## TEST REPORT

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

Report No.:	28772
Date of Issue:	2018-05-04
Date Received:	2018-04-24
Date Tested:	2018-04-24
Date Completed:	2018-05-04

**ATTN:** Ms. Mei Ling Tang

Page: 1 of 1

**Sample Description** : 3 liquid samples as received from client said to be groundwater  
**Laboratory No.** : 28772  
**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)/20180424  
**Sampling Date** : 2018-04-24

**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 <sub>2</sub> /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 <sub>3</sub> -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.	28772-1	28772-2	28772-3
Total Suspended Solids (mg/L)	6	6	3
Biochemical Oxygen Demand (mg O <sub>2</sub> /L)	4	8	4
Total Organic Carbon (mg-TOC/L)	12	16	8
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	3.7	2.9	2.9
Ammonia (mg NH <sub>3</sub> -N/L)	<0.05	0.07	0.16
Total Phosphorus (mg-P/L)	0.06	0.08	0.10

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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**APPENDIX L  
SITE AUDIT SUMMARY**

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

**Appendix L - Site Audit Summary (May 2018)**

**Contract No. NE/2015/01**

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

Items	Date	Status*	Follow up Action
<b>Water Quality</b>			
Silt curtain near marine platform in TKO site should be maintained to prevent untreated discharge.	25 April 2018	✓	Improved/rectified on 02 May 2018.
<b>Noise</b>			
The Contractor was reminded to repair noise barrier at Portion IVC to reduce noise nuisance to the nearby NSRs.	16 May 2018	✓	Improved/rectified on 23 May 2018.
<b>Landscape and Visual</b>			
--	--	--	--
<b>Air Quality</b>			
Water sprinklers on Slope H should be provided to all breaking works for dust suppression.	25 April 2018	✓	Improved/rectified on 02 May 2018.
Water spraying should be provided to exposed slope more frequently at TKO and LTI.	02 May 2018	✓	Improved/rectified on 09 May 2018.
Water spraying should be provided to exposed slope at LTI and TKO for dust suppression.	16 May 2018	✗	Item remarked on 23 May 2018.
	23 May 2018	✗	Item remarked on 30 May 2018.
	30 May 2018	#	Follow up action will be reported in next reporting month
<b>Waste / Chemical Management</b>			
Drip tray should be provided to chemical containers on marine platform in TKO site.	09 May 2018	✓	Improved/rectified on 16 May 2018.
Construction material should be removed from drip tray at TKO marine platform.	30 May 2018	#	Follow up action will be reported in next reporting month
<b>Impact on Cultural Heritage</b>			
--	--	--	--
<b>Permits / Licenses</b>			
--	--	--	--

- ✓ 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
- \* Non-compliance of mitigation measure
- Non-compliance but improved by the contractor

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

**Appendix L - Site Audit Summary (May 2018)**

**Contract No. NE/2015/02**

*Tseung Kwan O - Lam Tin Tunnel - Road P2 and Associated Works*

<b>Items</b>	<b>Date</b>	<b>Status*</b>	<b>Follow up Action</b>
<b><i>Water Quality</i></b>			
To repair the damaged silt curtain at the double water gate and deploy silt curtains around the cofferdam properly without gaps.	26 April 2018	✓	Improved/rectified on 3 May 2018.
The Contractor was reminded to clear the sediment at the unloading area at Portion 7 regularly.	26 April 2018	✓	Improved/rectified on 3 May 2018.
The Contractor was reminded to provide sand bunds to surround the mud pit in Portion 7.	3 May 2018	✓	Improved/rectified on 10 May 2018.
<b><i>Noise</i></b>			
To place the acoustic box properly for breaking work in Portion 4.	26 April 2018	✓	Improved/rectified on 3 May 2018.
The Contractor was reminded to erect an effective acoustic mat for the derrick barge at the unloading area in Portion 7 and properly erect the noise barrier near the entrance of Portion 7.	26 April 2018	✓	Improved/rectified on 3 May 2018.
To erect the noise barriers properly without gaps for the preboring works in Portion 4.	10 May 2018	✓	Improved/rectified on 16 May 2018.
The Contractor was reminded to provide sufficient noise barrier to the drill rig in Portion 7.	16 May 2018	✓	Improved/rectified on 23 May 2018.
To properly erect the acoustic mats without gaps for the derrick barge (Superich 206).	30 May 2018	#	Follow up action will be reported in next reporting month
<b><i>Landscape and Visual</i></b>			
--	--	--	--
<b><i>Air Quality</i></b>			
The Contractor was reminded to provide water spraying for unloading / loading activity at Portion 5	26 April 2018	✓	Improved/rectified on 3 May 2018.
The Contractor was reminded to maintain the construction vessels regularly to prevent black smoke emission.	26 April 2018	✓	Improved/rectified on 3 May 2018.
The Contractor was reminded to lower the level of stockpiles in Work Area A and cover them with impervious sheet.	26 April 2018	✓	Improved/rectified on 3 May 2018.
The Contractor was reminded to replace NRMM labels when needed.	26 April 2018	✓	Improved/rectified on 3 May 2018.
The Contractor was reminded to provide NRMM label for the crawler crane in Portion 7.	3 May 2018	✓	Improved/rectified on 10 May 2018.
The Contractor was reminded to carry out maintenance and ensure the integrity of the enclosure under the silo at all time.	16 May 2018	✓	Improved/rectified on 23 May 2018.
<b><i>Waste / Chemical Management</i></b>			
The Contractor was reminded to properly clear the oil stain at the double water gate and Portion 4.	26 April 2018	✓	Improved/rectified on 3 May 2018.
<b><i>Impact on Cultural Heritage</i></b>			
--	--	--	--
<b><i>Permits / Licenses</i></b>			
--	--	--	--

**Appendix L - Site Audit Summary (May 2018)**

- ✓ 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
  
- \* Non-compliance of mitigation measure
- Non-compliance but rectified by the contractor

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

**Appendix L - Site Audit Summary (May 2018)**

**Contract No. NE/2015/03**

*Tseung Kwan O - Lam Tin Tunnel - Northern Footbridge*

Items	Date	Status*	Follow up Action
<b><i>Water Quality</i></b>			
Water leakage was found in the sedimentation tank in West Pier. The Contractor was reminded to rectify immediately and check the performance regularly	27 April 2018	✓	Improved/rectified on 4 May 2018.
To regularly remove the sediment in the sedimentation tank in West Pier.	30 May 2018	#	Follow up action will be reported in next reporting month
<b><i>Noise</i></b>			
--	--	--	--
<b><i>Landscape and Visual</i></b>			
--	--	--	--
<b><i>Air Quality</i></b>			
To cover the stockpile near the u-channel at East Pier (Portion 2).	16 May 2018	✓	Improved/rectified on 23 May 2018.
<b><i>Waste / Chemical Management</i></b>			
To provide drip tray to the chemical container in Portion 2 near East Pier.	30 May 2018	#	Follow up action will be reported in next reporting month
<b><i>Impact on Cultural Heritage</i></b>			
--	--	--	--
<b><i>Permits / Licenses</i></b>			
--	--	--	--

- ✓ 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

- \* Non-compliance of mitigation measure
- Non-compliance but rectified by the contractor

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

**Appendix L - Site Audit Summary (May 2018)**

**Contract No. NE/2017/01**

*Tseung Kwan O - Lam Tin Tunnel – Tsueng Kwan O Interchange and Associated Works*

Items	Date	Status*	Follow up Action
<b><i>Water Quality</i></b>			
To remove the oil stain from the edge of the barge.	08 May 2018	✓	Improved/rectified on 16 May 2018.
<b><i>Noise</i></b>			
--	--	--	--
<b><i>Landscape and Visual</i></b>			
--	--	--	--
<b><i>Air Quality</i></b>			
The Contractor was reminded to provide an appropriate NRMM label for the power pack.	02 May 2018	✓	Improved/rectified on 08 May 2018.
<b><i>Waste / Chemical Management</i></b>			
The Contractor was reminded to remove the excess materials and stagnant water from the drip trays.	02 May 2018	✓	Improved/rectified on 08 May 2018.
<b><i>Impact on Cultural Heritage</i></b>			
--	--	--	--
<b><i>Permits / Licenses</i></b>			

- ✓ 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

- \* Non-compliance of mitigation measure
- Non-compliance but rectified by the contractor



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

**Appendix L - Site Audit Summary (May 2018)**

**Contract No. NE/2017/02**

*Tseung Kwan O - Lam Tin Tunnel – Road P2/D4 and Associated Works*

Items	Date	Status*	Follow up Action
<b>Water Quality</b>			
--	--	--	--
<b>Noise</b>			
--	--	--	--
<b>Landscape and Visual</b>			
--	--	--	--
<b>Air Quality</b>			
Dusty materials should be removed to prevent dust generation.	30 April 2018	✓	Improved/rectified on 7 May 2018.
To provide water spraying more frequently for Portion 1	16 May 2018	✗	Item remarked on 23 May 2018.
	23 May 2018	✓	Improved/rectified on 30 May 2018.
<b>Waste / Chemical Management</b>			
General refuse should be cleared regularly within site area to prevent accumulation.	7 May 2018	✓	Improved/rectified on 16 May 2018.
<b>Impact on Cultural Heritage</b>			
--	--	--	--
<b>Permits / Licenses</b>			

- ✓ 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
- \* Non-compliance of mitigation measure
- Non-compliance but rectified by the contractor

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**APPENDIX M**  
**EVENT AND ACTION PLANS**

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### Event and Action Plan for Air Quality (Dust)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of complaint and propose remedial measures;</li> <li>2. Inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
Action level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> <li>6. Discuss with IEC and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with IEC and ER;</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ET on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial actions to IEC within three working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	8. If exceedance stops, cease additional monitoring.			
Limit level being exceeded by one sampling	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform Contractor, IEC, ER, and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within three working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Limit level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within three working days of notification;</li> <li>3. Implement the agreed proposals;</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	3. Supervise the implementation of remedial measures.	4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

**Event and Action Plan for Construction Noise**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> <li>1. Notify IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC;</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC, ER, EPD and Contractor;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

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**

<b>Event</b>	<b>Action</b>			
	<b>ET</b>	<b>IEC</b>	<b>ER</b>	<b>CONTRACTOR</b>
Action level being exceeded by one sampling day at water sensitive receiver(s)	<ul style="list-style-type: none"> <li>Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;</li> <li>If exceedance is found to be caused by the reclamation activities, repeat <i>in-situ</i> measurement to confirm findings;</li> <li>Inform IEC and contractor;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>If exceedance occurs at WSD salt water intake, inform WSD;</li> <li>Discuss mitigation measures with IEC and Contractor;</li> <li>Repeat measurement on next day of exceedance.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with ET and Contractor on the mitigation measures;</li> <li>Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with IEC on the proposed mitigation measures;</li> <li>Make agreement on the mitigation proposal.</li> </ul>	<ul style="list-style-type: none"> <li>Inform the ER and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Amend working methods if appropriate;</li> <li>Discuss with ET and IEC and propose mitigation measures to IEC and ER;</li> <li>Implement the agree mitigation measures.</li> </ul>
Action level being exceeded by two or more consecutive	<ul style="list-style-type: none"> <li>Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with ET and Contractor on the mitigation measures;</li> </ul>	<ul style="list-style-type: none"> <li>Discuss with IEC on the proposed mitigation measures;</li> <li>Make agreement on the mitigation proposal;</li> </ul>	<ul style="list-style-type: none"> <li>Inform the Engineer and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> </ul>



Event	Action			
	ET	IEC	ER	CONTRACTOR
sampling days at water sensitive receiver(s)	<ul style="list-style-type: none"> <li>• If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings;</li> <li>• Inform IEC and contractor;</li> <li>• Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>• Discuss mitigation measures with IEC and Contractor;</li> <li>• Ensure mitigation measures are implemented;</li> <li>• Prepare to increase the monitoring frequency to daily;</li> <li>• If exceedance occurs at WSD salt water intake, inform WSD;</li> <li>• Repeat measurement on next day of exceedance.</li> </ul>	<ul style="list-style-type: none"> <li>• Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;</li> <li>• Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Check all plant and equipment and consider changes of working methods;</li> <li>• Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days;</li> <li>• Implement the agreed mitigation measures.</li> </ul>
Limit level being exceeded by one sampling day at water sensitive receiver(s)	<ul style="list-style-type: none"> <li>• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss with ET and Contractor on the mitigation measures;</li> <li>• Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>• Request Contractor to critically review the working methods;</li> </ul>	<ul style="list-style-type: none"> <li>• Inform the ER and confirm notification of the non-compliance in writing;</li> <li>• Rectify unacceptable practice;</li> </ul>

Event	Action			
	ET	IEC	ER	CONTRACTOR
	<ul style="list-style-type: none"> <li>• If exceedance is found to be caused by the reclamation activities, repeat <i>in-situ</i> measurement to confirm findings;</li> <li>• Inform IEC, contractor, AFCD and EPD</li> <li>• Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>• Discuss mitigation measures with IEC, ER and Contractor;</li> <li>• Ensure mitigation measures are implemented;</li> <li>• Increase the monitoring frequency to daily until no exceedance of Limit level;</li> <li>• If exceedance occurs at WSD salt water intake, inform WSD.</li> </ul>	<ul style="list-style-type: none"> <li>• Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Make agreement on the mitigation measures to be implemented;</li> <li>• Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Check all plant and equipment and consider changes of working methods;</li> <li>• Discuss with ET, IEC and ER and submit proposal of mitigation measures to IEC and ER within 3 working days of notification;</li> <li>• Implement the agreed mitigation measures.</li> </ul>
Limit level being exceeded by two or more consecutive sampling days at	<ul style="list-style-type: none"> <li>• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss with ET and Contractor on the mitigation measures;</li> <li>• Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss with IC(E), ET and Contractor on the proposed mitigation measures;</li> <li>• Request Contractor to critically review the working methods;</li> </ul>	<ul style="list-style-type: none"> <li>• Inform the ER and confirm notification of the non-compliance in writing;</li> <li>• Rectify unacceptable practice;</li> </ul>

Event	Action			
	ET	IEC	ER	CONTRACTOR
water sensitive receiver(s)	<ul style="list-style-type: none"> <li>• If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings;</li> <li>• Inform IC(E), AFCD, contractor and EPD;</li> <li>• Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>• Discuss mitigation measures with IC(E), ER and Contractor;</li> <li>• Ensure mitigation measures are implemented;</li> <li>• Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days;</li> <li>• If exceedance occurs at WSD salt water intake, inform WSD.</li> </ul>	<ul style="list-style-type: none"> <li>• Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Make agreement on the mitigation measures to be implemented;</li> <li>• Assess the effectiveness of the implemented mitigation measures;</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Check all plant and equipment and consider changes of working methods;</li> <li>• Discuss with ET, IC(E) and ER and submit proposal of mitigation measures to IC(E) and ER within 3 working days of notification;</li> <li>• Implement the agreed mitigation measures;</li> <li>• As directed by the Engineer, to slow down or to stop all or part of the construction activities.</li> </ul>

**Limit Levels and Action Plan for Landfill Gas**

Parameter	Limit Level	Action
Oxygen	<19%	<ul style="list-style-type: none"> <li>• Ventilate to restore oxygen to &gt;19%</li> </ul>
	<18%	<ul style="list-style-type: none"> <li>• Stop works</li> <li>• Evacuate personnel/prohibit entry</li> <li>• Increase ventilation to restore oxygen to &gt;19%</li> </ul>
Methane	>10% LEL (i.e. > 0.5% by volume)	<ul style="list-style-type: none"> <li>• Prohibit hot works</li> <li>• Ventilate to restore methane to &lt;10% LEL</li> </ul>
	>20% LEL (i.e. > 1% by volume)	<ul style="list-style-type: none"> <li>• Stop works</li> <li>• Evacuate personnel / prohibit entry</li> <li>• Increase ventilation to restore methane to &lt;10% LEL</li> </ul>
Carbon Dioxide	>0.5%	<ul style="list-style-type: none"> <li>• Ventilate to restore carbon dioxide to &lt; 0.5%</li> </ul>
	>1.5%	<ul style="list-style-type: none"> <li>• Stop works</li> <li>• Evacuate personnel / prohibit entry</li> <li>• Increase ventilation to restore carbon dioxide to &lt; 0.5%</li> </ul>

**Event and Action Plan for Coral Post-Translocation Monitoring**

<b>Event</b>	<b>Action</b>			
	<b>ET Leader</b>	<b>IEC</b>	<b>ER</b>	<b>Contractor</b>
<b>Action Level Exceedance</b>	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.
<b>Limit Level Exceedance</b>	Undertake Steps 1-4 as in the Action Level Exceedance. If further exceedance of Limit Level, suspend construction works until an effective solution is identified.	1. Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.

