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 June 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.

CINOTECH accepts no responsibility for changes made to this report by third parties.

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EXECUTIVE SUMMARY

Introduction

1. This is the 20th 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 June 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	4	12	0(1)	12	Refer to Appendix K & O
Groundwater Quality	0	12	0	0	N/A
Marine Water Quality	0	0	0	0	N/A
Groundwater Level Monitoring (Piezometer Monitoring)	0	N/A(2)	0	0	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 in June 2018 are still under investigation.
(2) No Limit Level for Groundwater Level Monitoring (Piezometer Monitoring).

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

- Additional water filter tank was adopted to reduce emission of dark smoke and exhaust;
- Preinstalled speaker was used on derrick barge to minimize the noise disturbance from on-site communication.
- Street washing truck would be provided once a week to clean the dust on the public street.
- Additional notice would be set up to remind the truck driver to perform wheel-washing properly before leaving site;
- Deployed staff at the access to check the dump trucks to ensure the dump truck are properly covered and wheel-washed before leaving site;
- Ensured blasting doors were closed while blasting associated works was undertaken in the tunnel;
- Installed steel-type blasting door mounted with sound absorptive lining to absorb construction noise in the tunnel;
- Erected movable cantilever noise barriers and the breaker head was wrapped with Silent Mat and TMD;
- Powered mechanical equipment (PME) for rock breaking were equipped with TMD and SilentMat;
- Drill rig was covered with Silent Mat and TMR.

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. Four (4) Action Level exceedance was recorded due to the documented complaints received in this reporting month. Twelve (12) 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 Twelve (12) Limit Level exceedances were recorded in the reporting month.

9. All marine water monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

10. Construction phase daily piezometer monitoring by the Contractor commenced in June 2018. No Action Level exceedance was recorded in the reporting month.

Ecological Monitoring

11. 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

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

Landscape and Visual Monitoring and Audit

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

Landfill Gas Monitoring

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

Environmental Site Inspection

15. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. The representative of the IEC joined the site inspection for NE/2015/01, NE/2015/02, NE/2015/03, NE/2017/01 and NE/2017/02 on 27, 13, 13, 27, 13 June 2018 respectively. Details of the audit findings and implementation status are presented in Section 10.

Waste Management

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

Key Information in the Reporting Month

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

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received by Project Team / Complaint referred by EPD (June 2018)	10	Construction dust/ Noise nuisance/ Odour/ Dark Smoke/ Waste management/ Landscape	Under investigation	On-going	Details refer to App O
Complaint received by Project Team /	22	Construction dust / Noise nuisance/ Odour	Under investigation	On-going	

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint referred by EPD (May 2018)					
Complaint received by Project Team / Complaint referred by EPD (April 2018)*	15	Noise nuisance / Light pollution/ Odour	Erection of acoustics barriers/ Regular site checking/ Installation of water filter tanks/ Adjust illumination angle of spotlight	On-going	
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Note (*): Non-compliances were recorded on 16th, 18th and 23rd April 2018 for Contract No. NE/2015/02 due to non-conformance with the proposed quantity of powered mechanical equipment stated in the CNMP. Details of investigation are presented in **Appendix O**.

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

18. 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 (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, 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) Lower ground works at Portion V 2) Cable diversion works at Portion IV and V 3) Pre-bore and interlocking pipe pile works for 2100 pipe at Portion IV and Portion VII 4) Sheet pile works for decked U-trough at Portion V 5) ELS works for 2100 pipe and P2A RW at Portion IV 6) Installation of DN 1500Temporary Steel Corrugated Pipe at Portion V 7) Retaining wall works at Portion VIII 8) Dredging Works and Armour Rock Removal at Portion IX 9) Treatment of Marine Sediment at Area A 10) Rock filling works at Portion IX 11) Construction of U-trough structure at Portion VIII 12) 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) Site Accommodation 2) Erection of Temporary Platform 3) Pre-drilling
NE/2017/02	Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works	4) Trial pit 5) Underground utilities detection 6) Temporary traffic arrangement Setup 7) Site office erection 8) Communication Liaison Center erection 9) Modification of traffic island 10) Fencing erection 11) Predrilling 12) Construction of Temporary cycle track

Future Key Issues

19. 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 (July 2018)		Key environmental issues *
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	(A)/ (B) / (C) / (D) / (E) (G)
	Main Tunnel	1) Main Tunnel Excavation	(B)
	TKO Interchange	1) Haul Road Construction and Site Formation & Slope Works 2) Steel Platform for Bridge Construction	(A) / (C) / (D) / (E) / (F) / (I)
NE/2015/02 - Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Operation of Double Watergate 2) Treatment works of S/S Treatment Facility at Area A 3) Dredging works and reclamation works at Portion IX 4) Rock filling works at Portion IX 5) Installation of DN 1500 Temporary Steel Corrugated Pipe at Portion V 6) Installation of band drain in Portion IX		(A) / (B) / (C) / (D) / (E) / (G) / (I)

	7) Laying of geotextile in Portion IX 8) Removal of existing seawall blocks at Portion IV & VII 9) Reconstruction of existing outfall and installation of DN2100 drainage system at Portion IV & VII 10) Laying of geotextile in 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	(A) / (B) / (C) / (D) / (E)
NE/2017/01 – Tseung Kwan O Interchange and Associated Works	1) Site Accommodation 2) Erection of Temporary Platform 3) Pre-drilling	(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 20th Monthly EM&A report summarizing the EM&A works for the Project in June 2018.

Purpose of the Report

1.2 This is the 20th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in June 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

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

<table>
<tr><th>Contract No.</th><th>Project Title</th><th colspan="2">Site Activities (June 2018)</th></tr>
<tr><td rowspan="3">NE/2015/01</td><td rowspan="3">Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works</td><td>Lam Tin Interchange</td><td>1) EHC2 U-Trough
2) Site Formation – Area 1G1, Area 1G2, Area 2 , Area 3, Area 4 & Area 5</td></tr>
<tr><td>Main Tunnel</td><td>1) Main tunnel Excavation</td></tr>
<tr><td>TKO Interchange</td><td>1) Haul Road Construction, Site Formation and Slope Works
2) Steel Platform for Bridge Construction</td></tr>
<tr><td>NE/2015/02</td><td>Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works</td><td colspan="2">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</td></tr>
<tr><td>NE/2015/03</td><td>Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge</td><td colspan="2">1) Construction of lift shaft and sum pit
2) Construction of main deck</td></tr>
<tr><td>NE/2017/01</td><td>Tseung Kwan O – Lam Tin Tunnel – Tseung Kwan O Interchange and Associated Works</td><td colspan="2">1) Site Accommodation
2) Erection of Temporary Platform
3) Pre-drilling</td></tr>
<tr><td>NE/2017/02</td><td>Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works</td><td colspan="2">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</td></tr>
</table>

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

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

Construction Works	Major Environmental Impact	Control Measures
As mentioned in **Table 2.2**	Noise, dust impact, water quality and waste generation	• Sufficient watering of the works site with active dust emitting activities • Properly cover the stockpiles • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge • Use of quiet plant and well-maintained construction plant • Provide movable noise barrier

Status of Environmental Licences, Notification and Permits

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

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

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Environmental Permit (EP)				
N/A	EP-458/2013/C	20/1/2017	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation				
NE/2015/01	EPD Ref no.: 405305	21/07/2016	N/A	Valid
	EPD Ref no.: 405582	28/07/2016	N/A	Valid
NE/2015/02	EPD Ref no.: 406100	12/08/2016	N/A	Valid
NE/2015/03	EPD Ref no.: 416072	26/04/2017	N/A	Valid
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
Billing Account for Construction Waste Disposal				
NE/2015/01	Account No. 7025431	11/07/2016	N/A	Valid
NE/2015/02	Account No. 7025654	16/08/2016	N/A	Valid
NE/2015/03	Account No. 7026805	30/12/2016	N/A	Valid
NE/2017/02	Account No. 7029651	22/12/2017	N/A	Valid
NE/2017/01	Account No. 7029994	01/02/2018	N/A	Valid
Vessel Billing Account under construction waste disposal charging scheme				
NE/2015/01	Account No. 7027764	29/01/2018	10/05/2018	Valid
Registration of Chemical Waste Producer				
NE/2015/01	Waste Producer No. 5218-290-L2881-02	22/08/2016	N/A	Valid
	Waste Producer No. 5213-833-L2532-03	22/08/2016	N/A	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
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
Effluent Discharge License under Water Pollution Control Ordinance				
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
Construction Noise Permit (CNP)				
NE/2015/01	GW-RE1024-17	23/12/2017	22/06/2018	Expired on 22/06/2018
	GW-RE0140-18	06/03/2018	05/09/2018	Valid
	GW-RE0278-18	26/04/2018	24/06/2018	Expired on 24/06/2018
	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
	GW-RE0418-18	23/06/2018	22/12/2018	Valid
	GW-RE0421-18	25/06/2018	24/08/2018	Valid
NE/2015/02	GW-RE0916-17	02/12/2017	01/06/2018	Expired on 01/06/2018
	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
	GW-RE0384-18	02/06/2018	01/12/2018	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
	GW-RE0434-18	16/06/2018	15/01/2019	Valid
NE/2017/01	GW-RE0442-18	21/06/2018	02/11/2018	Valid
Marine Dumping Permit				
NE/2015/02	EP/MD/18-129	16/03/2018	15/09/2018	Valid
	EP/MD/18-139	15/05/2018	14/11/2018	Valid
	EP/MD/19-011	01/07/2018	31/07/2018	Valid
Specified Process (SP) License				
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 June 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(1)	Sitting-out Area at Cha Kwo Ling Village	Ground Level
AM4(A)(2) (*)	Cha Kwo Ling Public Cargo Working Area Administrative Office	Rooftop (3/F)
AM5(A)(*)	Tseung Kwan O DSD Desilting Compound	Ground Level
AM6(A) (*)	Park Central, L1/F Open Space Area	1/F

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

Monitoring Equipment

3.3 High Volume Samplers (HVS) were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined periodically by HVS to check the validity and accuracy of the results measured by direct reading method.

3.4 Wind data monitoring equipment was set at rooftop (about 41/F) of Yau Lai Estate Bik Lai House for logging wind speed and wind direction such that the wind sensors are clear of obstructions or turbulence caused by building. The wind data monitoring equipment is re-calibrated at least once every six months and the wind directions are divided into 16 sectors of 22.5 degrees each. The location is shown in **Figure 2**.

3.5 **Table 3.2** summarizes the equipment to be used in the air quality monitoring. Copies of calibration certificates are attached in **Appendix B**.

Table 3.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	TISCH Model: TE-5025A	1
1-hour TSP Dust Meter	Sibata Model No.: LD-3 / LD-3B	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.

<u>(Equipment: Hal Technology; Model no. Hal-HPC300 / Hal-HPC301)</u>

- 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.

<u>Maintenance/Calibration</u>

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

<u>Instrumentation</u>

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^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

3.12 For TSP sampling, fiberglass filters with a collection efficiency of > 99% for particles of 0.3μm diameter were used.

3.13 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.

3.14 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

3.15 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

3.16 The shelter lid was closed and secured with the aluminum strip.

3.17 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).

3.18 After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time will be also recorded.

3.19 Before weighing, all filters was equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

3.20 The following maintenance/calibration is required for the HVS:

- The high volume motors and their accessories will be properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking will be made to ensure that the equipment and necessary power supply are in good working condition.

- High volume samplers will be calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

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

3.22 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

3.23 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer at rooftop of Yau Lai Estate Bik Lai House (41/F). The location is shown in **Figure 2**. This weather information for the reporting month is summarized in **Appendix C**.

3.24 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix E** and **Appendix F** respectively.

3.25 The summary of exceedance record in reporting month is shown in **Appendix K**. No exceedance was recorded for the air quality monitoring.

3.26 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Table 3.4 Major Dust Source during Air Quality Monitoring

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

4. NOISE

Monitoring Requirements

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

Monitoring Locations

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

Table 4.1 Noise Monitoring Stations

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

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

Monitoring Equipments

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

Table 4.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVAN 957 / 977	4
	BSWA 801	2
Calibrator	SV30A	2
	Brüel & Kjær 4231	0

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

Table 4.3 Frequency and Parameters of Noise Monitoring

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

Monitoring Methodology and QA/QC Procedure

4.5 The monitoring procedures are as follows:

- The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time was set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - measurement time : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement will be more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- At the end of the monitoring period, the L_{eq}, L_{90} and L_{10} was recorded. In addition, noise sources was recorded on a standard record sheet.
- Noise monitoring will be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. Supplementary monitoring was provided to ensure sufficient data would be obtained.

Maintenance and Calibration

4.6 The microphone head of the sound level meter and calibrator was cleaned with a soft cloth at quarterly intervals.

4.7 The sound level meter and calibrator was checked and calibrated at yearly intervals.

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

dB.

Results and Observations

4.9 All noise monitoring was conducted as scheduled in the reporting month. Four (4) Action Level exceedance was recorded due to the documented complaints received in this reporting month. Twelve (12) 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 Construction Noise Assessment for Contract No. NE/2015/02 has been updated due to the change of construction work sequence. Updated Construction Noise Assessment for Contract No. NE/2015/02 is shown in **Appendix S** and highlighted in yellow. No update of Construction Noise Assessment for other contracts in the reporting period.

5. WATER QUALITY

Monitoring Requirements

Groundwater Quality

5.1 Groundwater quality monitoring shall be conducted as identified in the EIA report (locations refer to **Figure 4**, Stream 1 to 3). According to the EM&A Manual, dissolved oxygen (DO), pH, temperature, turbidity, suspended solids (SS), 5-day biochemical oxygen demand (BOD_5), Total organic carbon (TOC), Total Nitrogen, Ammonia-N and Total Phosphate are the parameters for the monitoring. **Appendix A** shows the established Action and Limit Levels.

5.2 As stated in the Baseline Environmental Monitoring Plan submitted to EPD in September 2016, Groundwater quality monitoring could not be conducted at the other identified monitoring station in the EIA Report, Stream 4, as it was found to be not accessible due to safety reason. EPD has no further comment on the Plan in October 2016.

Marine Water Quality

5.3 Marine water quality monitoring was conducted three times per week at the designated monitoring stations. Monitoring took place two times per monitoring day during mid ebb and mid flood tides at three depths (1 meter from surface, mid depth and 1 meter from the bottom). For Tseung Kwan O Salt Water Intake (i.e. Station M6), water sampling and in-situ measurements was taken at the vertical level where the water abstraction point of the intake is located (i.e. approximately mid-depth level). If the water depth is less than 6m, the mid-depth measurement may be omitted. If the depth is less than 3m, only the mid-depth measurements need to be taken.

5.4 Duplicate in-situ measurements (Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity) and water samples (suspended solids (SS)) at each depth were monitored in accordance with the requirements in the EM&A Manual. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides were not less than 0.5m.

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 is 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 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_5, 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	5
Monitoring Position	"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
Groundwater Quality			
Stream 1-Stream 3	• DO, mg/L • DO Saturation, % • pH • Water Temperature (°C) • Turbidity, NTU • SS, mg/L • BOD_5, mg O_2/L • TOC, mg-TOC/L • Total Nitrogen, mg/L • Ammonia-N, mg NH_3-N/L • Total Phosphate, mg-P/L	Mid-depth	Biweekly (When the tunnel construction works are found within 50m of the location, weekly.)
Marine Water Quality			
M1 M2 M3 M4 M5 M6 C1 C2 G1 G2 G3 G4	_In-situ_: Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity Laboratory Testing: Suspended Solids (SS)	M1-M5, C1-C2, G1-G4 • 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. • If the water depth is less than 3m, mid-depth sampling only. • If the water depth is less than 6m, omit mid-depth sampling. M6 • at the vertical level where the water abstraction point of	3 days per week / 2 per monitoring day (1 for mid-ebb and 1 for mid-flood)

Monitoring Stations	Parameters, unit	Depth	Frequency
		the intake is located(i.e. approximately mid-depth level)	
Water Quality Monitoring in Temporary Marine Embayment			
W1	• DO, mg/L • DO Saturation, % • pH • Water Temperature (°C) • Salinity, ppt	• 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. • If the water depth is less than 3m, mid-depth monitoring only. • If the water depth is less than 6m, omit mid-depth monitoring	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_5, TOC, Total Nitrogen, Ammonia-N and Total Phosphate, measurement and grab samples of surface water was collected. Water samples of about adequate volume was collected and stored in high density polythene bottles. Following collection, water samples was stored in high density polythene bottles. Preservation H_2SO_4 was appropriately added for water samples for TOC, Total Nitrogen, Ammonia-N and Total Phosphate testing. Water samples was packed in ice and cooled to 4°C (without being frozen), delivered to the HOKLAS accredited laboratory, Wellab Limited and analyzed.

Marine Water Quality

5.27 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 (1)	0.5 mg/L
BOD_5 (mg O_2/L)	APHA 19ed 5210B	2 mg O_2/L	--
TOC (mg-TOC/L)	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L	--
Total Nitrogen (mg/L)	In-house method SOP063 (FIA)	0.6 mg/L	--
Ammonia-N (mg NH_3-N/L)	In-house method SOP057 (FIA)	0.05 mg NH_3-N/L	--
Total Phosphorus (mg-P/L)(2)	In-house method SOP055 (FIA)	0.05 mg-P/L	--

Note:
1) Limit of Reporting is reported as Detection Limit for non-HOKLAS report.
2) Parameter Total Phosphorus represents the laboratory testing for total phosphate content in water which is the sum of all three forms of phosphates in water.

QA/QC Requirements

Decontamination Procedures

5.30 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_5 (mg O_2/L)	TOC (mg-TOC/L)	Total Nitrogen (mg/L)	NH_3-N (mg NH_3-N/L)	Total Phosphorus (mg-P/L)
5 June 2018	Stream 1	8.2	7.7	***7.6***	***39***	<2	7	***2.2***	0.1	***0.11***
	Stream 2	8.9	7.8	***72.2***	***100***	<2	5	1.5	<0.05	<0.05
	Stream 3	8.7	7.9	***86.9***	***92***	<2	5	1.5	<0.05	***0.06***
20 June 2018	Stream 1	8.5	7.4	***3.7***	<2.5	<2	3	0.8	0.11	<0.05
	Stream 2	8.5	7.5	***3.3***	<2.5	<2	4	1.5	<0.05	<0.05
	Stream 3	8.5	7.6	***4.2***	<2.5	<2	4	1.5	<0.05	<0.05
No. of Exceedance	Action Level	0	0	0	0	0	0	0	0	0
	Limit Level	0	0	6	3	0	0	1	0	2

Note: ***Bold Italic*** means Action Level exceedance ***Bold Italic with underline*** means Limit Level exceedance

5.36 Further to Monthly EM&A Report (May 2018), the exceedance events on 24 May 2018 are considered due to human activities, therefore non-Project related. Details of the investigation are presented in **Appendix K**.

5.37 All groundwater quality monitoring was conducted as scheduled in the reporting month. Twelve (12) Limit Level exceedances and no Action Level exceedance were recorded in the reporting month. The exceedances are considered due to rainfall and human activities, therefore non-Project related. Details of the investigation are presented 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.

<u>Groundwater Level Monitoring (Piezometer Monitoring)</u>

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 commenced in June 2018. No Action Level exceedance was recorded in the reporting month. Details of the result are presented in **Appendix U**.

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 aplied on the Cha Kwo Ling Tin Hau Temple. Construction works less than 100m from the Cha Kwo Ling Tin Hau temple commenced on 8 April 2017.

7.2 As stated in the "*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	MiniMate Plus manufactured by Instantel Model No.: 716A0403 / 721A2501	10

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(1)	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:

<u>Excavations deeper than 1m</u>
- 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.

<u>Excavations between 300mm and 1m deep</u>
- directly after the excavation has been completed; and
- periodically whilst the excavation remains open.

<u>For excavations less than 300mm deep</u>
- 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 / 120847)	2

Results and Observations

9.7 In the reporting month, landfill gas monitoring was carried out by the Contractor at the aforesaid locations on 50 occasions. No Limit Level exceedance for landfill gas monitoring was recorded in the reporting month. The monitoring results are provided in **Appendix R**. Copies of calibration certificates are attached in **Appendix B.**

10. ENVIRONMENTAL AUDIT

Site Audits

10.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix L**.

10.2 Joint weekly site audits by the representatives of the Engineer, Contractor and the ET were conducted in the reporting month as shown in below:

- Contract No. NE/2015/01: 6, 13, 20 and 27 June 2018
- Contract No. NE/2015/02: 6, 13, 20 and 27 June 2018
- Contract No. NE/2015/03: 6, 13, 20 and 27 June 2018
- Contract No. NE/2017/01: 6, 13, 20 and 27 June 2018
- Contract No. NE/2017/02: 6, 13, 20 and 27 June 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 27, 13, 13, 27, 13 June 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**.

11. WASTE MANAGEMENT

11.1 Waste generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediments. Inert C&D waste includes soil, broken rock, broken concrete and building debris, while non-inert C&D materials are made up of C&D waste which cannot be reused or recycled and has to be disposed of at the designated landfill sites. Marine sediment shall be expected from excavation and dredging works of this Project.

11.2 With reference to relevant handling records of this Project, the quantities of different types of waste generated in the reporting month are summarised and presented in **Appendix P**.

11.3 The Contractors are advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in the approved EM&A Manual and waste management plans shall be fully implemented. The status of implementation of waste management and reduction measures are summited in **Appendix N**.

12. ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

12.1 Four (4) Action Level exceedances were recorded due to the documented complaints received in the reporting month and Twelve (12) Limit Level exceedances for noise monitoring were recorded in the reporting month.

12.2 No Action Level and Twelve (12) 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.

12.5 After complaint investigation, non-compliances were recorded on 16th, 18th and 23rd April 2018 for Contract No. NE/2015/02 due to non-conformance with the proposed quantity of powered mechanical equipment stated in the CNMP. Details of investigation are presented in **Appendix O**.

Summary of Environmental Complaint

12.6 Ten (10) 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

12.7 No notification of summon was received in this reporting period. One successful environmental prosecution to the subcontractor under Contract No. NE/2015/02 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 (July 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) Construction of main deck 2) Construction of lift shaft and sum pit	
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 20th Environmental Monitoring and Audit (EM&A) Report which presents the EM&A works undertaken during the period in June 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. Four (4) Action Level exceedances were recorded due to the documented complaints received in this reporting month and Twelve (12) Limit Level exceedances were 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 Twelve (12) Limit Level exceedances were recorded in the reporting month. The exceedances are considered due to rainfall and human activities, therefore non-Project related.

14.6 Tunnel construction activities are within +/- 50m of the piezometer gate in plan. Construction phase daily piezometer monitoring by the Contractor commenced in June 2018. No Action Level exceedance was recorded in the reporting month.

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 Ten (10) 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

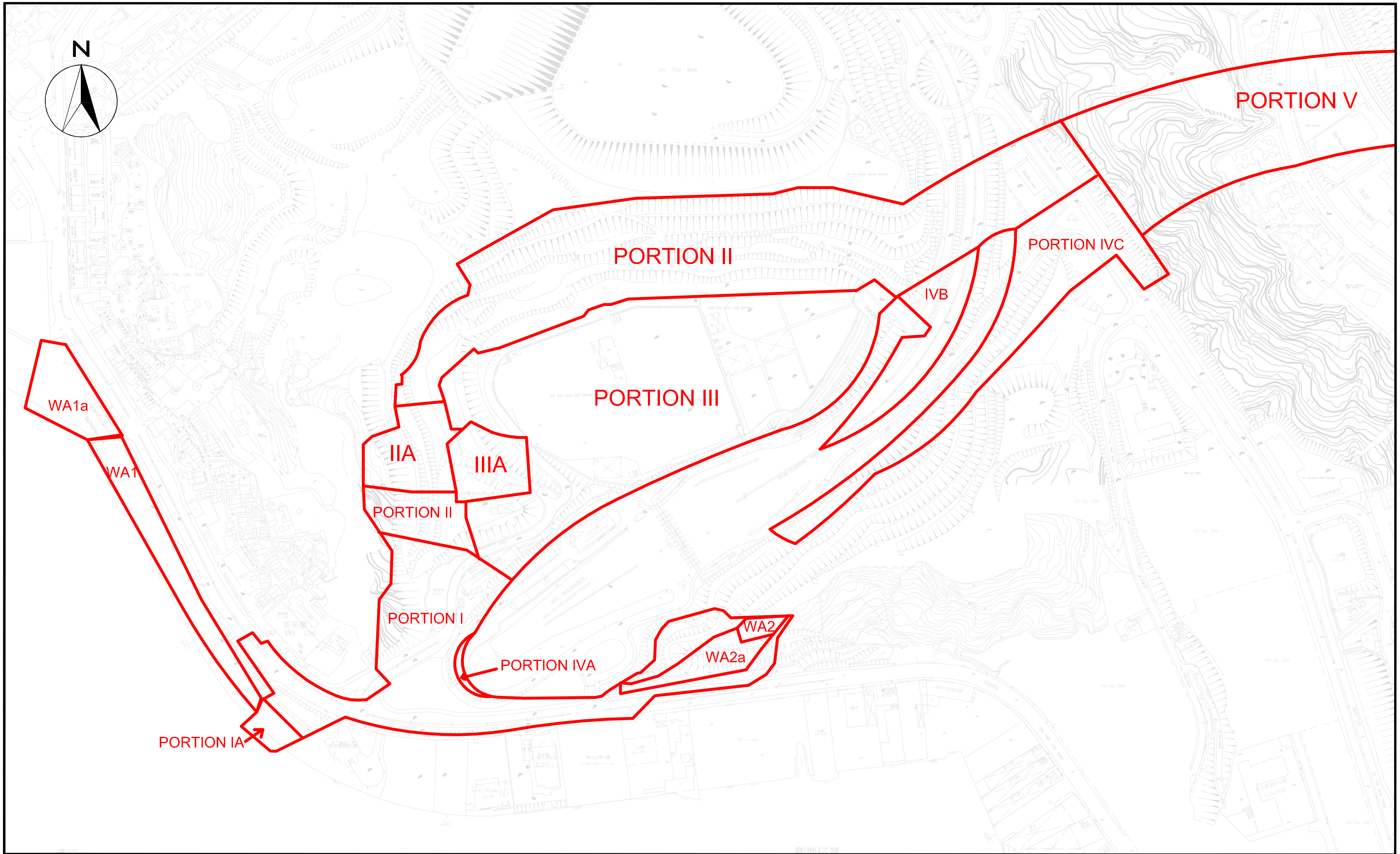
- To remove construction waste regularly.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment.
- To provide drip tray to chemical containers to avoid any chemical leakage.
- To remove the oil stain and disposed of as chemical waste.
- To remove the stagnant water regularly found inside the drip tray.

Landscape and Visual

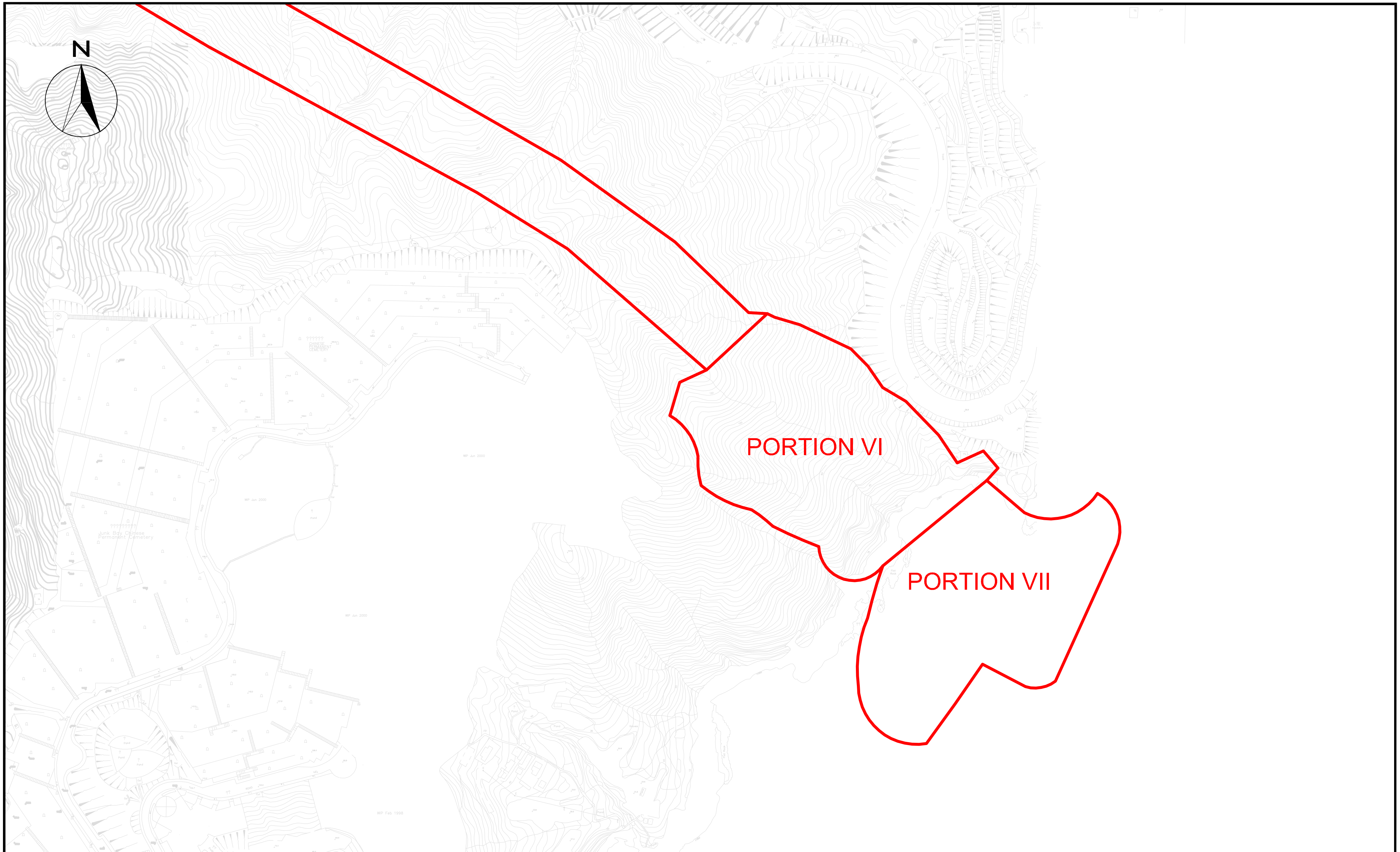
- To set up proper tree protection area.
- To avoid placing any construction materials in the tree protection zone.

FIGURES

CINOTECH Cinotech Consultants Limited	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Site Layout Plan	SCALE	1:15000 @ A4	DATE	APR 2018	
		CHECK	JF	DRAWN	AC	
		JOB No.	MA16034	FIGURE NO.	1	REV -



CINOTECH Cinotech Consultants Limited	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Site Portions under Works Contract No. NE/2015/01 (Lam, Tin Side)	SCALE	1:15000 @ A4	DATE	JAN 2018
		CHECK	JF	DRAWN	JW
		JOB No.	MA16034	FIGURE NO. 1a	REV -



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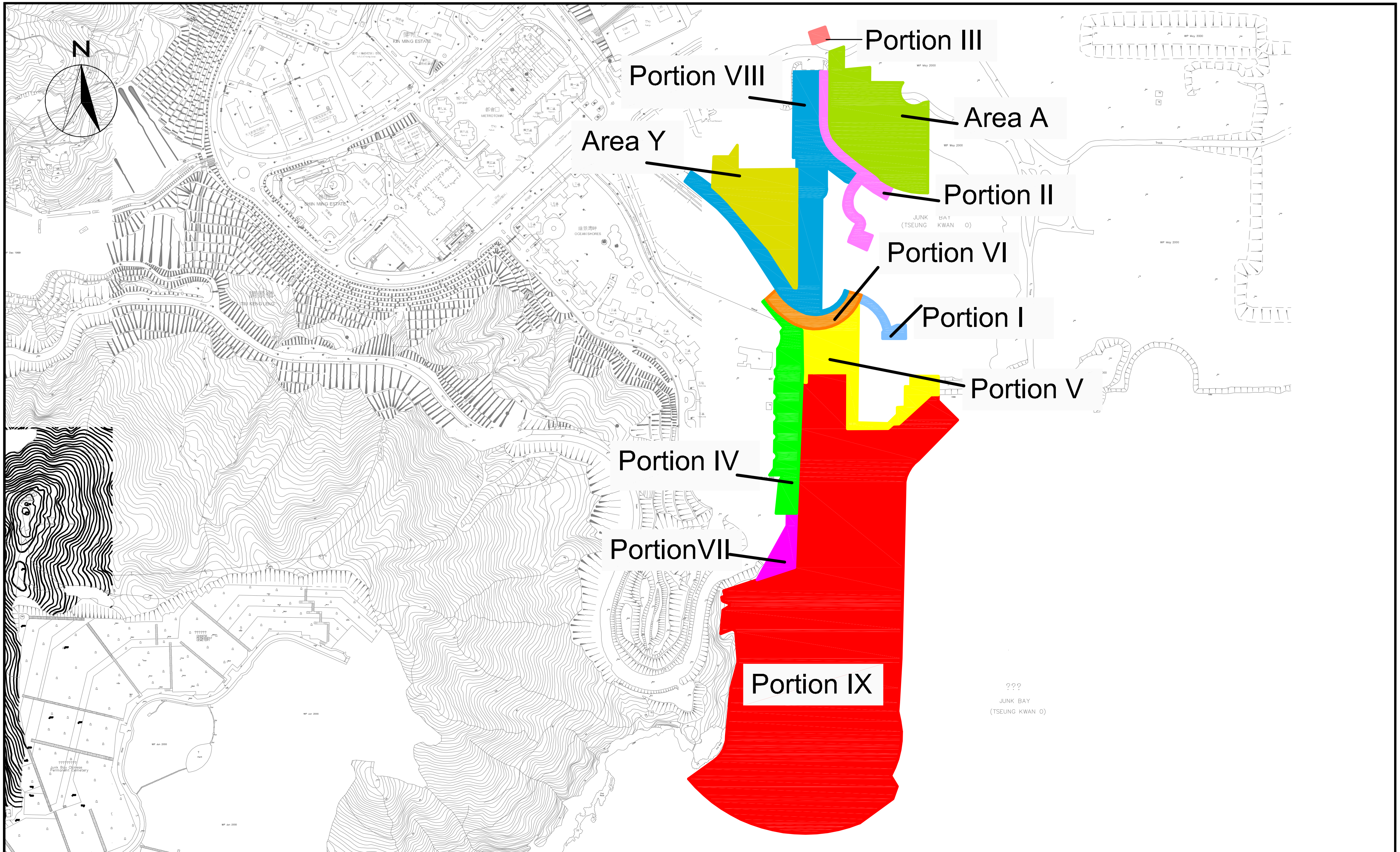
Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel
- Design and Construction
Site Portions under Works Contract No. NE/2015/01 (Tsuneg Kwan O Side)

SCALE	1:15000 @ A4	DATE	JAN 2018
CHECK	JF	DRAWN	JW
JOB No.	MA16034	FIGURE NO.	1b
		REV	-



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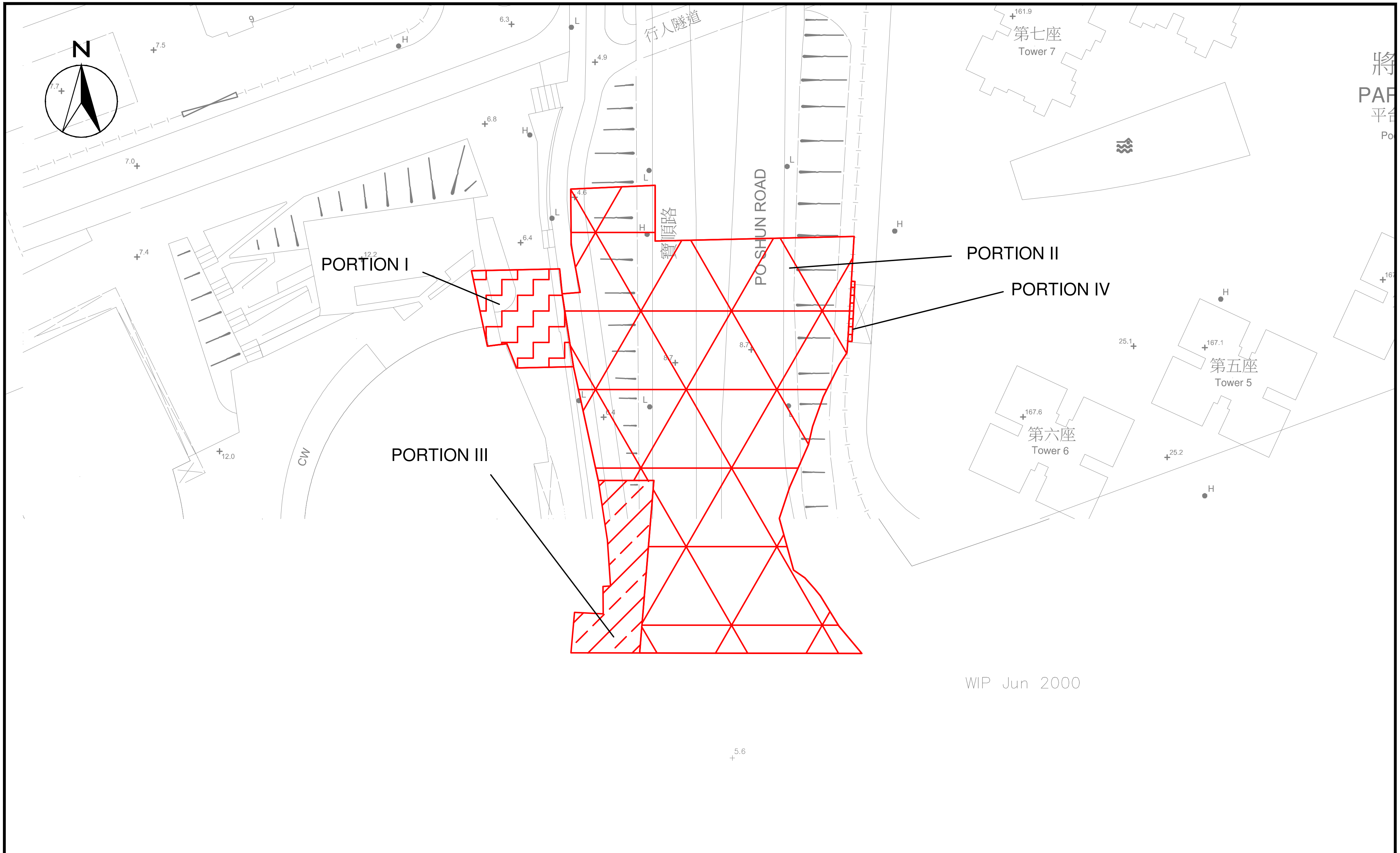
Cinotech Consultants Limited

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

SCALE	N.T.S.	DATE	AUG 2017
CHECK	JF	DRAWN	JW
JOB No.	MA16034	FIGURE NO.	1c
		REV	-



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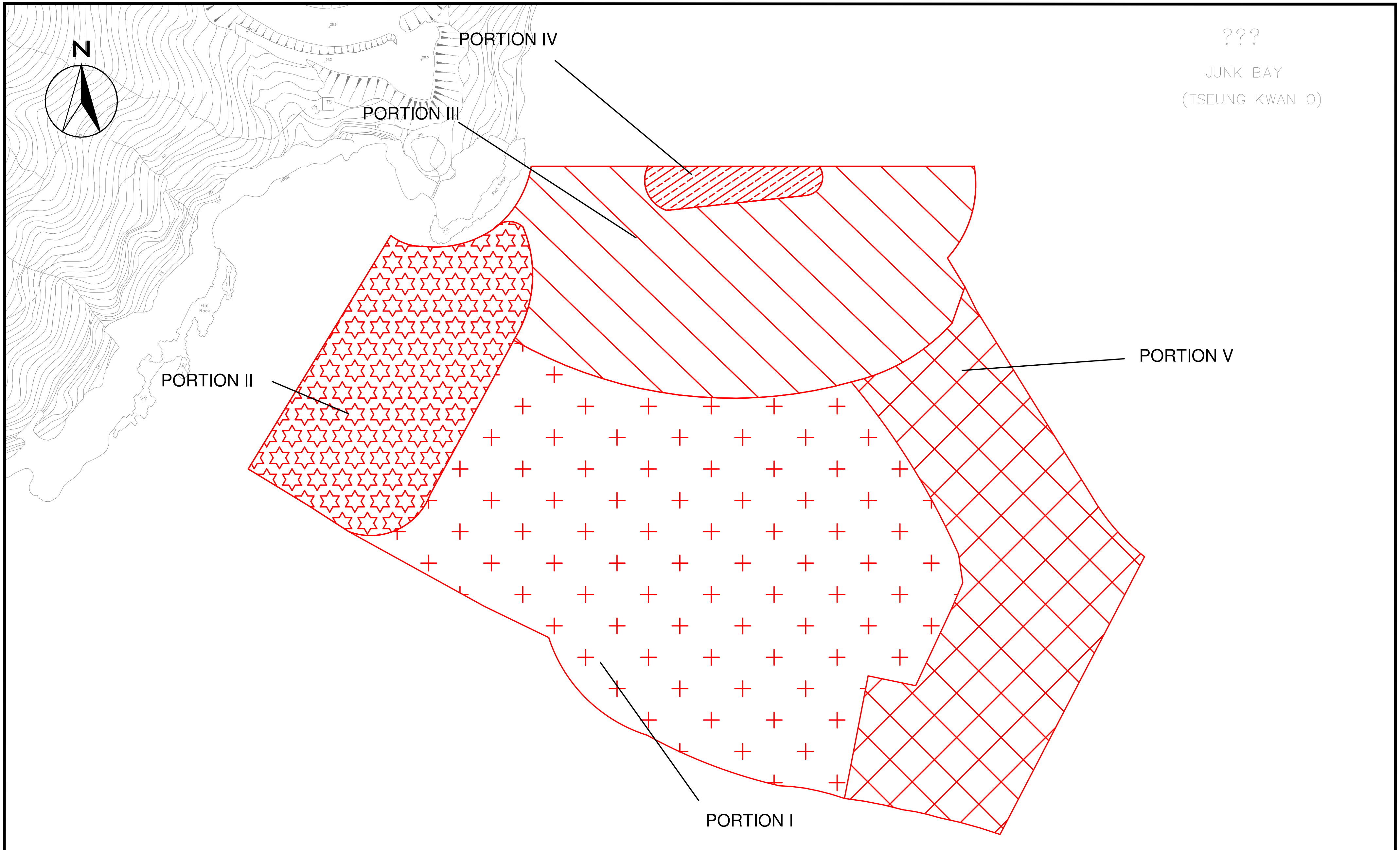
Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel
- Design and Construction

Site Portions under Work Contract No. NE/2015/03

SCALE	1:2500 @ A4	DATE	JUN 2018
CHECK	VC	DRAWN	AC
JOB No.	MA16034	FIGURE NO. 1d	REV -



CINOTECH Cinotech Consultants Limited	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction	SCALE	1:2500 @ A4	DATE	JUN 2018
		CHECK	VC	DRAWN	AC
	Site Portions under Work Contract No. NE/2017/01	JOB No.	MA16034	FIGURE NO. 1e	REV -

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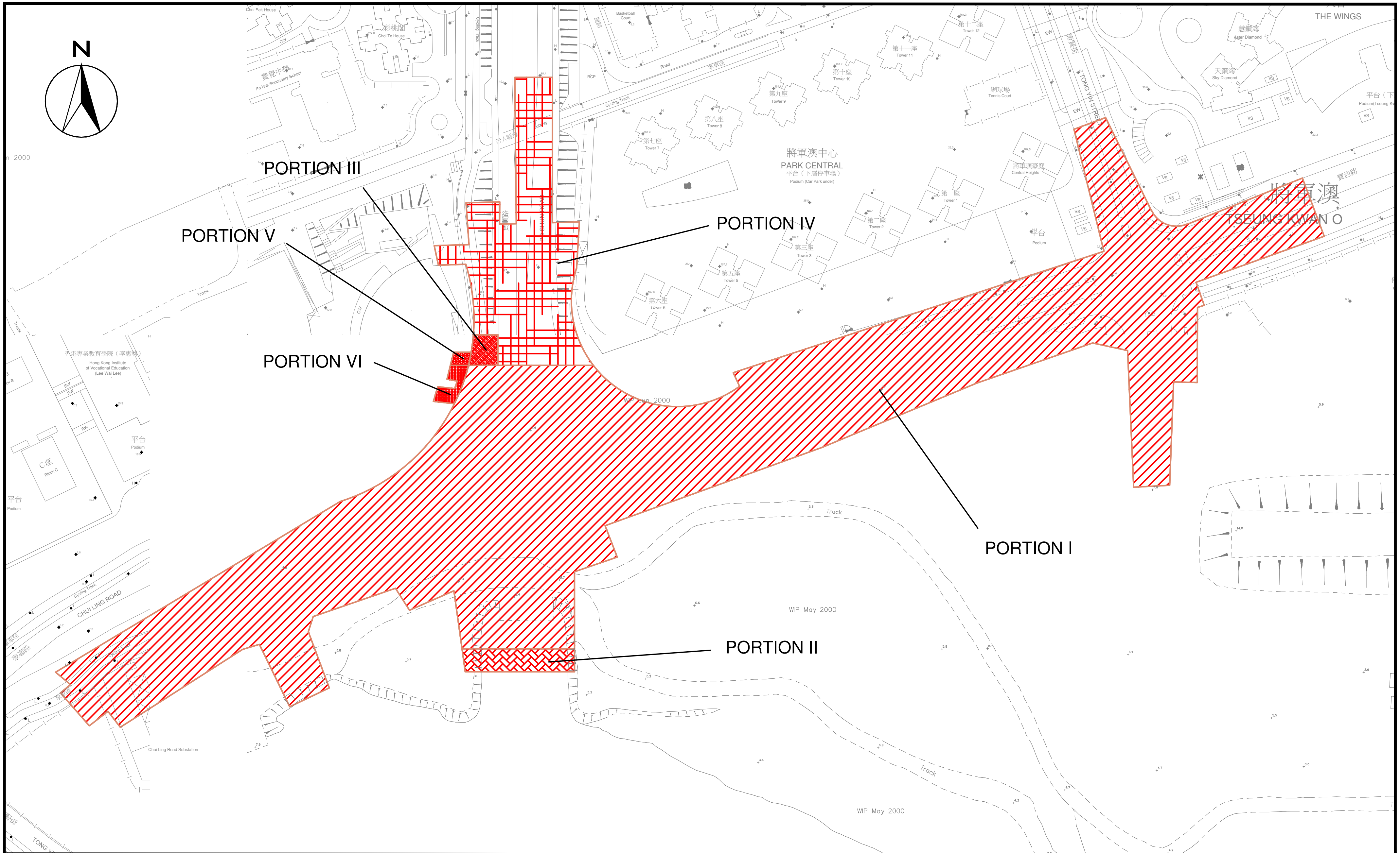
Environmental Team for Tseung Kwan O - Lam Tin Tunnel
- Design and Construction

Site Portions under Work Contract No. NE/2017/01

SCALE	1:1500 @ A4	DATE	JUN 2018
CHECK	VC	DRAWN	AC
JOB No.	MA16034	FIGURE NO. 1f	REV -



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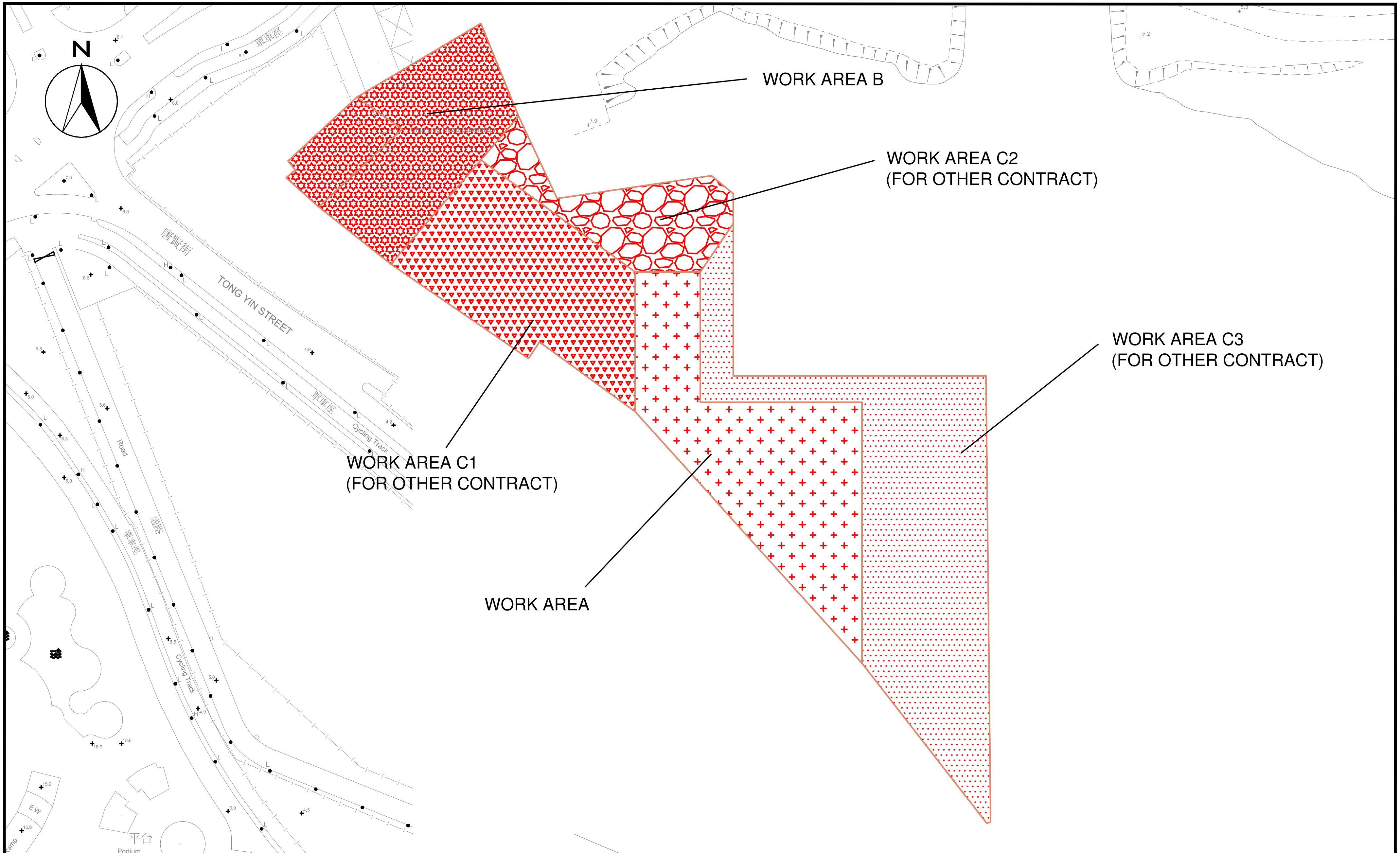
Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel
- Design and Construction

Site Portions under Work Contract No. NE/2017/02

SCALE	1:2500 @ A4	DATE	JUN 2018
CHECK	VC	DRAWN	AC
JOB No.	MA16034	FIGURE NO.	1g
		REV	-



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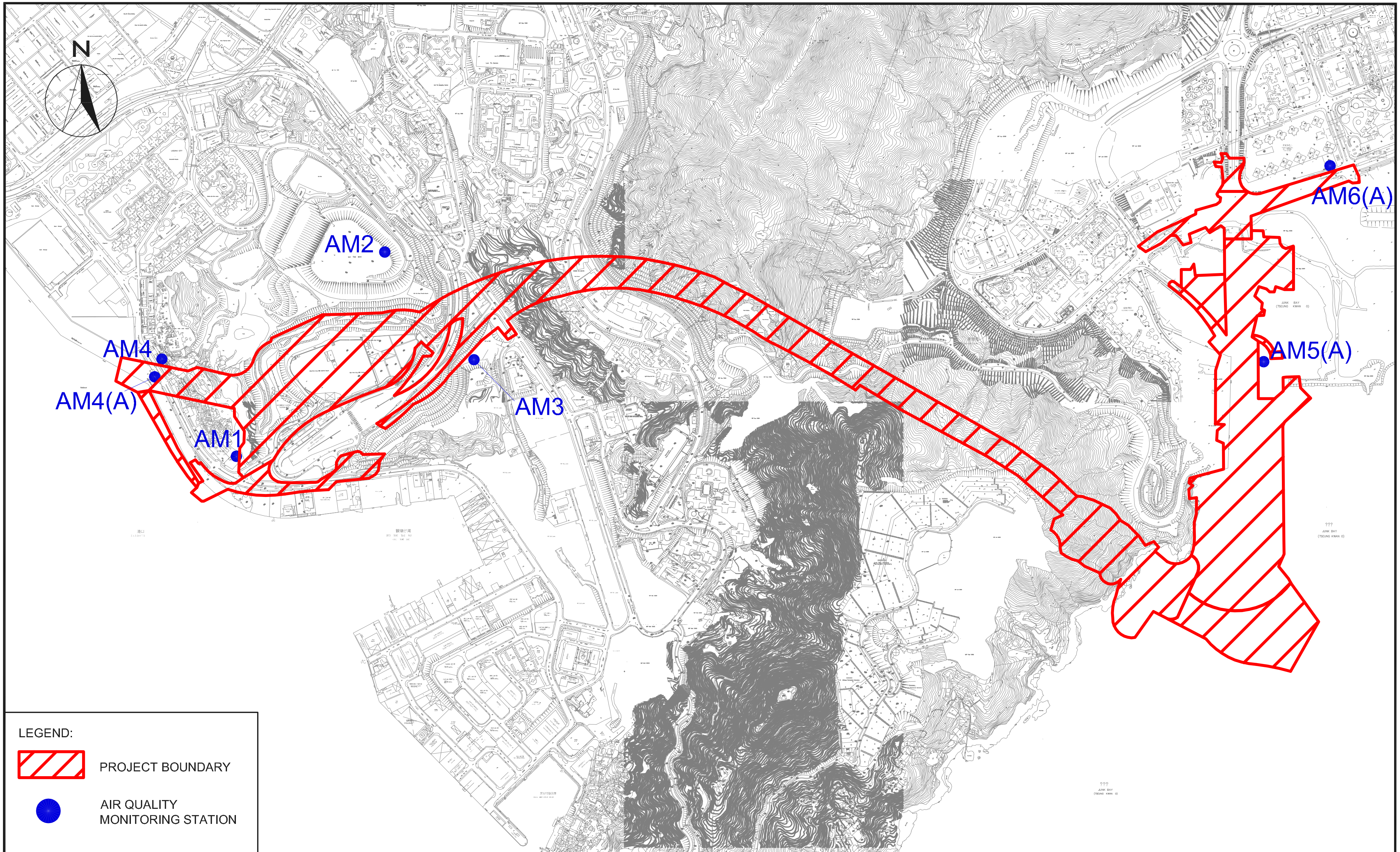
Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel
- Design and Construction

Site Portions under Work Contract No. NE/2017/02

SCALE	1:1500 @ A4	DATE	JUN 2018
CHECK	VC	DRAWN	AC
JOB No.	MA16034	FIGURE NO.	1h
		REV	-



LEGEND:

PROJECT BOUNDARY

AIR QUALITY MONITORING STATION

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

SCALE	1:15000 @ A4	DATE	JAN 2018	
CHECK	JF	DRAWN	JW	
JOB No.	MA16034	FIGURE NO.	2	REV -

LEGEND:

PROJECT BOUNDARY

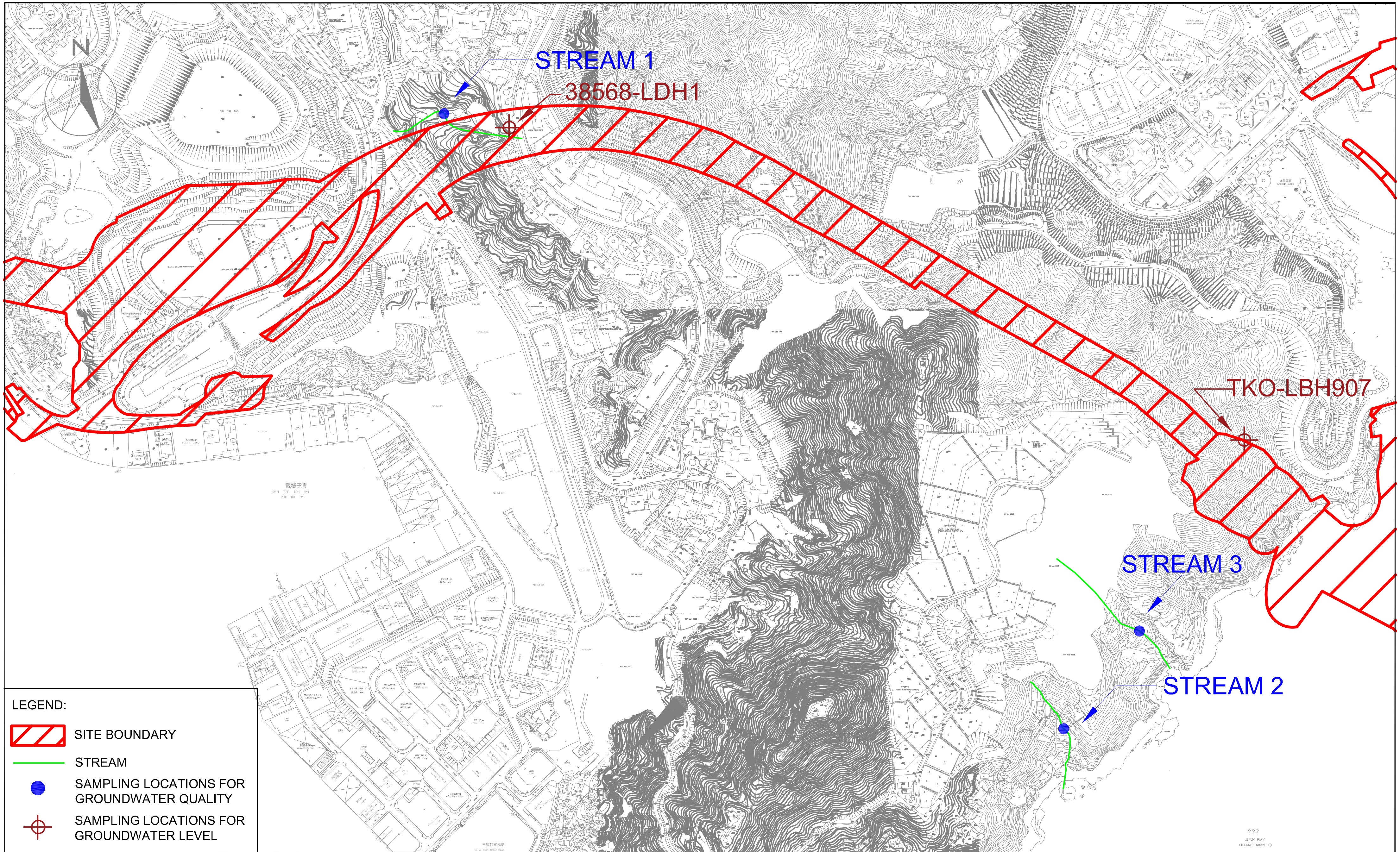
NOISE MONITORING STATION

CINOTECH
Cinotech Consultants Limited

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

Noise Monitoring Stations

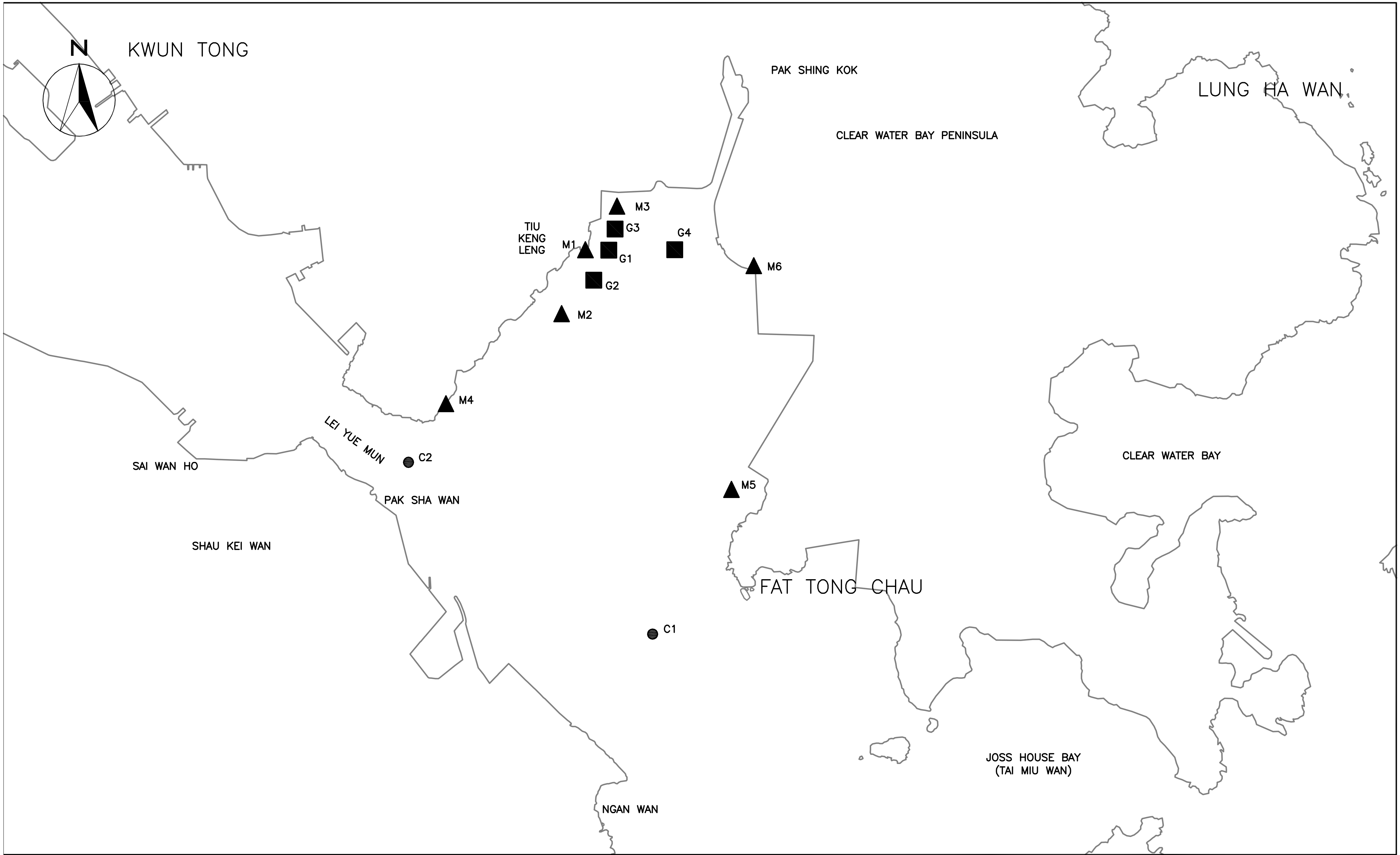
SCALE	1:15000 @ A4	DATE	JAN 2018	
CHECK	JF	DRAWN	JW	
JOB No.	MA16034	FIGURE NO.	3	REV -



CINOTECH
Cinotech Consultants Limited

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 -

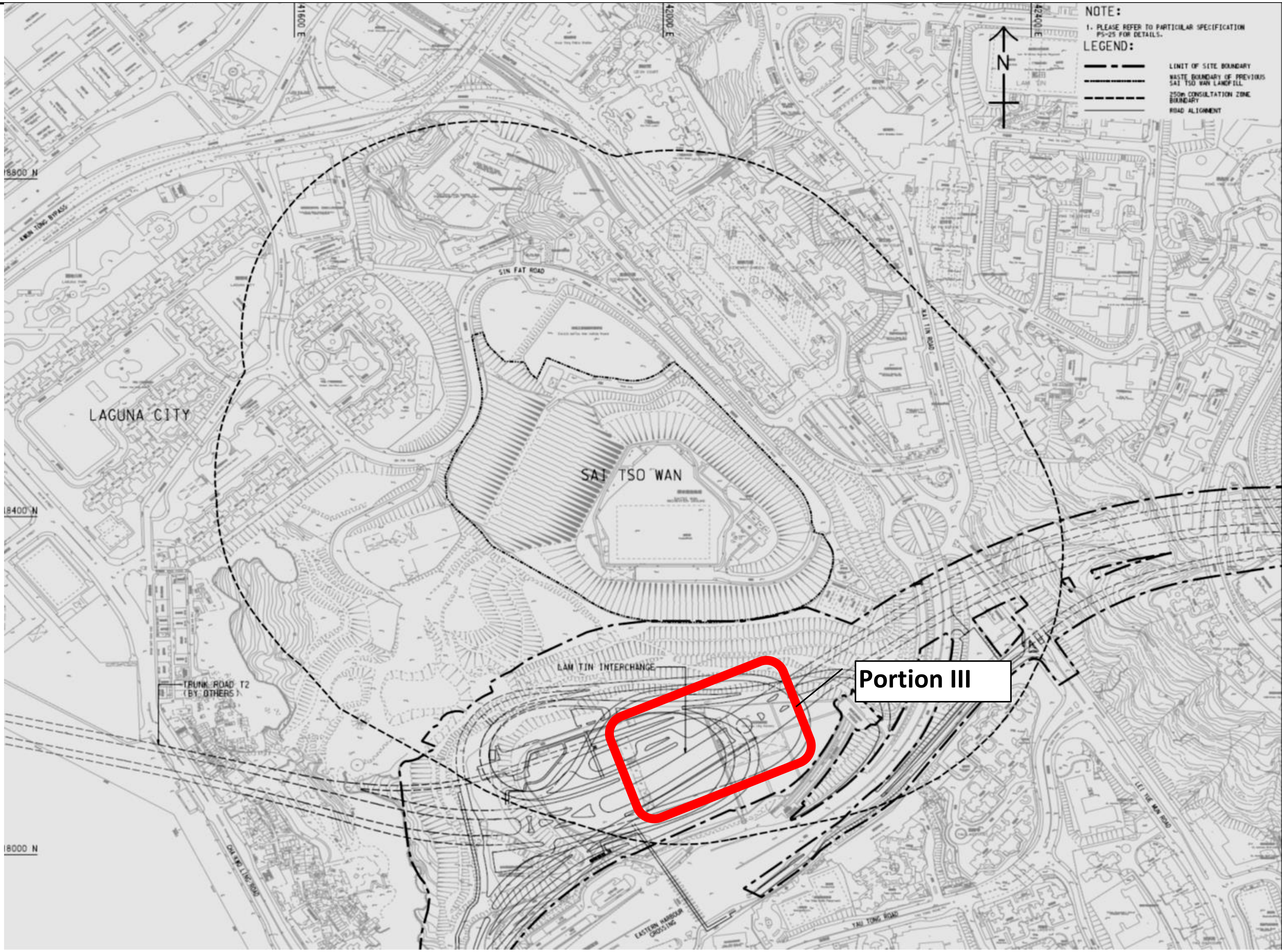


CINOTECH
Cinotech Consultants Limited

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

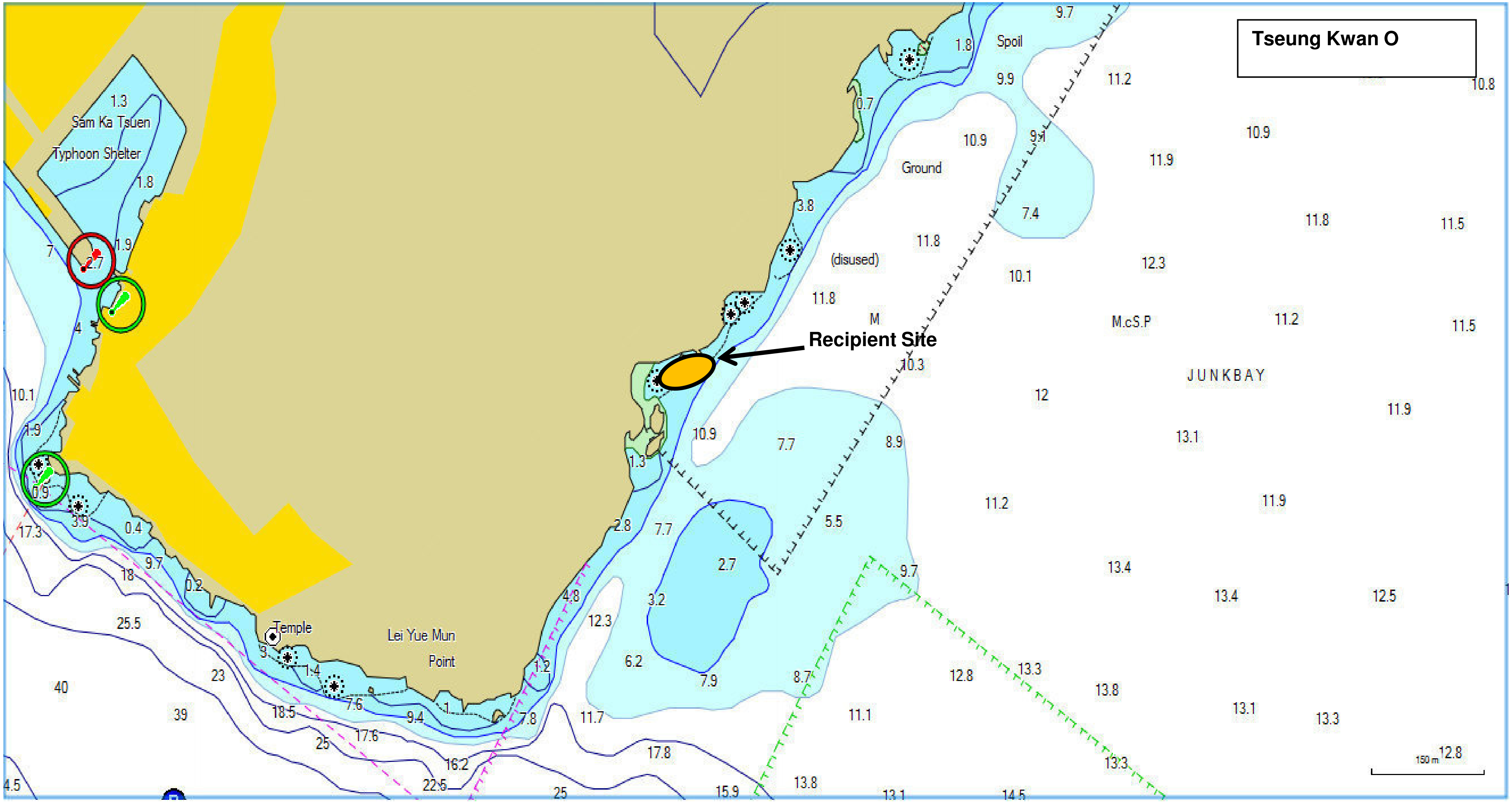
Locations of Water Quality Monitoring Stations

SCALE	N.T.S	DATE	AUG 2016
CHECK	JF	DRAWN	JW
PROJECT NO.	MA16034	FIGURE NO. 5	REV –

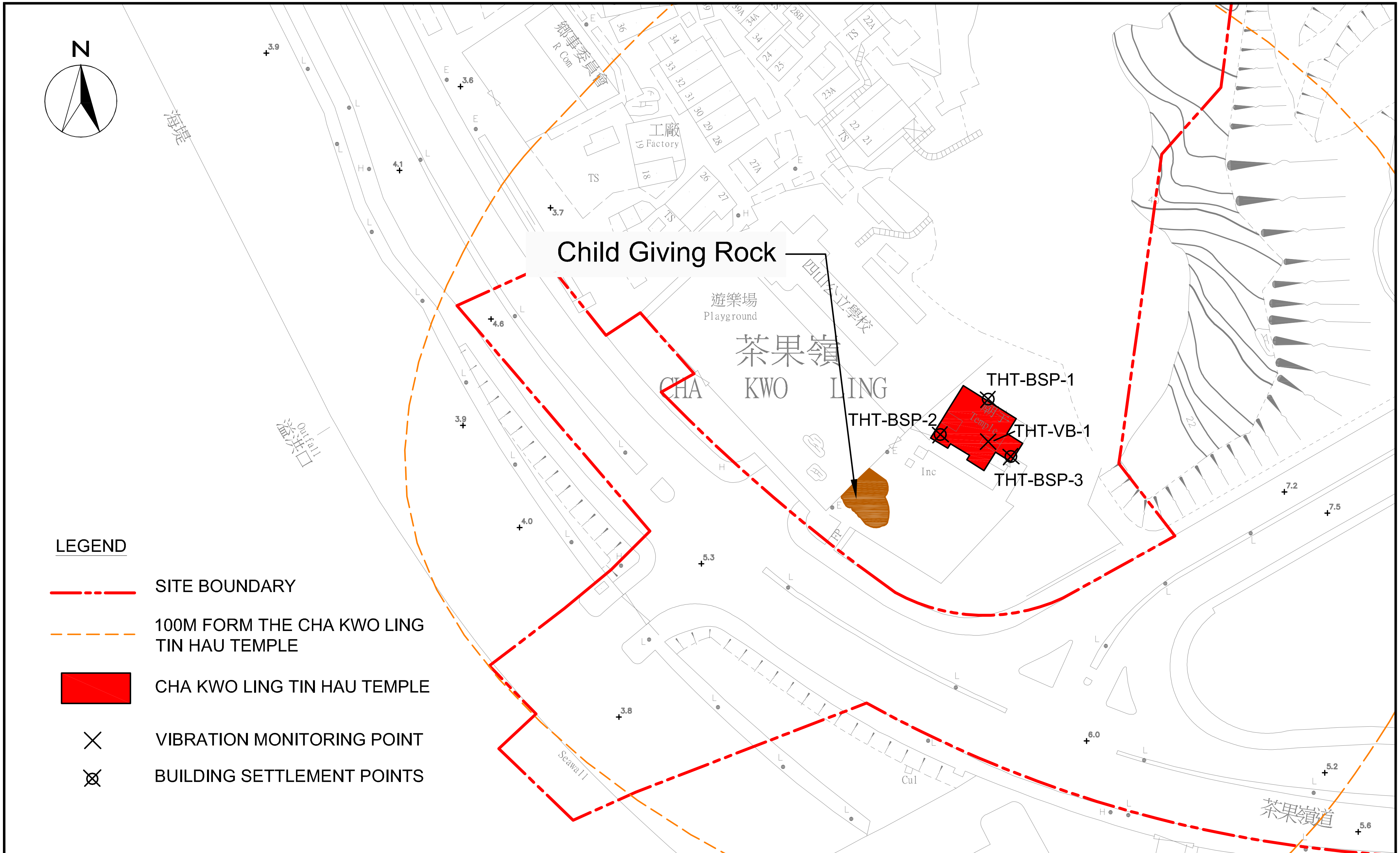


Title	Scale	Project
Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Locations of Landfill Gas Monitoring	N.T.S	No. MA16034
	Date Dec-16	Figure 6

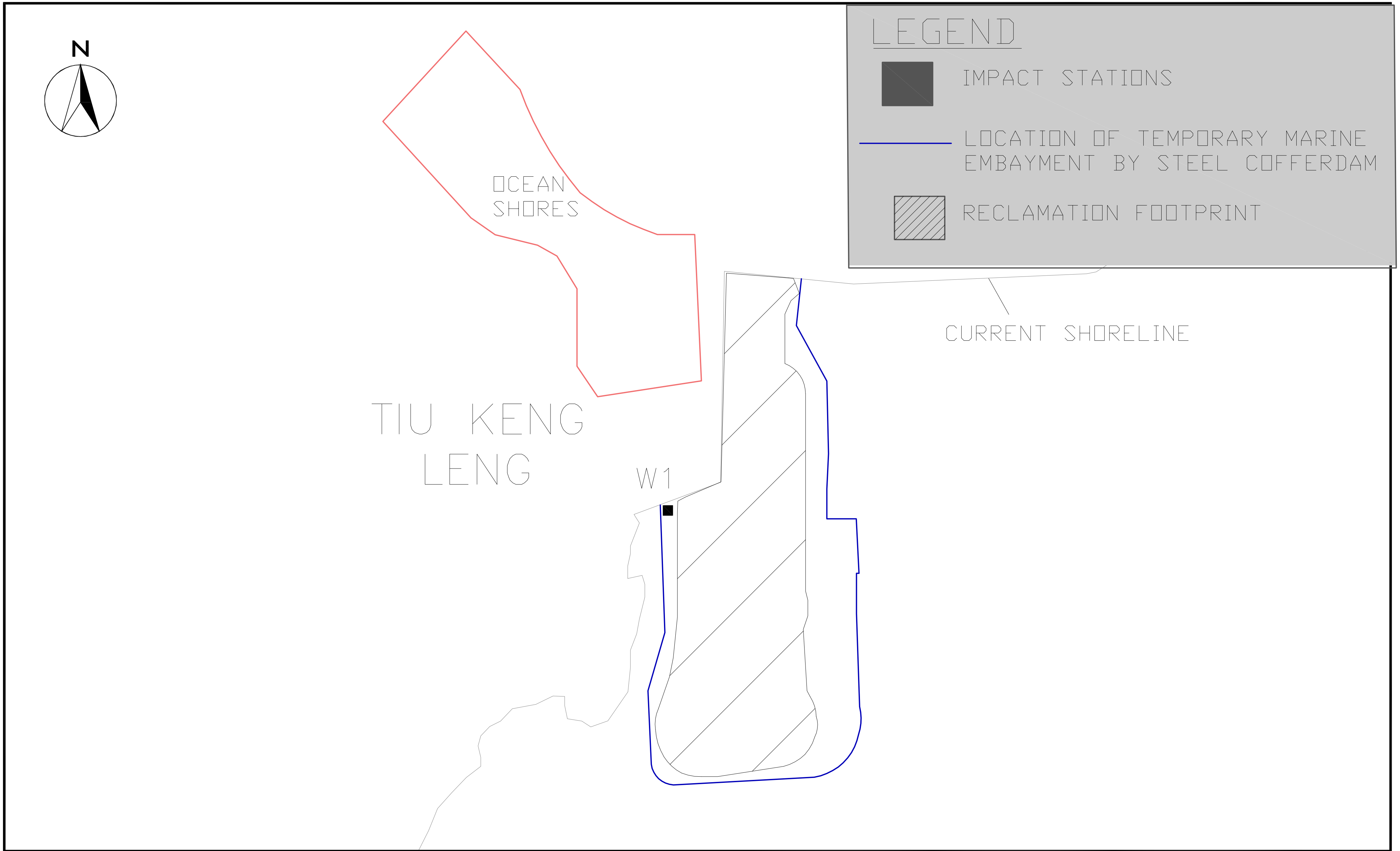
CINOTECH



Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Location of Post-translocation Coral Monitoring	Scale: N.T.S	Project No. MA16034	CINOTECH
	Date: Mar-17	Figure: 7	