### Mitigation Measures for Vibration Monitoring

Level	Contingency Action
Alert Level	<ul style="list-style-type: none"> <li>● The Engineer shall be informed immediately.</li> <li>● 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.</li> <li>● The Contractor shall review and increase the instrumentation monitoring and reporting frequency, if applicable.</li> <li>● 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.</li> </ul>
Alarm Level	<ul style="list-style-type: none"> <li>● The Engineer shall be informed immediately.</li> <li>● The active construction works may require to be suspended subject to the Engineer's review of monitoring data.</li> <li>● The Contractor shall immediately implement the measures as defined in the detailed plan of action to prevent further ground movement and groundwater drawdown etc.</li> <li>● The Contractor shall prepare a detailed investigation report to study the cause of the exceedance</li> <li>● The Contractor shall propose a contingency plan for the Engineer's approval in the event that alarm value is reached or exceeded</li> <li>● The Contractor shall develop an emergency plan for the Engineer's approval in the event the applied contingency measures cannot control the situation.</li> <li>● The Contractor shall meet the Engineer to discuss the instrument response and review the effectiveness of the implemented measures.</li> <li>● The Contractor shall carry out design review of the works</li> </ul>

Action Level	<ul style="list-style-type: none"><li>● Consideration shall be given to suspend all active construction works and the Engineer shall be informed immediately</li><li>● The Contractor shall immediately implement the measures defined in the contingency plan</li><li>● The Contractor shall implement the measures defined in the emergency plan in the event that the applied contingency measures are found inadequate</li><li>● 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</li><li>● 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.</li></ul>
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**APPENDIX N  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

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**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	E.P Condition
<b>Air Quality Impact</b>								
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	To minimize the dust impact	Contractor	All Active Work Sites	Construction phase	APCO	*(1)/#(1)	3.12
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	^	3.12
S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: <ul style="list-style-type: none"> <li>- Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</li> <li>- Use of frequent watering for particularly dusty construction areas and areas close to ASRs.</li> <li>- Side enclosure and covering of any aggregate or dusty material storage piles to</li> </ul>	To minimize the dust impact	Contractor	All Construction Work Sites	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation	*(1)/#(1)  *(1)/#(1)	

**App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**May 2018**

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	E.P Condition
	<p>reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.</p> <ul style="list-style-type: none"> <li>- Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</li> <li>- Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</li> <li>- Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.</li> <li>- 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.</li> <li>- 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.</li> <li>- Imposition of speed controls for vehicles on site haul roads.</li> <li>- Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs</li> <li>- 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.</li> <li>- Instigation of an environmental monitoring and auditing program to monitor the</li> </ul>						<p>*(1)/#(1)</p> <p>^</p> <p>N/A</p> <p>*(1)/#(1)</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>	

**App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**May 2018**

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	E.P Condition
	construction process in order to enforce controls and modify method of work if dusty conditions arise.							
/	Emission from Vehicles and Plants <ul style="list-style-type: none"> <li>• All vehicles shall be shut down in intermittent use.</li> <li>• Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke.</li> <li>• All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)</li> </ul>	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	*(2)	
<b>Noise Impact (Construction Phase)</b>								
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	

**App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**May 2018**

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	E.P Condition
Noise Mitigation Plan	Use of Temporary Noise Barriers or Full Enclosure for PME according to the approved Noise Mitigation Plan	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO	*(3)/#(3)	
S4.9	<p>Good Site Practice</p> <ul style="list-style-type: none"> <li>- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program</li> <li>- Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.</li> <li>- Mobile plant, if any, should be sited as far away from NSRs as possible.</li> <li>- 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.</li> <li>- 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.</li> <li>- Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.</li> </ul>	To minimize construction noise impact arising from the Project at the affected NSRs	Project Proponent	Work sites	Construction Period	EIAO-TM, NCO	^ ^ ^ ^ ^ ^	
S4.9	Scheduling of Construction Works during School Examination Period	To minimize construction noise impact arising from the	Contractor	Work site near school	Construction phase	EIAO-TM, NCO	N/A	

**App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**May 2018**

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	E.P Condition
		Project at the affected NSRs						
<b>Water Quality Impact (Construction Phase)</b>								
S5.6.24	The dry density of filling material for the TKO-LT Tunnel reclamation should be 1,900kg/m <sup>3</sup> , 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 including the installation of steel cellular caisson), silt curtain shall be employed around the active stone column installation points.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A	3.2B
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 <sup>3</sup> (i.e. 1,000 m <sup>3</sup> 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	3.2C
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;	Control potential impacts from filling activities and marine-	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, Waste Disposal Ordinance (WDO)	*(4)	3.3C

**App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**May 2018**

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	E.P Condition
	<ul style="list-style-type: none"> <li>- floating single silt curtain shall be employed for all marine works;</li> <li>- 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;</li> <li>- all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>- excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved;</li> <li>- adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;</li> <li>- 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;</li> <li>- any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes;</li> <li>- 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</li> <li>- 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.</li> </ul>	<p>based construction</p>					<p>*(4) ^  ^  ^  ^  ^  ^  ^</p>	<p>2.8</p>

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S5.8.4	Site specific mitigation plan for reclamation areas using public fill materials should be submitted for EPD agreement before commencement of construction phase with due consideration of good site practices.	Control potential impacts from filling activities and marine based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A	
ERR S5.6.1	<p>To minimize water quality impact arising from the dredging and filling works for Reclamation for Road P2, the following mitigation measures shall be implemented:</p> <ul style="list-style-type: none"> <li>- 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)</li> <li>- 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.</li> <li>- Water quality sampling and testing shall be carried out to demonstrate that the water quality inside the enclosed barrier is comparable to the ambient or baseline levels prior to the removal of the fully enclosed barrier.</li> <li>- 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).</li> </ul>	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  ^	3.3E

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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	^	
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 under the TM-DSS.	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	*(5)	



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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	^	

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S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m <sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	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	*(6)/#(6)	
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 <sup>3</sup> 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-	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^	

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		based construction						
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	^	
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	

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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	^	
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	^	

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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	^	
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-	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^	

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		based construction						
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 runoff 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	

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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-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A	
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-	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A	



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		based construction						
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	^	
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	

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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	*(7)	
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. 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.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^	
S5.8.44	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)	Control potential impacts from accidental	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO	^	

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	(General) Regulation should be observed and complied with for control of chemical wastes.	spillage of chemicals						
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	*(8)/#(8)	
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: <ul style="list-style-type: none"> <li>- suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;</li> <li>- chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and</li> <li>- storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO	^ ^ ^	
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 and the neighbouring water free from rubbish.	Control potential impacts from floating refuse and debris	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO,	^	

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<b><i>Ecological Impact</i></b>								
S6.8.4	<p><b><i>Measures to Minimize Disturbance</i></b></p> <ul style="list-style-type: none"> <li>- Use of Quiet Mechanical Plant during the construction phase should be adopted wherever possible.</li> <li>- 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;</li> <li>- Regular spraying of haul roads to minimize impacts of dust deposition on adjacent vegetation and habitats during the construction activities</li> </ul>	Minimize noise, human and traffic disturbance to terrestrial habitat and wildlife; and reduce dust generation	Design Team / Contractor	Land-based works are	Construction Phase	N/A	^  ^  ^	
S6.8.5	<p><b><i>Standard Good Site Practice</i></b></p> <ul style="list-style-type: none"> <li>- Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats.</li> <li>- Construction activities should be restricted to works areas that should be clearly demarcated. The works areas should be reinstated after completion of the works.</li> <li>- Waste skips should be provided to collect general refuse and construction wastes. The wastes should be properly disposed off-site in a timely manner.</li> <li>- General drainage arrangements should include sediment and oil traps to collect and control construction site run-off.</li> <li>- Open burning on works sites is illegal, and should be strictly prohibited.</li> <li>- Measures should also be put into place so that litter, fuel and solvents do not enter</li> </ul>	Reduce disturbance to surrounding habitats	Contractor	Land-based works are	Construction Phase	N/A	^  ^  ^  ^  ^	

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	the nearby watercourses.							
S6.8.6	<p><b><i>Measure to Minimize Groundwater Inflow</i></b></p> <ul style="list-style-type: none"> <li>- The drained tunnel construction method with groundwater inflow control measures would generally be adopted.</li> <li>- 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.</li> </ul>	Minimize groundwater inflow	Contractor	Tunnel	Construction Phase	N/A	N/A	N/A
S6.8.8	<p><b><i>Measure to Minimize Impact on Corals</i></b></p> <p><u>Coral translocation</u></p> <ul style="list-style-type: none"> <li>- It is recommended to translocate the affected coral colonies, except the locally common <i>Oulastrea crispata</i>, within the reclamation area and bridge footprint to the other suitable locations as far as practicable.</li> <li>- 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).</li> <li>- 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.</li> </ul>	Minimize loss of coral	Design team, contractor, project operator	Within reclamation areas and pier footprint	Prior construction	N/A	^  ^  ^  ^	

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	<ul style="list-style-type: none"> <li>- 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 exercises should be conducted by experienced marine ecologist(s) who is/are approved by AFCD prior to commencement of coral translocation.</li> </ul> <p><u>Post translocation Monitoring</u></p> <ul style="list-style-type: none"> <li>- A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the translocated coral communities</li> <li>- 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.</li> </ul>						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>	
<p>S6.8.9</p> <p>S6.8.10</p>	<p><b><i>Measure to Control Water Quality Impact</i></b></p> <ul style="list-style-type: none"> <li>- Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area.</li> <li>- Diverting of the site runoff to silt trap facilities before discharging into storm drain;</li> <li>- Proper waste and dumping management; and</li> <li>- Standard good-site practice for land-based construction.</li> </ul>	<p>Control water quality impact, especially on suspended solid level; minimize the contamination of wastewater discharge, accidental chemical</p>	<p>Design Team, contractor</p>	<p>Marine and landbased works area</p>	<p>Construction phase</p>	<p>WQO</p>	<p>N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>	

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		spillage and construction site runoff to the receiving water bodies						
S6.8.11	<p><b>Compensation for Vegetation Loss</b></p> <ul style="list-style-type: none"> <li>- 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.</li> </ul>	Compensate for the vegetation loss	Design Team, contractor	Land-based works area	Construction phase	N/A	^	
<b>Fisheries Impact</b>								
S7.7.3	<p><b>Measure to Control Water Quality Impact</b></p> <ul style="list-style-type: none"> <li>- Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area.</li> </ul>	Control water quality impact, especially on suspended solid level	Design Team / Contractor	Marine work area	Construction phase	WQO	^	
<b>Waste Management (Construction Phase)</b>								
S8.6.3	<p><b>Good Site Practices and Waste Reduction Measures</b></p> <ul style="list-style-type: none"> <li>- Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;</li> </ul>	To reduce waste management impacts	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354)	^	

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	<ul style="list-style-type: none"> <li>- Training of site personnel in site cleanliness, proper waste management and chemical handling procedures;</li> <li>- Provision of sufficient waste disposal points and regular collection of waste;</li> <li>- Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and</li> <li>- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.</li> </ul>					Land (Miscellaneous Provisions) Ordinance (Cap. 28)	^  ^  ^  *(9)	
S8.6.4	<p><b><i>Good Site Practices and Waste Reduction Measures (con't)</i></b></p> <ul style="list-style-type: none"> <li>- Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>- 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;</li> <li>- Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and</li> <li>- Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.</li> </ul>	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354)  Land (Miscellaneous Provisions) Ordinance (Cap. 28)	^  ^  ^  ^	
S8.6.5	<p><b><i>Good Site Practices and Waste Reduction Measures (con't)</i></b></p> <p>The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for</p>	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^	



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	<p>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.</p> <p>The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.</p>							
S8.6.6	<p><b>Good Site Practices and Waste Reduction Measures (con't)</b></p> <ul style="list-style-type: none"> <li>- C&amp;D materials would be reused in the project and other local concurrent projects as far as possible.</li> </ul>	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^	
S8.6.7	<p><b>Storage, Collection and Transportation of Waste</b></p> <p>Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include:</p> <ul style="list-style-type: none"> <li>- Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution;</li> <li>- Maintain and clean storage areas routinely;</li> <li>- Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and</li> <li>- Different locations should be designated to stockpile each material to enhance reuse.</li> </ul>	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	-	^ ^ ^ ^	
S8.6.8	<p><b>Storage, Collection and Transportation of Waste (con't)</b></p>	To minimize	Contractor	All work	Construction			

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	<ul style="list-style-type: none"> <li>- Remove waste in timely manner;</li> <li>- Waste collectors should only collect wastes prescribed by their permits;</li> <li>- Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers;</li> <li>- 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);</li> <li>- Waste should be disposed of at licensed waste disposal facilities; and</li> <li>- Maintain records of quantities of waste generated, recycled and disposed.</li> </ul>	potential adverse environmental impacts arising from waste collection and disposal		sites	Phase		^ ^ ^ ^ ^ ^	
S8.6.9	<p><b>Storage, Collection and Transportation of Waste (con't)</b></p> <ul style="list-style-type: none"> <li>- Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction &amp; Demolition Materials, to monitor disposal of 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.</li> </ul>	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010	^	
S8.6.11 - S8.6.13	<p><b>Sorting of C&amp;D Materials</b></p> <ul style="list-style-type: none"> <li>- Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site.</li> <li>- Specific areas shall be provided by the Contractors for sorting and to provide</li> </ul>	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010  ETWB TCW No.	^  ^	

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	<p>temporary storage areas for the sorted materials.</p> <ul style="list-style-type: none"> <li>- The C&amp;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</li> </ul>					<p>33/2002</p> <p>ETWB TCW No. 19/2005</p>	^	
<p>S8.6.15 – S8.6.16</p>	<p><b>Sediments</b></p> <ul style="list-style-type: none"> <li>- 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&amp;DMMP. MFC has no adverse comment on the current C&amp;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 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.</li> <li>- Despite exceedance of RBRG, onsite reuse of sediment under sample (TKO-EBH501 33.95m) as filling material after cement stabilization is also a suitable</li> </ul>	<p>To ensure the sediment to be disposed of in an authorized and least impacted way</p>	<p>contractor</p>	<p>All works areas with sediments concern</p>	<p>Construction Phase</p>	<p>RBRG</p>	<p>N/A</p> <p>N/A</p>	

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	<p>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</p>							
<p>S8.6.17 – S8.6.20</p>	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- 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).</li> <li>- 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. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.</li> </ul>	<p>To determine the best handling and treatment of sediment</p>	<p>Contractor</p>	<p>All works areas with sediments concern</p>	<p>Construction Phase</p>		<p>N/A  N/A  N/A  N/A</p>	

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	<ul style="list-style-type: none"> <li>- 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.</li> </ul>							
S8.6.21	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>- 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.</li> </ul>	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A	
S8.6.23	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>- 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.</li> </ul>	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 - S8.6.28	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>- The excavated sediments is expected to be loaded onto the barge and</li> </ul>	To ensure handling of	Contractor	All works areas with	Construction Phase	ETWB TC(W) No. 34/2002 &	N/A	



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	<p>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.</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- 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.</li> </ul>						<p>N/A</p> <p>N/A</p>	
S8.6.26	<p><b>Chemical Wastes.</b></p> <ul style="list-style-type: none"> <li>- 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,</li> </ul>	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)	^	

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	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.					Regulation		
S8.6.27	<p><b>General Refuse</b></p> <ul style="list-style-type: none"> <li>- General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</li> </ul>	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)	^	
<b>Impact on Cultural Heritage (Construction Phase)</b>								
S9.6.4	<p>Dust and visual impacts</p> <ul style="list-style-type: none"> <li>- Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided;</li> <li>- The open yard in front of the temple should be kept as usual for annual Tin Hau festival;</li> <li>- Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple.</li> </ul>	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO	^ ^ ^	
S9.6.4	<p>Indirect vibration impact</p> <ul style="list-style-type: none"> <li>- Vibration level is suggest to be controlled within a peak particle velocity (ppv) limit of 5mm/s measured inside the historical buildings;</li> <li>- Monitoring of vibration should be carried out during construction phase.</li> </ul>	To prevent indirect vibration impact	Contractors	Work areas	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.	^ ^	3.7 3.7



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	<ul style="list-style-type: none"> <li>- Tilting and settlement monitoring should will be applied on the Cha Kwo Ling Tin Hau Temple as well.</li> <li>- 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.</li> </ul>						^	3.7
							^	3.7
<b><i>Landscape and Visual Impact (Construction Phase)</i></b>								
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 construction period	N/A	^	
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	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	^	

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	contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).			)		Specification		
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 landscape deck, TKO	Beginning of construction period	N/A	^	
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	^	

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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 existing coastlin	CEDD (via Contractor)	Temporary reclamation for barging points at TKO and Lam Tin and permanent reclamation for TKO Interchange	Construction planning and reclamation stages	N/A	N/A	

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				slip roads and Road P2				
<b>Landfill Gas Hazard (Design and Construction Phase)</b>								
S11.5.9	<p>A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site throughout the groundworks phase. The Safety Officer should be provided with an intrinsically safe portable instrument, which is appropriately calibrated and able to measure the following gases in the ranges indicated below:</p> <p>Methane 0-100% LEL and 0100% v/v                      Carbon dioxide 0-100%                      Oxygen 0-21%</p>	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note	^	
S11.5.10 S11.5.25	<p><b>Safety Measures</b></p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out.</li> <li>- 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</li> </ul>	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  Labour Department's Code of Practice for Safety and Health at Work in	^   ^  ^	

**App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**May 2018**

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	E.P Condition
	<p>rescue if needed.</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation.</li> <li>- 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).</li> <li>- 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.</li> </ul>					Confined Space	^  ^  ^  ^  ^	

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status	E.P Condition
	<ul style="list-style-type: none"> <li>- 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.</li> <li>- 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.</li> <li>- During construction, adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus (BA) sets should be made available on site.</li> <li>- Fire drills should be organized at not less than six monthly intervals.</li> <li>- The contractor should formulate a health and safety policy, standards and instructions for site personnel to follow.</li> <li>- 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</li> </ul>						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>	

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**May 2018**

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	E.P Condition
	<p>the site warning danger of the potential hazards.</p> <ul style="list-style-type: none"> <li>- Service runs within the Consultation Zone should be designated as “special routes”; utilities companies should be informed of this and precautionary measures should be 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).</li> <li>- 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.</li> </ul>						^	
S11.5.26 - S11.5.31	<p><b>Monitoring</b></p> <ul style="list-style-type: none"> <li>● 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</li> </ul>	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	^	

**App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**May 2018**

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	E.P Condition
	<p>sure that the area is free of landfill gas before any man enters into the area.</p> <ul style="list-style-type: none"> <li>● For excavations <b>deeper than 1m</b>, measurements should be carried out:                             <ul style="list-style-type: none"> <li>- at the ground surface before excavation commences;-</li> <li>- immediately before any worker enters the excavation;</li> <li>- at the beginning of each working day for the entire period the excavation remains open; and</li> <li>- periodically throughout the working day whilst workers are in the excavation.</li> </ul> </li> <li>● For excavations <b>between 300mm and 1m deep</b>, measurements should be carried out:                             <ul style="list-style-type: none"> <li>- directly after the excavation has been completed; and</li> <li>- periodically whilst the excavation remains open.</li> </ul> </li> <li>● For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person.</li> <li>● 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.</li> <li>● 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</li> </ul>						<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>	



**App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**May 2018**

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	E.P Condition
	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
<b>Air Quality Impact</b>					
* (1)	S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	NE/2015/01	Construction of Lam Tin Interchange	Water sprinklers on Slope H should be provided to all breaking works for dust suppression.
	S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: <ul style="list-style-type: none"> <li>- Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</li> <li>- Use of frequent watering for particularly dusty construction areas and areas close to ASRs.</li> <li>- 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.</li> <li>- Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</li> </ul>	NE/2015/02	Construction of Road P2	The Contractor was reminded to provide water spraying for unloading / loading activity at Portion 5
			NE/2015/02	Construction of Road P2	The Contractor was reminded to lower the level of stockpiles in Work Area A and cover them with impervious sheet.
			NE/2015/02	Construction of Road P2	The Contractor was reminded to carry out maintenance and ensure the integrity of the enclosure under the silo at all time.
			NE/2015/03	Construction of Northern Footbridge	To cover the stockpile near the u-channel at East Pier (Portion 2).
			NE/2017/02	Construction of Road P2/D4	Dusty materials should be removed to prevent dust generation.

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**May 2018**

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
			NE/2017/02	Construction of Road P2/D4	To provide water spraying more frequently for Portion 1
# (1)			NE/2015/01	Construction of Lam Tin Interchange / TKO portal	Water spraying should be provided to exposed slope more frequently at TKO and LTI.
/	/	Emission from Vehicles and Plants <ul style="list-style-type: none"> <li>Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke.</li> </ul>	NE/2015/02	Construction of Road P2	The Contractor was reminded to maintain the construction vessels regularly to prevent black smoke emission.
* (2)	/	Valid No-road Mobile Machinery (NRMM) labels should be provided to regulated machines	NE/2015/02	Construction of Road P2	The Contractor was reminded to replace NRMM labels when needed.
			NE/2017/01	Construction of TKO Interchange	The Contractor was reminded to provide an appropriate NRMM label for the power pack.
			NE/2015/02	Construction of Road P2	The Contractor was reminded to provide NRMM label for the crawler crane in Portion 7.
<b>Noise Impact (Construction Phase)</b>					
* (3)	Noise Mitigation Plan	Use of Temporary Noise Barriers or Full Enclosure for PME according to the approved Noise Mitigation Plan	NE/2015/01	Construction of Lam Tin Interchange	The Contractor was reminded to repair noise barrier at Portion IVC to reduce noise nuisance to the nearby NSRs.
			NE/2015/02	Construction of Road P2	To place the acoustic box properly for breaking work in Portion 4.
			NE/2015/02	Construction of Road P2	The Contractor was reminded to erect an effective acoustic mat for the derrick barge at the unloading area in Portion 7 and properly erect the noise barrier near

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**May 2018**

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
# (3)					the entrance of Portion 7.
			NE/2015/02	Construction of Road P2	To erect the noise barriers properly without gaps for the preboring works in Portion 4.
			NE/2015/02	Construction of Road P2	The Contractor was reminded to provide sufficient noise barrier to the drill rig in Portion 7.
			NE/2015/02	Construction of Road P2	To properly erect the acoustic mats without gaps for the derrick barge (Superich 206).
<b>Water Quality Impact (Construction Phase)</b>					
* (4)	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;	NE/2015/01	Construction of TKO Portal	Silt curtain near marine platform in TKO site should be maintained to prevent untreated discharge.
			NE/2015/02	Construction of Road P2	To repair the damaged silt curtain at the double water gate and deploy silt curtains around the cofferdam properly without gaps.
* (5)	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 under the TM-DSS.	NE/2015/02	Construction of Road P2	The Contractor was reminded to clear the sediment at the unloading area at Portion 7 regularly.
			NE/2015/02	Construction of Road P2	The Contractor was reminded to provide sand bunds to surround the mud pit in Portion 7.
* (6)	S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m <sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The	NE/2015/03	Construction of Northern Footbridge	Water leakage was found in the sedimentation tank in West Pier. The Contractor was reminded to rectify immediately and check the performance regularly

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**May 2018**

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
# (6)		system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	NE/2015/03	Construction of Northern Footbridge	To regularly remove the sediment in the sedimentation tank in West Pier.
<b>Ecological Impact</b>					
* (7)	S 5.8.42	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.	NE/2015/02	Construction of Road P2	The Contractor was reminded to properly clear the oil stain at the double water gate and Portion 4.
			NE/2017/01	Construction of TKO Interchange	To remove the oil stain from the edge of the barge.
* (8)	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 TKO Portal	Drip tray should be provided to chemical containers on marine platform in TKO site.
# (8)			NE/2017/01	Construction of TKO Interchange	The Contractor was reminded to remove the excess materials and stagnant water from the drip trays.
		NE/2015/01	Construction of TKO Portal	Construction material should be removed from drip tray at TKO marine platform.	
		NE/2015/03	Construction of Northern Footbridge	To provide drip tray to the chemical container in Portion 2 near East Pier.	
<b>Waste Management (Construction Phase)</b>					
* (9)	S8.6.3	<p><b>Good Site Practices and Waste Reduction Measures</b></p> <ul style="list-style-type: none"> <li>- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.</li> </ul>	NE/2017/02	Construction of Road P2/D4	General refuse should be cleared regularly within site area to prevent accumulation.

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**APPENDIX O  
SUMMARIES OF ENVIRONMENTAL  
COMPLAINT, WARNING, SUMMON  
AND NOTIFICATION OF SUCCESSFUL  
PROSECUTION**

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**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
185	29 <sup>th</sup> May 2018	Not specified/ Construction of Road P2	Public	Air Quality	The complainant complained about the black smoke emission from the construction vessel.	N	Under Investigation	On-going
184	24 <sup>th</sup> May 2018	23 <sup>rd</sup> May 2018/ Construction of Road P2	SKDC member Mr. Cheung Chin Pang	Odour	The complainant complained about smell of exhaust gas affecting high level residents (60/F and above) of Metrotown Tower 10.	N	Under Investigation	On-going
183	24 <sup>th</sup> May 2018	24 <sup>th</sup> May 2018/ Construction of Road P2	Public	Air Quality	The complainant complained construction dust generated from the CEDD construction works site between Tong Yin Street and Tiu Keng Leng Sport Centre (Po Yap Road) as a result of insufficient dust suppression measures	N	Under Investigation	On-going
182	23 <sup>rd</sup> May 2018	22 <sup>nd</sup> May 2018/ Construction of Road P2	Public	N/A	The complainant complained construction works was carried out on 22 May (which was a public holiday) around 1500 hour at the sea area near Ocean shore Block 2.	N	Under Investigation	On-going
181	22 <sup>nd</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Air Quality & Noise	The complainant complained about the dust nuisance and construction noise at Lam Tin Interchange	Y	Under Investigation	On-going

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
180	21 <sup>st</sup> May 2018	Not specified/ Construction of Road P2	Public	Air Quality	The complainant complained about dust/dirt being brought onto Tong Yin Street by the vehicles travelling to and from TKO-LTT construction site, causing dust problem and air nuisance.	N	Under Investigation	On-going
179	19 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	The complainant complained the noise nuisance due to the construction work at Lam Tin Interchange during nighttime.	Y	Under Investigation	On-going
178	19 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	The complainant complained the noise nuisance due to the construction work at Lam Tin Interchange during nighttime.	Y	Under Investigation	On-going
177	16 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Hong Nga Court,	Noise	The complainant complained the noise nuisance due to the construction work at Lam Tin Interchange during night-time.	Y	Under Investigation	On-going
176	15 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	The complainant complained the noise nuisance during night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going
175	15 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate, Bik Lai Estate	Noise	The complainant complained the noise nuisance during night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going



Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
174	15 <sup>th</sup> May 2018	Not specified/ Construction site near Cha Kwo Ling Tsuen	Anonymous	Noise	The complainant complained the noise nuisance due to the construction work near Cha Kwo Ling Tsuen during night-time.	Y	Under Investigation	On-going
173	14 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Kowloon East District Council Member Mr. Tam Man Ho	Noise	The complainant complained the noise nuisance due to the construction work and night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going
172	14 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate, Yung Lai House	Noise	The complainant complained the noise nuisance due to the construction work at Lam Tin Interchange during night-time.	Y	Under Investigation	On-going
171	13 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Hong Nga Court, Chung Pak House	Noise	The complainant complained the noise nuisance due to the construction work on Sunday morning and night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going
170	13 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	The complainant complained the noise nuisance due to the construction work at around 5:00 am and night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
169	13 <sup>th</sup> May 2018	13 <sup>th</sup> May 2018/ Construction of Lam Tin Interchange	Property Management Office of Hong Nga Court	Noise	The complainant complained the noise nuisance due to the construction work at Lam Tin Interchange on 13 <sup>th</sup> May 2018 (Sunday morning).	Y	Under Investigation	On-going
168	12 <sup>th</sup> May 2018	12 <sup>th</sup> May 2018/ Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	The complainant complained the noise nuisance during night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going
167	12 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained the noise nuisance due to the construction work at Lam Tin Interchange.	Y	Under Investigation	On-going
166	11 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Lung Pak House	Noise	The complainant complained the noise nuisance during night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going
165	9 <sup>th</sup> May 2018	2 <sup>nd</sup> May 2018 / Construction of Road P2	Resident of Ocean Shore	Air Quality	The complainant complained about dark smoke emission from a barge working at the sea area under TKO-LTT project near Block 2 of Ocean Shore.	N	Under Investigation	On-going
164	4 <sup>th</sup> May 2018	Not specified/ Construction of Lam Tin Interchange	Public	Noise	The complainant complained the noise nuisance during night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
163	3 <sup>rd</sup> May 2018	2 <sup>nd</sup> May 2018 / Construction of Road P2	Public	Odour	The complainant complained the odour nuisance from the construction vessel.	N	Under Investigation	On-going
	30 <sup>th</sup> April 2018	Not specified / Construction of Road P2	Public	Noise & Odour	The complainant complained the construction noise and odour nuisance from the construction vessel.	Y	Under Investigation	On-going
162	30 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Property Management Office of Kwong Tin Estate	Noise	The complainant complained the noise nuisance due to the breaking work at Lam Tin Interchange.	Y	Under Investigation	On-going
161	26 <sup>th</sup> April 2018	Not specified / Construction of TKO portal	Resident of Laguna City	Light	The complainant complained that two spotlights were used during daytime and nighttime causing light nuisance to the residents. She requested to direct the strong lighting toward the sea.	N	Under Investigation	On-going
160	25 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate, Yau Lai Estate	Noise	The complainant complained the noise nuisance due to the breaking work at Lam Tin Interchange.	Y	Under Investigation	On-going
159	23 <sup>th</sup> April 2018	Not specified / Construction of Road P2	Public	Noise	The complainant complained about noise from construction activities at the sea area near Ocean Shore Block 6 starting 8:30-8:45am on 23 April 2018. She suspected the noise is from drilling/breaking works.	Y	Under Investigation	On-going

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
158	23 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Kwun Tong District Council Member Mr. Lai Shu Ho	Noise	The complainant complained the noise nuisance during night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going
157	23 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained the noisy breaking work from two breakers at Lam Tin Interchange. He requested the Contractor to review the noise mitigation measures on site.	Y	Under Investigation	On-going
156	20 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Nga Lai Estate, Yau Lai Estate	Noise	The complainant complained the noise nuisance during night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going
155*	18 <sup>th</sup> April 2018	Not specified / Construction of Road P2	Resident of Ocean Shore	Noise	The complaint is about the noise generated from a poorly maintained excavator.	Y	Under Investigation	On-going
	16 <sup>th</sup> April 2018	Not specified / Construction of Road P2	Resident of Ocean Shore	Noise	The complaint is about the noise generated from a poorly maintained excavator.			
154	17 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Property Management Office of Yau Lai Estate	Noise	The complainant complained the noise nuisance due to the construction work at Lam Tin Interchange.	Y	Under Investigation	On-going
153	17 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Sham Shui Po District Council Member Mr. Ho Kai Ming	Noise	The complainant complained the noise nuisance during night time blasting works at the Lam Tin Interchange.	Y	Under Investigation	On-going
152	15 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained the noisy construction work at Lam Tin Interchange.	Y	Under Investigation	On-going

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
151	15 <sup>th</sup> April 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained the noisy construction work at Lam Tin Interchange on public holiday.	Y	Under Investigation	On-going
150	2 <sup>nd</sup> April 2018	Public holiday/ Construction Works near Eastern Harbour Crossing tunnel portal	Resident of Yau Lai Estate	Noise	The complainant complained the noise nuisance due to the construction work near Eastern Harbour Crossing tunnel portal on public holiday. (started from 9:00 am)	Y	Under Investigation	On-going
135	20 <sup>th</sup> March 2018	Not specified / near Cha Kwo Ling Road	茶果嶺居民關注組	Air Quality & Noise	The complainant complained about the dust nuisance near Cha Kwo Ling Road, construction noise at barging point at around 7am and blasting noise at Cha Kwo Ling site.	Y	See Investigation / Mitigation Measures for Complaint No. 127 & 131	Closed
134	19 <sup>th</sup> March 2018	Not specified / near Cha Kwo Ling Tsuen and Tin Hau Temple	Public	Air Quality	The complainant complained the dust nuisance from the construction site near Cha Kwo Ling Tsuen	N	See Investigation / Mitigation Measures for Complaint No. 131	Closed
133	16 <sup>th</sup> March 2018	Not specified/ Construction of Lam Tin Interchange	Resident of Yung Lai House, Yau Lai Estate	Noise	The complainant complained the noisy breaking work at Lam Tin Interchange at around 7pm.	Y	See Investigation / Mitigation Measures for Complaint No. 127	Closed
	The complainant complained the noisy breaking work at Lam Tin Interchange after 7pm on 16 March 2018.							
131	7 <sup>th</sup> March 2018	Not specified / near Cha Kwo Ling Tsuen and Tin Hau Temple	Public	Air Quality	The complainant complained the dust nuisance on Cha Kwo Ling Road near Yau Tong and Tin Hau Temple. He	N	According to the information provided by the Contractor and confirmed by the Engineer of the Project, there were no construction activities in Portion 1 adjacent to Cha Kwo Ling Road and Works Area 1 during the time of complaint. Apart from the road traffic on Cha Kwo Ling Road,	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
					request to perform frequent water spraying on Cha Kwo Ling Road.		<p>it is considered that the entering and leaving of construction vehicles from Portion 1 and transfer of construction materials in Works Area 1 would also contribute to the dust and noise nuisance on Cha Kwo Ling Road.</p> <p>The Contractor had implemented environmental mitigation measures in accordance with the “Implementation Schedule of Proposed Mitigation Measures” of EM&amp;A Manual as follows:</p> <p><u>Air Quality:</u></p> <ul style="list-style-type: none"> <li>➤ Vehicle washing bay was set up at the site access of Portion 1 near Cha Kwo Ling Road;</li> <li>➤ The access road leading to and exiting from the wheel washing bay to Cha Kwo Ling Road was hard-paved to prevent vehicle tracking of soil and mud to public roads;</li> <li>➤ Water trucks and workers were dispatched to clear dust on Cha Kwo Ling Road and frequently perform water spraying to reduce dust generation due to vehicle movement;</li> <li>➤ Accumulated dust on Cha Kwo Ling Road was cleared by using the shovel and the boom</li> </ul> <p><u>Noise:</u></p> <ul style="list-style-type: none"> <li>➤ Acoustic baffle between Works Area 1 and Cha Kwo Ling Village with acoustic materials mounted on container office to absorb noise due to handling of construction materials in Works Area 1.</li> <li>➤ Steel bridge with full enclosure was used by construction vehicles to access Cha Kwo Ling Barging Point to reduce noise nuisance generated by entering or leaving of dump trucks from Cha Kwo Ling Barging Point</li> </ul> <p>The environmental conditions of the site and the control of works will be continuously reviewed and monitored by the Engineer and the Environmental Team.</p>	
130	6 <sup>th</sup> March 2018	Not specified/ Not specified	Anonymous	Air Quality	The complainant complained the dust nuisance from the construction site and no	N	According to the Engineer’s Site Diaries, the major construction activities performed in the reporting period included rock breaking and	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
					water spraying system was observed near the construction site. He request to review the water sparing system more frequently		excavation at Lam Tin Interchange.  The Contractor had implemented environmental mitigation measures in accordance with the “Implementation Schedule of Proposed Mitigation Measures” of EM&A Manual as follows:	
128	3 <sup>rd</sup> March 2018	3 <sup>rd</sup> March 2018 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained the noise nuisance due to the breaking work at Lam Tin Interchange in the morning.	Y	<p><u>Air Quality:</u></p> <ul style="list-style-type: none"> <li>➤ Breaking works were provided with water spraying to reduce fugitive emission;</li> <li>➤ Frequent water spraying on slopes and haul roads at Lam Tin Interchange;</li> </ul>	
127	22 <sup>nd</sup> February 2018	Not specified/ Construction of Lam Tin Interchange	Public	Noise	The complainant complained the noise time construction noise from the site.	Y	<p><u>Noise:</u></p> <ul style="list-style-type: none"> <li>➤ Powered mechanical equipment (PME) for rock breaking were equipped with TMD and SilentMat at Slope H in Lam Tin Interchange;</li> <li>➤ Erected noise barriers at Slope H in Lam Tin Interchange;</li> <li>➤ Ensured blasting doors were closed while mucking out in the tunnel was undertaken;</li> <li>➤ Installed steel-type blasting door mounted with sound absorptive lining to absorb noise due to construction works in the tunnel;</li> <li>➤ Vertical screens with blasting mat to minimize the blasting noise due to surface blasting works; and</li> <li>➤ Protective cages with rubber mat has been provided for the surface blasting works to minimize the blasting noise to the nearby NSRs in Lam Tin Interchange;</li> </ul> <p>According to Construction Noise Assessment of this Contract, operated PME during the time of complaints are consistent with the proposed quantities in the latest Construction Noise Assessment.</p> <p>The environmental conditions of the site and the control of works will be continuously reviewed and monitored by the Engineer and the Environmental Team.</p>	

Note: (\*) One environmental complaint received on 16 & 18 April 2018 have been updated in the above table.

**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
August 2017	8	0	0
September 2017	14	0	0
October 2017	8	0	0
November 2017	12	0	0
December 2017	10	1	0
January 2018	11	0	0
February 2018	6	0	0
March 2018	17	0	0
April 2018	15*	0	0
May 2018	22	0	0
<b>Total</b>	<b>181</b>	<b>1</b>	<b>0</b>

Note (\*): The Number of Complaints in April 2018 has been updated.