CINOTECH Cinotech Consultants Limited	Agreement No. CE/59/2015 (EP) Environmental Team for Tsueng Kwan O - Lam Tin Tunnel - Design and Construction Locations of Monitirong for Cultural Heritage	SCALE	N.T.S.	DATE	FEB 2018
		CHECK	JF	DRAWN	AC
		JOB No.	MA16034	FIGURE NO. 8	REV -



CINOTECH Cinotech Consultants Limited	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction Location of Water Quality Monitoring Stations within Temporary Marine Embayment	SCALE	N.T.S	DATE	MAY 2017
		CHECK	JF	DRAWN	JW
		PROJECT NO.	MA16034	FIGURE NO. 9	REV –

APPENDIX A
ACTION AND LIMIT LEVELS

APPENDIX A – Action and Limit Levels

Air Quality

1-hr TSP

Monitoring Stations	Location	Action Level, µg/m^3	Limit Level, µg/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, µg/m^3	Limit Level, µg/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) (1)
1900-2300 on all days and 0700-2300 on general holidays (including Sundays)		60/65/70 dB(A)(2)(3)
2300-0700 on all days		45/50/55 dB(A)(2)(3)

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

Water Quality

Groundwater

Parameters	Action	Limit
DO in mg L^{-1}	7.6	7.6
pH	6.0 – 8.9	6.0 – 9.0
BOD_5 in mg L^{-1}	2.0	2.0
TOC in mg L^{-1}	Stream 1 and Stream 2: 9	Stream 1 and Stream 2: 9
	Stream 3: 6	Stream 3: 6
Total Nitrogen in mg L^{-1}	2.0	2.1
Ammonia-N in mg L^{-1}	0.15	0.20
Total Phosphate in mg L^{-1}	0.05	0.05
SS in mg L^{-1}	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_5), Total organic carbon (TOC), Total Nitrogen, Ammonia-N and Total Phosphate, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

Groundwater Level Monitoring

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

Marine Water Quality

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

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

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	***4.8 mg/L*** (4)	***4 mg/L*** (3)
	Bottom	***2.4 mg/L*** (4)	***2 mg/L***(3)

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

Landfill Gas Monitoring

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

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

APPENDIX B
COPIES OF CALIBRATION CERTIFICATES

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	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.0	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: Chi Man Hei Signature: Hei Date: 27/4/2018

Checked by: WK Tang Signature: Kwan Date: 27/4/2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/05/0012

Project No. AM1 - Tin Hau Temple

Date: 26-Jun-18 | Next Due Date: 25-Aug-18 | Operator: MH

Equipment No.: A-01-05 | Model No.: GS2310 | Serial No.: 10599

Ambient Condition			
Temperature, Ta (K)	302.5	Pressure, Pa (mmHg)	758.6

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

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	13.2	3.60	61.56	7.6	2.73
2	9.4	3.04	51.95	5.4	2.30
3	8.2	2.84	48.52	4.6	2.13
4	5.3	2.28	39.01	3.3	1.80
5	3.1	1.75	29.84	2.0	1.40

By Linear Regression of Y on X

Slope , mw = 0.0413 **Intercept, bw = 0.1662**

Correlation coefficient* = 0.9984

*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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **3.84**

Remarks:

Conducted by: Chi Man Hui Signature: Hui Date: 26/6/2018

Checked by: WK Tang Signature: Kwan Date: 26/6/2018

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	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-**axis**
1	13.4	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 Mun Hiu Signature: hei Date: 27/4/2018

Checked by: WK Tang Signature: Kwai Date: 27/4/2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0012

Project No. AM2 - Sai Tso Wan Recreation Ground

Date: 26-Jun-18 Next Due Date: 25-Aug-18 Operator: MH

Equipment No.: A-01-08 Model No.: GS2310 Serial No.: 1287

Ambient Condition			
Temperature, Ta (K)	301.5	Pressure, Pa (mmHg)	758.6

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	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	13.4	3.64	62.13	8.0	2.81
2	10.8	3.26	55.78	6.5	2.53
3	8.7	2.93	50.06	5.1	2.24
4	5.5	2.33	39.81	3.4	1.83
5	3.3	1.80	30.84	2.0	1.40

By Linear Regression of Y on X

Slope , mw = **0.0446** **Intercept, bw =** **0.0361**

Correlation coefficient* = **0.9995**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.87**

Remarks:

Conducted by: Lai Man Hou Signature: hei Date: 26/6/2018

Checked by: WK Tang Signature: Kwan Date: 26/6/2018

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 x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	13-Feb-19	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **3.96**

Remarks:

Conducted by: Lee Man Hei Signature: Lei Date: 27/4/2018

Checked by: WK Tang Signature: Kwai Date: 27/4/2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/03/0010

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

Date: 26-Jun-18 Next Due Date: 25-Aug-18 Operator: MH

Equipment No.: A-01-03 Model No.: GS2310 Serial No.: 10379

Ambient Condition			
Temperature, Ta (K)	301.4	Pressure, Pa (mmHg)	758

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

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	12.5	3.51	59.99	7.4	2.70
2	10.7	3.25	55.51	6.7	2.57
3	7.8	2.77	47.39	4.8	2.18
4	5.6	2.35	40.16	3.4	1.83
5	3.2	1.78	30.36	2.0	1.40

By Linear Regression of Y on X

Slope , mw = **0.0448** **Intercept, bw =** **0.0431**

Correlation coefficient* = **0.9988**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **3.94**

Remarks:

Conducted by: Lee Man Hei Signature: Lei Date: 26/6/2018

Checked by: W.K. Tang Signature: Kiwai Date: 26/6/2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/54/0011

Project No. AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

Date: 27-Apr-18 Next Due Date: 26-Jun-18 Operator: MH

Equipment No.: A-01-54 Model No.: TE-5170 Serial No.: 1536

Ambient Condition			
Temperature, Ta (K)	298.4	Pressure, Pa (mmHg)	763.6

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	mc x 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	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	17.1	4.14	70.78	10.6	3.26
2	13.4	3.67	62.66	8.7	2.95
3	10.0	3.17	54.13	6.2	2.49
4	6.7	2.59	44.31	4.3	2.08
5	4.3	2.08	35.50	2.7	1.65

By Linear Regression of Y on X

Slope , mw = 0.0462 **Intercept, bw = 0.0155**

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.00**

Remarks:

Conducted by: Lee Man Hei Signature: Hei Date: 27/4/2018

Checked by: WK Tang Signature: Kwai Date: 27/4/2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/54/0012

Project No. AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

Date: 26-Jun-18 Next Due Date: 25-Aug-18 Operator: MH

Equipment No.: A-01-54 Model No.: TE-5170 Serial No.: 1536

Ambient Condition			
Temperature, Ta (K)	301.1	Pressure, Pa (mmHg)	759.3

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	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	16.4	4.03	68.81	9.7	3.10
2	12.8	3.56	60.79	7.8	2.78
3	10.3	3.19	54.53	6.5	2.54
4	6.9	2.61	44.64	4.2	2.04
5	4.2	2.04	34.83	2.7	1.63

By Linear Regression of Y on X

Slope , mw = **0.0437** **Intercept, bw =** **0.1134**

Correlation coefficient* = **0.9990**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.01**

Remarks:

Conducted by: Lit Man Hey Signature: Lei Date: 26/6/2018

Checked by: W K Tang Signature: Kwan Date: 26/6/2018

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 x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	13-Feb-19	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	17.2	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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **3.71**

Remarks:

Conducted by: Lee Man Hin Signature: Lee Date: 27/4/2018

Checked by: WK. Tang Signature: Kwai Date: 27/4/2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/37/0012

Project No. AM5(A) - Tseung Kwan O DSD Desilting Compound
Date: 26-Jun-18 Next Due Date: 25-Aug-18 Operator: MH
Equipment No.: A-01-37 Model No.: GS2310 Serial No.: 1704

Ambient Condition			
Temperature, Ta (K)	301.7	Pressure, Pa (mmHg)	759

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	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	16.6	4.05	69.15	9.6	3.08
2	13.0	3.58	61.19	7.8	2.77
3	9.8	3.11	53.13	5.7	2.37
4	6.7	2.57	43.93	4.0	1.99
5	4.6	2.13	36.40	2.8	1.66

By Linear Regression of Y on X

Slope , mw = **0.0437** **Intercept, bw =** **0.0670**

Correlation coefficient* = **0.9994**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.84**

Remarks:

Conducted by: Lt Man Kee Signature: lui Date: 26/6/2018
Checked by: WK Tang Signature: Kwan Date: 26/6/2018

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 x 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	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.4	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: Lit Wan Hei Signature: hei Date: 25/5/2018

Checked by: WK Tang Signature: Kwai Date: 25/5/2018

TISCH Environmental

RECALIBRATION DUE DATE:
February 13, 2019

Certificate of Calibration

Calibration Certification Information					
Cal. Date:	February 13, 2018	**Rootsmeter S/N:** 438320	**Ta:** 293	°K	
Operator:	Jim Tisch		**Pa:** 763.3	mm Hg	
Calibration Model #:	TE-5025A	**Calibrator S/N:** 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)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (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
QSTD	m=	**2.06726**	**QA**	m=	**1.29448**
	b=	**-0.00045**		b=	**-0.00028**
	r=	**0.99992**		r=	**0.99992**

Calculations

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

For subsequent flow rate calculations:

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

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

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

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

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

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

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

WELLAB Testing & Research 匯力

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

TEST REPORT

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

Test Report No.:	C/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**

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

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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

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******************************

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TEST REPORT

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

Test Report No.:	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**

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 Temperatre : 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

****

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

Patrick Tse

PATRICK TSE
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TEST REPORT

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

Test Report No.:	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 Temperatre	: 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

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	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**

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

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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	29026 2018-06-11 2018-06-08 2018-06-08 2018-06-11 2018-08-10
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)	1.226

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	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**

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:
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TEST REPORT

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

Test Report No.:	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**

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

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	29026B
Date of Issue:	2018-06-11
Date Received:	2018-06-08
Date Tested:	2018-06-08
Date Completed:	2018-06-11
Next Due Date:	2018-08-10

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

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)	1.204

****

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

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	29026C
Date of Issue:	2018-06-11
Date Received:	2018-06-08
Date Tested:	2018-06-08
Date Completed:	2018-06-11
Next Due Date:	2018-08-10

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

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)	1.239

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	29026E
Date of Issue:	2018-06-11
Date Received:	2018-06-08
Date Tested:	2018-06-08
Date Completed:	2018-06-11
Next Due Date:	2018-08-10

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

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)	1.213

****

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

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TEST REPORT

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

Test Report No.:	C/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
Page:	1 of 1

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

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperatre	: 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

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TEST REPORT

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

Test Report No.:	C/N/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**

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 Temperatre	: 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

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TEST REPORT

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

Test Report No.:	C/N/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**

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 Temperatre : 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

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PATRICK TSE
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TEST REPORT

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

Test Report No.:	C/N/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 Temperatre : 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:
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TEST REPORT

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

Test Report No.:	C/N/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 Temperatre : 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:
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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **Room 1710, Technology Park,** **18 On Lai Street,** **Shatin, NT, Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/N/171215B 2017-12-18 2017-12-15 2017-12-15 2017-12-18 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 Temperatre : 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

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TEST REPORT

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

Test Report No.:	C/N/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**

Item for calibration:

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

Test conditions:

Room Temperatre : 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

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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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 Temperatre	: 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:
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TEST REPORT

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

Test Report No.:	29025B
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**

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 Turbuduty 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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TEST REPORT

Test Report No.:	29025B
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

Certificate of Calibration

Results:

Conductivity performance checking

	Instrument Readings (μS/cm)	Accetance Criteria	Comment
KCl stock solution (12890 μS/cm)	13000	12246-13534	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
20.7	20.703	-0.003	N/A

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.00	4.05	4.00 ± 0.10	Pass
pH QC buffer 6.86	6.87	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.20	9.18 ± 0.10	Pass

D.O. performance checking

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

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.00	8.02	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Accetance Criteria	Comment
10 NTU	10.20	9.0-11.0	Pass
50 NTU	50.16	45.0-55.0	Pass
100 NTU	100.4	90.0-110.0	Pass

Depth performance checking

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

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

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TEST REPORT

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

Test Report No.:	29025D
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**

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 Turbuduty Sensor, Ti	599101-01	16J101097
- EXO pH Sensor Assembly, Guarded, Ti	599701	17K103109

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.**

PatrickTse

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	29025D
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

Certificate of Calibration

Results:

Conductivity performance checking

	Instrument Readings (µS/cm)	Accetance Criteria	Comment
KCl stock solution (12890 µS/cm)	13000	12246-13534	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
20.0	20.004	-0.004	N/A

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.00	4.03	4.00 ± 0.10	Pass
pH QC buffer 6.86	6.87	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.20	9.18 ± 0.10	Pass

D.O. performance checking

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

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

Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Accetance Criteria	Comment
10 NTU	10.16	9.0-11.0	Pass
50 NTU	50.43	45.0-55.0	Pass
100 NTU	100.2	90.0-110.0	Pass

Depth performance checking

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

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

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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**

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 Turbuduty 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

****

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

Patrick Tse

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Laboratory Manager

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Website: www.wellab.com.hk

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

Certificate of Calibration

Results:

Conductivity performance checking

	Instrument Readings (μS/cm)	Accetance Criteria	Comment
KCl stock solution (12890 μS/cm)	13000	12246-13534	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
20.0	20.001	-0.001	N/A

pH performance checking

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

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

Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Accetance Criteria	Comment
10 NTU	10.24	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)	Accetance Criteria	Comment
0.5 meter	0.50	0.45-0.55	Pass

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

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TEST REPORT

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

ATTN: **Miss Mei Ling Tang**

Test Report No.:	29025F
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

Certificate of Calibration

Item for calibration:

YSI EXO1 Multiparameter Sondes	Equipment No.: SW-08-85	
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO Optical DO Sensor, Ti	599100-01	17A105009
- EXO conductivity/Temperature Sensor, Ti	599870	17A105103
- EXO Turbuduty Sensor, Ti	599101-01	17A104092
- EXO pH Sensor Assembly, Guarded, Ti	599795-01	17A105263

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

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

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

TEST REPORT

Test Report No.:	29025F
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

Certificate of Calibration

Results:

Conductivity performance checking

	Instrument Readings (μS/cm)	Accetance Criteria	Comment
KCl stock solution (12890 μS/cm)	13000	12246-13534	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
20.7	20.701	-0.001	N/A

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.00	4.02	4.00 ± 0.10	Pass
pH QC buffer 6.86	6.86	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.21	9.18 ± 0.10	Pass

D.O. performance checking

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

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

Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Accetance Criteria	Comment
10 NTU	10.17	9.0-11.0	Pass
50 NTU	50.60	45.0-55.0	Pass
100 NTU	100.3	90.0-110.0	Pass

Depth performance checking

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

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

WELLAB 滙力
Testing & Research

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

TEST REPORT

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

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**

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 Turbuduty 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

PATRICK TSE
Laboratory Manager

WELLAB 滙力 Testing & Research

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

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

Certificate of Calibration

Results:

Conductivity performance checking

	Instrument Readings (μS/cm)	Accetance Criteria	Comment
KCl stock solution (12890 μS/cm)	13000	12246-13534	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
20.7	20.703	-0.003	N/A

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.00	4.02	4.00 ± 0.10	Pass
pH QC buffer 6.86	6.86	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.20	9.18 ± 0.10	Pass

D.O. performance checking

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

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

Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Accetance Criteria	Comment
10 NTU	10.33	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)	Accetance Criteria	Comment
0.5 meter	0.50	0.45-0.55	Pass

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

CALIBRATION CERTIFICATE

Calibration Item:	Micromate Unit (Calibration with Geophone UM12902)
Model No.:	721A2501
Serial No.:	UM12902
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

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

*References are traceable to NIST or equivalent.

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

Authorized by: ______________________

(Wong, Keefe Solomon)

Date: 14 May 2018

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG20673)
Model No.:	716A0403
Serial No.:	BE13849
Calibration Date:	10 April 2018
Next Calibration Date:	10 April 2019
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

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

*References are traceable to NIST or equivalent.

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

Authorized by:

(Wong, Keefe Solomon)

Date: 10 April 2018

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CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG14849)
Model No.:	716A0403
Serial No.:	BE15892
Calibration Date:	9 April 2018
Next Calibration Date:	9 April 2019
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

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

*References are traceable to NIST or equivalent.

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

Authorized by:

(Wong, Keefe Solomon)

Date: 9 April 2018

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG20674)
Model No.:	716A0403
Serial No.:	BE17902
Calibration Date:	10 April 2018
Next Calibration Date:	10 April 2019
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

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

*References are traceable to NIST or equivalent.

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

Authorized by:

(Wong, Keefe Solomon)

Date: 10 April 2018

R:\Service Dept\Calibration\Instantel\BE17902 (10-04-18)

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG14847)
Model No.:	716A0403
Serial No.:	BE17904
Calibration Date:	9 April 2018
Next Calibration Date:	9 April 2019
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

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

*References are traceable to NIST or equivalent.

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

Authorized by: ______________________

(Wong, Keefe Solomon)

Date: 9 April 2018

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CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG16959)
Model No.:	716A0403
Serial No.:	BE17506
Calibration Date:	9 April 2018
Next Calibration Date:	9 April 2019
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

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

*References are traceable to NIST or equivalent.

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

Authorized by: ______________________

(Wong, Keefe Solomon)

Date: 9 April 2018

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CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG14849)
Model No.:	716A0403
Serial No.:	BE15892
Calibration Date:	9 April 2018
Next Calibration Date:	9 April 2019
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

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

*References are traceable to NIST or equivalent.

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

Authorized by:

(Wong, Keefe Solomon)

Date: 9 April 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

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

*References are traceable to NIST or equivalent.

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

Authorized by: ______________________

(Leung Man Hin, Eric)

Date: 22 March 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

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

*References are traceable to NIST or equivalent.

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

Authorized by: ______________________

(Leung Man Hin, Eric)

Date: 22 March 2018

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG16955)
Model No.:	716A0403
Serial No.:	BE16223
Calibration Date:	9 April 2018
Next Calibration Date:	9 April 2019
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

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

*References are traceable to NIST or equivalent.

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

Authorized by: ______________________

(Wong, Keefe Solomon)

Date: 9 April 2018

GEO-Experts

CERTIFICATE OF CALIBRATION

Calibration Date: 1st September 2017

Model: iCivil-1011 Inclinometer
Serial No.： HK110118
Method Used: By direct measurement

Laboratory Conditions:

Ambient Temperature: (23±2)℃
Relative Humidity: (50 ±20)%

Test Reference	Model	Equipment ID
Dual-Axis Digital Angle Protractor	TLL-90S	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: 1st September 2017

*** End of Report***

CERTIFICATE OF CALIBRATION

Calibration Date: 1st September 2017

Model: iCivil-1011 Inclinometer
Serial No.： HK110120
Method Used: By direct measurement

Laboratory Conditions:

Ambient Temperature: (23±2)℃
Relative Humidity: (50 ±20)%

Test Reference	Model	Equipment ID
Dual-Axis Digital Angle Protractor	TLL-90S	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: 1st 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		
Model	: LS15 0.3mm		
Serial No.	: 701133	Calibration Interval	: 12 months
Calibration Date	: 14th September, 2017	Reference Document	: CS/ME/ 3(HKST)
Expire Date	: 13th September, 2018	Report No.	: CS-CR- 170820

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 distruibuted in a complete and unchanged form. Unsigned calibration certificates are invalid.

Calibrated by

Wayne

Wayne Ng, Service Engineer
14th September, 2017

Checked by

YSF Corporation Ltd.

Wallace Yu, Service Manager
14th September, 2017

CKL/CSL/170820

YSF Corporation Ltd.

Calibration Report

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

Reference Standard : 5198266

Calibration check according to customer's requirement.

Calibration Method : Procedure CS02

Calibration Conditions

Temperature : (31 ± 3℃)

Relative Humidity : 84% RH

Date of Test : 14th September, 2017

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

Calibrated by : Wayne

Wayne Ng, Service Engineer

Date: 14th September, 2017

HKCS Approved Signatory:

Wallace Yu, Service Manager

Date: 14th September, 2017

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

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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

YSF Corporation Ltd.

Wallace Yu, Service Manager

Date: 14th September, 2017

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

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

	METHANE 0-100.00 %LEL	O2 0-30.00 %VOL	CO 0-2000.00 PPM	H2S 0-200.00 PPM	NH3 0-100.00 PPM	
(Low)	10.00 %LEL	19.50 %VOL	25.00 PPM	10.00 PPM	25.00 PPM	
(High)	20.00 %LEL	23.00 %VOL	100.00 PPM	15.00 PPM	50.00 PPM	
STEL			100.00 PPM	15.00 PPM	35.00 PPM	
TWA			25.00 PPM	10.00 PPM	25.00 PPM	
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:

Jim Hoffman

JIM HOFFMAN
QUALITY ENGINEER

Calibrated By: E. Weber

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

MSA

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:

Jim Hoffman

JIM HOFFMAN
QUALITY ENGINEER

Calibrated By: E. Weber

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

APPENDIX C
WEATHER INFORMATION

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 June 2018	27.8 – 35.1	75	-
2 June 2018	27.2 – 32.8	74	Trace
3 June 2018	27.3 – 32.6	74	Trace
4 June 2018	26.5 – 31.2	85	12.4
5 June 2018	25.9 – 29.5	92	28.2
6 June 2018	26.0 – 28.4	93	58.3
7 June 2018	26.0 – 28.6	92	47.4
8 June 2018	25.3 – 30.2	88	70.2
9 June 2018	26.5 – 30.4	79	4.8
10 June 2018	27.4 – 33.4	69	-
11 June 2018	28.0 – 34.3	59	-
12 June 2018	25.2 – 30.1	88	39.6
13 June 2018	25.6 – 28.5	94	109.3
14 June 2018	25.4 – 28.6	82	1.3
15 June 2018	25.7 – 29.1	76	0.2
16 June 2018	26.9 -31.5	70	-
17 June 2018	26.2 – 30.8	72	Trace
18 June 2018	27.4 – 31.9	77	Trace
19 June 2018	28.6 – 31.5	79	Trace

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 June 2018	28.8 – 32.4	78	Trace
21 June 2018	28.7 – 31.6	81	2.6
22 June 2018	25.4 – 30.4	87	32.9
23 June 2018	24.4 – 29.7	90	25.6
24 June 2018	26.4 – 32.5	84	18.1
25 June 2018	26.0 – 31.3	85	6.2
26 June 2018	25.9 – 33.4	80	1.7
27 June 2018	27.4 – 31.9	78	Trace
28 June 2018	27.7 – 32.6	75	-
29 June 2018	28.4 – 32.5	76	Trace
30 June 2018	28.9 – 32.8	80	Trace

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

** Trace means rainfall less than 0.05 mm

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-Jun-2018	00:00	1.9	SW
1-Jun-2018	01:00	1.8	SW
1-Jun-2018	02:00	1.5	WNW
1-Jun-2018	03:00	1.7	SSW
1-Jun-2018	04:00	1.9	SSE
1-Jun-2018	05:00	1.8	ESE
1-Jun-2018	06:00	1.6	ESE
1-Jun-2018	07:00	1.8	SSE
1-Jun-2018	08:00	1.6	SSE
1-Jun-2018	09:00	2.4	SSE
1-Jun-2018	10:00	2	SSE
1-Jun-2018	11:00	2.7	SE
1-Jun-2018	12:00	3	SE
1-Jun-2018	13:00	2.6	SSE
1-Jun-2018	14:00	3	SSE
1-Jun-2018	15:00	2.5	SSE
1-Jun-2018	16:00	2.7	SSE
1-Jun-2018	17:00	2.7	ENE
1-Jun-2018	18:00	2.3	NE
1-Jun-2018	19:00	1.8	ENE
1-Jun-2018	20:00	1.6	NE
1-Jun-2018	21:00	1.6	ENE
1-Jun-2018	22:00	1.4	ENE
1-Jun-2018	23:00	1.5	ENE
2-Jun-2018	00:00	1.6	ENE
2-Jun-2018	01:00	1.7	ENE
2-Jun-2018	02:00	1.9	E
2-Jun-2018	03:00	1.6	ENE
2-Jun-2018	04:00	2	E
2-Jun-2018	05:00	1.8	ENE
2-Jun-2018	06:00	1.8	SSE
2-Jun-2018	07:00	1.8	ESE
2-Jun-2018	08:00	1.6	ENE
2-Jun-2018	09:00	1.9	ENE
2-Jun-2018	10:00	2.1	ENE
2-Jun-2018	11:00	2.6	ESE
2-Jun-2018	12:00	2.8	ENE

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

2-Jun-2018	13:00	2.6	ESE
2-Jun-2018	14:00	2.7	ESE
2-Jun-2018	15:00	2.9	ESE
2-Jun-2018	16:00	2.4	ESE
2-Jun-2018	17:00	1.7	ESE
2-Jun-2018	18:00	1.9	ESE
2-Jun-2018	19:00	2	ESE
2-Jun-2018	20:00	1.8	ESE
2-Jun-2018	21:00	1.7	SSW
2-Jun-2018	22:00	1.7	SSW
2-Jun-2018	23:00	1.7	ESE
3-Jun-2018	00:00	1.8	ESE
3-Jun-2018	01:00	1.7	E
3-Jun-2018	02:00	1.7	NNW
3-Jun-2018	03:00	1.8	ENE
3-Jun-2018	04:00	1.9	N
3-Jun-2018	05:00	1.7	ENE
3-Jun-2018	06:00	1.4	N
3-Jun-2018	07:00	2	ENE
3-Jun-2018	08:00	1.6	ENE
3-Jun-2018	09:00	1.8	ENE
3-Jun-2018	10:00	2.3	ENE
3-Jun-2018	11:00	2.1	SE
3-Jun-2018	12:00	2.4	ENE
3-Jun-2018	13:00	2.9	ENE
3-Jun-2018	14:00	2.6	ENE
3-Jun-2018	15:00	2.6	SSE
3-Jun-2018	16:00	2.9	S
3-Jun-2018	17:00	2.7	SSE
3-Jun-2018	18:00	2.7	ESE
3-Jun-2018	19:00	2.8	SE
3-Jun-2018	20:00	2	SW
3-Jun-2018	21:00	1.8	E
3-Jun-2018	22:00	2	WSW
3-Jun-2018	23:00	1.7	SW
4-Jun-2018	00:00	2.1	S
4-Jun-2018	01:00	2.1	SSW
4-Jun-2018	02:00	1.5	SE

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

4-Jun-2018	03:00	1.7	SSE
4-Jun-2018	04:00	1.5	SE
4-Jun-2018	05:00	1.4	SSE
4-Jun-2018	06:00	1.5	ENE
4-Jun-2018	07:00	1.3	N
4-Jun-2018	08:00	1.9	SSW
4-Jun-2018	09:00	2.1	SSW
4-Jun-2018	10:00	2.5	ENE
4-Jun-2018	11:00	3.2	ENE
4-Jun-2018	12:00	2.8	ENE
4-Jun-2018	13:00	2.7	SE
4-Jun-2018	14:00	2.8	SE
4-Jun-2018	15:00	2.6	SE
4-Jun-2018	16:00	2.7	SE
4-Jun-2018	17:00	2	ESE
4-Jun-2018	18:00	1.8	SSE
4-Jun-2018	19:00	1.2	S
4-Jun-2018	20:00	1	SE
4-Jun-2018	21:00	1	W
4-Jun-2018	22:00	1.2	W
4-Jun-2018	23:00	1.2	N
5-Jun-2018	00:00	1.3	NE
5-Jun-2018	01:00	1.5	N
5-Jun-2018	02:00	1.4	ENE
5-Jun-2018	03:00	1.4	S
5-Jun-2018	04:00	1.7	NNE
5-Jun-2018	05:00	1.7	ENE
5-Jun-2018	06:00	1.2	SSW
5-Jun-2018	07:00	1.6	SSE
5-Jun-2018	08:00	1.6	SSE
5-Jun-2018	09:00	2.7	NNE
5-Jun-2018	10:00	2	S
5-Jun-2018	11:00	2.5	SSW
5-Jun-2018	12:00	2.3	S
5-Jun-2018	13:00	2.1	S
5-Jun-2018	14:00	1.6	SSE
5-Jun-2018	15:00	2.6	ENE
5-Jun-2018	16:00	3	NE

II. Mean Wind Speed and Wind Direction

5-Jun-2018	17:00	2.2	N
5-Jun-2018	18:00	2.2	WSW
5-Jun-2018	19:00	2.6	SW
5-Jun-2018	20:00	2.7	N
5-Jun-2018	21:00	2.1	S
5-Jun-2018	22:00	1.9	SSW
5-Jun-2018	23:00	1.9	SSW
6-Jun-2018	00:00	1.9	SW
6-Jun-2018	01:00	2	SSW
6-Jun-2018	02:00	2.7	SSW
6-Jun-2018	03:00	2.6	SW
6-Jun-2018	04:00	2.4	ESE
6-Jun-2018	05:00	2.3	WSW
6-Jun-2018	06:00	2.3	SW
6-Jun-2018	07:00	2.3	WNW
6-Jun-2018	08:00	2.3	SW
6-Jun-2018	09:00	2.5	SSW
6-Jun-2018	10:00	2.8	SSW
6-Jun-2018	11:00	3	SSW
6-Jun-2018	12:00	3.1	N
6-Jun-2018	13:00	3.1	ENE
6-Jun-2018	14:00	2.9	NE
6-Jun-2018	15:00	3.4	SW
6-Jun-2018	16:00	3.6	N
6-Jun-2018	17:00	3.2	ENE
6-Jun-2018	18:00	2.6	S
6-Jun-2018	19:00	2.6	WNW
6-Jun-2018	20:00	2.5	E
6-Jun-2018	21:00	2.1	NW
6-Jun-2018	22:00	2.5	WNW
6-Jun-2018	23:00	2.3	NNE
7-Jun-2018	00:00	2.3	N
7-Jun-2018	01:00	2.6	SSE
7-Jun-2018	02:00	2.2	SSE
7-Jun-2018	03:00	2.3	SSW
7-Jun-2018	04:00	2.2	WSW
7-Jun-2018	05:00	1.9	WSW
7-Jun-2018	06:00	1.8	ENE

II. Mean Wind Speed and Wind Direction

7-Jun-2018	07:00	1.7	SW
7-Jun-2018	08:00	2	SSE
7-Jun-2018	09:00	2	WNW
7-Jun-2018	10:00	2	WNW
7-Jun-2018	11:00	1.8	N
7-Jun-2018	12:00	1.8	N
7-Jun-2018	13:00	1.7	ENE
7-Jun-2018	14:00	1.7	ENE
7-Jun-2018	15:00	1.8	WNW
7-Jun-2018	16:00	1.9	W
7-Jun-2018	17:00	2.2	W
7-Jun-2018	18:00	2.2	SSW
7-Jun-2018	19:00	2.3	SSW
7-Jun-2018	20:00	1.9	NE
7-Jun-2018	21:00	1.7	SW
7-Jun-2018	22:00	1.6	SW
7-Jun-2018	23:00	1.6	WNW
8-Jun-2018	00:00	1.6	WNW
8-Jun-2018	01:00	1.5	ENE
8-Jun-2018	02:00	1.5	SSW
8-Jun-2018	03:00	1.4	ENE
8-Jun-2018	04:00	1.7	NNW
8-Jun-2018	05:00	1.7	ENE
8-Jun-2018	06:00	1.6	ENE
8-Jun-2018	07:00	1.7	W
8-Jun-2018	08:00	2.2	W
8-Jun-2018	09:00	2.3	WSW
8-Jun-2018	10:00	2.8	SSW
8-Jun-2018	11:00	2.8	W
8-Jun-2018	12:00	2.7	W
8-Jun-2018	13:00	2.3	W
8-Jun-2018	14:00	2.8	SSW
8-Jun-2018	15:00	2.7	SSW
8-Jun-2018	16:00	2.4	SSW
8-Jun-2018	17:00	2	SSW
8-Jun-2018	18:00	1.7	W
8-Jun-2018	19:00	1.6	W
8-Jun-2018	20:00	1.9	SW

II. Mean Wind Speed and Wind Direction

8-Jun-2018	21:00	2.1	W
8-Jun-2018	22:00	2.2	WSW
8-Jun-2018	23:00	1.8	SSW
9-Jun-2018	00:00	2	SSW
9-Jun-2018	01:00	2	WSW
9-Jun-2018	02:00	1.9	SSW
9-Jun-2018	03:00	1.9	SSW
9-Jun-2018	04:00	2.1	WSW
9-Jun-2018	05:00	1.6	WSW
9-Jun-2018	06:00	1.3	W
9-Jun-2018	07:00	1.3	WSW
9-Jun-2018	08:00	1.4	WSW
9-Jun-2018	09:00	1.8	SSW
9-Jun-2018	10:00	2.1	SW
9-Jun-2018	11:00	2.3	W
9-Jun-2018	12:00	2.3	W
9-Jun-2018	13:00	2.2	WNW
9-Jun-2018	14:00	1.8	SSW
9-Jun-2018	15:00	1.9	NNW
9-Jun-2018	16:00	1.8	NW
9-Jun-2018	17:00	1.8	N
9-Jun-2018	18:00	1.3	NNW
9-Jun-2018	19:00	1	NW
9-Jun-2018	20:00	1.1	WNW
9-Jun-2018	21:00	1.6	WNW
9-Jun-2018	22:00	1.3	W
9-Jun-2018	23:00	1.2	WNW
10-Jun-2018	00:00	1	WNW
10-Jun-2018	01:00	1.2	WNW
10-Jun-2018	02:00	1	WNW
10-Jun-2018	03:00	1.1	WNW
10-Jun-2018	04:00	0.8	NW
10-Jun-2018	05:00	0.9	WNW
10-Jun-2018	06:00	1	WNW
10-Jun-2018	07:00	0.7	WNW
10-Jun-2018	08:00	0.8	NW
10-Jun-2018	09:00	1.3	WNW
10-Jun-2018	10:00	1.4	NNW

II. Mean Wind Speed and Wind Direction

10-Jun-2018	11:00	2.5	WNW
10-Jun-2018	12:00	2.7	NNW
10-Jun-2018	13:00	2.7	N
10-Jun-2018	14:00	2.6	NNW
10-Jun-2018	15:00	2.5	WNW
10-Jun-2018	16:00	2.7	WNW
10-Jun-2018	17:00	2.5	WNW
10-Jun-2018	18:00	1.3	WNW
10-Jun-2018	19:00	1.3	WNW
10-Jun-2018	20:00	2.4	WNW
10-Jun-2018	21:00	1.2	W
10-Jun-2018	22:00	2.1	SSW
10-Jun-2018	23:00	1.6	SW
11-Jun-2018	00:00	1.4	SW
11-Jun-2018	01:00	1.5	WNW
11-Jun-2018	02:00	2	WNW
11-Jun-2018	03:00	1.7	W
11-Jun-2018	04:00	1.5	SSW
11-Jun-2018	05:00	1.3	WSW
11-Jun-2018	06:00	1.6	WSW
11-Jun-2018	07:00	1.6	WSW
11-Jun-2018	08:00	1.5	WSW
11-Jun-2018	09:00	2.1	WSW
11-Jun-2018	10:00	2.1	WSW
11-Jun-2018	11:00	2.3	WNW
11-Jun-2018	12:00	2.9	W
11-Jun-2018	13:00	2.8	WSW
11-Jun-2018	14:00	2.8	S
11-Jun-2018	15:00	2.8	S
11-Jun-2018	16:00	2.7	S
11-Jun-2018	17:00	1.7	S
11-Jun-2018	18:00	1.6	SW
11-Jun-2018	19:00	1.7	WSW
11-Jun-2018	20:00	1.6	SW
11-Jun-2018	21:00	1.5	WNW
11-Jun-2018	22:00	1.6	NNE
11-Jun-2018	23:00	1.5	N
12-Jun-2018	00:00	3.1	E

II. Mean Wind Speed and Wind Direction

12-Jun-2018	01:00	2.6	ENE
12-Jun-2018	02:00	2.1	ENE
12-Jun-2018	03:00	2.6	N
12-Jun-2018	04:00	2.3	WNW
12-Jun-2018	05:00	2.1	W
12-Jun-2018	06:00	2	WSW
12-Jun-2018	07:00	1.9	WSW
12-Jun-2018	08:00	1.7	WSW
12-Jun-2018	09:00	2.5	WNW
12-Jun-2018	10:00	2.9	WSW
12-Jun-2018	11:00	3.2	W
12-Jun-2018	12:00	2.1	WSW
12-Jun-2018	13:00	3	SW
12-Jun-2018	14:00	2.3	WNW
12-Jun-2018	15:00	2.6	SW
12-Jun-2018	16:00	2.6	SW
12-Jun-2018	17:00	2.5	WNW
12-Jun-2018	18:00	2.3	WNW
12-Jun-2018	19:00	1.8	SSW
12-Jun-2018	20:00	1.9	SW
12-Jun-2018	21:00	1.3	SSW
12-Jun-2018	22:00	1.2	WSW
12-Jun-2018	23:00	1.6	S
13-Jun-2018	00:00	2.4	SSW
13-Jun-2018	01:00	1.8	SSW
13-Jun-2018	02:00	1.5	WNW
13-Jun-2018	03:00	1.2	WNW
13-Jun-2018	04:00	1.4	WNW
13-Jun-2018	05:00	1.3	SW
13-Jun-2018	06:00	0.9	WSW
13-Jun-2018	07:00	1.2	WSW
13-Jun-2018	08:00	1.5	W
13-Jun-2018	09:00	2.8	W
13-Jun-2018	10:00	3.9	S
13-Jun-2018	11:00	4.1	NNE
13-Jun-2018	12:00	4.7	SW
13-Jun-2018	13:00	4.1	WSW
13-Jun-2018	14:00	4.7	WSW

II. Mean Wind Speed and Wind Direction

13-Jun-2018	15:00	4.3	SW
13-Jun-2018	16:00	4.3	W
13-Jun-2018	17:00	3.9	W
13-Jun-2018	18:00	2.8	SW
13-Jun-2018	19:00	1.8	SSE
13-Jun-2018	20:00	1.6	NNE
13-Jun-2018	21:00	2.4	WNW
13-Jun-2018	22:00	2.6	WSW
13-Jun-2018	23:00	2	WSW
14-Jun-2018	00:00	1.3	WSW
14-Jun-2018	01:00	1.2	WNW
14-Jun-2018	02:00	1.3	WNW
14-Jun-2018	03:00	1.5	SW
14-Jun-2018	04:00	1.5	WSW
14-Jun-2018	05:00	1.4	WSW
14-Jun-2018	06:00	1.3	WNW
14-Jun-2018	07:00	1.3	WNW
14-Jun-2018	08:00	1.3	WSW
14-Jun-2018	09:00	1.6	SW
14-Jun-2018	10:00	2	WSW
14-Jun-2018	11:00	2.1	WSW
14-Jun-2018	12:00	2.3	W
14-Jun-2018	13:00	2.7	WNW
14-Jun-2018	14:00	2.5	SW
14-Jun-2018	15:00	2.2	ENE
14-Jun-2018	16:00	2.3	ENE
14-Jun-2018	17:00	2.2	SSW
14-Jun-2018	18:00	1.7	SW
14-Jun-2018	19:00	1.3	SW
14-Jun-2018	20:00	1.1	SW
14-Jun-2018	21:00	1.1	W
14-Jun-2018	22:00	1.2	W
14-Jun-2018	23:00	1	W
15-Jun-2018	00:00	1.3	ENE
15-Jun-2018	01:00	1	SSW
15-Jun-2018	02:00	0.9	W
15-Jun-2018	03:00	1.1	W
15-Jun-2018	04:00	1.3	SSW

II. Mean Wind Speed and Wind Direction

15-Jun-2018	05:00	1.3	WNW
15-Jun-2018	06:00	1.3	WSW
15-Jun-2018	07:00	1.7	S
15-Jun-2018	08:00	1.6	S
15-Jun-2018	09:00	1.7	S
15-Jun-2018	10:00	2.2	ENE
15-Jun-2018	11:00	1.9	NE
15-Jun-2018	12:00	2	NE
15-Jun-2018	13:00	2.7	ENE
15-Jun-2018	14:00	2.4	SW
15-Jun-2018	15:00	3.8	SW
15-Jun-2018	16:00	2.9	WSW
15-Jun-2018	17:00	2.1	SW
15-Jun-2018	18:00	2.5	NE
15-Jun-2018	19:00	1.8	NE
15-Jun-2018	20:00	1.7	SSW
15-Jun-2018	21:00	1.8	SSW
15-Jun-2018	22:00	1.9	SSW
15-Jun-2018	23:00	1.6	SW
16-Jun-2018	00:00	1.7	SW
16-Jun-2018	01:00	1.8	WSW
16-Jun-2018	02:00	1.6	NW
16-Jun-2018	03:00	1.3	NW
16-Jun-2018	04:00	2.1	SW
16-Jun-2018	05:00	1.8	SW
16-Jun-2018	06:00	2	SSE
16-Jun-2018	07:00	2.2	SE
16-Jun-2018	08:00	1.8	SE
16-Jun-2018	09:00	2.3	SE
16-Jun-2018	10:00	2.1	SSE
16-Jun-2018	11:00	2.5	ESE
16-Jun-2018	12:00	3	E
16-Jun-2018	13:00	3	SSE
16-Jun-2018	14:00	3	SSE
16-Jun-2018	15:00	3	WNW
16-Jun-2018	16:00	3.2	SW
16-Jun-2018	17:00	3.2	SW
16-Jun-2018	18:00	3.2	WSW

II. Mean Wind Speed and Wind Direction

16-Jun-2018	19:00	2.8	WNW
16-Jun-2018	20:00	2.2	SW
16-Jun-2018	21:00	1.7	W
16-Jun-2018	22:00	1.6	SSW
16-Jun-2018	23:00	1.6	SW
17-Jun-2018	00:00	1.7	W
17-Jun-2018	01:00	1.7	SW
17-Jun-2018	02:00	1.3	WNW
17-Jun-2018	03:00	1.3	NW
17-Jun-2018	04:00	0.8	W
17-Jun-2018	05:00	1.3	NW
17-Jun-2018	06:00	1.8	SSW
17-Jun-2018	07:00	1	SW
17-Jun-2018	08:00	1.1	WSW
17-Jun-2018	09:00	2.2	SW
17-Jun-2018	10:00	2.4	SW
17-Jun-2018	11:00	3	WSW
17-Jun-2018	12:00	2.7	SW
17-Jun-2018	13:00	3.1	SW
17-Jun-2018	14:00	3.3	SW
17-Jun-2018	15:00	2.9	WSW
17-Jun-2018	16:00	3.1	SW
17-Jun-2018	17:00	2.5	SW
17-Jun-2018	18:00	2.2	W
17-Jun-2018	19:00	1.6	WNW
17-Jun-2018	20:00	1.2	W
17-Jun-2018	21:00	1.1	WSW
17-Jun-2018	22:00	1.1	SSW
17-Jun-2018	23:00	0.9	SW
18-Jun-2018	00:00	1	SSW
18-Jun-2018	01:00	1.1	W
18-Jun-2018	02:00	1	WNW
18-Jun-2018	03:00	0.7	W
18-Jun-2018	04:00	0.7	W
18-Jun-2018	05:00	0.8	W
18-Jun-2018	06:00	0.6	W
18-Jun-2018	07:00	0.8	WNW
18-Jun-2018	08:00	1	WNW

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

18-Jun-2018	09:00	1.8	SW
18-Jun-2018	10:00	2.5	WSW
18-Jun-2018	11:00	2.8	SW
18-Jun-2018	12:00	3.2	W
18-Jun-2018	13:00	3.2	W
18-Jun-2018	14:00	2.9	N
18-Jun-2018	15:00	2.8	WSW
18-Jun-2018	16:00	2.6	SSW
18-Jun-2018	17:00	2	WSW
18-Jun-2018	18:00	2.1	WSW
18-Jun-2018	19:00	1.7	WSW
18-Jun-2018	20:00	1.5	WSW
18-Jun-2018	21:00	1.3	SW
18-Jun-2018	22:00	1.4	SW
18-Jun-2018	23:00	1.1	WSW
19-Jun-2018	00:00	1.3	WSW
19-Jun-2018	01:00	1.1	SW
19-Jun-2018	02:00	1.3	WSW
19-Jun-2018	03:00	1.2	W
19-Jun-2018	04:00	1.3	SW
19-Jun-2018	05:00	1.2	SW
19-Jun-2018	06:00	1.4	SW
19-Jun-2018	07:00	1.2	SW
19-Jun-2018	08:00	1.6	SW
19-Jun-2018	09:00	2.1	SW
19-Jun-2018	10:00	2.4	SW
19-Jun-2018	11:00	2.8	SW
19-Jun-2018	12:00	3.1	WSW
19-Jun-2018	13:00	2	SW
19-Jun-2018	14:00	2.1	SW
19-Jun-2018	15:00	2.4	SSW
19-Jun-2018	16:00	2.1	SSW
19-Jun-2018	17:00	2	S
19-Jun-2018	18:00	1.4	S
19-Jun-2018	19:00	1.6	SSW
19-Jun-2018	20:00	1.7	S
19-Jun-2018	21:00	1.1	SSE
19-Jun-2018	22:00	1.3	S

II. Mean Wind Speed and Wind Direction

19-Jun-2018	23:00	1.4	SE
20-Jun-2018	00:00	1.4	SSE
20-Jun-2018	01:00	1.6	SSE
20-Jun-2018	02:00	1.7	SSE
20-Jun-2018	03:00	1.5	SSW
20-Jun-2018	04:00	1.6	SE
20-Jun-2018	05:00	2	SE
20-Jun-2018	06:00	1.9	SE
20-Jun-2018	07:00	1.6	SE
20-Jun-2018	08:00	1.3	SSW
20-Jun-2018	09:00	2.2	SSW
20-Jun-2018	10:00	2.3	SSE
20-Jun-2018	11:00	2.6	SSE
20-Jun-2018	12:00	2.7	ESE
20-Jun-2018	13:00	2.8	NE
20-Jun-2018	14:00	2.6	NE
20-Jun-2018	15:00	2.9	E
20-Jun-2018	16:00	2.8	ESE
20-Jun-2018	17:00	2.7	NE
20-Jun-2018	18:00	1.7	ESE
20-Jun-2018	19:00	1.5	ESE
20-Jun-2018	20:00	1.2	E
20-Jun-2018	21:00	1.6	SW
20-Jun-2018	22:00	2.2	NW
20-Jun-2018	23:00	2.1	NE
21-Jun-2018	00:00	1.2	N
21-Jun-2018	01:00	1.8	NE
21-Jun-2018	02:00	1.7	SE
21-Jun-2018	03:00	2.1	SE
21-Jun-2018	04:00	1.8	SE
21-Jun-2018	05:00	2.5	SE
21-Jun-2018	06:00	2	ENE
21-Jun-2018	07:00	1.7	E
21-Jun-2018	08:00	1.8	ESE
21-Jun-2018	09:00	2.3	E
21-Jun-2018	10:00	3.1	E
21-Jun-2018	11:00	3	NNE
21-Jun-2018	12:00	3.6	N

II. Mean Wind Speed and Wind Direction

21-Jun-2018	13:00	3.6	SE
21-Jun-2018	14:00	3	SE
21-Jun-2018	15:00	2.7	SE
21-Jun-2018	16:00	2.7	SE
21-Jun-2018	17:00	2.8	SE
21-Jun-2018	18:00	2.7	SE
21-Jun-2018	19:00	2.3	SE
21-Jun-2018	20:00	2	SE
21-Jun-2018	21:00	2.2	ESE
21-Jun-2018	22:00	2.2	SSE
21-Jun-2018	23:00	2.3	SSE
22-Jun-2018	00:00	2.2	SE
22-Jun-2018	01:00	2.1	SSE
22-Jun-2018	02:00	1.6	SE
22-Jun-2018	03:00	1.9	SE
22-Jun-2018	04:00	1.8	SSW
22-Jun-2018	05:00	1.3	WSW
22-Jun-2018	06:00	1.7	WSW
22-Jun-2018	07:00	1.7	W
22-Jun-2018	08:00	2.1	SW
22-Jun-2018	09:00	2.2	SW
22-Jun-2018	10:00	2.8	SW
22-Jun-2018	11:00	3.1	WNW
22-Jun-2018	12:00	3.2	SW
22-Jun-2018	13:00	2.9	SW
22-Jun-2018	14:00	2.8	SW
22-Jun-2018	15:00	2.5	SSE
22-Jun-2018	16:00	2.6	SSE
22-Jun-2018	17:00	2.3	SSW
22-Jun-2018	18:00	2.5	SW
22-Jun-2018	19:00	2.2	SSW
22-Jun-2018	20:00	1.9	W
22-Jun-2018	21:00	1.8	WSW
22-Jun-2018	22:00	1.3	WSW
22-Jun-2018	23:00	1.3	SSW
23-Jun-2018	00:00	1.3	NNW
23-Jun-2018	01:00	1.2	WNW
23-Jun-2018	02:00	1.3	WNW

II. Mean Wind Speed and Wind Direction

23-Jun-2018	03:00	1.3	WNW
23-Jun-2018	04:00	1	W
23-Jun-2018	05:00	0.9	SW
23-Jun-2018	06:00	1	W
23-Jun-2018	07:00	1	WSW
23-Jun-2018	08:00	1.2	NNE
23-Jun-2018	09:00	1.5	NE
23-Jun-2018	10:00	2.5	W
23-Jun-2018	11:00	2.8	WSW
23-Jun-2018	12:00	2.8	WSW
23-Jun-2018	13:00	2.5	W
23-Jun-2018	14:00	2.6	W
23-Jun-2018	15:00	2.8	NE
23-Jun-2018	16:00	2.5	NNE
23-Jun-2018	17:00	1.8	W
23-Jun-2018	18:00	1.3	W
23-Jun-2018	19:00	1.5	WSW
23-Jun-2018	20:00	1.1	W
23-Jun-2018	21:00	1.1	W
23-Jun-2018	22:00	0.9	WNW
23-Jun-2018	23:00	0.9	W
24-Jun-2018	00:00	0.7	WSW
24-Jun-2018	01:00	0.7	WNW
24-Jun-2018	02:00	0.7	WNW
24-Jun-2018	03:00	0.8	W
24-Jun-2018	04:00	0.9	W
24-Jun-2018	05:00	1.2	WNW
24-Jun-2018	06:00	1	WNW
24-Jun-2018	07:00	1	SSW
24-Jun-2018	08:00	1.3	SSE
24-Jun-2018	09:00	2	SSE
24-Jun-2018	10:00	2.6	E
24-Jun-2018	11:00	2.7	ENE
24-Jun-2018	12:00	2.7	ESE
24-Jun-2018	13:00	3	ESE
24-Jun-2018	14:00	3.2	SE
24-Jun-2018	15:00	3.3	SSE
24-Jun-2018	16:00	3.2	ESE

II. Mean Wind Speed and Wind Direction

24-Jun-2018	17:00	3.2	SSE
24-Jun-2018	18:00	2.6	ESE
24-Jun-2018	19:00	2.4	SSE
24-Jun-2018	20:00	2.1	SSE
24-Jun-2018	21:00	2.5	SSE
24-Jun-2018	22:00	2.9	SSE
24-Jun-2018	23:00	2.7	ESE
25-Jun-2018	00:00	2.1	ESE
25-Jun-2018	01:00	2.3	ESE
25-Jun-2018	02:00	2.2	ESE
25-Jun-2018	03:00	1.8	S
25-Jun-2018	04:00	1.8	SSE
25-Jun-2018	05:00	1.8	SSE
25-Jun-2018	06:00	1.7	ENE
25-Jun-2018	07:00	1.5	ENE
25-Jun-2018	08:00	1.6	ENE
25-Jun-2018	09:00	2.2	NE
25-Jun-2018	10:00	2.5	NNE
25-Jun-2018	11:00	2.8	N
25-Jun-2018	12:00	3.3	N
25-Jun-2018	13:00	3.4	SE
25-Jun-2018	14:00	4	SE
25-Jun-2018	15:00	3.7	ESE
25-Jun-2018	16:00	3.7	SSW
25-Jun-2018	17:00	2.9	N
25-Jun-2018	18:00	2.9	NE
25-Jun-2018	19:00	2.7	ENE
25-Jun-2018	20:00	2.7	ENE
25-Jun-2018	21:00	2.6	ENE
25-Jun-2018	22:00	2.2	NE
25-Jun-2018	23:00	2.5	SSW
26-Jun-2018	00:00	1.7	SW
26-Jun-2018	01:00	1.5	SSW
26-Jun-2018	02:00	1.8	SSW
26-Jun-2018	03:00	1.3	SSW
26-Jun-2018	04:00	0.7	WSW
26-Jun-2018	05:00	1	SSW
26-Jun-2018	06:00	1.1	SW

II. Mean Wind Speed and Wind Direction

26-Jun-2018	07:00	1.5	SSW
26-Jun-2018	08:00	2.1	SW
26-Jun-2018	09:00	2.7	SW
26-Jun-2018	10:00	2.9	WSW
26-Jun-2018	11:00	3.1	WNW
26-Jun-2018	12:00	3.5	SSW
26-Jun-2018	13:00	4.2	WNW
26-Jun-2018	14:00	4	W
26-Jun-2018	15:00	3.9	W
26-Jun-2018	16:00	3.7	NNW
26-Jun-2018	17:00	3.3	N
26-Jun-2018	18:00	3	W
26-Jun-2018	19:00	2.8	W
26-Jun-2018	20:00	2.4	SSW
26-Jun-2018	21:00	2.7	SW
26-Jun-2018	22:00	2.4	SW
26-Jun-2018	23:00	2.7	SW
27-Jun-2018	00:00	2.9	SW
27-Jun-2018	01:00	2.3	W
27-Jun-2018	02:00	2.7	W
27-Jun-2018	03:00	2.3	W
27-Jun-2018	04:00	2.1	WNW
27-Jun-2018	05:00	2.1	WNW
27-Jun-2018	06:00	2	W
27-Jun-2018	07:00	2.1	NW
27-Jun-2018	08:00	2	WNW
27-Jun-2018	09:00	2.6	NW
27-Jun-2018	10:00	2.8	WNW
27-Jun-2018	11:00	2.9	WNW
27-Jun-2018	12:00	3.5	WNW
27-Jun-2018	13:00	3.2	NW
27-Jun-2018	14:00	3	WNW
27-Jun-2018	15:00	2.6	W
27-Jun-2018	16:00	2.3	WNW
27-Jun-2018	17:00	2.3	W
27-Jun-2018	18:00	1.5	NW
27-Jun-2018	19:00	1.3	W
27-Jun-2018	20:00	1.1	WSW

II. Mean Wind Speed and Wind Direction

27-Jun-2018	21:00	1.3	NW
27-Jun-2018	22:00	1.3	NW
27-Jun-2018	23:00	2.3	NW
28-Jun-2018	00:00	2.3	W
28-Jun-2018	01:00	2	W
28-Jun-2018	02:00	2.2	WSW
28-Jun-2018	03:00	2.5	SW
28-Jun-2018	04:00	2.3	SSW
28-Jun-2018	05:00	2.6	W
28-Jun-2018	06:00	2.2	W
28-Jun-2018	07:00	2.6	W
28-Jun-2018	08:00	2.3	WNW
28-Jun-2018	09:00	3.1	W
28-Jun-2018	10:00	3.3	W
28-Jun-2018	11:00	3.3	W
28-Jun-2018	12:00	3.3	W
28-Jun-2018	13:00	3.4	WSW
28-Jun-2018	14:00	2.7	WSW
28-Jun-2018	15:00	2.8	NW
28-Jun-2018	16:00	2.8	WNW
28-Jun-2018	17:00	3	WNW
28-Jun-2018	18:00	2.7	W
28-Jun-2018	19:00	2	SW
28-Jun-2018	20:00	2.5	SSW
28-Jun-2018	21:00	2.6	SSW
28-Jun-2018	22:00	2.2	SSW
28-Jun-2018	23:00	2	WSW
29-Jun-2018	00:00	2	SSW
29-Jun-2018	01:00	2.7	W
29-Jun-2018	02:00	3	WNW
29-Jun-2018	03:00	3.5	NW
29-Jun-2018	04:00	2.6	WSW
29-Jun-2018	05:00	2.5	W
29-Jun-2018	06:00	2.5	SW
29-Jun-2018	07:00	2.5	SW
29-Jun-2018	08:00	2.5	SSE
29-Jun-2018	09:00	3.2	SSE
29-Jun-2018	10:00	4.3	SSE

II. Mean Wind Speed and Wind Direction

29-Jun-2018	11:00	4.4	ESE
29-Jun-2018	12:00	4.5	SE
29-Jun-2018	13:00	4.4	SE
29-Jun-2018	14:00	4	SSE
29-Jun-2018	15:00	3.7	ESE
29-Jun-2018	16:00	4	SSE
29-Jun-2018	17:00	3.5	ENE
29-Jun-2018	18:00	2.9	ENE
29-Jun-2018	19:00	3.1	ESE
29-Jun-2018	20:00	3	E
29-Jun-2018	21:00	2.8	E
29-Jun-2018	22:00	3.6	SE
29-Jun-2018	23:00	2.9	ESE
30-Jun-2018	00:00	2.6	ESE
30-Jun-2018	01:00	3.1	SSE
30-Jun-2018	02:00	2.5	SSE
30-Jun-2018	03:00	2.8	SE
30-Jun-2018	04:00	3.5	ESE
30-Jun-2018	05:00	3.7	ESE
30-Jun-2018	06:00	3.3	ESE
30-Jun-2018	07:00	3	SE
30-Jun-2018	08:00	3.5	ESE
30-Jun-2018	09:00	3.6	ESE
30-Jun-2018	10:00	4	ESE
30-Jun-2018	11:00	4.3	SSE
30-Jun-2018	12:00	4	SSE
30-Jun-2018	13:00	4.1	SE
30-Jun-2018	14:00	2.3	SE
30-Jun-2018	15:00	2.4	SE
30-Jun-2018	16:00	2	SE
30-Jun-2018	17:00	2.5	SE
30-Jun-2018	18:00	2.7	ESE
30-Jun-2018	19:00	2.6	SE
30-Jun-2018	20:00	2.4	ESE
30-Jun-2018	21:00	2.4	SE
30-Jun-2018	22:00	2.1	SE
30-Jun-2018	23:00	2.5	ESE

APPENDIX D
ENVIRONMENTAL MONITORING
SCHEDULES

Agreement No. CE/59/2015 (EP)

Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Impact Air Quality and Noise Monitoring Schedule (June 2018)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jun	2-Jun
					Noise [Evening time (19:00-23:00)] [CM1, CM2, CM3, CM4]	
3-Jun	4-Jun	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun
	24 hr TSP	**1 hr TSP X3** [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM1, CM2, CM3, CM4, CM5]	**1 hr TSP X3** [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A)]		**24 hr TSP** **Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3, CM4] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3, CM4]	
10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
Noise [Daytime (07:00-19:00)] [CM1, CM2, CM3, CM4]	**1 hr TSP X3** [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM1, CM2, CM4]	**1 hr TSP X3** [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A)] [CM3, CM5]	**24 hr TSP**	**1 hr TSP X3** [AM1, AM2, AM3, AM4] **Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3, CM4] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3, CM4]	**1 hr TSP X3** [AM5(A), AM6(A)]	
17-Jun	**18-Jun**	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun
Noise [Daytime (07:00-19:00)] [CM1, CM2, CM3, CM4]		**24 hr TSP**	**1 hr TSP X3** [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM1, CM2, CM3, CM4, CM5] **Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3, CM4] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3, CM4]	**1 hr TSP X3** [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A)]		
24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun
Noise [Daytime (07:00-19:00)] [CM1, CM2, CM3, CM4]	**24 hr TSP**	**1 hr TSP X3** [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM1, CM2, CM3, CM4, CM5] **Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3, CM4] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3, CM4]	**1 hr TSP X3** [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A)]	**24 hr TSP**	**1 hr TSP X3** [AM1, AM2, AM3, AM4]	

Air Quality Monitoring Station

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

Noise Monitoring Station

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

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

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jun Mid-Flood 07:08 Mid-Ebb 13:59	2-Jun
3-Jun	4-Jun Mid-Flood 08:22 Mid-Ebb 15:45	5-Jun	6-Jun Mid-Flood 10:16 Mid-Ebb 17:24	7-Jun	8-Jun	9-Jun Mid-Ebb 09:14 Mid-Flood 14:42
10-Jun	11-Jun Mid-Ebb 10:33 Mid-Flood 16:52	12-Jun	13-Jun Mid-Ebb 11:55 Mid-Flood 18:38	14-Jun	15-Jun Mid-Ebb 13:29 Mid-Flood 20:26	16-Jun
17-Jun	**18-Jun**	19-Jun Mid-Flood 10:02 Mid-Ebb 17:06	20-Jun	21-Jun Mid-Flood 12:39 Mid-Ebb 19:15	22-Jun	23-Jun Mid-Ebb 09:21 Mid-Flood 15:31
24-Jun	25-Jun Mid-Ebb 10:50 Mid-Flood 17:31	26-Jun	27-Jun Mid-Ebb 12:00 Mid-Flood 19:04	28-Jun	29-Jun Mid-Ebb 13:08 Mid-Flood 20:21	30-Jun

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
Impact Water Quality Monitoring Schedule in Temporary Marine Embayment (June 2018)

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

Monitoring Station:
W1

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

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

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 Air Quality and Noise Monitoring Schedule (July 2018)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jul	2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul
Noise [Daytime (07:00-19:00)] [CM1, CM2, CM3, CM4]		**1 hr TSP X3** [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A)]	**24 hr TSP** **Noise [Daytime (07:00-19:00)]** [CM3, CM5]	**1 hr TSP X3** [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM1, CM2, CM4] **Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3, CM4] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3, CM4]	**1 hr TSP X3** [AM5(A), AM6(A)]	
8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul
Noise [Daytime (07:00-19:00)] [CM1, CM2, CM3, CM4]		**24 hr TSP** **Noise [Daytime (07:00-19:00)]** [CM3, CM5]	**1 hr TSP X3** [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM1, CM2, CM4]	**1 hr TSP X3** [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A)]	**Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3, CM4] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3, CM4]	
15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
Noise [Daytime (07:00-19:00)] [CM1, CM2, CM3, CM4]	**24 hr TSP**	**1 hr TSP X3** [AM1, AM2, AM3, AM4] [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM1, CM2, CM4] [CM6(A), CM7(A), CM8(A)]		**Noise [Daytime (07:00-19:00)]** [CM3, CM5]	**24 hr TSP** **Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3, CM4] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3, CM4]	
22-Jul	**23-Jul**	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
Noise [Daytime (07:00-19:00)] [CM1, CM2, CM3, CM4]	**1 hr TSP X3** [AM1, AM2, AM3, AM4] [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM1, CM2, CM4]	**Noise [Daytime (07:00-19:00)]** [CM3, CM5]		**24 hr TSP**	**1 hr TSP X3** [AM1, AM2, AM3, AM4] [AM5(A), AM6(A)] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A)] **Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3, CM4] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3, CM4]	
29-Jul	30-Jul	31-Jul				
Noise [Daytime (07:00-19:00)] [CM1, CM2, CM3, CM4]		**Noise [Daytime (07:00-19:00)]** [CM3, CM5]				

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

Air Quality Monitoring Station

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

Noise Monitoring Station

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

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

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jul	**2-Jul**	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul
		Mid-Flood 8:27 Mid-Ebb 15:21		Mid-Flood 10:04 Mid-Ebb 16:43		Mid-Ebb 7:27 Mid-Flood 12:57
8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul
	Mid-Ebb 9:17 Mid-Flood 15:36		Mid-Ebb 10:51 Mid-Flood 17:42		Mid-Ebb 12:28 Mid-Flood 19:29	
15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
	Mid-Flood 8:04 Mid-Ebb 14:56		Mid-Flood 9:54 Mid-Ebb 16:36		Mid-Flood 12:18 Mid-Ebb 18:33	
22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
	Mid-Ebb 9:55 Mid-Flood 16:46		Mid-Ebb 11:10 Mid-Flood 18:21		Mid-Ebb 12:16 Mid-Flood 19:30	
29-Jul	30-Jul	31-Jul				
	Mid-Flood 7:06 Mid-Ebb 13:52					

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

<u>Monitoring Station:</u>
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 Water Quality Monitoring Schedule in Temporary Marine Embayment (July 2018)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jul	**2-Jul**	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul
			Mid-Flood 9:12 Mid-Ebb 16:00			
8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul
		Mid-Ebb 10:05 Mid-Flood 16:43				
15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
				Mid-Flood 11:00 Mid-Ebb 17:33		
22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
		Mid-Flood 10:36 Mid-Ebb 17:40				
29-Jul	30-Jul	31-Jul				
		Mid-Flood 7:45 Mid-Ebb 14:25				

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

Monitoring Station:
W1

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

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

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

Monitoring Location:
Stream 1, Stream 2, Stream 3

APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple			
Date	Time	Weather	Particulate Concentration (μg/m^3)
5-Jun-18	9:00	Rainy	121.9
5-Jun-18	10:00	Rainy	126.8
5-Jun-18	11:00	Rainy	123.8
11-Jun-18	9:00	Sunny	25.2
11-Jun-18	10:00	Sunny	28.8
11-Jun-18	11:00	Sunny	18.0
14-Jun-18	9:00	Cloudy	244.6
14-Jun-18	10:00	Cloudy	254.5
14-Jun-18	11:00	Cloudy	250.8
20-Jun-18	9:00	Sunny	252.2
20-Jun-18	10:00	Sunny	231.7
20-Jun-18	11:00	Sunny	227.6
26-Jun-18	9:00	Sunny	128.1
26-Jun-18	10:00	Sunny	146.4
26-Jun-18	11:00	Sunny	129.1
29-Jun-18	9:00	Cloudy	111.0
29-Jun-18	10:00	Cloudy	118.4
29-Jun-18	11:00	Cloudy	103.3
		Average	146.8
		Maximum	254.5
		Minimum	18.0

Location AM2 - Sai Tso Wan Recreation Ground			
Date	Time	Weather	Particulate Concentration (μg/m^3)
5-Jun-18	13:00	Rainy	116.0
5-Jun-18	14:00	Rainy	114.6
5-Jun-18	15:00	Rainy	117.3
11-Jun-18	13:00	Cloudy	26.0
11-Jun-18	14:00	Cloudy	26.0
11-Jun-18	15:00	Cloudy	23.7
14-Jun-18	13:00	Cloudy	208.1
14-Jun-18	14:00	Cloudy	209.7
14-Jun-18	15:00	Cloudy	188.5
20-Jun-18	13:00	Sunny	201.9
20-Jun-18	14:00	Sunny	185.8
20-Jun-18	15:00	Sunny	191.0
26-Jun-18	13:00	Sunny	113.6
26-Jun-18	14:00	Sunny	120.8
26-Jun-18	15:00	Sunny	119.4
29-Jun-18	14:30	Sunny	100.0
29-Jun-18	15:30	Sunny	98.3
29-Jun-18	16:30	Sunny	76.4
		Average	124.3
		Maximum	209.7
		Minimum	23.7

Appendix E - 1-hour TSP Monitoring Results

Location AM3 - Yau Lai Estate Bik Lai House

Date	Time	Weather	Particulate Concentration (μg/m^3)
5-Jun-18	9:00	Rainy	180.1
5-Jun-18	10:00	Rainy	179.6
5-Jun-18	11:00	Rainy	182.1
11-Jun-18	9:00	Sunny	26.0
11-Jun-18	10:00	Sunny	24.8
11-Jun-18	11:00	Sunny	23.7
14-Jun-18	13:00	Cloudy	241.1
14-Jun-18	14:00	Cloudy	260.4
14-Jun-18	15:00	Cloudy	267.9
20-Jun-18	13:00	Sunny	253.4
20-Jun-18	14:00	Sunny	245.7
20-Jun-18	15:00	Sunny	249.2
26-Jun-18	9:00	Sunny	153.9
26-Jun-18	10:00	Sunny	161.7
26-Jun-18	11:00	Sunny	148.3
29-Jun-18	10:00	Sunny	135.6
29-Jun-18	11:00	Sunny	173.4
29-Jun-18	12:00	Sunny	132.2
		Average	168.8
		Maximum	267.9
		Minimum	23.7

Location AM4 - Sitting-out Area at Cha Kwo Ling Village

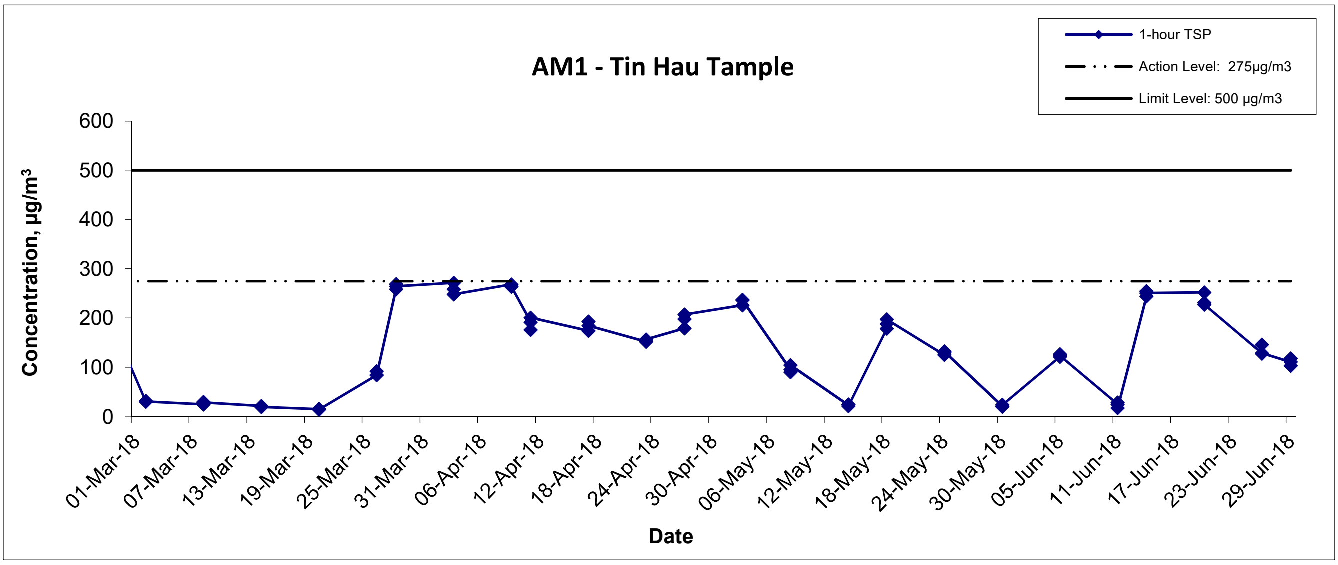
Date	Time	Weather	Particulate Concentration (μg/m^3)
5-Jun-18	13:00	Rainy	207.2
5-Jun-18	14:00	Rainy	214.3
5-Jun-18	15:00	Rainy	209.2
11-Jun-18	14:10	Sunny	28.8
11-Jun-18	15:10	Sunny	31.2
11-Jun-18	16:10	Sunny	32.4
14-Jun-18	9:00	Cloudy	244.0
14-Jun-18	10:00	Cloudy	253.3
14-Jun-18	11:00	Cloudy	273.5
20-Jun-18	9:00	Sunny	229.9
20-Jun-18	10:00	Sunny	208.7
20-Jun-18	11:00	Sunny	225.5
26-Jun-18	9:00	Sunny	164.3
26-Jun-18	10:00	Sunny	161.7
26-Jun-18	11:00	Sunny	157.9
29-Jun-18	13:00	Cloudy	113.6
29-Jun-18	14:00	Cloudy	118.1
29-Jun-18	15:00	Cloudy	110.7
		Average	165.8
		Maximum	273.5
		Minimum	28.8

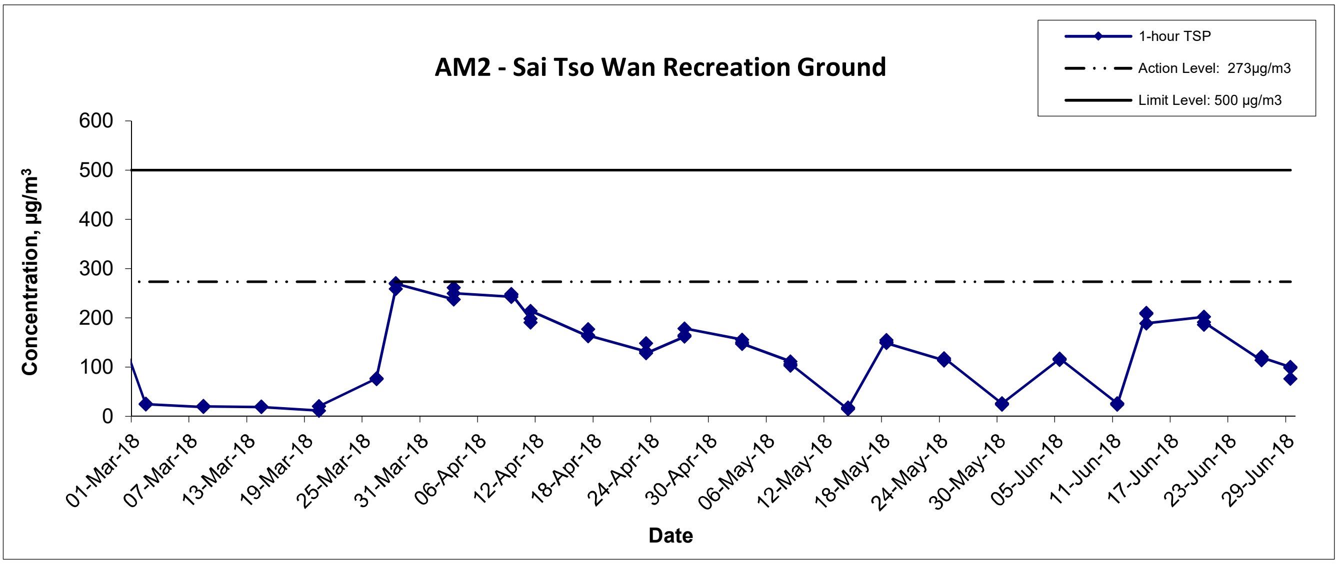
Appendix E - 1-hour TSP Monitoring Results

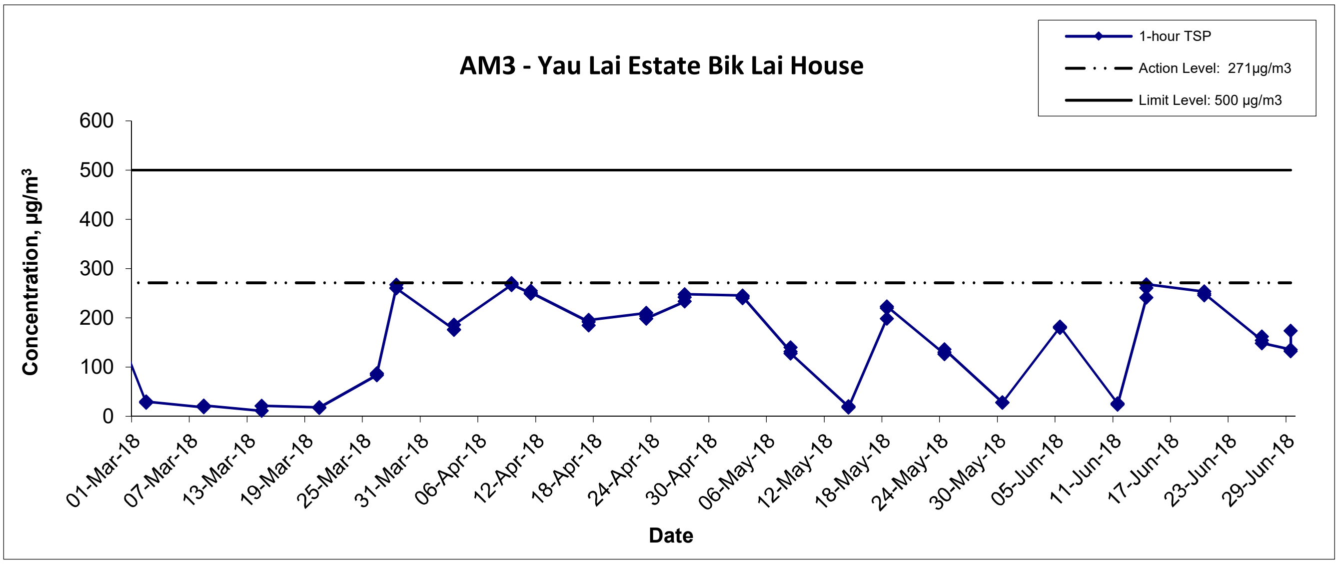
Location AM5(A) - Tseung Kwan O DSD Desilting Compound			
Date	Time	Weather	Particulate Concentration (μg/m^3)
6-Jun-18	13:00	Rainy	207.6
6-Jun-18	14:00	Rainy	146.2
6-Jun-18	15:00	Rainy	166.8
12-Jun-18	13:00	Rainy	31.2
12-Jun-18	14:00	Rainy	37.2
12-Jun-18	15:00	Rainy	27.6
15-Jun-18	13:00	Sunny	240.5
15-Jun-18	14:00	Sunny	224.9
15-Jun-18	15:00	Sunny	116.7
21-Jun-18	13:00	Rainy	221.9
21-Jun-18	14:00	Rainy	153.4
21-Jun-18	15:00	Rainy	173.2
27-Jun-18	9:00	Cloudy	111.2
27-Jun-18	10:00	Cloudy	114.1
27-Jun-18	11:00	Cloudy	118.1
		Average	139.4
		Maximum	240.5
		Minimum	27.6