**Cumulative Log for Notifications of Summons**

<b>Contract No.</b>	<b>Log Ref.</b>	<b>Date/Location</b>	<b>Subject</b>	<b>Status</b>	<b>Total no. Received in this reporting month</b>	<b>Total no. Received since project commencement</b>
NE/2015/01	--	--	--	--	--	--
NE/2015/02	KTS2 4138/ 2017	25 June 2017/ Marine construction site at Junk Bay	Contrary to: Sections 6 (1) (b) and 6 (5), Noise Control Ordinance, Cap.400	First hearing on 29 Mar 2018	0	1
NE/2015/03	--	--	--	--	--	--
NE/2017/01	--	--	--	--	--	--
NE/2017/02	--	--	--	--	--	--

**Cumulative Log for Successful Prosecutions**

<b>Contract No.</b>	<b>Log Ref.</b>	<b>Date/Location</b>	<b>Subject</b>	<b>Status</b>	<b>Total no. Received in this reporting month</b>	<b>Total no. Received since project commencement</b>
NE/2015/01	--	--	--	--	--	--
NE/2015/02	--	--	--	--	--	--
NE/2015/03	--	--	--	--	--	--
NE/2017/01	--	--	--	--	--	--
NE/2017/02	--	--	--	--	--	--

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**APPENDIX P  
WASTE GENERATION IN THE  
REPORTING MONTH**

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**Monthly Summary Waste Flow Table for 2018**

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 <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
January	118.887	44.216	25.727	60.437	32.723	0.000	0.000	0.308	0.000	1.200	0.094
February	76.419	34.880	8.626	54.212	13.581	0.000	0.000	0.000	0.000	0.800	0.046
March	140.974	31.352	57.578	49.166	34.230	0.000	0.000	0.020	0.000	0.000	0.052
April	123.925	30.310	57.340	42.266	24.319	0.000	0.000	0.368	0.000	1.200	0.058
May	113.094	32.375	0.000	70.782	42.312	0.000	0.000	0.000	0.000	0.000	0.034
June											
Sub-total	573.299	173.133	149.271	276.863	147.165	0.000	0.000	0.696	0.000	3.200	0.284
July											
August											
September											
October											
November											
December											
Total	573.299	173.133	149.271	276.863	147.165	0.000	0.000	0.696	0.000	3.200	0.284

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

Name of Department: Civil Engineering Development Department

Contract No.: NE/2015/01



- Notes: (1) The performance target 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 material
- (4) The Contractor shall also submit the latest forecast of the amount of C&D materials expected to be generated from the Works, together with a break down of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m<sup>3</sup>. (PS Clause 1.105(4) refers)
- (5) All recyclable materials, including metals, paper / cardboard packaging, plastics, etc. will be collected by registered collector for recycling.
- (6) Conversion factors for reporting purpose:  
in-situ: rock = 2.5 tonnes/m<sup>3</sup>; soil = 2.0 tonnes/m<sup>3</sup>
- (7) excavated: rock = 2.0 tonnes/m<sup>3</sup>; soil = 1.8 tonnes/m<sup>3</sup>; broken concrete and bitumen = 2.4 tonnes/m<sup>3</sup>, soil and rock = 1.9 tonnes/m<sup>3</sup>
- (8) C&D Waste = 0.9 tonnes/m<sup>3</sup>; bentonite slurry = 2.8 tonnes/m<sup>3</sup>  
Diesel density: 0.8kg/l  
Numbers are rounded off to the nearest three decimal places  
The "Total Quantity Generated" equals to the sum of "Reuse in the Contract", "Reuse in Other Projects" and "Disposed as Public Fill"

**Monthly Summary Waste Flow Table for 2018 Year**

NE/2015/02

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Borken Concrete	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics (See note 3)	Chemical Waste	Other, e.g. general refuse
	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m <sup>3</sup> ]
Jan	0.30510	0.00000	0.11060	0.00000	0.00850	0.18600	0.00000	0.00000	0.00000	0.00000	0.07544
Feb	1.12247	0.00000	0.01080	0.00000	1.08367	0.02800	32.04000	0.00000	0.00000	0.00000	0.05240
Mar	6.50826	0.00000	0.04500	0.00000	6.46326	0.00000	23.74000	0.00000	0.00000	0.00000	0.04520
Apr	3.82690	0.00000	0.00000	0.00000	3.82690	0.00000	26.37000	0.00000	0.00000	0.00000	0.03010
May	11.03519	0.00000	8.30510	0.00000	2.64644	0.08365	24.18000	0.00000	0.00000	0.00000	0.06998
June											
<b>SUB-TOTAL</b>	22.79792	0.00000	8.47150	0.00000	14.02877	0.29765	106.33000	0.00000	0.00000	0.00000	0.27312
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
<b>TOTAL</b>	22.79792	0.00000	8.47150	0.00000	14.02877	0.29765	106.33000	0.00000	0.00000	0.00000	0.27312

Note: Conversion to 1000m<sup>3</sup> for general refuse is weight in 1000kg multiply by 0.002

Conversion to 1000m<sup>3</sup> 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

Monthly Summary Waste Flow Table for 2018

Name of Department: Civil Engineering and Development Department

Contract No.: NE/2017/01

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Jan	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May	0.0222	0.0060	0.0000	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024
Jun											
Sub-total	0.0222	0.0060	0.0000	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	0.0222	0.0060	0.0000	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024

- Notes:
1. Assume the density of soil fill is 2 ton/m<sup>3</sup>.
  2. Assume the density of rock and broken concrete is 2.5 ton/m<sup>3</sup>.
  3. Assume the density of mixed rock and soil is 1.9 ton/m<sup>3</sup>.
  4. Assume the density of slurry and bentonite is 2.8 ton/m<sup>3</sup>.
  5. The slurry and bentonite are disposed at Tseung Kwan O Area 137 Fill Bank.
  6. Assume the density of C&D waste is 0.9 ton/m<sup>3</sup>.
  7. The non-inert C&D wastes are disposed at NENT.

Name of Department :  CEDD

Contract No. :  NE/2015/03

**Monthly Summary Waste Flow Table for 2018** (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 <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m <sup>3</sup> )
Accumulated From 2017	0.84697	0	0.175365	0.290915	0.350135	0.03056	0	0	0	0	0.03079
Jan	0.2397525	0	0	0.0642025	0.17555	0	0	0	0	0	0.00614
Feb	0.0722875	0	0	0.0722875	0	0	0	0	0	0	0
Mar	0.05853	0	0	0	0.05853	0	0	0	0	0	0
Apr	0.007575	0	0	0	0.007575	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0.001258
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	1.225109	0	0.175365	0.427405	0.59179	0.03056	0	0	0	0	0.038188

- 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 ms.



### Monthly Summary of Waste Flow Table for 2018

Name of Person completing the Record: Ricky Hon

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
		<i>(see Note 1)</i>						<i>(see Note 2)</i>		
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000m <sup>3</sup> )
Jan	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0.143
Mar	0	0	0	0	0	0	0	0	0	0
Apr	0	0.039	0	0	0	0	0	0	0	0.0585
May	0	0	0	0	0	0	0	0	0	0.0325
Jun										
<b>Sub-total</b>	<b>0</b>	<b>0.039</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.234</b>
Jul										
Aug										
Sept										
Oct										
Nov										
Dec										
<b>Total</b>	<b>0</b>	<b>0.039</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.234</b>

Notes:

- (1) Broken concrete for recycling into aggregates.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) Use the conversion factor: 1 full load of dumping truck being equivalent to 6.5m<sup>3</sup> by volume.



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**APPENDIX Q  
TENTATIVE CONSTRUCTION  
PROGRAMME**

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## High Level 3 Months Look Ahead Programme

Activities	Jun-18	Jul-18	Aug-18
<b>Lam Tin Interchange</b>			
EHC2 U-Trough			
Site Formation - Area 1G1 & 1G2 &5			
Site Formation - Area 2			
Site Formation - Area 3			
Site Formation - Area 4			
<b>Main Tunnel</b>			
MT Excavation			
<b>TKO Interchange</b>			
Haul Road Construction, Site Formation & Slope Works			
Steel Platform for Bridge Construction			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	TRA	Variance - BL1	2018					
											May	Jun	Jul	Aug	Sep	
<b>NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (May-18)</b>																
<b>Early Warning (EW)</b>																
B31090	EW no.073 Unloading Material to a Hopper Barge Incident on 27 April 2018	P2-Cal.A	0	0	23-May-18 A	23-May-18 A		100%		0						
<b>Preliminaries, Submission, Contractor's Design Submission and Approval</b>																
<b>Preliminaries</b>																
<b>Design Submission of Physical Model</b>																
LC10242	Design the Physical Model	P2-Cal.A	14	9	10-May-18 A	28-May-18	617	35.71%		-5						
LC10244	Review and Discuss the Physical Model	P2-Cal.A	21	21	29-May-18	18-Jun-18	617	0%		0						
LC10246	Resubmission of Physical Model	P2-Cal.A	14	14	19-Jun-18	02-Jul-18	617	0%		0						
LC10248	Approve the Physical Model	P2-Cal.A	21	21	03-Jul-18	23-Jul-18	617	0%		0						
LC10250	Fabrication of Physical Model	P2-Cal.A	90	90	24-Jul-18	21-Oct-18	617	0%		0						
<b>General Submission and Acceptance</b>																
S10050	Submission of the Temporary Drainage Management Plan incorporating the mitigation plan for diversion of DN1500	P2-Cal.A	60	10	20-Nov-17 A	29-May-18	-181	83.33%		-131						
S10240	Prepare/Submit the Weather Protection Scheme	P2-Cal.A	30	20	21-Aug-17 A	08-Jun-18	752	33.33%		-262						
<b>Contractor's Design Submission and Acceptance</b>																
<b>Foundation Design</b>																
<b>AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 1 CT01 CH366.059-201.44</b>																
S11260-2	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	4	26-Apr-18 A	23-May-18	-54	80.95%		-7						
<b>AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 2 (S200 CH821 - P2 CH188)</b>																
S11270	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	4	26-Apr-18 A	23-May-18	-54	80.95%		-7						
<b>AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 3 (P2 CH188 - CH278)</b>																
S11279	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	4	26-Apr-18 A	23-May-18	-54	80.95%		-7						
<b>DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 1 CT01 CH366.059-201.44</b>																
S11360	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	24-May-18	13-Jun-18	-54	0%		0						
S11380	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	14-Jun-18	04-Jul-18	-54	0%		0						
S11400	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	14	14	05-Jul-18	18-Jul-18	-54	0%		0						
S11410	Review and comment by GEO	P2-Cal.A	14	14	19-Jul-18	01-Aug-18	-54	0%		0						
S11420	Review and Accept DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	02-Aug-18	22-Aug-18	-54	0%		0						
<b>DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 2 (S200 CH821 - P2 CH188)</b>																
S11422	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	24-May-18	13-Jun-18	-54	0%		0						
S11424	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	14-Jun-18	04-Jul-18	-54	0%		0						
S11426	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	14	14	05-Jul-18	18-Jul-18	-54	0%		0						
S11428	Review and comment by GEO	P2-Cal.A	14	14	19-Jul-18	01-Aug-18	-54	0%		0						
S11430	Review and Accept DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	02-Aug-18	22-Aug-18	-54	0%		0						
<b>DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 3 (P2 CH188 - CH278)</b>																
S11432	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	24-May-18	13-Jun-18	-54	0%		0						
S11434	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	14-Jun-18	04-Jul-18	-54	0%		0						
S11436	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	14	14	05-Jul-18	18-Jul-18	-54	0%		0						
S11438	Review and comment by GEO	P2-Cal.A	14	14	19-Jul-18	01-Aug-18	-54	0%		0						
S11439	Review and Accept DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	02-Aug-18	22-Aug-18	-54	0%		0						
<b>E&amp;M Design</b>																
<b>Statutory Approval for E&amp;M Works</b>																
S11570-11	FSD Approval for Underpass GBP	P2-Cal.A	0	0	22-Jul-18	22-Jul-18	85	0%		0						

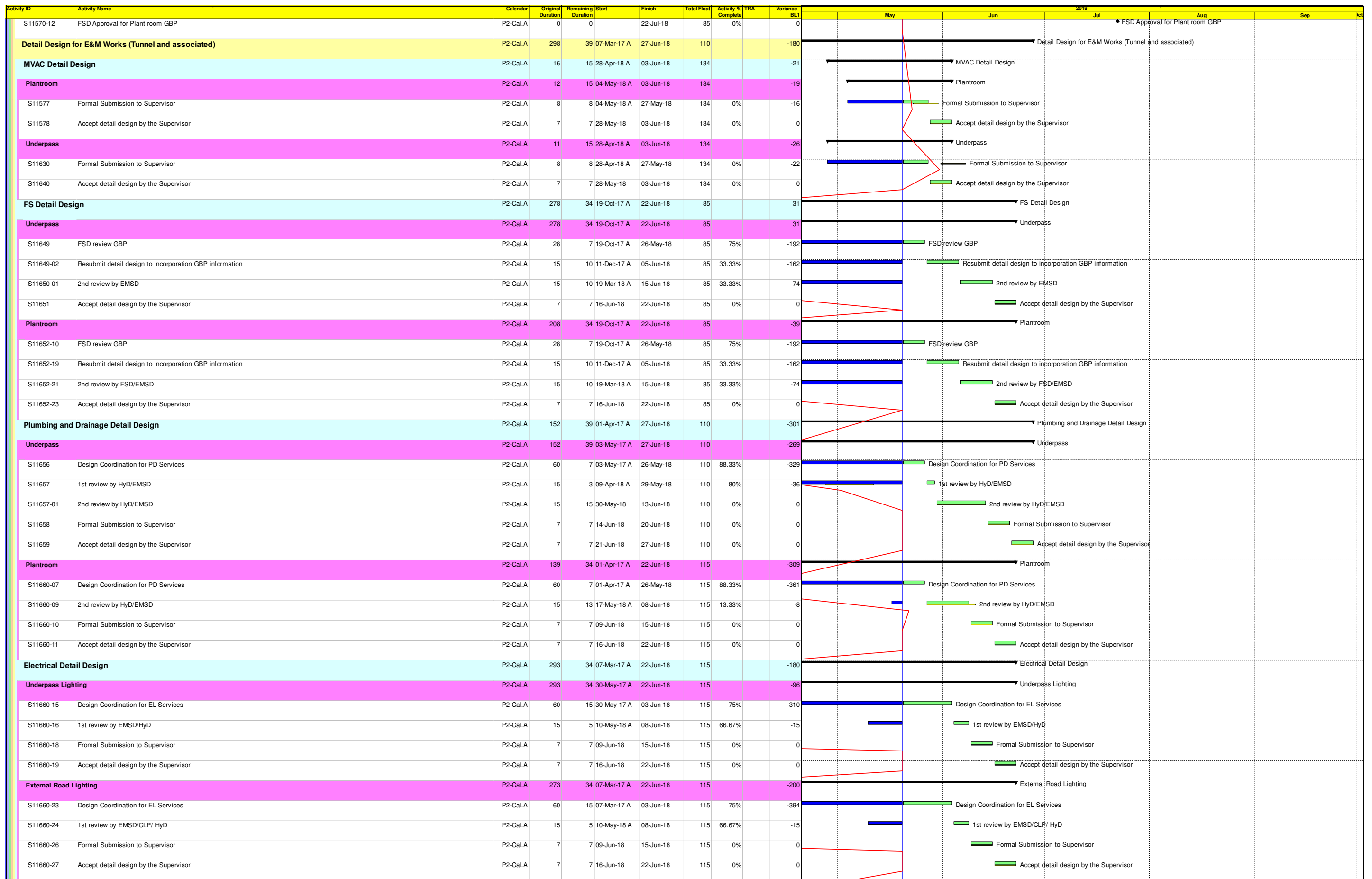
█ Primary Baseline    █ Critical Remaining Work  
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											May	Jun	Jul	Aug	Sep	
<b>Plantroom</b>																
S11665	Design Coordination for EL Services	P2-Cal.A	60	15	07-Mar-17 A	03-Jun-18	115	75%		-394						
S11666	1st review by EMSD/HyD	P2-Cal.A	15	5	10-May-18 A	08-Jun-18	115	66.67%		-15						
S11667	Formal Submission to Supervisor	P2-Cal.A	7	7	09-Jun-18	15-Jun-18	115	0%		0						
S11668	Accept detail design by the Supervisor	P2-Cal.A	7	7	16-Jun-18	22-Jun-18	115	0%		0						
<b>ELV And SCADA Detail Design</b>																
<b>Underpass</b>																
S11669-10	Design Coordination for ELV & SCADA	P2-Cal.A	60	10	12-Aug-17 A	29-May-18	120	83.33%		-231						
S11669-19	2nd review by HyD	P2-Cal.A	15	5	04-May-18 A	03-Jun-18	120	66.67%		-16						
S11669-29	Formal Submission to Supervisor	P2-Cal.A	7	7	04-Jun-18	10-Jun-18	120	0%		0						
S11669-30	Accept detail design by the Supervisor	P2-Cal.A	7	7	11-Jun-18	17-Jun-18	120	0%		0						
<b>Plantroom</b>																
S11670-10	Design Coordination for ELV & SCADA	P2-Cal.A	60	10	12-Aug-17 A	29-May-18	120	83.33%		-231						
S11670-19	2nd review by HyD	P2-Cal.A	15	5	04-May-18 A	03-Jun-18	120	66.67%		-16						
S11670-29	Formal Submission to Supervisor	P2-Cal.A	7	7	04-Jun-18	10-Jun-18	120	0%		0						
S11670-30	Accept detail design by the Supervisor	P2-Cal.A	7	7	11-Jun-18	17-Jun-18	120	0%		0						
<b>Design of Architectural Finishes for Internal Walls of U-Trough Structures</b>																
S11675	Prepare and Submit Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and PC Panel)	P2-Cal.A	21	21	06-Jun-18	26-Jun-18	170	0%		0						
S11680	Review and Discuss Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and PC Panel)	P2-Cal.A	21	21	27-Jun-18	17-Jul-18	170	0%		0						
S11700	Resubmit Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and PC Panel)	P2-Cal.A	14	14	18-Jul-18	31-Jul-18	170	0%		0						
S11720	Review and Accept Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and PC Panel)	P2-Cal.A	21	21	01-Aug-18	21-Aug-18	170	0%		0						
<b>Irrigation System</b>																
S11787-01	2nd review by LCSD/EMSD	P2-Cal.A	21	21	20-May-18	09-Jun-18	121	0%		0						
S11788	Prepare & Submission of Form 542	P2-Cal.A	14	14	10-Jun-18	23-Jun-18	121	0%		0						
S11789	Reviewed by WSD	P2-Cal.A	28	28	24-Jun-18	21-Jul-18	121	0%		0						
S11790	Formal Submission to Supervisor	P2-Cal.A	14	14	22-Jul-18	04-Aug-18	121	0%		0						
S11800	Review and Accept Submission for Waterpoints and associated elements	P2-Cal.A	21	21	05-Aug-18	25-Aug-18	121	0%		0						
<b>Contractor Cost Saving Design</b>																
<b>AIP Submission for CSD2 of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)</b>																
S11930	Review and Discuss AIP Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	9	08-May-18 A	28-May-18	36	57.14%		0						
S11940	Resubmit AIP for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	28	28	29-May-18	25-Jun-18	36	0%		0						
S11950	Review and Accept AIP Submission for CSD of Reclaimed Section by CEDD (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	26-Jun-18	16-Jul-18	43	0%		0						
S11960	Review and Accept AIP Submission for CSD of Reclaimed Section by HYD (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	28	28	26-Jun-18	23-Jul-18	36	0%		0						
<b>DDA Submission for CSD2 of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)</b>																
S11962	Prepare and Submit DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	24-Jul-18	13-Aug-18	36	0%		0						
S11964	Review and Discuss DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	14-Aug-18	03-Sep-18	36	0%		0						
<b>AIP Submission for CSD3 of Reclaimed Section (S200 CH821 - P2 CH305)</b>																
S11971	Review and Discuss AIP Submission for CSD of Reclaimed Section (S200 CH821 - P2 CH305)	P2-Cal.A	21	9	08-May-18 A	28-May-18	187	57.14%		0						
S11972	Resubmit AIP Submission for CSD of Reclaimed Section (S200 CH821 - P2 CH305)	P2-Cal.A	28	28	29-May-18	25-Jun-18	187	0%		0						
S11973	Review and Accept AIP Submission for CSD of Reclaimed Section by CEDD (S200 CH821 - P2 CH305)	P2-Cal.A	21	21	26-Jun-18	16-Jul-18	194	0%		0						
S11974	Review and Accept AIP Submission for CSD of Reclaimed Section by HyD (S200 CH821 - P2 CH305)	P2-Cal.A	28	28	26-Jun-18	23-Jul-18	187	0%		0						
<b>DDA Submission for CSD3 of Reclaimed Section (S200 CH821 - P2 CH305)</b>																
S11975	Prepare and Submit DDA Submission for CSD of Reclaimed Section (S200 CH821 - P2 CH305)	P2-Cal.A	21	21	24-Jul-18	13-Aug-18	187	0%		0						

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S14937	Accept Method Statement for Construction of Vertical Seawall	P2-Cal.A	21	21	30-May-18	19-Jun-18	-194	0%		0					
<b>Construction of Vertical Band Drain</b>		P2-Cal.A	43	43	20-May-18	01-Jul-18	-205			0					
S14939	Prepare and Submit Method Statement for Construction of Vertical Band Drain	P2-Cal.A	5	5	20-May-18	24-May-18	-205	0%		0					
S14941	Review and Discuss Method Statement for Construction of Vertical Band Drain	P2-Cal.A	21	21	25-May-18	14-Jun-18	-205	0%		0					
S14945	Resubmit Method Statement for Construction of Vertical Band Drain	P2-Cal.A	3	3	15-Jun-18	17-Jun-18	-205	0%		0					
S14947	Accept Method Statement for Construction of Vertical Band Drain	P2-Cal.A	14	14	18-Jun-18	01-Jul-18	-205	0%		0					
<b>Procurement of Major Material</b>		P2-Cal.A	1015	595	20-Jan-17 A	04-Jan-20	64			-65					
<b>Civil/Structural</b>		P2-Cal.A	1015	595	20-Jan-17 A	04-Jan-20	64			-65					
S14981	Procurement and Delivery of Steel H-Pile	P2-Cal.A	800	360	31-Jan-17 A	14-May-19	-149	55%		-34					
S14983	Procurement and Delivery of ELS Walling & Struts Members	P2-Cal.A	1015	595	20-Jan-17 A	04-Jan-20	-13	41.38%		-65					
S14985	Offsite Fabrication of Pre-cast Seawall blocks	P2-Cal.A	40	32	27-Mar-18 A	20-Jun-18	-233	20%		-46					
S14987	Cast-in for sign gantry and Road Works	P2-Cal.A	120	120	10-Jul-18	06-Nov-18	488	0%		0					
S14995	Offsite Fabrication of Marine Survey Tower	P2-Cal.A	120	120	02-Aug-18	29-Nov-18	-6	0%		0					
<b>Subletting Package</b>		P2-Cal.A	491	98	27-Apr-17 A	25-Aug-18	312			5					
<b>V Panel and Precast Concrete Panel</b>		P2-Cal.A	0	0	05-Jun-18	05-Jun-18	170			0					
S15160	V Panel and Precast Concrete Panel Award	P2-Cal.A	0	0	05-Jun-18	05-Jun-18	170	0%		0					
<b>Installation of Socketed H-Pile (Reclaimed Section)</b>		P2-Cal.A	7	3	16-Apr-18 A	25-Aug-18	-54			-125					
S16381	Prepare Installation of Pre-bored Socketed H-Pile (Reclaimed Section) Tender for PM Acceptance	P2-Cal.A	7	3	16-Apr-18 A	25-Aug-18	-54	57.14%		-125					
<b>ELS Works (Reclaimed Section)</b>		P2-Cal.A	68	38	07-Apr-18 A	26-Jun-18	288			-13					
S16385	Prepare Excavation and ELS Works (Reclaimed Section) Tender Document for PM Acceptance	P2-Cal.A	7	3	07-Apr-18 A	22-May-18	288	57.14%		-39					
S16386	Invitation, Submission and Opening of Tender for Excavation and ELS Works (Reclaimed Section)	P2-Cal.A	14	14	23-May-18	05-Jun-18	288	0%		0					
S16387	Tender Interview and Recommendation to PM for Excavation and ELS Works (Reclaimed Section)	P2-Cal.A	21	21	06-Jun-18	26-Jun-18	288	0%		0					
S16388	Excavation and ELS Works (Reclaimed Section) Award	P2-Cal.A	0	0	26-Jun-18	26-Jun-18	288	0%		0					
<b>Structural Works for Retaining Wall (Reclaimed Section)</b>		P2-Cal.A	51	28	14-Mar-18 A	16-Jun-18	380			-44					
S16390	Invitation, Submission and Opening of Tender for Structural Works for Retaining Wall	P2-Cal.A	14	7	14-Mar-18 A	26-May-18	380	50%		-60					
S16391	Tender Interview and Recommendation to PM for Structural Works for Retaining Wall	P2-Cal.A	21	21	27-May-18	16-Jun-18	380	0%		0					
S16392	Structural Works for Retaining Wall Award	P2-Cal.A	0	0	16-Jun-18	16-Jun-18	380	0%		0					
<b>Structural Works for U-Trough, Underpass and Abutment</b>		P2-Cal.A	60	60	14-Mar-18 A	18-Jul-18	350			-67					
S16420	Invitation, Submission and Opening of Tender for Structural Works for U-Trough, Underpass and Abutment	P2-Cal.A	60	30	14-Mar-18 A	18-Jun-18	350	50%		-37					
S16440	Tender Interview and Recommendation to PM for Structural Works for U-Trough, Underpass and Abutment	P2-Cal.A	30	30	19-Jun-18	18-Jul-18	350	0%		0					
S16460	Structural Works for U-Trough, Underpass and Abutment Award	P2-Cal.A	0	0	18-Jul-18	18-Jul-18	350	0%		0					
<b>Drainage and Sewerage Works (Existing Land) (At Grade Section)</b>		P2-Cal.A	451	63	27-Apr-17 A	21-Jul-18	187			0					
S17104	Submission and Opening of Tender for Drainage and Sewerage Works	P2-Cal.A	42	42	27-Apr-17 A	30-Jun-18	187	0%		-388					
S17106	Tender Interview and Recommendation to PM for Drainage and Sewerage Works	P2-Cal.A	21	21	01-Jul-18	21-Jul-18	187	0%		0					
S17108	Drainage and Sewerage Works Award	P2-Cal.A	0	0	21-Jul-18	21-Jul-18	187	0%		0					
<b>Water Works (To be Incorporated in Irrigation Package)</b>		P2-Cal.A	329	56	07-Aug-17 A	14-Jul-18	249			-13					
S17120	Prepare Water Works Tender Document for PM Acceptance	P2-Cal.A	30	5	07-Aug-17 A	24-May-18	249	83.33%		-261					
S17140	Submission and Opening of Tender for Water Works	P2-Cal.A	30	30	25-May-18	23-Jun-18	249	0%		0					
S17160	Tender Interview and Recommendation to PM for Water Works	P2-Cal.A	21	21	24-Jun-18	14-Jul-18	249	0%		0					
S17180	Water Works Award	P2-Cal.A	0	0	14-Jul-18	14-Jul-18	249	0%		0					
<b>Irrigation Works</b>		P2-Cal.A	298	56	07-Aug-17 A	14-Jul-18	249			-44					
S17280	Prepare Irrigation Works Tender Document for PM Acceptance	P2-Cal.A	30	5	07-Aug-17 A	24-May-18	249	83.33%		-261					
S17300	Submission and Opening of Tender for Irrigation Works	P2-Cal.A	30	30	25-May-18	23-Jun-18	249	0%		0					

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S17320	Tender Interview and Recommendation to PM for Irrigation Works	P2-Cal.A	21	21	24-Jun-18	14-Jul-18	249	0%		0							
S17340	Irrigation Works Award	P2-Cal.A	0	0		14-Jul-18	249	0%		0							
<b>E &amp; M Work (Electrical)</b>			P2-Cal.A	87	39	15-Feb-18 A	27-Jun-18	110		-46							
S17410	Addendum for E & M Works (Electrical)	P2-Cal.A	21	9	15-Feb-18 A	28-May-18	110	57.14%		-82							
S17420	E & M Works (Electrical) Award	P2-Cal.A	0	0		27-Jun-18	110	0%		0							
<b>E &amp; M Works (MVAC)</b>			P2-Cal.A	128	39	15-Feb-18 A	27-Jun-18	110		-5							
S17424-01	Addendum for E & M Works (MVAC)	P2-Cal.A	21	9	15-Feb-18 A	28-May-18	110	57.14%		-82							
S17425	E & M Works Award (MVAC)	P2-Cal.A	0	0		27-Jun-18	110	0%		0							
<b>E &amp; M Works (FS)</b>			P2-Cal.A	98	39	15-Feb-18 A	27-Jun-18	110		-35							
S17428-01	Addendum for E & M Works (FS)	P2-Cal.A	21	9	15-Feb-18 A	28-May-18	110	57.14%		-82							
S17429	E & M Works (FS) Award	P2-Cal.A	0	0		27-Jun-18	110	0%		0							
<b>E &amp; M Works (Plumbing &amp; Drainage)</b>			P2-Cal.A	128	39	15-Feb-18 A	27-Jun-18	110		-5							
S17432-01	Addendum for E & M Works (Plumbing & Drainage)	P2-Cal.A	21	9	15-Feb-18 A	28-May-18	110	57.14%		-82							
S17433	E & M Works (Plumbing & Drainage) Award	P2-Cal.A	0	0		27-Jun-18	110	0%		0							
<b>Section 3 of the Works All Works within Portion IV, V, VI, VII, VIII, and IX</b>				494	178	25-Apr-17 A	13-Nov-18	188		-74							
<b>Existing Land Section</b>				494	139	25-Apr-17 A	05-Oct-18	227		-35							
<b>Retaining Wall P2-A CH 500- 650</b>				494	110	25-Apr-17 A	06-Sep-18	215		-6							
LC11929	CLP cable Diversion and relocation WSD flowmeter chamber(by others)(NCE-029&30)ref CLP meeting completed on end of Aug	P2-Cal.A	494	104	25-Apr-17 A	31-Aug-18	11	78.95%		0							
LC11932	Removal of existing planter (NCE-019, EW-014, PMI-61 & CE-95)	P2-Cal.C	12	5	16-Apr-18 A	06-Sep-18	79	58.33%		-108							
<b>Bay 1-2</b>			P2-Cal.C	48	48	25-Jun-18	21-Aug-18	189		0							
LC11940	Sheet Pile Installation of Bay 1 - 2	P2-Cal.C	10	10	25-Jun-18	07-Jul-18	189	0%		0							
LC11940-1	Excavation of Bay 1 - 2	P2-Cal.C	5	5	07-Jul-18	13-Jul-18	189	0%		0							
LC11941	Laying Blinding	P2-Cal.C	3	3	13-Jul-18	17-Jul-18	189	0%		0							
LC11942	Construction of Base Slab - Bay 1	P2-Cal.C	10	10	17-Jul-18	28-Jul-18	189	0%		0							
LC11943	Construction of Base Slab - Bay 2	P2-Cal.C	10	10	28-Jul-18	09-Aug-18	189	0%		0							
LC11944	Construction of Wall Stem - Bay 1	P2-Cal.C	10	10	09-Aug-18	21-Aug-18	189	0%		0							
<b>Bay 5-15</b>			P2-Cal.C	91	70	02-May-18 A	13-Aug-18	120		5							
LC11961	ELS and Open Cut Excavation of Bay 5 - 8	P2-Cal.C	35	25	02-May-18 A	20-Jun-18	100	28.57%		-6							
LC11962	Laying Blinding (Bay 5 - 8)	P2-Cal.C	7	7	21-Jun-18	28-Jun-18	108	0%		0							
LC11963	Construction of Base Slab - Bay 5	P2-Cal.C	10	10	29-Jun-18	11-Jul-18	108	0%		0							
LC11964	Construction of Base Slab - Bay 6	P2-Cal.C	10	10	12-Jul-18	23-Jul-18	128	0%		0							
LC11965	Construction of Base Slab - Bay 7	P2-Cal.C	10	10	29-Jun-18	11-Jul-18	108	0%		0							
LC11965-01	Excavation of Desilting Opening (CE078)	P2-Cal.C	10	10	21-Jun-18	03-Jul-18	100	0%		0							
LC11965-02	Construction of Desilting Opening (CE078)	P2-Cal.C	15	15	04-Jul-18	20-Jul-18	100	0%		0							
LC11966	Construction of Base Slab - Bay 8	P2-Cal.C	10	10	21-Jul-18	01-Aug-18	100	0%		0							
LC11967	Construction of Wall Stem - Bay 5	P2-Cal.C	10	10	12-Jul-18	23-Jul-18	128	0%		0							
LC11968	Construction of Wall Stem - Bay 6	P2-Cal.C	10	10	24-Jul-18	03-Aug-18	128	0%		0							
LC11969	Construction of Wall Stem - Bay 7	P2-Cal.C	10	10	12-Jul-18	23-Jul-18	138	0%		0							
LC11970	Construction of Wall Stem - Bay 8	P2-Cal.C	10	10	02-Aug-18	13-Aug-18	100	0%		0							
<b>P2 Road</b>			P2-Cal.C	172	114	19-Mar-18 A	05-Oct-18	181		9							
<b>P2 CH 318 - 363</b>			P2-Cal.C	102	78	03-Apr-18 A	22-Aug-18	-117		-15							
<b>Foundation P2 CH318-363</b>			P2-Cal.C	40	18	03-Apr-18 A	11-Jun-18	-117		-17							
LC12949-05	Lower Down Ground Level to +3.5mpd & UU Diversion	P2-Cal.C	40	18	03-Apr-18 A	11-Jun-18	-117	55%		-17							

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<b>ELS P2 CH318-363 &amp; SR2 CH100-110</b>											ELS P2 CH318-363 & SR2 CH100-110				
LC12951	Overcome obstruction by Pre-bore method at CH318-363 (NCE072, NCE075 and CE067)	P2-Cal.C	60	51	16-Apr-18 A	11-Aug-18	-117	15%		-38	Overcome obstruction by Pre-bore method at CH318-363				
LC12952	Installation of sheetpile wall at CH318-363	P2-Cal.C	60	60	12-Jun-18	22-Aug-18	-117	0%		0	Installation of sheetpile wall at CH318-363				
LC12953	Installation of Dewatering System and King Posts	P2-Cal.C	20	20	31-Jul-18	22-Aug-18	-117	0%		0	Installation of Dewatering System and King Po				
<b>P2 CH 411- 500</b>											P2 CH 411- 500				
<b>Structure P2 CH 411 - 500 (U Trough A)</b>											Structure P2 CH 411 - 500 (U Trough A)				
<b>Wall Stem</b>											Wall Stem				
LC15120	Waterproofing of wall stem, backfill & removal of strut/walling at Bay 4 & 5	P2-Cal.C	30	15	19-Mar-18 A	07-Jun-18	137	50%		-34	Waterproofing of wall stem, backfill & removal of strut/walling at Bay 4 & 5				
LC15130	Waterproofing of wall stem, backfill & removal of strut/walling at Bay 2 & 3	P2-Cal.C	30	29	13-Apr-18 A	25-Jun-18	137	5%		-30	Waterproofing of wall stem, backfill & removal of strut/walling at Bay 2 & 3				
LC15140	Waterproofing of wall stem, backfill & removal of strut/walling at Bay 1	P2-Cal.C	30	27	14-Apr-18 A	22-Jun-18	177	10%		-27	Waterproofing of wall stem, backfill & removal of strut/walling at Bay 1				
LC15150	Construction of wall stem at Bay 6 & 7 - 2nd pour	P2-Cal.C	13	13	25-Jun-18	11-Jul-18	137	0%		0	Construction of wall stem at Bay 6 & 7 - 2nd pour				
LC15160	Construction of wall stem at Bay 4 & 5 - 2nd pour	P2-Cal.C	13	13	11-Jul-18	26-Jul-18	137	0%		0	Construction of wall stem at Bay 4 & 5 - 2nd pour				
LC15170	Construction of wall stem at Bay 2 & 3 - 2nd pour	P2-Cal.C	13	13	26-Jul-18	10-Aug-18	137	0%		0	Construction of wall stem at Bay 2 & 3 - 2nd pour				
LC15185	Waterproofing of wall stem, backfill & removal of strut/walling at Bay 4 to 7	P2-Cal.C	30	30	26-Jul-18	30-Aug-18	150	0%		0	Waterproofing of wall stem, backfill &				
LC15190	Waterproofing of wall stem, backfill & removal of strut/walling at Bay 1 to 3	P2-Cal.C	30	30	10-Aug-18	14-Sep-18	137	0%		0	Waterproofing of wa				
LC15250	Construction of Drainage and Manhole	P2-Cal.C	60	32	06-Apr-18 A	17-Sep-18	181	46.67%		-77	Construction of Drainage and Manhole				
LC15260	Backfilling of Engineered Fill Material (3430m3) inside U-trough	P2-Cal.C	15	14	15-May-18 A	05-Oct-18	181	5%		-104	Backfilling of Engineered Fill Material (3430m3) inside U-trough				
<b>SR2</b>											SR2				
<b>SR2 CH170 - 250</b>											SR2 CH170 - 250				
<b>Structure SR2 CH 170 - 250 (U Trough A)</b>											Structure SR2 CH 170 - 250 (U Trough A)				
LC17320	Construction of wall stem 1st pour (+3.0mpd) at CH236 - 250	P2-Cal.C	12	8	07-May-18 A	30-May-18	69	33.33%		-8	Construction of wall stem 1st pour (+3.0mpd) at CH236 - 250				
LC17340	Waterproofing of wall stem, backfill & removal of strut/walling at CH170 - 182.5	P2-Cal.C	10	10	31-May-18	11-Jun-18	69	0%		0	Waterproofing of wall stem, backfill & removal of strut/walling at CH170 - 182.5				
LC17345	Waterproofing of wall stem, backfill & removal of strut/walling at CH182.5 - 195	P2-Cal.C	10	10	12-Jun-18	23-Jun-18	69	0%		0	Waterproofing of wall stem, backfill & removal of strut/walling at CH182.5 - 195				
LC17350	Waterproofing of wall stem, backfill & removal of strut/walling at CH195 - 208	P2-Cal.C	10	10	25-Jun-18	06-Jul-18	69	0%		0	Waterproofing of wall stem, backfill & removal of strut/walling at CH195 - 208				
LC17355	Waterproofing of wall stem, backfill & removal of strut/walling at CH208 - 222	P2-Cal.C	10	10	07-Jul-18	18-Jul-18	69	0%		0	Waterproofing of wall stem, backfill & removal of strut/walling at CH208 - 222				
LC17360	Waterproofing of wall stem, backfill & removal of strut/walling at CH222 - 236	P2-Cal.C	10	10	19-Jul-18	30-Jul-18	69	0%		0	Waterproofing of wall stem, backfill & removal of strut/walling at CH222 - 236				
LC17365	Waterproofing of wall stem, backfill & removal of strut/walling at CH236 - 250	P2-Cal.C	10	10	31-Jul-18	10-Aug-18	69	0%		0	Waterproofing of wall stem, backfill & removal of strut/walling				
LC17370	Construction of wall stem 2nd pour (top level) at CH182.5 - 194	P2-Cal.C	9	9	11-Aug-18	21-Aug-18	69	0%		0	Construction of wall stem 2nd pour (top level) at				
LC17380	Construction of wall stem 2nd pour (top level) at CH236 - 250	P2-Cal.C	9	9	11-Aug-18	21-Aug-18	69	0%		0	Construction of wall stem 2nd pour (top level) at				
<b>Portion IV &amp; VII</b>											Portion IV & VII				
<b>Construction of DN2100 stormwater at Portion IV &amp; VII</b>											Construction of DN2100 stormwater				
<b>Preboring</b>											Preboring				
<b>Rig 1</b>											Rig 1				
LC17666	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.970-918)(52 nos.@ 2nos./d)(CE 041)	P2-Cal.C	26	26	01-Jun-18	03-Jul-18	-135	0%		0	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.970-918)(52 nos.@ 2nos./d)(CE 041)				
LC17666-01	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.971-991)(20 nos.@ 2nos./d)(CE 041)	P2-Cal.C	10	10	27-Jun-18	09-Jul-18	-140	0%		0	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.971-991)(20 nos.@ 2nos./d)(CE 041)				
LC17666-02	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.854-918)(64 nos.@ 2nos./d)(CE 041)	P2-Cal.C	32	32	21-May-18	28-Jun-18	-132	0%		0	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.854-918)(64 nos.@ 2nos./d)(CE 041)				
<b>Rig 2</b>											Rig 2				
LC17676	Stage 8 -- Preboring for Dia. 2100 Drain Pipe (no.992-1128)(124nos.@ 2.4nos./d)(CE 041)	P2-Cal.C	52	30	13-Apr-18 A	26-Jun-18	-140	42.31%		-9	Stage 8 -- Preboring for Dia. 2100 Drain Pipe (no.992-1128)(124nos.@ 2.4nos./d)(CE 041)				
<b>Rig 3</b>											Rig 3				
LC17677-2	Stage 7 -- Preboring for Dia. 2100 Drain Pipe (no. 763-853)(90 nos.@ 2nos./d)(CE 041)	P2-Cal.C	45	9	23-Mar-18 A	31-May-18	-135	80%		-9	Stage 7 -- Preboring for Dia. 2100 Drain Pipe (no. 763-853)(90 nos.@ 2nos./d)(CE 041)				
<b>ELS</b>											ELS				
<b>Installation Sheet Pile - 24m</b>											Installation Sheet Pile - 24m				
LC17686	Stage 7 -- Sheet Pile installation 24m length for SMH9105 - 9104 (83 nos.@15pcs./d)	P2-Cal.C	6	5	08-May-18 A	26-May-18	-99	23.33%		-10	Stage 7 -- Sheet Pile installation 24m length for SMH9105 - 9104 (83 nos.@15pcs./d)				