Location AM6(A) - Park Central, L1/F Open Space Area			
Date	Time	Weather	Particulate Concentration (μg/m^3)
6-Jun-18	9:00	Rainy	225.2
6-Jun-18	10:00	Rainy	194.6
6-Jun-18	11:00	Rainy	200.1
12-Jun-18	9:00	Rainy	21.6
12-Jun-18	10:00	Rainy	22.8
12-Jun-18	11:00	Rainy	22.8
15-Jun-18	9:00	Sunny	116.1
15-Jun-18	10:00	Sunny	153.5
15-Jun-18	11:00	Sunny	112.3
21-Jun-18	9:00	Rainy	153.2
21-Jun-18	10:00	Rainy	167.6
21-Jun-18	11:00	Rainy	184.4
27-Jun-18	14:00	Cloudy	88.1
27-Jun-18	15:00	Cloudy	97.1
27-Jun-18	16:00	Cloudy	103.2
		Average	124.2
		Maximum	225.2
		Minimum	21.6

1-hr TSP Concentration Levels

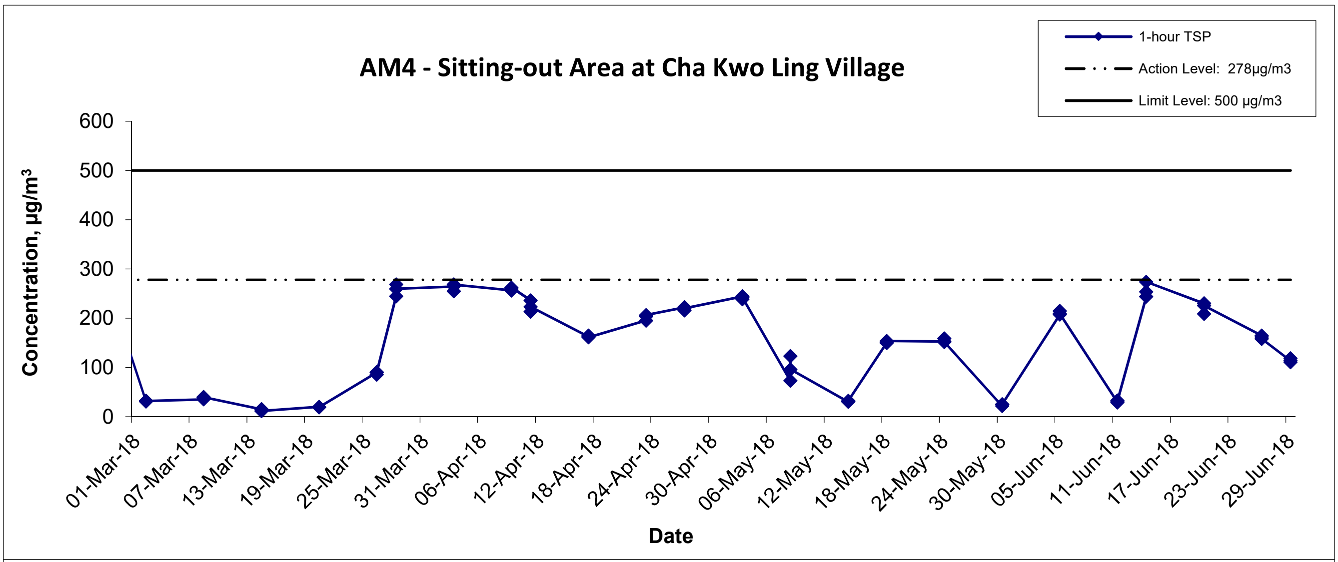


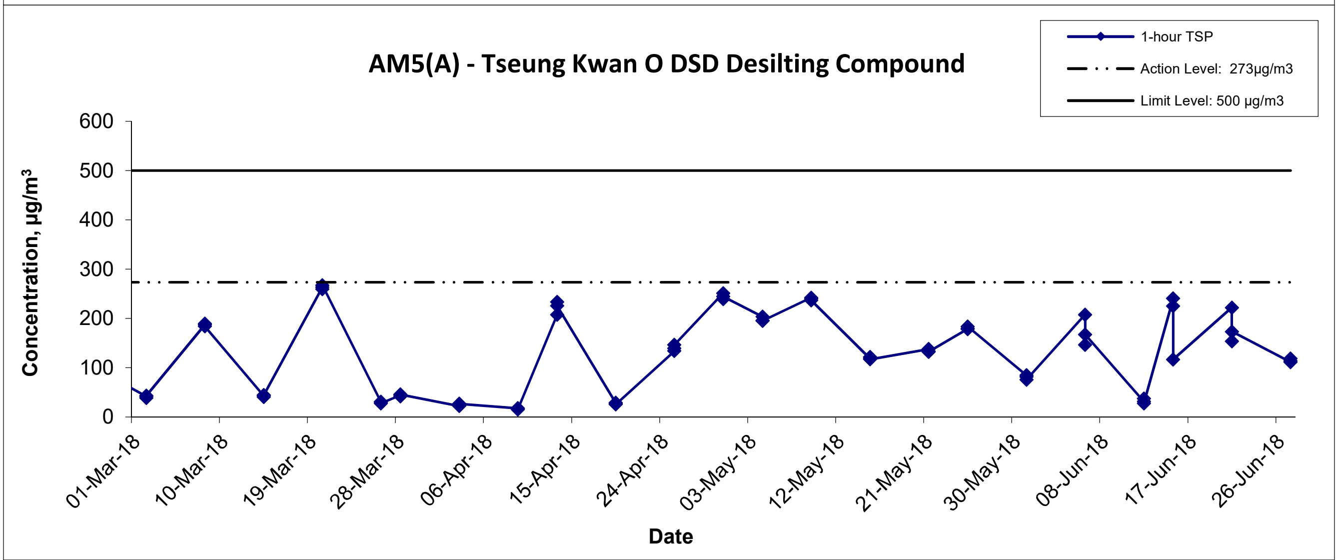


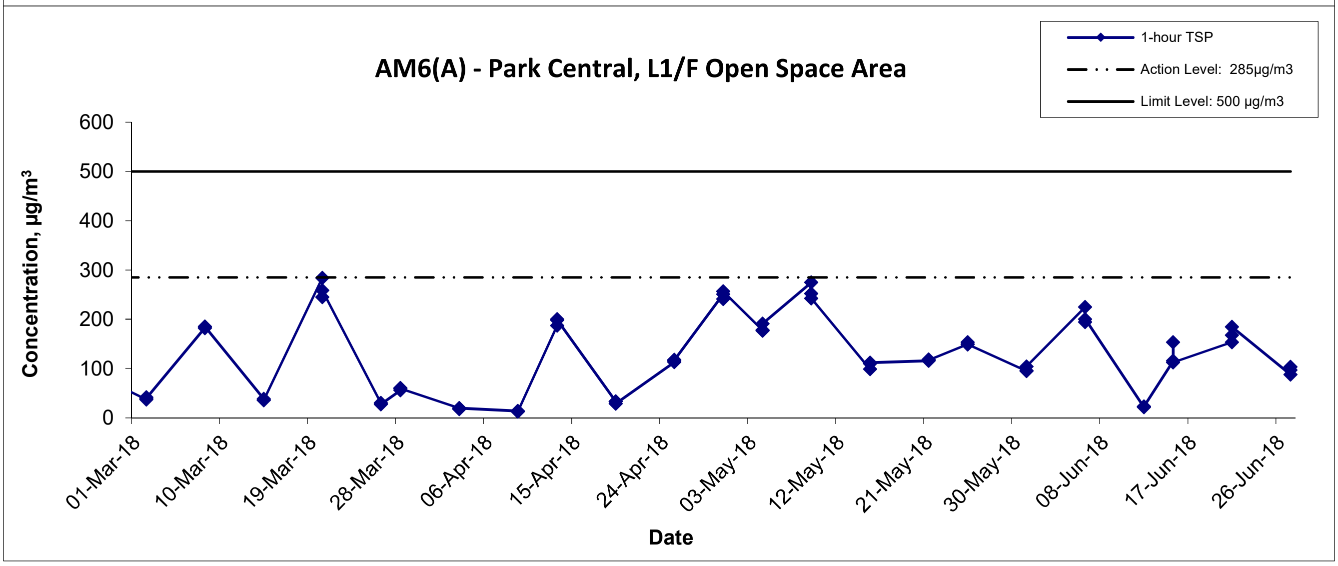


Title	Scale	Project No.	
Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 1-hour TSP Monitoring Results	N.T.S	MA16034	CINOTECH
	Date: Jun-18	Appendix: E	

1-hr TSP Concentration Levels







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

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix F - 24-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
				Initial	Final		Initial	Final		Initial	Final			
4-Jun-18	Rainy	302.0	758.5	3.2974	3.4368	0.1394	3587.0	3611.0	24.0	1.19	1.19	1.19	1717.3	81.2
8-Jun-18	Rainy	299.1	753.7	2.8193	2.8537	0.0344	3611.0	3635.0	24.0	1.20	1.19	1.19	1720.6	20.0
13-Jun-18	Cloudy	299.7	751.5	2.8743	2.9680	0.0937	3635.0	3659.0	24.0	1.19	1.19	1.19	1715.7	54.6
19-Jun-18	Sunny	302.5	755.5	2.9744	3.1294	0.1550	3659.0	3683.0	24.0	1.19	1.19	1.19	1711.8	90.5
25-Jun-18	Cloudy	300.9	759.1	2.9833	3.0829	0.0996	3683.0	3707.0	24.0	1.20	1.20	1.20	1721.7	57.9
28-Jun-18	Cloudy	302.3	758.8	3.2362	3.3640	0.1278	3707.0	3731.0	24.0	1.21	1.21	1.21	1744.3	73.3
													Min	20.0
													Max	90.5
													Average	62.9

Location AM2 - Sai Tso Wan Recreation Ground

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
				Initial	Final		Initial	Final		Initial	Final			
4-Jun-18	Rainy	301.5	759.2	3.6284	3.6982	0.0698	24551.3	24575.3	24.0	1.21	1.20	1.21	1735.2	40.2
8-Jun-18	Rainy	299.6	753.1	2.8507	2.9182	0.0675	24575.3	24599.3	24.0	1.20	1.20	1.20	1733.7	38.9
13-Jun-18	Cloudy	300.4	751.5	3.6151	3.6784	0.0633	24599.3	24623.3	24.0	1.20	1.20	1.20	1729.5	36.6
19-Jun-18	Sunny	303.0	755.6	2.9981	3.0637	0.0656	24623.3	24647.3	24.0	1.20	1.20	1.20	1726.7	38.0
25-Jun-18	Cloudy	301.2	758.8	2.9668	3.0203	0.0535	24647.3	24671.3	24.0	1.21	1.21	1.21	1735.6	30.8
28-Jun-18	Cloudy	302.7	758.1	3.2174	3.3161	0.0987	24671.3	24695.3	24.0	1.22	1.22	1.22	1755.2	56.2
													Min	30.8
													Max	56.2
													Average	40.1

Location AM3 - Yau Lai Estate, Bik Lai House

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
				Initial	Final		Initial	Final		Initial	Final			
4-Jun-18	Rainy	302.4	758.3	3.2569	3.3038	0.0469	13118.7	13142.7	24.0	1.21	1.21	1.21	1737.8	27.0
8-Jun-18	Rainy	299.1	753.6	3.2956	3.3454	0.0498	13142.7	13166.7	24.0	1.21	1.21	1.21	1742.1	28.6
13-Jun-18	Cloudy	300.5	751.9	3.6424	3.6989	0.0565	13166.7	13190.7	24.0	1.21	1.21	1.21	1735.8	32.6
19-Jun-18	Sunny	302.6	755.3	2.9822	3.0275	0.0453	13190.7	13214.7	24.0	1.20	1.20	1.20	1733.6	26.1
25-Jun-18	Cloudy	300.9	758.5	3.2171	3.2605	0.0434	13214.7	13238.7	24.0	1.21	1.21	1.21	1742.6	24.9
28-Jun-18	Cloudy	302.2	757.8	3.6291	3.6684	0.0393	13238.7	13262.7	24.0	1.21	1.21	1.21	1742.1	22.6
													Min	22.6
													Max	32.6
													Average	27.0

Appendix F - 24-hour TSP Monitoring Results

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

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
4-Jun-18	Rainy	301.6	758.9	3.2980	3.5222	0.2242	10105.2	10129.2	24.0	1.21	1.21	1.21	1738.7	129.0
8-Jun-18	Rainy	300.5	752.4	2.8398	2.9678	0.1280	10129.2	10153.2	24.0	1.20	1.20	1.20	1734.3	73.8
13-Jun-18	Cloudy	299.9	751.5	2.8431	3.0091	0.1660	10153.2	10177.2	24.0	1.21	1.20	1.20	1735.0	95.7
19-Jun-18	Sunny	302.5	754.6	3.0004	3.1884	0.1880	10177.2	10201.2	24.0	1.20	1.20	1.20	1731.1	108.6
25-Jun-18	Cloudy	300.8	759.3	2.9823	3.1904	0.2081	10201.2	10225.2	24.0	1.21	1.21	1.21	1741.4	119.5
28-Jun-18	Cloudy	302.6	758.5	2.9897	3.0218	0.0321	10225.2	10249.2	24.0	1.21	1.21	1.21	1743.3	18.4
													Min	18.4
													Max	129.0
													Average	90.8

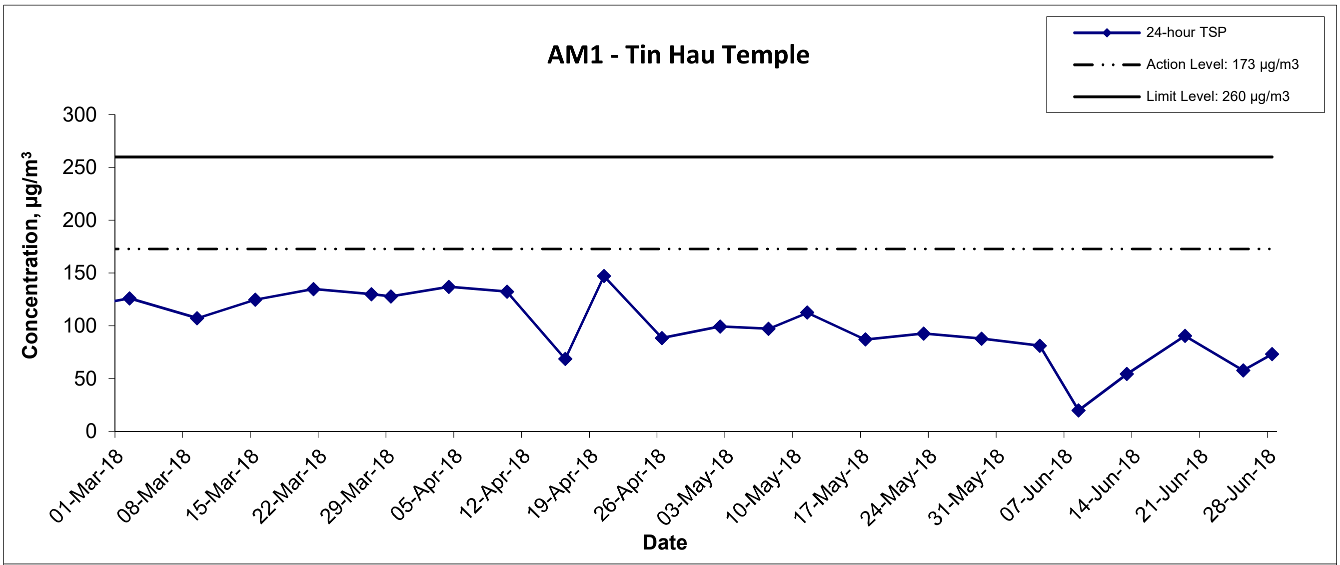
Location AM5(A) - Tseung Kwan O DSD Desilting Compound

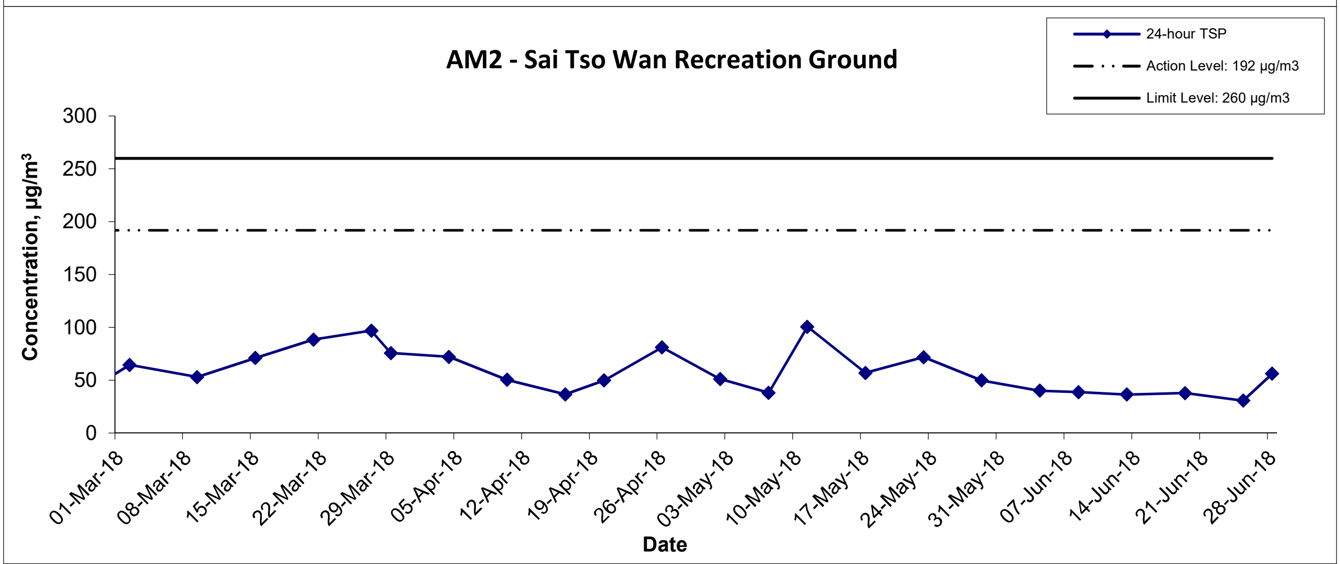
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
4-Jun-18	Cloudy	301.5	758.3	3.6085	3.6723	0.0638	26434.9	26458.9	24.0	1.20	1.20	1.20	1730.9	36.9
8-Jun-18	Cloudy	299.8	753.7	2.8123	2.8579	0.0456	26458.9	26482.9	24.0	1.20	1.20	1.20	1730.5	26.4
13-Jun-18	Sunny	300.2	750.8	2.8510	2.8905	0.0395	26482.9	26506.9	24.0	1.20	1.20	1.20	1725.4	22.9
19-Jun-18	Cloudy	303.1	755.7	3.0101	3.0775	0.0674	26506.9	26530.9	24.0	1.20	1.20	1.20	1722.3	39.1
25-Jun-18	Cloudy	301.7	759.4	2.9897	3.0218	0.0321	26530.9	26554.9	24.0	1.20	1.20	1.20	1731.7	18.5
28-Jun-18	Cloudy	301.9	759.1	2.8019	2.8234	0.0215	26560.3	26584.3	24.0	1.21	1.21	1.21	1742.5	12.3
													Min	12.3
													Max	39.1
													Average	26.0

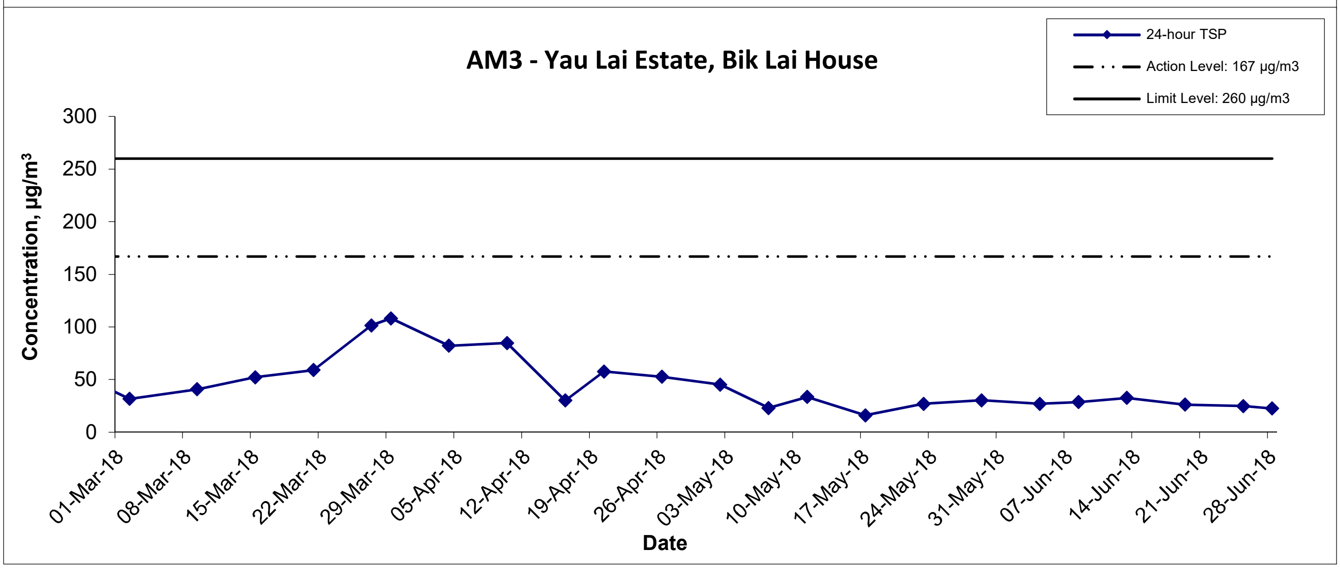
Location AM6(A) - Park Central, L1/F Open Space Area

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^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
4-Jun-18	Cloudy	302.3	758.6	3.6178	3.6965	0.0787	16907.8	16931.8	24.0	1.22	1.22	1.22	1758.0	44.8
8-Jun-18	Cloudy	299.6	753.5	2.8639	2.9018	0.0379	16931.8	16955.8	24.0	1.22	1.22	1.22	1760.0	21.5
13-Jun-18	Sunny	300.0	751.3	3.3643	3.3856	0.0213	16955.8	16979.8	24.0	1.22	1.22	1.22	1756.2	12.1
19-Jun-18	Cloudy	302.7	755.4	2.9711	2.9977	0.0266	16979.8	17003.8	24.0	1.22	1.22	1.22	1753.1	15.2
25-Jun-18	Cloudy	301.4	759.3	3.6106	3.7669	0.1563	17003.8	17027.8	24.0	1.22	1.22	1.22	1761.5	88.7
28-Jun-18	Cloudy	301.7	759.0	2.9804	3.0932	0.1128	17027.8	17051.8	24.0	1.22	1.22	1.22	1760.3	64.1
													Min	12.1
													Max	88.7
													Average	41.1

24-hr TSP Concentration Levels







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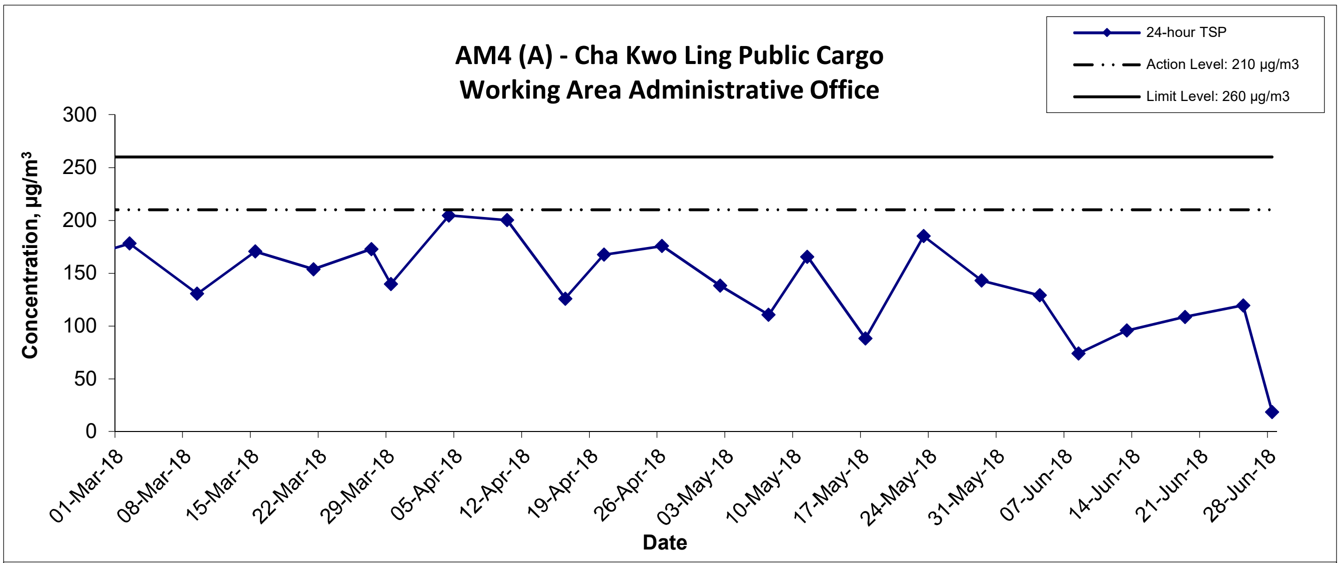
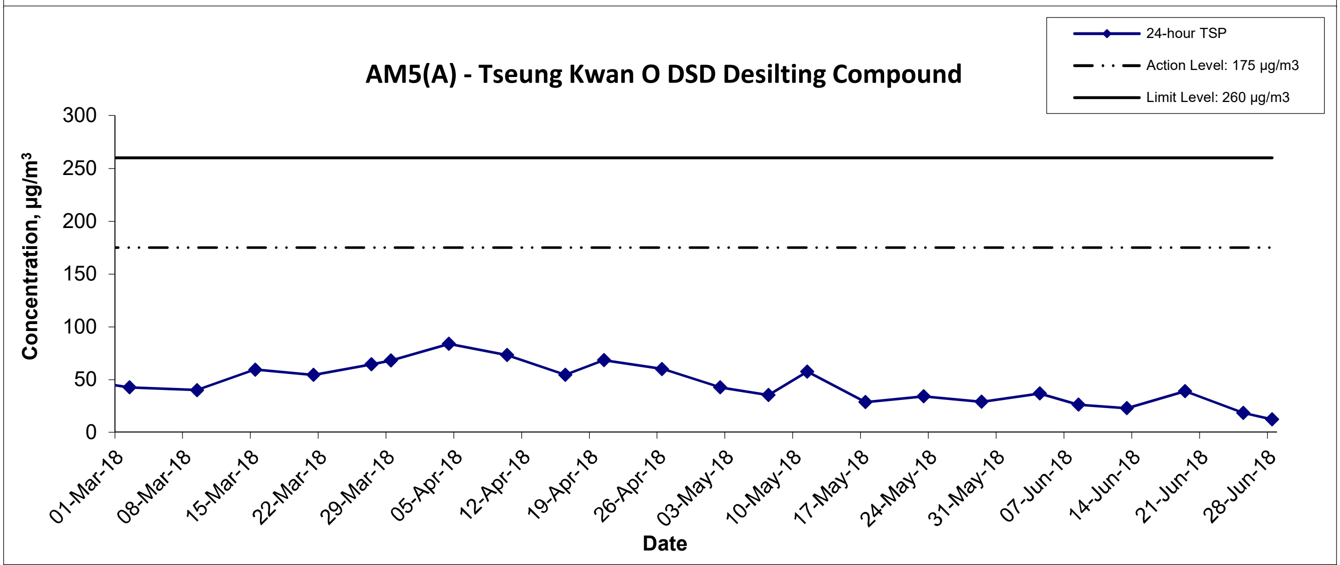
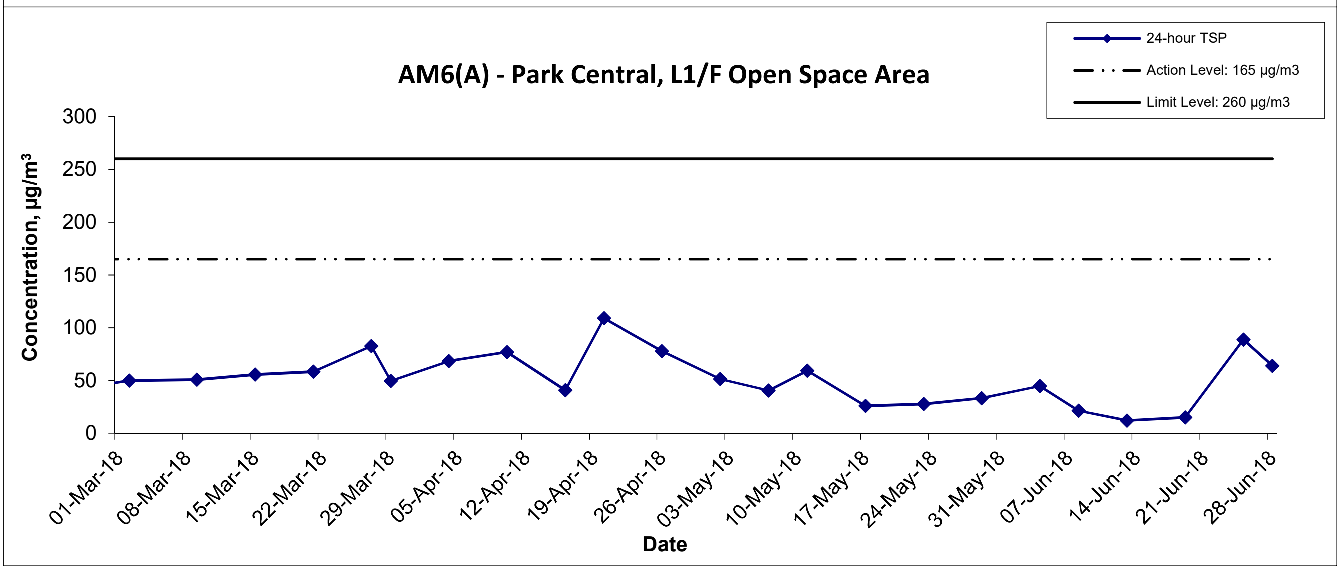
24-hr TSP Concentration Levels







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

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix G - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Jun-18	9:50	Rainy	74.6	77.9	69.3	65.5	74.0
11-Jun-18	10:35	Sunny	68.9	69.7	62.7		66.2
20-Jun-18	14:00	Sunny	74.2	76.7	70.6		73.6
26-Jun-18	16:30	Sunny	69.9	71.6	67.9		67.9

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_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Jun-18	9:00	Cloudy	74.6	77.6	69.4	63.6	74.2
11-Jun-18	10:00	Sunny	69.6	71.2	63.6		68.3
20-Jun-18	13:05	Sunny	74.3	76.2	71.0		73.9
26-Jun-18	9:10	Sunny	69.8	71.2	64.4		68.6

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Jun-18	10:20	Rainy	66.0	68.4	61.2	65.6	55.4
12-Jun-18	10:30	Cloudy	73.4	75.0	71.1		72.6
20-Jun-18	13:50	Cloudy	72.1	73.9	69.4		71.0
26-Jun-18	11:30	Sunny	72.2	74.8	69.2		71.1

Location CM4 - Tin Hau Temple, Cha Kwo Ling

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Jun-18	13:00	Rainy	61.2	64.3	57.2	62.0	61.2 Measured ≦ Baseline
11-Jun-18	11:30	Sunny	63.7	64.9	57.6		58.8
20-Jun-18	9:05	Sunny	69.8	71.4	65.3		69.0
26-Jun-18	9:05	Sunny	70.1	72.4	66.3		69.4

Location CM5 - CCC Kei Faat Primary School, Yau Tong

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Jun-18	11:00	Rainy	69.2	73.7	67.4	68.2	62.3
12-Jun-18	11:25	Cloudy	70.9	72.7	66.3		67.6
20-Jun-18	13:05	Cloudy	69.3	71.2	65.1		62.8
26-Jun-18	10:00	Sunny	69.7	71.9	66.5		64.4

Appendix G - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
6-Jun-18	15:00	Cloudy	71.0	75.6	56.9	61.9	70.4
12-Jun-18	16:30	Cloudy	66.7	68.5	61.6		65.0
21-Jun-18	13:00	Cloudy	72.3	74.3	69.8		71.9
27-Jun-18	11:30	Cloudy	69.1	71.5	67.4		68.2

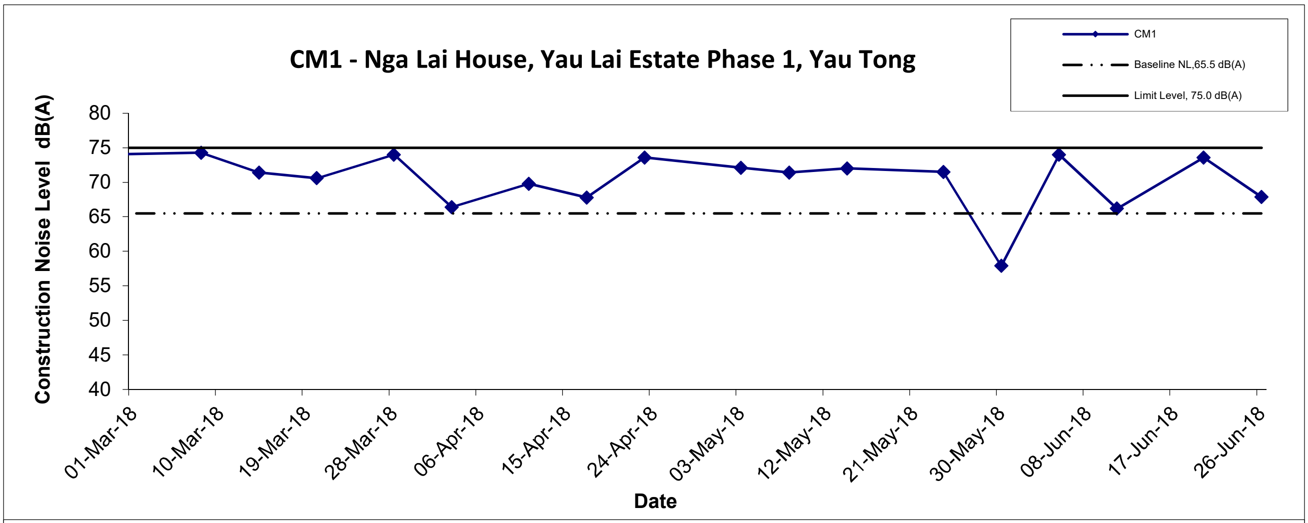
Location CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores

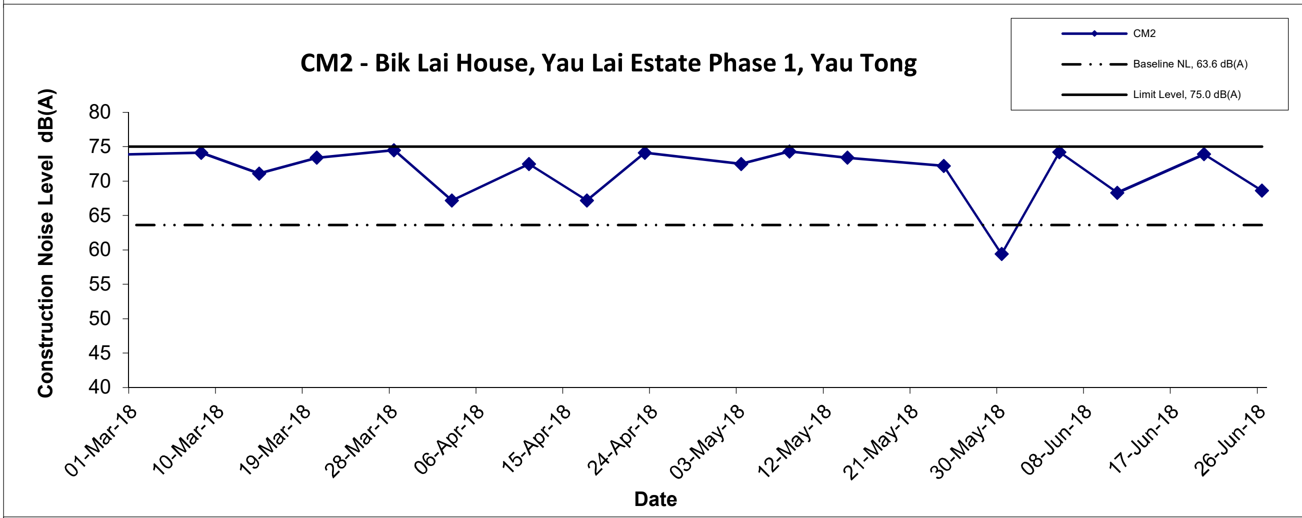
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
6-Jun-18	14:15	Cloudy	63.7	62.8	56.8	58.3	62.2
12-Jun-18	15:05	Cloudy	69.3	71.5	63.5		68.9
21-Jun-18	13:30	Cloudy	70.2	71.3	69.1		69.9
27-Jun-18	10:30	Cloudy	68.9	71.2	66.3		68.5

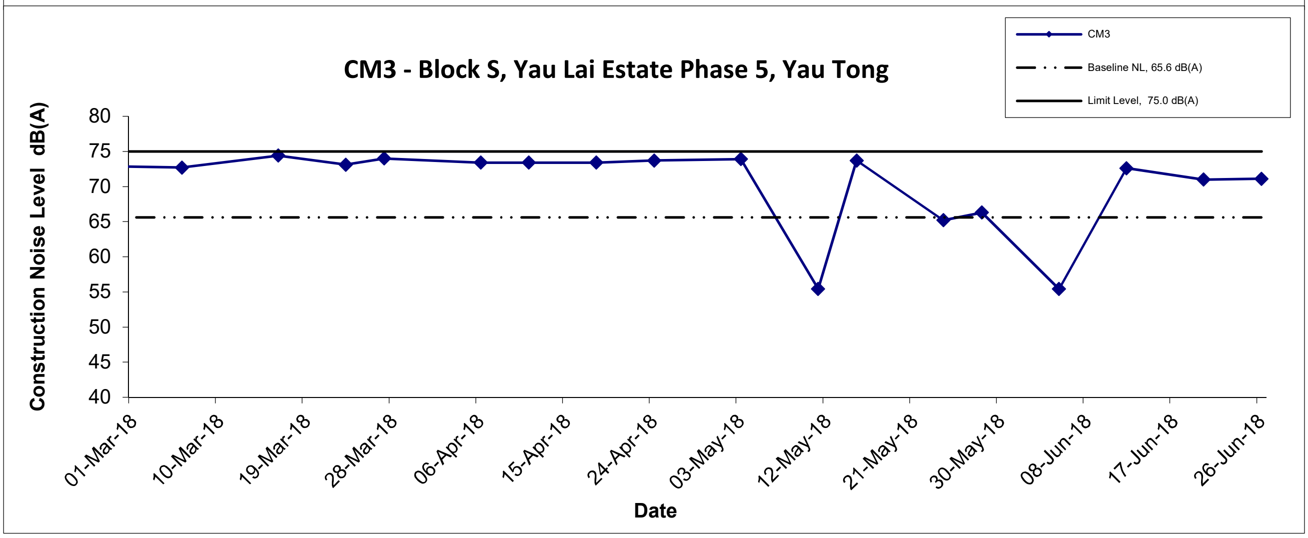
Location CM8(A) - Park Central, L1/F Open Space Area

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
6-Jun-18	9:00	Cloudy	62.6	66.5	55.1	69.1	62.6 Measured ≦ Baseline
12-Jun-18	11:00	Cloudy	69.6	72.1	61.6		60.0
21-Jun-18	9:00	Cloudy	60.1	63.0	56.7		60.1 Measured ≦ Baseline
27-Jun-18	16:00	Cloudy	66.6	70.7	58.7		66.6 Measured ≦ Baseline

Noise Levels







Title	Scale	Project	
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	N.T.S	No. MA16034	CINOTECH
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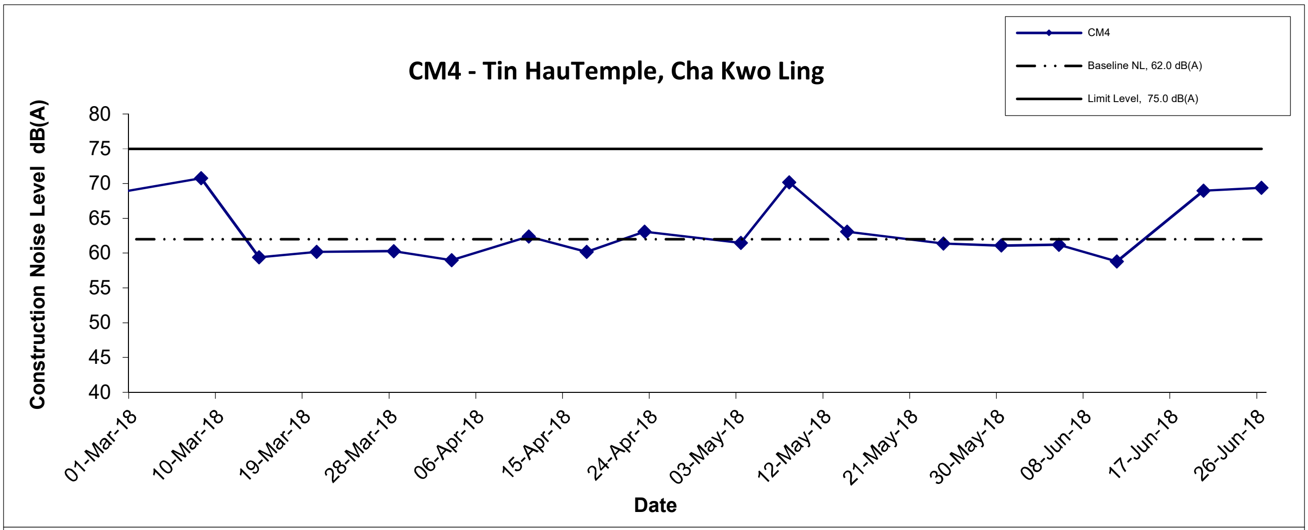
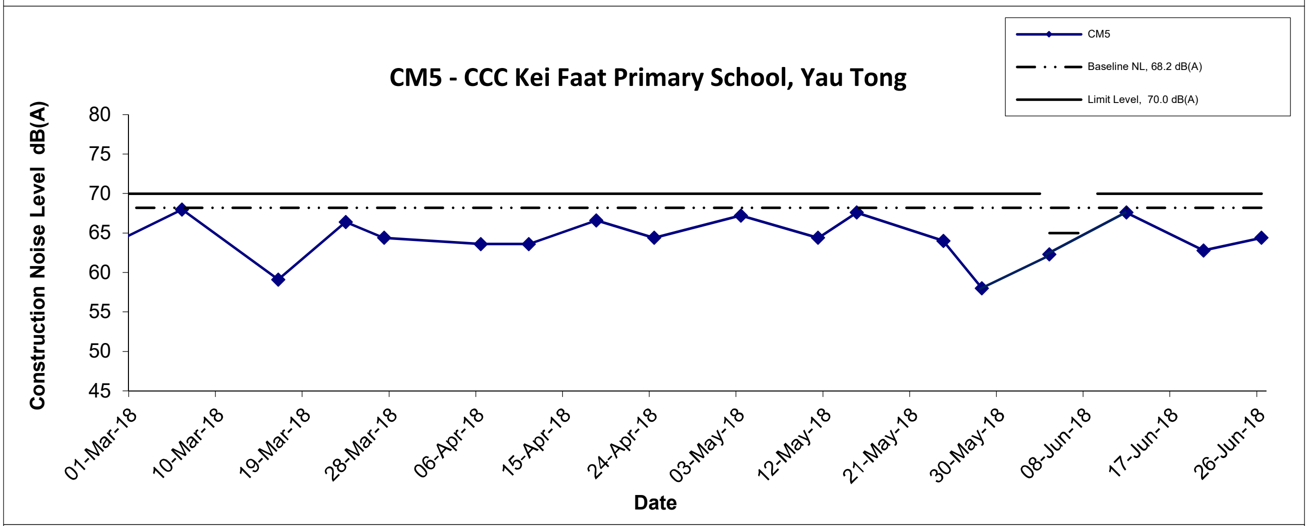
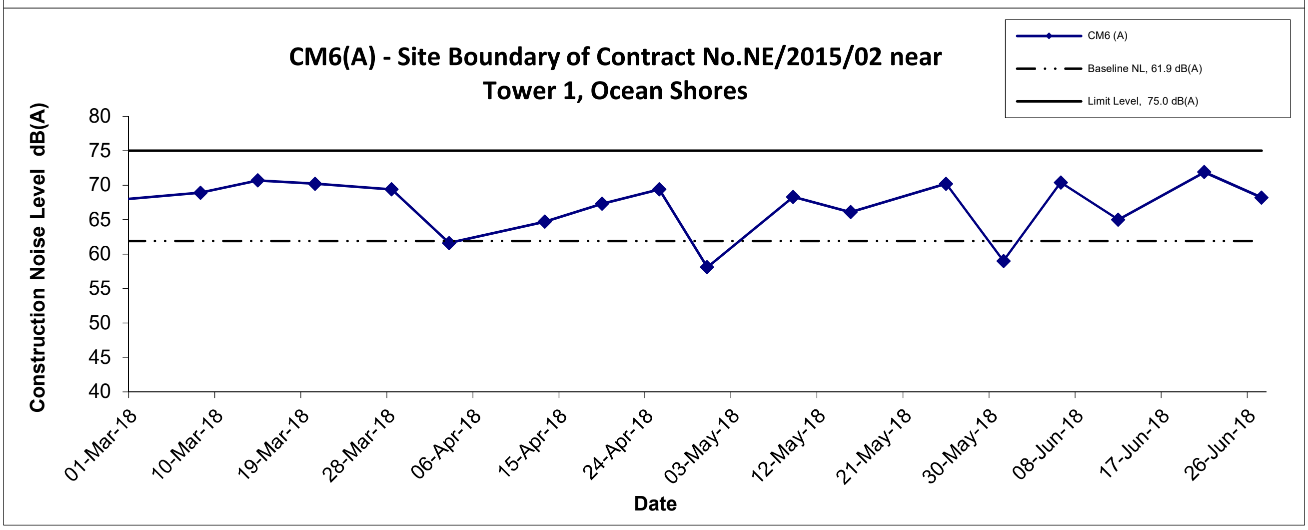
Noise Levels







Remark: Examination Period for CM5: 4/6, 5/6, 7/6 and 8/6. Noise Criteria during examination is 65 db(A).

Title	Scale	Project	
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	N.T.S	No. MA16034	CINOTECH
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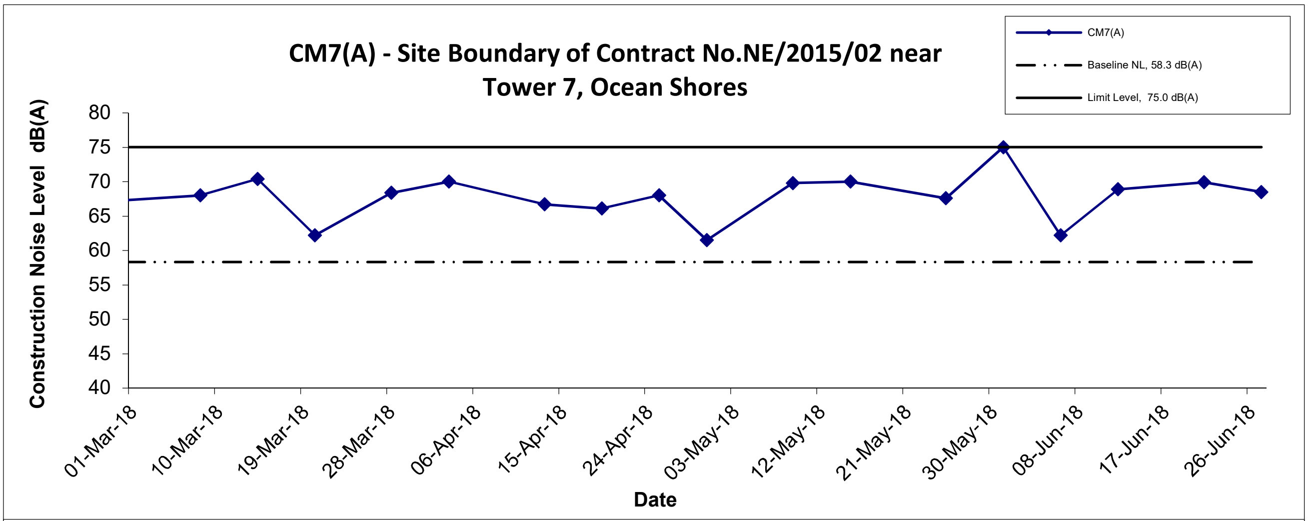
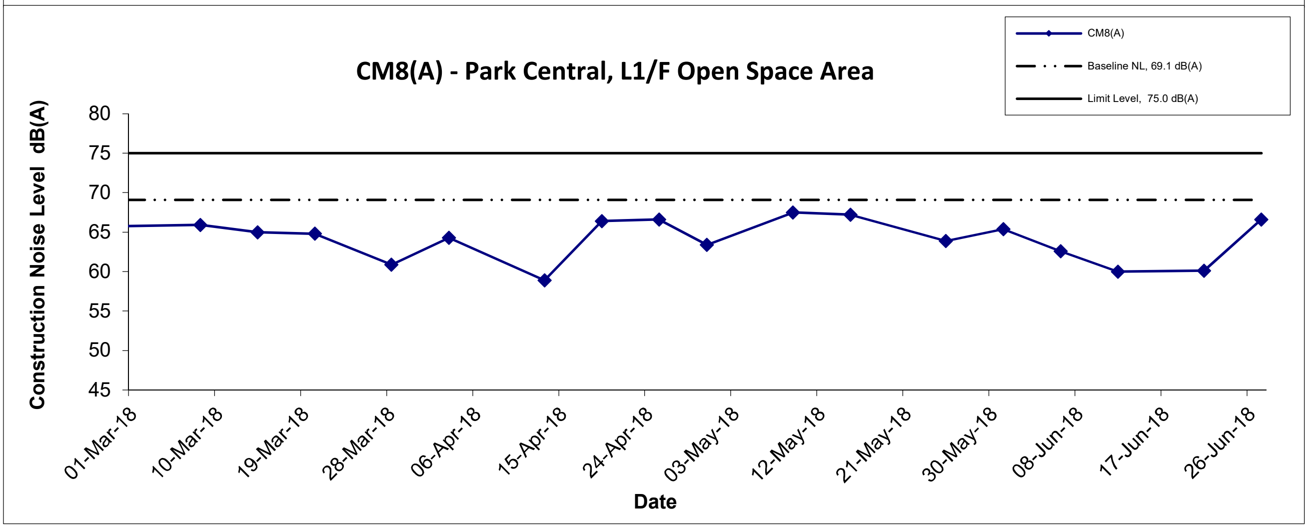
Noise Levels





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	CINOTECH
	Date Jun 18	Appendix G	

Appendix G - Noise Monitoring Results

(Restricted Hours - 19:00 to 23:00 on all other days & 07:00 to 23:00 holidays)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong

Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
1-Jun-18	20:55	Cloudy	64.5	66.7	62.6	64.3	64.4	64.3 Measured ≦ Baseline
	21:00		64.3	65.6	62.5			
	21:05		64.0	65.3	62.4			
8-Jun-18	22:45	Cloudy	65.9	66.9	64.4	66.0		60.9
	22:50		66.1	67.0	65.0			
	22:55		66.0	67.0	64.7			
10-Jun-18	10:45	Sunny	64.5	66.0	62.3	64.9		55.3
	10:50		64.9	66.1	63.4			
	10:55		65.3	66.7	62.6			
14-Jun-18	22:45	Cloudy	65.3	66.7	63.7	65.2		57.5
	22:50		65.1	66.5	63.6			
	22:55		65.3	66.8	63.4			
17-Jun-18	14:20	Sunny	64.0	65.5	63.2	64.5		48.1
	14:25		64.6	66.4	63.5			
	14:30		64.8	66.7	63.9			
20-Jun-18	22:05	Cloudy	65.2	66.5	63.5	65.3		58.0
	22:10		65.1	66.7	63.5			
	22:15		65.6	67.1	64.0			
24-Jun-18	11:15	Sunny	66.1	67.5	64.6	66.0		60.9
	11:20		65.9	67.4	64.2			
	11:25		66.1	67.6	64.2			
26-Jun-18	22:10	Fine	66.6	67.9	64.6	66.3		61.8
	22:15		66.4	68.1	64.0			
	22:20		65.9	67.3	64.2			

Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong

Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
1-Jun-18	20:20	Cloudy	65.1	66.5	63.1	65.0	64.2	57.3
	20:25		64.8	65.9	63.6			
	20:30		65.1	66.4	63.7			
8-Jun-18	22:20	Cloudy	65.9	67.1	64.4	65.6		60.0
	22:25		65.7	67.1	64.0			
	22:30		65.1	66.8	63.6			
10-Jun-18	10:05	Cloudy	65.3	66.8	63.4	65.6		60.0
	10:10		66.0	67.7	64.0			
	10:15		65.4	66.8	64.1			
14-Jun-18	22:15	Cloudy	65.3	66.5	64.1	64.9		56.6
	22:20		64.4	65.8	62.6			
	22:25		64.9	65.9	63.4			
17-Jun-18	13:42	Sunny	67.5	69.8	65.1	67.4		64.6
	13:47		67.7	70.1	65.8			
	13:52		66.8	68.7	64.3			
20-Jun-18	21:40	Cloudy	64.0	65.4	62.2	64.1		64.1 Measured ≦ Baseline
	21:45		64.1	65.4	62.6			
	21:50		64.1	65.5	62.4			
24-Jun-18	10:50	Sunny	64.2	65.5	62.8	65.0		57.3
	10:55		65.5	66.9	63.4			
	11:00		65.3	66.8	63.5			
26-Jun-18	21:45	Fine	67.1	68.3	64.1	67.7		65.1
	21:50		68.3	69.6	65.5			
	21:55		67.5	69.0	65.0			

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong

Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
1-Jun-18	21:35	Cloudy	58.5	59.8	57.1	58.6	64.7	58.6 Measured ≦ Baseline
	21:40		58.6	59.9	57.1			
	21:45		58.8	60.3	57.1			
8-Jun-18	21:50	Cloudy	66.2	67.8	64.4	66.1		60.5
	21:55		66.7	67.9	64.5			
	22:00		65.4	66.7	64.1			
10-Jun-18	9:35	Sunny	63.4	64.8	61.7	63.9		63.9 Measured ≦ Baseline
	9:40		64.0	65.2	62.4			
	9:45		64.3	65.5	62.9			
14-Jun-18	21:45	Cloudy	66.8	68.6	65.0	66.1		60.5
	21:50		66.0	66.9	64.5			
	21:55		65.5	66.7	64.2			
17-Jun-18	13:00	Sunny	57.4	61.2	50.9	57.2		57.2 Measured ≦ Baseline
	13:05		57.3	60.3	50.5			
	13:10		57.0	60.2	50.1			
20-Jun-18	21:05	Cloudy	65.3	66.7	63.6	64.9		51.4
	21:10		64.6	65.7	63.5			
	21:15		64.8	65.9	63.4			
24-Jun-18	11:45	Sunny	63.7	65.1	61.5	64.1		64.1 Measured ≦ Baseline
	11:50		64.3	65.4	62.0			
	11:55		64.4	65.5	62.3			
26-Jun-18	22:40	Fine	65.6	66.8	64.0	65.4		57.1
	22:45		65.4	66.8	64.1			
	22:50		65.1	66.0	63.9			

Appendix G - Noise Monitoring Results

Location CM4 - Tin Hau Temple, Cha Kwo Ling								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
1-Jun-18	21:43	Cloudy	51.7	54.8	44.1	51.5	57.0	51.5 Measured ≦ Baseline
	21:48		50.6	53.6	44.5			
	21:53		52.1	54.7	45.5			
8-Jun-18	21:20	Cloudy	53.5	56.2	47.8	53.6		53.6 Measured ≦ Baseline
	21:25		53.6	56.4	47.6			
	21:30		53.7	56.8	46.3			
10-Jun-18	9:00	Cloudy	57.2	58.6	55.2	58.7		53.8
	9:05		59.8	61.6	57.3			
	9:10		58.8	60.6	56.7			
14-Jun-18	21:20	Cloudy	56.0	59.0	49.5	53.9		53.9 Measured ≦ Baseline
	21:25		51.3	54.2	47.6			
	21:30		52.9	55.6	47.6			
17-Jun-18	15:30	Sunny	56.7	58.9	52.6	56.2		56.2 Measured ≦ Baseline
	15:35		56.2	58.6	52.1			
	15:40		55.6	57.4	51.5			
20-Jun-18	22:35	Cloudy	49.4	52.5	44.1	49.6		49.6 Measured ≦ Baseline
	22:40		50.2	53.4	45.2			
	22:45		49.1	52.2	44.0			
24-Jun-18	10:00	Sunny	57.6	60.1	55.2	57.1		40.7
	10:05		56.4	59.5	52.7			
	10:10		57.2	59.9	55.0			
26-Jun-18	21:15	Fine	52.6	55.0	46.3	51.4		51.4 Measured ≦ Baseline
	21:20		50.2	52.8	45.6			
	21:25		50.9	52.8	45.8			

Appendix G - Noise Monitoring Results

(Restricted Hours - 2300-0700 on all days)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong

Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
	23:00		65.6	66.9	64.3		60.5	
8-Jun-18	23:05	Cloudy	65.6	67.1	64.1	65.7		64.1
	23:10		65.9	67.1	64.5			
	23:00		64.2	65.7	62.4			
14-Jun-18	23:05	Cloudy	64.2	65.6	62.7	64.2		61.8
	23:10		64.2	65.7	62.3			
	0:35		62.1	64.1	59.6			
21-Jun-18	0:40	Cloudy	63.5	64.9	59.4	62.3		57.6
	0:45		61.1	63.1	58.7			
	23:50		64.2	65.8	61.4			
26-Jun-18	23:55	Fine	63.4	64.7	62.0	63.9		61.2
	0:00		64.2	64.8	61.1			

Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong

Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
	23:25		64.8	66.0	63.4		58.0	
8-Jun-18	23:30	Cloudy	64.8	65.9	63.0	64.9		63.9
	23:35		65.0	66.3	63.2			
	23:20		63.1	64.7	61.1			
14-Jun-18	23:25	Cloudy	63.0	64.8	60.7	63.1		61.5
	23:30		63.2	64.9	60.9			
	0:05		60.9	62.7	58.7			
21-Jun-18	0:10	Cloudy	61.0	62.5	59.0	61.1		58.2
	0:15		61.4	62.7	60.0			
	23:28		65.1	66.2	62.6			
26-Jun-18	23:33	Fine	63.5	64.8	62.1	64.2		63.0
	23:38		63.8	65.4	62.1			

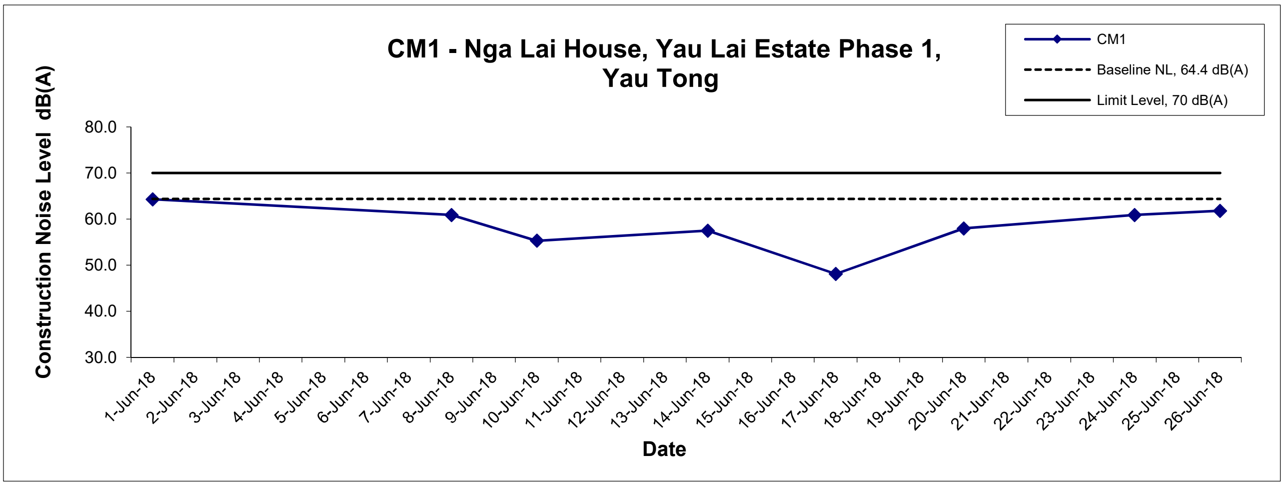
Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong

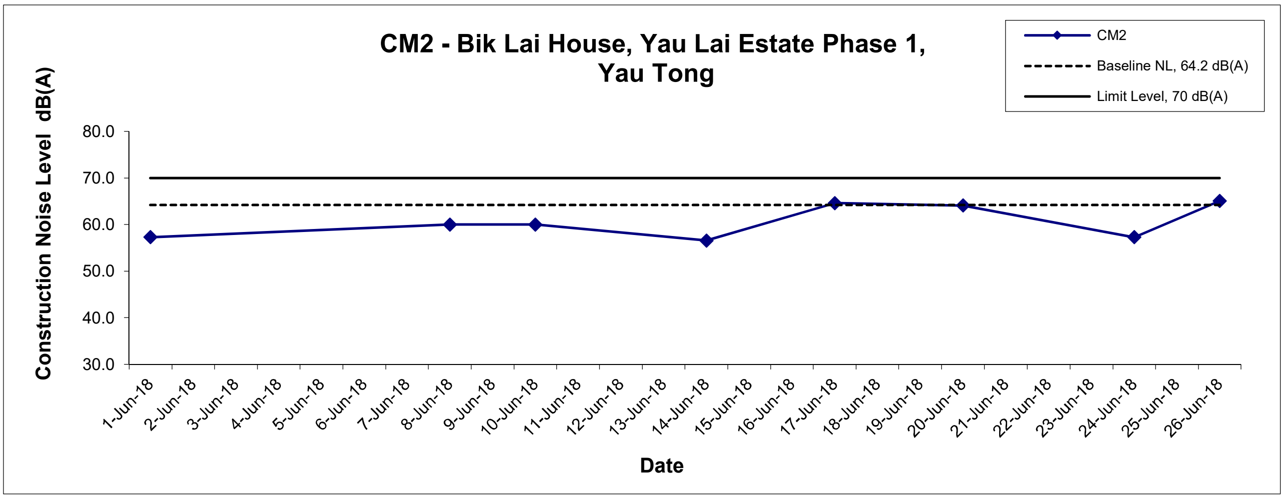
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
	0:00		64.2	65.7	62.3		60.2	
8-Jun-18	0:05	Cloudy	64.4	65.8	62.8	64.1		61.8
	0:10		63.5	64.9	62.0			
	23:55		65.1	66.7	63.2			
14-Jun-18	0:00	Cloudy	64.1	65.9	62.4	64.6		62.6
	0:05		64.6	66.2	62.7			
	23:35		63.2	64.6	61.6			
21-Jun-18	23:40	Cloudy	62.7	63.9	61.2	62.9		59.6
	23:45		62.7	64.1	61.1			
	23:00		64.7	65.8	63.3			
26-Jun-18	23:05	Fine	65.3	67.1	63.3	64.7		62.8
	23:10		64.0	65.1	62.4			

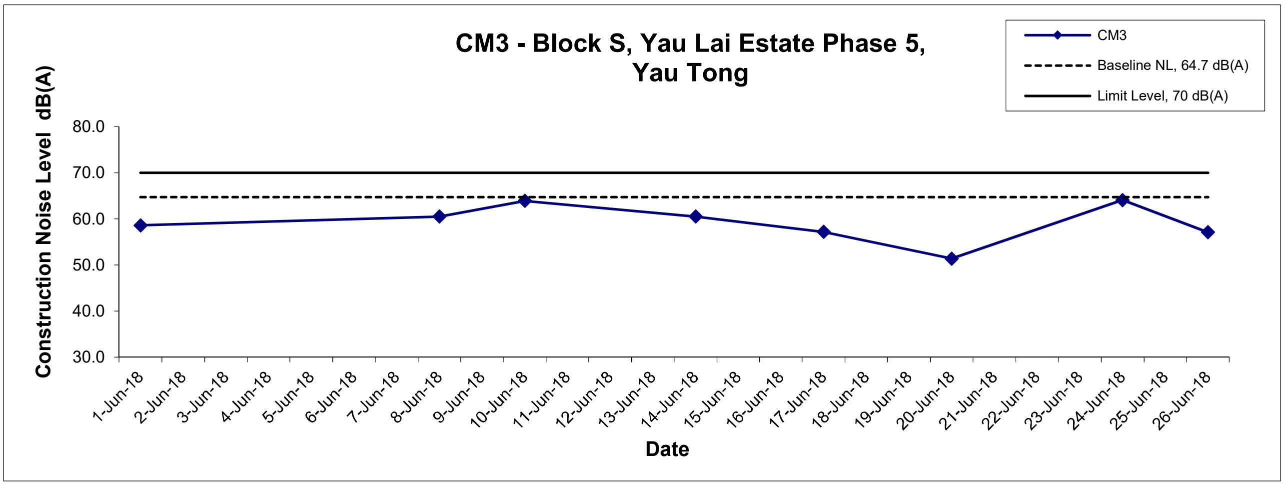
Location CM4 - Tin Hau Temple, Cha Kwo Ling

Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
	0:05		53.9	55.1	52.4		55.8	
8-Jun-18	0:10	Fine	55.6	54.4	55.7	53.4		53.4 Measured ≦ Baseline
	0:15		46.4	45.6	46.3			
	0:25		54.1	55.8	47.4			
15-Jun-18	0:30	Cloudy	54.8	56.1	49.1	53.9		53.9 Measured ≦ Baseline
	0:35		52.4	54.8	46.9			
	23:00		48.5	51.6	44.4			
20-Jun-18	23:05	Cloudy	48.7	51.5	45.2	48.7		48.7 Measured ≦ Baseline
	23:10		48.9	51.8	44.9			
	0:20		50.4	52.7	45.2			
26-Jun-18	0:25	Fine	48.9	50.9	45.4	49.5		49.5 Measured ≦ Baseline
	0:30		49.2	51.6	45.4			

Noise Levels
(Restricted Hours - 07:00 - 23:00 holidays & 19:00 - 23:00 on all other days)

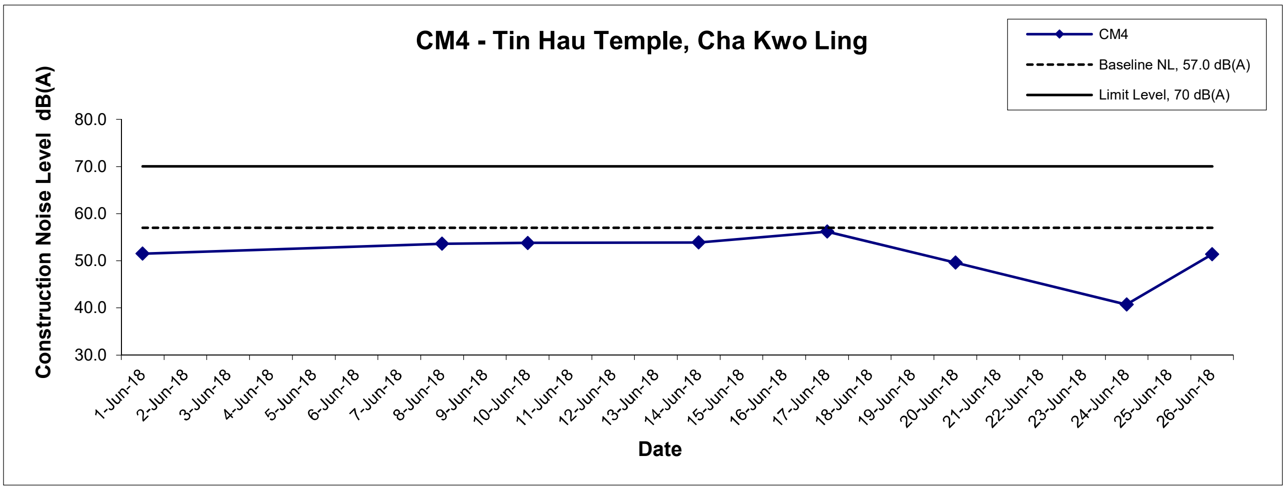






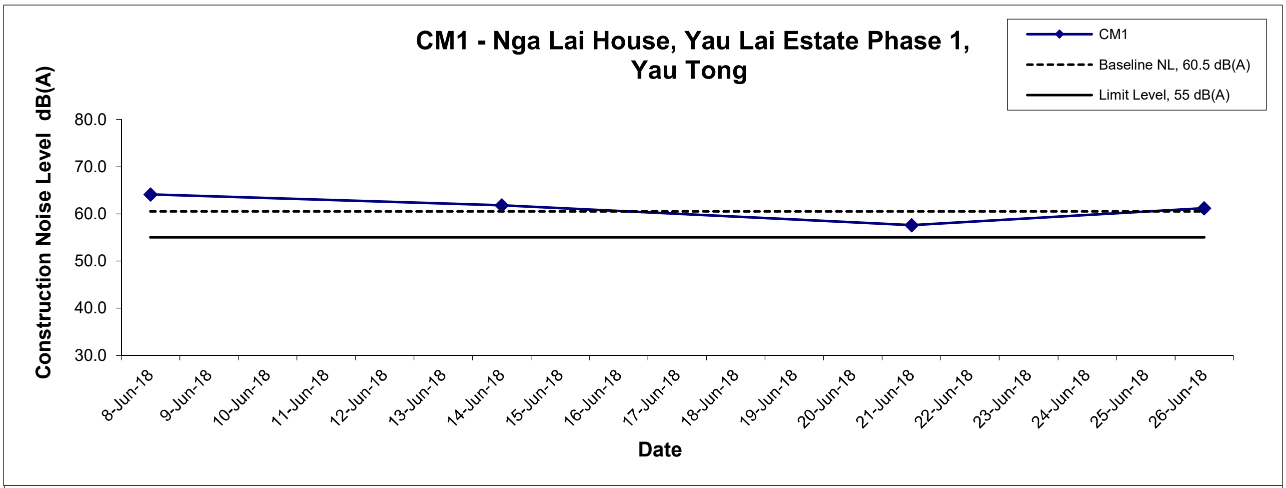
Title	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Restricted Noise Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
		Date Jun 18	Appendix G	

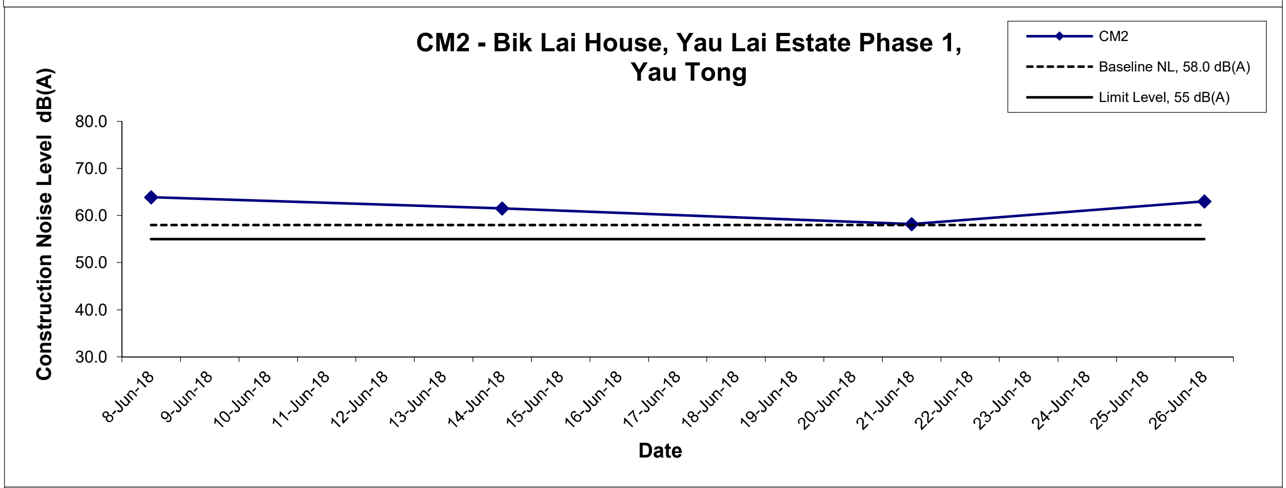
Noise Levels
(Restricted Hours - 07:00 - 23:00 holidays & 19:00 - 23:00 on all other days)

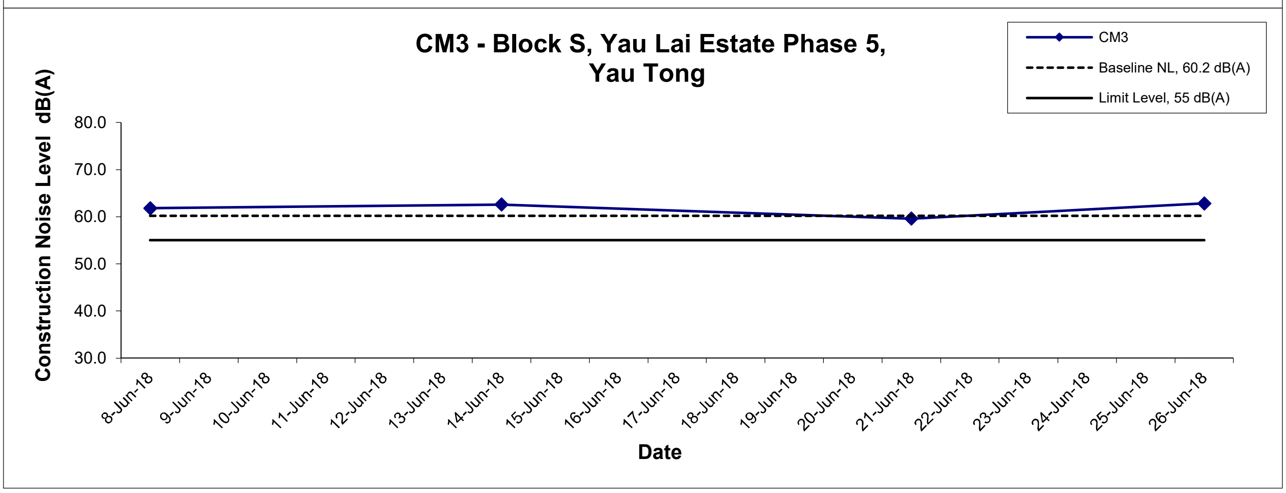


Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Restricted Noise Monitoring Results	Scale: N.T.S	Project No. MA16034	CINOTECH
	Date: Jun 18	Appendix G	

Noise Levels
(Restricted Hours - 2300-0700 on all days)

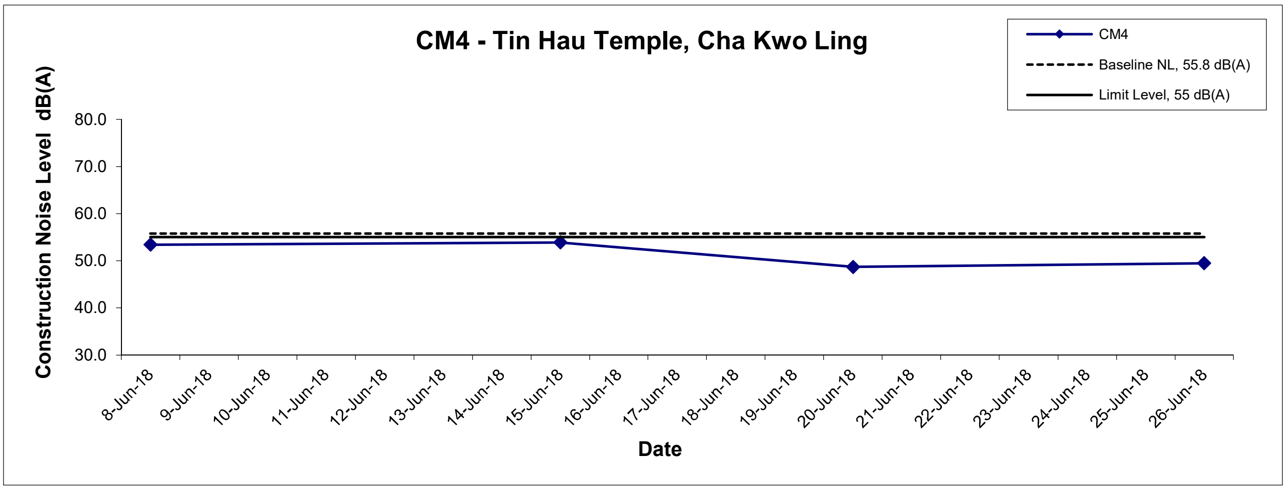






Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Restricted Noise Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
	Date Jun 18	Appendix G	