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											May	Jun	Jul	Aug	Sep
LC17686-01	Stage 7 -- Sheet Pile installation 24m length for SMH9104 - 9103 (125 nos.@15pcs./d)	P2-Cal.C	9	9	01-Jun-18	11-Jun-18	-116	0%		0					
LC17687	Stage 8 -- Sheet Pile installation 24m length for SMH9110 - 9109 (105 nos.@15pcs./d)	P2-Cal.C	7	7	21-May-18	29-May-18	-101	0%		0					
LC17687-01	Stage 8 -- Sheet Pile installation 24m length for SMH9109 - 9108 (105 nos.@15pcs./d)	P2-Cal.C	7	7	27-Jun-18	05-Jul-18	-131	0%		0					
LC17687-02	Stage 9 -- Sheet Pile installation 24m length for SMH9108 - 9107 (90 nos.@15pcs./d)	P2-Cal.C	6	6	10-Jul-18	16-Jul-18	-140	0%		0					
LC17688	Stage 9 -- Sheet Pile installation 24m length for SMH9107 - 9106 (95 nos.@15pcs./d)	P2-Cal.C	6	6	10-Jul-18	16-Jul-18	-140	0%		0					
<b>Drainage works</b>		P2-Cal.C	87	87	21-May-18	01-Sep-18	-140			0					
<b>SMH9103-SMH9104</b>		P2-Cal.C	45	45	12-Jun-18	04-Aug-18	-116			0					
LC17690	Trench Excavation and Strut Installation for Construction of Dia. 2100 Drain Pipe (SMH9103 to SMH9104)	P2-Cal.C	10	10	12-Jun-18	23-Jun-18	-116	0%		0					
LC17690-2	Bedding And Inspection	P2-Cal.C	3	3	25-Jun-18	27-Jun-18	-116	0%		0					
LC17690-3	Manhole construction and Pipe Laying (SMH9103 and SMH9104)	P2-Cal.C	20	20	28-Jun-18	21-Jul-18	-116	0%		0					
LC17690-5	Inspection & Backfill	P2-Cal.C	14	14	20-Jul-18	04-Aug-18	-116	0%		0					
<b>SMH9104-SMH9105</b>		P2-Cal.C	41	41	26-May-18	16-Jul-18	-99			0					
LC17691	Trench Excavation and Strut Installation for Construction of Dia. 2100 Drain Pipe (SMH9104 to SMH9105)	P2-Cal.C	10	10	26-May-18	07-Jun-18	-99	0%		0					
LC17691-2	Bedding And Inspection	P2-Cal.C	3	3	07-Jun-18	11-Jun-18	-99	0%		0					
LC17691-3	Manhole construction and Pipe Laying (SMH9105)	P2-Cal.C	16	16	11-Jun-18	30-Jun-18	-99	0%		0					
LC17691-5	Inspection & Backfill	P2-Cal.C	14	14	28-Jun-18	16-Jul-18	-99	0%		0					
<b>SMH9105-SMH9106</b>		P2-Cal.C	41	41	21-May-18	10-Jul-18	-94			0					
LC17692	Trench Excavation and Strut Installation for Construction of Dia. 2100 Drain Pipe (SMH9105 to SMH9106)	P2-Cal.C	10	10	21-May-18	01-Jun-18	-94	0%		0					
LC17692-2	Bedding And Inspection	P2-Cal.C	3	3	02-Jun-18	05-Jun-18	-94	0%		0					
LC17692-3	Manhole construction and Pipe Laying (SMH9106)	P2-Cal.C	16	16	06-Jun-18	25-Jun-18	-94	0%		0					
LC17692-5	Inspection & Backfill	P2-Cal.C	14	14	23-Jun-18	10-Jul-18	-94	0%		0					
<b>SMH9106-SMH9107</b>		P2-Cal.C	41	41	17-Jul-18	01-Sep-18	-140			0					
LC17693	Trench Excavation and Strut Installation for Construction of Dia. 2100 Drain Pipe (SMH9106 to SMH9107)	P2-Cal.C	10	10	17-Jul-18	27-Jul-18	-140	0%		0					
LC17693-2	Bedding And Inspection	P2-Cal.C	3	3	28-Jul-18	31-Jul-18	-140	0%		0					
LC17693-3	Manhole construction and Pipe Laying (SMH9107)	P2-Cal.C	16	16	01-Aug-18	18-Aug-18	-140	0%		0					
LC17693-5	Inspection & Backfill	P2-Cal.C	14	14	17-Aug-18	01-Sep-18	-140	0%		0					
<b>SMH9107-SMH9108</b>		P2-Cal.C	41	41	17-Jul-18	01-Sep-18	-140			0					
LC17694	Trench Excavation and Strut Installation for Construction of Dia. 2100 Drain Pipe (SMH9107 to SMH9108)	P2-Cal.C	10	10	17-Jul-18	27-Jul-18	-140	0%		0					
LC17695	Bedding And Inspection	P2-Cal.C	3	3	28-Jul-18	31-Jul-18	-140	0%		0					
LC17696	Manhole construction and Pipe Laying (SMH9108)	P2-Cal.C	16	16	01-Aug-18	18-Aug-18	-140	0%		0					
LC17698	Inspection & Backfill	P2-Cal.C	14	14	17-Aug-18	01-Sep-18	-140	0%		0					
<b>SMH9108-SMH9109</b>		P2-Cal.C	41	41	06-Jul-18	22-Aug-18	-131			0					
LC17699	Trench Excavation and Strut Installation for Construction of Dia. 2100 Drain Pipe (SMH9108 to SMH9109)	P2-Cal.C	10	10	06-Jul-18	17-Jul-18	-131	0%		0					
LC17701	Bedding And Inspection	P2-Cal.C	3	3	18-Jul-18	20-Jul-18	-131	0%		0					
LC17702	Manhole construction and Pipe Laying (SMH9109)	P2-Cal.C	16	16	21-Jul-18	08-Aug-18	-131	0%		0					
LC17704	Inspection & Backfill	P2-Cal.C	14	14	07-Aug-18	22-Aug-18	-131	0%		0					
<b>SMH9109-SMH9110</b>		P2-Cal.C	41	41	30-May-18	18-Jul-18	-101			0					
LC17705	Trench Excavation and Strut Installation for Construction of Dia. 2100 Drain Pipe (SMH9109-9110)	P2-Cal.C	10	10	30-May-18	09-Jun-18	-101	0%		0					
LC17707	Bedding And Inspection	P2-Cal.C	3	3	11-Jun-18	13-Jun-18	-101	0%		0					
LC17708	Manhole construction and Pipe Laying (SMH9110)	P2-Cal.C	16	16	14-Jun-18	04-Jul-18	-101	0%		0					
LC17710	Inspection & Backfill	P2-Cal.C	14	14	03-Jul-18	18-Jul-18	-101	0%		0					
<b>SMH9110-Outfall</b>		P2-Cal.C	82	82	21-May-18	27-Aug-18	-135			0					
LC17711	Fabrication of Precast Outfall	P2-Cal.C	21	21	21-May-18	14-Jun-18	-135	0%		0					

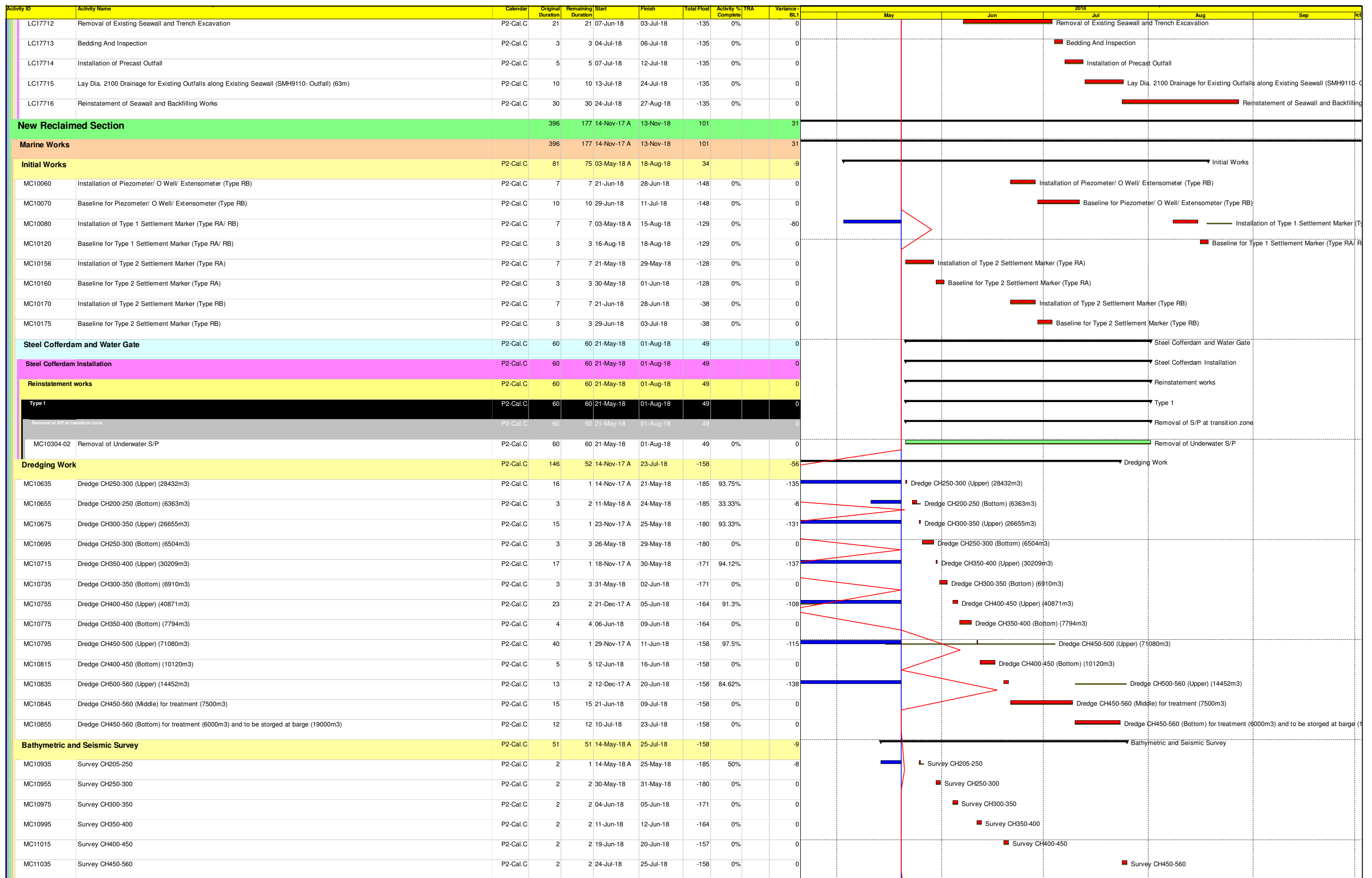
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											May	Jun	Jul	Aug	Sep
<b>Filling of Recycle G400 Rock at Dredged Trench</b>											Filling of Recycle G400 Rock at Dredged				
MC11085	Fill Recycle G400 at CH112-162 (12707m3) (EW073)	P2-Cal.C	7	6	16-May-18 A	28-May-18	-193	14.29%		-3	Fill Recycle G400 at CH112-162 (12707m3) (EW073)				
MC11105	Fill Recycle G400 at CH162-212 (20761m3)	P2-Cal.C	10	10	29-May-18	08-Jun-18	-187	0%		0	Fill Recycle G400 at CH162-212 (20761m3)				
MC11125	Fill Recycle G400 at CH212-262 (21729m3)	P2-Cal.C	13	13	09-Jun-18	25-Jun-18	-187	0%		0	Fill Recycle G400 at CH212-262 (21729m3)				
MC11145	Fill Recycle G400 at CH262-312 (22016m3)	P2-Cal.C	13	13	26-Jun-18	11-Jul-18	-187	0%		0	Fill Recycle G400 at CH262-312 (22016m3)				
MC11165	Fill Recycle G400 at CH312-362 (22354m3)	P2-Cal.C	13	13	12-Jul-18	26-Jul-18	-187	0%		0	Fill Recycle G400 at CH312-362 (22354m3)				
MC11185	Fill Recycle G400 at CH362-412 (25473m3)	P2-Cal.C	12	12	27-Jul-18	09-Aug-18	-187	0%		0	Fill Recycle G400 at CH362-412 (25473m3)				
MC11205	Fill Recycle G400 at CH412-462 (33181m3)	P2-Cal.C	16	16	10-Aug-18	28-Aug-18	-187	0%		0	Fill Recycle G400 at CH412-462 (33181m3)				
<b>Construction of Seawall Foundation (Dredged Area)</b>											Construction of Seawall Foundation (Dredged Area)				
<b>Laying of Type A Rockfill (Base)</b>											Laying of Type A Rockfill (Base)				
MC11265	Type A Rockfill CH213-262 (797m3)	P2-Cal.C	1	1	26-Jun-18	26-Jun-18	-175	0%		0	Type A Rockfill CH213-262 (797m3)				
MC11275	Type A Rockfill CH262-312 (952m3)	P2-Cal.C	2	2	12-Jul-18	13-Jul-18	-180	0%		0	Type A Rockfill CH262-312 (952m3)				
MC11285	Type A Rockfill CH312-362 (860m3)	P2-Cal.C	1	1	27-Jul-18	27-Jul-18	-186	0%		0	Type A Rockfill CH312-362 (860m3)				
MC11295	Type A Rockfill CH362-412 (917m3)	P2-Cal.C	1	1	10-Aug-18	10-Aug-18	-183	0%		0	Type A Rockfill CH362-412 (917m3)				
<b>Laying of Geotextile Type A (Base)</b>											Laying of Geotextile Type A (Base)				
MC11325	Geotextile Type A CH75-112 (801m2)	P2-Cal.C	1	1	29-May-18	29-May-18	-193	0%		0	Geotextile Type A CH75-112 (801m2)				
MC11335	Geotextile Type A CH112-162 (889m2)	P2-Cal.C	1	1	30-May-18	30-May-18	-192	0%		0	Geotextile Type A CH112-162 (889m2)				
MC11345	Geotextile Type A CH162-212 (915m2)	P2-Cal.C	1	1	09-Jun-18	09-Jun-18	-167	0%		0	Geotextile Type A CH162-212 (915m2)				
MC11355	Geotextile Type A CH212-262 (929m2)	P2-Cal.C	1	1	27-Jun-18	27-Jun-18	-175	0%		0	Geotextile Type A CH212-262 (929m2)				
MC11365	Geotextile Type A CH262-312 (1023m2)	P2-Cal.C	1	1	14-Jul-18	14-Jul-18	-180	0%		0	Geotextile Type A CH262-312 (1023m2)				
MC11375	Geotextile Type A CH312-362 (952m2)	P2-Cal.C	1	1	28-Jul-18	28-Jul-18	-186	0%		0	Geotextile Type A CH312-362 (952m2)				
MC11385	Geotextile Type A CH362-412 (952m2)	P2-Cal.C	1	1	11-Aug-18	11-Aug-18	-183	0%		0	Geotextile Type A CH362-412 (952m2)				
<b>Laying of Granular Filter (Base)</b>											Laying of Granular Filter (Base)				
MC11415	Granular Filter CH75-112 (1382m3)	P2-Cal.C	2	2	30-May-18	31-May-18	-193	0%		0	Granular Filter CH75-112 (1382m3)				
MC11425	Granular Filter CH112-162 (2051m3)	P2-Cal.C	3	3	01-Jun-18	04-Jun-18	-193	0%		0	Granular Filter CH112-162 (2051m3)				
MC11435	Granular Filter CH162-212 (2219m3)	P2-Cal.C	3	3	11-Jun-18	13-Jun-18	-167	0%		0	Granular Filter CH162-212 (2219m3)				
MC11445	Granular Filter CH212-262 (1665m3)	P2-Cal.C	2	2	28-Jun-18	29-Jun-18	-175	0%		0	Granular Filter CH212-262 (1665m3)				
MC11455	Granular Filter CH262-312 (1217m3)	P2-Cal.C	2	2	16-Jul-18	17-Jul-18	-180	0%		0	Granular Filter CH262-312 (1217m3)				
MC11465	Granular Filter CH312-362 (852m3)	P2-Cal.C	1	1	30-Jul-18	30-Jul-18	-186	0%		0	Granular Filter CH312-362 (852m3)				
MC11475	Granular Filter CH362-412 (893m3)	P2-Cal.C	1	1	13-Aug-18	13-Aug-18	-183	0%		0	Granular Filter CH362-412 (893m3)				
<b>Laying Geotextile Type A (Ground Treatment)</b>											Laying Geotextile Type A (Ground Treatment)				
MC12015	Geotextile Type A (Dredged Area) and Granular Filter CH95-162 (1292m2)	P2-Cal.C	3	3	05-Jun-18	07-Jun-18	-193	0%		0	Geotextile Type A (Dredged Area) and Granular Filter CH95-162 (1292m2)				
MC12025	Geotextile Type A (Dredged Area) and Granular Filter CH162-212 (1400m2)	P2-Cal.C	3	3	14-Jun-18	16-Jun-18	-167	0%		0	Geotextile Type A (Dredged Area) and Granular Filter CH162-212 (1400m2)				
MC12035	Geotextile Type A (Dredged Area) and Granular Filter CH212-CH262 (1796m2)	P2-Cal.C	3	3	30-Jun-18	04-Jul-18	-175	0%		0	Geotextile Type A (Dredged Area) and Granular Filter CH212-CH262 (1796m2)				
MC12045	Geotextile Type A (No-Dredged Area) CH262-312 (2426m2)	P2-Cal.C	4	4	18-Jul-18	21-Jul-18	-180	0%		0	Geotextile Type A (No-Dredged Area) CH262-312 (2426m2)				
MC12055	Geotextile Type A (No-Dredged Area) CH312-362 (2606m2)	P2-Cal.C	4	4	31-Jul-18	03-Aug-18	-186	0%		0	Geotextile Type A (No-Dredged Area) CH312-362 (2606m2)				
MC12065	Geotextile Type A (No-Dredged Area) CH362-412 (2566m2)	P2-Cal.C	4	4	14-Aug-18	17-Aug-18	-183	0%		0	Geotextile Type A (No-Dredged Area) CH362-412 (2566m2)				
<b>Placing Sand Blanket (Non-Dredged Area)</b>											Placing Sand Blanket (Non-Dredged Area)				
MC12105	Sand Blanket CH225-275 (1205m3)	P2-Cal.C	3	3	20-Jul-18	23-Jul-18	-180	0%		0	Sand Blanket CH225-275 (1205m3)				
MC12115	Sand Blanket CH275-325 (2316m3)	P2-Cal.C	5	5	02-Aug-18	07-Aug-18	-186	0%		0	Sand Blanket CH275-325 (2316m3)				
MC12125	Sand Blanket CH325-375 (2467m3)	P2-Cal.C	5	5	16-Aug-18	21-Aug-18	-183	0%		0	Sand Blanket CH325-375 (2467m3)				
<b>Installation of Band Drain (Non-Dredged Area)</b>											Installation of Band Drain (Non-Dredged Area)				
MC12163	Band Drain CH38-75 (1130nos)	P2-Cal.C	12	12	21-Jun-18	05-Jul-18	-185	0%		0	Band Drain CH38-75 (1130nos)				