Noise Levels
(Restricted Hours - 2300-0700 on all days)



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

APPENDIX H
GROUNDWATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

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

Groundwater Quality Monitoring Results at Stream 1

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (^oC)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
5-Jun-18	Rainy	14:42	Middle	27.6 27.5	27.6	8.2 8.2	8.2	0.3 0.3	0.3	99.3 96.9	98.1	7.8 7.6	7.7	7.7 7.5	7.6
20-Jun-18	Sunny	13:14	Middle	26.4 26.5	26.5	8.5 8.5	8.5	1.4 1.4	1.4	102.5 102.5	102.5	7.4 7.4	7.4	3.8 3.6	3.7

Groundwater Quality Monitoring Results at Stream 2

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (^oC)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
5-Jun-18	Rainy	13:48	Middle	27.6 27.6	27.6	8.8 8.9	8.9	0.2 0.2	0.2	99.4 99.0	99.2	7.8 7.8	7.8	72.1 72.2	72.2
20-Jun-18	Sunny	15:15	Middle	26.3 26.5	26.4	8.6 8.4	8.5	0.1 0.1	0.1	101.5 101.5	101.5	7.5 7.5	7.5	3.5 3.1	3.3

Groundwater Quality Monitoring Results at Stream 3

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (^oC)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
5-Jun-18	Rainy	14:15	Middle	27.3 27.1	27.2	8.6 8.8	8.7	0.1 0.1	0.1	98.9 98.8	98.9	7.8 7.9	7.9	86.8 86.9	86.9
20-Jun-18	Sunny	15:26	Middle	26.4 26.0	26.2	8.5 8.5	8.5	0.1 0.1	0.1	102.7 102.2	102.5	7.6 7.5	7.6	4.1 4.2	4.2

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

Summary of Groundwater Quality Monitoring Results

Location	Date	Parameters (unit)								
		pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	SS (mg/L)	BOD_5 (mg O_2/L)	TOC (mg-TOC/L)	Total Nitrogen (mg/L)	NH_3-N (mg NH_3-N/L)	Total Phosphorus (mg-P/L)
Stream 1	5-Jun-18	8.2	7.7	7.6	39	<2	7	2.2	0.1	0.11
	20-Jun-18	8.5	7.4	3.7	<2.5	<2	3	0.8	0.11	<0.05
Stream 2	5-Jun-18	8.9	7.8	72.2	100	<2	5	1.5	<0.05	<0.05
	20-Jun-18	8.5	7.5	3.3	<2.5	<2	4	1.5	<0.05	<0.05
Stream 3	5-Jun-18	8.7	7.9	86.9	92	<2	5	1.5	<0.05	0.06
	20-Jun-18	8.5	7.6	4.2	<2.5	<2	4	1.5	<0.05	<0.05

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Testing & Research

WELLAB LIMITED
Rms 1502, 1516, 1701-1702 & 1713-1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

ATTN: **Ms. Mei Ling Tang**

Report No.:	29033
Date of Issue:	2018-06-14
Date Received:	2018-06-05
Date Tested:	2018-06-05
Date Completed:	2018-06-14

Sample Description : 3 liquid samples as received from client said to be groundwater
Laboratory No. : 29033
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)/20180605
Sampling Date : 2018-06-05

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	*0.5 mg/L
2	Biochemical Oxygen Demand	APHA 19ed 5210B	2 mg O_2/L
3	Total Organic Carbon	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L
4	Nitrogen (Total Kjeldahl + nitrate + nitrite)	In-house method SOP063 (FIA)	0.6 mg N/L
5	Ammonia	In-house method SOP057 (FIA)	0.05 mg NH_3-N/L
6	Total Phosphorus	In-house method SOP055 (FIA)	0.05 mg-P/L

Results:

Sample ID	Stream 1	Stream 2	Stream 3
Sampling Depth	S	S	S
Sample No.	29033-1	29033-2	29033-3
Total Suspended Solids (mg/L)	39	100	92
Biochemical Oxygen Demand (mg O_2/L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	7	5	5
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	2.2	1.5	1.5
Ammonia (mg NH_3-N/L)	0.10	<0.05	<0.05
Total Phosphorus (mg-P/L)	0.11	<0.05	0.06

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

WELLAB LIMITED
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Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
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TEST REPORT

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

ATTN: **Ms. Mei Ling Tang**

Report No.:	29129
Date of Issue:	2018-06-29
Date Received:	2018-06-20
Date Tested:	2018-06-20
Date Completed:	2018-06-29
Page:	1 of 1

Sample Description : 3 liquid samples as received from client said to be groundwater
Laboratory No. : 29129
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)/20180620
Sampling Date : 2018-06-20

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	*0.5 mg/L
2	Biochemical Oxygen Demand	APHA 19ed 5210B	2 mg O_2/L
3	Total Organic Carbon	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L
4	Nitrogen (Total Kjeldahl + nitrate + nitrite)	In-house method SOP063 (FIA)	0.6 mg N/L
5	Ammonia	In-house method SOP057 (FIA)	0.05 mg NH_3-N/L
6	Total Phosphorus	In-house method SOP055 (FIA)	0.05 mg-P/L

Results:

Sample ID	Stream 1	Stream 2	Stream 3
Sampling Depth	S	S	S
Sample No.	29129-1	29129-2	29129-3
Total Suspended Solids (mg/L)	<2.5	<2.5	<2.5
Biochemical Oxygen Demand (mg O_2/L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	3	4	4
Nitrogen (Total Kjeldahl + nitrate + nitrite) (mg N/L)	0.8	1.5	1.5
Ammonia (mg NH_3-N/L)	0.11	<0.05	<0.05
Total Phosphorus (mg-P/L)	<0.05	<0.05	<0.05

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

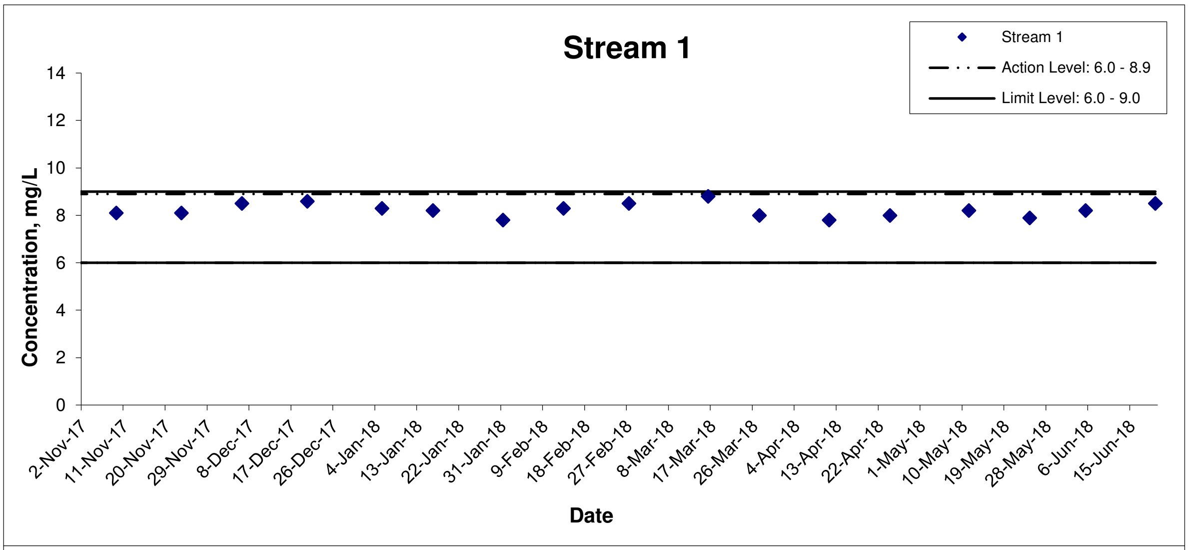
************************************END OF REPORT************************************

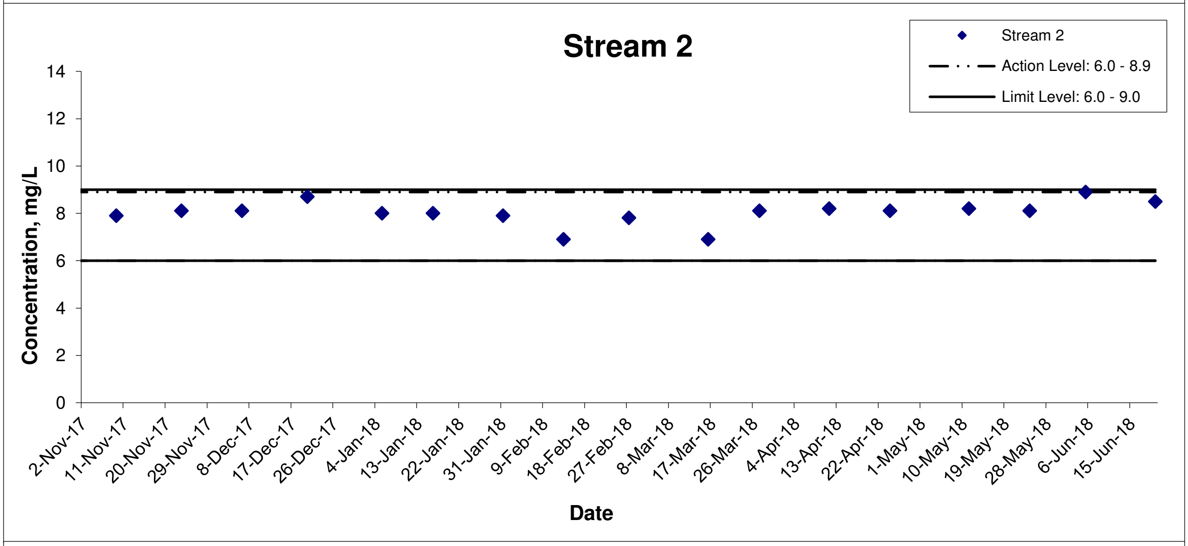
PREPARED AND CHECKED BY:

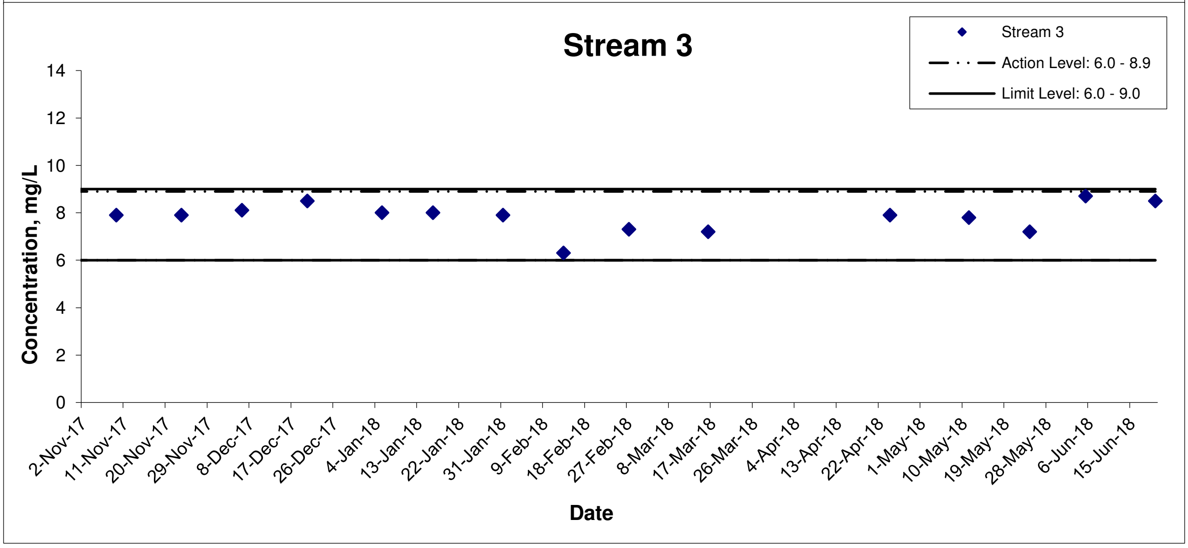
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

pH







Title	Scale	Project No.	
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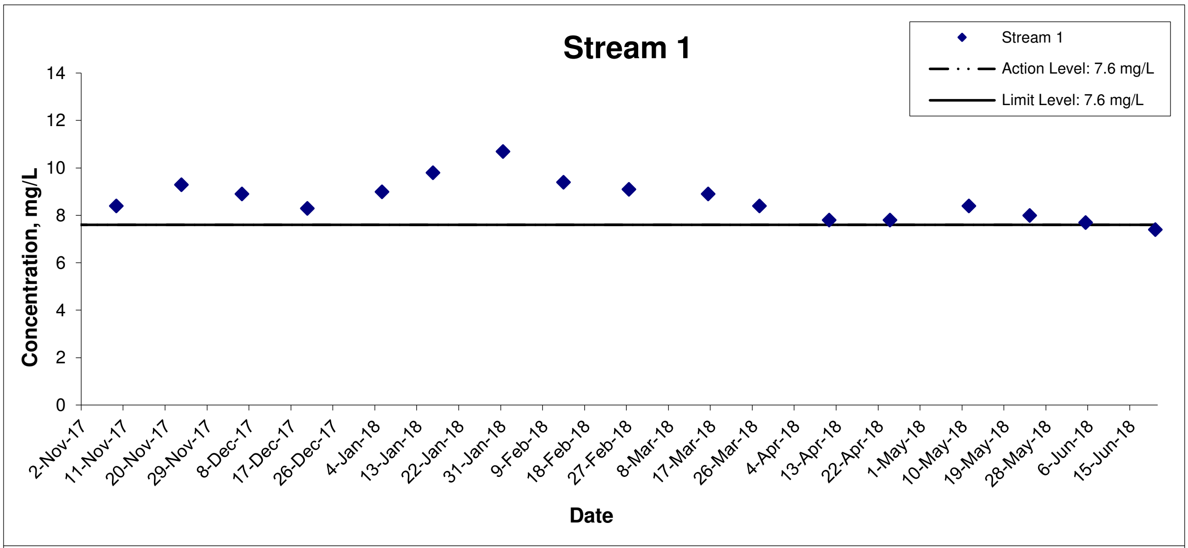
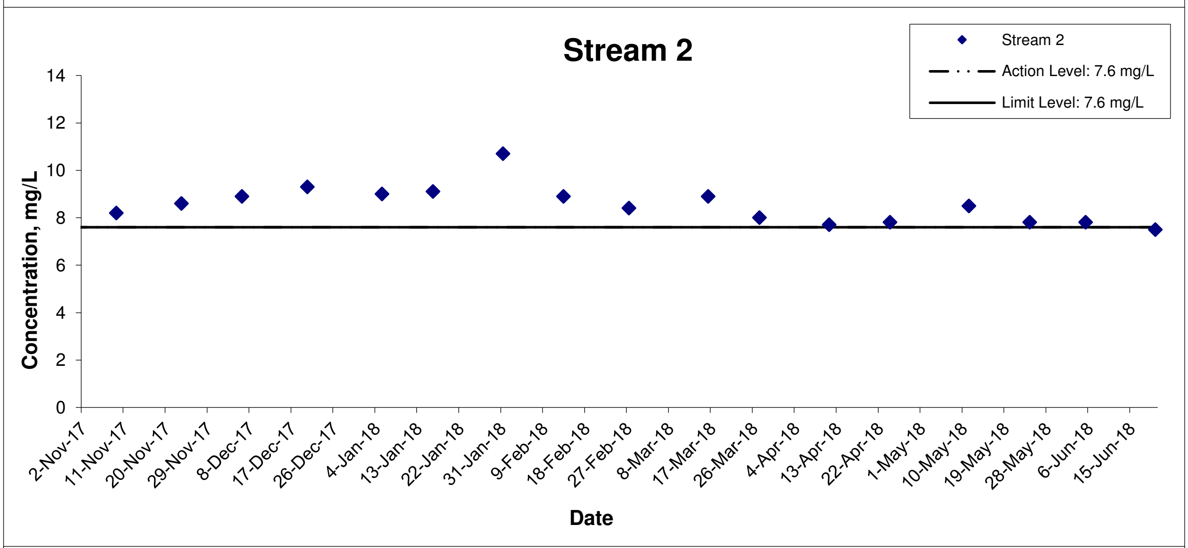
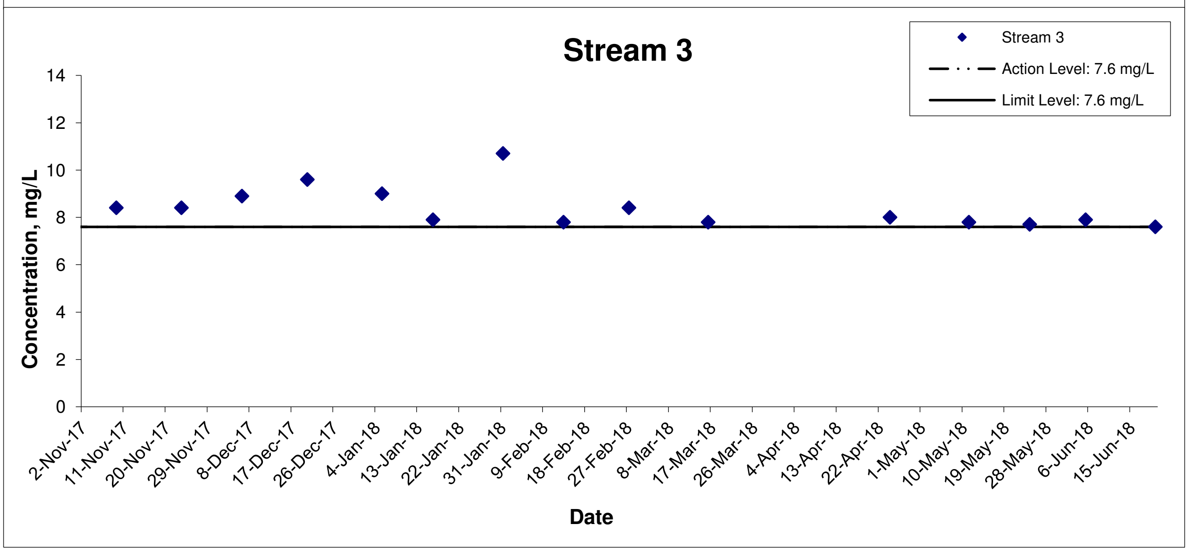
Dissolved Oxygen







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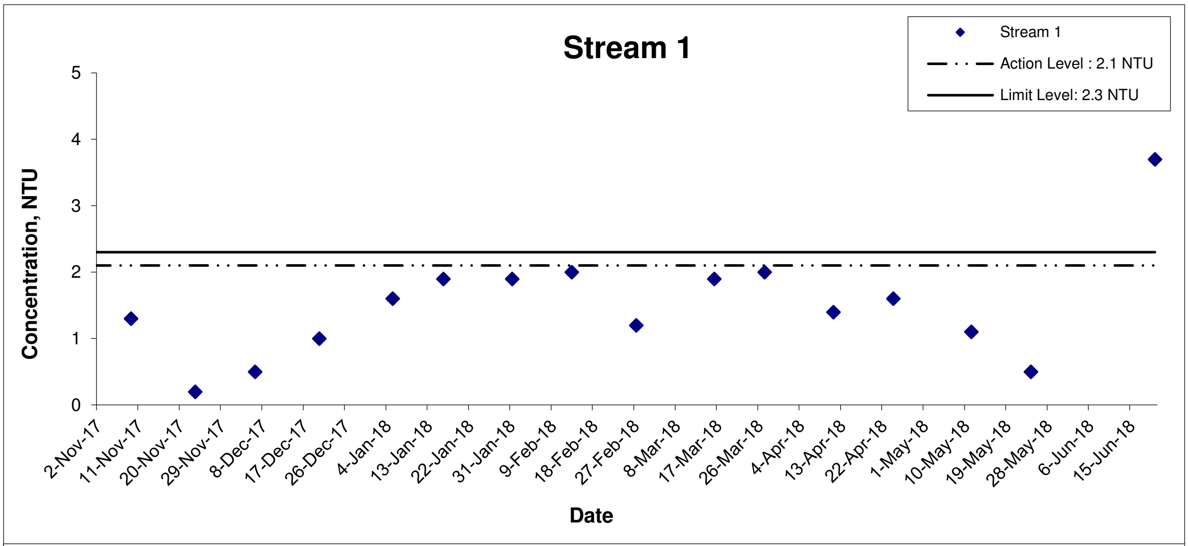
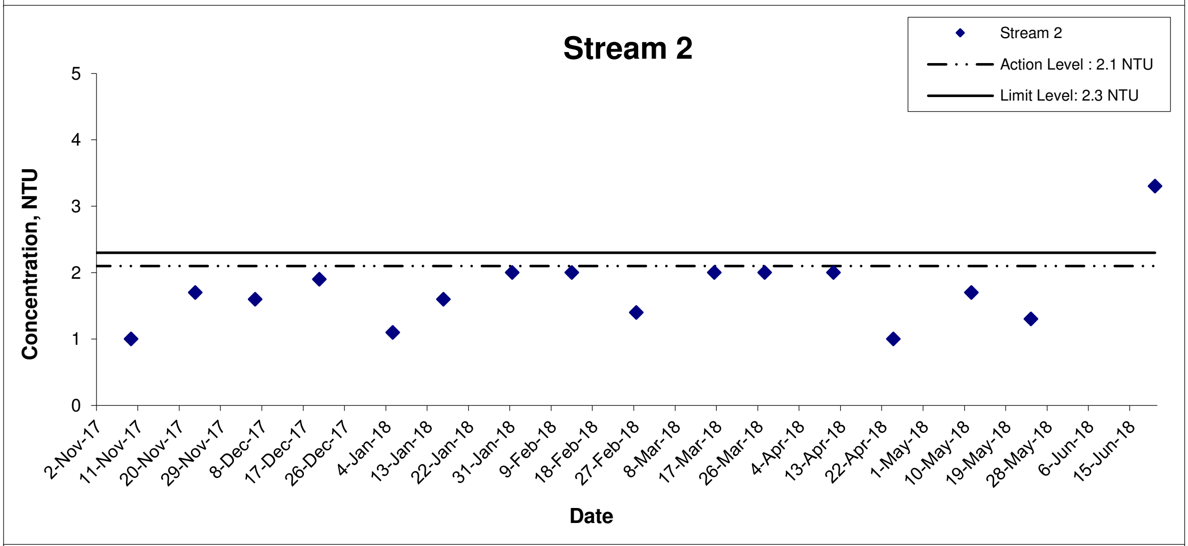
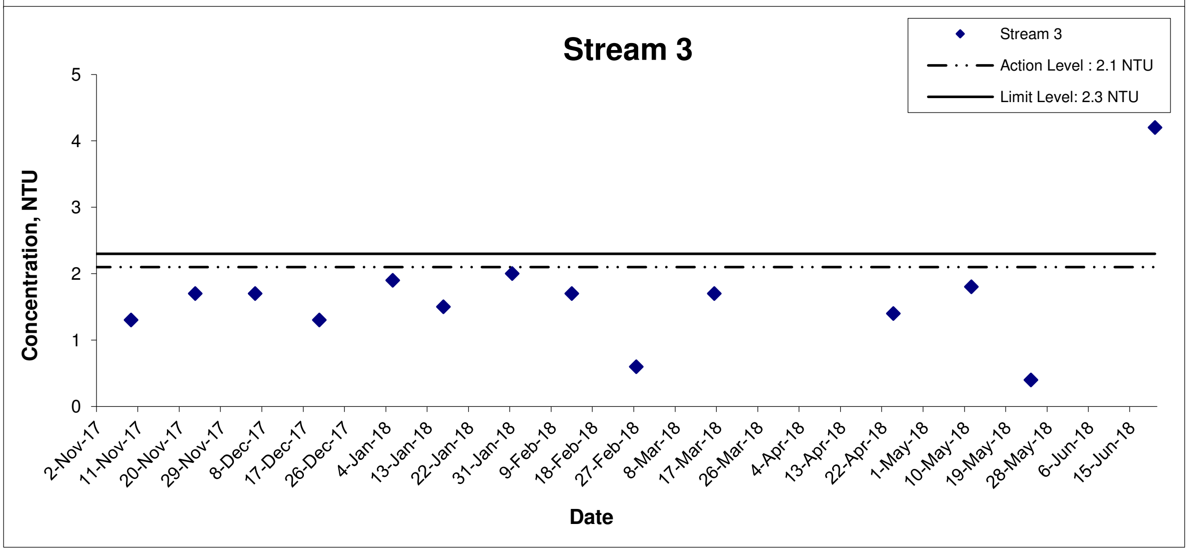
	Date: June 18	Appendix: H	

Turbidity







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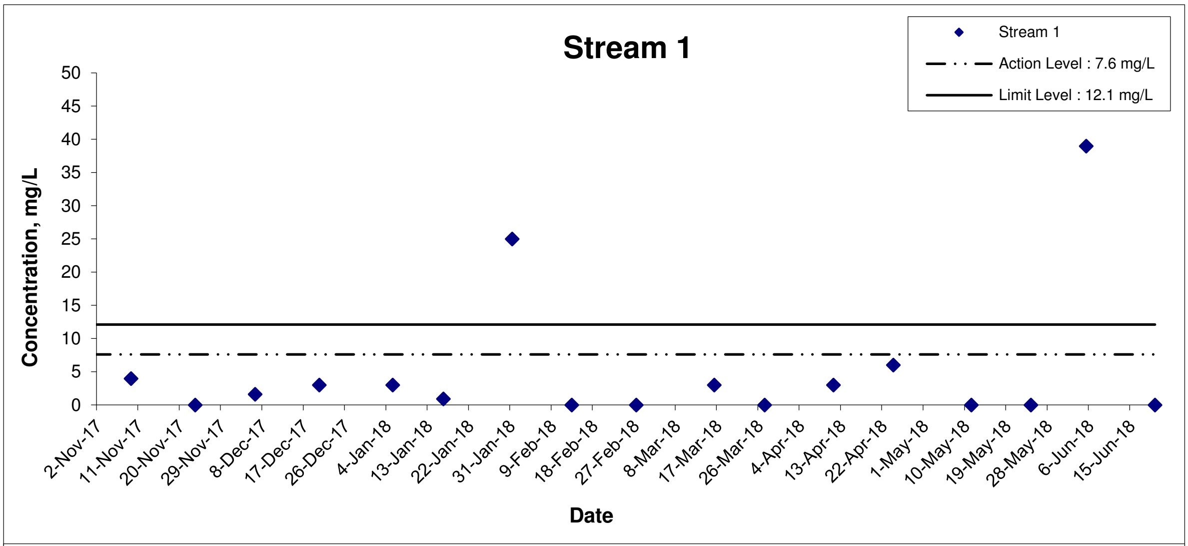
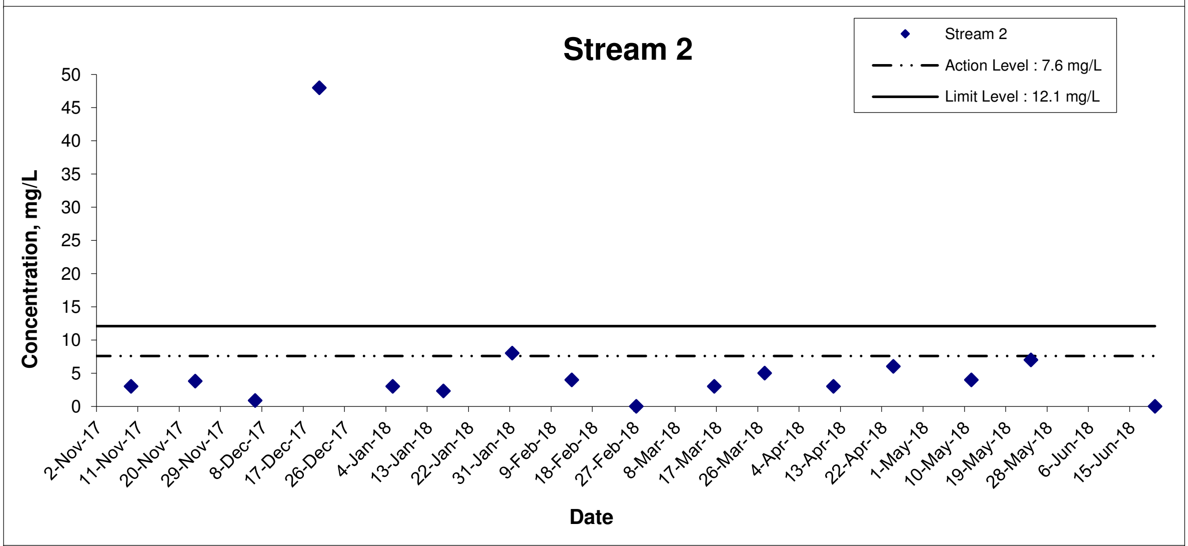
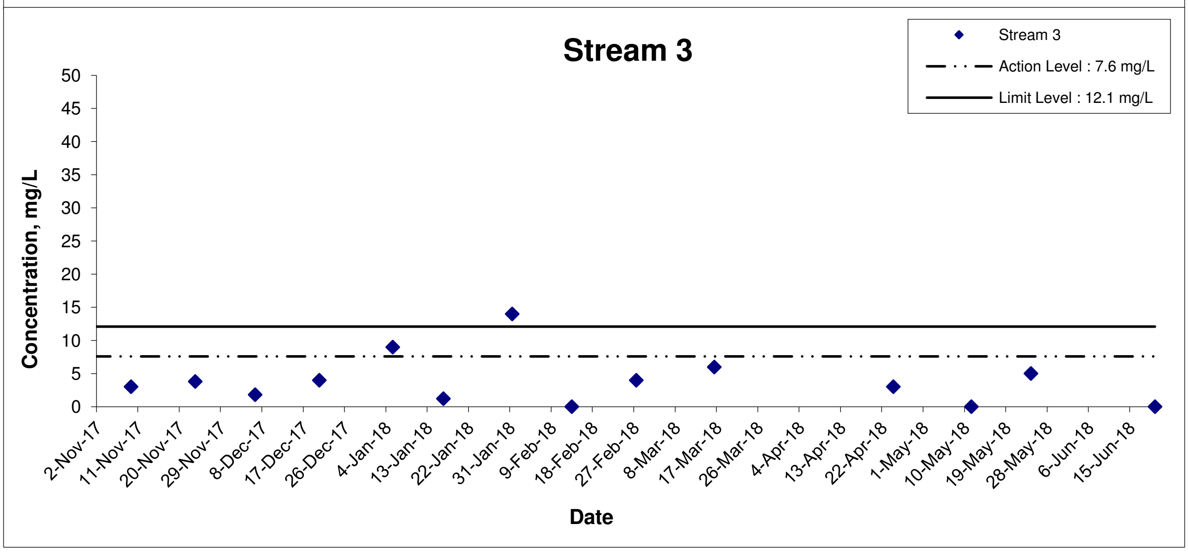
Suspended Solids







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

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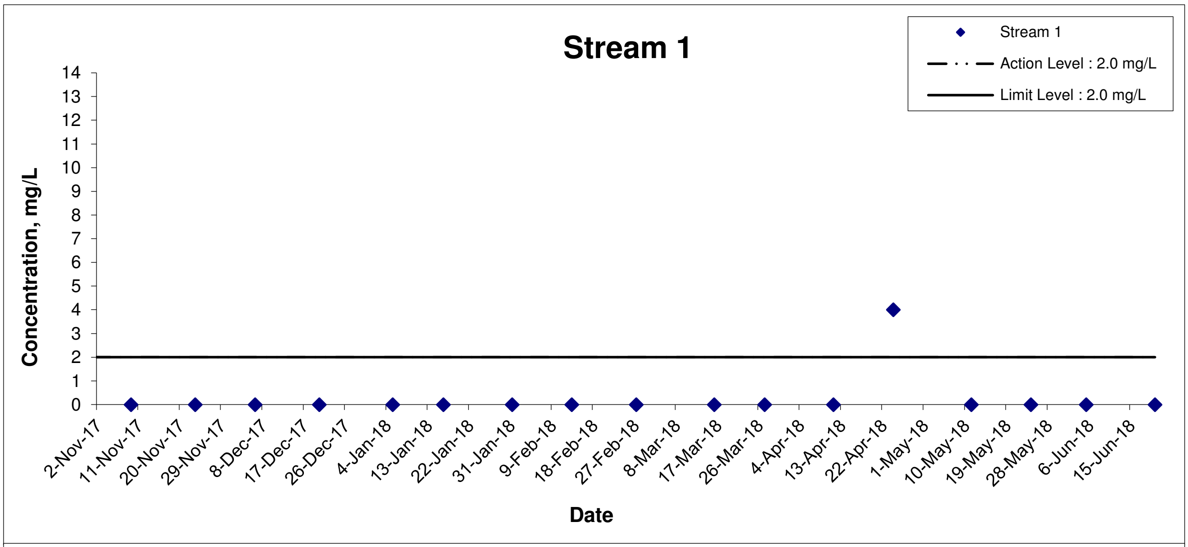
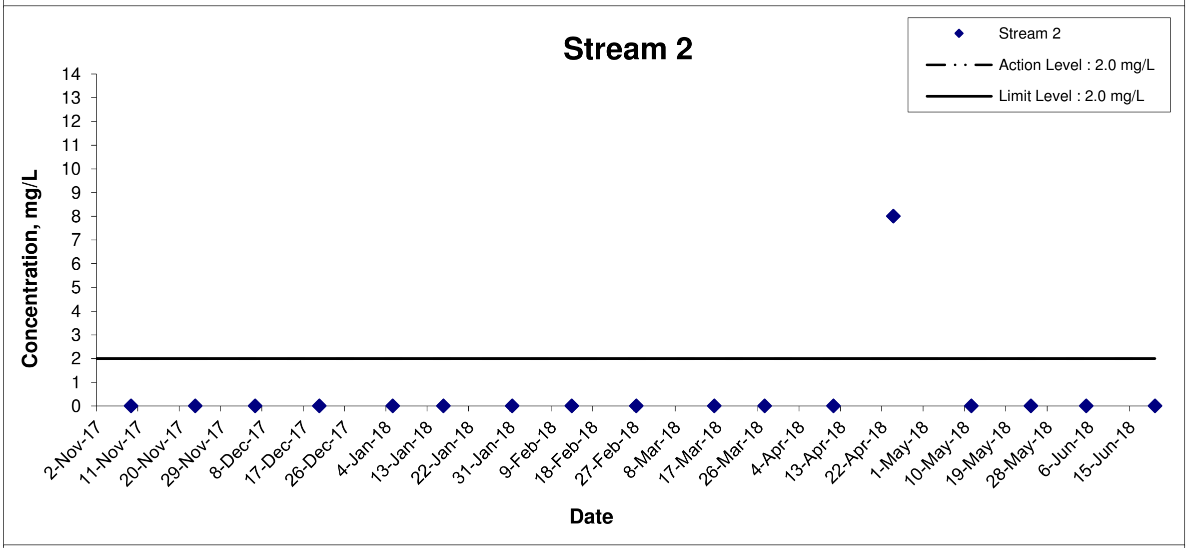
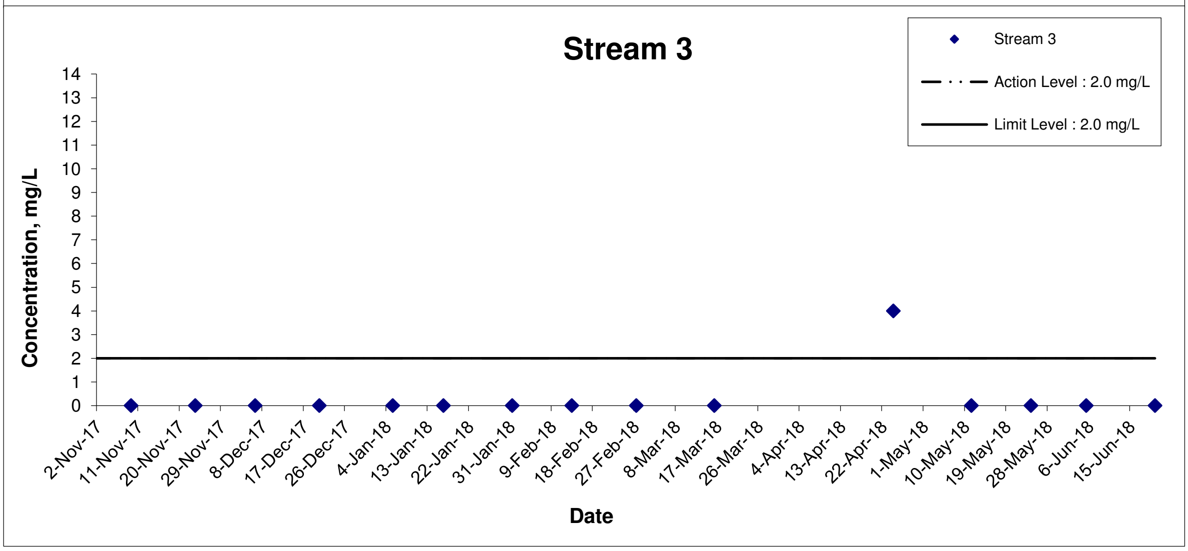
5-day Biochemical Oxygen Demand (BOD_5)







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

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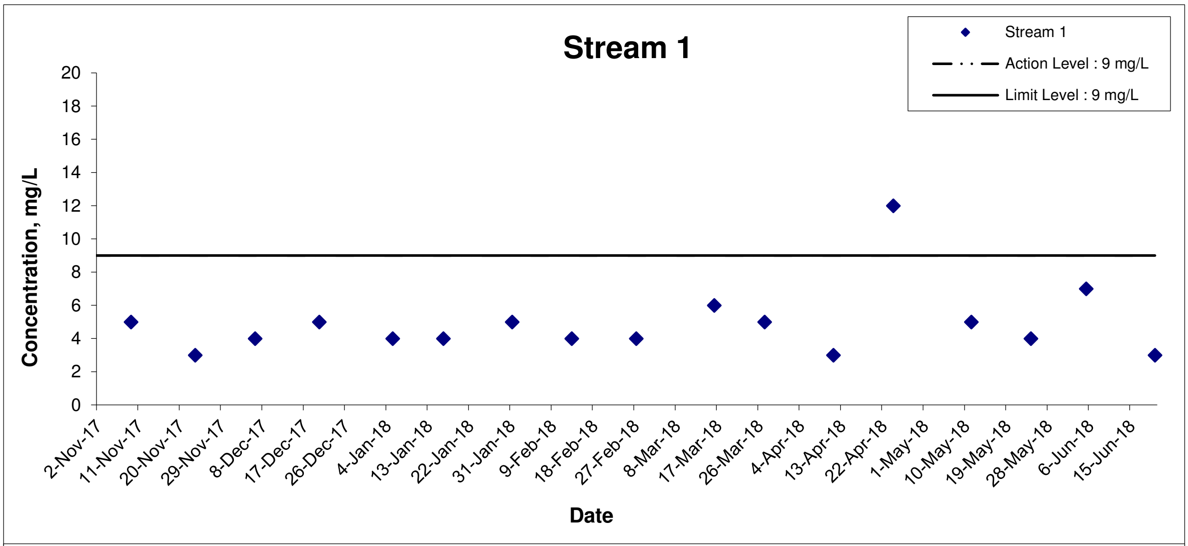
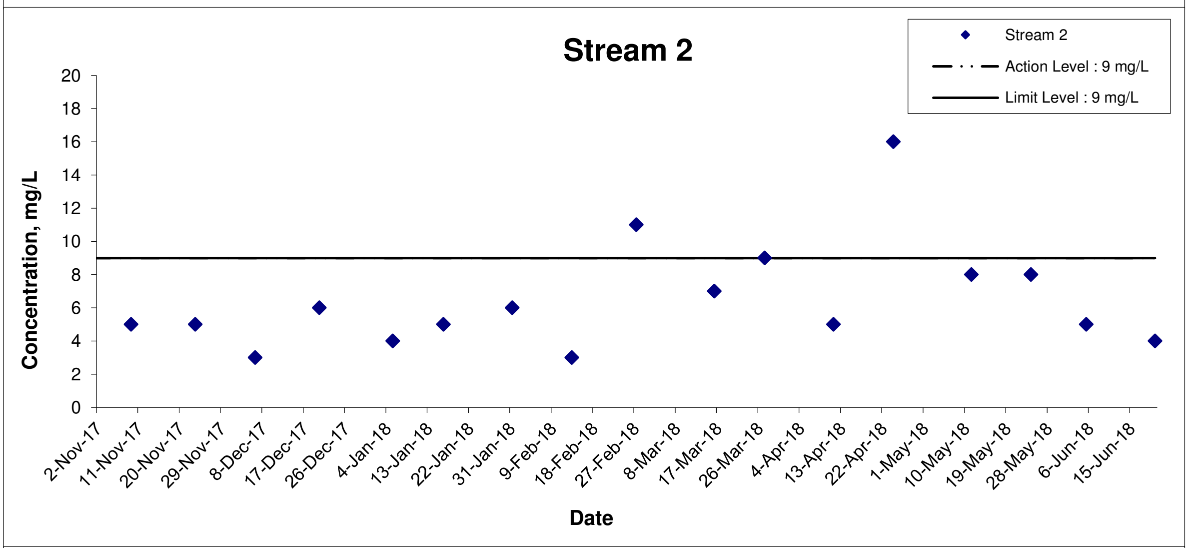
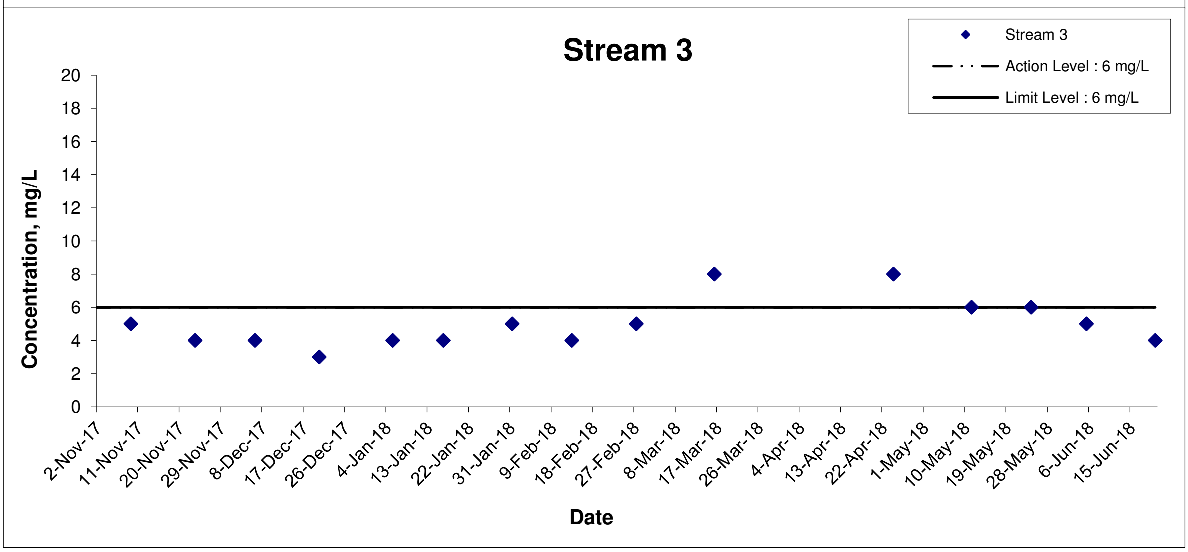
Total Organic Carbon (TOC)







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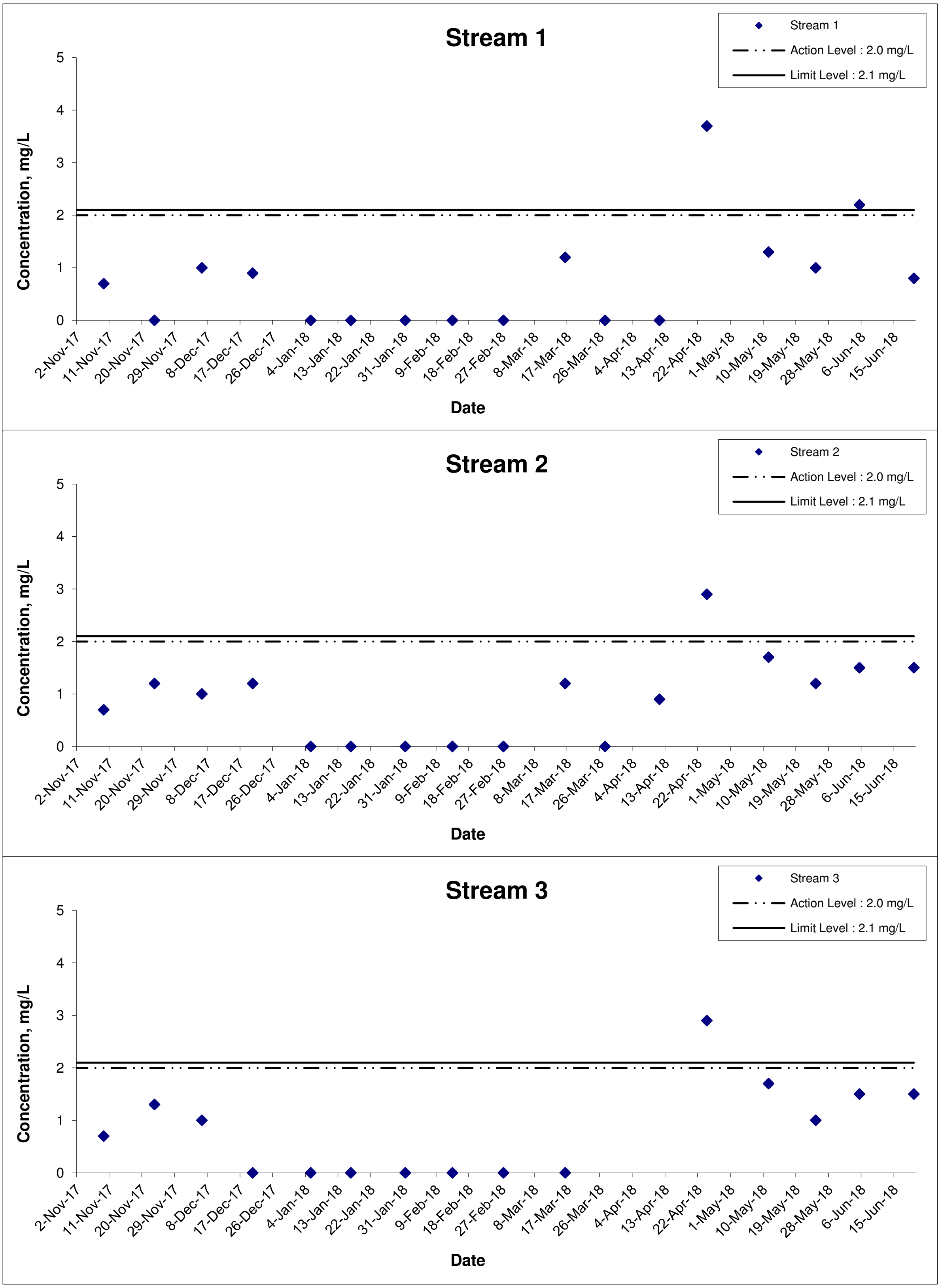
Total Nitrogen



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	CINOTECH
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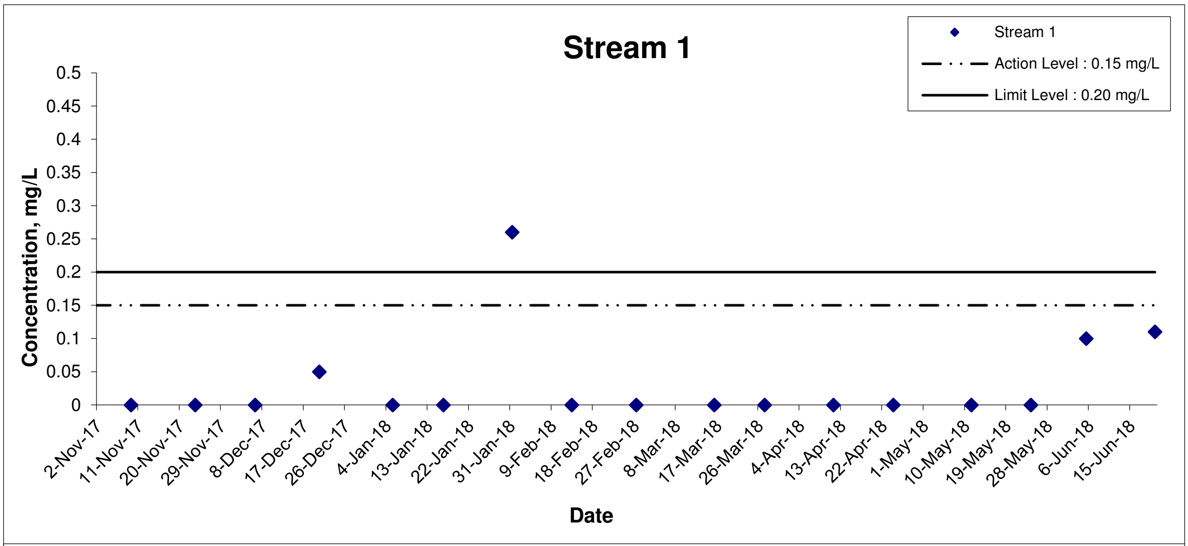
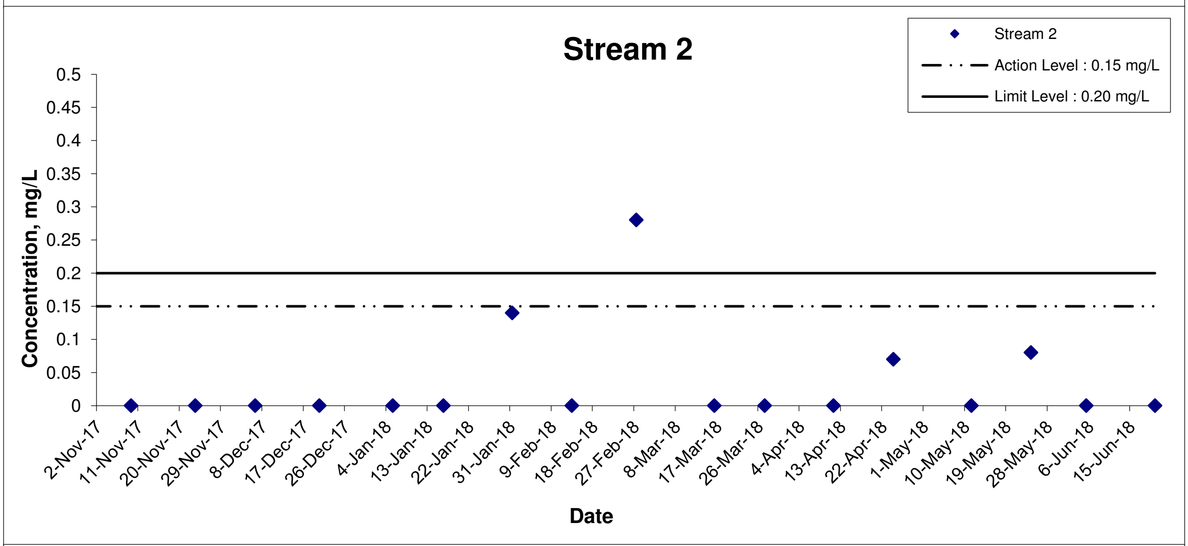
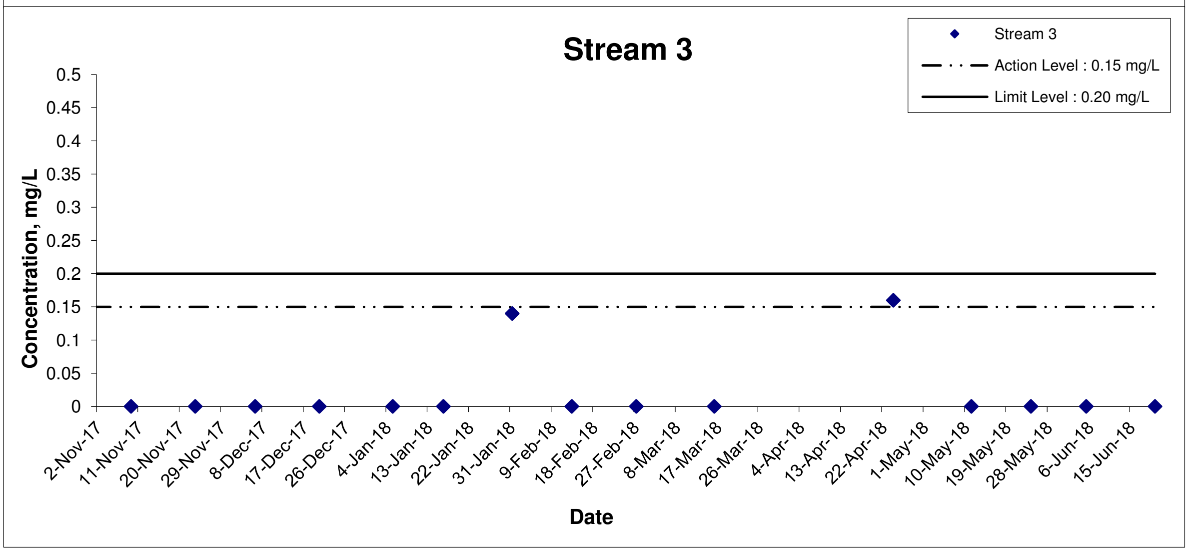
Ammonia-Nitrogen



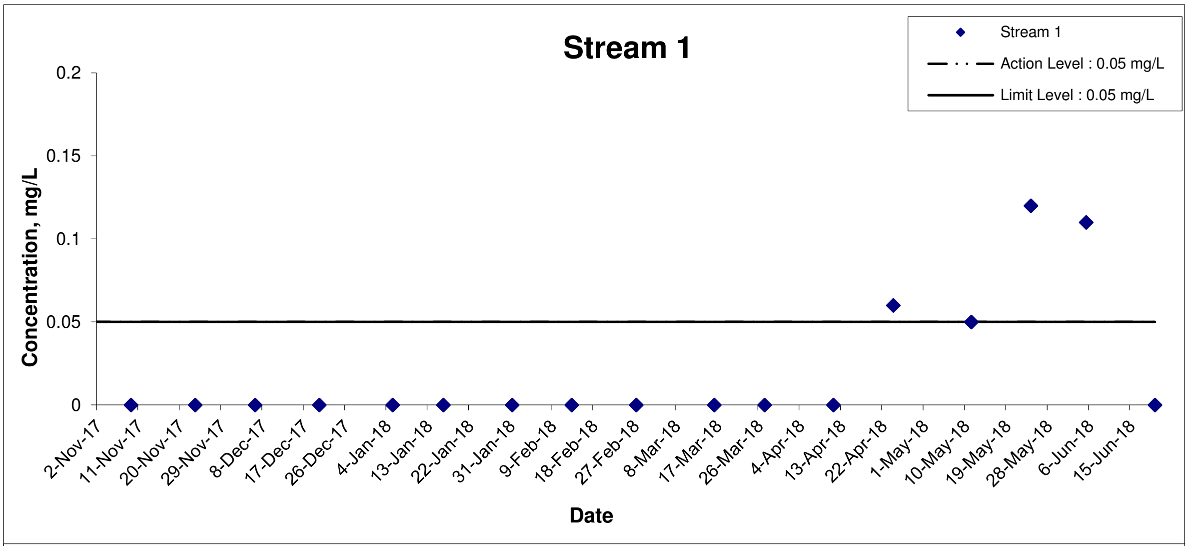


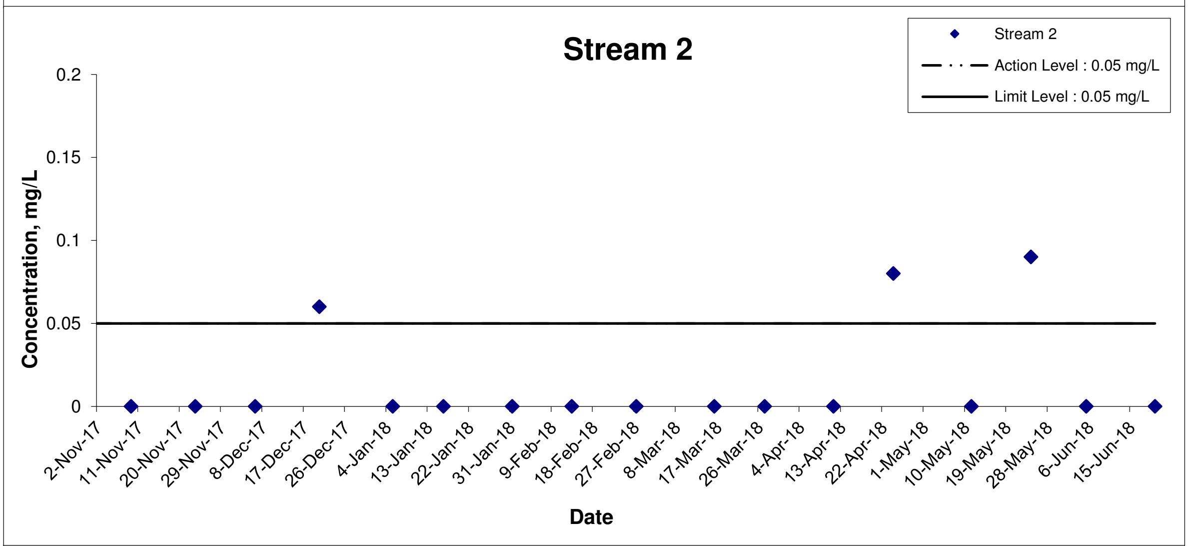


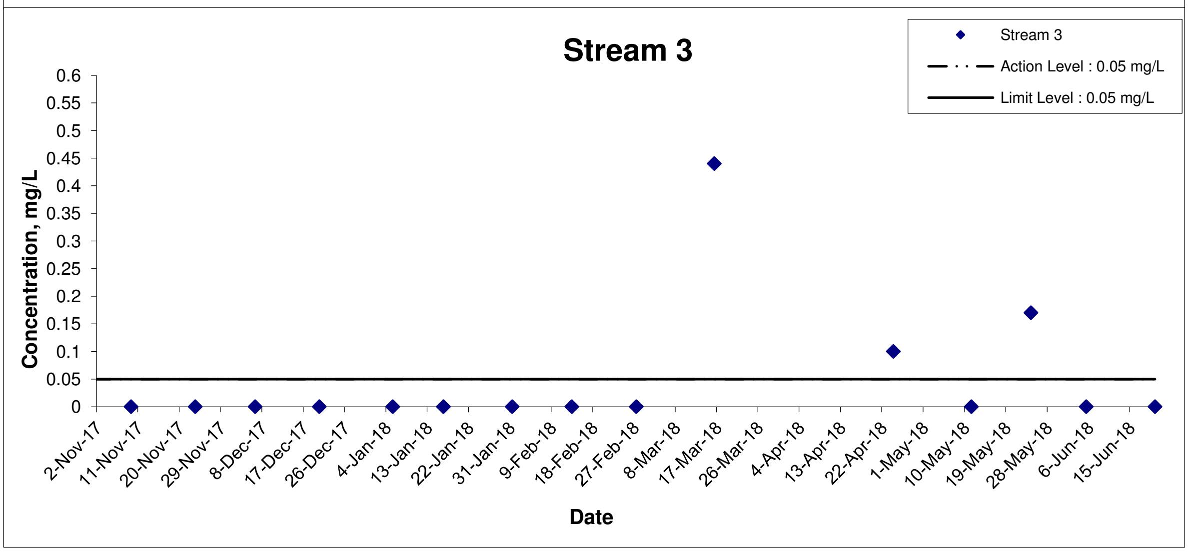
Remarks: The graphical point at zero concentration is presented as <0.05 mg/L

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

Total Phosphate







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

Title	Scale	Project No.	
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	N.T.S	MA16034	CINOTECH
	Date: June 18	Appendix: H	

APPENDIX I
MARINE WATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix I - Action and Limit Levels for Marine Water Quality on 1 June 2018 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 2.9 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 01 June 2018

(Mid-Ebb Tide)

Location	Weather	Sea	Sampling	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
	Condition	Condition**	Time			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	15:05	Surface	1	25.6 25.9	25.8	8.2 8.1	8.2	33.3 33.0	33.2	86.6 88.2	87.4	5.9 6.0	6.0	5.8	1.4 1.3	1.4		5.6 5.5	5.6	
				Middle	9	24.1 24.2	24.2	8.2 8.2	8.2	34.4 34.3	34.4	81.0 81.3	81.2	5.6 5.6	5.6		1.6 1.7	1.7	1.6	4.0 4.1	4.1	5.3
				Bottom	17	23.7 23.8	23.8	8.1 8.1	8.1	34.6 34.5	34.6	77.8 78.4	78.1	5.4 5.4	5.4	5.4	1.7 1.6	1.7		6.1 6.1	6.1	
C2	Cloudy	Moderate	13:57	Surface	1	26.6 26.8	26.7	8.1 8.1	8.1	32.6 32.3	32.5	97.2 97.8	97.5	6.5 6.5	6.5	6.1	0.6 0.7	0.7		5.2 5.1	5.2	
				Middle	16.5	24.9 24.5	24.7	8.1 8.1	8.1	33.9 34.1	34.0	84.2 81.9	83.1	5.8 5.6	5.7		1.4 1.5	1.5	1.5	4.0 3.9	4.0	4.9
				Bottom	32	23.8 24.0	23.9	8.1 8.1	8.1	34.5 34.4	34.5	78.7 78.5	78.6	5.5 5.4	5.5	5.5	2.4 2.4	2.4		5.4 5.5	5.5	
G1	Cloudy	Moderate	14:29	Surface	1	27.3 27.1	27.2	8.4 8.4	8.4	33.2 33.3	33.3	152.4 148.0	150.2	10.0 9.8	9.9	9.3	0.6 0.6	0.6		4.8 4.7	4.8	
				Middle	4	26.4 26.3	26.4	8.3 8.3	8.3	33.5 33.5	33.5	133.2 127.5	130.4	8.9 8.5	8.7		0.8 0.8	0.8	1.0	3.0 3.0	3.0	4.2
				Bottom	7	24.4 24.6	24.5	8.2 8.1	8.2	34.3 34.3	34.3	85.0 83.7	84.4	5.8 5.7	5.8	5.8	1.4 1.5	1.5		4.8 4.8	4.8	
G2	Cloudy	Moderate	14:17	Surface	1	26.5 26.5	26.5	8.3 8.3	8.3	33.5 33.5	33.5	134.3 132.9	133.6	9.0 8.9	9.0	8.2	0.7 0.7	0.7		4.8 4.7	4.8	
				Middle	5	25.3 25.4	25.4	8.2 8.2	8.2	33.9 33.9	33.9	106.2 108.1	107.2	7.2 7.3	7.3		0.8 0.8	0.8	0.9	6.0 6.2	6.1	5.7
				Bottom	9	24.3 24.3	24.3	8.1 8.1	8.1	34.4 34.4	34.4	80.2 81.0	80.6	5.5 5.6	5.6	5.6	1.1 1.2	1.2		6.2 6.3	6.3	
G3	Cloudy	Moderate	14:35	Surface	1	27.6 27.5	27.6	8.4 8.4	8.4	33.2 33.2	33.2	157.3 156.0	156.7	10.3 10.2	10.3	9.6	0.6 0.6	0.6		5.9 5.8	5.9	
				Middle	4	27.0 27.0	27.0	8.3 8.3	8.3	33.3 33.3	33.3	133.7 135.8	134.8	8.8 9.0	8.9		1.4 1.5	1.5	1.2	5.3 6.2	5.8	5.8
				Bottom	7	24.6 24.4	24.5	8.1 8.1	8.1	34.2 34.3	34.3	83.8 81.3	82.6	5.7 5.6	5.7	5.7	1.5 1.5	1.5		5.8 5.8	5.8	
G4	Cloudy	Moderate	14:47	Surface	1	26.9 27.0	27.0	8.4 8.4	8.4	33.3 33.3	33.3	146.1 145.9	146.0	9.7 9.7	9.7	9.5	0.6 0.7	0.7		4.0 4.0	4.0	
				Middle	4	26.7 26.7	26.7	8.3 8.3	8.3	33.3 33.3	33.3	139.6 137.8	138.7	9.3 9.2	9.3		0.6 0.6	0.6	0.8	3.2 3.1	3.2	3.9
				Bottom	7	24.6 24.6	24.6	8.2 8.2	8.2	34.2 34.2	34.2	89.1 87.1	88.1	6.1 6.0	6.1	6.1	1.1 1.1	1.1		4.4 4.7	4.6	
M1	Cloudy	Moderate	14:25	Surface	1	27.2 27.1	27.2	8.4 8.4	8.4	33.3 33.3	33.3	150.5 148.6	149.6	9.9 9.8	9.9	9.7	0.7 0.6	0.7		3.6 3.6	3.6	
				Middle	3	26.7 26.7	26.7	8.3 8.3	8.3	33.4 33.3	33.4	140.8 141.0	140.9	9.4 9.4	9.4		0.6 0.6	0.6	0.8	3.9 3.9	3.9	3.8
				Bottom	5	25.0 25.1	25.1	8.2 8.2	8.2	34.1 34.0	34.1	96.9 97.2	97.1	6.6 6.6	6.6	6.6	0.9 1.0	1.0		3.9 4.0	4.0	
M2	Cloudy	Moderate	14:11	Surface	1	27.1 27.2	27.2	8.4 8.4	8.4	33.3 33.3	33.3	152.0 151.0	151.5	10.0 10.0	10.0	8.5	0.6 0.6	0.6		5.9 5.9	5.9	
				Middle	6	24.9 24.9	24.9	8.2 8.2	8.2	34.1 34.1	34.1	101.6 99.7	100.7	6.9 6.8	6.9		0.7 0.8	0.8	1.2	4.3 4.3	4.3	4.9
				Bottom	11	23.7 23.7	23.7	8.1 8.1	8.1	34.7 34.7	34.7	75.9 76.1	76.0	5.3 5.3	5.3	5.3	2.3 2.3	2.3		4.6 4.5	4.6	
M3	Cloudy	Moderate	14:40	Surface	1	27.4 27.4	27.4	8.4 8.4	8.4	33.2 33.2	33.2	146.6 149.1	147.9	9.6 9.8	9.7	9.3	0.6 0.6	0.6		3.1 3.3	3.2	
				Middle	4	27.1 27.1	27.1	8.3 8.3	8.3	33.3 33.3	33.3	133.3 134.0	133.7	8.8 8.9	8.9		1.4 1.3	1.4	1.2	5.5 5.6	5.6	4.6
				Bottom	7	24.4 24.4	24.4	8.1 8.1	8.1	34.4 34.4	34.4	80.4 79.1	79.8	5.5 5.4	5.5	5.5	1.6 1.6	1.6		5.1 5.0	5.1	
M4	Cloudy	Moderate	14:05	Surface	1	26.6 26.6	26.6	8.3 8.3	8.3	33.4 33.4	33.4	131.5 132.4	132.0	8.8 8.8	8.8	8.4	0.8 0.7	0.8		5.8 5.9	5.9	
				Middle	5	25.7 25.6	25.7	8.3 8.3	8.3	33.7 33.7	33.7	118.6 117.9	118.3	8.0 8.0	8.0		0.7 0.7	0.7	0.7	4.6 4.7	4.7	5.4
				Bottom	9	24.9 24.7	24.8	8.2 8.2	8.2	34.0 34.1	34.1	98.3 95.6	97.0	6.7 6.5	6.6	6.6	0.7 0.7	0.7		5.5 5.7	5.6	
M5	Cloudy	Moderate	14:58	Surface	1	25.8 25.7	25.8	8.2 8.2	8.2	33.4 33.4	33.4	101.7 100.8	101.3	6.9 6.8	6.9	6.9	0.9 0.9	0.9		3.4 3.5	3.5	
				Middle	5.5	25.8 25.7	25.8	8.2 8.2	8.2	33.4 33.4	33.4	100.9 100.7	100.8	6.8 6.8	6.8		0.9 0.9	0.9	1.0	3.6 3.6	3.6	3.5
				Bottom	10	25.7 25.7	25.7	8.2 8.2	8.2	33.4 33.4	33.4	99.7 100.7	100.2	6.7 6.8	6.8	6.8	1.2 1.1	1.2		3.3 3.4	3.4	
M6	Cloudy	Moderate	14:53	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	9.4	- -	-		- -	-	
				Middle	2	26.5 26.5	26.5	8.3 8.3	8.3	33.4 33.4	33.4	140.5 141.0	140.8	9.4 9.4	9.4		0.8 0.8	0.8	0.8	4.8 4.7	4.8	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 1 June 2018 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 2.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 3.0 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 8.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 01 June 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	08:15	Surface	1	25.9 25.9	25.9	8.2 8.2	8.2	33.5 33.4	33.5	98.9 98.2	98.6	6.7 6.6	6.7	6.5	1.0 1.0	1.0		5.8 5.8	5.8	
				Middle	9	25.0 25.1	25.1	8.2 8.2	8.2	33.9 33.8	33.9	91.1 91.8	91.5	6.2 6.3	6.3		1.3 1.3	1.3	1.5	6.2 6.3	6.3	6.2
				Bottom	17	23.4 23.4	23.4	8.2 8.2	8.2	34.8 34.8	34.8	79.0 78.9	79.0	5.5 5.5	5.5	5.5	2.2 2.3	2.3		6.5 6.3	6.4	
C2	Cloudy	Moderate	07:00	Surface	1	25.1 25.6	25.4	8.1 8.2	8.2	33.8 33.5	33.7	89.9 95.5	92.7	6.1 6.5	6.3	5.9	0.7 0.6	0.7		5.4 5.5	5.5	
				Middle	16.5	23.4 23.4	23.4	8.1 8.1	8.1	34.7 34.8	34.8	77.9 78.6	78.3	5.4 5.5	5.5		1.8 1.9	1.9	1.7	4.8 4.6	4.7	4.5
				Bottom	32	23.3 23.3	23.3	8.1 8.1	8.1	34.8 34.8	34.8	77.1 76.8	77.0	5.4 5.4	5.4	5.4	2.4 2.3	2.4		3.4 3.3	3.4	
G1	Cloudy	Moderate	07:41	Surface	1	26.0 26.0	26.0	8.2 8.2	8.2	33.4 33.4	33.4	106.0 100.1	103.1	7.1 6.7	6.9	6.3	0.9 0.9	0.9		5.3 5.3	5.3	
				Middle	4	24.6 24.6	24.6	8.2 8.1	8.2	34.2 34.2	34.2	81.6 81.4	81.5	5.6 5.6	5.6		1.3 1.3	1.3	1.6	6.6 6.3	6.5	6.0
				Bottom	7	24.0 24.0	24.0	8.1 8.1	8.1	34.6 34.6	34.6	77.7 77.2	77.5	5.4 5.3	5.4	5.4	2.6 2.5	2.6		6.1 6.1	6.1	
G2	Cloudy	Moderate	07:23	Surface	1	26.1 26.4	26.3	8.2 8.2	8.2	33.4 33.2	33.3	107.4 111.3	109.4	7.2 7.5	7.4	6.5	0.7 0.7	0.7		4.3 4.6	4.5	
				Middle	5	24.4 24.3	24.4	8.1 8.1	8.1	34.3 34.4	34.4	80.2 77.8	79.0	5.5 5.4	5.5		1.5 1.5	1.5	1.3	5.1 5.2	5.2	5.4
				Bottom	9	23.9 23.9	23.9	8.1 8.1	8.1	34.6 34.6	34.6	78.0 76.9	77.5	5.4 5.3	5.4	5.4	1.8 1.7	1.8		6.5 6.5	6.5	
G3	Cloudy	Moderate	07:46	Surface	1	25.3 26.0	25.7	8.2 8.2	8.2	33.8 33.4	33.6	94.9 102.9	98.9	6.4 6.9	6.7	6.1	1.0 0.8	0.9		5.6 5.7	5.7	
				Middle	4	24.4 24.5	24.5	8.1 8.2	8.2	34.3 34.3	34.3	79.2 81.3	80.3	5.4 5.6	5.5		1.7 1.6	1.7	1.6	5.5 5.3	5.4	5.1
				Bottom	7	24.0 24.1	24.1	8.1 8.1	8.1	34.6 34.5	34.6	76.1 77.0	76.6	5.3 5.3	5.3	5.3	2.1 2.2	2.2		4.3 4.3	4.3	
G4	Cloudy	Moderate	07:56	Surface	1	25.7 25.8	25.8	8.2 8.2	8.2	33.6 33.5	33.6	96.2 97.1	96.7	6.5 6.5	6.5	6.0	0.8 0.9	0.9		4.7 4.9	4.8	
				Middle	4	24.5 24.4	24.5	8.1 8.1	8.1	34.2 34.3	34.3	77.0 78.0	77.5	5.3 5.4	5.4		2.0 2.0	2.0	1.3	4.6 4.6	4.6	4.7
				Bottom	7	24.0 24.0	24.0	8.1 8.1	8.1	34.5 34.5	34.5	77.2 77.2	77.2	5.3 5.3	5.3	5.3	1.1 1.1	1.1		4.8 4.8	4.8	
M1	Cloudy	Moderate	07:29	Surface	1	25.9 25.9	25.9	8.2 8.2	8.2	33.6 33.5	33.6	98.4 99.6	99.0	6.6 6.7	6.7	6.5	0.9 0.9	0.9		4.9 4.7	4.8	
				Middle	3	25.2 25.3	25.3	8.2 8.2	8.2	33.9 33.8	33.9	90.2 91.1	90.7	6.1 6.2	6.2		1.4 1.2	1.3	1.3	5.1 5.1	5.1	5.1
				Bottom	5	24.4 24.4	24.4	8.2 8.2	8.2	34.3 34.4	34.4	81.7 82.5	82.1	5.6 5.7	5.7	5.7	1.9 1.7	1.8		5.3 5.5	5.4	
M2	Cloudy	Moderate	07:19	Surface	1	26.2 26.2	26.2	8.2 8.2	8.2	33.3 33.3	33.3	109.9 109.4	109.7	7.4 7.3	7.4	6.6	0.6 0.6	0.6		4.8 4.7	4.8	
				Middle	6	24.1 24.0	24.1	8.2 8.2	8.2	34.6 34.5	34.6	83.8 82.9	83.4	5.8 5.7	5.8		1.1 1.0	1.1	1.2	4.8 4.7	4.8	5.2
				Bottom	11	23.5 23.5	23.5	8.1 8.1	8.1	34.8 34.8	34.8	77.6 77.4	77.5	5.4 5.4	5.4	5.4	2.1 1.9	2.0		5.9 5.8	5.9	
M3	Cloudy	Moderate	07:51	Surface	1	26.2 25.8	26.0	8.2 8.2	8.2	33.5 33.6	33.6	94.0 93.9	94.0	6.3 6.3	6.3	5.8	1.3 1.4	1.4		5.9 6.0	6.0	
				Middle	4	24.3 24.3	24.3	8.1 8.1	8.1	34.4 34.4	34.4	74.6 76.1	75.4	5.1 5.2	5.2		2.6 2.7	2.7	2.1	5.5 5.7	5.6	5.9
				Bottom	7	24.1 24.1	24.1	8.1 8.1	8.1	34.5 34.5	34.5	75.1 75.6	75.4	5.2 5.2	5.2	5.2	2.3 2.3	2.3		6.3 6.1	6.2	
M4	Cloudy	Moderate	07:11	Surface	1	26.2 26.4	26.3	8.2 8.2	8.2	33.1 33.1	33.1	104.6 106.4	105.5	7.0 7.1	7.1	6.9	0.5 0.5	0.5		3.9 3.9	3.9	
				Middle	5	25.8 25.8	25.8	8.2 8.2	8.2	33.3 33.2	33.3	97.8 99.3	98.6	6.6 6.7	6.7		0.6 0.6	0.6	0.9	3.4 3.5	3.5	4.1
				Bottom	9	23.8 23.9	23.9	8.2 8.1	8.2	34.6 34.5	34.6	82.4 80.2	81.3	5.7 5.6	5.7	5.7	1.7 1.5	1.6		5.0 5.0	5.0	
M5	Cloudy	Moderate	08:08	Surface	1	26.3 26.4	26.4	8.2 8.2	8.2	33.1 33.1	33.1	104.8 103.4	104.1	7.0 6.9	7.0	6.6	0.5 0.5	0.5		5.7 6.0	5.9	
				Middle	5.5	25.1 25.4	25.3	8.2 8.2	8.2	33.7 33.6	33.7	88.1 91.2	89.7	6.0 6.2	6.1		0.6 0.6	0.6	0.6	3.9 4.0	4.0	4.3
				Bottom	10	24.3 24.2	24.3	8.2 8.2	8.2	34.3 34.3	34.3	82.3 82.2	82.3	5.7 5.7	5.7	5.7	0.8 0.8	0.8		3.0 3.1	3.1	
M6	Cloudy	Moderate	08:02	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.2	- -	-		- -	-	
				Middle	2	25.6 25.6	25.6	8.2 8.2	8.2	33.6 33.6	33.6	91.3 91.5	91.4	6.2 6.2	6.2		0.6 0.6	0.6	0.6	5.7 5.6	5.7	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 4 June 2018 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 4.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.8 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

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

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 04 June 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	16:28	Surface	1	27.9 27.9	27.9	8.4 8.4	8.4	31.9 31.9	31.9	113.5 115.7	114.6	7.5 7.6	7.6	7.4	1.1 1.0	1.1		4.8 4.9	4.9	
				Middle	9	27.5 27.5	27.5	8.3 8.3	8.3	32.2 32.2	32.2	107.7 107.8	107.8	7.1 7.1	7.1		1.4 1.5	1.5	1.7	4.1 4.3	4.2	4.1
				Bottom	17	26.1 26.0	26.1	8.2 8.2	8.2	33.1 33.2	33.2	85.3 84.2	84.8	5.7 5.7	5.7	5.7	2.5 2.6	2.6		3.3 3.2	3.3	
C2	Cloudy	Moderate	15:09	Surface	1	27.4 27.4	27.4	8.3 8.3	8.3	32.2 32.2	32.2	104.5 105.4	105.0	6.9 7.0	7.0	6.5	2.0 1.9	2.0		5.1 5.0	5.1	
				Middle	16.5	26.7 26.5	26.6	8.2 8.2	8.2	32.7 32.9	32.8	92.9 86.8	89.9	6.2 5.8	6.0		2.7 2.6	2.7	2.9	6.4 6.3	6.4	6.0
				Bottom	32	26.1 26.0	26.1	8.2 8.2	8.2	33.1 33.1	33.1	84.9 82.9	83.9	5.7 5.6	5.7	5.7	4.0 3.9	4.0		6.6 6.4	6.5	
G1	Cloudy	Moderate	15:52	Surface	1	27.8 27.9	27.9	8.3 8.4	8.4	31.9 31.9	31.9	108.6 112.1	110.4	7.1 7.4	7.3	6.9	1.4 1.2	1.3		5.5 5.6	5.6	
				Middle	4	27.4 27.3	27.4	8.3 8.3	8.3	32.2 32.3	32.3	98.0 97.0	97.5	6.5 6.4	6.5		3.4 3.7	3.6	3.0	5.3 5.5	5.4	5.3
				Bottom	7	27.1 27.2	27.2	8.3 8.3	8.3	32.4 32.4	32.4	92.9 93.6	93.3	6.2 6.2	6.2	6.2	4.1 4.1	4.1		5.0 4.9	5.0	
G2	Cloudy	Moderate	15:33	Surface	1	28.0 28.0	28.0	8.4 8.4	8.4	31.8 31.8	31.8	114.2 113.9	114.1	7.5 7.5	7.5	7.5	1.4 1.2	1.3		4.0 4.2	4.1	
				Middle	5	27.9 27.9	27.9	8.4 8.4	8.4	31.9 31.9	31.9	110.7 113.2	112.0	7.3 7.4	7.4		1.5 1.3	1.4	1.7	10.4 10.8	10.6	7.1
				Bottom	9	26.9 27.3	27.1	8.2 8.3	8.3	32.6 32.3	32.5	93.4 100.1	96.8	6.2 6.6	6.4	6.4	2.4 2.3	2.4		6.5 6.6	6.6	
G3	Cloudy	Moderate	15:58	Surface	1	27.9 28.0	28.0	8.4 8.4	8.4	31.4 31.9	31.7	114.9 115.4	115.2	7.6 7.6	7.6	7.7	1.4 1.3	1.4		4.1 4.1	4.1	
				Middle	4	27.9 27.9	27.9	8.4 8.4	8.4	31.9 31.9	31.9	116.8 115.2	116.0	7.7 7.6	7.7		1.2 1.2	1.2	2.3	3.8 3.8	3.8	4.5
				Bottom	7	27.5 27.4	27.5	8.3 8.3	8.3	32.3 32.3	32.3	97.7 94.5	96.1	6.4 6.3	6.4	6.4	4.2 4.4	4.3		5.9 5.5	5.7	
G4	Cloudy	Moderate	16:08	Surface	1	28.0 28.1	28.1	8.4 8.4	8.4	31.9 31.9	31.9	120.7 124.0	122.4	7.9 8.1	8.0	7.6	1.0 1.0	1.0		3.7 3.7	3.7	
				Middle	4.5	27.6 27.6	27.6	8.3 8.3	8.3	32.1 32.1	32.1	107.0 110.1	108.6	7.1 7.3	7.2		2.6 2.2	2.4	2.6	5.7 5.8	5.8	5.0
				Bottom	8	26.6 26.5	26.6	8.2 8.2	8.2	32.8 32.8	32.8	84.5 86.0	85.3	5.6 5.7	5.7	5.7	4.4 4.5	4.5		5.6 5.5	5.6	
M1	Cloudy	Moderate	15:42	Surface	1	28.0 27.8	27.9	8.4 8.3	8.4	31.8 31.9	31.9	113.0 107.6	110.3	7.4 7.1	7.3	7.2	1.2 1.3	1.3		3.3 3.4	3.4	
				Middle	3	27.8 27.8	27.8	8.3 8.3	8.3	32.0 32.0	32.0	107.1 107.8	107.5	7.1 7.1	7.1		1.5 1.4	1.5	1.5	4.0 4.1	4.1	4.2
				Bottom	5	27.7 27.6	27.7	8.3 8.3	8.3	32.1 32.1	32.1	104.4 105.9	105.2	6.9 7.0	7.0	7.0	1.7 1.5	1.6		5.0 5.1	5.1	
M2	Cloudy	Moderate	15:26	Surface	1	28.0 28.0	28.0	8.4 8.4	8.4	31.8 31.8	31.8	116.8 118.3	117.6	7.7 7.8	7.8	7.6	1.0 1.0	1.0		5.8 5.7	5.8	
				Middle	6	27.8 28.0	27.9	8.4 8.4	8.4	31.9 31.9	31.9	108.3 114.6	111.5	7.1 7.5	7.3		1.3 1.2	1.3	2.2	4.3 4.2	4.3	4.7
				Bottom	11	26.5 26.6	26.6	8.2 8.2	8.2	32.9 32.8	32.9	83.1 82.2	82.7	5.6 5.5	5.6	5.6	4.4 4.4	4.4		4.0 4.0	4.0	
M3	Cloudy	Moderate	16:02	Surface	1	27.9 27.9	27.9	8.3 8.3	8.3	31.6 31.9	31.8	107.4 112.3	109.9	7.1 7.4	7.3	7.4	1.3 1.4	1.4		3.4 3.5	3.5	
				Middle	4	27.9 27.9	27.9	8.3 8.3	8.3	31.9 31.9	31.9	112.8 111.3	112.1	7.4 7.3	7.4		1.6 1.5	1.6	2.2	3.5 3.6	3.6	4.1
				Bottom	7	27.6 27.6	27.6	8.3 8.3	8.3	32.0 32.1	32.1	96.9 97.6	97.3	6.4 6.4	6.4	6.4	3.6 3.7	3.7		5.3 5.1	5.2	
M4	Cloudy	Moderate	15:18	Surface	1	28.1 28.1	28.1	8.4 8.4	8.4	31.8 31.8	31.8	118.2 118.6	118.4	7.7 7.8	7.8	7.7	1.0 1.1	1.1		5.8 5.9	5.9	
				Middle	5	28.0 28.0	28.0	8.4 8.4	8.4	31.9 31.8	31.9	115.3 116.0	115.7	7.6 7.6	7.6		1.2 1.3	1.3	1.4	3.5 3.5	3.5	4.8
				Bottom	9	27.2 27.6	27.4	8.3 8.3	8.3	32.4 32.1	32.3	99.3 108.0	103.7	6.6 7.1	6.9	6.9	1.9 1.9	1.9		4.8 5.0	4.9	
M5	Cloudy	Moderate	16:22	Surface	1	27.8 27.8	27.8	8.4 8.4	8.4	32.0 32.0	32.0	114.4 115.3	114.9	7.5 7.6	7.6	7.1	1.2 1.1	1.2		3.5 3.4	3.5	
				Middle	5.5	27.0 27.1	27.1	8.3 8.3	8.3	32.5 32.4	32.5	98.3 100.0	99.2	6.5 6.6	6.6		1.8 1.5	1.7	1.7	6.1 6.0	6.1	5.0
				Bottom	10	26.6 26.4	26.5	8.2 8.2	8.2	32.8 33.0	32.9	91.7 88.1	89.9	6.1 5.9	6.0	6.0	2.1 2.3	2.2		5.4 5.4	5.4	
M6	Cloudy	Moderate	16:16	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.1	- -	-		- -	-	
				Middle	1.3	27.7 27.3	27.5	8.3 8.2	8.3	32.0 32.3	32.2	95.4 88.1	91.8	6.3 5.8	6.1		3.5 3.4	3.5	3.5	5.2 5.3	5.3	5.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 4 June 2018 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 3.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 3.7 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

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

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
				Surface	1	28.0 28.1	28.1	8.4 8.4	8.4	31.9 31.9	31.9	115.6 117.5	116.6	7.6 7.7	7.7	7.3	1.1 1.1	1.1		5.2 5.2	5.2	
C1	Cloudy	Moderate	09:18	Middle	8.5	27.3 27.3	27.3	8.3 8.3	8.3	32.4 32.4	32.4	104.9 104.4	104.7	6.9 6.9	6.9		1.2 1.2	1.2	1.7	5.7 5.8	5.8	5.5
				Bottom	16	26.3 25.9	26.1	8.3 8.2	8.3	33.2 33.5	33.4	89.6 83.6	86.6	6.0 5.6	5.8	5.8	2.8 2.8	2.8		5.5 5.4	5.5	
				Surface	1	28.1 28.1	28.1	8.3 8.4	8.4	31.7 31.7	31.7	112.6 112.1	112.4	7.4 7.3	7.4	7.1	0.8 0.9	0.9		4.9 5.0	5.0	
C2	Cloudy	Moderate	08:15	Middle	16.5	27.2 27.5	27.4	8.3 8.3	8.3	32.4 32.2	32.3	98.3 102.3	100.3	6.5 6.8	6.7		1.6 1.6	1.6	1.4	5.2 5.1	5.2	4.6
				Bottom	32	26.6 26.5	26.6	8.2 8.2	8.2	32.7 32.8	32.8	92.7 91.8	92.3	6.2 6.1	6.2	6.2	1.5 1.7	1.6		3.5 3.5	3.5	
				Surface	1	28.0 28.0	28.0	8.3 8.3	8.3	31.8 31.8	31.8	108.8 110.4	109.6	7.1 7.2	7.2	7.3	1.0 1.0	1.0		3.3 3.2	3.3	
G1	Cloudy	Moderate	08:47	Middle	4	27.9 27.9	27.9	8.4 8.4	8.4	31.9 31.9	31.9	111.3 111.6	111.5	7.3 7.3	7.3		1.1 1.1	1.1	1.1	4.4 4.4	4.4	3.7
				Bottom	7	27.5 27.4	27.5	8.3 8.3	8.3	32.2 32.3	32.3	105.5 104.6	105.1	7.0 6.9	7.0	7.0	1.2 1.3	1.3		3.5 3.5	3.5	
				Surface	1	27.9 28.0	28.0	8.4 8.4	8.4	31.8 31.8	31.8	112.7 112.9	112.8	7.4 7.4	7.4	7.3	1.0 0.9	1.0		4.6 4.5	4.6	
G2	Cloudy	Moderate	08:35	Middle	5	27.8 27.8	27.8	8.3 8.3	8.3	32.0 32.0	32.0	110.0 109.2	109.6	7.2 7.2	7.2		1.2 1.1	1.2	1.2	2.6 2.6	2.6	3.5
				Bottom	9	27.2 27.0	27.1	8.3 8.3	8.3	32.4 32.5	32.5	102.1 99.8	101.0	6.8 6.6	6.7	6.7	1.3 1.4	1.4		3.1 3.2	3.2	
				Surface	1	27.9 27.9	27.9	8.4 8.4	8.4	31.7 31.7	31.7	111.1 113.1	112.1	7.3 7.4	7.4	7.3	1.3 1.3	1.3		3.5 3.5	3.5	
G3	Cloudy	Moderate	08:52	Middle	4	27.6 27.5	27.6	8.3 8.3	8.3	32.0 32.1	32.1	107.6 105.6	106.6	7.1 7.0	7.1		1.7 1.8	1.8	2.0	5.0 5.0	5.0	4.5
				Bottom	7	27.2 27.3	27.3	8.3 8.3	8.3	32.3 32.2	32.3	97.9 98.2	98.1	6.5 6.5	6.5	6.5	3.0 3.0	3.0		5.0 5.1	5.1	
				Surface	1	27.8 27.8	27.8	8.3 8.4	8.4	32.0 31.9	32.0	112.9 113.2	113.1	7.4 7.4	7.4	7.4	1.2 1.1	1.2		5.5 5.8	5.7	
G4	Cloudy	Moderate	09:03	Middle	4.5	27.5 27.7	27.6	8.3 8.3	8.3	32.2 32.0	32.1	109.4 112.2	110.8	7.2 7.4	7.3		1.1 1.0	1.1	1.2	5.5 5.6	5.6	5.4
				Bottom	8	27.4 27.2	27.3	8.3 8.3	8.3	32.3 32.4	32.4	104.3 100.1	102.2	6.9 6.6	6.8	6.8	1.4 1.3	1.4		4.8 4.7	4.8	
				Surface	1	28.0 28.0	28.0	8.3 8.3	8.3	31.8 31.8	31.8	106.9 107.8	107.4	7.0 7.1	7.1	7.1	1.3 1.3	1.3		5.0 4.9	5.0	
M1	Cloudy	Moderate	08:42	Middle	3	28.0 27.9	28.0	8.3 8.3	8.3	31.8 31.9	31.9	107.3 107.4	107.4	7.0 7.1	7.1		1.6 1.6	1.6	1.6	4.2 4.2	4.2	5.2
				Bottom	5	27.7 27.8	27.8	8.3 8.3	8.3	32.0 32.0	32.0	105.1 105.6	105.4	6.9 7.0	7.0	7.0	2.0 1.8	1.9		6.4 6.3	6.4	
				Surface	1	28.0 28.1	28.1	8.4 8.4	8.4	31.8 31.8	31.8	111.7 111.7	111.7	7.3 7.3	7.3	7.3	1.1 1.0	1.1		4.7 4.7	4.7	
M2	Cloudy	Moderate	08:30	Middle	6	27.9 27.9	27.9	8.3 8.3	8.3	31.9 31.9	31.9	110.9 110.8	110.9	7.3 7.3	7.3		1.0 1.0	1.0	1.8	4.6 4.8	4.7	5.2
				Bottom	11	26.3 26.3	26.3	8.2 8.2	8.2	33.0 33.0	33.0	81.9 81.5	81.7	5.5 5.5	5.5	5.5	3.2 3.4	3.3		6.4 6.2	6.3	
				Surface	1	27.9 28.0	28.0	8.3 8.4	8.4	31.6 31.6	31.6	109.8 112.5	111.2	7.2 7.4	7.3	7.1	1.4 1.2	1.3		3.3 3.3	3.3	
M3	Cloudy	Moderate	08:58	Middle	4	27.5 27.5	27.5	8.3 8.3	8.3	32.1 32.1	32.1	101.6 103.9	102.8	6.7 6.9	6.8		2.2 2.0	2.1	2.1	3.8 3.8	3.8	4.0
				Bottom	7	27.2 27.2	27.2	8.3 8.3	8.3	32.3 32.3	32.3	96.0 97.3	96.7	6.4 6.5	6.5	6.5	2.9 2.7	2.8		4.9 4.9	4.9	
				Surface	1	28.1 28.1	28.1	8.3 8.4	8.4	31.8 31.8	31.8	112.7 113.5	113.1	7.4 7.4	7.4	7.4	1.0 0.9	1.0		5.3 5.4	5.4	
M4	Cloudy	Moderate	08:23	Middle	5	28.0 28.0	28.0	8.4 8.4	8.4	31.8 31.8	31.8	113.0 113.4	113.2	7.4 7.4	7.4		0.9 0.9	0.9	1.0	2.9 3.1	3.0	4.6
				Bottom	9	27.9 28.0	28.0	8.3 8.4	8.4	31.9 31.9	31.9	110.0 112.1	111.1	7.2 7.4	7.3	7.3	1.1 1.1	1.1		5.3 5.3	5.3	
				Surface	1	28.1 28.2	28.2	8.4 8.4	8.4	31.8 31.8	31.8	116.9 118.4	117.7	7.7 7.7	7.7	7.6	0.9 0.9	0.9		4.3 4.4	4.4	
M5	Cloudy	Moderate	09:12	Middle	5.5	27.7 27.7	27.7	8.4 8.4	8.4	32.1 32.0	32.1	112.1 113.6	112.9	7.4 7.5	7.5		1.1 1.1	1.1	1.1	4.4 4.6	4.5	4.5
				Bottom	10	27.2 27.2	27.2	8.3 8.3	8.3	32.4 32.4	32.4	101.3 102.6	102.0	6.7 6.8	6.8	6.8	1.4 1.2	1.3		4.5 4.5	4.5	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-		- -	-	
M6	Cloudy	Moderate	09:07	Middle	1.2	28.0 28.0	28.0	8.4 8.4	8.4	32.0 32.0	32.0	112.9 116.5	114.7	7.4 7.6	7.5		1.5 1.6	1.6	1.6	5.8 5.8	5.8	5.8
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 6 June 2018 (Mid-Ebb Tide)

<table>
<tr><th><u>Parameter (unit)</u></th><th><u>Depth</u></th><th>Action Level</th><th>Limit Level</th></tr>
<tr><td rowspan="5">DO in mg/L
(See Note 1 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Depth Average</td><td><u>4.9 mg/L</u></td><td><u>4.6 mg/L</u></td></tr>
<tr><td>Bottom</td><td><u>4.2 mg/L</u></td><td><u>3.6 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>5.0 mg/L</u></td><td><u>4.7 mg/L</u></td></tr>
<tr><td rowspan="4">Turbidity in NTU
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>19.3 NTU</u>
or 120% of upstream control station's Turbidity at the same tide of the same day
<u>C2: 3.6 NTU</u></td><td><u>22.2 NTU</u>
or 130% of upstream control station's Turbidity at the same tide of the same day
<u>C2: 3.9 NTU</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>19.0 NTU</u></td><td><u>19.4 NTU</u></td></tr>
<tr><td rowspan="8">SS in mg/L
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4</u></td></tr>
<tr><td>Surface</td><td><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></td><td><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></td></tr>
<tr><td colspan="3"><u>Stations M1-M5</u></td></tr>
<tr><td>Surface</td><td><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></td><td><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></td></tr>
<tr><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>6.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C2: 7.1 mg/L</u></td><td><u>7.9 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C2: 7.7 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>8.3 mg/L</u></td><td><u>8.6 mg/L</u></td></tr>
</table>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 06 June 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*
				Surface	1	27.5 27.5	27.5	8.3 8.3	8.3	31.4 31.4	31.4	95.4 95.2	95.3	6.3 6.3	6.3	6.2	0.7 0.6	0.7		4.3 4.2	4.3	
C1	Rainy	Moderate	17:12	Middle	9	27.6 27.5	27.6	8.3 8.3	8.3	31.6 31.6	31.6	90.9 91.2	91.1	6.0 6.0	6.0		0.5 0.4	0.5	1.3	5.3 5.4	5.4	4.6
				Bottom	17	27.3 27.3	27.3	8.2 8.2	8.2	31.8 31.8	31.8	82.1 81.0	81.6	5.5 5.4	5.5	5.5	2.6 2.5	2.6		4.0 3.9	4.0	
				Surface	1	27.4 27.4	27.4	8.3 8.3	8.3	30.6 30.6	30.6	93.0 92.1	92.6	6.2 6.2	6.2	5.9	0.7 0.6	0.7		5.8 5.8	5.8	
C2	Rainy	Moderate	16:09	Middle	16	27.2 27.2	27.2	8.2 8.2	8.2	31.8 31.8	31.8	82.2 82.6	82.4	5.5 5.5	5.5		2.0 1.9	2.0	1.9	5.7 5.5	5.6	5.8
				Bottom	31	27.1 27.1	27.1	8.2 8.2	8.2	32.0 32.0	32.0	78.3 78.6	78.5	5.2 5.2	5.2	5.2	2.9 3.0	3.0		5.8 5.9	5.9	
				Surface	1	27.5 27.5	27.5	8.3 8.3	8.3	31.0 31.0	31.0	96.0 95.1	95.6	6.4 6.3	6.4	6.3	0.6 0.6	0.6		5.5 5.5	5.5	
G1	Rainy	Moderate	16:39	Middle	4	27.5 27.5	27.5	8.3 8.3	8.3	31.2 31.2	31.2	92.4 92.7	92.6	6.1 6.2	6.2		0.7 0.7	0.7	0.8	3.7 3.6	3.7	4.0
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	31.3 31.4	31.4	86.1 83.9	85.0	5.7 5.6	5.7	5.7	1.1 1.1	1.1		2.8 2.7	2.8	
				Surface	1	27.7 27.5	27.6	8.3 8.3	8.3	31.2 30.8	31.0	98.3 97.2	97.8	6.5 6.5	6.5	6.5	0.6 0.6	0.6		4.4 4.3	4.4	
G2	Rainy	Moderate	16:30	Middle	5	27.8 27.8	27.8	8.3 8.3	8.3	31.5 31.5	31.5	96.9 97.0	97.0	6.4 6.4	6.4		0.3 0.3	0.3	0.7	3.4 3.2	3.3	4.0
				Bottom	9	27.4 27.5	27.5	8.2 8.2	8.2	31.6 31.5	31.6	86.2 86.5	86.4	5.7 5.7	5.7	5.7	1.2 1.3	1.3		4.4 4.4	4.4	
				Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	29.5 30.1	29.8	87.8 87.2	87.5	5.9 5.8	5.9	5.8	1.9 1.6	1.8		5.8 5.8	5.8	
G3	Rainy	Moderate	16:45	Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	31.4 31.4	31.4	87.7 81.4	84.6	5.8 5.4	5.6		2.4 2.4	2.4	2.5	5.1 5.1	5.1	5.0
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	31.6 31.6	31.6	80.9 82.3	81.6	5.4 5.5	5.5	5.5	3.2 3.1	3.2		4.1 4.0	4.1	
				Surface	1	27.3 27.4	27.4	8.2 8.2	8.2	30.8 30.7	30.8	92.3 91.6	92.0	6.2 6.1	6.2	6.1	1.5 1.8	1.7		3.2 3.1	3.2	
G4	Rainy	Moderate	16:56	Middle	4.5	27.3 27.4	27.4	8.2 8.2	8.2	31.3 31.4	31.4	89.5 88.0	88.8	6.0 5.9	6.0		0.8 0.7	0.8	1.8	3.3 3.2	3.3	4.2
				Bottom	8	27.4 27.4	27.4	8.2 8.2	8.2	31.6 31.6	31.6	78.2 82.3	80.3	5.2 5.5	5.4	5.4	3.2 2.8	3.0		5.8 6.1	6.0	
				Surface	1	27.5 27.5	27.5	8.3 8.3	8.3	31.0 31.0	31.0	95.6 94.3	95.0	6.4 6.3	6.4	6.4	0.9 0.8	0.9		3.0 2.9	3.0	
M1	Rainy	Moderate	16:35	Middle	3	27.6 27.6	27.6	8.3 8.3	8.3	31.3 31.2	31.3	95.7 95.9	95.8	6.3 6.4	6.4		0.6 0.7	0.7	0.8	2.7 2.7	2.7	3.2
				Bottom	5	27.5 27.5	27.5	8.3 8.3	8.3	31.3 31.3	31.3	91.9 91.5	91.7	6.1 6.1	6.1	6.1	0.8 0.9	0.9		4.0 4.0	4.0	
				Surface	1	27.8 27.8	27.8	8.3 8.3	8.3	31.2 31.3	31.3	98.9 98.5	98.7	6.5 6.5	6.5	6.4	0.2 0.2	0.2		5.0 5.0	5.0	
M2	Rainy	Moderate	16:23	Middle	6	27.7 27.6	27.7	8.3 8.3	8.3	31.5 31.5	31.5	93.1 94.6	93.9	6.2 6.3	6.3		0.5 0.5	0.5	1.2	3.6 3.5	3.6	4.3
				Bottom	11	27.4 27.3	27.4	8.2 8.2	8.2	31.7 31.7	31.7	80.2 73.8	77.0	5.3 4.9	5.1	5.1	3.0 2.9	3.0		4.3 4.3	4.3	
				Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	30.0 30.4	30.2	89.6 88.7	89.2	6.0 5.9	6.0	5.9	1.5 1.4	1.5		3.9 3.8	3.9	
M3	Rainy	Moderate	16:51	Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	31.4 31.2	31.3	85.3 85.0	85.2	5.7 5.7	5.7		1.7 1.8	1.8	1.8	7.5 7.2	7.4	5.8
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	31.6 31.6	31.6	84.9 83.3	84.1	5.6 5.5	5.6	5.6	1.9 2.2	2.1		6.1 6.0	6.1	
				Surface	1	27.4 27.4	27.4	8.3 8.3	8.3	30.9 30.9	30.9	92.6 92.6	92.6	6.2 6.2	6.2	6.2	0.7 0.7	0.7		5.3 5.2	5.3	
M4	Rainy	Moderate	16:17	Middle	5	27.5 27.4	27.5	8.3 8.2	8.3	31.4 31.4	31.4	91.8 90.3	91.1	6.1 6.0	6.1		0.8 0.8	0.8	0.9	3.9 3.9	3.9	5.0
				Bottom	9	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	89.2 88.0	88.6	5.9 5.8	5.9	5.9	1.0 1.2	1.1		5.8 5.7	5.8	
				Surface	1	27.5 27.5	27.5	8.3 8.3	8.3	31.3 31.3	31.3	95.0 94.7	94.9	6.3 6.3	6.3	6.3	0.6 0.5	0.6		5.7 5.4	5.6	
M5	Rainy	Moderate	17:06	Middle	5.5	27.5 27.5	27.5	8.3 8.3	8.3	31.4 31.5	31.5	92.2 93.2	92.7	6.1 6.2	6.2		0.5 0.6	0.6	0.6	3.1 3.1	3.1	4.4
				Bottom	10	27.5 27.5	27.5	8.3 8.3	8.3	31.5 31.5	31.5	91.2 91.3	91.3	6.0 6.1	6.1	6.1	0.4 0.5	0.5		4.5 4.4	4.5	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.1	- -	-		- -	-	
M6	Rainy	Moderate	17:02	Middle	1.1	27.3 27.3	27.3	8.2 8.2	8.2	29.7 29.8	29.8	91.0 90.4	90.7	6.1 6.1	6.1		1.1 1.0	1.1	1.1	4.4 4.4	4.4	4.4
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 6 June 2018 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 3.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 3.3 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.1 g/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.7/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 06 June 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	Moderate	11:18	Surface	1	27.6 27.5	27.6	8.3 8.3	8.3	31.3 31.2	31.3	97.4 96.9	97.2	6.5 6.4	6.5	6.3	0.4 0.4	0.4		4.6 4.5	4.6	
				Middle	9	27.5 27.5	27.5	8.3 8.3	8.3	31.7 31.7	31.7	89.5 90.8	90.2	5.9 6.0	6.0		0.9 0.8	0.9	1.3	3.7 3.7	3.7	4.7
				Bottom	17	27.2 27.1	27.2	8.2 8.2	8.2	31.9 31.9	31.9	81.8 80.3	81.1	5.4 5.4	5.4	5.4	2.4 2.5	2.5		6.0 5.8	5.9	
C2	Rainy	Moderate	10:06	Surface	1	27.4 27.3	27.4	8.2 8.2	8.2	30.9 31.1	31.0	93.4 91.5	92.5	6.2 6.1	6.2	5.9	0.7 0.7	0.7		5.1 5.1	5.1	
				Middle	16	27.2 27.3	27.3	8.2 8.2	8.2	31.9 31.7	31.8	83.4 85.1	84.3	5.5 5.7	5.6		1.9 1.8	1.9	1.4	4.5 4.6	4.6	5.1
				Bottom	31	27.2 27.2	27.2	8.2 8.2	8.2	31.9 31.9	31.9	82.4 82.6	82.5	5.5 5.5	5.5	5.5	1.6 1.7	1.7		5.7 5.7	5.7	
G1	Rainy	Moderate	10:40	Surface	1	27.3 27.2	27.3	8.2 8.2	8.2	30.2 29.7	30.0	91.0 92.1	91.6	6.1 6.2	6.2	6.1	0.8 1.0	0.9		3.6 3.6	3.6	
				Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	90.0 89.5	89.8	6.0 5.9	6.0		0.7 0.7	0.7	0.9	3.5 3.5	3.5	3.2
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	88.4 88.6	88.5	5.9 5.9	5.9	5.9	1.1 1.1	1.1		2.6 2.5	2.6	
G2	Rainy	Moderate	10:29	Surface	1	27.4 27.3	27.4	8.2 8.2	8.2	30.8 30.7	30.8	92.0 91.6	91.8	6.1 6.1	6.1	6.1	0.7 0.7	0.7		3.8 3.7	3.8	
				Middle	5	27.5 27.5	27.5	8.2 8.2	8.2	31.6 31.5	31.6	89.8 90.0	89.9	6.0 6.0	6.0		0.8 0.7	0.8	1.4	4.3 4.2	4.3	4.1
				Bottom	9	27.4 27.4	27.4	8.2 8.2	8.2	31.7 31.7	31.7	86.4 86.0	86.2	5.7 5.7	5.7	5.7	2.8 2.4	2.6		4.0 4.1	4.1	
G3	Rainy	Moderate	10:46	Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	31.0 31.2	31.1	88.2 88.2	88.2	5.9 5.9	5.9	5.9	1.7 1.8	1.8		3.0 3.0	3.0	
				Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	31.4 31.4	31.4	87.5 86.5	87.0	5.8 5.8	5.8		1.8 1.9	1.9	1.6	4.5 4.4	4.5	4.1
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	86.4 85.9	86.2	5.7 5.7	5.7	5.7	0.9 1.1	1.0		4.9 4.9	4.9	
G4	Rainy	Moderate	10:58	Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	31.1 31.2	31.2	90.9 90.7	90.8	6.1 6.0	6.1	6.1	0.9 0.8	0.9		4.3 4.2	4.3	
				Middle	4.5	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	90.3 90.3	90.3	6.0 6.0	6.0		0.7 0.6	0.7	1.2	3.2 3.2	3.2	3.9
				Bottom	8	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	85.3 86.7	86.0	5.7 5.8	5.8	5.8	2.0 2.1	2.1		4.4 4.2	4.3	
M1	Rainy	Moderate	10:36	Surface	1	27.4 27.4	27.4	8.2 8.2	8.2	31.3 30.6	31.0	85.2 87.3	86.3	5.7 5.8	5.8	5.8	1.2 1.3	1.3		4.8 4.9	4.9	
				Middle	3	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	88.5 85.9	87.2	5.9 5.7	5.8		1.3 1.5	1.4	1.4	3.6 3.6	3.6	4.3
				Bottom	5	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	88.8 86.0	87.4	5.9 5.7	5.8	5.8	1.5 1.7	1.6		4.5 4.4	4.5	
M2	Rainy	Moderate	10:22	Surface	1	27.4 27.4	27.4	8.2 8.2	8.2	31.1 31.3	31.2	92.0 90.8	91.4	6.1 6.0	6.1	6.1	0.6 0.6	0.6		5.0 5.1	5.1	
				Middle	6	27.5 27.5	27.5	8.2 8.2	8.2	31.6 31.6	31.6	91.1 90.5	90.8	6.0 6.0	6.0		0.8 0.7	0.8	1.3	3.5 3.4	3.5	5.1
				Bottom	11	27.3 27.3	27.3	8.2 8.2	8.2	31.7 31.7	31.7	79.5 77.1	78.3	5.3 5.1	5.2	5.2	2.6 2.5	2.6		6.8 6.6	6.7	
M3	Rainy	Moderate	10:51	Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	31.2 31.1	31.2	89.5 86.5	88.0	6.0 5.8	5.9	6.0	1.1 1.3	1.2		3.1 3.2	3.2	
				Middle	4	27.3 27.3	27.3	8.2 8.2	8.2	31.4 31.4	31.4	89.6 89.5	89.6	6.0 6.0	6.0		0.8 0.9	0.9	1.0	2.8 2.9	2.9	3.0
				Bottom	7	27.5 27.5	27.5	8.2 8.2	8.2	31.6 31.6	31.6	87.2 87.9	87.6	5.8 5.8	5.8	5.8	1.0 0.9	1.0		2.9 3.0	3.0	
M4	Rainy	Moderate	10:16	Surface	1	27.4 27.3	27.4	8.2 8.2	8.2	30.9 30.1	30.5	94.3 94.4	94.4	6.3 6.3	6.3	6.3	0.5 0.4	0.5		4.1 4.1	4.1	
				Middle	5	27.5 27.4	27.5	8.2 8.2	8.2	31.4 31.5	31.5	92.8 92.3	92.6	6.2 6.1	6.2		0.6 0.6	0.6	0.7	3.4 3.4	3.4	3.6
				Bottom	9	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	91.4 89.7	90.6	6.1 5.9	6.0	6.0	1.0 1.0	1.0		3.2 3.2	3.2	
M5	Rainy	Moderate	11:09	Surface	1	27.4 27.4	27.4	8.2 8.2	8.2	31.5 31.5	31.5	90.6 89.9	90.3	6.0 6.0	6.0	6.0	0.7 0.8	0.8		4.4 4.4	4.4	
				Middle	5.5	27.4 27.4	27.4	8.2 8.2	8.2	31.6 31.6	31.6	89.1 89.0	89.1	5.9 5.9	5.9		1.1 1.1	1.1	1.3	3.1 3.0	3.1	3.7
				Bottom	10	27.4 27.4	27.4	8.2 8.2	8.2	31.7 31.7	31.7	86.8 86.2	86.5	5.8 5.7	5.8	5.8	1.8 1.9	1.9		3.5 3.5	3.5	
M6	Rainy	Moderate	11:05	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.9	- -	-		- -	-	
				Middle	1.1	27.3 27.3	27.3	8.2 8.2	8.2	31.3 31.2	31.3	89.1 89.1	89.1	5.9 5.9	5.9		0.9 1.0	1.0	1.0	4.2 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 9 June 2018 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 2.9 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 09 June 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*
				Surface	1	27.6 27.6	27.6	8.2 8.2	8.2	29.8 29.5	29.7	80.8 78.9	79.9	5.4 5.3	5.4	5.3	1.3 1.3	1.3		3.5 3.5	3.5	
C1	Fine	Calm	10:39	Middle	9	27.4 27.4	27.4	8.2 8.2	8.2	32.2 32.3	32.3	76.4 76.7	76.6	5.1 5.1	5.1		1.7 1.5	1.6	1.6	2.7 2.7	2.7	3.6
				Bottom	17	27.8 27.8	27.8	8.3 8.3	8.3	32.7 32.7	32.7	86.4 85.8	86.1	5.7 5.6	5.7	5.7	1.9 1.9	1.9		4.5 4.5	4.5	
				Surface	1	27.4 27.4	27.4	8.1 8.1	8.1	28.7 28.4	28.6	77.3 77.2	77.3	5.2 5.2	5.2	5.1	0.8 0.8	0.8		4.8 4.8	4.8	
C2	Fine	Calm	09:48	Middle	16	27.4 27.4	27.4	8.2 8.2	8.2	32.4 32.4	32.4	75.8 74.7	75.3	5.0 4.9	5.0		2.6 2.4	2.5	1.9	5.4 5.4	5.4	5.2
				Bottom	31	27.5 27.5	27.5	8.2 8.2	8.2	32.5 32.5	32.5	77.9 77.3	77.6	5.1 5.1	5.1	5.1	2.3 2.4	2.4		5.5 5.5	5.5	
				Surface	1	27.5 27.4	27.5	8.1 8.2	8.2	28.6 29.0	28.8	82.6 80.0	81.3	5.6 5.4	5.5	5.3	1.1 1.2	1.2		4.0 4.0	4.0	
G1	Fine	Calm	10:13	Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	29.9 30.5	30.2	75.1 74.7	74.9	5.0 5.0	5.0		1.3 1.2	1.3	1.6	9.3 9.3	9.3	5.1
				Bottom	7	27.3 27.4	27.4	8.2 8.2	8.2	31.8 31.7	31.8	67.7 67.9	67.8	4.5 4.5	4.5	4.5	2.4 2.4	2.4		1.9 1.9	1.9	
				Surface	1	27.5 27.4	27.5	8.2 8.2	8.2	28.9 29.3	29.1	86.6 83.4	85.0	5.8 5.6	5.7	5.4	1.2 1.1	1.2		3.0 3.1	3.1	
G2	Fine	Calm	10:05	Middle	5	27.3 27.4	27.4	8.2 8.2	8.2	30.8 30.9	30.9	76.3 74.6	75.5	5.1 5.0	5.1		1.7 1.7	1.7	1.7	4.8 4.8	4.8	4.2
				Bottom	9	27.5 27.5	27.5	8.2 8.2	8.2	32.2 32.2	32.2	75.0 75.0	75.0	5.0 5.0	5.0	5.0	2.1 2.2	2.2		4.8 4.8	4.8	
				Surface	1	27.4 27.4	27.4	8.2 8.2	8.2	28.5 28.6	28.6	85.5 81.1	83.3	5.8 5.5	5.7	5.4	1.5 1.5	1.5		4.5 4.3	4.4	
G3	Fine	Calm	10:17	Middle	4	27.3 27.3	27.3	8.2 8.2	8.2	30.6 30.1	30.4	75.5 73.6	74.6	5.0 4.9	5.0		1.3 1.3	1.3	1.7	4.2 4.1	4.2	4.1
				Bottom	7	27.3 27.3	27.3	8.2 8.1	8.2	31.4 31.7	31.6	64.4 64.6	64.5	4.3 4.3	4.3	4.3	2.2 2.1	2.2		3.8 3.8	3.8	
				Surface	1	27.4 27.4	27.4	8.2 8.2	8.2	28.6 28.7	28.7	87.6 84.8	86.2	5.9 5.7	5.8	5.4	1.5 1.5	1.5		2.8 2.8	2.8	
G4	Fine	Calm	10:26	Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	31.4 31.5	31.5	75.7 75.6	75.7	5.0 5.0	5.0		2.2 2.3	2.3	2.1	3.2 3.1	3.2	3.5
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	31.8 31.8	31.8	70.5 73.8	72.2	4.7 4.9	4.8	4.8	2.6 2.5	2.6		4.5 4.3	4.4	
				Surface	1	27.5 27.6	27.6	8.2 8.2	8.2	28.8 28.8	28.8	84.8 82.4	83.6	5.7 5.5	5.6	5.5	1.2 1.1	1.2		3.3 3.3	3.3	
M1	Fine	Calm	10:09	Middle	3	27.5 27.5	27.5	8.2 8.2	8.2	29.3 29.1	29.2	79.3 81.9	80.6	5.3 5.5	5.4		1.2 1.1	1.2	1.1	2.9 3.0	3.0	3.0
				Bottom	5	27.4 27.4	27.4	8.2 8.2	8.2	31.0 31.0	31.0	75.8 73.7	74.8	5.1 4.9	5.0	5.0	1.0 1.0	1.0		2.8 2.7	2.8	
				Surface	1	27.4 27.4	27.4	8.2 8.2	8.2	29.3 29.5	29.4	89.4 82.5	86.0	6.0 5.5	5.8	5.4	1.2 1.1	1.2		3.3 3.3	3.3	
M2	Fine	Calm	10:00	Middle	6	27.3 27.3	27.3	8.2 8.2	8.2	31.5 31.3	31.4	73.3 73.3	73.3	4.9 4.9	4.9		2.5 2.4	2.5	2.1	3.5 3.5	3.5	3.7
				Bottom	11	27.5 27.5	27.5	8.2 8.2	8.2	32.3 32.3	32.3	76.9 76.9	76.9	5.1 5.1	5.1	5.1	2.7 2.6	2.7		4.3 4.3	4.3	
				Surface	1	27.4 27.4	27.4	8.2 8.2	8.2	28.8 29.4	29.1	76.5 76.5	76.5	5.2 5.1	5.2	5.1	2.1 2.1	2.1		5.4 5.3	5.4	
M3	Fine	Calm	10:20	Middle	4	27.3 27.3	27.3	8.2 8.2	8.2	30.6 30.7	30.7	74.7 74.2	74.5	5.0 5.0	5.0		2.1 2.2	2.2	2.3	6.5 6.5	6.5	6.0
				Bottom	7	27.3 27.3	27.3	8.1 8.1	8.1	31.7 31.8	31.8	65.2 65.1	65.2	4.3 4.3	4.3	4.3	2.5 2.5	2.5		6.1 6.0	6.1	
				Surface	1	27.5 27.6	27.6	8.2 8.2	8.2	28.9 28.7	28.8	87.7 84.6	86.2	5.9 5.7	5.8	5.5	1.3 1.3	1.3		3.9 4.1	4.0	
M4	Fine	Calm	09:54	Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	30.5 30.1	30.3	77.6 77.4	77.5	5.2 5.2	5.2		1.0 1.0	1.0	1.5	3.3 3.4	3.4	3.2
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	30.6 30.5	30.6	73.1 72.5	72.8	4.9 4.8	4.9	4.9	2.2 2.2	2.2		2.3 2.3	2.3	
				Surface	1	27.7 27.7	27.7	8.2 8.2	8.2	26.1 26.5	26.3	93.6 89.9	91.8	6.4 6.1	6.3	5.8	2.5 2.2	2.4		4.7 4.9	4.8	
M5	Fine	Calm	10:34	Middle	5.5	27.4 27.4	27.4	8.2 8.2	8.2	31.3 31.2	31.3	78.3 77.8	78.1	5.2 5.2	5.2		0.7 0.6	0.7	1.7	3.5 3.5	3.5	3.2
				Bottom	10	27.4 27.4	27.4	8.2 8.2	8.2	31.7 31.7	31.7	72.5 73.9	73.2	4.8 4.9	4.9	4.9	2.0 1.7	1.9		1.2 1.2	1.2	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.6	- -	-		- -	-	
M6	Fine	Calm	10:30	Middle	2.1	27.3 27.3	27.3	8.2 8.2	8.2	29.7 29.7	29.7	83.0 82.3	82.7	5.6 5.5	5.6		0.8 0.8	0.8	0.8	4.0 4.1	4.1	4.1
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 9 June 2018 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 4.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.4 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

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

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}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	14:29	Surface	1	27.8 28.2	28.0	8.2 8.2	8.2	29.3 29.3	29.3	86.4 87.0	86.7	5.8 5.8	5.8	5.6	1.0 1.0	1.0	1.9	4.5 4.7	4.6	4.6
				Middle	9	27.6 27.6	27.6	8.2 8.2	8.2	31.8 31.6	31.7	81.5 81.1	81.3	5.4 5.4	5.4		0.6 0.6	0.6		4.6 4.7	4.7	
				Bottom	17	28.0 28.0	28.0	8.3 8.3	8.3	32.9 32.9	32.9	88.5 88.3	88.4	5.8 5.8	5.8	5.8	4.0 4.0	4.0		4.5 4.5	4.5	
C2	Fine	Calm	13:37	Surface	1	27.7 27.7	27.7	8.0 8.1	8.1	29.6 29.7	29.7	82.0 81.9	82.0	5.5 5.5	5.5	5.3	0.5 0.5	0.5	1.5	5.2 5.2	5.2	5.0
				Middle	15.5	27.4 27.4	27.4	8.1 8.2	8.2	32.3 32.3	32.3	75.6 75.4	75.5	5.0 5.0	5.0		1.9 1.9	1.9		4.8 4.8	4.8	
				Bottom	30	27.5 27.4	27.5	8.1 8.2	8.2	32.4 32.3	32.4	76.4 75.4	75.9	5.0 5.0	5.0	5.0	2.1 2.0	2.1		4.8 5.0	4.9	
G1	Fine	Calm	14:00	Surface	1	28.1 27.8	28.0	8.1 8.2	8.2	29.1 29.8	29.5	87.8 78.9	83.4	5.8 5.3	5.6	5.4	0.9 0.9	0.9	2.2	4.1 4.3	4.2	5.1
				Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	31.1 31.1	31.1	77.3 76.7	77.0	5.1 5.1	5.1		0.9 1.0	1.0		6.9 7.0	7.0	
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	32.0 32.0	32.0	71.8 69.4	70.6	4.8 4.6	4.7	4.7	4.3 4.9	4.6		4.2 4.1	4.2	
G2	Fine	Calm	13:53	Surface	1	27.9 27.7	27.8	8.1 8.2	8.2	29.7 30.3	30.0	84.2 78.5	81.4	5.6 5.2	5.4	5.2	1.1 1.1	1.1	1.6	2.7 2.8	2.8	3.6
				Middle	5	27.4 27.5	27.5	8.1 8.2	8.2	31.3 31.2	31.3	74.6 74.4	74.5	5.0 4.9	5.0		1.5 1.3	1.4		3.4 3.5	3.5	
				Bottom	9	27.5 27.5	27.5	8.2 8.2	8.2	32.0 32.2	32.1	77.8 78.4	78.1	5.1 5.2	5.2	5.2	2.3 2.3	2.3		4.4 4.3	4.4	
G3	Fine	Calm	14:05	Surface	1	28.0 27.7	27.9	8.2 8.2	8.2	28.9 29.3	29.1	85.9 82.7	84.3	5.7 5.5	5.6	5.4	1.0 1.0	1.0	1.2	2.6 2.7	2.7	3.3
				Middle	4	27.4 27.5	27.5	8.2 8.2	8.2	31.0 30.8	30.9	77.5 77.1	77.3	5.2 5.1	5.2		1.0 1.1	1.1		3.8 3.7	3.8	
				Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	31.6 31.7	31.7	71.0 70.1	70.6	4.7 4.7	4.7	4.7	1.5 1.6	1.6		3.4 3.4	3.4	
G4	Fine	Calm	14:14	Surface	1	27.8 27.7	27.8	8.2 8.2	8.2	28.6 28.8	28.7	88.8 86.2	87.5	6.0 5.8	5.9	5.6	1.1 1.3	1.2	2.2	4.2 4.2	4.2	4.1
				Middle	4.5	27.4 27.4	27.4	8.2 8.2	8.2	31.1 31.0	31.1	78.2 78.6	78.4	5.2 5.2	5.2		0.8 0.7	0.8		3.5 3.4	3.5	
				Bottom	8	27.4 27.4	27.4	8.2 8.2	8.2	31.9 31.8	31.9	67.5 72.3	69.9	4.5 4.8	4.7	4.7	4.9 4.1	4.5		4.6 4.6	4.6	
M1	Fine	Calm	13:57	Surface	1	27.7 27.6	27.7	8.1 8.2	8.2	29.9 30.0	30.0	80.0 79.1	79.6	5.3 5.3	5.3	5.3	1.8 1.7	1.8	1.3	2.8 2.8	2.8	2.8
				Middle	3	27.5 27.5	27.5	8.1 8.2	8.2	30.6 30.7	30.7	78.7 78.6	78.7	5.2 5.2	5.2		1.0 1.1	1.1		3.1 3.2	3.2	
				Bottom	5	27.4 27.4	27.4	8.2 8.2	8.2	31.2 31.1	31.2	76.9 76.9	76.9	5.1 5.1	5.1	5.1	0.9 0.8	0.9		2.5 2.5	2.5	
M2	Fine	Calm	13:48	Surface	1	27.7 27.8	27.8	8.2 8.2	8.2	29.9 29.8	29.9	83.4 82.2	82.8	5.6 5.5	5.6	5.4	1.3 1.3	1.3	1.7	3.6 3.6	3.6	3.4
				Middle	5.5	27.4 27.5	27.5	8.2 8.2	8.2	31.8 31.9	31.9	76.7 76.5	76.6	5.1 5.1	5.1		1.4 1.5	1.5		3.0 3.1	3.1	
				Bottom	10	27.6 27.6	27.6	8.2 8.2	8.2	32.4 32.4	32.4	77.6 77.3	77.5	5.1 5.1	5.1	5.1	2.1 2.2	2.2		3.5 3.4	3.5	
M3	Fine	Calm	14:09	Surface	1	27.7 27.6	27.7	8.2 8.2	8.2	29.3 29.7	29.5	84.1 80.9	82.5	5.6 5.4	5.5	5.3	1.4 1.4	1.4	1.5	3.8 4.0	3.9	3.2
				Middle	4	27.4 27.5	27.5	8.2 8.2	8.2	30.8 30.5	30.7	77.1 76.1	76.6	5.1 5.1	5.1		1.2 1.2	1.2		2.7 2.8	2.8	
				Bottom	7	27.3 27.4	27.4	8.2 8.2	8.2	31.7 31.6	31.7	67.2 67.7	67.5	4.5 4.5	4.5	4.5	1.9 1.8	1.9		2.9 2.9	2.9	
M4	Fine	Calm	13:42	Surface	1	27.7 27.8	27.8	8.1 8.1	8.1	29.7 29.5	29.6	89.0 86.1	87.6	5.9 5.7	5.8	5.6	0.8 0.9	0.9	1.0	3.6 3.7	3.7	2.5
				Middle	5	27.6 27.6	27.6	8.1 8.1	8.1	30.4 30.2	30.3	80.7 80.9	80.8	5.4 5.4	5.4		0.9 0.9	0.9		1.1 1.1	1.1	
				Bottom	9	27.4 27.5	27.5	8.1 8.1	8.1	31.5 30.9	31.2	76.4 75.8	76.1	5.1 5.0	5.1	5.1	1.2 1.1	1.2		2.7 2.7	2.7	
M5	Fine	Calm	14:24	Surface	1	28.0 28.0	28.0	8.2 8.2	8.2	28.4 28.3	28.4	91.9 88.6	90.3	6.2 5.9	6.1	5.7	1.3 1.2	1.3	1.7	5.3 5.3	5.3	4.8
				Middle	5.5	27.6 27.7	27.7	8.2 8.2	8.2	31.9 31.7	31.8	80.9 80.0	80.5	5.3 5.3	5.3		1.1 1.1	1.1		6.3 6.2	6.3	
				Bottom	10	27.7 27.9	27.8	8.2 8.3	8.3	32.6 32.8	32.7	85.9 85.5	85.7	5.6 5.6	5.6	5.6	2.6 2.6	2.6		2.8 2.7	2.8	
M6	Fine	Calm	14:19	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.2	- -	-	0.7	- -	-	3.4
				Middle	2	27.4 27.4	27.4	8.2 8.2	8.2	30.9 30.9	30.9	78.0 76.9	77.5	5.2 5.1	5.2		0.7 0.7	0.7		3.4 3.4	3.4	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 11 June 2018 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 4.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

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

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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	10:59	Surface	1	28.1	28.1	8.2	8.2	30.9	30.9	94.1	93.7	6.2	6.2	6.1	1.1	1.1	1.4	5.2	5.2	4.7
						28.1		8.2		30.9		93.2		6.1			1.0			5.2		
				Middle	9	28.2	28.2	8.3	8.3	31.6	31.6	89.9	90.2	5.9	5.9		1.1	1.1		4.3	4.3	
						28.1		8.2		31.5		90.4		5.9			1.1			4.3		
				Bottom	17	28.2	28.2	8.3	8.3	31.6	31.6	89.3	89.4	5.8	5.9	5.9	2.1	2.0		4.7	4.7	
						28.2		8.3		31.6		89.4		5.9			1.9			4.7		
C2	Sunny	Calm	10:00	Surface	1	28.1	28.1	8.1	8.2	30.8	30.8	93.5	93.0	6.2	6.2	6.0	0.6	0.7	2.1	5.5	5.4	5.3
						28.1		8.2		30.8		92.5		6.1			0.7			5.3		
				Middle	17	28.1	28.1	8.2	8.2	31.6	31.6	86.5	86.5	5.7	5.7		2.4	2.5		4.3	4.3	
						28.1		8.2		31.6		86.4		5.7			2.6			4.3		
				Bottom	33	28.2	28.2	8.2	8.2	31.8	31.8	86.7	86.3	5.7	5.7	5.7	3.3	3.2		6.1	6.1	
						28.2		8.2		31.7		85.8		5.6			3.1			6.0		
G1	Sunny	Calm	10:29	Surface	1	28.2	28.2	8.3	8.3	30.9	31.0	100.1	99.5	6.6	6.6	6.6	0.7	0.7	0.8	4.6	4.7	4.6
						28.2		8.3		31.0		98.8		6.5			0.7			4.7		
				Middle	4	28.2	28.2	8.3	8.3	31.2	31.2	98.7	98.6	6.5	6.5		0.6	0.7		4.1	4.2	
						28.2		8.3		31.1		98.5		6.5			0.7			4.3		
				Bottom	7	28.1	28.1	8.3	8.3	31.3	31.4	91.3	90.7	6.0	6.0	6.0	1.0	1.0		4.9	5.0	
						28.1		8.3		31.4		90.1		5.9			1.0			5.1		
G2	Sunny	Calm	10:18	Surface	1	28.2	28.2	8.3	8.3	31.0	31.0	101.7	101.5	6.7	6.7	6.5	0.7	0.7	1.7	5.7	5.7	5.7
						28.2		8.3		31.0		101.3		6.7			0.7			5.6		
				Middle	5.5	28.1	28.1	8.3	8.3	31.3	31.3	93.9	94.2	6.2	6.2		0.7	0.7		6.4	6.5	
						28.1		8.3		31.3		94.4		6.2			0.7			6.6		
				Bottom	10	28.1	28.1	8.2	8.2	31.7	31.7	85.6	85.5	5.6	5.6	5.6	3.6	3.6		4.8	4.8	
						28.1		8.2		31.7		85.4		5.6			3.5			4.8		
G3	Sunny	Calm	10:37	Surface	1	28.1	28.1	8.2	8.2	31.0	31.0	90.4	88.3	6.0	5.9	5.8	1.4	1.5	1.7	4.8	4.9	5.7
						28.0		8.2		31.0		86.2		5.7			1.5			5.0		
				Middle	4	28.0	28.0	8.2	8.2	31.2	31.2	88.8	87.0	5.8	5.7		1.4	1.5		7.8	7.7	
						28.0		8.2		31.2		85.2		5.6			1.5			7.6		
				Bottom	7	28.0	28.0	8.2	8.2	31.4	31.4	79.9	81.8	5.3	5.4	5.4	2.0	2.0		4.6	4.6	
						28.0		8.2		31.4		83.7		5.5			2.0			4.6		
G4	Sunny	Calm	10:45	Surface	1	28.2	28.2	8.3	8.3	31.0	31.0	99.0	99.5	6.5	6.6	6.5	0.8	0.8	0.8	4.0	4.0	4.7
						28.2		8.2		31.0		99.9		6.6			0.8			4.0		
				Middle	4	28.2	28.2	8.3	8.3	31.2	31.3	98.1	97.3	6.4	6.4		0.7	0.8		4.9	4.9	
						28.2		8.3		31.3		96.5		6.3			0.8			4.8		
				Bottom	7	28.2	28.2	8.3	8.3	31.4	31.4	93.9	94.5	6.2	6.2	6.2	0.9	0.9		5.2	5.1	
						28.2		8.3		31.4		95.1		6.2			0.9			4.9		
M1	Sunny	Calm	10:24	Surface	1	28.1	28.1	8.2	8.2	31.0	31.0	94.4	94.2	6.2	6.2	6.2	1.0	1.0	0.9	5.7	5.7	4.9
						28.1		8.2		31.0		94.0		6.2			0.9			5.7		
				Middle	3	28.1	28.1	8.2	8.2	31.1	31.1	94.8	94.4	6.2	6.2		0.9	0.9		4.8	4.8	
						28.1		8.2		31.0		94.0		6.2			0.9			4.8		
				Bottom	5	28.1	28.1	8.2	8.2	31.1	31.1	94.0	93.8	6.2	6.2	6.2	0.8	0.8		4.2	4.1	
						28.1		8.2		31.1		93.6		6.2			0.8			4.0		
M2	Sunny	Calm	10:13	Surface	1	28.2	28.2	8.3	8.3	31.0	31.0	101.9	101.5	6.7	6.7	6.5	0.6	0.6	1.6	5.8	6.0	5.1
						28.2		8.3		31.0		101.1		6.6			0.6			6.1		
				Middle	6	28.1	28.1	8.2	8.2	31.3	31.3	93.2	93.6	6.1	6.2		0.9	0.9		5.5	5.6	
						28.1		8.2		31.2		93.9		6.2			0.8			5.7		
				Bottom	11	28.1	28.1	8.2	8.2	31.7	31.7	82.3	83.6	5.4	5.5	5.5	3.3	3.3		3.8	3.8	
						28.1		8.2		31.7		84.9		5.6			3.3			3.8		
M3	Sunny	Calm	10:40	Surface	1	28.1	28.1	8.2	8.2	30.9	30.9	90.6	91.4	6.0	6.1	6.1	1.1	1.1	1.5	4.8	4.8	4.5
						28.1		8.2		30.9		92.2		6.1			1.0			4.7		
				Middle	4	28.1	28.1	8.2	8.2	31.1	31.2	91.6	91.6	6.0	6.0		1.1	1.2		3.7	3.8	
						28.0		8.2		31.2		91.5		6.0			1.3			3.8		
				Bottom	7	28.0	28.0	8.2	8.2	31.4	31.4	80.0	79.0	5.3	5.2	5.2	2.1	2.1		5.0	5.0	
						27.9		8.2		31.4		77.9		5.1			2.1			5.0		
M4	Sunny	Calm	10:07	Surface	1	28.2	28.2	8.2	8.2	31.0	31.0	101.0	100.2	6.6	6.6	6.5	0.6	0.6	1.6	5.3	5.4	3.7
						28.2		8.2		31.0		99.3		6.5			0.6			5.4		
				Middle	5	28.1	28.1	8.2	8.2	31.2	31.2	96.1	95.8	6.3	6.3		0.8	0.8		2.9	2.9	
						28.1		8.2		31.2		95.5		6.3			0.8			2.9		
				Bottom	9	28.1	28.1	8.2	8.2	31.4	31.5	89.1	89.1	5.9	5.9	5.9	3.4	3.5		2.9	2.9	
						28.1		8.2		31.5		89.1		5.8			3.6			2.8		
M5	Sunny	Calm	10:54	Surface	1	28.2	28.2	8.3	8.3	31.0	31.0	108.3	107.8	7.1	7.1	6.9	0.7	0.7	0.7	4.8	4.8	5.2
						28.2		8.3		31.0		107.2		7.0			0.6			4.8		
				Middle	5.5	28.2	28.2	8.3	8.3	31.2	31.2	99.7	99.9	6.6	6.6		0.7	0.7		5.7	5.8	
						28.2		8.3		31.1		100.0		6.6			0.7			5.9		
				Bottom	10	28.1	28.1	8.3	8.3	31.1	31.2	97.6	97.0	6.4	6.4	6.4	0.7	0.8		4.9	4.9	
						28.1		8.3		31.2		96.4		6.3			0.8			4.9		
M6	Sunny	Calm	10:49	Surface	-	-	-	-	-	-	-	-	-	-	-	6.1	-	-	1.0	-	-	6.5
						-		-		-		-		-			-			-		
				Middle	2.1	28.1	28.1	8.2	8.2	31.2	31.2	93.4	93.3	6.1	6.1		1.0	1.0		6.5	6.5	
						28.1		8.2		31.2		93.1		6.1			1.0			6.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

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

Appendix I - Action and Limit Levels for Marine Water Quality on 11 June 2018 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.8 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 8.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

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

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

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
				Surface	1	28.4 28.4	28.4	8.3 8.3	8.3	30.6 30.6	30.6	102.4 103.1	102.8	6.7 6.8	6.8	6.7	0.8 0.7	0.8		5.8 5.8	5.8	
C1	Sunny	Calm	16:24	Middle	9	28.2 28.2	28.2	8.3 8.3	8.3	30.9 31.0	31.0	100.2 97.3	98.8	6.6 6.4	6.5		0.7 0.7	0.7	1.3	6.3 6.3	6.3	6.2
				Bottom	17	28.2 28.2	28.2	8.3 8.3	8.3	31.5 31.5	31.5	90.3 90.2	90.3	5.9 5.9	5.9	5.9	2.5 2.4	2.5		6.5 6.4	6.5	
				Surface	1	28.4 28.3	28.4	8.1 8.2	8.2	30.3 30.3	30.3	100.4 99.0	99.7	6.6 6.5	6.6	6.2	0.6 0.6	0.6		5.4 5.4	5.4	
C2	Sunny	Calm	15:27	Middle	17	28.1 28.1	28.1	8.2 8.2	8.2	31.5 31.3	31.4	88.3 87.8	88.1	5.8 5.8	5.8		1.3 1.3	1.3	1.4	3.3 3.3	3.3	4.8
				Bottom	33	28.2 28.2	28.2	8.2 8.2	8.2	31.7 31.7	31.7	90.2 89.6	89.9	5.9 5.9	5.9	5.9	2.2 2.1	2.2		5.9 5.7	5.8	
				Surface	1	29.4 29.1	29.3	8.3 8.3	8.3	30.9 30.9	30.9	128.7 129.0	128.9	8.3 8.4	8.4	8.2	0.9 0.9	0.9		5.0 5.1	5.1	
G1	Sunny	Calm	15:53	Middle	4	28.4 28.5	28.5	8.3 8.3	8.3	31.1 31.1	31.1	120.4 118.8	119.6	7.9 7.8	7.9		0.9 1.0	1.0	1.0	4.8 4.8	4.8	4.9
				Bottom	7	28.2 28.1	28.2	8.3 8.3	8.3	31.3 31.3	31.3	100.4 97.6	99.0	6.6 6.4	6.5	6.5	1.1 1.3	1.2		4.8 4.9	4.9	
				Surface	1	28.9 29.2	29.1	8.3 8.3	8.3	31.0 31.0	31.0	132.8 133.5	133.2	8.6 8.6	8.6	8.3	0.8 0.8	0.8		4.4 4.4	4.4	
G2	Sunny	Calm	15:44	Middle	5	28.6 28.5	28.6	8.3 8.3	8.3	31.1 31.1	31.1	124.7 119.2	122.0	8.1 7.8	8.0		0.9 1.1	1.0	1.0	3.7 3.6	3.7	4.3
				Bottom	9	28.2 28.3	28.3	8.3 8.3	8.3	31.3 31.3	31.3	101.9 102.4	102.2	6.7 6.7	6.7	6.7	1.1 1.0	1.1		4.8 4.8	4.8	
				Surface	1	29.0 28.9	29.0	8.3 8.3	8.3	30.7 30.7	30.7	130.5 128.9	129.7	8.5 8.4	8.5	7.9	1.0 1.0	1.0		5.6 5.9	5.8	
G3	Sunny	Calm	15:58	Middle	4	28.4 28.3	28.4	8.3 8.3	8.3	31.1 31.1	31.1	110.2 110.4	110.3	7.2 7.2	7.2		1.2 1.1	1.2	1.1	5.7 5.8	5.8	5.5
				Bottom	7	28.2 28.2	28.2	8.3 8.3	8.3	31.3 31.4	31.4	99.9 98.8	99.4	6.6 6.5	6.6	6.6	1.1 1.2	1.2		4.7 4.9	4.8	
				Surface	1	29.2 29.1	29.2	8.4 8.4	8.4	31.0 31.0	31.0	132.3 132.4	132.4	8.5 8.6	8.6	8.4	0.9 0.9	0.9		4.1 4.1	4.1	
G4	Sunny	Calm	16:07	Middle	4	28.4 28.4	28.4	8.4 8.4	8.4	31.2 31.2	31.2	124.2 124.7	124.5	8.1 8.2	8.2		0.7 0.7	0.7	0.9	5.5 5.7	5.6	5.2
				Bottom	7	28.2 28.3	28.3	8.3 8.3	8.3	31.3 31.3	31.3	101.3 105.0	103.2	6.6 6.9	6.8	6.8	1.0 0.9	1.0		5.8 6.1	6.0	
				Surface	1	28.9 29.0	29.0	8.3 8.3	8.3	30.9 30.9	30.9	120.9 126.3	123.6	7.9 8.2	8.1	7.9	1.0 0.9	1.0		5.4 5.5	5.5	
M1	Sunny	Calm	15:50	Middle	3	28.7 28.9	28.8	8.3 8.3	8.3	30.9 30.9	30.9	116.8 118.3	117.6	7.6 7.7	7.7		1.0 1.0	1.0	1.0	5.2 5.4	5.3	5.3
				Bottom	5	28.3 28.3	28.3	8.3 8.3	8.3	31.2 31.2	31.2	102.2 111.9	107.1	6.7 7.3	7.0	7.0	1.1 1.0	1.1		5.1 5.0	5.1	
				Surface	1	29.2 29.2	29.2	8.3 8.4	8.4	31.0 31.0	31.0	138.0 136.8	137.4	8.9 8.8	8.9	8.7	0.8 0.7	0.8		5.3 5.4	5.4	
M2	Sunny	Calm	15:39	Middle	6	28.4 28.5	28.5	8.3 8.3	8.3	31.1 31.1	31.1	126.9 130.0	128.5	8.3 8.5	8.4		0.7 0.7	0.7	1.4	4.4 4.4	4.4	5.5
				Bottom	11	28.1 28.1	28.1	8.3 8.2	8.3	31.6 31.6	31.6	87.8 87.4	87.6	5.8 5.7	5.8	5.8	2.7 2.7	2.7		6.7 6.8	6.8	
				Surface	1	28.6 28.8	28.7	8.4 8.3	8.4	30.9 30.7	30.8	130.9 127.3	129.1	8.6 8.3	8.5	8.0	0.9 1.1	1.0		4.4 4.4	4.4	
M3	Sunny	Calm	16:02	Middle	4	28.2 28.2	28.2	8.3 8.3	8.3	31.1 31.2	31.2	113.3 112.4	112.9	7.4 7.4	7.4		1.1 1.1	1.1	1.1	4.1 4.1	4.1	4.4
				Bottom	7	28.1 28.2	28.2	8.3 8.3	8.3	31.3 31.3	31.3	96.8 99.4	98.1	6.4 6.5	6.5	6.5	1.2 1.1	1.2		4.5 4.9	4.7	
				Surface	1	28.7 28.8	28.8	8.3 8.3	8.3	31.0 31.0	31.0	125.3 128.3	126.8	8.2 8.3	8.3	8.3	0.8 0.7	0.8		4.9 4.3	4.6	
M4	Sunny	Calm	15:33	Middle	5	28.6 28.7	28.7	8.3 8.3	8.3	31.0 31.0	31.0	125.6 127.5	126.6	8.2 8.3	8.3		0.7 0.7	0.7	0.8	5.0 4.9	5.0	5.0
				Bottom	9	28.6 28.6	28.6	8.3 8.3	8.3	31.0 31.1	31.1	128.3 128.0	128.2	8.4 8.4	8.4	8.4	0.9 0.9	0.9		5.4 5.3	5.4	
				Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	30.9 30.9	30.9	103.4 103.5	103.5	6.8 6.8	6.8	6.6	0.7 0.7	0.7		4.4 4.5	4.5	
M5	Sunny	Calm	16:18	Middle	5.5	28.2 28.2	28.2	8.3 8.3	8.3	31.1 31.1	31.1	96.8 95.5	96.2	6.4 6.3	6.4		0.8 0.8	0.8	1.4	8.5 8.5	8.5	5.6
				Bottom	10	28.2 28.2	28.2	8.3 8.3	8.3	31.4 31.4	31.4	90.9 90.8	90.9	6.0 6.0	6.0	6.0	2.7 2.5	2.6		3.6 3.7	3.7	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	9.1	- -	-		- -	-	
M6	Sunny	Calm	16:11	Middle	2	28.4 28.4	28.4	8.4 8.4	8.4	31.1 31.1	31.1	138.9 139.3	139.1	9.1 9.1	9.1		0.9 0.9	0.9	0.9	5.8 5.8	5.8	5.8
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 13 June 2018 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.3 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 13 June 2018

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}C) Value	Temperature (^{o}C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
				Surface	1	28.2 28.2	28.2	8.3 8.3	8.3	31.0 31.1	31.1	87.8 86.8	87.3	5.8 5.7	5.8	5.7	1.3 1.4	1.4		1.9 2.0	2.0	
C1	Rainy	Moderate	12:06	Middle	9	28.0 28.0	28.0	8.3 8.3	8.3	32.1 32.0	32.1	83.0 83.3	83.2	5.4 5.5	5.5		1.7 1.8	1.8	1.6	3.4 3.5	3.5	2.8
				Bottom	17	28.0 28.0	28.0	8.3 8.3	8.3	32.2 32.1	32.2	81.9 83.0	82.5	5.4 5.4	5.4	5.4	1.7 1.7	1.7		3.0 3.0	3.0	
				Surface	1	28.1 28.1	28.1	8.2 8.3	8.3	30.9 30.8	30.9	89.3 88.8	89.1	5.9 5.8	5.9	5.7	1.3 1.2	1.3		5.2 5.2	5.2	
C2	Rainy	Moderate	11:03	Middle	16.5	28.1 28.0	28.1	8.2 8.2	8.2	32.0 32.1	32.1	83.9 83.4	83.7	5.5 5.5	5.5		2.2 2.4	2.3	2.0	4.0 3.9	4.0	4.6
				Bottom	32	27.9 27.9	27.9	8.2 8.2	8.2	32.3 32.4	32.4	81.5 80.7	81.1	5.3 5.3	5.3	5.3	2.5 2.4	2.5		4.7 4.6	4.7	
				Surface	1	28.4 28.4	28.4	8.3 8.3	8.3	31.7 31.7	31.7	92.3 92.4	92.4	6.0 6.0	6.0	6.0	1.5 1.2	1.4		5.1 5.3	5.2	
G1	Rainy	Moderate	11:32	Middle	4	28.4 28.3	28.4	8.3 8.3	8.3	31.8 31.8	31.8	91.4 90.9	91.2	6.0 5.9	6.0		1.2 1.1	1.2	1.7	6.8 6.8	6.8	4.7
				Bottom	7	28.4 28.3	28.4	8.3 8.3	8.3	32.0 31.9	32.0	87.6 89.0	88.3	5.7 5.8	5.8	5.8	2.6 2.5	2.6		2.0 1.9	2.0	
				Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	31.3 31.3	31.3	94.2 93.4	93.8	6.2 6.1	6.2	6.1	1.7 1.6	1.7		4.4 4.6	4.5	
G2	Rainy	Moderate	11:20	Middle	5	28.4 28.4	28.4	8.3 8.3	8.3	31.7 31.7	31.7	92.6 92.4	92.5	6.0 6.0	6.0		1.3 1.2	1.3	1.5	4.5 4.4	4.5	4.0
				Bottom	9	28.3 28.4	28.4	8.3 8.3	8.3	31.8 31.9	31.9	89.5 88.4	89.0	5.8 5.8	5.8	5.8	1.6 1.6	1.6		3.1 3.1	3.1	
				Surface	1	28.3 28.2	28.3	8.3 8.3	8.3	31.5 30.9	31.2	86.7 86.6	86.7	5.7 5.7	5.7	5.9	2.1 2.4	2.3		2.1 2.2	2.2	
G3	Rainy	Moderate	11:37	Middle	4	28.4 28.4	28.4	8.3 8.3	8.3	31.8 31.8	31.8	91.6 91.5	91.6	6.0 6.0	6.0		1.2 1.2	1.2	1.7	3.3 3.3	3.3	2.5
				Bottom	7	28.4 28.3	28.4	8.3 8.3	8.3	31.8 31.8	31.8	87.7 87.4	87.6	5.7 5.7	5.7	5.7	1.5 1.4	1.5		2.0 2.0	2.0	
				Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	31.6 31.6	31.6	93.3 90.9	92.1	6.1 6.0	6.1	6.0	1.5 1.2	1.4		5.6 5.8	5.7	
G4	Rainy	Moderate	11:49	Middle	4.5	28.3 28.3	28.3	8.3 8.3	8.3	31.8 31.8	31.8	89.6 90.2	89.9	5.9 5.9	5.9		1.2 1.2	1.2	1.6	4.1 4.2	4.2	4.1
				Bottom	8	28.3 28.3	28.3	8.2 8.2	8.2	31.9 31.9	31.9	75.0 83.0	79.0	4.9 5.4	5.2	5.2	2.2 2.3	2.3		2.2 2.3	2.3	
				Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	31.5 31.6	31.6	88.0 85.2	86.6	5.8 5.6	5.7	5.7	1.5 1.8	1.7		3.8 3.9	3.9	
M1	Rainy	Moderate	11:27	Middle	3	28.4 28.4	28.4	8.3 8.3	8.3	31.7 31.8	31.8	86.4 86.7	86.6	5.6 5.7	5.7		1.6 1.7	1.7	1.7	4.0 4.0	4.0	3.6
				Bottom	5	28.4 28.4	28.4	8.3 8.3	8.3	31.8 31.8	31.8	87.0 87.2	87.1	5.7 5.7	5.7	5.7	1.7 1.7	1.7		2.9 2.8	2.9	
				Surface	1	28.3 28.2	28.3	8.3 8.3	8.3	31.2 30.7	31.0	94.0 91.8	92.9	6.2 6.0	6.1	6.0	1.4 1.3	1.4		2.8 2.7	2.8	
M2	Rainy	Moderate	11:15	Middle	6	28.3 28.3	28.3	8.3 8.3	8.3	31.8 31.8	31.8	90.0 90.1	90.1	5.9 5.9	5.9		1.2 1.2	1.2	1.8	2.4 2.4	2.4	2.4
				Bottom	11	28.3 28.3	28.3	8.2 8.3	8.3	32.0 32.0	32.0	82.0 82.7	82.4	5.4 5.4	5.4	5.4	2.6 2.7	2.7		2.1 2.1	2.1	
				Surface	1	28.3 28.3	28.3	8.2 8.3	8.3	31.5 31.5	31.5	83.2 87.8	85.5	5.4 5.7	5.6	5.8	1.6 1.6	1.6		4.3 4.3	4.3	
M3	Rainy	Moderate	11:43	Middle	4	28.4 28.4	28.4	8.3 8.3	8.3	31.8 31.8	31.8	90.9 89.9	90.4	5.9 5.9	5.9		1.2 1.3	1.3	1.6	3.7 3.8	3.8	4.1
				Bottom	7	28.4 28.4	28.4	8.3 8.3	8.3	31.9 31.9	31.9	86.9 84.5	85.7	5.7 5.5	5.6	5.6	1.7 2.1	1.9		4.2 4.4	4.3	
				Surface	1	28.1 28.1	28.1	8.3 8.3	8.3	31.2 31.3	31.3	91.7 88.5	90.1	6.0 5.8	5.9	5.9	1.5 1.3	1.4		3.5 3.7	3.6	
M4	Rainy	Moderate	11:10	Middle	5	28.3 28.3	28.3	8.3 8.3	8.3	31.7 31.7	31.7	90.3 89.8	90.1	5.9 5.9	5.9		1.2 1.2	1.2	1.3	1.7 1.7	1.7	2.9
				Bottom	9	28.1 28.2	28.2	8.3 8.3	8.3	31.8 31.8	31.8	86.5 86.3	86.4	5.7 5.6	5.7	5.7	1.3 1.4	1.4		3.5 3.5	3.5	
				Surface	1	28.2 28.2	28.2	8.3 8.3	8.3	31.3 31.3	31.3	92.5 92.8	92.7	6.1 6.1	6.1	6.1	1.3 1.2	1.3		2.5 2.4	2.5	
M5	Rainy	Moderate	11:58	Middle	5.5	28.3 28.3	28.3	8.3 8.3	8.3	31.4 31.4	31.4	93.7 91.9	92.8	6.1 6.0	6.1		1.2 1.2	1.2	1.2	3.9 4.0	4.0	3.1
				Bottom	10	28.4 28.4	28.4	8.3 8.3	8.3	31.6 31.6	31.6	92.2 92.0	92.1	6.0 6.0	6.0	6.0	1.1 1.2	1.2		2.8 2.7	2.8	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.1	- -	-		- -	-	
M6	Rainy	Moderate	11:53	Middle	1.3	28.3 28.3	28.3	8.3 8.3	8.3	31.7 31.7	31.7	93.1 91.6	92.4	6.1 6.0	6.1		1.2 1.4	1.3	1.3	2.6 2.5	2.6	2.6
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 13 June 2018 (Mid-Flood Tide)

<table>
<tr><th><u>Parameter (unit)</u></th><th><u>Depth</u></th><th>Action Level</th><th>Limit Level</th></tr>
<tr><td rowspan="6">DO in mg/L
(See Note 1 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Depth Average</td><td><u>4.9 mg/L</u></td><td><u>4.6 mg/L</u></td></tr>
<tr><td>Bottom</td><td><u>4.2 mg/L</u></td><td><u>3.6 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>5.0 mg/L</u></td><td><u>4.7 mg/L</u></td></tr>
<tr><td rowspan="4">Turbidity in NTU
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>19.3 NTU</u>
or 120% of upstream control station's Turbidity at the same tide of the same day
<u>C1: 6.0 NTU</u></td><td><u>22.2 NTU</u>
or 130% of upstream control station's Turbidity at the same tide of the same day
<u>C1: 6.5 NTU</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>19.0 NTU</u></td><td><u>19.4 NTU</u></td></tr>
<tr><td rowspan="8">SS in mg/L
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4</u></td></tr>
<tr><td>Surface</td><td><u>6.0 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 5.9 mg/L</u></td><td><u>6.9 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 6.4 mg/L</u></td></tr>
<tr><td colspan="3"><u>Stations M1-M5</u></td></tr>
<tr><td>Surface</td><td><u>6.2 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 5.9 mg/L</u></td><td><u>7.4 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 6.4 mg/L</u></td></tr>
<tr><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>6.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 6.7 mg/L</u></td><td><u>7.9 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 7.3 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>8.3 mg/L</u></td><td><u>8.6 mg/L</u></td></tr>
</table>