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											May	Jun	Jul	Aug	Sep
MC12883	Reclamation Fill to +2.5mPD CH0-40 (7413m3) - Sandfill	P2-Cal.C	4	2	25-Apr-18 A	23-May-18	-168	50%		-19					
MC12885	Reclamation Fill to +2.5mPD CH40-80 (10195m3) - Sandfill	P2-Cal.C	6	6	13-Jun-18	20-Jun-18	-185	0%		0					
MC12895	Reclamation Fill to +2.5mPD CH80-150 (8362m3)	P2-Cal.C	4	4	30-Jul-18	02-Aug-18	-193	0%		0					
<b>Filling of Compacted Fill +2.5 to +5.5mPD</b>		P2-Cal.C	40	40	06-Jul-18	21-Aug-18	-168			0					
MC12950	Compacted Fill to +5.5mPD CH0-40 (5773m3)	P2-Cal.C	6	6	06-Jul-18	12-Jul-18	-185	0%		0					
MC12955	Compacted Fill to +5.5mPD CH40-90 (7216m3)	P2-Cal.C	7	7	08-Aug-18	15-Aug-18	-192	0%		0					
MC12965	Compacted Fill to +5.5mPD CH90-140 (4468m3)	P2-Cal.C	5	5	16-Aug-18	21-Aug-18	-168	0%		0					
<b>Surcharge</b>			124	124	13-Jul-18	13-Nov-18	-232			0					
<b>Placing Surcharge</b>		P2-Cal.C	34	34	13-Jul-18	21-Aug-18	-192			0					
MC13015	Placing Surcharge Area 1a (CH0-30) (2990m3)	P2-Cal.C	3	3	13-Jul-18	16-Jul-18	-185	0%		0					
MC13020	Placing Surcharge Area 1b (CH30-86) (4852m3)	P2-Cal.C	5	5	16-Aug-18	21-Aug-18	-192	0%		0					
<b>Surcharging</b>		P2-Cal.A	120	120	17-Jul-18	13-Nov-18	-232			0					
MC13155	Surcharge Area 1a (CH0-30) (2990m3)	P2-Cal.A	120	120	17-Jul-18	13-Nov-18	-232	0%		0					
<b>Full-scale Treatment of Cement S/S of Marine Sediment</b>		P2-Cal.C	313	120	06-Jan-18 A	07-Nov-18	86			65					
MC14075	Treatment	P2-Cal.C	250	64	06-Jan-18 A	30-Aug-18	-165	74.5%		58					
MC14080	Curing, Stockpiling and Filling	P2-Cal.C	313	120	06-Jan-18 A	07-Nov-18	86	61.66%		65					
<b>Modification Works of Existing Seawall</b>		P2-Cal.C	35	35	19-Jul-18	28-Aug-18	79			0					
MC14145	Excavation and Removal of existing seawall	P2-Cal.C	15	15	19-Jul-18	04-Aug-18	79	0%		0					
MC14165	Excavation down to -0.5mPD	P2-Cal.C	20	20	06-Aug-18	28-Aug-18	79	0%		0					
<b>Land Works</b>		P2-Cal.C	12	12	17-Jul-18	30-Jul-18	-95			0					
<b>Road P2 Underpass (CH105-CH318)</b>		P2-Cal.C	12	12	17-Jul-18	30-Jul-18	-95			0					
<b>Underpass</b>		P2-Cal.C	12	12	17-Jul-18	30-Jul-18	-95			0					
<b>Underpass P2 CH 105 - 318</b>		P2-Cal.C	12	12	17-Jul-18	30-Jul-18	-95			0					
<b>Ground Investigation</b>		P2-Cal.C	12	12	17-Jul-18	30-Jul-18	-95			0					
LC17784	Pre-drilling Works (10 nos) for Area 1a (P2 CH264 - 318) - 4 Rigs	P2-Cal.C	12	12	17-Jul-18	30-Jul-18	-95	0%		0					
<b>Section 4 of the Works - Preservation and Protection of Existing Trees</b>		P2-Cal.A	1563	1102	12-Jan-17 A	25-May-21	-241			-32					
LC25260	Preservation and Protection of Existing Trees	P2-Cal.A	1451	1011	12-Jan-17 A	25-May-21	-241	30.32%		-144					
LC25280	Nursery Transplanted Trees at the Contractor's holding nursery	P2-Cal.A	1177	1011	28-Apr-17 A	23-Feb-21	-150	14.1%		-221					

█ Primary Baseline    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work    ▬ Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (May-18)

3 Monthly Rolling Programme  
(Data Date : 20-May-2018)  
Page : 12 of 12

Date	Revision	Checked	Approved
20-May-18			

Subject: 3 Months Look Ahead Programme			
Activities	Jun, 18	Jul, 18	Aug, 18
Erection of falsework system			
Construction of Pile Cap PC4 and Sump Pit			
Install steel mould for main deck			

Subject: Construction Programme (May, 18)				
Activities	Week 1	Week 2	Week 3	Week 4
Erection of falsework system				

Activity ID	Activity Name	Original Duration	Start	Finish	May				June				July				August			
					5		6		7		8									
					29	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12
<b>Tseung Kwan O Interchange and Associated Works _201804_180514 1607</b>					858	07-Mar-18 A	19-Mar-21													
<b>Construction Works</b>					858	07-Mar-18 A	19-Mar-21													
<b>Construction Works of Contractor Site Accommodation</b>					851	07-Mar-18 A	19-Mar-21													
CON-10010	Erect hoarding and construct contractor's site accommodation (CSA)	178	07-Mar-18 A	21-Jun-18																
CON-10020	Maintenance CSA during contract period	815	21-Jun-18	19-Mar-21																
<b>Temporary Platform and Ground Investigation</b>					102	02-May-18 A	19-Sep-18													
<b>Ground Investigation Works (Including Erection Temporary Work)</b>					102	02-May-18 A	19-Sep-18													
<b>Phase I - Portion I &amp; V</b>					102	02-May-18 A	19-Sep-18													
CON-10070	Ground Investigation works (Phase 1) (1no SI/Team/8days),Including Temporary Work, Plant Mobilization, Testing - 4 rigs	102	02-May-18 A	19-Sep-18																
<b>Bored Pile Construction &amp; Pile Test (59nos)(Including Removal of Temporary Work)</b>					121	10-Jul-18	30-Nov-18													
<b>Bored Pile Construction at Bridge ML</b>					121	10-Jul-18	30-Nov-18													
CON-10100	Bored Pile, Pile Test & Removal of Temporary Work for ML 1G, 2 Piles (1pile/1.5mon, team 1)	108	10-Jul-18	15-Nov-18																
CON-10110	Bored Pile, Pile Test & Removal of Temporary Work for ML 1F-N, 2 Piles (1pile/1.5mon, team 2)	108	10-Jul-18	15-Nov-18																
CON-10120	Bored Pile, Pile Test & Removal of Temporary Work for ML 1F-S, 2 Piles (1pile/1.5mon, team 3)	108	10-Jul-18	15-Nov-18																
CON-10130	Bored Pile, Pile Test & Removal of Temporary Work for ML 1E-S, 2 Piles (1pile/1mon, team 4)	82	24-Aug-18	30-Nov-18																
<b>Bored Pile Construction at Bridge S300</b>					69	10-Jul-18	28-Sep-18													
CON-10180	Bored Pile, Pile Test & Removal of Temporary Work for S300 4A, 1 Pile (1pile/1.5mon, team 4)	69	10-Jul-18	28-Sep-18																

◆ Milestone	Regular Submission	Date	Revision	Checked	Approved
Works	Actual Progress of Regular Submission	1 May 2018	Works Programme	LL	YMH
Critical Works					
Actual					



NE/2017/02 - Updated Programme (May 2018)

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	ICB	Time Risk Allowance	2018												2019												2020												2021											
														Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
NE/2017/02 - Updated Programme (May 2018)																																																													
Contractual Dates		1471			1302	17-Nov-17 A	29-Nov-21	08-May-18	29-Nov-21	07-May-18	29-Nov-21	0																																																	
Commencement Date		0	7d		0	20-Nov-17 A	30-Nov-17 A	08-May-18	08-May-18	07-May-18	07-May-18																																																		
K10000	Contract Date	0	7d	100%	0	20-Nov-17 A		08-May-18		07-May-18																																																			
K10010	Starting Date	0	7d	100%	0	30-Nov-17 A		08-May-18		07-May-18																																																			
Key Dates (contract)		195	7d		195	18-May-20	29-Nov-20	18-May-20	29-Nov-20	18-May-20	29-Nov-20	0																																																	
K10020	Key Date 1 - Completion of works for the T&C of route-wide lighting, E&M	0	7d	0%	0		18-May-20*		18-May-20		18-May-20	0																																																	
K10030	Key Date 2 - Completion of works for the opening of Road P2	0	7d	0%	0		29-Nov-20*		29-Nov-20		29-Nov-20	0																																																	
Key Dates (planned)		196	7d		196	16-May-20	28-Nov-20	16-May-20	28-Nov-20	18-May-20	29-Nov-20	1																																																	
K10040	Key Date 1 - Completion of works for the T&C of route-wide lighting, E&M	0	7d	0%	0		16-May-20*		16-May-20		18-May-20	2																																																	
K10050	Key Date 2 - Completion of works for the opening of Road P2 (planned)	0	7d	0%	0		28-Nov-20*		28-Nov-20		29-Nov-20	1																																																	
Completion Dates (contract)		1190	7d		1190	27-Aug-18	29-Nov-21	27-Aug-18	29-Nov-21	27-Aug-18	29-Nov-21	0																																																	
K10060	Section 1 - All works not covered by other Sections	0	7d	0%	0		01-Aug-20*		01-Aug-20		01-Aug-20	0																																																	
K10070	Section 2 - Bridgeworks	0	7d	0%	0		29-Nov-20*		29-Nov-20		29-Nov-20	0																																																	
K10080	Section 3 - Preservation and Protection of Existing Trees	0	7d	0%	0		29-Nov-20*		29-Nov-20		29-Nov-20	0																																																	
K10090	Section 4 - Landscape Softworks	0	7d	0%	0		29-Nov-20*		29-Nov-20		29-Nov-20	0																																																	
K10100	Section 5 - Establishment Works	0	7d	0%	0		29-Nov-21*		29-Nov-21		29-Nov-21	0																																																	
K10110	Section 6 - Community Liaison Centre	0	7d	0%	0		27-Aug-18*		27-Aug-18		27-Aug-18	0																																																	
Completion Dates (planned)		1196	7d		1196	16-Aug-18	25-Nov-21	16-Aug-18	25-Nov-21	27-Aug-18	29-Nov-21	4																																																	
K10120	Section 1 - All works not covered by other Sections (planned)	0	7d	0%	0		01-Aug-20*		01-Aug-20		01-Aug-20	0																																																	
K10130	Section 2 - Bridgeworks (planned)	0	7d	0%	0		28-Nov-20*		28-Nov-20		29-Nov-20	1																																																	
K10140	Section 3 - Preservation and Protection of Existing Trees (planned)	0	7d	0%	0		28-Nov-20*		28-Nov-20		29-Nov-20	1																																																	
K10150	Section 4 - Landscape Softworks (planned)	0	7d	0%	0		25-Nov-20*		25-Nov-20		29-Nov-20	4																																																	
K10160	Section 5 - Establishment Works (planned)	0	7d	0%	0		25-Nov-21*		25-Nov-21		29-Nov-21	4																																																	
K10170	Section 6 - Community Liaison Centre (planned)	0	7d	0%	0		16-Aug-18*		16-Aug-18		27-Aug-18	11																																																	
Access Dates		477	6d		0	17-Nov-17 A	21-Sep-19	08-May-18	21-Sep-19	21-Sep-19	29-Nov-21	650																																																	
K10180	Portion I	0	6d	100%	0	30-Nov-17 A		08-May-18		08-May-18	29-Nov-21																																																		
K10190	Portion II	0	6d	100%	0	30-Nov-17 A		08-May-18		29-Nov-21																																																			
K10200	Portion III	0	6d	100%	0	17-Nov-17 A		08-May-18		29-Nov-21																																																			
K10210	Portion IV	0	6d	0%	0	21-Sep-19*		21-Sep-19		21-Sep-19		0																																																	
K10220	Portion V	0	6d	100%	0	30-Nov-17 A		08-May-18		29-Nov-21																																																			
K10230	Portion VI	0	6d	100%	0	30-Nov-17 A		08-May-18		29-Nov-21																																																			
Subcontracting		404			235	20-Nov-17 A	28-Dec-18	08-May-18	28-Dec-18	07-May-18	10-Aug-20	591																																																	
S10000	Proposal on competitive process for selection of suppliers of Plant and M	21	7d	100%	0	20-Nov-17 A	11-Dec-17 A	08-May-18	08-May-18	26-Jun-19	26-Jun-19																																																		
S10010	Acceptance of proposal on competitive process	21	7d	100%	0	11-Dec-17 A	18-Dec-17 A	08-May-18	08-May-18	26-Jun-19	26-Jun-19																																																		
S10020	Subcontracting procedure	3	6d	100%	0	04-Dec-17 A	06-Dec-17 A	08-May-18	08-May-18	07-May-18	07-May-18																																																		
S10030	Acceptance of subcontracting procedure	6	7d	100%	0	07-Dec-17 A	12-Dec-17 A	08-May-18	08-May-18	07-May-18	07-May-18																																																		
Subcontract Packages		319	6d		194	30-Nov-17 A	28-Dec-18	08-May-18	28-Dec-18	07-May-18	10-Aug-20	477																																																	
S10040	SC003 - Community Liaison Centre subcontract	48	6d	100%	0	07-Dec-17 A	21-Feb-18 A	08-May-18	08-May-18	07-May-18	07-May-18																																																		
S10050	SC004 - Contractor's site office subcontract	48	6d	100%	0	07-Dec-17 A	08-Feb-18 A	08-May-18	08-May-18	24-May-18	24-May-18																																																		
S10060	SC002 - Pre-construction condition survey subcontract	48	6d	100%	0	07-Dec-17 A	27-Feb-18 A	08-May-18	08-May-18	15-May-18	15-May-18																																																		
S10070	SC011 - Instrumentation subcontract	48	6d	60%	19	08-Mar-18 A	31-May-18	08-May-18	08-May-18	02-Jun-18	26-Jun-18	21																																																	
S10080	SC005 - Site security system subcontract	48	6d	100%	0	07-Dec-17 A	27-Feb-18 A	08-May-18	08-May-18	09-Jun-18	09-Jun-18																																																		
S10090	SC006 - ICE for temporary works and Contractor's Design works	48	6d	100%	0	07-Dec-17 A	20-Mar-18 A	08-May-18	08-May-18	09-May-18	09-May-18																																																		
S10100	SC028 - Landscaping subcontract	48	6d	100%	0	07-Dec-17 A	15-Feb-18 A	08-May-18	08-May-18	08-May-18	08-May-18																																																		
S10110	Traffic consultant (1st stage)	17	6d	100%	0	30-Nov-17 A	08-Dec-17 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		
S10120	SC008 - Traffic consultant (2nd stage)	48	6d	100%	0	13-Dec-17 A	19-Apr-18 A	08-May-18	08-May-18	20-Jun-18	20-Jun-18																																																		
S10130	SC013 - Road, Drainage, Watermain subcontract	48	6d	100%	0	08-Feb-18 A	03-May-18 A	08-May-18	08-May-18	15-May-18	15-May-18																																																		
S10150	SC010 - Ground investigation subcontract	48	6d	100%	0	08-Mar-18 A	04-May-18 A	08-May-18	08-May-18	18-Aug-18	18-Aug-18																																																		
S10160	SC018 - Bored pile subcontract	48	6d	0%	48	09-May-18*	06-Jul-18	09-May-18	06-Jul-18	17-Sep-18	15-Nov-18	109																																																	
S10170	SC019 - Socketted H-pile subcontract	48	6d	25%	36	02-May-18 A	20-Jun-18	08-May-18	20-Jun-18	23-Nov-18	07-Jan-19	165																																																	
S10180	SC031 - Road lighting system subcontract	48	6d	0%	48	09-May-18*	06-Jul-18	09-May-18	06-Jul-18	31-Oct-18	28-Dec-18	144																																																	
S10190	SC017 - Fences, railing, parapets, crash gate and untensioned beam bar	48	6d	0%	48	01-Jun-18*	28-Jul-18	01-Jun-18	28-Jul-18	26-Oct-18	20-Dec-18	121																																																	
S10200	SC015 - Flexible surfacing, milling and resurfacing	48	6d	25%	36	05-May-18 A	20-Jun-18	08-May-18	20-Jun-18	09-Nov-18	20-Dec-18	153																																																	
S10210	SC033 - Electrical system for footbridge subcontract	48	6d	0%	48	03-Jul-18*	27-Aug-18	03-Jul-18	27-Aug-18	12-Jul-19	05-Sep-19	304																																																	
S10220	SC029 - Irrigation system subcontract	48	6d	0%	48	01-Aug-18*	26-Sep-18	01-Aug-18	26-Sep-18	09-Apr-19	11-Jun-19	205																																																	
S10230	SC030 - Lift system subcontract	48	6d	0%	48	01-Aug-18*	26-Sep-18	01-Aug-18	26-Sep-18	20-Mar-19	21-May-19	189																																																	
S10240	SC022 - Footbridge waterproofing	48	6d	0%	48	01-Sep-18*	30-Oct-18	01-Sep-18	30-Oct-18	28-Mar-20	29-May-20	466																																																	
S10250	SC025 - Glazing subcontract	48	6d	0%	48	02-Oct-18*	27-Nov-18	02-Oct-18	27-Nov-18	05-Jul-19	29-Aug-19	222																																																	
S10260	SC032 - Canopy for footbridge and cladding of arch subcontract	48	6d	0%	48	02-Oct-18*	27-Nov-18	02-Oct-18	27-Nov-18	17-Jun-19	12-Aug-19	207																																																	
S10270	SC020 - Footbridge RC works subcontract	48	6d	0%	48	01-Nov-18*	28-Dec-18	01-Nov-18	28-Dec-18	25-Jan-19	25-Mar-19	70																																																	
S10280	SC021 - Prestressing, bearing and fabricated movement joint subcontract	48	6d	0%	48	01-Nov-18*	28-Dec-18	01-Nov-18	28-Dec-18	25-Jul-19	19-Sep-19	214																																																	
S10290	SC023 - Footbridge steelworks (steel arch & lift beams)	48	6d	0%	48	01-Nov-18*	28-Dec-18	01-Nov-18	28-Dec-18	05-Nov-19	02-Jan-20	299																																																	
S10300	SC026 - Footbridge finishing	48	6d	0%	48	01-Nov-18*	28-Dec-18	01-Nov-18	28-Dec-18	13-Jun-20	10-Aug-20	477																																																	
General Submissions		974			805	20-Nov-17 A	20-Jul-20	08-May-18	20-Jul-20	08-May-18	28-Sep-20	70																																																	
C10000	Draft Safety Plan (submission)	14	7d	100%	0	20-Nov-17 A	19-Dec-17 A	08-May-18	08-May-18	15-May-18	15-May-18																																																		
C10010	Safety Plan (submission)	6	6d	100%	0	20-Dec-17 A	06-Jan-18 A	08-May-18	08-May-18	15-May-18	15-May-18																																																		
C10020	Safety Plan (PM's acceptance)	21	7d	100%	0	07-Jan-18 A	24-Jan-18 A	08-May-18	08-May-18	15-May-18	15-May-18																																																		
C10030	Environmental Management Plan (prepare & submit)	21	7d	100%	0	20-Nov-17 A	11-Dec-17 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		
C10040	Environmental Management Plan (review & discuss)	6	7d	100%	0	12-Dec-17 A	11-Jan-18 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		
C10050	Environmental Management Plan (resubmit)	6	6d	100%	0	12-Jan-18 A	30-Jan-18 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		
C10060	Environmental Management Plan (PM's acceptance)	21	7d	100%	0	31-Jan-18 A	25-Feb-18 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		
C10070	Subcontractor Management Plan (submission)	30	7d	100%	0	20-Nov-17 A	20-Dec-17 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		
C10080	Subcontractor Management Plan (PM's comments)	21	7d	100%	0	21-Dec-17 A	05-Jan-18 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		
C10090	Subcontractor Management Plan (resubmit)	56	6d	100%	0	06-Jan-18 A	15-Mar-18 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		
C10100	Subcontractor Management Plan (PM's acceptance)	21	7d	100%	0	16-Mar-18 A	06-Apr-18 A	08-May-18	08-May-18	16-May-18	16-May-18																																																		