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 13 June 2018

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Rainy	Moderate	18:08	Surface	1	28.1 28.1	28.1	8.3 8.3	8.3	30.5 30.7	30.6	87.1 86.0	86.6	5.7 5.7	5.7	5.6	4.0 3.9	4.0	3.5	4.9 4.9	4.9	5.2
				Middle	9	28.1 28.1	28.1	8.3 8.3	8.3	31.6 31.6	31.6	84.6 84.3	84.5	5.5 5.5	5.5		1.4 1.4	1.4		4.9 5.0	5.0	
				Bottom	17	28.1 28.1	28.1	8.3 8.3	8.3	32.1 32.1	32.1	83.9 83.9	83.9	5.5 5.5	5.5	5.5	5.1 4.8	5.0		5.8 5.4	5.6	
C2	Rainy	Moderate	17:07	Surface	1	28.0 28.0	28.0	8.1 8.2	8.2	29.0 29.6	29.3	93.8 89.6	91.7	6.3 5.9	6.1	5.8	1.7 1.5	1.6	2.5	4.9 4.8	4.9	5.3
				Middle	16.5	28.1 28.1	28.1	8.2 8.2	8.2	31.8 31.8	31.8	82.4 83.5	83.0	5.4 5.5	5.5		2.3 2.5	2.4		4.7 4.5	4.6	
				Bottom	32	28.0 28.0	28.0	8.2 8.2	8.2	32.1 32.1	32.1	80.9 81.2	81.1	5.3 5.3	5.3	5.3	3.7 3.4	3.6		6.6 6.4	6.5	
G1	Rainy	Moderate	17:35	Surface	1	28.2 28.3	28.3	8.3 8.3	8.3	30.2 30.9	30.6	92.9 94.0	93.5	6.1 6.2	6.2	6.2	2.8 2.7	2.8	1.7	4.2 4.1	4.2	3.6
				Middle	4	28.4 28.4	28.4	8.3 8.3	8.3	31.3 31.4	31.4	94.3 94.1	94.2	6.2 6.2	6.2		1.3 1.2	1.3		4.2 4.2	4.2	
				Bottom	7	28.4 28.4	28.4	8.3 8.3	8.3	31.6 31.6	31.6	94.1 94.0	94.1	6.1 6.1	6.1	6.1	1.1 1.1	1.1		2.2 2.3	2.3	
G2	Rainy	Moderate	17:25	Surface	1	28.2 28.2	28.2	8.3 8.3	8.3	30.9 30.7	30.8	92.0 92.7	92.4	6.1 6.1	6.1	6.0	1.7 1.5	1.6	1.4	3.0 3.0	3.0	2.1
				Middle	5	28.2 28.2	28.2	8.3 8.3	8.3	31.5 31.4	31.5	89.4 89.3	89.4	5.9 5.9	5.9		1.5 1.4	1.5		1.5 1.4	1.5	
				Bottom	9	28.4 28.4	28.4	8.3 8.3	8.3	31.7 31.7	31.7	93.3 93.2	93.3	6.1 6.1	6.1	6.1	1.2 1.1	1.2		1.7 1.7	1.7	
G3	Rainy	Moderate	17:40	Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	30.9 30.7	30.8	93.8 92.6	93.2	6.2 6.1	6.2	6.2	2.2 2.6	2.4	1.6	4.5 4.5	4.5	4.9
				Middle	4	28.3 28.4	28.4	8.3 8.3	8.3	31.5 31.5	31.5	93.7 93.7	93.7	6.1 6.1	6.1		1.1 1.3	1.2		5.0 4.9	5.0	
				Bottom	7	28.3 28.3	28.3	8.3 8.3	8.3	31.7 31.7	31.7	89.1 89.8	89.5	5.8 5.9	5.9	5.9	1.3 1.2	1.3		5.2 5.2	5.2	
G4	Rainy	Moderate	17:52	Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	31.2 31.0	31.1	94.4 92.5	93.5	6.2 6.1	6.2	6.1	1.4 1.6	1.5	2.0	5.0 5.2	5.1	3.8
				Middle	4.5	28.3 28.3	28.3	8.3 8.3	8.3	31.4 31.5	31.5	92.1 90.4	91.3	6.0 5.9	6.0		1.4 1.4	1.4		3.2 3.1	3.2	
				Bottom	8	28.3 28.3	28.3	8.2 8.2	8.2	31.8 31.8	31.8	72.3 73.4	72.9	4.7 4.8	4.8	4.8	2.9 3.1	3.0		3.0 3.0	3.0	
M1	Rainy	Moderate	17:30	Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	31.0 31.0	31.0	91.0 89.6	90.3	6.0 5.9	6.0	6.1	1.4 1.4	1.4	1.4	4.0 4.1	4.1	3.7
				Middle	3	28.3 28.4	28.4	8.3 8.3	8.3	31.4 31.4	31.4	93.3 93.3	93.3	6.1 6.1	6.1		1.3 1.2	1.3		3.2 3.2	3.2	
				Bottom	5	28.3 28.3	28.3	8.3 8.3	8.3	31.6 31.6	31.6	87.8 88.1	88.0	5.7 5.8	5.8	5.8	1.4 1.3	1.4		3.7 3.6	3.7	
M2	Rainy	Moderate	17:20	Surface	1	28.3 28.3	28.3	8.3 8.3	8.3	31.0 31.0	31.0	96.7 95.3	96.0	6.4 6.3	6.4	6.3	1.3 1.3	1.3	1.8	2.9 2.8	2.9	2.2
				Middle	6	28.4 28.4	28.4	8.3 8.3	8.3	31.7 31.7	31.7	93.3 93.0	93.2	6.1 6.1	6.1		1.2 1.1	1.2		1.4 1.4	1.4	
				Bottom	11	28.4 28.4	28.4	8.3 8.3	8.3	31.9 31.9	31.9	89.6 89.9	89.8	5.8 5.9	5.9	5.9	3.0 2.8	2.9		2.3 2.2	2.3	
M3	Rainy	Moderate	17:45	Surface	1	28.2 28.2	28.2	8.3 8.3	8.3	30.6 30.3	30.5	90.9 91.6	91.3	6.0 6.0	6.0	6.0	4.4 4.1	4.3	2.3	3.6 3.7	3.7	3.3
				Middle	4	28.4 28.3	28.4	8.3 8.3	8.3	31.7 31.7	31.7	92.5 91.6	92.1	6.0 6.0	6.0		1.3 1.3	1.3		3.2 3.3	3.3	
				Bottom	7	28.3 28.3	28.3	8.3 8.3	8.3	31.8 31.8	31.8	87.6 88.6	88.1	5.7 5.8	5.8	5.8	1.4 1.3	1.4		2.8 2.8	2.8	
M4	Rainy	Moderate	17:15	Surface	1	28.2 28.3	28.3	8.3 8.3	8.3	30.7 31.1	30.9	96.7 95.5	96.1	6.4 6.3	6.4	6.3	1.4 1.4	1.4	1.4	2.4 2.4	2.4	2.6
				Middle	5	28.3 28.4	28.4	8.3 8.3	8.3	31.3 31.6	31.5	94.7 93.4	94.1	6.2 6.1	6.2		1.2 1.3	1.3		2.4 2.4	2.4	
				Bottom	9	28.4 28.4	28.4	8.3 8.3	8.3	31.7 31.7	31.7	93.0 91.7	92.4	6.1 6.0	6.1	6.1	1.3 1.4	1.4		3.1 3.1	3.1	
M5	Rainy	Moderate	18:02	Surface	1	28.1 28.1	28.1	8.2 8.2	8.2	30.7 30.7	30.7	89.0 85.4	87.2	5.9 5.6	5.8	5.7	1.8 1.5	1.7	2.9	2.3 2.3	2.3	3.5
				Middle	5.5	28.2 28.2	28.2	8.2 8.3	8.3	31.2 31.2	31.2	85.3 85.0	85.2	5.6 5.6	5.6		2.0 2.0	2.0		3.9 4.0	4.0	
				Bottom	10	28.0 28.0	28.0	8.2 8.3	8.3	32.1 32.1	32.1	81.3 81.4	81.4	5.3 5.3	5.3	5.3	5.1 5.1	5.1		4.1 4.1	4.1	
M6	Rainy	Moderate	17:57	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.0	- -	-	2.0	- -	-	6.0
				Middle	1.3	28.1 28.1	28.1	8.3 8.3	8.3	29.8 30.7	30.3	92.3 88.1	90.2	6.1 5.8	6.0		2.0 1.9	2.0		5.9 6.1	6.0	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 15 June 2018 (Mid-Ebb Tide)

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

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 15 June 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	13:46	Surface	1	27.9 28.1	28.0	8.2 8.2	8.2	33.6 33.5	33.6	98.9 97.4	98.2	6.9 6.8	6.9	6.4	1.0 1.0	1.0	1.8	4.5 4.4	4.5	3.2
				Middle	9	26.9 26.7	26.8	8.2 8.2	8.2	34.6 33.9	34.3	84.4 84.6	84.5	5.9 5.9	5.9		0.9 1.0	1.0		2.3 2.3	2.3	
				Bottom	17	23.9 23.9	23.9	8.1 8.1	8.1	37.6 34.6	36.1	75.6 76.3	76.0	5.3 5.3	5.3	5.3	3.1 3.4	3.3		2.8 2.8	2.8	
C2	Cloudy	Moderate	12:01	Surface	1	27.5 27.4	27.5	8.2 8.2	8.2	33.5 33.5	33.5	90.3 89.2	89.8	6.3 6.2	6.3	6.0	1.1 1.1	1.1	2.2	4.5 4.4	4.5	5.0
				Middle	16.5	26.5 26.4	26.5	8.1 8.1	8.1	34.0 34.1	34.1	77.9 80.1	79.0	5.5 5.6	5.6		2.1 2.1	2.1		4.6 4.7	4.7	
				Bottom	32	25.1 24.9	25.0	8.1 8.1	8.1	33.9 34.2	34.1	71.2 71.8	71.5	5.0 5.1	5.1	5.1	3.3 3.2	3.3		5.6 5.7	5.7	
G1	Cloudy	Moderate	12:55	Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	33.6 33.6	33.6	99.5 96.1	97.8	6.9 6.7	6.8	6.8	1.1 1.1	1.1	1.9	2.8 2.8	2.8	3.6
				Middle	4	26.9 26.9	26.9	8.2 8.2	8.2	34.1 34.2	34.2	97.7 96.5	97.1	6.8 6.7	6.8		1.3 1.5	1.4		5.6 5.8	5.7	
				Bottom	7	26.1 26.2	26.2	8.1 8.1	8.1	34.5 34.4	34.5	87.1 86.2	86.7	6.1 6.0	6.1	6.1	3.2 3.3	3.3		2.1 2.2	2.2	
G2	Cloudy	Moderate	12:37	Surface	1	27.2 27.2	27.2	8.2 8.2	8.2	33.7 33.7	33.7	101.2 100.5	100.9	7.0 7.0	7.0	6.7	1.1 1.0	1.1	1.6	4.7 4.5	4.6	4.5
				Middle	5	26.8 26.8	26.8	8.2 8.2	8.2	34.3 34.3	34.3	89.8 89.3	89.6	6.3 6.2	6.3		1.5 1.5	1.5		3.8 3.7	3.8	
				Bottom	9	26.1 26.0	26.1	8.1 8.1	8.1	34.6 34.6	34.6	79.5 82.0	80.8	5.6 5.7	5.7	5.7	2.0 2.2	2.1		5.0 5.1	5.1	
G3	Cloudy	Moderate	13:04	Surface	1	27.6 27.6	27.6	8.2 8.2	8.2	33.1 33.0	33.1	91.8 79.3	85.6	6.4 5.5	6.0	6.1	1.1 1.1	1.1	1.5	3.3 3.4	3.4	3.4
				Middle	4	26.9 26.9	26.9	8.2 8.2	8.2	34.0 33.9	34.0	87.8 87.9	87.9	6.1 6.1	6.1		1.6 1.5	1.6		4.5 4.5	4.5	
				Bottom	7	26.6 26.6	26.6	8.1 8.1	8.1	34.5 34.5	34.5	80.2 81.7	81.0	5.6 5.7	5.7	5.7	2.0 1.8	1.9		2.2 2.2	2.2	
G4	Cloudy	Moderate	13:19	Surface	1	27.9 27.3	27.6	8.3 8.2	8.3	33.2 33.7	33.5	98.6 97.3	98.0	6.8 6.8	6.8	6.8	1.1 1.0	1.1	1.9	3.1 3.2	3.2	3.3
				Middle	4.5	26.9 26.9	26.9	8.2 8.2	8.2	34.2 34.2	34.2	96.0 95.9	96.0	6.7 6.7	6.7		1.2 1.2	1.2		1.4 1.4	1.4	
				Bottom	8	26.2 26.2	26.2	8.1 8.1	8.1	34.3 34.4	34.4	79.8 80.4	80.1	5.6 5.6	5.6	5.6	3.4 3.5	3.5		5.4 5.4	5.4	
M1	Cloudy	Moderate	12:47	Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	33.7 33.7	33.7	99.6 94.9	97.3	6.9 6.6	6.8	6.8	1.1 1.1	1.1	1.3	1.1 1.2	1.2	1.9
				Middle	3	27.0 27.0	27.0	8.2 8.2	8.2	34.0 33.9	34.0	95.6 95.8	95.7	6.6 6.7	6.7		1.4 1.3	1.4		1.0 1.0	1.0	
				Bottom	5	26.7 26.8	26.8	8.2 8.2	8.2	34.4 34.2	34.3	86.6 86.2	86.4	6.0 6.0	6.0	6.0	1.4 1.5	1.5		3.4 3.4	3.4	
M2	Cloudy	Moderate	12:26	Surface	1	27.2 27.3	27.3	8.2 8.2	8.2	33.7 33.7	33.7	100.9 99.1	100.0	7.0 6.9	7.0	6.7	1.2 1.1	1.2	2.4	1.8 1.8	1.8	2.0
				Middle	5.5	26.4 26.3	26.4	8.1 8.1	8.1	35.0 34.1	34.6	89.1 91.4	90.3	6.2 6.4	6.3		2.9 2.9	2.9		2.3 2.2	2.3	
				Bottom	10	25.9 25.8	25.9	8.1 8.1	8.1	34.6 34.7	34.7	73.6 77.2	75.4	5.2 5.4	5.3	5.3	3.0 3.3	3.2		2.0 1.9	2.0	
M3	Cloudy	Moderate	13:11	Surface	1	27.6 27.6	27.6	8.2 8.2	8.2	33.2 33.4	33.3	86.5 84.2	85.4	6.0 5.9	6.0	6.0	1.1 1.1	1.1	1.8	3.7 3.7	3.7	3.6
				Middle	4	26.8 26.9	26.9	8.2 8.2	8.2	34.1 34.1	34.1	83.6 88.9	86.3	5.8 6.2	6.0		1.7 1.7	1.7		3.1 3.2	3.2	
				Bottom	7	26.5 26.6	26.6	8.1 8.2	8.2	34.6 34.6	34.6	81.9 81.1	81.5	5.7 5.7	5.7	5.7	2.4 2.5	2.5		3.7 3.8	3.8	
M4	Cloudy	Moderate	12:11	Surface	1	27.3 27.4	27.4	8.2 8.2	8.2	33.6 33.6	33.6	96.8 95.5	96.2	6.8 6.7	6.8	6.3	1.1 1.1	1.1	1.2	3.3 3.4	3.4	4.1
				Middle	5	27.3 27.0	27.2	8.2 8.2	8.2	33.7 34.0	33.9	78.5 82.5	80.5	5.5 5.8	5.7		1.1 1.2	1.2		3.4 3.4	3.4	
				Bottom	9	27.1 26.9	27.0	8.2 8.2	8.2	33.9 34.1	34.0	73.3 75.4	74.4	5.1 5.3	5.2	5.2	1.2 1.4	1.3		5.5 5.6	5.6	
M5	Cloudy	Moderate	13:36	Surface	1	27.4 27.5	27.5	8.2 8.2	8.2	33.6 33.6	33.6	97.4 96.5	97.0	6.8 6.7	6.8	6.7	1.4 1.4	1.4	1.9	4.5 4.4	4.5	5.2
				Middle	5.5	27.1 27.1	27.1	8.2 8.2	8.2	33.9 33.9	33.9	94.7 93.1	93.9	6.6 6.5	6.6		1.2 1.1	1.2		7.0 7.2	7.1	
				Bottom	10	26.4 26.3	26.4	8.1 8.1	8.1	34.0 34.1	34.1	95.0 93.9	94.5	6.6 6.5	6.6	6.6	3.2 3.2	3.2		4.1 4.1	4.1	
M6	Cloudy	Moderate	13:28	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.7	- -	-	1.1	- -	-	3.2
				Middle	1.6	27.2 27.3	27.3	8.2 8.2	8.2	33.8 33.7	33.8	81.9 81.5	81.7	5.7 5.7	5.7		1.1 1.1	1.1		3.1 3.2	3.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 15 June 2018 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 4.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 4.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.4 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.9 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.4 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.9 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 15 June 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	21:18	Surface	1	26.3 26.2	26.3	8.2 8.2	8.2	33.3 33.5	33.4	90.7 89.7	90.2	6.3 6.2	6.3	6.3	1.4 1.4	1.4		4.5 4.5	4.5	
				Middle	9	25.0 25.3	25.2	8.1 8.1	8.1	34.3 34.2	34.3	92.2 89.4	90.8	6.4 6.2	6.3		2.6 2.2	2.4	2.5	4.4 4.3	4.4	4.5
				Bottom	17	24.0 23.4	23.7	8.1 8.1	8.1	34.0 34.5	34.3	88.5 86.9	87.7	6.1 6.0	6.1	6.1	3.6 3.7	3.7		4.6 4.6	4.6	
C2	Cloudy	Moderate	19:49	Surface	1	26.3 26.3	26.3	8.2 8.2	8.2	33.6 33.7	33.7	97.1 96.8	97.0	6.7 6.7	6.7	6.5	1.2 1.2	1.2		5.0 5.0	5.0	
				Middle	16.5	24.9 24.6	24.8	8.1 8.1	8.1	34.5 34.0	34.3	83.9 94.4	89.2	5.9 6.5	6.2		2.9 3.0	3.0	2.6	1.8 1.8	1.8	2.9
				Bottom	32	24.3 24.1	24.2	8.1 8.1	8.1	34.6 33.8	34.2	77.2 77.5	77.4	5.4 5.4	5.4	5.4	3.6 3.6	3.6		1.9 2.0	2.0	
G1	Cloudy	Moderate	20:31	Surface	1	27.5 27.4	27.5	8.2 8.2	8.2	33.5 33.5	33.5	98.2 99.2	98.7	6.7 6.8	6.8	6.7	1.5 1.5	1.5		4.6 4.8	4.7	
				Middle	3.5	26.7 27.0	26.9	8.2 8.2	8.2	33.6 33.6	33.6	94.4 92.4	93.4	6.5 6.4	6.5		1.2 1.1	1.2	1.5	4.4 4.5	4.5	3.8
				Bottom	6	26.0 26.0	26.0	8.2 8.2	8.2	34.1 34.0	34.1	89.7 90.7	90.2	6.2 6.3	6.3	6.3	1.7 1.8	1.8		2.1 2.1	2.1	
G2	Cloudy	Moderate	20:20	Surface	1	26.9 27.4	27.2	8.2 8.2	8.2	33.5 33.4	33.5	99.1 98.8	99.0	6.8 6.8	6.8	6.7	1.1 1.1	1.1		4.4 4.4	4.4	
				Middle	4.5	26.2 26.2	26.2	8.2 8.2	8.2	33.8 33.8	33.8	93.7 93.3	93.5	6.5 6.5	6.5		1.1 1.2	1.2	1.3	1.6 1.6	1.6	3.3
				Bottom	8	25.6 25.9	25.8	8.1 8.2	8.2	34.7 34.1	34.4	92.2 91.8	92.0	6.4 6.4	6.4	6.4	1.7 1.7	1.7		4.0 4.0	4.0	
G3	Cloudy	Moderate	20:39	Surface	1	27.7 27.8	27.8	8.2 8.2	8.2	33.1 33.1	33.1	87.4 86.2	86.8	6.1 6.0	6.1	5.9	1.2 1.1	1.2		1.8 1.7	1.8	
				Middle	3.5	26.6 26.6	26.6	8.2 8.2	8.2	33.6 33.6	33.6	80.2 80.7	80.5	5.6 5.6	5.6		1.1 1.2	1.2	1.3	2.8 2.8	2.8	2.9
				Bottom	6	26.1 26.0	26.1	8.2 8.2	8.2	33.9 34.0	34.0	82.7 82.3	82.5	5.8 5.7	5.8	5.8	1.5 1.5	1.5		3.9 4.0	4.0	
G4	Cloudy	Moderate	20:50	Surface	1	27.0 27.1	27.1	8.2 8.2	8.2	33.6 33.5	33.6	97.0 95.4	96.2	6.7 6.6	6.7	6.5	1.1 1.1	1.1		3.0 3.1	3.1	
				Middle	4	26.5 26.5	26.5	8.2 8.2	8.2	33.6 33.7	33.7	89.8 89.1	89.5	6.2 6.2	6.2		1.2 1.2	1.2	1.9	2.0 2.0	2.0	2.8
				Bottom	7	25.3 25.3	25.3	8.1 8.1	8.1	34.3 34.3	34.3	91.1 91.2	91.2	6.3 6.3	6.3	6.3	3.4 3.2	3.3		3.2 3.1	3.2	
M1	Cloudy	Moderate	20:27	Surface	1	27.3 27.4	27.4	8.2 8.2	8.2	33.5 33.5	33.5	92.8 96.6	94.7	6.4 6.6	6.5	6.5	1.1 1.1	1.1		2.7 2.7	2.7	
				Middle	3	26.6 26.9	26.8	8.2 8.2	8.2	33.6 33.5	33.6	92.4 91.0	91.7	6.4 6.3	6.4		1.2 1.1	1.2	1.2	2.1 2.1	2.1	2.4
				Bottom	5	26.1 26.1	26.1	8.2 8.2	8.2	33.9 33.9	33.9	83.7 85.1	84.4	5.8 5.9	5.9	5.9	1.2 1.4	1.3		2.5 2.5	2.5	
M2	Cloudy	Moderate	20:10	Surface	1	26.9 27.8	27.4	8.2 8.2	8.2	33.6 33.3	33.5	95.0 97.3	96.2	6.5 6.7	6.6	6.5	1.2 1.1	1.2		4.3 4.5	4.4	
				Middle	5.5	26.0 26.0	26.0	8.2 8.2	8.2	34.0 34.0	34.0	91.6 92.7	92.2	6.4 6.4	6.4		1.4 1.3	1.4	1.4	2.0 2.0	2.0	3.9
				Bottom	10	25.9 25.9	25.9	8.2 8.2	8.2	34.1 34.1	34.1	78.1 79.3	78.7	5.4 5.5	5.5	5.5	1.5 1.5	1.5		5.4 5.4	5.4	
M3	Cloudy	Moderate	20:43	Surface	1	27.8 26.1	27.0	8.2 8.2	8.2	33.1 32.1	32.6	88.7 86.9	87.8	6.1 6.0	6.1	5.7	1.2 1.2	1.2		2.1 2.1	2.1	
				Middle	3.5	26.6 25.3	26.0	8.2 8.2	8.2	33.5 32.2	32.9	75.7 74.6	75.2	5.3 5.2	5.3		1.3 1.3	1.3	1.4	2.0 2.0	2.0	1.9
				Bottom	6	26.0 24.6	25.3	8.2 8.2	8.2	33.9 32.7	33.3	83.5 83.3	83.4	5.8 5.8	5.8	5.8	1.8 1.7	1.8		1.5 1.6	1.6	
M4	Cloudy	Moderate	19:58	Surface	1	27.9 26.1	27.0	8.2 8.2	8.2	33.3 33.0	33.2	95.7 95.0	95.4	6.6 6.5	6.6	6.5	1.1 1.1	1.1		4.5 4.5	4.5	
				Middle	5	26.1 26.1	26.1	8.2 8.2	8.2	34.0 34.0	34.0	90.6 90.8	90.7	6.3 6.3	6.3		1.2 1.2	1.2	1.9	6.9 7.0	7.0	5.2
				Bottom	9	25.7 26.0	25.9	8.2 8.2	8.2	34.5 34.2	34.4	86.2 88.8	87.5	6.0 6.2	6.1	6.1	3.3 3.3	3.3		4.0 3.9	4.0	
M5	Cloudy	Moderate	21:07	Surface	1	26.7 26.7	26.7	8.2 8.2	8.2	33.9 33.9	33.9	92.4 91.2	91.8	6.4 6.3	6.4	6.2	1.0 1.0	1.0		5.3 5.2	5.3	
				Middle	5.5	26.3 26.3	26.3	8.2 8.2	8.2	34.4 34.4	34.4	86.7 86.1	86.4	6.0 6.0	6.0		1.1 1.2	1.2	1.9	4.6 4.7	4.7	3.7
				Bottom	10	24.6 24.6	24.6	8.1 8.1	8.1	34.3 34.3	34.3	77.3 77.6	77.5	5.4 5.4	5.4	5.4	3.3 3.6	3.5		1.2 1.2	1.2	
M6	Cloudy	Moderate	20:57	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.4	- -	-		- -	-	
				Middle	2.1	26.1 26.1	26.1	8.2 8.2	8.2	34.0 34.0	34.0	92.3 92.8	92.6	6.4 6.4	6.4		0.8 0.8	0.8	0.8	1.7 1.6	1.7	1.7
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 19 June 2018 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 2.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 2.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.3 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 5.7 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.3 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 5.7 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 19 June 2018

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
				Surface	1	28.6 28.6	28.6	8.3 8.3	8.3	30.0 29.9	30.0	95.5 95.7	95.6	6.3 6.3	6.3	6.3	0.7 0.7	0.7		4.5 4.3	4.4	
C1	Cloudy	Moderate	17:17	Middle	9	28.4 28.4	28.4	8.3 8.3	8.3	30.9 30.9	30.9	96.9 96.9	96.9	6.3 6.3	6.3		0.7 0.7	0.7	1.1	4.1 4.4	4.3	4.5
				Bottom	17	28.1 28.1	28.1	8.3 8.3	8.3	32.0 31.9	32.0	84.6 84.3	84.5	5.5 5.5	5.5	5.5	1.9 1.9	1.9		4.8 4.7	4.8	
				Surface	1	28.7 28.7	28.7	8.3 8.3	8.3	29.5 29.4	29.5	97.3 97.4	97.4	6.4 6.4	6.4	6.2	0.6 0.6	0.6		4.4 4.3	4.4	
C2	Cloudy	Moderate	15:59	Middle	16.5	28.4 28.4	28.4	8.3 8.3	8.3	30.7 30.8	30.8	91.8 91.4	91.6	6.0 6.0	6.0		1.2 1.3	1.3	1.2	4.8 4.8	4.8	5.2
				Bottom	32	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	91.5 91.5	91.5	6.0 6.0	6.0	6.0	1.7 1.7	1.7		6.3 6.5	6.4	
				Surface	1	28.6 28.6	28.6	8.3 8.3	8.3	29.7 29.7	29.7	95.6 95.8	95.7	6.3 6.3	6.3	6.3	0.7 0.7	0.7		4.6 4.5	4.6	
G1	Cloudy	Moderate	16:30	Middle	4	28.5 28.5	28.5	8.3 8.3	8.3	30.5 30.6	30.6	94.6 94.6	94.6	6.2 6.2	6.2		0.9 0.8	0.9	0.8	4.6 4.7	4.7	4.3
				Bottom	7	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.8	30.8	95.9 96.0	96.0	6.3 6.3	6.3	6.3	0.7 0.7	0.7		3.7 3.7	3.7	
				Surface	1	28.6 28.6	28.6	8.3 8.3	8.3	29.8 29.8	29.8	94.7 94.5	94.6	6.2 6.2	6.2	6.2	0.7 0.7	0.7		4.7 4.9	4.8	
G2	Cloudy	Moderate	16:20	Middle	5	28.4 28.4	28.4	8.3 8.3	8.3	30.5 30.6	30.6	93.0 92.9	93.0	6.1 6.1	6.1		1.1 1.1	1.1	1.0	4.8 4.8	4.8	4.9
				Bottom	9	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.8	30.8	93.6 93.6	93.6	6.1 6.1	6.1	6.1	1.1 1.1	1.1		4.9 5.0	5.0	
				Surface	1	28.6 28.6	28.6	8.3 8.3	8.3	29.6 29.6	29.6	96.4 96.4	96.4	6.3 6.3	6.3	6.3	0.7 0.7	0.7		2.2 2.2	2.2	
G3	Cloudy	Moderate	16:38	Middle	4	28.5 28.5	28.5	8.3 8.3	8.3	30.5 30.6	30.6	95.5 95.4	95.5	6.3 6.3	6.3		0.8 0.8	0.8	0.7	3.1 3.0	3.1	2.7
				Bottom	7	28.4 28.4	28.4	8.3 8.3	8.3	30.7 30.7	30.7	96.5 96.6	96.6	6.3 6.3	6.3	6.3	0.6 0.6	0.6		2.7 2.6	2.7	
				Surface	1	28.6 28.6	28.6	8.3 8.3	8.3	29.7 29.8	29.8	96.2 96.1	96.2	6.3 6.3	6.3	6.3	0.7 0.7	0.7		2.2 2.2	2.2	
G4	Cloudy	Moderate	16:51	Middle	4.5	28.5 28.5	28.5	8.3 8.3	8.3	30.3 30.4	30.4	95.3 95.2	95.3	6.3 6.2	6.3		0.7 0.7	0.7	0.7	4.2 4.2	4.2	3.9
				Bottom	8	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.7	30.7	96.3 96.8	96.6	6.3 6.3	6.3	6.3	0.7 0.7	0.7		5.4 5.2	5.3	
				Surface	1	28.7 28.7	28.7	8.3 8.3	8.3	29.5 29.6	29.6	96.8 96.7	96.8	6.4 6.4	6.4	6.3	0.6 0.6	0.6		3.9 3.9	3.9	
M1	Cloudy	Moderate	16:26	Middle	3	28.5 28.5	28.5	8.3 8.3	8.3	30.3 30.3	30.3	93.8 93.8	93.8	6.2 6.2	6.2		0.9 0.9	0.9	0.8	5.5 5.7	5.6	5.2
				Bottom	5	28.4 28.4	28.4	8.3 8.3	8.3	30.6 30.6	30.6	94.3 94.3	94.3	6.2 6.2	6.2	6.2	0.9 0.9	0.9		6.0 6.1	6.1	
				Surface	1	28.7 28.7	28.7	8.3 8.3	8.3	29.3 29.2	29.3	96.9 97.3	97.1	6.4 6.4	6.4	6.3	0.6 0.6	0.6		4.3 4.4	4.4	
M2	Cloudy	Moderate	16:16	Middle	6	28.5 28.5	28.5	8.3 8.3	8.3	30.4 30.4	30.4	92.7 92.7	92.7	6.1 6.1	6.1		1.1 1.1	1.1	0.9	6.3 6.3	6.3	5.8
				Bottom	11	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.9	30.9	92.5 92.6	92.6	6.1 6.1	6.1	6.1	1.1 1.0	1.1		6.6 6.6	6.6	
				Surface	1	28.6 28.6	28.6	8.3 8.3	8.3	29.8 29.8	29.8	95.9 95.9	95.9	6.3 6.3	6.3	6.3	0.7 0.7	0.7		4.1 4.1	4.1	
M3	Cloudy	Moderate	16:44	Middle	4	28.5 28.5	28.5	8.3 8.3	8.3	30.5 30.5	30.5	95.2 95.2	95.2	6.2 6.2	6.2		0.8 0.8	0.8	0.7	4.6 4.8	4.7	4.7
				Bottom	7	28.5 28.5	28.5	8.3 8.3	8.3	30.7 30.7	30.7	96.8 97.0	96.9	6.3 6.4	6.4	6.4	0.6 0.6	0.6		5.1 5.4	5.3	
				Surface	1	28.7 28.7	28.7	8.3 8.3	8.3	29.6 29.6	29.6	96.5 96.8	96.7	6.3 6.4	6.4	6.2	0.6 0.6	0.6		2.7 2.8	2.8	
M4	Cloudy	Moderate	16:06	Middle	5	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.7	30.8	92.0 91.8	91.9	6.0 6.0	6.0		1.3 1.3	1.3	1.0	8.7 8.8	8.8	5.7
				Bottom	9	28.4 28.3	28.4	8.3 8.3	8.3	31.0 31.1	31.1	92.2 92.8	92.5	6.0 6.1	6.1	6.1	1.0 1.0	1.0		5.5 5.7	5.6	
				Surface	1	28.6 28.6	28.6	8.3 8.3	8.3	29.9 29.9	29.9	95.6 95.7	95.7	6.3 6.3	6.3	6.4	0.7 0.7	0.7		4.9 4.6	4.8	
M5	Cloudy	Moderate	17:07	Middle	5.5	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	97.1 96.9	97.0	6.4 6.4	6.4		0.7 0.7	0.7	0.8	5.0 5.2	5.1	4.7
				Bottom	10	28.3 28.3	28.3	8.3 8.3	8.3	31.4 31.4	31.4	91.2 91.1	91.2	6.0 6.0	6.0	6.0	1.0 1.0	1.0		4.3 4.3	4.3	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-		- -	-	
M6	Cloudy	Moderate	16:57	Middle	2.1	28.5 28.5	28.5	8.3 8.3	8.3	30.2 30.2	30.2	95.3 95.1	95.2	6.3 6.2	6.3		0.8 0.8	0.8	0.8	3.8 3.7	3.8	3.8
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 19 June 2018 (Mid-Flood Tide)

<table>
<tr><th><u>Parameter (unit)</u></th><th><u>Depth</u></th><th>Action Level</th><th>Limit Level</th></tr>
<tr><td rowspan="5">DO in mg/L
(See Note 1 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Depth Average</td><td><u>4.9 mg/L</u></td><td><u>4.6 mg/L</u></td></tr>
<tr><td>Bottom</td><td><u>4.2 mg/L</u></td><td><u>3.6 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>5.0 mg/L</u></td><td><u>4.7 mg/L</u></td></tr>
<tr><td rowspan="4">Turbidity in NTU
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>19.3 NTU</u>
or 120% of upstream control station's Turbidity at the same tide of the same day
<u>C1: 1.4 NTU</u></td><td><u>22.2 NTU</u>
or 130% of upstream control station's Turbidity at the same tide of the same day
<u>C1: 1.6 NTU</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>19.0 NTU</u></td><td><u>19.4 NTU</u></td></tr>
<tr><td rowspan="8">SS in mg/L
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4</u></td></tr>
<tr><td>Surface</td><td><u>6.0 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 6.4 mg/L</u></td><td><u>6.9 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 6.9 mg/L</u></td></tr>
<tr><td colspan="3"><u>Stations M1-M5</u></td></tr>
<tr><td>Surface</td><td><u>6.2 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 6.4 mg/L</u></td><td><u>7.4 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 6.9 mg/L</u></td></tr>
<tr><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>6.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 7.0 mg/L</u></td><td><u>7.9 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 7.5 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>8.3 mg/L</u></td><td><u>8.6 mg/L</u></td></tr>
</table>

Notes:

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

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 19 June 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	11:26	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.7 30.7	30.7	103.7 103.9	103.8	6.8 6.8	6.8	6.5	0.9 0.9	0.9		5.3 5.2	5.3	
				Middle	9	28.3 28.3	28.3	8.3 8.3	8.3	31.2 31.2	31.2	93.0 93.0	93.0	6.1 6.1	6.1		0.9 0.9	0.9	1.0	5.6 5.6	5.6	5.6
				Bottom	17	28.0 28.0	28.0	8.3 8.3	8.3	32.2 32.2	32.2	82.8 82.7	82.8	5.4 5.4	5.4	5.4	1.1 1.2	1.2		5.8 5.7	5.8	
C2	Cloudy	Moderate	10:08	Surface	1	28.5 28.5	28.5	8.2 8.2	8.2	30.5 30.5	30.5	100.4 100.4	100.4	6.6 6.6	6.6	6.4	0.8 0.8	0.8		2.6 2.6	2.6	
				Middle	16.5	28.4 28.4	28.4	8.2 8.2	8.2	31.0 31.0	31.0	94.5 94.5	94.5	6.2 6.2	6.2		0.8 0.8	0.8	0.8	7.2 7.4	7.3	4.7
				Bottom	32	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	93.0 92.7	92.9	6.1 6.1	6.1	6.1	0.9 0.9	0.9		4.2 4.2	4.2	
G1	Cloudy	Moderate	10:45	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	101.8 102.0	101.9	6.7 6.7	6.7	6.7	1.0 0.9	1.0		3.9 4.1	4.0	
				Middle	4	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.8	30.8	100.3 99.9	100.1	6.6 6.5	6.6		0.9 0.8	0.9	0.9	3.8 3.8	3.8	3.3
				Bottom	7	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	94.5 94.4	94.5	6.2 6.2	6.2	6.2	0.8 0.9	0.9		2.2 2.2	2.2	
G2	Cloudy	Moderate	10:32	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	101.3 101.3	101.3	6.6 6.6	6.6	6.6	0.9 0.9	0.9		2.3 2.2	2.3	
				Middle	5	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.8	30.8	99.2 98.9	99.1	6.5 6.5	6.5		0.8 0.8	0.8	0.8	2.9 2.9	2.9	3.0
				Bottom	9	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	94.8 94.5	94.7	6.2 6.2	6.2	6.2	0.8 0.8	0.8		3.8 3.8	3.8	
G3	Cloudy	Moderate	10:52	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	102.0 102.1	102.1	6.7 6.7	6.7	6.7	0.8 0.9	0.9		2.8 3.0	2.9	
				Middle	4	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.8	30.8	101.4 100.9	101.2	6.6 6.6	6.6		0.9 0.8	0.9	0.9	3.0 2.9	3.0	3.1
				Bottom	7	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	94.4 94.2	94.3	6.2 6.2	6.2	6.2	0.9 0.9	0.9		3.3 3.4	3.4	
G4	Cloudy	Moderate	11:04	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	102.6 102.8	102.7	6.7 6.7	6.7	6.6	0.9 0.9	0.9		0.5 0.5	0.5	
				Middle	4.5	28.4 28.4	28.4	8.3 8.3	8.3	30.9 30.9	30.9	99.9 99.6	99.8	6.5 6.5	6.5		0.8 0.8	0.8	0.8	5.2 5.2	5.2	3.2
				Bottom	8	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	93.7 93.7	93.7	6.1 6.1	6.1	6.1	0.8 0.8	0.8		3.9 4.0	4.0	
M1	Cloudy	Moderate	10:39	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	101.1 101.2	101.2	6.6 6.6	6.6	6.6	1.1 0.9	1.0		5.1 5.3	5.2	
				Middle	3	28.4 28.4	28.4	8.3 8.3	8.3	30.7 30.7	30.7	100.9 100.8	100.9	6.6 6.6	6.6		0.9 0.8	0.9	0.9	4.2 4.1	4.2	4.7
				Bottom	5	28.4 28.4	28.4	8.3 8.3	8.3	31.0 30.9	31.0	96.0 95.9	96.0	6.3 6.3	6.3	6.3	0.8 0.8	0.8		4.9 4.7	4.8	
M2	Cloudy	Moderate	10:24	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	100.7 100.7	100.7	6.6 6.6	6.6	6.6	0.8 0.8	0.8		4.9 4.9	4.9	
				Middle	6	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.8	30.8	99.8 99.7	99.8	6.5 6.5	6.5		0.8 0.8	0.8	0.8	5.7 5.5	5.6	5.7
				Bottom	11	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	93.4 93.3	93.4	6.1 6.1	6.1	6.1	0.9 0.9	0.9		6.5 6.4	6.5	
M3	Cloudy	Moderate	10:57	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	102.3 102.4	102.4	6.7 6.7	6.7	6.7	0.9 0.9	0.9		2.3 2.2	2.3	
				Middle	4	28.4 28.4	28.4	8.3 8.3	8.3	30.8 30.8	30.8	100.2 99.2	99.7	6.6 6.5	6.6		0.8 0.9	0.9	0.9	1.3 1.3	1.3	2.8
				Bottom	7	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	93.9 93.7	93.8	6.2 6.1	6.2	6.2	0.8 0.8	0.8		4.7 4.6	4.7	
M4	Cloudy	Moderate	10:15	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.5 30.5	30.5	100.4 100.6	100.5	6.6 6.6	6.6	6.4	0.9 0.9	0.9		5.5 5.5	5.5	
				Middle	5	28.3 28.3	28.3	8.3 8.3	8.3	31.0 31.0	31.0	95.0 95.0	95.0	6.2 6.2	6.2		0.8 0.8	0.8	0.9	4.3 4.4	4.4	4.9
				Bottom	9	28.3 28.3	28.3	8.3 8.3	8.3	31.1 31.1	31.1	93.9 93.6	93.8	6.2 6.1	6.2	6.2	0.9 0.9	0.9		4.7 4.6	4.7	
M5	Cloudy	Moderate	11:18	Surface	1	28.5 28.5	28.5	8.3 8.3	8.3	30.6 30.6	30.6	104.0 104.0	104.0	6.8 6.8	6.8	6.6	0.9 0.9	0.9		5.6 5.4	5.5	
				Middle	5.5	28.4 28.4	28.4	8.3 8.3	8.3	30.9 30.9	30.9	97.8 97.7	97.8	6.4 6.4	6.4		0.8 0.8	0.8	0.9	5.7 5.6	5.7	5.8
				Bottom	10	28.3 28.3	28.3	8.3 8.3	8.3	31.2 31.2	31.2	93.3 93.0	93.2	6.1 6.1	6.1	6.1	0.8 0.9	0.9		6.1 6.0	6.1	
M6	Cloudy	Moderate	11:10	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.7	- -	-		- -	-	
				Middle	2	28.5 28.5	28.5	8.3 8.3	8.3	30.8 30.8	30.8	102.4 102.5	102.5	6.7 6.7	6.7		0.8 0.8	0.8	0.8	2.0 2.0	2.0	2.0
				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 21 June 2018 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.5 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.0 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.7 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.7 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 5.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

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Water Quality Monitoring Results on 21 June 2018

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
C1	Rainy	Calm	19:16	Surface	1	28.8 28.8	28.8	8.2 8.2	8.2	28.9 29.1	29.0	90.0 89.1	89.6	5.9 5.9	5.9	5.7	1.3 1.4	1.4		4.7 4.5	4.6	
				Middle	9	28.0 28.0	28.0	8.2 8.2	8.2	32.5 32.4	32.5	81.9 82.2	82.1	5.4 5.4	5.4		1.8 1.6	1.7	2.7	4.8 4.9	4.9	4.2
				Bottom	17	27.4 27.5	27.5	8.2 8.2	8.2	33.3 33.3	33.3	73.1 75.4	74.3	4.8 5.0	4.9	4.9	4.9 5.0	5.0		3.1 3.1	3.1	
C2	Rainy	Calm	18:03	Surface	1	29.2 29.2	29.2	8.2 8.2	8.2	27.3 27.3	27.3	101.6 100.9	101.3	6.7 6.7	6.7	5.9	1.0 1.2	1.1		5.5 5.6	5.6	
				Middle	17.5	27.7 27.7	27.7	8.2 8.2	8.2	33.0 33.0	33.0	75.8 75.1	75.5	5.0 4.9	5.0		4.6 4.7	4.7	3.7	4.1 4.0	4.1	4.6
				Bottom	34	27.7 27.7	27.7	8.2 8.2	8.2	33.1 33.0	33.1	75.4 75.1	75.3	4.9 4.9	4.9	4.9	5.0 5.8	5.4		4.2 4.1	4.2	
G1	Rainy	Calm	18:40	Surface	1	29.2 29.2	29.2	8.4 8.4	8.4	29.5 29.4	29.5	135.1 135.4	135.3	8.8 8.8	8.8	8.5	0.6 0.6	0.6		2.8 2.8	2.8	
				Middle	4	29.1 29.1	29.1	8.4 8.4	8.4	29.7 29.7	29.7	123.3 123.6	123.5	8.0 8.1	8.1		0.6 0.6	0.6	1.1	3.0 3.2	3.1	2.9
				Bottom	7	28.1 28.1	28.1	8.2 8.2	8.2	32.4 32.3	32.4	84.9 84.6	84.8	5.5 5.5	5.5	5.5	2.1 2.0	2.1		2.7 2.7	2.7	
G2	Rainy	Calm	18:26	Surface	1	29.1 29.0	29.1	8.4 8.4	8.4	29.7 29.8	29.8	129.4 122.9	126.2	8.4 8.0	8.2	7.0	0.6 0.6	0.6		3.7 3.7	3.7	
				Middle	5	28.4 28.4	28.4	8.2 8.3	8.3	31.3 31.2	31.3	86.3 91.2	88.8	5.6 6.0	5.8		1.3 1.1	1.2	1.2	4.2 4.2	4.2	3.7
				Bottom	9	28.1 28.1	28.1	8.2 8.2	8.2	32.4 32.4	32.4	85.6 84.8	85.2	5.6 5.5	5.6	5.6	1.9 1.8	1.9		3.1 3.1	3.1	
G3	Rainy	Calm	18:46	Surface	1	29.2 29.2	29.2	8.4 8.4	8.4	29.3 29.3	29.3	143.7 141.7	142.7	9.4 9.2	9.3	8.8	0.7 0.7	0.7		3.4 3.3	3.4	
				Middle	4	29.1 29.1	29.1	8.4 8.4	8.4	29.6 29.6	29.6	126.9 124.6	125.8	8.3 8.1	8.2		0.6 0.6	0.6	1.3	3.5 3.4	3.5	3.4
				Bottom	7	28.2 28.1	28.2	8.2 8.2	8.2	32.1 32.5	32.3	85.0 81.3	83.2	5.6 5.3	5.5	5.5	2.2 2.7	2.5		3.3 3.3	3.3	
G4	Rainy	Calm	18:57	Surface	1	29.4 29.4	29.4	8.5 8.4	8.5	29.1 29.0	29.1	152.0 147.0	149.5	9.9 9.6	9.8	8.5	0.8 0.8	0.8		4.8 4.7	4.8	
				Middle	4.5	28.9 28.9	28.9	8.3 8.3	8.3	30.1 30.0	30.1	106.8 110.7	108.8	7.0 7.2	7.1		1.1 1.0	1.1	2.7	3.1 3.0	3.1	3.9
				Bottom	8	28.1 28.2	28.2	8.2 8.3	8.3	32.3 32.0	32.2	74.0 78.8	76.4	4.8 5.1	5.0	5.0	6.5 5.9	6.2		3.7 3.8	3.8	
M1	Rainy	Calm	18:35	Surface	1	29.1 29.1	29.1	8.4 8.3	8.4	29.6 29.7	29.7	128.8 123.8	126.3	8.4 8.1	8.3	8.2	0.6 0.6	0.6		2.1 2.2	2.2	
				Middle	3	29.1 29.1	29.1	8.4 8.4	8.4	29.7 29.7	29.7	121.3 124.4	122.9	7.9 8.1	8.0		0.7 0.6	0.7	0.7	2.8 2.8	2.8	3.1
				Bottom	5	28.7 28.9	28.8	8.3 8.3	8.3	30.6 30.0	30.3	99.0 111.7	105.4	6.5 7.3	6.9	6.9	0.8 0.8	0.8		4.4 4.3	4.4	
M2	Rainy	Calm	18:20	Surface	1	29.1 28.8	29.0	8.4 8.3	8.4	29.8 30.0	29.9	130.1 112.7	121.4	8.5 7.4	8.0	7.0	0.7 0.6	0.7		3.1 3.0	3.1	
				Middle	6	28.2 28.4	28.3	8.2 8.3	8.3	32.0 31.3	31.7	90.7 90.3	90.5	5.9 5.9	5.9		0.9 1.0	1.0	2.0	2.4 2.4	2.4	2.8
				Bottom	11	28.0 27.9	28.0	8.2 8.2	8.2	32.8 32.9	32.9	77.7 76.7	77.2	5.1 5.0	5.1	5.1	4.4 4.4	4.4		3.0 2.9	3.0	
M3	Rainy	Calm	18:51	Surface	1	29.2 28.9	29.1	8.4 8.4	8.4	29.3 29.6	29.5	142.2 130.8	136.5	9.3 8.6	9.0	8.6	0.6 0.6	0.6		4.3 4.3	4.3	
				Middle	4	29.1 29.1	29.1	8.4 8.4	8.4	29.7 29.7	29.7	125.7 122.5	124.1	8.2 8.0	8.1		0.6 0.6	0.6	1.2	3.5 3.4	3.5	3.7
				Bottom	7	28.1 28.1	28.1	8.2 8.2	8.2	32.3 32.4	32.4	83.2 84.0	83.6	5.4 5.5	5.5	5.5	2.4 2.5	2.5		3.4 3.3	3.4	
M4	Rainy	Calm	18:12	Surface	1	29.0 29.0	29.0	8.3 8.3	8.3	29.6 29.5	29.6	114.3 111.8	113.1	7.5 7.3	7.4	7.0	0.8 0.8	0.8		4.1 4.2	4.2	
				Middle	4.5	28.5 28.6	28.6	8.3 8.3	8.3	31.2 30.6	30.9	98.9 99.9	99.4	6.5 6.5	6.5		0.9 0.8	0.9	1.5	3.0 3.2	3.1	3.8
				Bottom	8	27.9 27.9	27.9	8.2 8.2	8.2	32.7 32.8	32.8	79.3 78.6	79.0	5.2 5.1	5.2	5.2	2.8 2.9	2.9		3.9 4.0	4.0	
M5	Rainy	Calm	19:08	Surface	1	28.9 28.9	28.9	8.3 8.3	8.3	29.3 29.3	29.3	104.5 102.2	103.4	6.9 6.7	6.8	6.3	0.8 0.8	0.8		3.6 3.6	3.6	
				Middle	5.5	28.2 28.4	28.3	8.3 8.3	8.3	31.9 31.1	31.5	85.6 89.5	87.6	5.6 5.9	5.8		1.6 1.6	1.6	2.6	5.3 5.4	5.4	4.0
				Bottom	10	28.0 28.0	28.0	8.2 8.2	8.2	32.6 32.6	32.6	78.7 79.8	79.3	5.1 5.2	5.2	5.2	5.5 5.5	5.5		3.0 3.0	3.0	
M6	Rainy	Calm	19:02	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	8.2	- -	-		- -	-	
				Middle	2.2	29.2 29.1	29.2	8.4 8.4	8.4	29.4 29.6	29.5	125.6 123.9	124.8	8.2 8.1	8.2		0.7 0.7	0.7	0.7	3.6 3.8	3.7	3.7
				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 21 June 2018 (Mid-Flood Tide)

<table>
<tr><th><u>Parameter (unit)</u></th><th><u>Depth</u></th><th>Action Level</th><th>Limit Level</th></tr>
<tr><td rowspan="5">DO in mg/L
(See Note 1 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Depth Average</td><td><u>4.9 mg/L</u></td><td><u>4.6 mg/L</u></td></tr>
<tr><td>Bottom</td><td><u>4.2 mg/L</u></td><td><u>3.6 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>5.0 mg/L</u></td><td><u>4.7 mg/L</u></td></tr>
<tr><td rowspan="4">Turbidity in NTU
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>19.3 NTU</u>
or 120% of upstream control station's Turbidity at the same tide of the same day
<u>C1: 7.0 NTU</u></td><td><u>22.2 NTU</u>
or 130% of upstream control station's Turbidity at the same tide of the same day
<u>C1: 7.5 NTU</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>19.0 NTU</u></td><td><u>19.4 NTU</u></td></tr>
<tr><td rowspan="8">SS in mg/L
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4</u></td></tr>
<tr><td>Surface</td><td><u>6.0 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 6.2 mg/L</u></td><td><u>6.9 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 6.8 mg/L</u></td></tr>
<tr><td colspan="3"><u>Stations M1-M5</u></td></tr>
<tr><td>Surface</td><td><u>6.2 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 6.2 mg/L</u></td><td><u>7.4 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 6.8 mg/L</u></td></tr>
<tr><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>6.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C1: 5.9 mg/L</u></td><td><u>7.9 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C1: 6.4 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>8.3 mg/L</u></td><td><u>8.6 mg/L</u></td></tr>
</table>

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 June 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*
				Surface	1	28.8 28.8	28.8	8.3 8.3	8.3	29.3 29.4	29.4	98.6 96.9	97.8	6.5 6.4	6.5	6.1	0.6 0.6	0.6		5.1 5.2	5.2	
C1	Rainy	Calm	12:31	Middle	9.5	28.0 28.1	28.1	8.3 8.3	8.3	32.5 32.4	32.5	84.9 84.9	84.9	5.6 5.5	5.6		0.9 1.0	1.0	2.5	4.7 4.7	4.7	4.9
				Bottom	18	27.6 27.6	27.6	8.2 8.2	8.2	33.2 33.2	33.2	77.1 77.2	77.2	5.1 5.1	5.1	5.1	5.8 5.7	5.8		4.9 4.9	4.9	
				Surface	1	28.9 28.9	28.9	8.1 8.2	8.2	27.8 27.9	27.9	83.9 84.3	84.1	5.5 5.6	5.6	5.5	1.0 0.9	1.0		4.2 4.3	4.3	
C2	Rainy	Calm	10:59	Middle	17	28.0 28.0	28.0	8.2 8.2	8.2	32.6 32.6	32.6	81.3 81.0	81.2	5.3 5.3	5.3		1.7 1.8	1.8	1.5	3.7 3.8	3.8	3.8
				Bottom	33	28.0 28.0	28.0	8.2 8.2	8.2	32.6 32.7	32.7	81.1 81.0	81.1	5.3 5.3	5.3	5.3	1.8 1.7	1.8		3.4 3.4	3.4	
				Surface	1	28.8 28.6	28.7	8.3 8.3	8.3	29.5 30.3	29.9	115.3 106.1	110.7	7.6 7.0	7.3	6.8	0.5 0.5	0.5		3.4 3.4	3.4	
G1	Rainy	Calm	11:49	Middle	4	28.7 28.7	28.7	8.3 8.3	8.3	30.2 30.2	30.2	98.3 95.4	96.9	6.4 6.2	6.3		0.5 0.5	0.5	0.8	6.1 6.2	6.2	4.7
				Bottom	7	28.1 28.4	28.3	8.2 8.3	8.3	32.1 31.3	31.7	78.2 82.9	80.6	5.1 5.4	5.3	5.3	1.4 1.5	1.5		4.3 4.5	4.4	
				Surface	1	28.8 28.8	28.8	8.3 8.3	8.3	29.6 29.5	29.6	110.3 110.2	110.3	7.2 7.2	7.2	6.5	0.5 0.5	0.5		2.1 2.1	2.1	
G2	Rainy	Calm	11:31	Middle	5	28.2 28.3	28.3	8.3 8.3	8.3	31.6 31.4	31.5	85.3 86.3	85.8	5.6 5.7	5.7		0.7 0.7	0.7	0.7	3.7 3.8	3.8	3.5
				Bottom	9	28.0 28.1	28.1	8.3 8.3	8.3	32.5 32.4	32.5	84.1 83.9	84.0	5.5 5.5	5.5	5.5	1.0 1.0	1.0		4.5 4.6	4.6	
				Surface	1	28.9 28.9	28.9	8.3 8.3	8.3	29.2 29.2	29.2	116.0 114.6	115.3	7.6 7.5	7.6	7.2	0.5 0.5	0.5		5.1 5.1	5.1	
G3	Rainy	Calm	11:54	Middle	4	28.7 28.7	28.7	8.3 8.3	8.3	30.0 30.1	30.1	103.5 100.7	102.1	6.8 6.6	6.7		0.7 0.7	0.7	0.7	5.2 5.3	5.3	4.3
				Bottom	7	28.4 28.2	28.3	8.3 8.2	8.3	30.9 31.8	31.4	86.2 74.6	80.4	5.6 4.9	5.3	5.3	0.8 0.9	0.9		2.6 2.6	2.6	
				Surface	1	28.8 28.8	28.8	8.3 8.3	8.3	29.3 29.5	29.4	115.7 112.7	114.2	7.6 7.4	7.5	6.9	0.5 0.5	0.5		4.8 4.8	4.8	
G4	Rainy	Calm	12:09	Middle	4.5	28.7 28.6	28.7	8.3 8.3	8.3	30.3 30.6	30.5	97.5 92.8	95.2	6.4 6.1	6.3		0.7 0.7	0.7	2.1	5.0 5.0	5.0	4.6
				Bottom	8	28.1 28.2	28.2	8.2 8.2	8.2	32.0 31.7	31.9	69.2 69.0	69.1	4.5 4.5	4.5	4.5	5.2 5.2	5.2		3.8 3.9	3.9	
				Surface	1	28.8 28.8	28.8	8.3 8.3	8.3	29.6 29.7	29.7	109.3 106.3	107.8	7.2 7.0	7.1	6.7	0.5 0.5	0.5		2.0 2.0	2.0	
M1	Rainy	Calm	11:42	Middle	3	28.7 28.7	28.7	8.3 8.3	8.3	30.2 30.2	30.2	92.9 96.6	94.8	6.1 6.3	6.2		0.5 0.5	0.5	0.5	5.1 5.1	5.1	4.1
				Bottom	5	28.6 28.6	28.6	8.2 8.3	8.3	30.5 30.4	30.5	90.6 91.9	91.3	5.9 6.0	6.0	6.0	0.5 0.5	0.5		5.3 5.3	5.3	
				Surface	1	28.8 28.7	28.8	8.3 8.3	8.3	29.6 29.9	29.8	109.5 106.4	108.0	7.2 7.0	7.1	6.4	0.5 0.5	0.5		4.5 4.4	4.5	
M2	Rainy	Calm	11:21	Middle	6	28.1 28.1	28.1	8.3 8.3	8.3	32.2 32.2	32.2	87.0 85.3	86.2	5.7 5.6	5.7		0.9 0.9	0.9	1.1	4.0 3.9	4.0	3.7
				Bottom	11	28.0 27.9	28.0	8.3 8.2	8.3	32.7 32.8	32.8	83.8 81.6	82.7	5.5 5.3	5.4	5.4	1.9 2.0	2.0		2.6 2.5	2.6	
				Surface	1	28.8 28.8	28.8	8.3 8.3	8.3	29.2 29.2	29.2	119.5 116.3	117.9	7.8 7.6	7.7	7.2	0.5 0.5	0.5		5.7 5.7	5.7	
M3	Rainy	Calm	12:02	Middle	4	28.6 28.7	28.7	8.3 8.3	8.3	30.2 29.8	30.0	98.2 103.0	100.6	6.4 6.8	6.6		0.5 0.5	0.5	0.6	4.9 4.9	4.9	5.3
				Bottom	7	28.3 28.3	28.3	8.3 8.2	8.3	31.3 31.5	31.4	87.9 82.4	85.2	5.8 5.4	5.6	5.6	0.7 0.7	0.7		5.2 5.2	5.2	
				Surface	1	28.8 28.7	28.8	8.3 8.2	8.3	29.5 29.7	29.6	99.7 98.1	98.9	6.5 6.4	6.5	6.4	0.6 0.6	0.6		5.3 5.4	5.4	
M4	Rainy	Calm	11:14	Middle	4	28.6 28.5	28.6	8.3 8.3	8.3	30.3 30.8	30.6	95.5 92.0	93.8	6.3 6.0	6.2		0.5 0.5	0.5	0.8	4.0 4.1	4.1	4.8
				Bottom	7	28.2 28.4	28.3	8.2 8.3	8.3	31.8 31.3	31.6	82.0 85.2	83.6	5.4 5.6	5.5	5.5	1.3 1.3	1.3		4.9 4.7	4.8	
				Surface	1	28.7 28.7	28.7	8.3 8.3	8.3	29.6 29.6	29.6	97.5 97.2	97.4	6.4 6.4	6.4	6.0	0.6 0.6	0.6		4.0 3.9	4.0	
M5	Rainy	Calm	12:22	Middle	5.5	28.1 28.4	28.3	8.3 8.3	8.3	32.4 32.2	32.3	85.3 86.4	85.9	5.6 5.6	5.6		1.0 1.0	1.0	1.7	4.1 4.2	4.2	3.9
				Bottom	10	27.9 27.8	27.9	8.2 8.2	8.2	32.9 33.0	33.0	81.3 79.9	80.6	5.3 5.2	5.3	5.3	3.3 3.8	3.6		3.4 3.4	3.4	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.4	- -	-		- -	-	
M6	Rainy	Calm	12:14	Middle	2	28.7 28.7	28.7	8.3 8.3	8.3	30.3 30.3	30.3	98.3 98.0	98.2	6.4 6.4	6.4		1.0 1.0	1.0	1.0	4.6 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 23 June 2018 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.2 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.6 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.9 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.9 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.2 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 5.6 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 23 June 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	Moderate	09:28	Surface	1	28.1 28.1	28.1	8.1 8.1	8.1	29.7 29.8	29.8	83.5 83.0	83.3	5.5 5.5	5.5	5.2	1.2 1.2	1.2	1.6	5.3 5.6	5.5	4.7
				Middle	9	26.7 26.9	26.8	8.1 8.2	8.2	33.2 32.8	33.0	72.6 73.2	72.9	4.8 4.9	4.9		1.8 1.5	1.7		5.5 5.3	5.4	
				Bottom	17	26.4 26.5	26.5	8.1 8.1	8.1	33.5 33.4	33.5	70.0 71.3	70.7	4.7 4.8	4.8	4.8	2.0 1.8	1.9		3.1 3.2	3.2	
C2	Rainy	Moderate	08:05	Surface	1	28.7 28.7	28.7	8.1 8.1	8.1	26.7 26.7	26.7	89.8 88.2	89.0	6.0 5.9	6.0	5.3	0.7 0.7	0.7	3.1	5.0 4.8	4.9	4.0
				Middle	17	26.3 26.2	26.3	8.1 8.1	8.1	33.5 33.5	33.5	67.5 66.9	67.2	4.5 4.5	4.5		4.1 4.2	4.2		2.8 2.8	2.8	
				Bottom	33	26.3 26.2	26.3	8.1 8.1	8.1	33.5 33.6	33.6	67.5 66.5	67.0	4.5 4.5	4.5	4.5	4.2 4.4	4.3		4.3 4.2	4.3	
G1	Rainy	Moderate	08:48	Surface	1	28.6 28.5	28.6	8.2 8.2	8.2	28.9 29.3	29.1	97.9 93.1	95.5	6.5 6.1	6.3	5.7	0.4 0.4	0.4	1.1	4.8 4.8	4.8	4.1
				Middle	4	28.3 28.2	28.3	8.2 8.2	8.2	30.3 30.9	30.6	79.4 73.3	76.4	5.2 4.8	5.0		0.9 0.9	0.9		3.3 3.3	3.3	
				Bottom	7	28.0 28.0	28.0	8.2 8.2	8.2	32.0 31.7	31.9	64.7 66.1	65.4	4.2 4.3	4.3	4.3	2.1 1.9	2.0		4.1 4.2	4.2	
G2	Rainy	Moderate	08:28	Surface	1	28.3 28.5	28.4	8.2 8.2	8.2	29.0 29.3	29.2	96.3 98.6	97.5	6.4 6.5	6.5	6.1	0.5 0.5	0.5	1.3	4.2 4.1	4.2	4.3
				Middle	5	28.1 28.5	28.3	8.2 8.2	8.2	30.8 29.6	30.2	77.2 91.8	84.5	5.1 6.1	5.6		1.0 0.9	1.0		4.2 4.2	4.2	
				Bottom	9	27.2 28.0	27.6	8.2 8.2	8.2	33.1 31.8	32.5	66.5 71.3	68.9	4.4 4.7	4.6	4.6	2.1 2.4	2.3		4.5 4.5	4.5	
G3	Rainy	Moderate	08:52	Surface	1	28.6 28.6	28.6	8.2 8.2	8.2	29.2 29.1	29.2	95.8 99.9	97.9	6.3 6.6	6.5	5.7	0.4 0.4	0.4	1.1	4.2 4.1	4.2	4.2
				Middle	4	28.1 28.2	28.2	8.2 8.2	8.2	30.9 30.8	30.9	74.1 73.8	74.0	4.9 4.9	4.9		0.9 0.8	0.9		4.2 4.3	4.3	
				Bottom	7	27.8 27.9	27.9	8.1 8.1	8.1	32.1 32.0	32.1	65.6 65.8	65.7	4.3 4.3	4.3	4.3	2.0 2.0	2.0		4.2 4.2	4.2	
G4	Rainy	Moderate	09:05	Surface	1	28.5 28.5	28.5	8.3 8.2	8.3	29.1 31.2	30.2	103.5 98.7	101.1	6.8 6.5	6.7	6.2	0.6 0.6	0.6	1.2	3.0 3.0	3.0	3.5
				Middle	4	27.9 28.4	28.2	8.2 8.2	8.2	31.1 29.7	30.4	77.5 92.7	85.1	5.1 6.1	5.6		0.8 0.8	0.8		3.7 3.7	3.7	
				Bottom	7	27.6 28.1	27.9	8.2 8.2	8.2	32.3 31.6	32.0	66.3 72.1	69.2	4.4 4.7	4.6	4.6	2.1 2.2	2.2		4.0 3.8	3.9	
M1	Rainy	Moderate	08:39	Surface	1	28.5 28.5	28.5	8.2 8.2	8.2	29.3 29.3	29.3	98.3 96.6	97.5	6.5 6.4	6.5	6.2	0.5 0.5	0.5	1.1	2.8 2.9	2.9	3.6
				Middle	3	28.3 28.4	28.4	8.2 8.2	8.2	30.4 29.6	30.0	79.8 93.4	86.6	5.3 6.2	5.8		0.8 0.8	0.8		3.3 3.3	3.3	
				Bottom	5	27.9 28.0	28.0	8.2 8.2	8.2	32.1 32.3	32.2	68.6 70.4	69.5	4.5 4.6	4.6	4.6	1.7 2.0	1.9		4.7 4.7	4.7	
M2	Rainy	Moderate	08:21	Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	28.9 28.8	28.9	99.0 96.8	97.9	6.6 6.4	6.5	6.0	0.5 0.5	0.5	1.3	3.0 2.9	3.0	3.5
				Middle	6	27.9 27.8	27.9	8.2 8.2	8.2	32.4 32.4	32.4	84.5 82.5	83.5	5.5 5.4	5.5		1.4 1.6	1.5		3.9 4.0	4.0	
				Bottom	11	27.1 26.8	27.0	8.1 8.1	8.1	33.2 33.4	33.3	69.9 64.1	67.0	4.6 4.3	4.5	4.5	1.8 1.8	1.8		3.5 3.6	3.6	
M3	Rainy	Moderate	08:59	Surface	1	28.6 28.4	28.5	8.3 8.3	8.3	29.1 29.1	29.1	105.8 103.6	104.7	7.0 6.9	7.0	6.5	0.4 0.4	0.4	1.2	3.5 3.5	3.5	5.3
				Middle	4	27.9 27.4	27.7	8.2 8.2	8.2	31.2 31.2	31.2	88.0 89.4	88.7	5.8 5.9	5.9		1.0 0.9	1.0		7.3 7.5	7.4	
				Bottom	7	27.7 27.5	27.6	8.1 8.2	8.2	32.5 32.4	32.5	67.6 70.0	68.8	4.4 4.6	4.5	4.5	2.1 2.3	2.2		5.1 5.0	5.1	
M4	Rainy	Moderate	08:14	Surface	1	28.4 28.4	28.4	8.2 8.2	8.2	28.9 29.0	29.0	94.1 93.5	93.8	6.2 6.2	6.2	6.0	0.5 0.5	0.5	1.0	3.0 3.0	3.0	3.4
				Middle	5	28.3 28.3	28.3	8.2 8.2	8.2	30.5 30.1	30.3	84.2 89.3	86.8	5.5 5.9	5.7		0.7 0.7	0.7		2.6 2.5	2.6	
				Bottom	9	27.1 27.2	27.2	8.2 8.2	8.2	32.9 33.0	33.0	67.2 68.1	67.7	4.4 4.5	4.5	4.5	1.8 1.9	1.9		4.6 4.5	4.6	
M5	Rainy	Moderate	09:18	Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	29.5 29.5	29.5	85.9 84.2	85.1	5.7 5.6	5.7	5.4	0.8 0.8	0.8	2.2	4.6 4.6	4.6	4.2
				Middle	6	27.7 27.9	27.8	8.2 8.2	8.2	31.4 30.9	31.2	76.1 79.2	77.7	5.0 5.2	5.1		1.3 1.2	1.3		4.7 4.7	4.7	
				Bottom	11	26.6 26.8	26.7	8.1 8.2	8.2	33.5 33.3	33.4	66.5 67.6	67.1	4.4 4.5	4.5	4.5	4.6 4.4	4.5		3.2 3.2	3.2	
M6	Rainy	Moderate	09:10	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.2	- -	-	0.4	- -	-	3.3
				Middle	2.3	28.6 28.6	28.6	8.3 8.3	8.3	29.1 29.1	29.1	108.0 108.4	108.2	7.1 7.2	7.2		0.4 0.4	0.4		3.2 3.3	3.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 23 June 2018 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 8.2 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 8.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 23 June 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	Moderate	15:38	Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	28.7 28.7	28.7	97.9 96.4	97.2	6.5 6.4	6.5	5.8	1.0 1.0	1.0	3.2	5.3 5.4	5.4	7.2
				Middle	9	27.2 27.0	27.1	8.2 8.1	8.2	32.5 32.5	32.5	76.8 73.9	75.4	5.1 4.9	5.0		1.7 1.7	1.7		10.6 10.5	10.6	
				Bottom	17	25.8 25.8	25.8	8.1 8.1	8.1	33.7 33.6	33.7	66.7 66.1	66.4	4.5 4.5	4.5	4.5	6.8 6.7	6.8		5.5 5.6	5.6	
C2	Rainy	Moderate	14:15	Surface	1	28.6 28.6	28.6	8.1 8.1	8.1	27.1 27.1	27.1	80.5 80.7	80.6	5.4 5.4	5.4	5.1	1.4 1.3	1.4	2.9	4.6 4.6	4.6	5.2
				Middle	16	27.1 27.1	27.1	8.1 8.1	8.1	33.0 33.0	33.0	73.2 73.0	73.1	4.8 4.8	4.8		2.0 2.0	2.0		4.7 4.7	4.7	
				Bottom	31	26.4 26.4	26.4	8.1 8.1	8.1	33.3 33.3	33.3	67.0 66.9	67.0	4.5 4.5	4.5	4.5	5.5 5.1	5.3		6.2 6.3	6.3	
G1	Rainy	Moderate	14:54	Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	29.6 29.6	29.6	92.8 90.3	91.6	6.1 6.0	6.1	5.9	0.8 0.8	0.8	2.0	4.7 4.6	4.7	5.9
				Middle	4	28.1 28.0	28.1	8.2 8.2	8.2	30.3 30.4	30.4	86.1 84.3	85.2	5.7 5.6	5.7		1.3 1.4	1.4		6.7 6.9	6.8	
				Bottom	7	27.2 27.2	27.2	8.1 8.1	8.1	33.2 33.2	33.2	66.8 67.0	66.9	4.4 4.4	4.4	4.4	3.7 4.0	3.9		6.2 6.0	6.1	
G2	Rainy	Moderate	14:40	Surface	1	28.2 28.2	28.2	8.2 8.2	8.2	29.2 29.2	29.2	93.8 90.7	92.3	6.2 6.0	6.1	5.6	1.2 1.2	1.2	2.3	5.1 5.1	5.1	3.8
				Middle	5	27.8 27.5	27.7	8.2 8.2	8.2	31.4 32.4	31.9	78.7 75.1	76.9	5.2 5.0	5.1		1.2 1.1	1.2		2.5 2.4	2.5	
				Bottom	9	26.5 26.5	26.5	8.1 8.1	8.1	33.4 33.4	33.4	65.7 64.8	65.3	4.4 4.3	4.4	4.4	4.5 4.6	4.6		3.9 3.9	3.9	
G3	Rainy	Moderate	15:01	Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	29.4 29.5	29.5	91.9 89.0	90.5	6.1 5.9	6.0	5.9	0.7 0.8	0.8	1.3	3.1 3.1	3.1	3.7
				Middle	4	28.3 28.2	28.3	8.2 8.2	8.2	29.8 29.9	29.9	86.0 86.0	86.0	5.7 5.7	5.7		1.0 0.9	1.0		3.9 3.9	3.9	
				Bottom	7	27.8 27.8	27.8	8.2 8.1	8.2	32.3 32.3	32.3	65.0 64.9	65.0	4.3 4.3	4.3	4.3	2.3 2.0	2.2		4.2 4.2	4.2	
G4	Rainy	Moderate	15:15	Surface	1	28.4 28.3	28.4	8.3 8.2	8.3	29.2 29.2	29.2	100.4 97.2	98.8	6.6 6.4	6.5	6.0	1.2 1.2	1.2	3.4	5.8 5.7	5.8	6.4
				Middle	4.5	27.4 27.4	27.4	8.1 8.2	8.2	31.6 31.5	31.6	82.4 83.3	82.9	5.5 5.5	5.5		1.7 1.7	1.7		6.7 6.8	6.8	
				Bottom	8	27.0 26.9	27.0	8.1 8.1	8.1	33.3 33.4	33.4	71.1 66.2	68.7	4.7 4.4	4.6	4.6	7.2 7.1	7.2		6.9 6.3	6.6	
M1	Rainy	Moderate	14:47	Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	29.6 29.6	29.6	91.5 91.3	91.4	6.0 6.0	6.0	5.9	0.7 0.7	0.7	1.4	4.6 4.6	4.6	4.7
				Middle	3	28.3 28.3	28.3	8.2 8.2	8.2	29.9 29.9	29.9	88.2 88.2	88.2	5.8 5.8	5.8		0.8 0.8	0.8		5.2 5.1	5.2	
				Bottom	5	27.8 27.8	27.8	8.2 8.2	8.2	32.1 32.1	32.1	68.0 65.4	66.7	4.5 4.3	4.4	4.4	2.9 2.5	2.7		4.3 4.5	4.4	
M2	Rainy	Moderate	14:33	Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	29.4 29.4	29.4	96.9 94.8	95.9	6.4 6.3	6.4	5.7	0.8 0.7	0.8	2.5	3.9 3.7	3.8	4.4
				Middle	6	27.2 27.3	27.3	8.2 8.2	8.2	33.1 33.0	33.1	76.4 74.4	75.4	5.0 4.9	5.0		2.0 2.1	2.1		5.1 5.1	5.1	
				Bottom	11	26.3 26.4	26.4	8.1 8.1	8.1	33.5 33.5	33.5	68.7 68.1	68.4	4.6 4.6	4.6	4.6	4.6 4.7	4.7		4.4 4.4	4.4	
M3	Rainy	Moderate	15:07	Surface	1	28.4 28.4	28.4	8.2 8.2	8.2	29.5 29.5	29.5	96.6 95.7	96.2	6.4 6.3	6.4	6.3	0.8 0.8	0.8	3.4	2.4 2.5	2.5	3.2
				Middle	4	28.2 28.1	28.2	8.2 8.2	8.2	30.1 30.3	30.2	91.2 92.0	91.6	6.0 6.1	6.1		1.9 2.1	2.0		3.8 3.9	3.9	
				Bottom	7	27.1 27.0	27.1	8.1 8.1	8.1	33.3 33.3	33.3	65.9 67.5	66.7	4.4 4.5	4.5	4.5	7.9 7.0	7.5		3.3 3.3	3.3	
M4	Rainy	Moderate	14:25	Surface	1	28.3 28.4	28.4	8.3 8.2	8.3	28.8 29.3	29.1	108.2 103.5	105.9	7.2 6.8	7.0	6.8	0.6 0.6	0.6	0.9	5.0 4.9	5.0	4.3
				Middle	5	28.4 28.3	28.4	8.2 8.2	8.2	29.3 29.8	29.6	102.3 91.8	97.1	6.8 6.1	6.5		0.6 0.6	0.6		3.9 3.8	3.9	
				Bottom	9	27.8 27.8	27.8	8.1 8.2	8.2	31.4 31.4	31.4	73.0 74.9	74.0	4.8 4.9	4.9	4.9	1.4 1.4	1.4		4.0 4.0	4.0	
M5	Rainy	Moderate	15:30	Surface	1	28.0 28.0	28.0	8.2 8.1	8.2	29.6 29.6	29.6	75.5 75.5	75.5	5.0 5.0	5.0	5.0	1.8 1.7	1.8	2.9	4.0 3.9	4.0	3.8
				Middle	5.5	27.8 27.4	27.6	8.2 8.1	8.2	30.7 31.5	31.1	76.4 72.3	74.4	5.1 4.8	5.0		3.0 3.1	3.1		4.5 4.5	4.5	
				Bottom	10	26.4 26.7	26.6	8.1 8.1	8.1	33.3 32.8	33.1	65.4 66.6	66.0	4.4 4.4	4.4	4.4	3.6 3.7	3.7		2.9 2.9	2.9	
M6	Rainy	Moderate	15:22	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.3	- -	-	2.5	- -	-	4.1
				Middle	2.1	28.0 27.9	28.0	8.2 8.2	8.2	30.6 31.0	30.8	79.9 78.4	79.2	5.3 5.2	5.3		2.5 2.4	2.5		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 25 June 2018 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 8.2 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 8.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