Baseline: Programme of Apr 2018     ◆ Milestone  
 Actual Work     ⇐ Summary  
 Remaining Work  
 Critical Remaining Work

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel  
 Road P2/D4 and Associated Works  
 Updated Programme (May 2018)

Date	Revision	Checked	Approved
15-May-18	RWP-2018-05 (Data date 8-May-...)	TC	



















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**APPENDIX R  
RECORD OF LANDFILL GAS  
MONITORING BY CONTRACTOR**

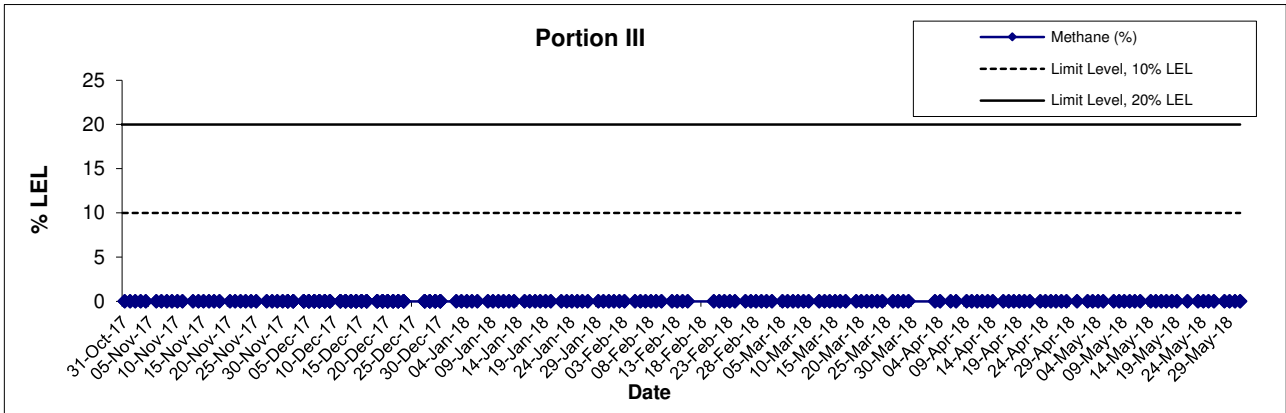
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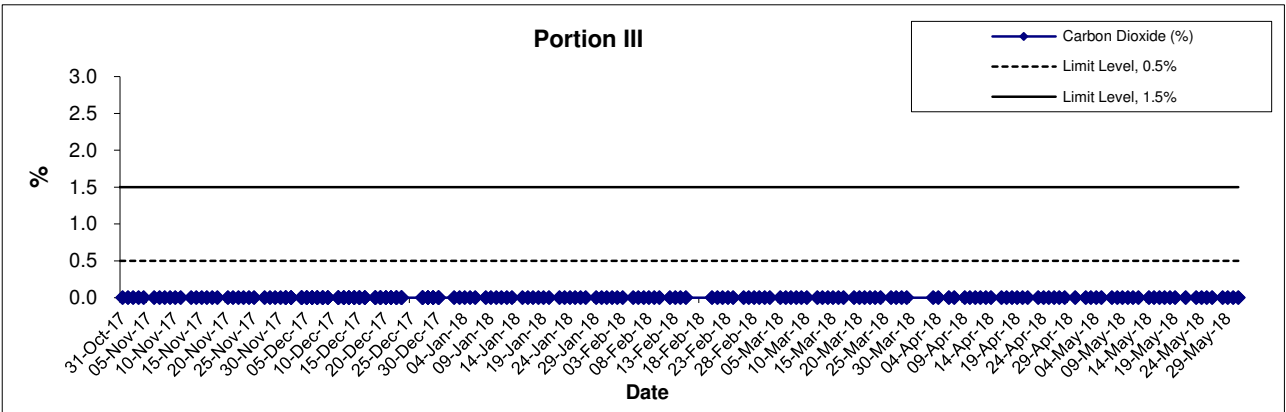
**APPENDIX R - RECORD OF LANDFILL GAS MONITORING BY THE CONTRACTOR**

Location	Date of Measurement	Sampling time	Weather Condition	Temperature (°C)	Methane (%)	Carbon dioxide (%)	Oxygen (%)
Portion III	2-May-18	08:30	Sunny	25	0	0	20.9
	2-May-18	13:02	Sunny	32	0	0	20.9
	3-May-18	08:30	Sunny	25	0	0	20.9
	3-May-18	13:02	Sunny	34	0	0	20.9
	4-May-18	08:30	Cloudy	22	0	0	20.9
	4-May-18	13:00	Cloudy	25	0	0	20.9
	5-May-18	08:30	Sunny	24	0	0	20.9
	5-May-18	13:00	Cloudy	28	0	0	20.9
	7-May-18	08:30	Cloudy	24	0	0	20.9
	7-May-18	13:01	Cloudy	30	0	0	20.9
	8-May-18	08:30	Rainy	23	0	0	20.9
	8-May-18	13:00	Rainy	28	0	0	20.9
	9-May-18	08:30	Cloudy	24	0	0	20.9
	9-May-18	13:02	Cloudy	30	0	0	20.9
	10-May-18	08:30	Rainy	21	0	0	20.9
	10-May-18	13:02	Rainy	24	0	0	20.9
	11-May-18	08:30	Cloudy	22	0	0	20.9
	11-May-18	13:01	Cloudy	25	0	0	20.9
	12-May-18	08:30	Sunny	24	0	0	20.9
	12-May-18	13:00	Sunny	30	0	0	20.9
	14-May-18	08:30	Sunny	26	0	0	20.9
	14-May-18	13:01	Sunny	32	0	0	20.9
	15-May-18	08:30	Cloudy	27	0	0	20.9
	15-May-18	13:02	Cloudy	32	0	0	20.9
	16-May-18	08:30	Sunny	26	0	0	20.9
	16-May-18	13:00	Sunny	32	0	0	20.9
	17-May-18	08:30	Sunny	27	0	0	20.9
	17-May-18	13:05	Sunny	33	0	0	20.9
	18-May-18	08:30	Sunny	28	0	0	20.9
	18-May-18	13:04	Sunny	34	0	0	20.9
	19-May-18	08:30	Sunny	27	0	0	20.9
19-May-18	13:00	Sunny	34	0	0	20.9	
21-May-18	08:30	Sunny	28	0	0	20.9	
21-May-18	13:00	Sunny	35	0	0	20.9	
23-May-18	08:30	Cloudy	27	0	0	20.9	
23-May-18	13:02	Cloudy	35	0	0	20.9	
24-May-18	08:30	Cloudy	28	0	0	20.9	
24-May-18	13:05	Sunny	33	0	0	20.9	
25-May-18	08:30	Cloudy	27	0	0	20.9	
25-May-18	13:04	Cloudy	33	0	0	20.9	
26-May-18	08:30	Sunny	28	0	0	20.9	
26-May-18	13:03	Sunny	34	0	0	20.9	
28-May-18	08:30	Sunny	27	0	0	20.9	
28-May-18	13:01	Sunny	34	0	0	20.9	
29-May-18	08:30	Sunny	28	0	0	20.9	
29-May-18	13:00	Sunny	35	0	0	20.9	
30-May-18	08:30	Sunny	29	0	0	20.9	
30-May-18	13:00	Sunny	35	0	0	20.9	
31-May-18	08:30	Sunny	28	0	0	20.9	
31-May-18	13:00	Sunny	35	0	0	20.9	

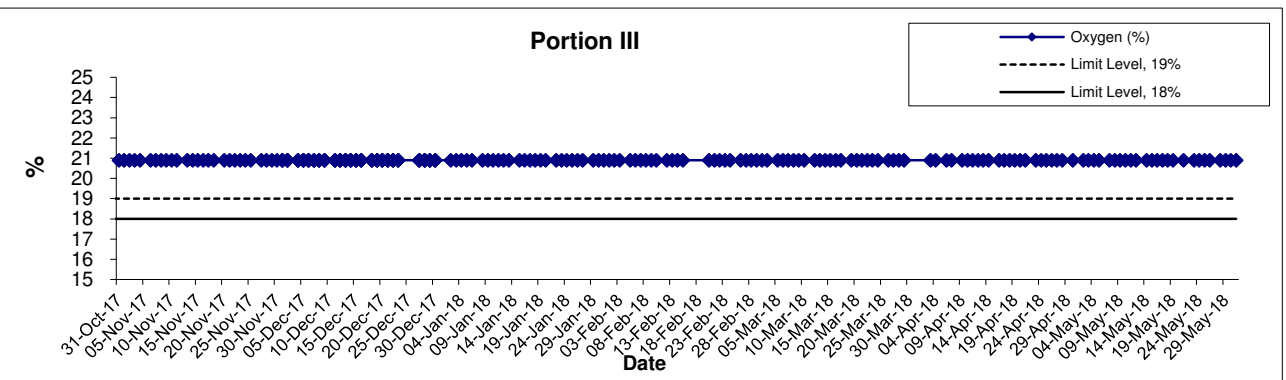
### Methane



### Carbon Dioxide



### Oxygen



Title	Agreement No. CE 59/2015 (EP)	Scale	Project	<b>CINOTECH</b>
	Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction	N.T.S	No. MA16034	
Graphical Presentation of Landfill Gas Measurement	Date	May 18	Appendix R	

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**APPENDIX S  
UPDATED CONSTRUCTION NOISE  
ASSESSMENT**

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**No update on Construction Noise Assessment in the reporting month**

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**APPENDIX T  
CULTURAL HERITAGE MONITORING  
RESULTS**

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**Appendix T – Cultural Heritage Monitoring Results**

Date	Time	Tilting			Settlement (mm)			Vibration (mm/s)		
		Angle (deg) between THT-BSP-1 & THT-BSP-2	Angle (deg) between THT-BSP-1 & THT-BSP-3	Angle (deg) between THT-BSP-2 & THT-BSP-3	THT-BSP-1	THT-BSP-2	THT-BSP-3	Measurement Direction		
								Tran	Vertical	Longitudinal
2-May-18	09:12	1 : 4597	1 : 7009	-1 : 16901	+3	+0	+1	0.127	0.254	0.254
3-May-18	17:02	1 : 3448	1 : 4673	-1 : 16901	+4	+0	+1	0.254	0.254	0.127
4-May-18	15:40	1 : 4597	1 : 4673	0	+3	+0	+0	0.254	0.254	0.127
5-May-18	15:48	1 : 13792	1 : 4673	1 : 8451	+3	+2	+0	0.158	0.213	0.221
7-May-18	16:57	1 : 4597	1 : 4673	0	+4	+1	+1	0.254	0.254	0.127
8-May-18	16:01	Bad weather			+3	Bad weather	+2	0.166	0.252	0.213
9-May-18	09:14	1 : 4597	1 : 4673	0	+4	+1	+1	0.158	0.221	0.221
10-May-18	16:56	1 : 3448	1 : 4673	-1 : 16901	+4	+0	+1	0.254	0.254	0.127
11-May-18	17:18	1 : 4597	1 : 4673	0	+4	+1	+1	0.254	0.254	0.127
12-May-18	09:32	Measurement missing			Measurement missing			0.158	0.205	0.236
14-May-18	17:06	1 : 6896	1 : 3505	1 : 8451	+3	+1	-1	0.254	0.254	0.127
15-May-18	17:05	1 : 4597	1 : 4673	0	+3	+0	+0	0.254	0.254	0.127
16-May-18	09:46	1 : 6896	1 : 7009	0	+4	+2	+2	0.150	0.300	0.205
17-May-18	17:05	1 : 6896	1 : 14018	-1 : 16901	+3	+1	+2	0.254	0.254	0.127
18-May-18	15:51	1 : 13792	1 : 7009	1 : 16901	+3	+2	+1	0.254	0.254	0.127
19-May-18	14:04	1 : 6896	1 : 3505	1 : 8451	+5	+3	+1	0.254	0.254	0.127
21-May-18	17:04	1 : 4597	1 : 4673	0	+3	+0	+0	0.254	0.254	0.127
23-May-18	17:29	1 : 4597	1 : 4673	0	+3	+0	+0	0.254	0.254	0.127
24-May-18	16:38	1 : 6896	1 : 7009	0	+3	+1	+1	0.254	0.254	0.127
25-May-18	17:10	1 : 4597	1 : 7009	-1 : 16901	+3	+0	+1	0.254	0.254	0.127
26-May-18	16:42	1 : 4597	1 : 4673	0	+3	+0	+0	0.254	0.254	0.127
28-May-18	17:36	1 : 3448	1 : 4673	-1 : 16901	+4	+0	+1	0.254	0.254	0.127
29-May-18	14:58	1 : 4597	1 : 4673	0	+3	+0	+0	0.254	0.254	0.127
30-May-18	16:18	1 : 6896	1 : 7009	0	+2	+0	+0	0.254	0.254	0.127
31-May-18	17:08	1:6896	1 : 7009	0	+3	+1	+1	0.254	0.254	0.127
<b>Alert Level</b>		1:2000			6			4.5		
<b>Alarm Level</b>		1:1500			8			4.8		
<b>Action Level</b>		1:1000			10			5		

Note: **Bold** means Alert Level exceedance**Bold Italic** means Alarm Level exceedance**Bold Italic with underline** means Action Level exceedance