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

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
				Surface	1	27.8 27.8	27.8	8.7 8.7	8.7	34.1 34.1	34.1	92.4 92.5	92.5	6.2 6.2	6.2	6.2	3.5 3.4	3.5		4.4 4.4	4.4	
C1	Cloudy	Moderate	11:29	Middle	9	27.9 27.8	27.9	8.6 8.7	8.7	34.1 34.1	34.1	91.8 91.5	91.7	6.1 6.1	6.1		3.2 3.4	3.3	3.4	6.5 6.1	6.3	5.7
				Bottom	17	27.8 27.9	27.9	8.7 8.8	8.8	34.1 34.1	34.1	91.1 91.1	91.1	6.1 6.1	6.1	6.1	3.4 3.2	3.3		6.5 6.2	6.4	
				Surface	1	27.8 27.8	27.8	8.2 8.1	8.2	33.7 33.7	33.7	85.0 85.0	85.0	5.7 5.7	5.7	5.7	3.1 3.2	3.2		5.2 5.1	5.2	
C2	Cloudy	Moderate	10:15	Middle	16.5	28.0 28.0	28.0	8.2 8.3	8.3	34.0 34.0	34.0	86.0 85.9	86.0	5.7 5.7	5.7		4.1 4.0	4.1	4.7	5.0 5.1	5.1	5.4
				Bottom	32	28.0 28.0	28.0	8.3 8.3	8.3	34.0 34.0	34.0	84.9 84.9	84.9	5.7 5.7	5.7	5.7	6.9 6.7	6.8		5.7 5.8	5.8	
				Surface	1	27.7 27.7	27.7	8.5 8.6	8.6	34.0 34.0	34.0	85.4 86.8	86.1	5.7 5.8	5.8	5.8	4.1 3.5	3.8		5.4 5.2	5.3	
G1	Cloudy	Moderate	10:49	Middle	4	27.7 27.7	27.7	8.5 8.6	8.6	34.0 34.0	34.0	85.2 86.1	85.7	5.7 5.8	5.8		3.9 3.4	3.7	3.7	5.6 5.6	5.6	5.2
				Bottom	7	27.7 27.7	27.7	8.5 8.7	8.6	34.0 34.0	34.0	84.8 86.1	85.5	5.7 5.8	5.8	5.8	3.8 3.5	3.7		4.6 4.7	4.7	
				Surface	1	27.9 27.9	27.9	8.4 8.5	8.5	34.1 34.1	34.1	89.5 89.9	89.7	6.0 6.0	6.0	6.0	3.8 3.9	3.9		4.6 4.7	4.7	
G2	Cloudy	Moderate	10:37	Middle	5	27.9 27.9	27.9	8.4 8.6	8.5	34.1 34.1	34.1	89.2 89.5	89.4	6.0 6.0	6.0		3.8 3.5	3.7	3.8	5.5 5.6	5.6	5.4
				Bottom	9	27.9 27.9	27.9	8.5 8.6	8.6	34.1 34.1	34.1	88.4 88.8	88.6	5.9 5.9	5.9	5.9	4.0 3.8	3.9		5.9 6.0	6.0	
				Surface	1	27.9 27.9	27.9	8.4 8.5	8.5	33.9 34.0	34.0	85.5 84.8	85.2	5.7 5.7	5.7	5.7	5.4 5.5	5.5		4.5 4.5	4.5	
G3	Cloudy	Moderate	10:56	Middle	4	27.9 27.9	27.9	8.2 8.6	8.4	34.0 34.0	34.0	83.9 83.5	83.7	5.6 5.6	5.6		6.1 6.9	6.5	6.5	6.4 6.4	6.4	5.2
				Bottom	7	27.9 27.9	27.9	8.4 8.6	8.5	34.0 34.0	34.0	82.1 82.2	82.2	5.5 5.5	5.5	5.5	7.6 7.3	7.5		4.8 4.8	4.8	
				Surface	1	27.8 27.8	27.8	8.6 8.6	8.6	33.9 33.9	33.9	83.7 84.3	84.0	5.6 5.6	5.6	5.7	4.2 4.3	4.3		5.2 5.3	5.3	
G4	Cloudy	Moderate	11:08	Middle	4.5	27.8 27.8	27.8	8.4 8.7	8.6	34.0 34.0	34.0	83.4 84.5	84.0	5.6 5.7	5.7		4.2 4.4	4.3	4.6	5.3 5.4	5.4	5.7
				Bottom	8	27.8 27.8	27.8	8.5 8.7	8.6	34.0 34.0	34.0	83.6 83.6	83.6	5.6 5.6	5.6	5.6	5.2 5.3	5.3		6.4 6.3	6.4	
				Surface	1	27.7 27.7	27.7	8.6 8.5	8.6	34.0 34.0	34.0	84.4 83.9	84.2	5.6 5.6	5.6	5.6	5.0 5.1	5.1		4.4 4.4	4.4	
M1	Cloudy	Moderate	10:42	Middle	3	27.7 27.7	27.7	8.4 8.5	8.5	34.0 34.0	34.0	83.8 83.8	83.8	5.6 5.6	5.6		5.1 5.0	5.1	5.1	5.0 5.0	5.0	5.1
				Bottom	5	27.7 27.7	27.7	8.4 8.6	8.5	34.0 34.0	34.0	83.4 83.7	83.6	5.6 5.6	5.6	5.6	5.0 4.9	5.0		5.8 5.9	5.9	
				Surface	1	27.8 27.9	27.9	8.0 8.2	8.1	34.1 34.1	34.1	88.9 89.1	89.0	5.9 5.9	5.9	5.9	4.6 3.8	4.2		4.9 5.0	5.0	
M2	Cloudy	Moderate	10:31	Middle	6	27.8 27.8	27.8	8.0 8.3	8.2	34.1 34.1	34.1	88.4 88.4	88.4	5.9 5.9	5.9		4.0 3.9	4.0	4.1	4.7 4.7	4.7	4.8
				Bottom	11	27.8 27.8	27.8	8.1 8.4	8.3	34.1 34.1	34.1	88.0 88.0	88.0	5.9 5.9	5.9	5.9	4.1 3.9	4.0		4.8 4.7	4.8	
				Surface	1	28.0 28.0	28.0	8.6 8.7	8.7	33.8 34.0	33.9	85.9 85.8	85.9	5.7 5.7	5.7	5.7	5.0 5.0	5.0		5.2 5.3	5.3	
M3	Cloudy	Moderate	11:02	Middle	4	28.0 27.9	28.0	8.6 8.7	8.7	34.0 34.0	34.0	85.4 84.7	85.1	5.7 5.7	5.7		4.8 5.0	4.9	5.6	5.9 5.9	5.9	5.6
				Bottom	7	27.9 27.9	27.9	8.6 8.7	8.7	34.0 34.0	34.0	82.3 82.4	82.4	5.5 5.5	5.5	5.5	6.9 6.7	6.8		5.6 5.7	5.7	
				Surface	1	28.0 28.0	28.0	8.2 8.2	8.2	34.0 34.0	34.0	88.6 88.1	88.4	5.9 5.9	5.9	5.9	3.7 3.8	3.8		5.6 5.7	5.7	
M4	Cloudy	Moderate	10:23	Middle	5	28.0 28.0	28.0	8.1 8.4	8.3	34.1 34.0	34.1	88.1 87.9	88.0	5.9 5.9	5.9		3.8 3.7	3.8	3.8	5.2 5.2	5.2	5.6
				Bottom	9	28.0 28.0	28.0	8.1 8.4	8.3	34.1 34.1	34.1	87.5 87.5	87.5	5.8 5.8	5.8	5.8	4.0 3.7	3.9		5.9 5.9	5.9	
				Surface	1	27.8 27.8	27.8	8.2 8.6	8.4	34.0 34.0	34.0	87.3 86.5	86.9	5.8 5.8	5.8	5.8	5.0 4.8	4.9		4.9 5.0	5.0	
M5	Cloudy	Moderate	11:21	Middle	5.5	27.8 27.8	27.8	8.2 8.6	8.4	34.0 34.0	34.0	85.5 85.8	85.7	5.7 5.7	5.7		4.8 4.7	4.8	5.0	5.6 5.7	5.7	4.9
				Bottom	10	27.8 27.8	27.8	8.4 8.7	8.6	34.0 34.0	34.0	84.8 85.1	85.0	5.7 5.7	5.7	5.7	5.3 5.1	5.2		4.1 4.0	4.1	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.5	- -	-		- -	-	
M6	Cloudy	Moderate	11:17	Middle	1.2	27.8 27.8	27.8	8.4 8.3	8.4	34.0 34.0	34.0	82.1 81.7	81.9	5.5 5.5	5.5		4.9 5.6	5.3	5.3	5.1 5.3	5.2	5.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

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

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 10.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 11.3 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 25 June 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*
				Surface	1	27.9 27.9	27.9	8.1 8.2	8.2	34.1 34.1	34.1	101.2 101.0	101.1	6.7 6.7	6.7	6.5	3.3 3.4	3.4		5.1 5.3	5.2	
C1	Cloudy	Moderate	18:02	Middle	9	27.9 27.9	27.9	8.1 8.2	8.2	34.1 34.1	34.1	93.8 94.5	94.2	6.3 6.3	6.3		4.1 4.4	4.3	5.5	5.0 5.0	5.0	5.3
				Bottom	17	27.8 27.8	27.8	8.2 8.3	8.3	34.2 34.2	34.2	89.6 90.1	89.9	6.0 6.0	6.0	6.0	8.7 8.7	8.7		5.7 5.5	5.6	
				Surface	1	28.1 28.2	28.2	8.5 8.5	8.5	33.9 33.9	33.9	96.6 97.3	97.0	6.4 6.5	6.5	6.2	3.4 3.1	3.3		5.5 5.5	5.5	
C2	Cloudy	Moderate	16:30	Middle	16.5	28.0 28.0	28.0	8.8 8.8	8.8	34.0 34.0	34.0	86.5 86.4	86.5	5.8 5.8	5.8		4.2 3.9	4.1	4.9	5.3 5.4	5.4	5.8
				Bottom	32	28.0 28.0	28.0	8.9 8.9	8.9	34.0 34.0	34.0	83.9 84.3	84.1	5.6 5.6	5.6	5.6	7.3 7.2	7.3		6.2 6.5	6.4	
				Surface	1	28.0 28.0	28.0	8.1 8.3	8.2	34.0 33.8	33.9	95.6 95.8	95.7	6.4 6.4	6.4	6.3	4.7 4.6	4.7		5.3 5.6	5.5	
G1	Cloudy	Moderate	17:18	Middle	4	27.8 27.9	27.9	8.1 8.3	8.2	34.0 34.0	34.0	90.7 91.7	91.2	6.1 6.1	6.1		5.0 5.8	5.4	5.0	5.4 5.5	5.5	5.4
				Bottom	7	27.8 27.8	27.8	8.2 8.3	8.3	34.1 34.1	34.1	90.0 89.5	89.8	6.0 6.0	6.0	6.0	4.6 5.1	4.9		5.2 5.1	5.2	
				Surface	1	28.0 28.0	28.0	8.3 8.4	8.4	33.9 33.9	33.9	100.5 100.4	100.5	6.7 6.7	6.7	6.7	3.8 3.8	3.8		5.4 5.8	5.6	
G2	Cloudy	Moderate	17:04	Middle	5	27.9 27.9	27.9	8.4 8.5	8.5	34.1 34.1	34.1	98.4 97.9	98.2	6.6 6.5	6.6		3.6 3.7	3.7	3.7	5.4 5.6	5.5	5.4
				Bottom	9	27.9 27.9	27.9	8.4 8.5	8.5	34.1 34.1	34.1	94.5 95.1	94.8	6.3 6.3	6.3	6.3	3.6 3.5	3.6		5.3 5.1	5.2	
				Surface	1	27.9 27.9	27.9	8.3 8.2	8.3	33.4 33.6	33.5	88.4 88.4	88.4	5.9 5.9	5.9	5.9	6.2 6.8	6.5		4.0 4.1	4.1	
G3	Cloudy	Moderate	17:27	Middle	4	27.9 27.9	27.9	8.3 8.3	8.3	33.7 33.9	33.8	88.0 86.7	87.4	5.9 5.8	5.9		9.5 8.6	9.1	8.4	5.2 5.2	5.2	5.2
				Bottom	7	27.8 27.8	27.8	8.4 8.4	8.4	33.9 34.0	34.0	86.7 85.7	86.2	5.8 5.7	5.8	5.8	9.3 9.7	9.5		6.2 6.1	6.2	
				Surface	1	28.1 28.1	28.1	8.1 8.1	8.1	33.9 34.0	34.0	93.1 93.5	93.3	6.2 6.2	6.2	6.2	4.5 4.6	4.6		5.3 5.3	5.3	
G4	Cloudy	Moderate	17:40	Middle	4.5	27.9 27.9	27.9	8.3 8.3	8.3	34.0 34.0	34.0	93.1 89.5	91.3	6.2 6.0	6.1		4.7 4.8	4.8	5.4	6.0 6.2	6.1	6.0
				Bottom	8	27.9 27.8	27.9	8.3 8.3	8.3	34.1 34.1	34.1	89.0 87.5	88.3	5.9 5.8	5.9	5.9	6.1 7.2	6.7		6.6 6.3	6.5	
				Surface	1	28.0 28.0	28.0	8.4 8.2	8.3	34.0 34.0	34.0	96.5 97.2	96.9	6.4 6.5	6.5	6.4	4.5 4.4	4.5		3.9 3.7	3.8	
M1	Cloudy	Moderate	17:11	Middle	3	27.9 27.9	27.9	8.2 8.4	8.3	34.1 34.0	34.1	92.5 90.8	91.7	6.2 6.1	6.2		5.0 5.2	5.1	5.4	3.4 3.5	3.5	4.1
				Bottom	5	27.8 27.8	27.8	8.2 8.4	8.3	34.0 34.0	34.0	89.8 88.7	89.3	6.0 5.9	6.0	6.0	6.3 6.9	6.6		5.0 5.1	5.1	
				Surface	1	28.0 28.0	28.0	8.3 8.4	8.4	34.0 34.0	34.0	101.3 102.1	101.7	6.7 6.8	6.8	6.7	3.6 3.6	3.6		4.9 4.8	4.9	
M2	Cloudy	Moderate	16:54	Middle	6	28.0 28.0	28.0	8.2 8.5	8.4	34.1 34.1	34.1	98.2 99.3	98.8	6.5 6.6	6.6		3.2 3.2	3.2	3.7	5.6 5.4	5.5	5.2
				Bottom	11	27.9 27.9	27.9	8.3 8.5	8.4	34.1 34.1	34.1	92.9 92.4	92.7	6.2 6.2	6.2	6.2	3.9 4.4	4.2		5.2 5.3	5.3	
				Surface	1	27.9 27.9	27.9	8.4 8.3	8.4	33.3 33.8	33.6	88.9 89.3	89.1	6.0 6.0	6.0	6.0	5.5 5.6	5.6		4.1 4.0	4.1	
M3	Cloudy	Moderate	17:33	Middle	4	27.9 27.9	27.9	8.3 8.4	8.4	33.9 34.0	34.0	87.7 86.8	87.3	5.9 5.8	5.9		6.0 6.4	6.2	6.1	4.1 4.0	4.1	4.7
				Bottom	7	27.8 27.8	27.8	8.3 8.4	8.4	34.0 34.0	34.0	87.1 86.0	86.6	5.8 5.7	5.8	5.8	5.8 6.9	6.4		5.9 5.8	5.9	
				Surface	1	28.1 28.1	28.1	8.4 8.6	8.5	34.0 34.0	34.0	102.9 103.6	103.3	6.8 6.9	6.9	6.9	3.7 3.4	3.6		4.1 4.0	4.1	
M4	Cloudy	Moderate	16:40	Middle	5	28.0 28.1	28.1	8.5 8.6	8.6	34.1 34.1	34.1	101.3 103.3	102.3	6.7 6.9	6.8		3.7 3.4	3.6	3.7	4.0 4.2	4.1	4.2
				Bottom	9	28.0 28.0	28.0	8.6 8.6	8.6	34.1 34.1	34.1	100.2 99.2	99.7	6.7 6.6	6.7	6.7	3.9 3.7	3.8		4.4 4.4	4.4	
				Surface	1	28.0 28.0	28.0	8.1 8.2	8.2	34.1 34.1	34.1	104.8 101.5	103.2	7.0 6.8	6.9	6.5	3.3 3.8	3.6		4.3 4.2	4.3	
M5	Cloudy	Moderate	17:54	Middle	5.5	27.8 27.8	27.8	8.3 8.2	8.3	34.1 34.1	34.1	90.3 90.3	90.3	6.0 6.0	6.0		5.4 5.5	5.5	4.7	4.9 4.7	4.8	5.1
				Bottom	10	27.9 27.9	27.9	8.4 8.3	8.4	34.1 34.1	34.1	90.3 91.8	91.1	6.0 6.1	6.1	6.1	5.0 4.8	4.9		6.3 6.3	6.3	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.0	- -	-		- -	-	
M6	Cloudy	Moderate	17:47	Middle	1.3	27.8 27.8	27.8	8.2 8.2	8.2	34.0 34.0	34.0	89.3 89.0	89.2	6.0 5.9	6.0		4.9 5.0	5.0	5.0	5.4 5.0	5.2	5.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged

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

Appendix I - Action and Limit Levels for Marine Water Quality on 27 June 2018 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 5.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.1 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.7 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 27 June 2018

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
C1	Sunny	Moderate	11:56	Surface	1	27.6 27.6	27.6	8.4 8.4	8.4	26.7 26.7	26.7	113.0 115.6	114.3	7.7 7.9	7.8	6.7	1.8 1.6	1.7	3.0	4.9 5.1	5.0	6.0
				Middle	9	26.3 26.3	26.3	8.3 8.3	8.3	28.5 28.5	28.5	79.6 78.9	79.3	5.5 5.4	5.5		2.1 2.0	2.1		6.1 6.3	6.2	
				Bottom	17	23.8 23.7	23.8	8.1 8.1	8.1	30.8 30.8	30.8	61.1 60.8	61.0	4.3 4.3	4.3	4.3	5.2 5.1	5.2		6.7 6.7	6.7	
C2	Sunny	Moderate	10:33	Surface	1	28.3 28.3	28.3	8.5 8.5	8.5	26.7 26.9	26.8	152.0 146.5	149.3	10.2 9.8	10.0	7.4	1.9 2.0	2.0	3.4	5.8 5.8	5.8	5.8
				Middle	16.5	25.0 25.2	25.1	8.2 8.2	8.2	29.8 29.7	29.8	67.2 67.0	67.1	4.7 4.7	4.7		3.5 3.6	3.6		5.6 5.6	5.6	
				Bottom	32	24.9 25.0	25.0	8.2 8.1	8.2	29.9 30.0	30.0	65.0 62.6	63.8	4.5 4.4	4.5	4.5	4.1 4.8	4.5		5.9 5.8	5.9	
G1	Sunny	Moderate	11:12	Surface	1	28.4 28.4	28.4	8.5 8.5	8.5	27.2 27.1	27.2	160.1 157.0	158.6	10.7 10.5	10.6	8.9	1.2 1.3	1.3	1.7	5.2 5.2	5.2	4.4
				Middle	4	27.1 27.1	27.1	8.3 8.3	8.3	27.8 27.8	27.8	102.4 108.9	105.7	7.0 7.4	7.2		1.9 1.7	1.8		5.3 5.3	5.3	
				Bottom	7	26.2 26.3	26.3	8.2 8.2	8.2	28.4 28.4	28.4	74.6 77.7	76.2	5.1 5.4	5.3	5.3	2.0 2.0	2.0		2.6 2.5	2.6	
G2	Sunny	Moderate	10:58	Surface	1	27.9 27.7	27.8	8.5 8.4	8.5	27.2 27.3	27.3	138.7 135.4	137.1	9.4 9.2	9.3	7.5	1.6 1.8	1.7	2.8	4.9 5.0	5.0	5.6
				Middle	5	26.3 26.5	26.4	8.3 8.3	8.3	28.3 28.2	28.3	81.1 85.1	83.1	5.6 5.8	5.7		2.3 2.2	2.3		5.5 5.5	5.5	
				Bottom	9	25.1 25.3	25.2	8.2 8.2	8.2	29.8 29.7	29.8	66.5 68.1	67.3	4.6 4.7	4.7	4.7	4.3 4.2	4.3		6.2 6.5	6.4	
G3	Sunny	Moderate	11:19	Surface	1	28.8 28.7	28.8	8.5 8.5	8.5	26.7 25.5	26.1	161.2 146.4	153.8	10.7 9.8	10.3	8.8	1.2 1.2	1.2	1.8	4.1 4.0	4.1	5.7
				Middle	4	27.3 27.1	27.2	8.4 8.3	8.4	27.7 27.9	27.8	109.5 102.0	105.8	7.4 6.9	7.2		1.9 1.9	1.9		6.6 6.5	6.6	
				Bottom	7	26.3 26.5	26.4	8.2 8.3	8.3	28.5 28.4	28.5	78.1 77.8	78.0	5.4 5.3	5.4	5.4	2.2 2.2	2.2		6.5 6.3	6.4	
G4	Sunny	Moderate	11:30	Surface	1	28.2 28.0	28.1	8.5 8.5	8.5	27.2 27.2	27.2	150.0 140.9	145.5	10.1 9.5	9.8	8.3	1.5 1.6	1.6	2.5	4.9 4.8	4.9	4.8
				Middle	4	27.0 26.7	26.9	8.3 8.3	8.3	27.9 28.0	28.0	100.9 94.7	97.8	6.9 6.5	6.7		1.8 2.0	1.9		4.6 4.4	4.5	
				Bottom	7	25.8 25.8	25.8	8.2 8.2	8.2	29.0 29.0	29.0	62.3 66.4	64.4	4.3 4.6	4.5	4.5	4.1 3.7	3.9		4.9 4.9	4.9	
M1	Sunny	Moderate	11:06	Surface	1	28.2 28.2	28.2	8.5 8.5	8.5	27.2 27.2	27.2	150.5 150.7	150.6	10.1 10.1	10.1	9.5	1.5 1.4	1.5	1.8	3.1 3.1	3.1	3.9
				Middle	3	27.7 27.8	27.8	8.4 8.5	8.5	27.3 27.3	27.3	130.7 133.2	132.0	8.8 9.0	8.9		1.9 1.7	1.8		3.1 3.1	3.1	
				Bottom	5	26.8 26.8	26.8	8.3 8.3	8.3	27.9 27.9	27.9	95.2 94.5	94.9	6.5 6.5	6.5	6.5	2.3 2.1	2.2		5.4 5.5	5.5	
M2	Sunny	Moderate	10:51	Surface	1	27.9 27.8	27.9	8.5 8.5	8.5	27.3 27.3	27.3	144.5 139.3	141.9	9.7 9.4	9.6	7.2	1.6 1.7	1.7	2.5	5.6 5.8	5.7	6.0
				Middle	6	25.6 25.6	25.6	8.2 8.2	8.2	29.3 29.3	29.3	66.2 69.6	67.9	4.6 4.8	4.7		2.0 2.0	2.0		5.5 5.7	5.6	
				Bottom	11	24.6 24.6	24.6	8.1 8.2	8.2	30.3 30.2	30.3	60.4 64.7	62.6	4.2 4.5	4.4	4.4	3.8 3.7	3.8		6.6 6.7	6.7	
M3	Sunny	Moderate	11:25	Surface	1	28.7 28.6	28.7	8.5 8.5	8.5	26.4 26.5	26.5	139.6 144.8	142.2	9.3 9.7	9.5	8.3	1.3 1.2	1.3	2.0	5.2 5.1	5.2	5.3
				Middle	4	27.1 27.0	27.1	8.3 8.3	8.3	27.9 28.0	28.0	103.1 102.6	102.9	7.0 7.0	7.0		1.9 2.2	2.1		5.2 5.3	5.3	
				Bottom	7	26.6 26.5	26.6	8.3 8.3	8.3	28.5 28.7	28.6	76.9 75.8	76.4	5.3 5.2	5.3	5.3	2.5 2.5	2.5		5.6 5.3	5.5	
M4	Sunny	Moderate	10:43	Surface	1	28.8 28.7	28.8	8.6 8.6	8.6	27.1 27.1	27.1	183.8 183.7	183.8	12.2 12.2	12.2	11.7	1.0 1.2	1.1	1.6	4.0 3.8	3.9	4.4
				Middle	5	28.1 28.1	28.1	8.6 8.6	8.6	27.2 27.2	27.2	165.0 166.4	165.7	11.1 11.2	11.2		1.5 1.5	1.5		4.6 4.6	4.6	
				Bottom	9	26.5 26.0	26.3	8.3 8.3	8.3	28.4 28.9	28.7	85.0 76.3	80.7	5.8 5.3	5.6	5.6	2.4 2.2	2.3		4.8 4.8	4.8	
M5	Sunny	Moderate	11:45	Surface	1	27.7 27.7	27.7	8.4 8.4	8.4	26.6 26.5	26.6	116.2 116.6	116.4	7.9 7.9	7.9	7.4	2.1 1.9	2.0	2.6	4.3 4.3	4.3	3.8
				Middle	5.5	27.0 27.6	27.3	8.3 8.4	8.4	27.7 27.0	27.4	98.7 100.1	99.4	6.7 6.8	6.8		2.6 2.3	2.5		4.9 4.9	4.9	
				Bottom	10	24.9 25.0	25.0	8.2 8.2	8.2	29.8 29.8	29.8	66.5 66.2	66.4	4.6 4.6	4.6	4.6	3.3 3.2	3.3		2.2 2.1	2.2	
M6	Sunny	Moderate	11:38	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	10.0	- -	-	1.6	- -	-	2.0
				Middle	1.3	28.2 28.4	28.3	8.5 8.5	8.5	27.2 27.2	27.2	145.0 152.4	148.7	9.7 10.2	10.0		1.6 1.5	1.6		2.0 2.0	2.0	
				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 27 June 2018 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.1 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 8.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 8.7 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 27 June 2018

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
				Surface	1	27.5 27.7	27.6	8.4 8.4	8.4	26.8 26.7	26.8	111.0 118.5	114.8	7.6 8.0	7.8	6.6	1.9 1.7	1.8		4.5 4.7	4.6	
C1	Sunny	Moderate	19:01	Middle	9	26.3 26.3	26.3	8.2 8.3	8.3	28.5 28.5	28.5	77.5 78.6	78.1	5.3 5.4	5.4		2.2 2.0	2.1	3.8	7.0 7.1	7.1	6.1
				Bottom	17	23.8 23.7	23.8	8.1 8.1	8.1	30.8 30.8	30.8	60.7 60.3	60.5	4.3 4.3	4.3	4.3	7.7 7.4	7.6		6.6 6.8	6.7	
				Surface	1	28.4 28.5	28.5	8.5 8.5	8.5	26.8 26.8	26.8	152.9 153.5	153.2	10.2 10.3	10.3	7.5	1.6 1.8	1.7		5.5 5.4	5.5	
C2	Sunny	Moderate	17:34	Middle	16.5	25.0 25.2	25.1	8.2 8.2	8.2	29.8 29.7	29.8	66.3 66.6	66.5	4.6 4.6	4.6		3.5 3.5	3.5	3.2	3.1 3.1	3.1	3.7
				Bottom	32	24.9 24.8	24.9	8.2 8.1	8.2	30.0 30.1	30.1	64.3 62.7	63.5	4.5 4.4	4.5	4.5	4.3 4.4	4.4		2.5 2.3	2.4	
				Surface	1	28.5 28.5	28.5	8.5 8.5	8.5	27.2 27.1	27.2	161.6 160.0	160.8	10.8 10.7	10.8	9.0	1.2 1.3	1.3		4.6 4.6	4.6	
G1	Sunny	Moderate	18:14	Middle	4	26.8 27.2	27.0	8.3 8.4	8.4	27.9 27.7	27.8	98.5 110.6	104.6	6.7 7.5	7.1		1.9 1.7	1.8	1.7	3.6 3.8	3.7	3.8
				Bottom	7	26.2 26.3	26.3	8.2 8.2	8.2	28.4 28.4	28.4	74.0 76.0	75.0	5.1 5.2	5.2	5.2	2.1 2.1	2.1		3.1 3.2	3.2	
				Surface	1	27.8 27.8	27.8	8.5 8.5	8.5	27.3 27.2	27.3	138.0 136.8	137.4	9.3 9.2	9.3	7.5	1.6 1.7	1.7		5.2 5.0	5.1	
G2	Sunny	Moderate	17:58	Middle	5	26.3 26.5	26.4	8.2 8.3	8.3	28.3 28.1	28.2	80.6 85.7	83.2	5.5 5.9	5.7		2.2 2.3	2.3	2.7	3.8 3.8	3.8	4.3
				Bottom	9	25.1 25.2	25.2	8.2 8.2	8.2	29.8 29.8	29.8	66.3 66.7	66.5	4.6 4.6	4.6	4.6	4.2 4.2	4.2		3.8 4.0	3.9	
				Surface	1	28.7 28.7	28.7	8.6 8.5	8.6	26.7 26.0	26.4	161.3 149.7	155.5	10.8 10.0	10.4	8.8	1.2 1.2	1.2		4.6 4.4	4.5	
G3	Sunny	Moderate	18:21	Middle	4	27.2 27.1	27.2	8.3 8.3	8.3	27.8 27.9	27.9	104.6 103.1	103.9	7.1 7.0	7.1		2.0 2.0	2.0	1.8	7.3 7.5	7.4	5.1
				Bottom	7	26.2 26.2	26.2	8.2 8.2	8.2	28.5 28.6	28.6	77.0 75.4	76.2	5.3 5.2	5.3	5.3	2.4 2.2	2.3		3.4 3.4	3.4	
				Surface	1	28.3 28.0	28.2	8.5 8.5	8.5	27.2 27.2	27.2	153.0 146.4	149.7	10.3 9.9	10.1	8.4	1.5 1.6	1.6		2.2 2.3	2.3	
G4	Sunny	Moderate	18:34	Middle	4	26.9 26.8	26.9	8.3 8.3	8.3	27.9 28.0	28.0	99.1 94.5	96.8	6.8 6.5	6.7		1.9 2.0	2.0	2.4	5.8 5.7	5.8	4.9
				Bottom	7	25.8 25.8	25.8	8.2 8.2	8.2	29.0 29.0	29.0	62.2 63.4	62.8	4.3 4.4	4.4	4.4	3.6 3.6	3.6		6.7 6.7	6.7	
				Surface	1	28.2 28.3	28.3	8.5 8.5	8.5	27.2 27.2	27.2	149.0 154.0	151.5	10.0 10.3	10.2	9.5	1.4 1.2	1.3		3.6 3.7	3.7	
M1	Sunny	Moderate	18:07	Middle	3	27.7 27.7	27.7	8.4 8.4	8.4	27.4 27.3	27.4	130.3 130.8	130.6	8.8 8.8	8.8		1.7 1.9	1.8	1.8	4.6 4.3	4.5	4.6
				Bottom	5	26.8 26.8	26.8	8.3 8.3	8.3	27.8 27.9	27.9	94.6 94.3	94.5	6.5 6.5	6.5	6.5	2.2 2.1	2.2		5.4 5.9	5.7	
				Surface	1	28.0 27.8	27.9	8.5 8.5	8.5	27.3 27.3	27.3	148.5 140.4	144.5	10.0 9.5	9.8	7.2	1.5 1.5	1.5		5.6 5.4	5.5	
M2	Sunny	Moderate	17:51	Middle	6	25.5 25.6	25.6	8.2 8.2	8.2	29.4 29.3	29.4	64.2 66.5	65.4	4.5 4.6	4.6		2.0 2.1	2.1	2.5	3.0 3.0	3.0	4.7
				Bottom	11	24.6 24.6	24.6	8.1 8.1	8.1	30.2 30.2	30.2	62.0 63.1	62.6	4.3 4.4	4.4	4.4	3.9 3.6	3.8		5.6 5.7	5.7	
				Surface	1	28.6 28.6	28.6	8.5 8.5	8.5	26.5 26.4	26.5	145.8 148.5	147.2	9.8 9.9	9.9	8.4	1.3 1.1	1.2		4.5 4.2	4.4	
M3	Sunny	Moderate	18:27	Middle	4	27.0 27.0	27.0	8.3 8.3	8.3	28.0 28.0	28.0	100.1 100.1	100.1	6.8 6.8	6.8		1.9 2.1	2.0	2.0	4.3 4.2	4.3	3.8
				Bottom	7	26.4 26.4	26.4	8.2 8.2	8.2	28.7 28.7	28.7	75.2 74.2	74.7	5.2 5.1	5.2	5.2	2.8 2.9	2.9		2.7 2.8	2.8	
				Surface	1	28.8 28.7	28.8	8.6 8.6	8.6	27.1 27.1	27.1	183.8 184.4	184.1	12.2 12.3	12.3	11.7	1.0 1.1	1.1		4.7 4.3	4.5	
M4	Sunny	Moderate	17:43	Middle	5	28.0 28.1	28.1	8.6 8.6	8.6	27.2 27.2	27.2	163.6 165.3	164.5	11.0 11.1	11.1		1.6 1.6	1.6	1.6	5.6 5.6	5.6	5.2
				Bottom	9	26.3 26.1	26.2	8.3 8.2	8.3	28.5 28.8	28.7	78.6 77.0	77.8	5.4 5.3	5.4	5.4	2.3 2.1	2.2		5.4 5.3	5.4	
				Surface	1	27.6 27.8	27.7	8.4 8.4	8.4	26.7 26.2	26.5	115.2 118.9	117.1	7.8 8.1	8.0	7.8	1.5 1.8	1.7		5.2 5.0	5.1	
M5	Sunny	Moderate	18:51	Middle	5.5	27.1 27.6	27.4	8.3 8.4	8.4	27.5 27.1	27.3	99.3 119.0	109.2	6.8 8.1	7.5		2.8 2.5	2.7	2.6	4.8 4.8	4.8	4.7
				Bottom	10	24.9 25.0	25.0	8.2 8.2	8.2	29.8 29.7	29.8	66.3 66.8	66.6	4.6 4.7	4.7	4.7	3.2 3.4	3.3		4.0 4.1	4.1	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	10.1	- -	-		- -	-	
M6	Sunny	Moderate	18:43	Middle	1.3	28.3 28.4	28.4	8.5 8.5	8.5	27.2 27.2	27.2	148.8 152.2	150.5	10.0 10.2	10.1		1.5 1.5	1.5	1.5	4.3 4.2	4.3	4.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 29 June 2018 (Mid-Ebb Tide)

<table>
<tr><th><u>Parameter (unit)</u></th><th><u>Depth</u></th><th>Action Level</th><th>Limit Level</th></tr>
<tr><td rowspan="6">DO in mg/L
(See Note 1 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Depth Average</td><td><u>4.9 mg/L</u></td><td><u>4.6 mg/L</u></td></tr>
<tr><td>Bottom</td><td><u>4.2 mg/L</u></td><td><u>3.6 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>5.0 mg/L</u></td><td><u>4.7 mg/L</u></td></tr>
<tr><td rowspan="4">Turbidity in NTU
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>19.3 NTU</u>
or 120% of upstream control station's Turbidity at the same tide of the same day
<u>C2: 6.0 NTU</u></td><td><u>22.2 NTU</u>
or 130% of upstream control station's Turbidity at the same tide of the same day
<u>C2: 6.5 NTU</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>19.0 NTU</u></td><td><u>19.4 NTU</u></td></tr>
<tr><td rowspan="8">SS in mg/L
(See Note 2 and 4)</td><td colspan="3"><u>Stations G1-G4</u></td></tr>
<tr><td>Surface</td><td><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></td><td><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></td></tr>
<tr><td colspan="3"><u>Stations M1-M5</u></td></tr>
<tr><td>Surface</td><td><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></td><td><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></td></tr>
<tr><td colspan="3"><u>Stations G1-G4, M1-M5</u></td></tr>
<tr><td>Bottom</td><td><u>6.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day
<u>C2: 8.2 mg/L</u></td><td><u>7.9 mg/L</u>
or 130% of upstream control station's SS at the same tide of the same day
<u>C2: 8.8 mg/L</u></td></tr>
<tr><td colspan="3"><u>Station M6</u></td></tr>
<tr><td>Intake Level</td><td><u>8.3 mg/L</u></td><td><u>8.6 mg/L</u></td></tr>
</table>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 29 June 2018

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
C1	Sunny	Moderate	14:12	Surface	1	26.8 26.7	26.8	7.8 7.8	7.8	29.4 29.5	29.5	86.3 84.8	85.6	5.9 5.8	5.9	5.3	3.3 3.3	3.3		4.9 4.9	4.9	
				Middle	9.5	25.5 25.6	25.6	7.8 7.8	7.8	31.4 31.2	31.3	67.4 68.9	68.2	4.6 4.7	4.7		3.1 3.2	3.2	3.1	5.0 5.1	5.1	5.0
				Bottom	18	25.5 25.3	25.4	7.8 7.8	7.8	31.3 31.6	31.5	67.9 69.8	68.9	4.7 4.8	4.8	4.8	3.0 2.8	2.9		5.1 5.0	5.1	
C2	Sunny	Moderate	12:20	Surface	1	27.6 27.6	27.6	7.8 7.9	7.9	28.6 28.5	28.6	102.1 103.5	102.8	6.9 7.0	7.0	5.8	2.2 2.3	2.3		5.2 5.1	5.2	
				Middle	16.5	24.5 24.5	24.5	7.7 7.7	7.7	32.7 32.7	32.7	64.4 64.9	64.7	4.5 4.5	4.5		5.1 4.4	4.8	4.0	6.4 6.2	6.3	6.1
				Bottom	32	24.3 24.2	24.3	7.7 7.7	7.7	33.0 33.1	33.1	62.1 61.3	61.7	4.3 4.3	4.3	4.3	5.2 4.8	5.0		6.7 6.9	6.8	
G1	Sunny	Moderate	13:15	Surface	1	26.8 27.1	27.0	8.0 8.0	8.0	30.7 30.6	30.7	119.5 120.2	119.9	8.0 8.1	8.1	7.7	1.2 1.2	1.2		5.3 5.3	5.3	
				Middle	4	26.5 26.5	26.5	7.9 7.9	7.9	30.9 31.0	31.0	108.1 106.2	107.2	7.3 7.2	7.3		1.0 1.0	1.0	1.4	5.4 5.3	5.4	5.1
				Bottom	7	25.7 25.7	25.7	7.8 7.8	7.8	31.9 31.9	31.9	64.4 65.0	64.7	4.4 4.4	4.4	4.4	2.0 1.8	1.9		4.7 4.6	4.7	
G2	Sunny	Moderate	12:58	Surface	1	27.7 27.6	27.7	8.0 8.0	8.0	30.1 30.1	30.1	136.1 136.0	136.1	9.1 9.1	9.1	8.6	0.9 0.8	0.9		5.2 5.2	5.2	
				Middle	5	27.0 27.1	27.1	8.0 8.0	8.0	30.5 30.5	30.5	119.5 121.1	120.3	8.0 8.1	8.1		0.9 0.9	0.9	1.1	8.4 8.3	8.4	6.6
				Bottom	9	25.5 25.4	25.5	7.8 7.8	7.8	32.0 32.1	32.1	66.8 65.3	66.1	4.6 4.5	4.6	4.6	1.5 1.5	1.5		6.3 6.1	6.2	
G3	Sunny	Moderate	13:27	Surface	1	27.2 27.3	27.3	7.8 7.8	7.8	30.7 30.6	30.7	92.6 91.6	92.1	6.2 6.1	6.2	5.6	3.0 3.2	3.1		4.6 4.6	4.6	
				Middle	4	25.9 25.9	25.9	7.8 7.8	7.8	31.6 31.6	31.6	71.3 71.6	71.5	4.9 4.9	4.9		1.9 1.9	1.9	2.3	5.0 4.8	4.9	4.7
				Bottom	7	25.5 25.5	25.5	7.8 7.8	7.8	32.0 31.9	32.0	62.7 64.2	63.5	4.3 4.4	4.4	4.4	1.8 1.7	1.8		4.6 4.6	4.6	
G4	Sunny	Moderate	13:44	Surface	1	26.8 26.9	26.9	8.0 8.0	8.0	30.4 30.4	30.4	115.1 116.3	115.7	7.8 7.8	7.8	7.4	1.7 1.7	1.7		3.1 3.1	3.1	
				Middle	4	26.4 26.4	26.4	7.9 7.9	7.9	30.8 30.8	30.8	101.5 101.6	101.6	6.9 6.9	6.9		1.8 1.9	1.9	1.7	5.1 5.1	5.1	5.0
				Bottom	7	26.0 26.1	26.1	7.9 7.9	7.9	31.5 31.4	31.5	87.4 89.1	88.3	5.9 6.1	6.0	6.0	1.4 1.3	1.4		6.8 6.5	6.7	
M1	Sunny	Moderate	13:07	Surface	1	27.6 27.6	27.6	7.9 7.9	7.9	30.3 30.3	30.3	115.9 116.8	116.4	7.7 7.8	7.8	7.9	1.4 1.4	1.4		3.9 3.8	3.9	
				Middle	3	27.1 27.1	27.1	8.0 8.0	8.0	30.5 30.5	30.5	119.5 119.3	119.4	8.0 8.0	8.0		1.3 1.3	1.3	1.3	5.2 5.3	5.3	5.3
				Bottom	5	26.5 26.4	26.5	7.9 7.9	7.9	31.0 31.0	31.0	104.2 105.0	104.6	7.0 7.1	7.1	7.1	1.3 1.2	1.3		6.8 6.6	6.7	
M2	Sunny	Moderate	12:48	Surface	1	27.6 27.6	27.6	8.0 8.0	8.0	30.0 30.0	30.0	134.2 134.1	134.2	9.0 8.9	9.0	8.1	0.8 0.8	0.8		3.9 3.9	3.9	
				Middle	5.5	26.6 26.5	26.6	7.9 7.9	7.9	30.8 30.9	30.9	106.9 104.9	105.9	7.2 7.1	7.2		1.1 1.2	1.2	1.2	3.0 3.1	3.1	3.5
				Bottom	10	25.0 24.8	24.9	7.7 7.7	7.7	32.5 32.8	32.7	64.8 64.2	64.5	4.5 4.4	4.5	4.5	1.7 1.6	1.7		3.5 3.4	3.5	
M3	Sunny	Moderate	13:35	Surface	1	27.1 27.1	27.1	7.8 7.8	7.8	30.8 30.8	30.8	81.9 86.4	84.2	5.5 5.8	5.7	5.5	2.1 2.2	2.2		4.4 4.1	4.3	
				Middle	4	26.1 26.1	26.1	7.8 7.8	7.8	31.6 31.6	31.6	75.9 75.9	75.9	5.2 5.2	5.2		1.7 1.8	1.8	2.0	3.9 3.5	3.7	4.5
				Bottom	7	25.5 25.4	25.5	7.7 7.7	7.7	32.1 32.1	32.1	67.8 66.4	67.1	4.6 4.5	4.6	4.6	1.9 2.0	2.0		5.5 5.6	5.6	
M4	Sunny	Moderate	12:36	Surface	1	27.9 27.9	27.9	8.0 8.0	8.0	30.2 30.2	30.2	128.7 131.3	130.0	8.5 8.7	8.6	8.2	0.8 0.8	0.8		3.5 3.5	3.5	
				Middle	4.5	27.0 27.1	27.1	7.9 7.9	7.9	30.6 30.4	30.5	113.9 118.4	116.2	7.7 7.9	7.8		1.3 1.1	1.2	1.2	3.5 3.4	3.5	4.4
				Bottom	8	26.3 26.4	26.4	7.8 7.9	7.9	31.1 31.0	31.1	91.3 93.8	92.6	6.2 6.4	6.3	6.3	1.4 1.6	1.5		6.3 6.3	6.3	
M5	Sunny	Moderate	14:01	Surface	1	26.7 26.7	26.7	7.9 7.9	7.9	29.9 29.9	29.9	92.9 92.5	92.7	6.3 6.3	6.3	6.3	2.7 2.8	2.8		5.0 5.0	5.0	
				Middle	5	26.6 26.6	26.6	7.9 7.9	7.9	30.2 30.2	30.2	92.5 92.0	92.3	6.3 6.2	6.3		2.7 2.7	2.7	2.8	5.1 5.2	5.2	5.2
				Bottom	9	26.6 26.5	26.6	7.9 7.9	7.9	30.2 30.2	30.2	90.6 91.3	91.0	6.1 6.2	6.2	6.2	2.7 2.8	2.8		5.4 5.4	5.4	
M6	Sunny	Moderate	13:53	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.3	- -	-		- -	-	
				Middle	2	26.6 26.6	26.6	7.9 7.9	7.9	30.6 30.6	30.6	107.8 107.2	107.5	7.3 7.2	7.3		1.5 1.6	1.6	1.6	3.7 3.6	3.7	3.7
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Appendix I - Action and Limit Levels for Marine Water Quality on 29 June 2018 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 4.7 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.6 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.6 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 8.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

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

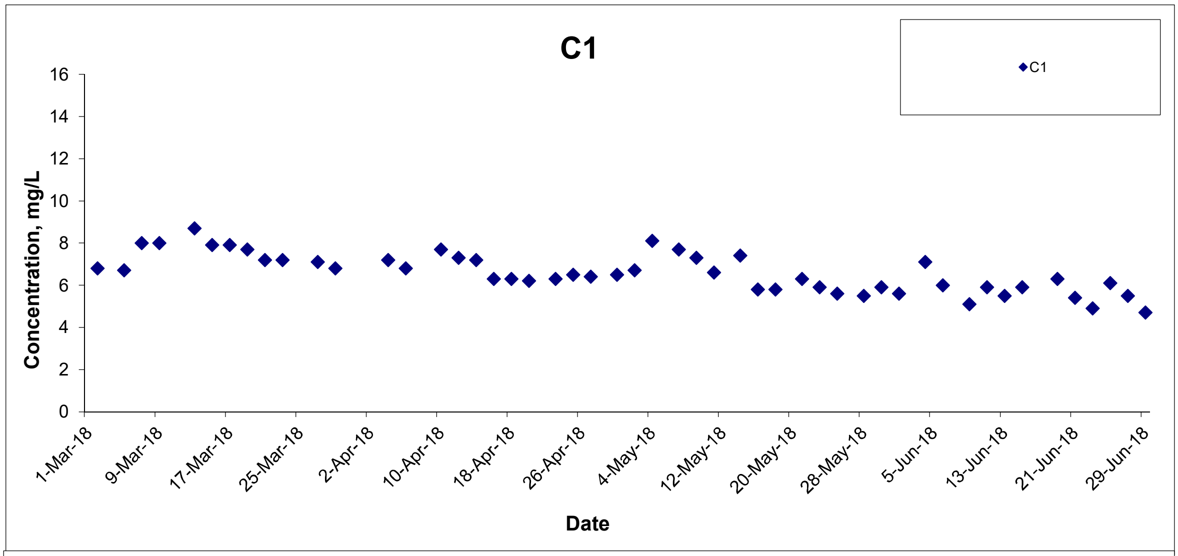
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 29 June 2018

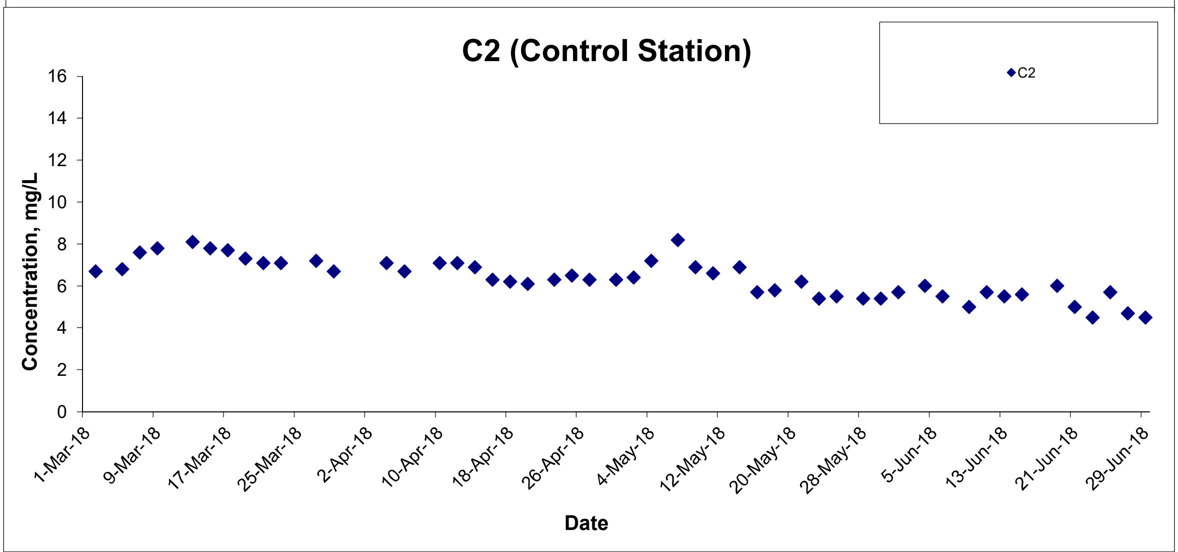
(Mid-Flood Tide)

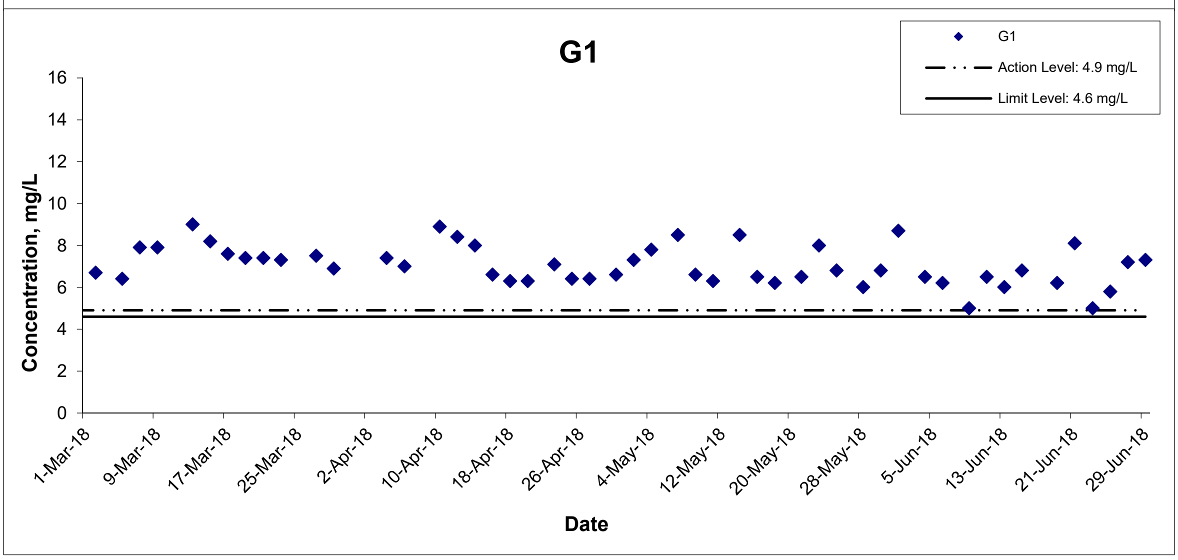
Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Fine	Moderate	21:10	Surface	1	27.1	27.1	8.0	8.0	29.3	29.4	108.1	107.6	7.3	7.3	6.0	1.2	1.2	2.4	5.4	5.5	5.4
						27.0		8.0		29.4		107.1		7.2			1.2			5.6		
				Middle	9.5	24.8	24.8	7.8	7.8	32.5	32.5	68.4	68.3	4.7	4.7		2.0	2.0		4.4	4.4	
						24.8		7.8		32.5		68.2		4.7			1.9			4.4		
				Bottom	18	23.4	23.4	7.8	7.8	33.8	33.8	62.3	62.3	4.4	4.4	4.4	3.8	3.9		6.2	6.4	
						23.4		7.8		33.8		62.3		4.4			3.9			6.5		
C2	Fine	Moderate	18:57	Surface	1	27.3	27.3	8.0	8.0	29.7	29.7	123.0	123.6	8.3	8.3	7.1	1.8	1.8	1.8	2.8	2.8	3.5
						27.3		8.0		29.7		124.1		8.3			1.8			2.8		
				Middle	16.5	25.9	25.9	7.8	7.8	31.3	31.3	85.1	85.0	5.8	5.8		1.7	1.8		4.3	4.3	
						25.8		7.8		31.3		84.8		5.8			1.8			4.3		
				Bottom	32	25.3	25.4	7.8	7.8	31.8	31.8	70.4	71.9	4.8	4.9	4.9	2.0	1.9		3.5	3.5	
						25.5		7.8		31.7		73.3		5.0			1.7			3.5		
G1	Fine	Moderate	20:00	Surface	1	27.3	27.3	8.1	8.1	30.1	30.1	129.4	129.3	8.7	8.7	7.5	1.1	1.1	1.8	5.5	5.6	5.6
						27.3		8.1		30.1		129.2		8.7			1.1			5.6		
				Middle	4	26.3	26.3	7.9	7.9	31.0	31.0	88.0	90.6	6.0	6.2		2.1	2.1		5.5	5.5	
						26.3		7.9		31.0		93.2		6.3			2.1			5.5		
				Bottom	7	24.6	24.6	7.8	7.8	32.6	32.6	68.2	67.9	4.7	4.7	4.7	2.2	2.2		5.7	5.7	
						24.6		7.8		32.6		67.6		4.7			2.2			5.7		
G2	Fine	Moderate	19:33	Surface	1	27.3	27.3	8.1	8.1	30.3	30.3	128.6	128.2	8.6	8.6	7.0	1.2	1.2	2.4	4.1	4.1	5.4
						27.3		8.0		30.3		127.8		8.6			1.2			4.1		
				Middle	5	25.7	25.6	7.9	7.9	31.4	31.6	78.3	78.4	5.4	5.4		1.9	1.8		5.3	5.4	
						25.4		7.8		31.7		78.5		5.4			1.7			5.5		
				Bottom	9	24.1	24.1	7.7	7.7	33.2	33.2	69.5	68.5	4.8	4.8	4.8	4.3	4.3		6.6	6.6	
						24.1		7.7		33.2		67.4		4.7			4.2			6.5		
G3	Fine	Moderate	20:13	Surface	1	27.3	27.3	8.1	8.1	30.0	30.0	127.0	127.0	8.5	8.5	7.4	1.2	1.2	1.8	5.1	5.1	5.2
						27.3		8.1		30.0		126.9		8.5			1.2			5.1		
				Middle	4	26.5	26.4	7.9	7.9	30.9	31.0	91.7	91.4	6.2	6.2		2.3	2.3		4.7	4.7	
						26.3		7.9		31.0		91.0		6.2			2.2			4.7		
				Bottom	7	24.6	24.6	7.8	7.8	32.6	32.6	66.3	66.1	4.6	4.6	4.6	1.8	1.9		5.8	5.8	
						24.5		7.8		32.6		65.9		4.6			2.0			5.8		
G4	Fine	Moderate	20:38	Surface	1	27.3	27.3	8.1	8.1	30.1	30.1	127.6	127.6	8.6	8.6	7.2	1.1	1.1	2.5	5.4	5.5	5.7
						27.3		8.1		30.1		127.5		8.5			1.1			5.5		
				Middle	4	26.2	26.2	7.9	7.9	31.1	31.1	85.8	86.0	5.8	5.8		2.9	2.9		5.5	5.5	
						26.2		7.9		31.1		86.1		5.8			2.8			5.5		
				Bottom	7	24.7	24.7	7.8	7.8	32.5	32.5	66.0	65.6	4.6	4.6	4.6	3.2	3.5		6.2	6.2	
						24.7		7.8		32.5		65.2		4.5			3.7			6.1		
M1	Fine	Moderate	19:50	Surface	1	27.4	27.4	8.1	8.1	30.1	30.1	130.3	130.2	8.7	8.7	8.7	1.3	1.3	2.1	3.5	3.5	5.0
						27.4		8.1		30.1		130.0		8.7			1.3			3.5		
				Middle	3	27.4	27.4	8.1	8.1	30.3	30.3	129.1	129.3	8.6	8.7		1.3	1.4		7.4	7.6	
						27.4		8.1		30.3		129.4		8.7			1.4			7.7		
				Bottom	5	25.5	25.5	7.8	7.8	31.7	31.7	79.8	79.8	5.5	5.5	5.5	3.5	3.7		3.7	3.8	
						25.5		7.8		31.7		79.7		5.5			3.9			3.8		
M2	Fine	Moderate	19:21	Surface	1	27.5	27.5	8.1	8.1	30.2	30.2	146.1	145.2	9.8	9.7	7.1	0.9	0.9	2.5	3.3	3.4	5.0
						27.4		8.1		30.2		144.2		9.6			0.9			3.4		
				Middle	5.5	25.0	25.0	7.8	7.8	32.2	32.3	65.4	65.1	4.5	4.5		2.3	2.3		5.7	5.7	
						25.0		7.8		32.3		64.7		4.5			2.3			5.6		
				Bottom	10	24.2	24.2	7.7	7.7	33.2	33.3	63.9	63.7	4.4	4.4	4.4	4.4	4.3		5.6	5.8	
						24.2		7.7		33.3		63.5		4.4			4.2			5.9		
M3	Fine	Moderate	20:23	Surface	1	27.3	27.3	8.1	8.1	30.0	30.0	126.0	126.1	8.4	8.5	6.5	1.2	1.2	2.8	3.8	3.8	4.8
						27.3		8.1		30.0		126.1		8.5			1.2			3.8		
				Middle	4	25.4	25.4	7.8	7.8	31.9	31.9	63.6	63.6	4.4	4.4		5.0	5.0		4.5	4.6	
						25.4		7.8		31.9		63.5		4.4			4.9			4.6		
				Bottom	7	24.5	24.5	7.8	7.8	32.7	32.7	64.8	64.6	4.5	4.5	4.5	2.1	2.2		5.9	5.9	
						24.5		7.8		32.7		64.4		4.5			2.3			5.9		
M4	Fine	Moderate	19:10	Surface	1	27.5	27.5	8.1	8.1	30.3	30.3	144.9	143.1	9.7	9.6	8.5	0.9	1.0	1.8	4.5	4.5	4.7
						27.4		8.1		30.3		141.3		9.4			1.0			4.4		
				Middle	5	26.6	26.6	7.9	7.9	30.6	30.7	108.5	107.2	7.3	7.3		1.5	1.6		4.2	4.2	
						26.5		7.9		30.7		105.9		7.2			1.6			4.1		
				Bottom	9	25.8	25.8	7.9	7.9	31.4	31.4	82.1	81.5	5.6	5.6	5.6	3.0	2.9		5.2	5.3	
						25.8		7.8		31.4		80.8		5.5			2.8			5.3		
M5	Fine	Moderate	20:57	Surface	1	27.0	27.0	8.0	8.0	29.7	29.8	110.0	109.9	7.4	7.4	6.4	2.0	1.9	3.2	5.1	5.1	4.3
						27.0		8.0		29.8		109.7		7.4			1.8			5.1		
				Middle	5	25.7	25.8	7.8	7.9	31.6	31.5	75.9	76.7	5.2	5.3		3.3	3.3		4.1	4.2	
						25.9		7.9		31.4		77.4		5.3			3.3			4.2		
				Bottom	9	24.2	24.2	7.8	7.8	33.0	33.0	63.1	62.8	4.4	4.4	4.4	4.2	4.3		3.6	3.6	
						24.2		7.8		33.0		62.5		4.3			4.4			3.5		
M6	Fine	Moderate	20:49	Surface	-	-	-	-	-	-	-	-	-	-	-	8.4	-	-	1.1	-	-	4.7
						-		-		-		-		-			-			-		
				Middle	2.1	27.2	27.2	8.1	8.1	30.0	30.0	125.0	125.0	8.4	8.4		1.2	1.1		4.7	4.7	
						27.2		8.1		30.0		124.9		8.4			1.0			4.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

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

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







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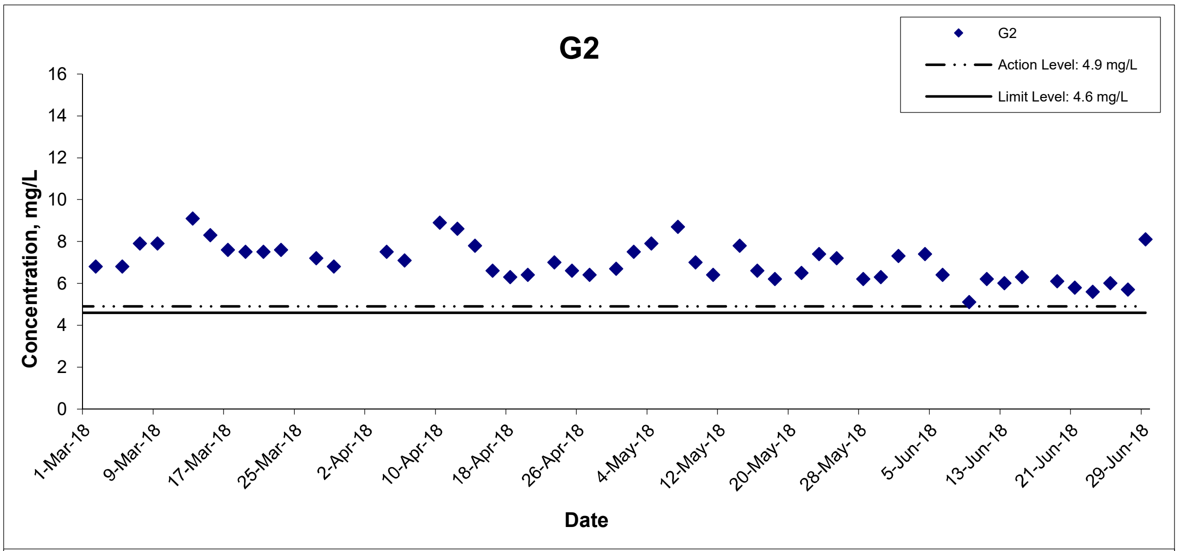
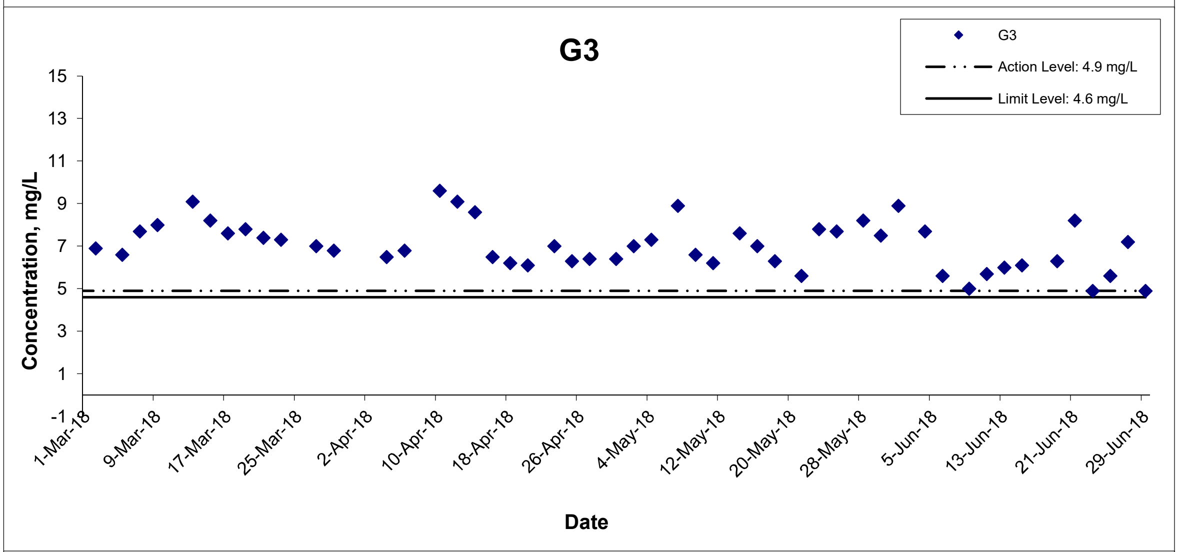
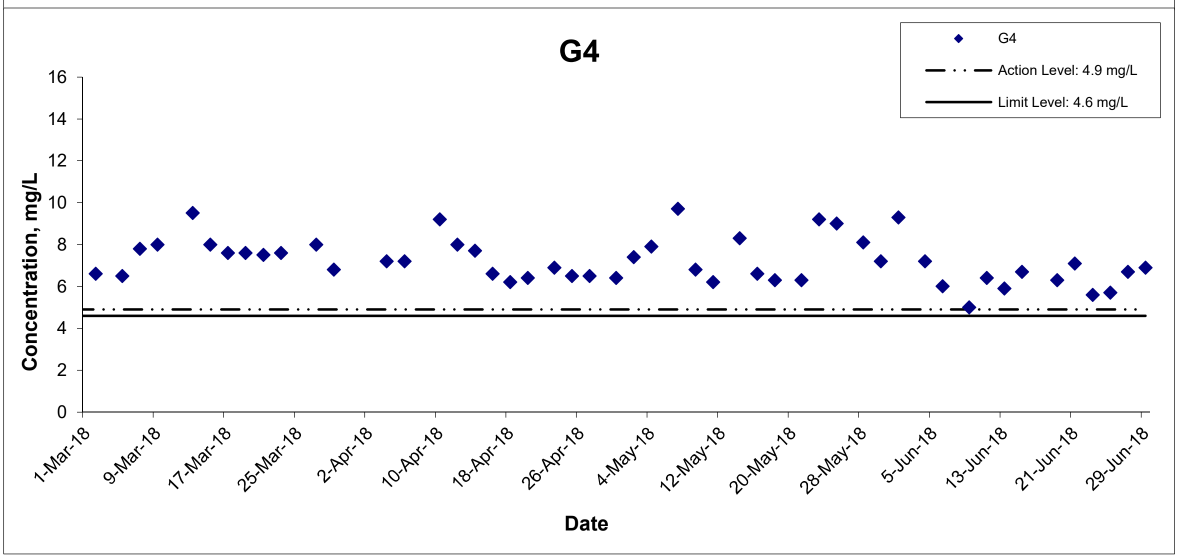
Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide







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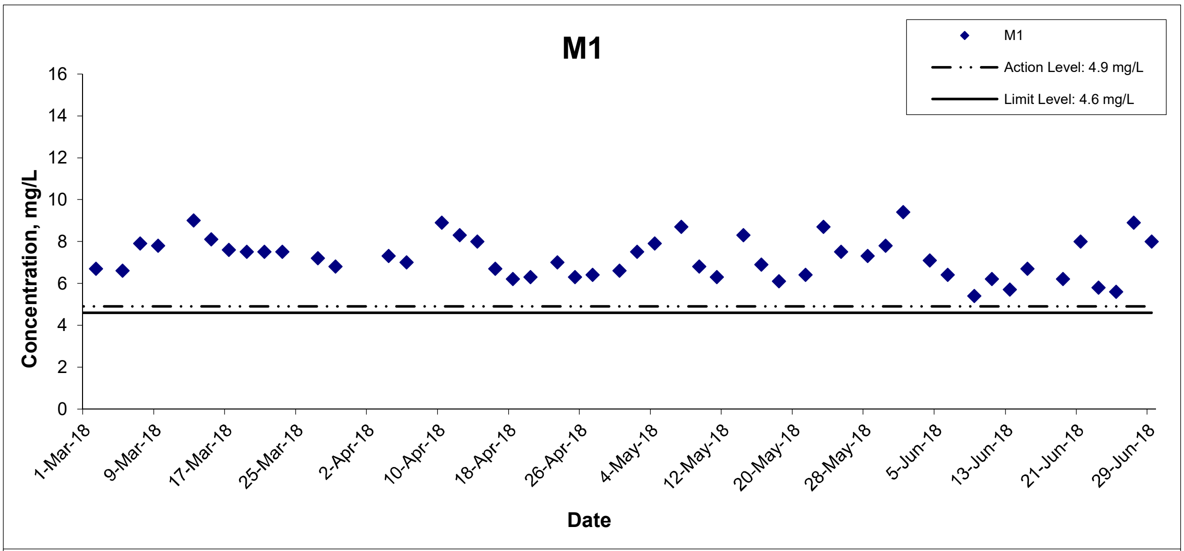
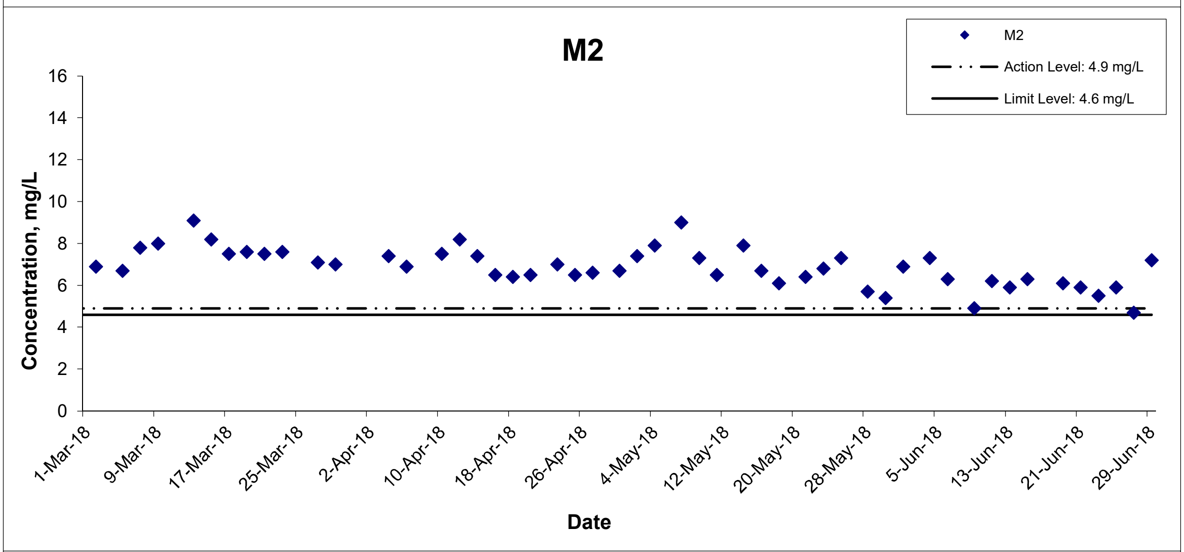
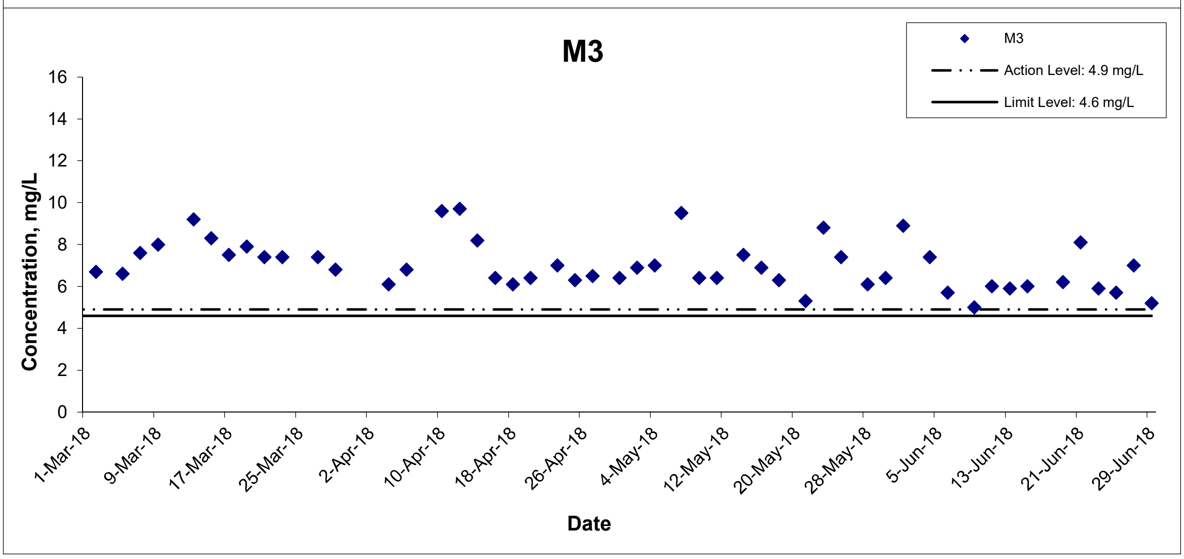
Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide







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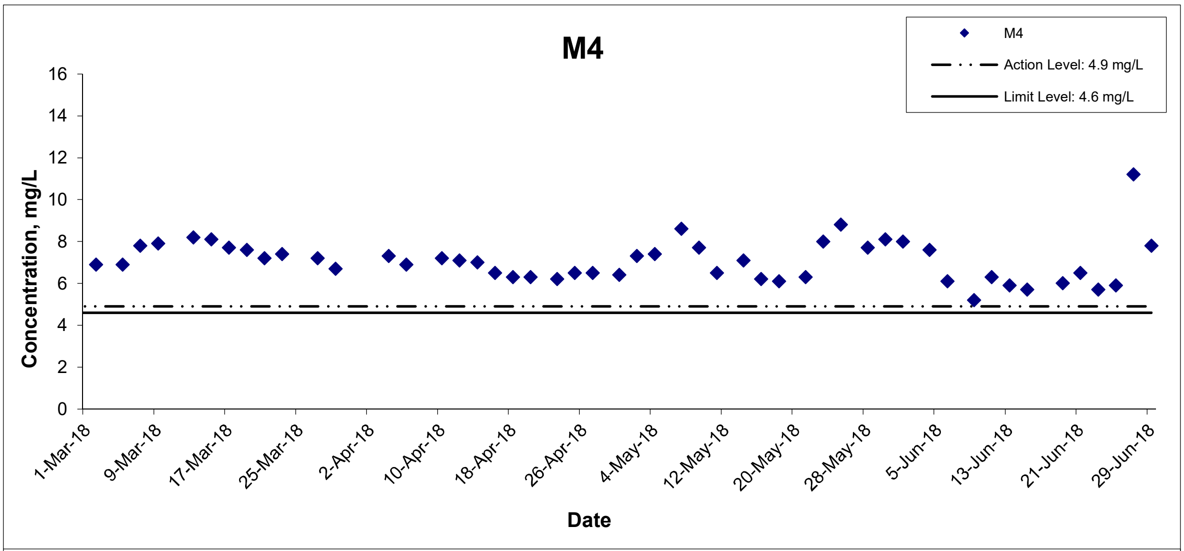
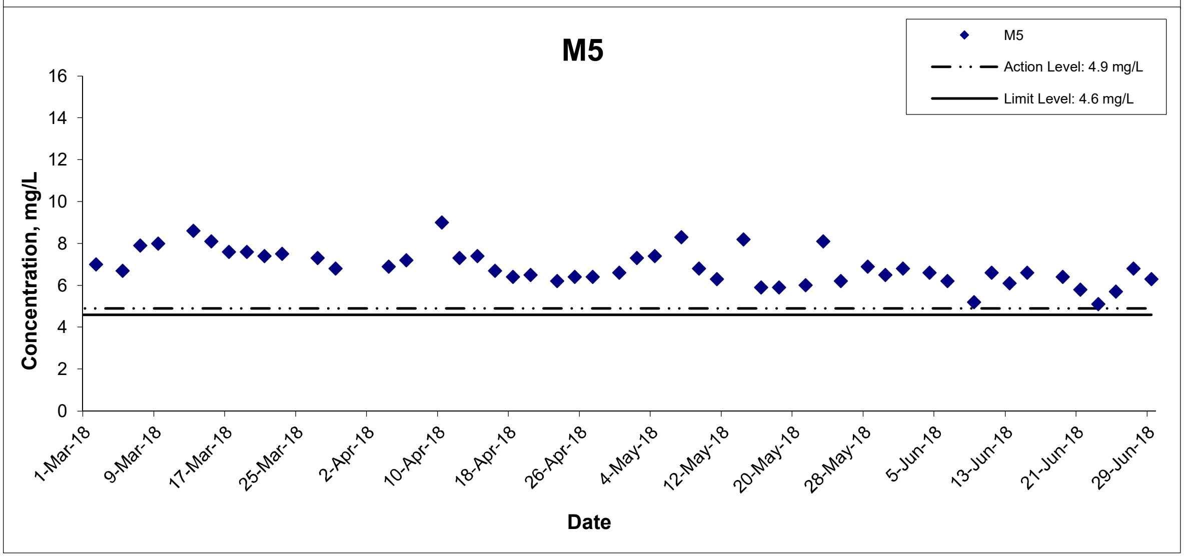
Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide





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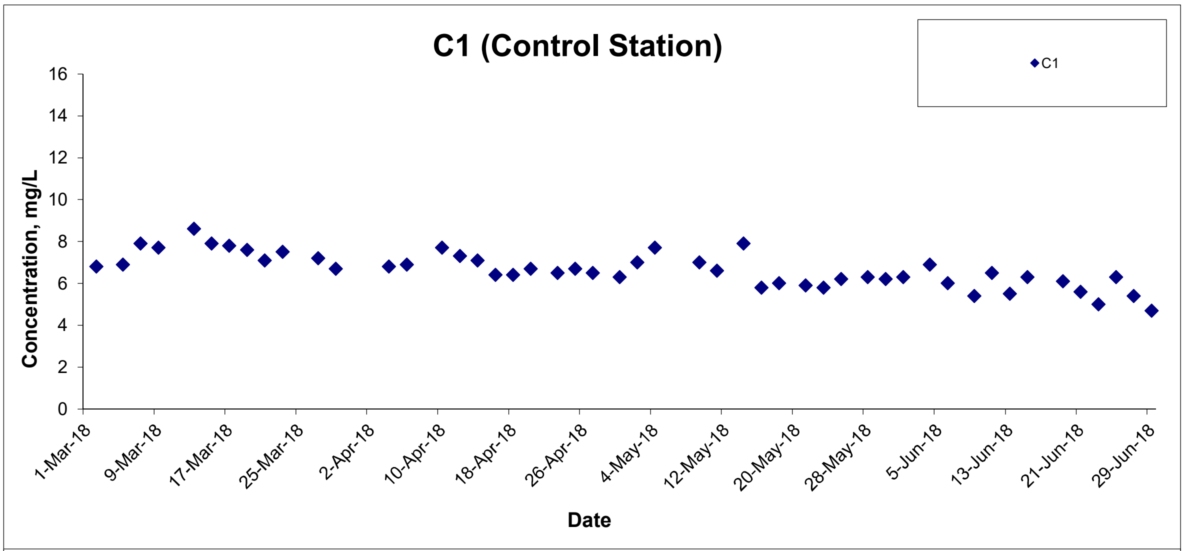
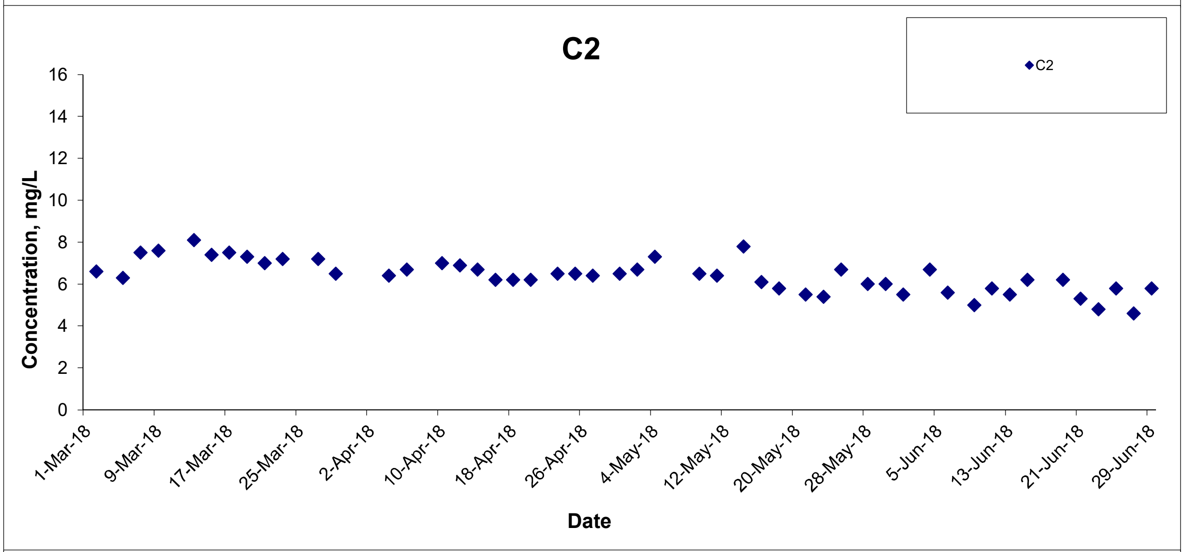
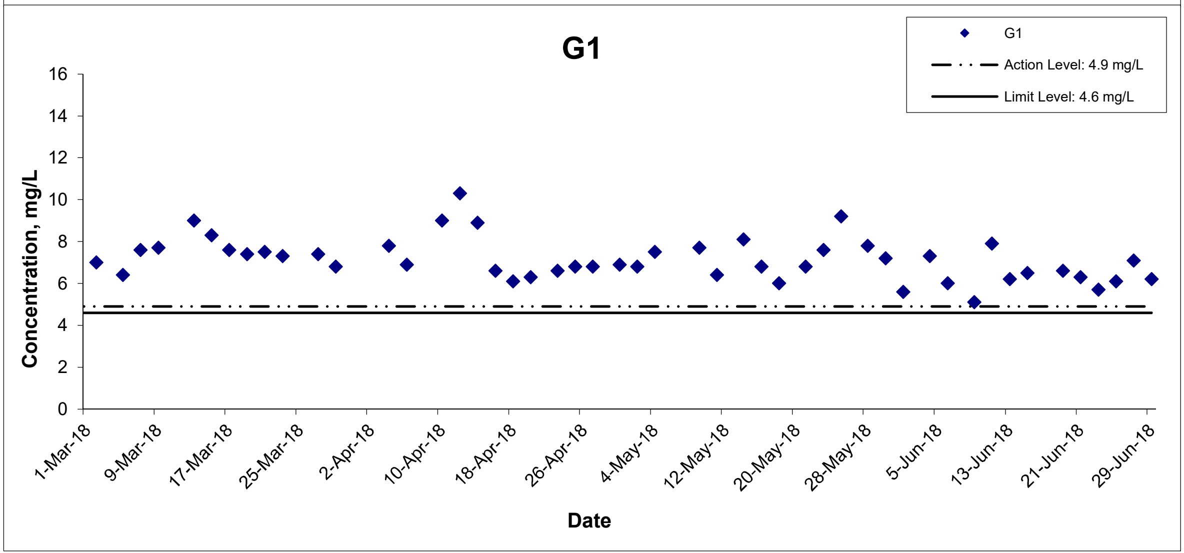
Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide







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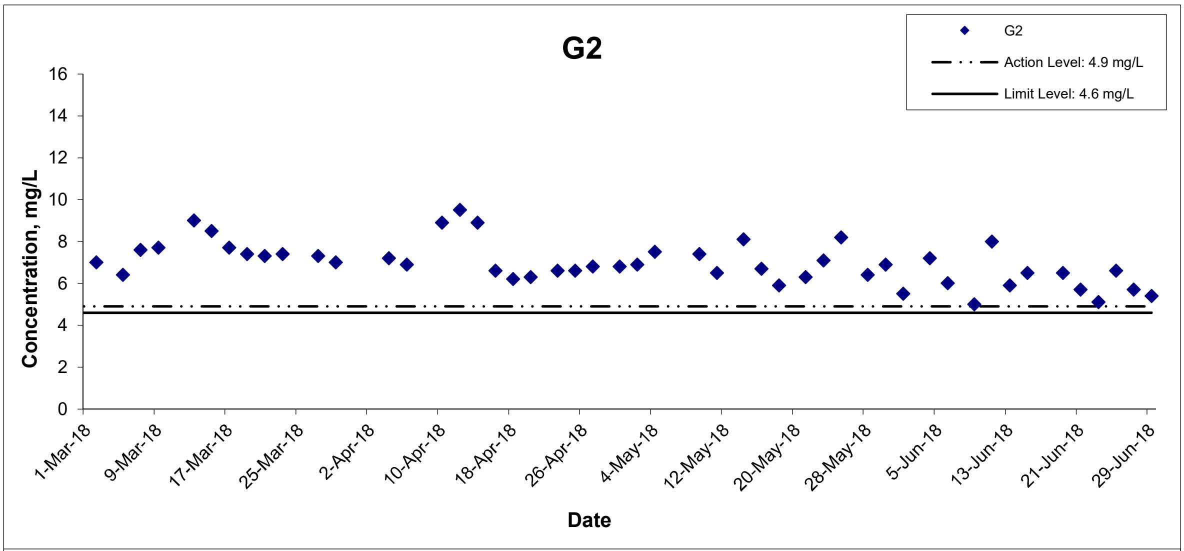
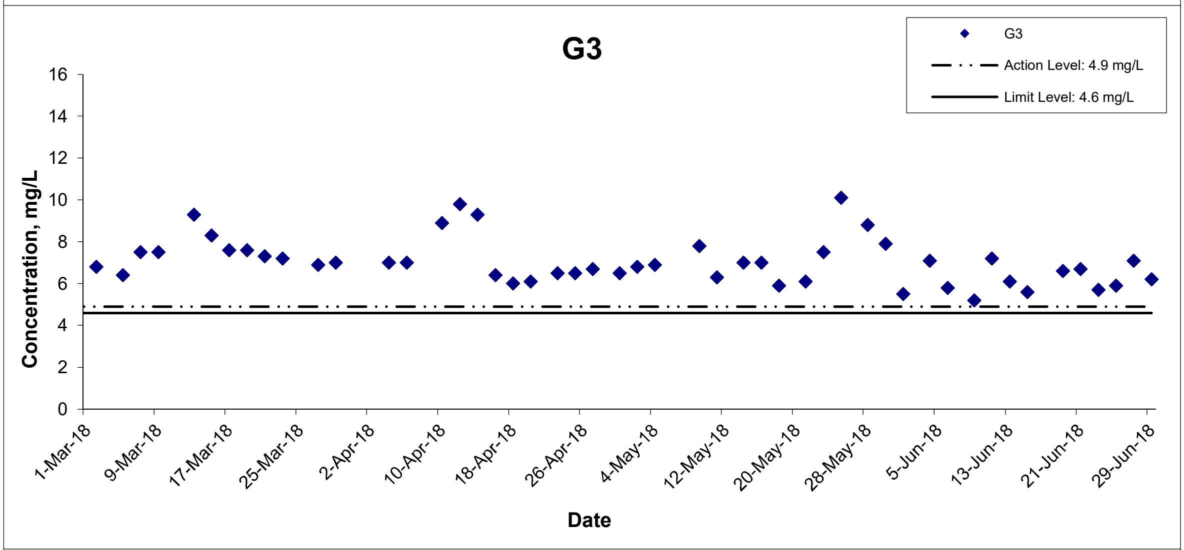
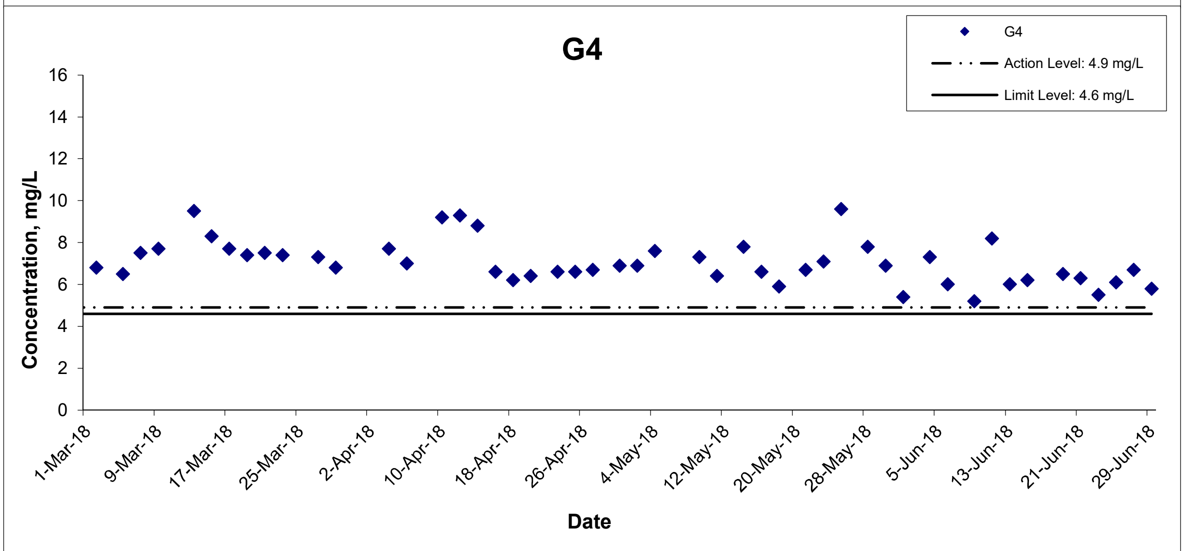
Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide







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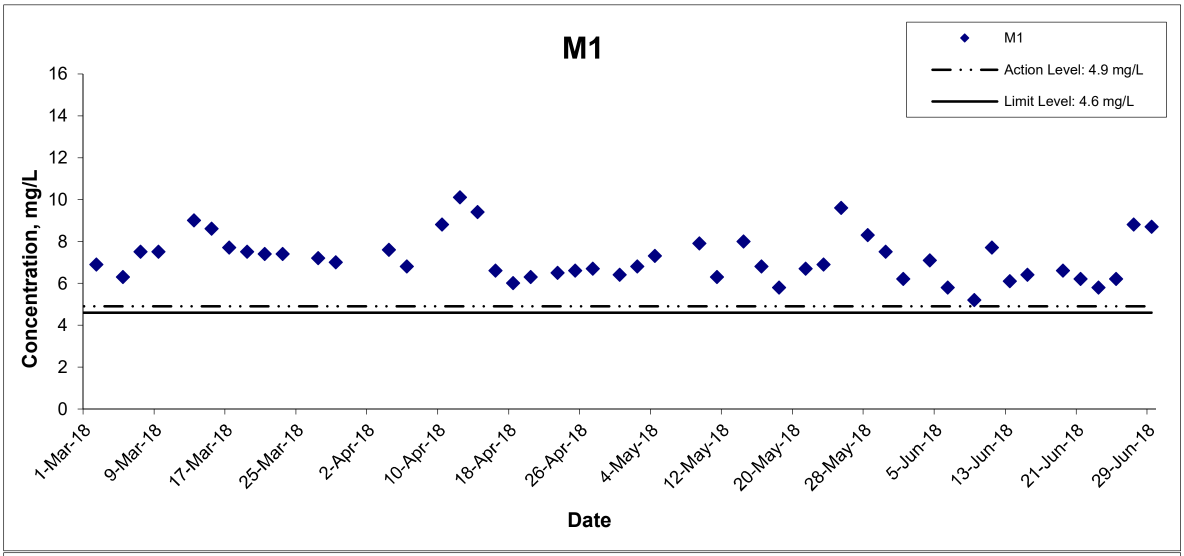

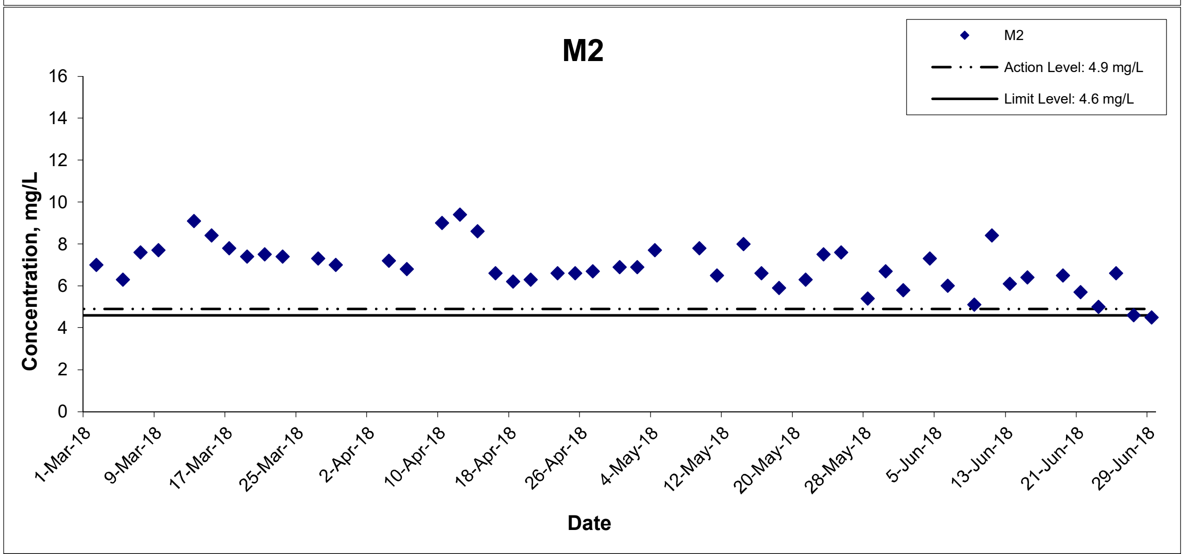

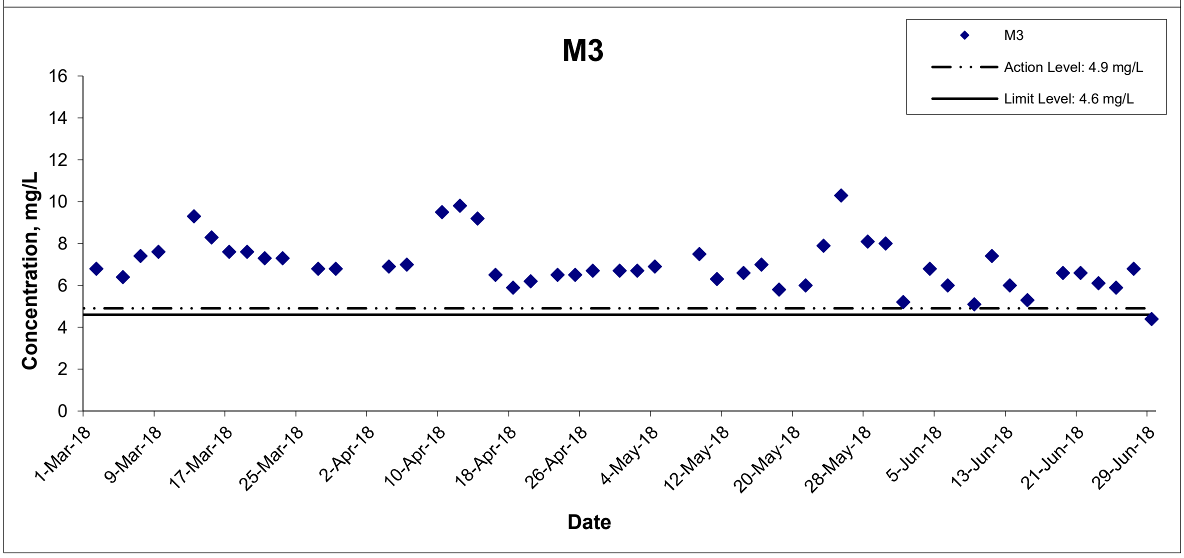

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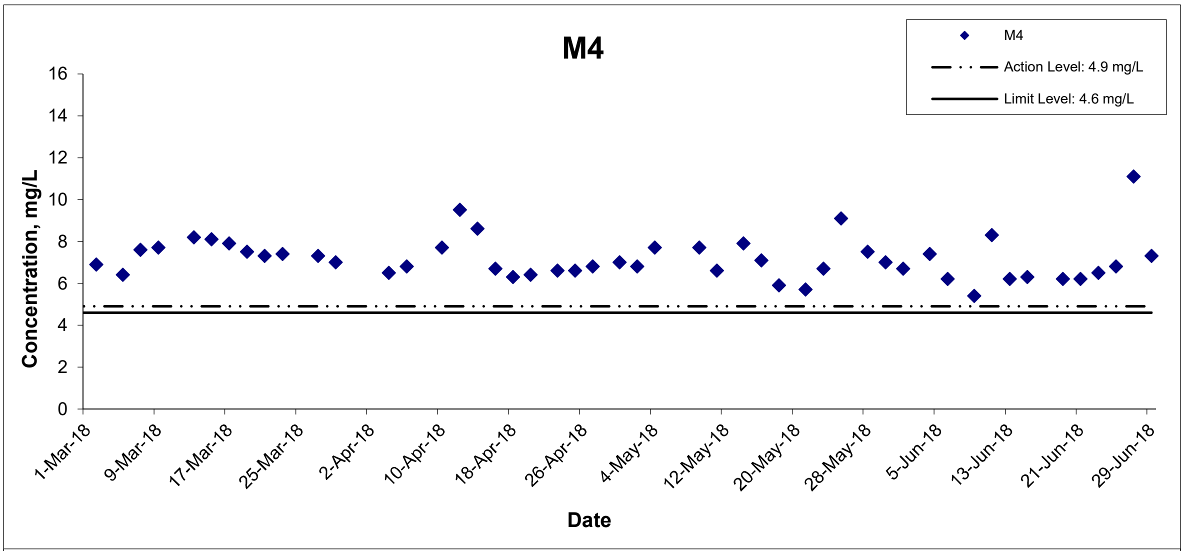

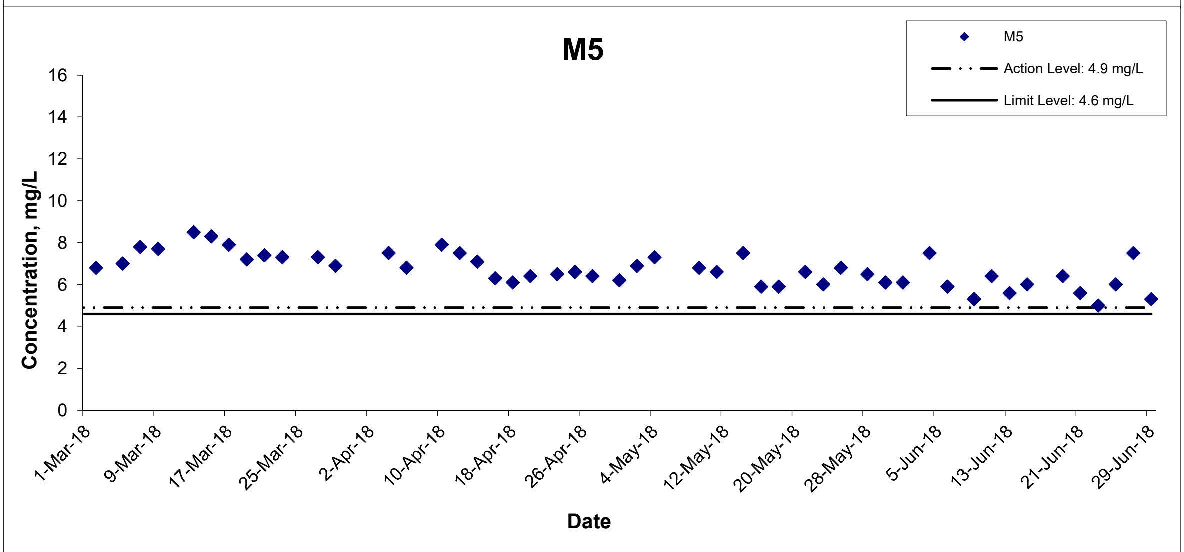

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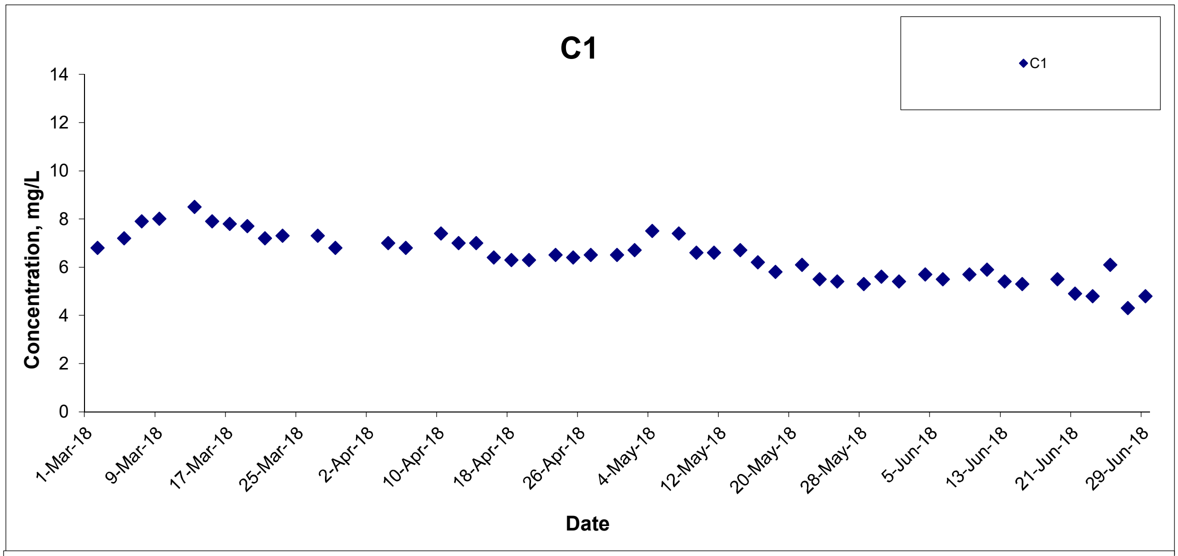
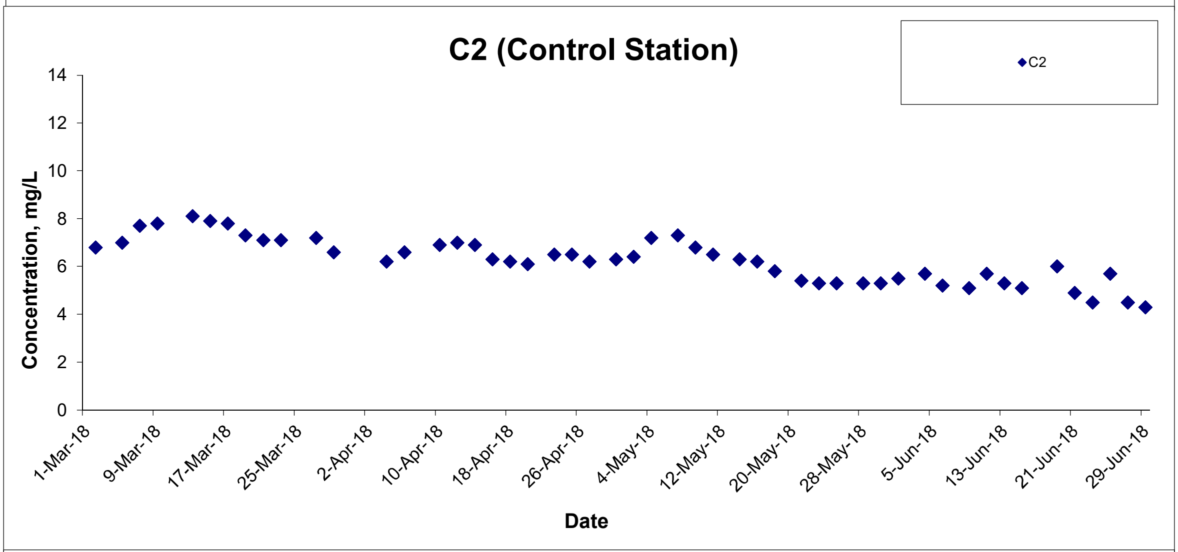
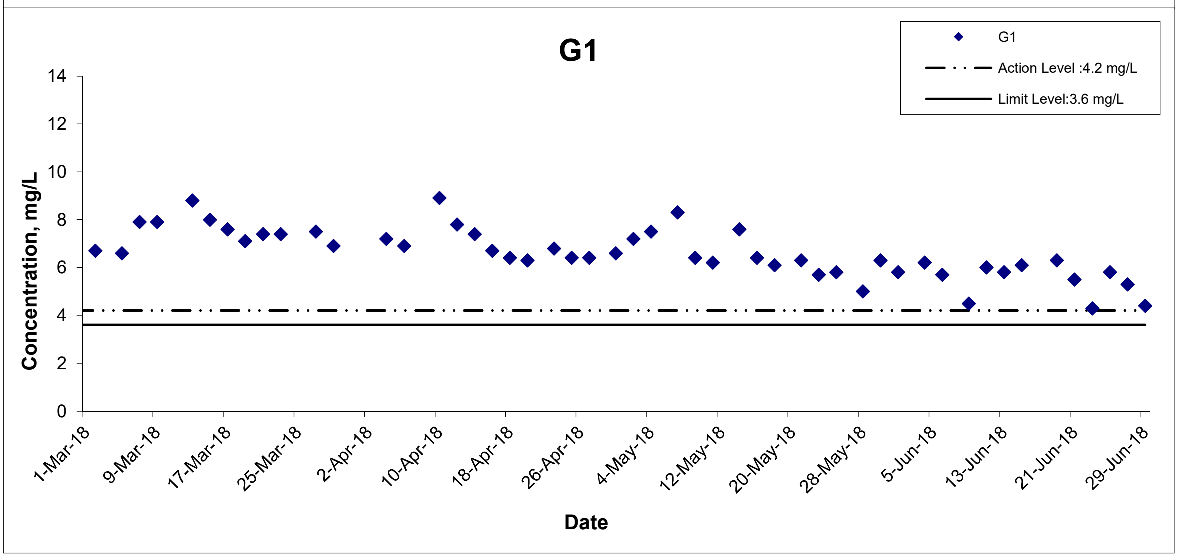
Dissolved Oxygen (Bottom) at Mid-Ebb Tide







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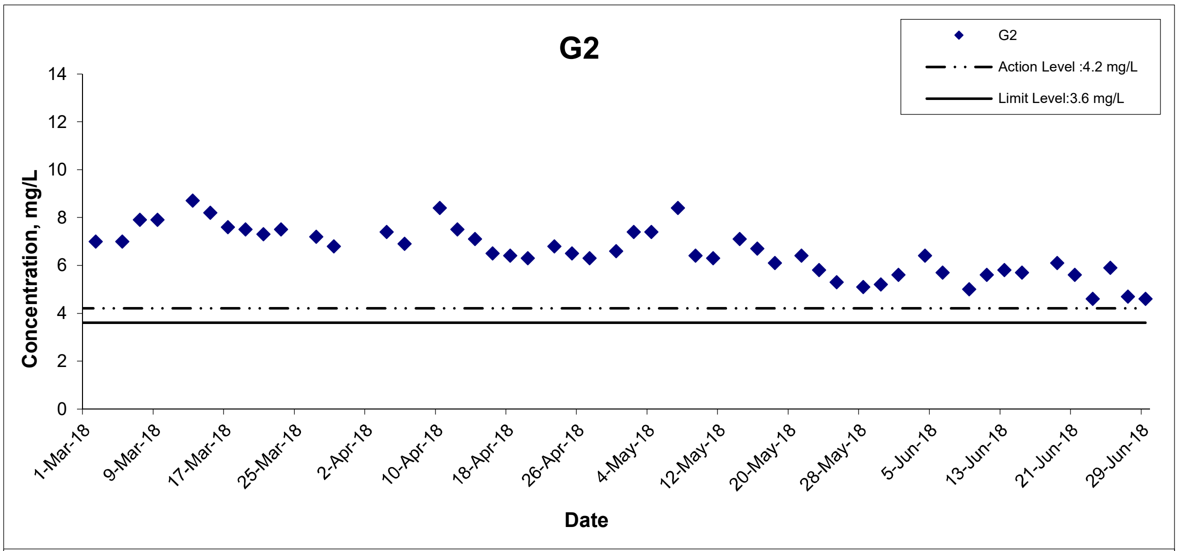
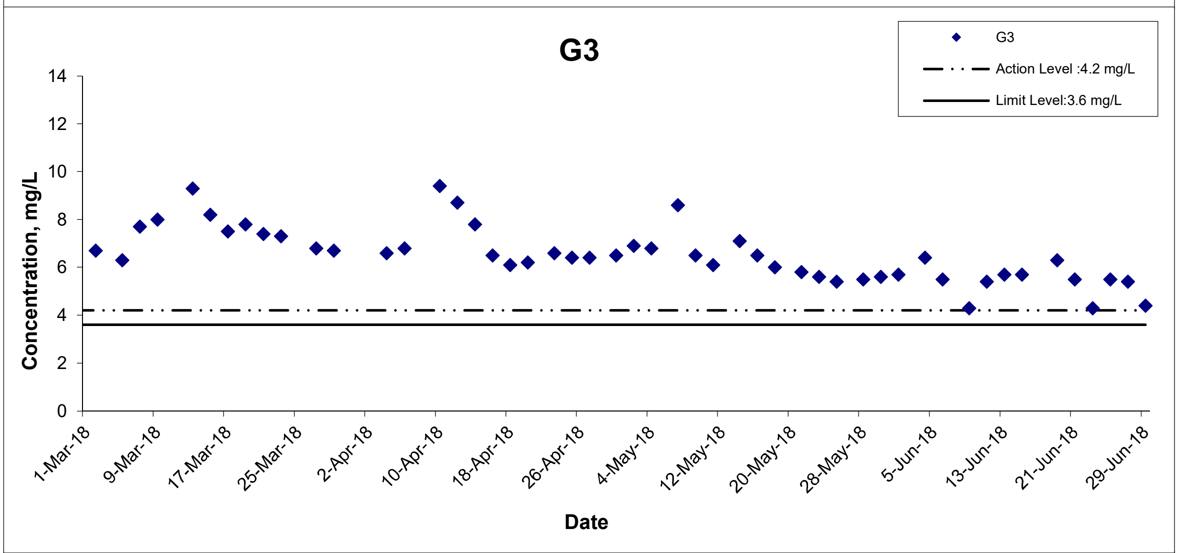
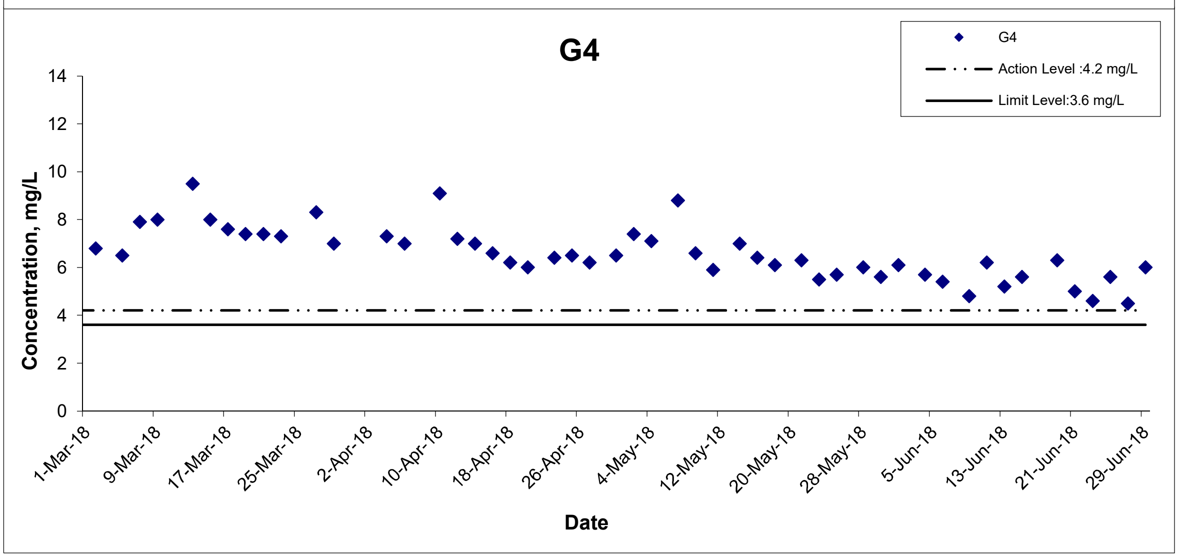
Dissolved Oxygen (Bottom) at Mid-Ebb Tide







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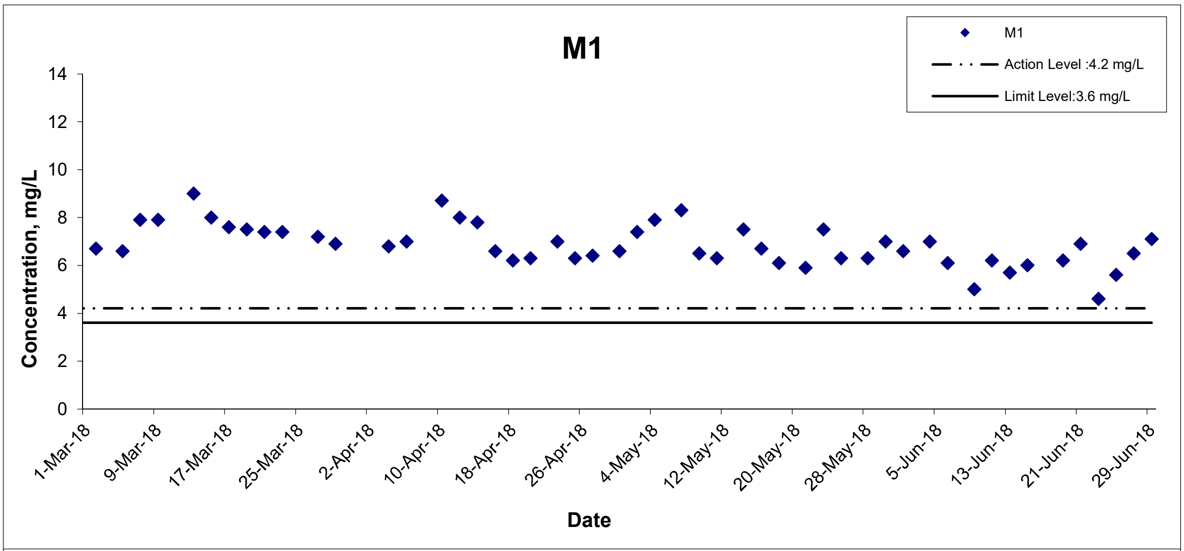
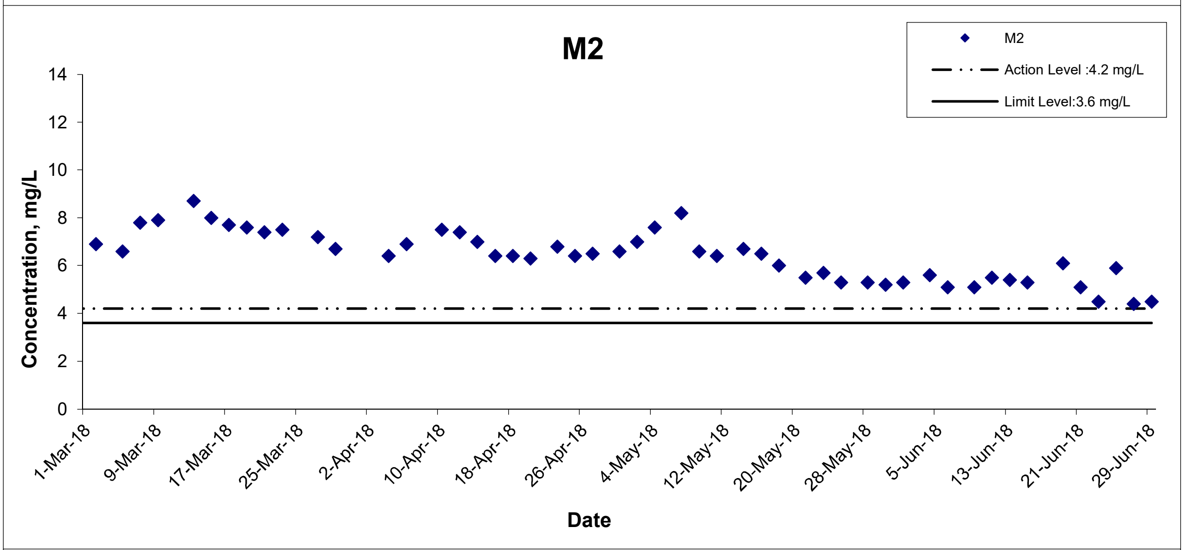
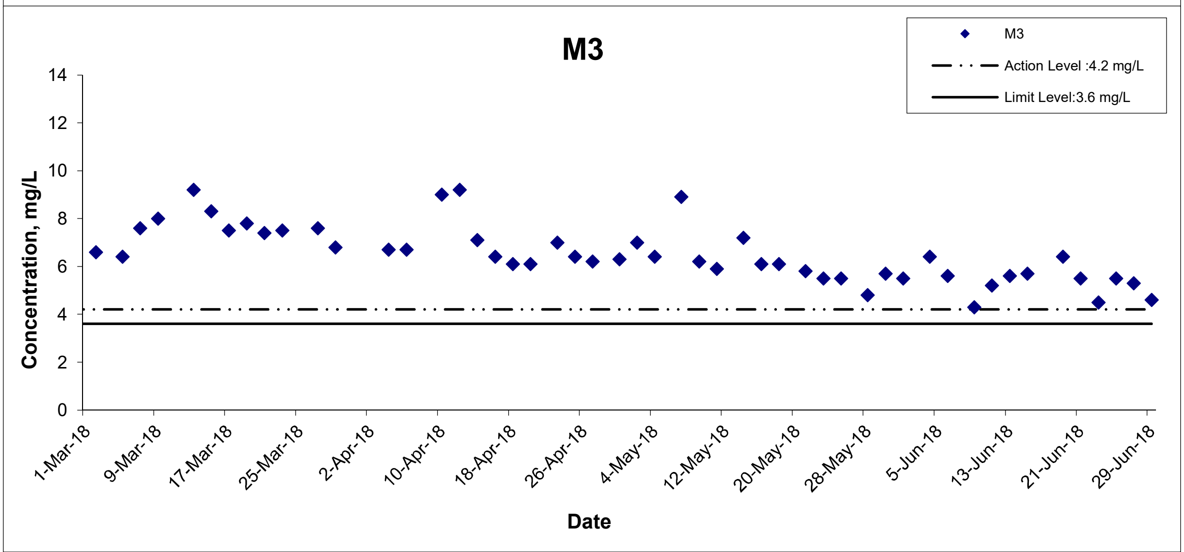
Dissolved Oxygen (Bottom) at Mid-Ebb Tide







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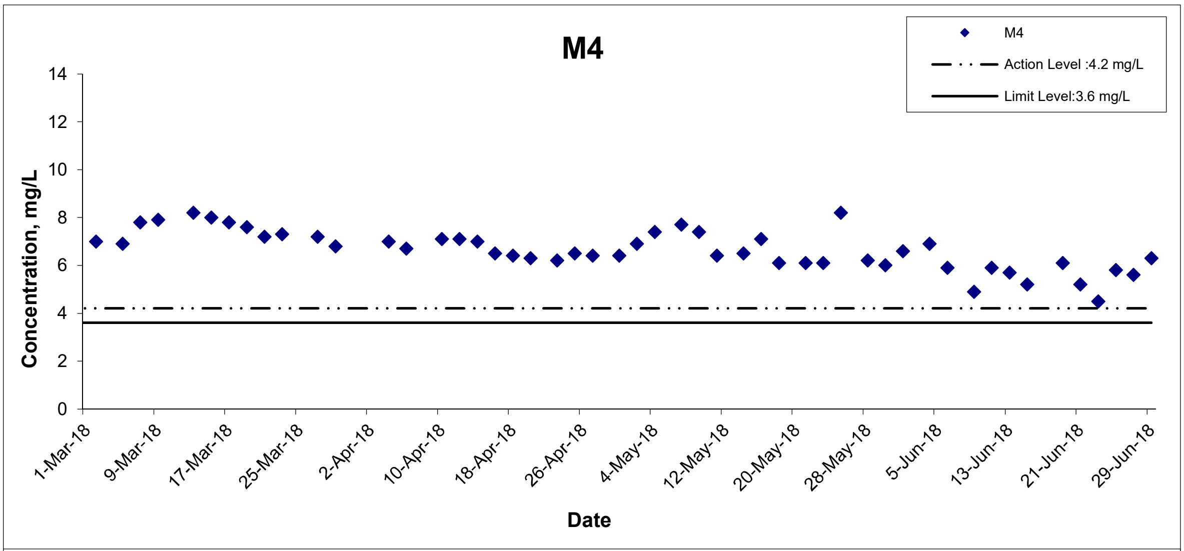
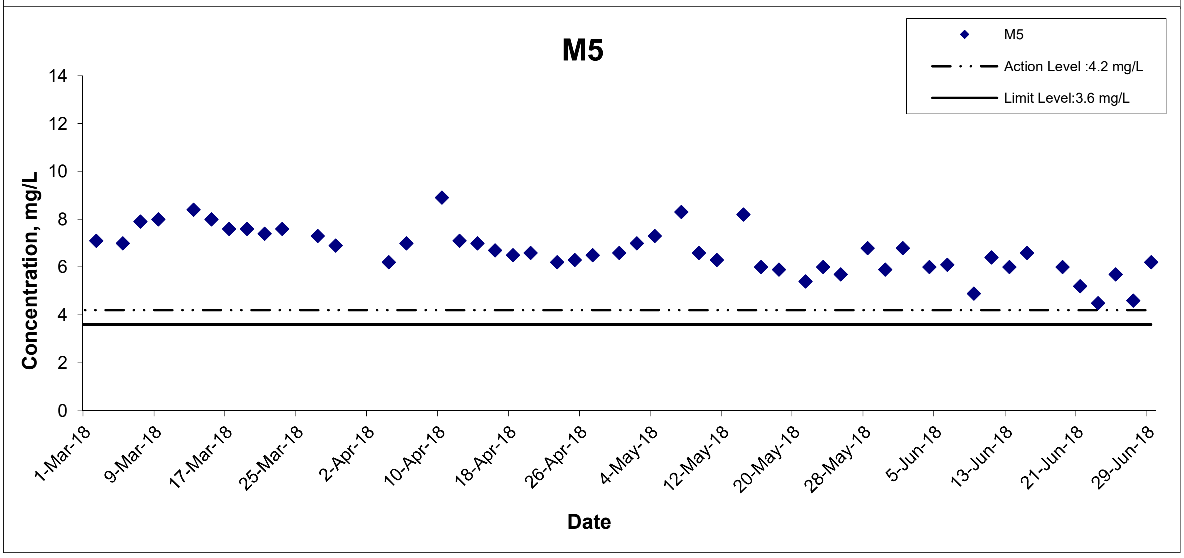
Dissolved Oxygen (Bottom) at Mid-Ebb Tide





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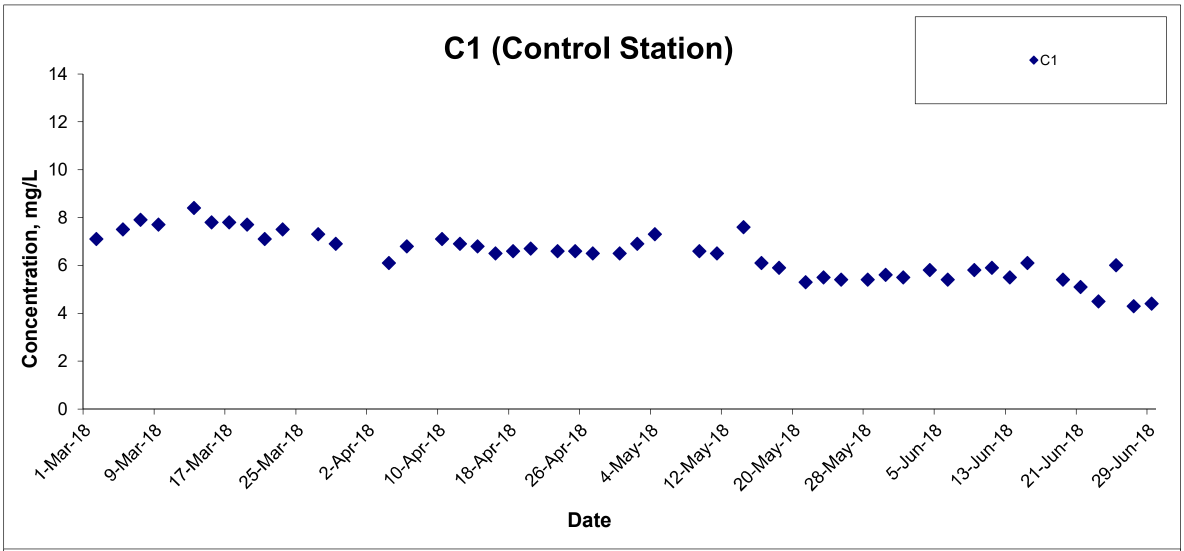
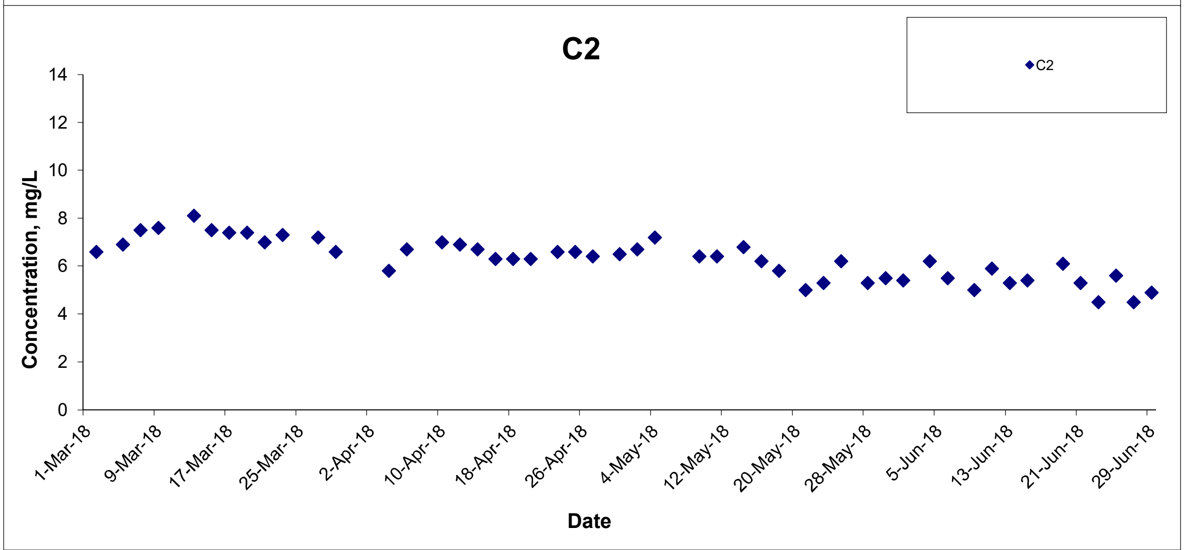
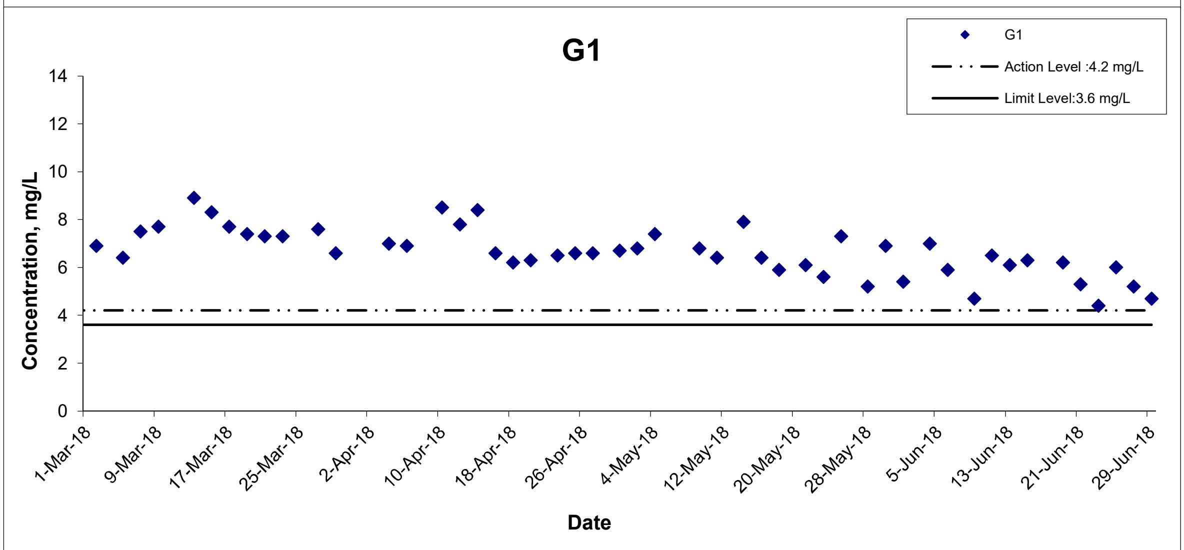
Dissolved Oxygen (Bottom) at Mid-Flood Tide







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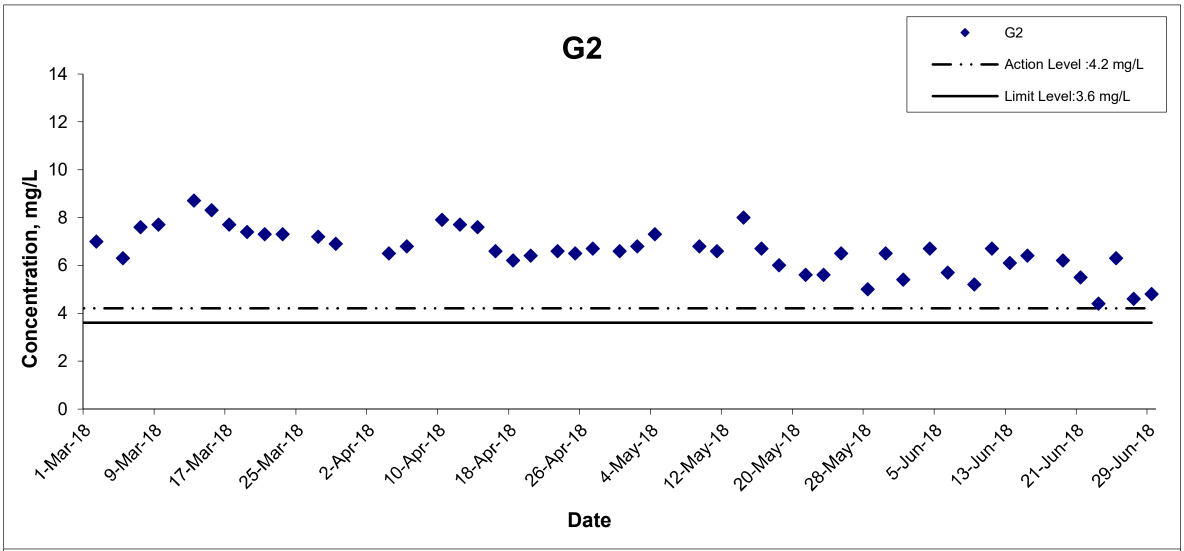
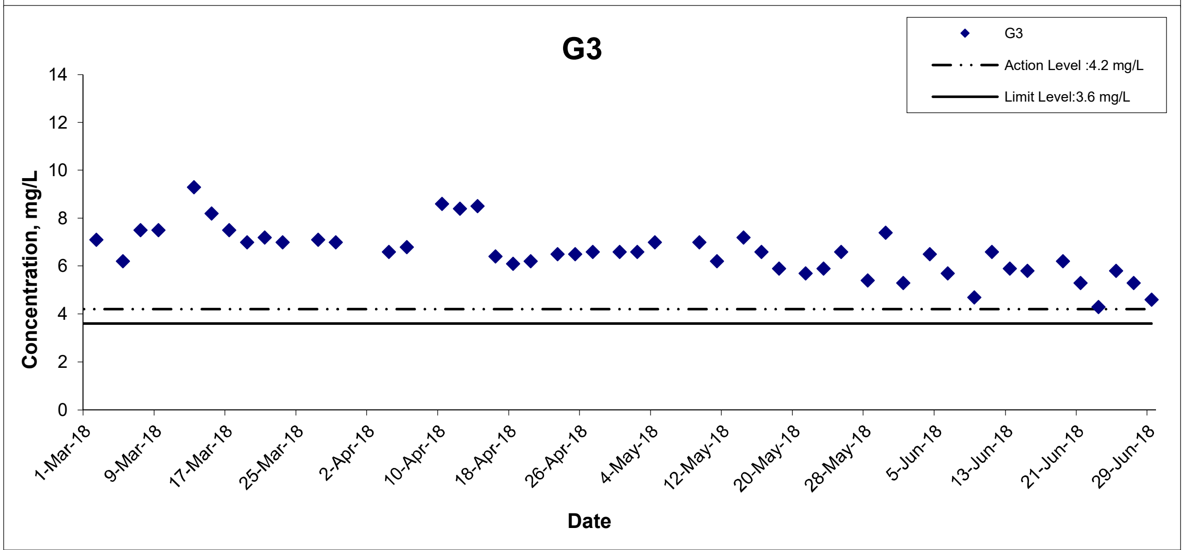
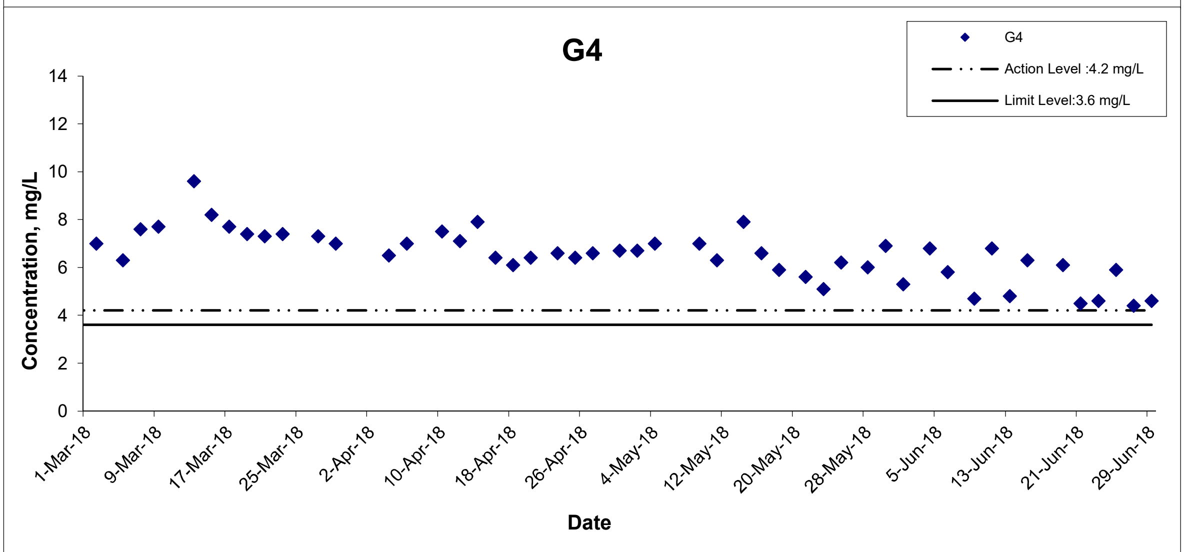
Dissolved Oxygen (Bottom) at Mid-Flood Tide







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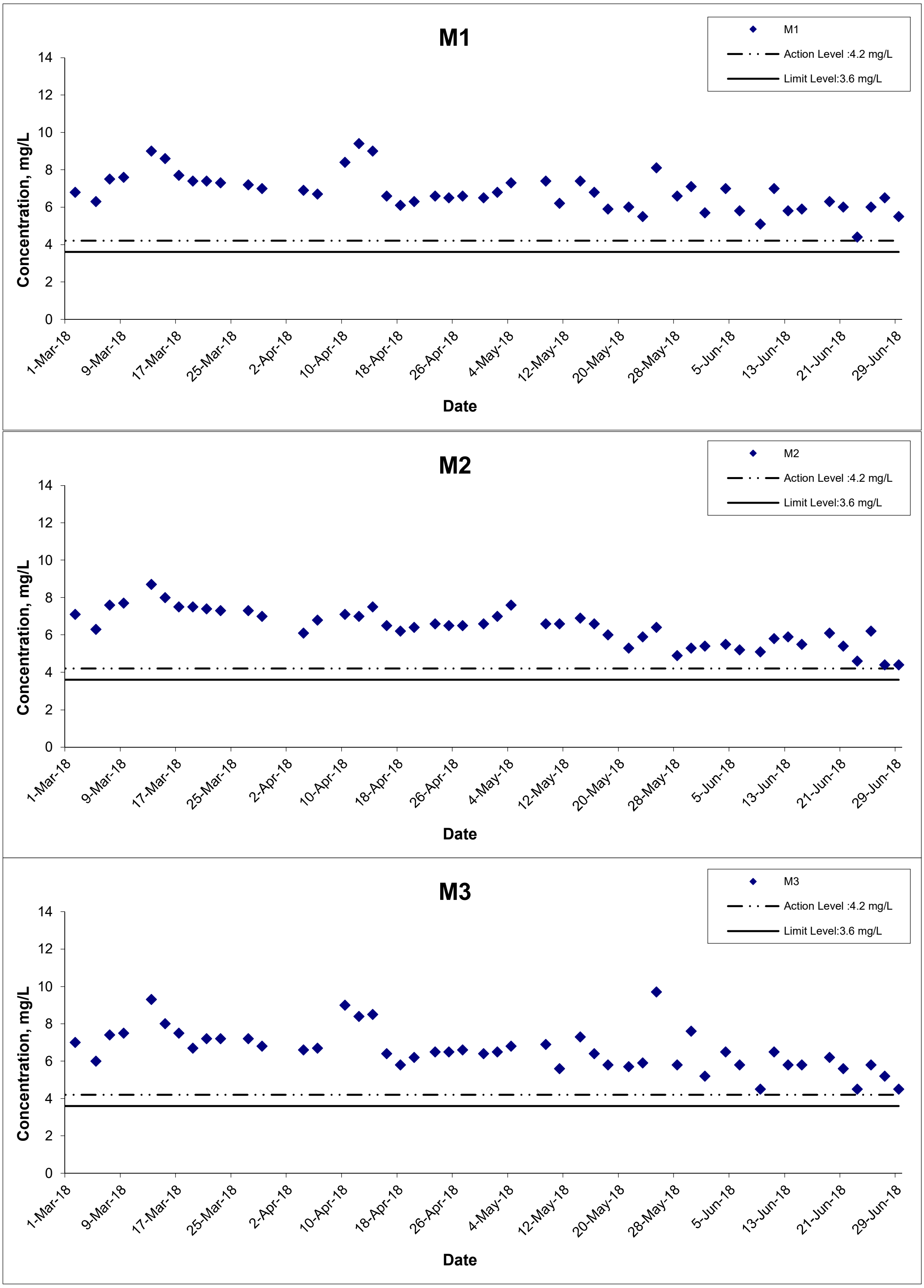
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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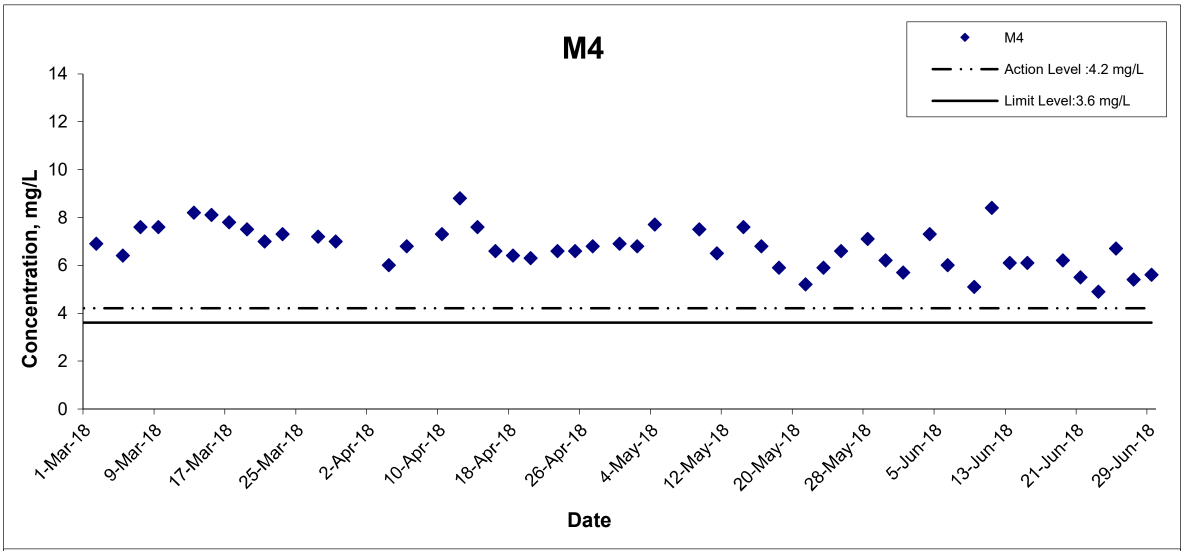
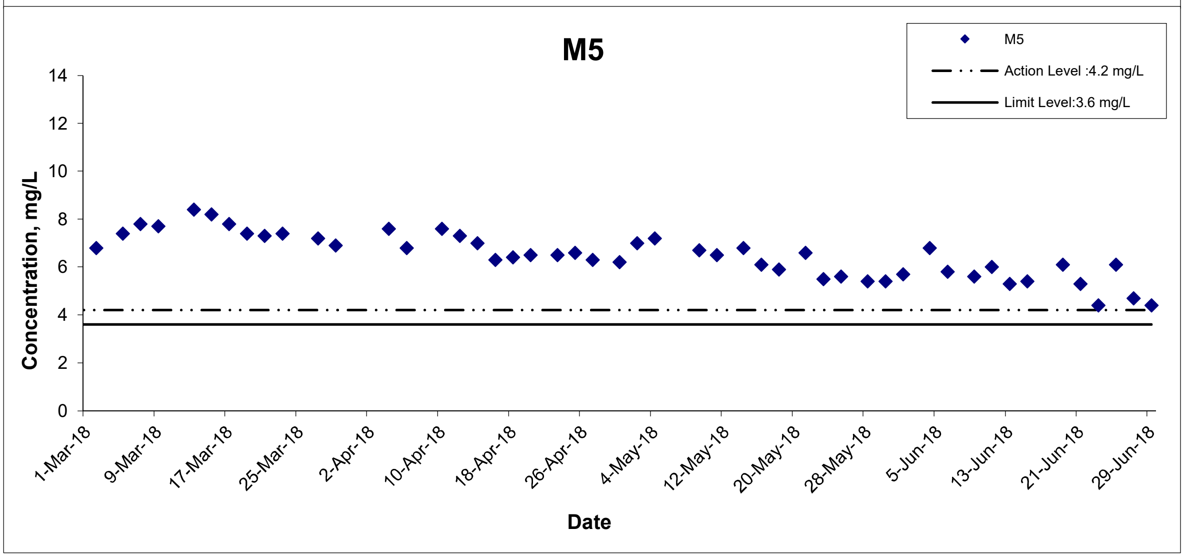
Dissolved Oxygen (Bottom) at Mid-Flood Tide





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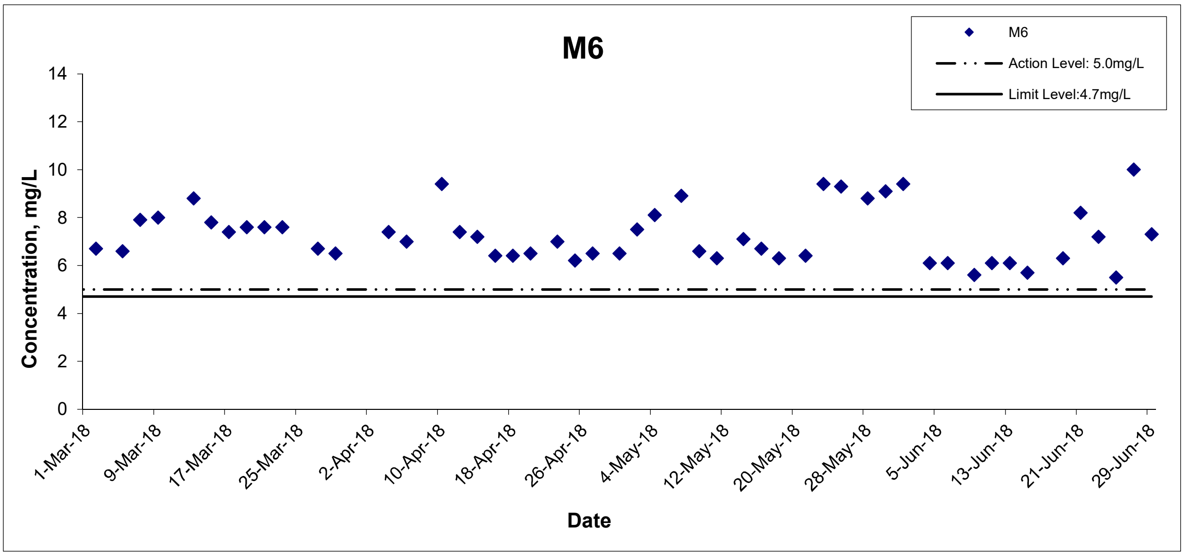
Dissolved Oxygen (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



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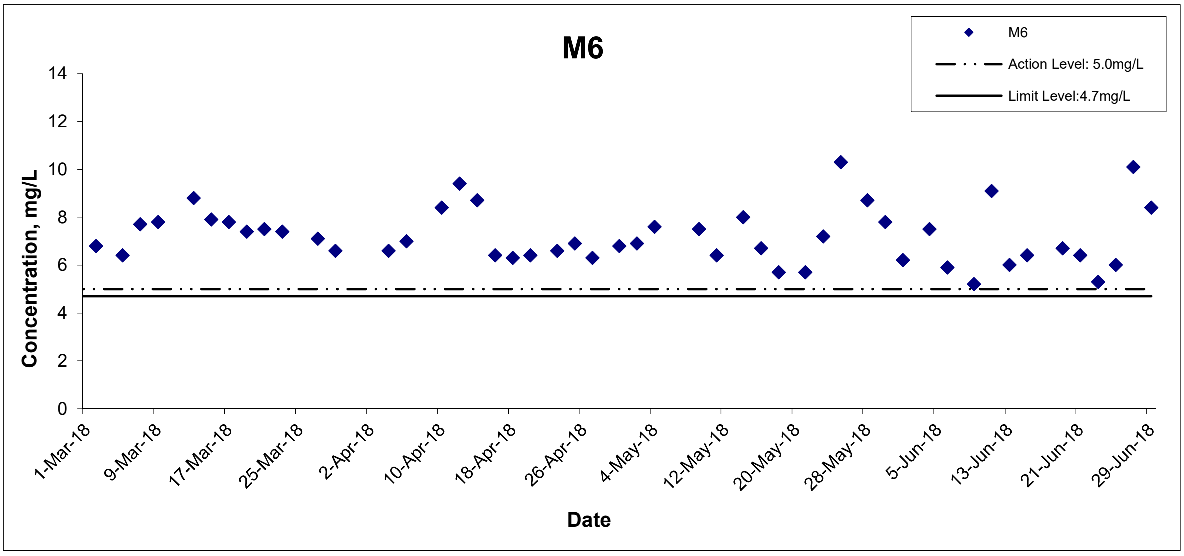
Dissolved Oxygen (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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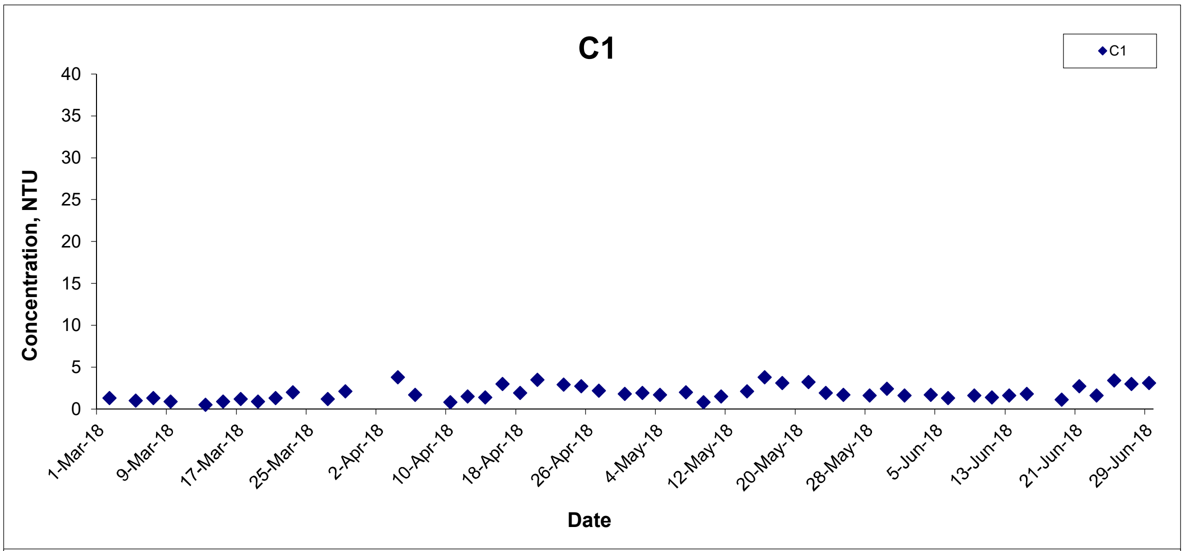
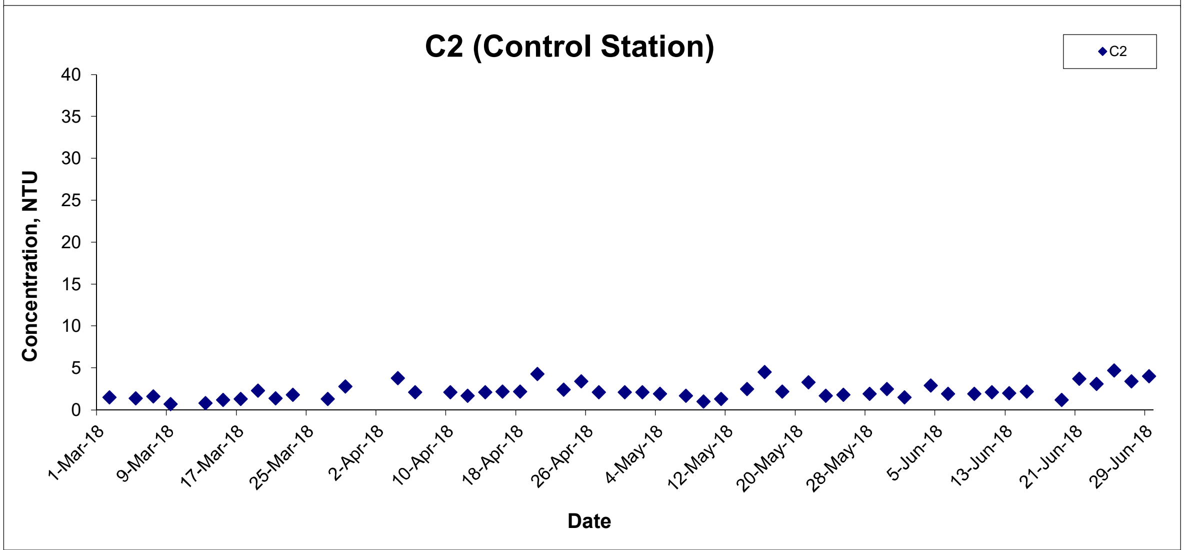
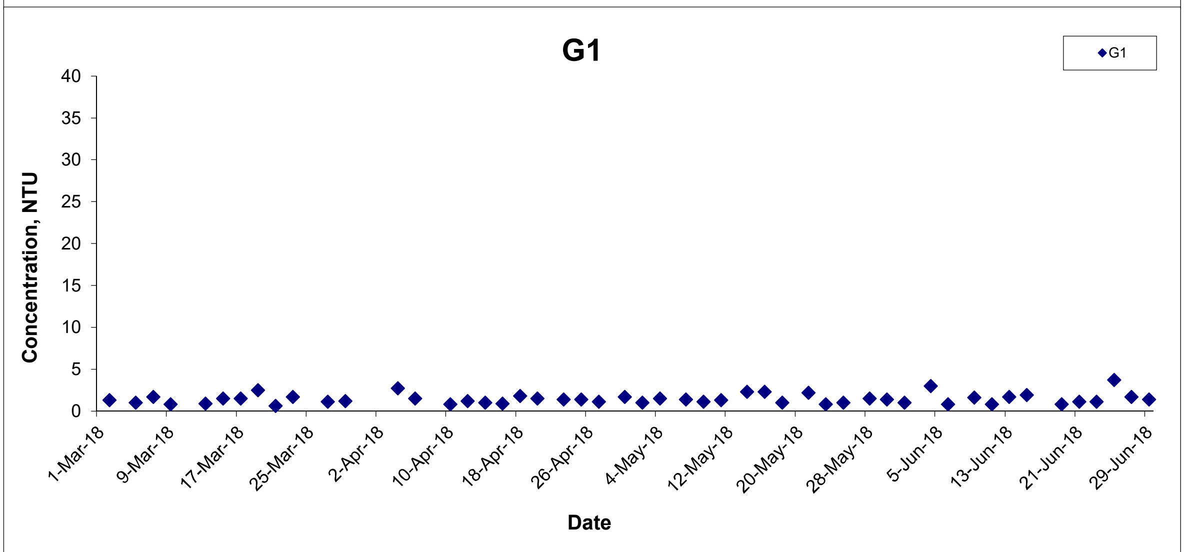
Turbidity (Depth-averaged) at Mid-Ebb Tide







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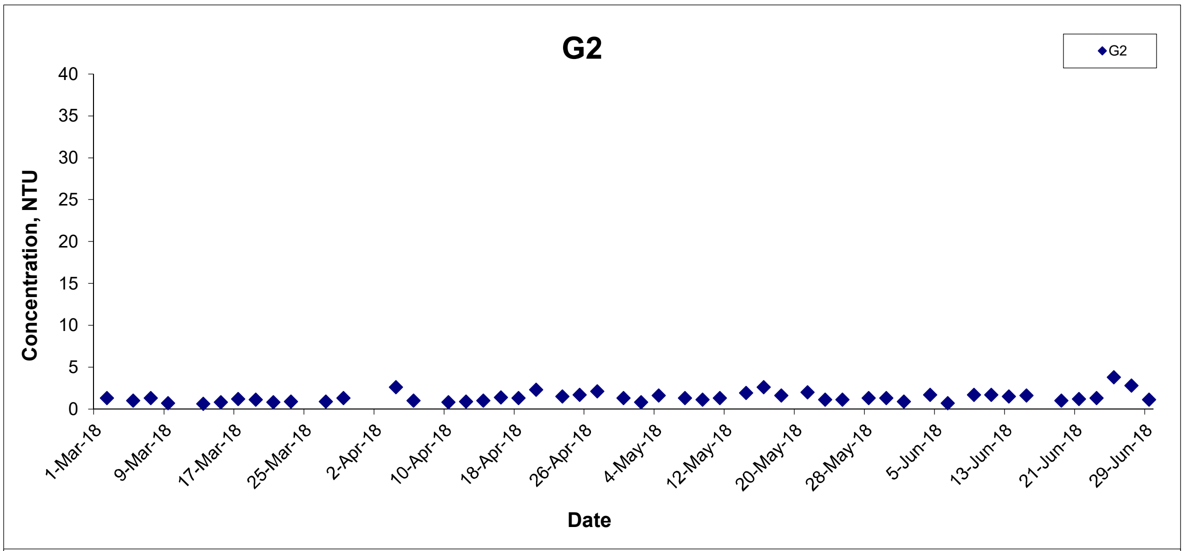
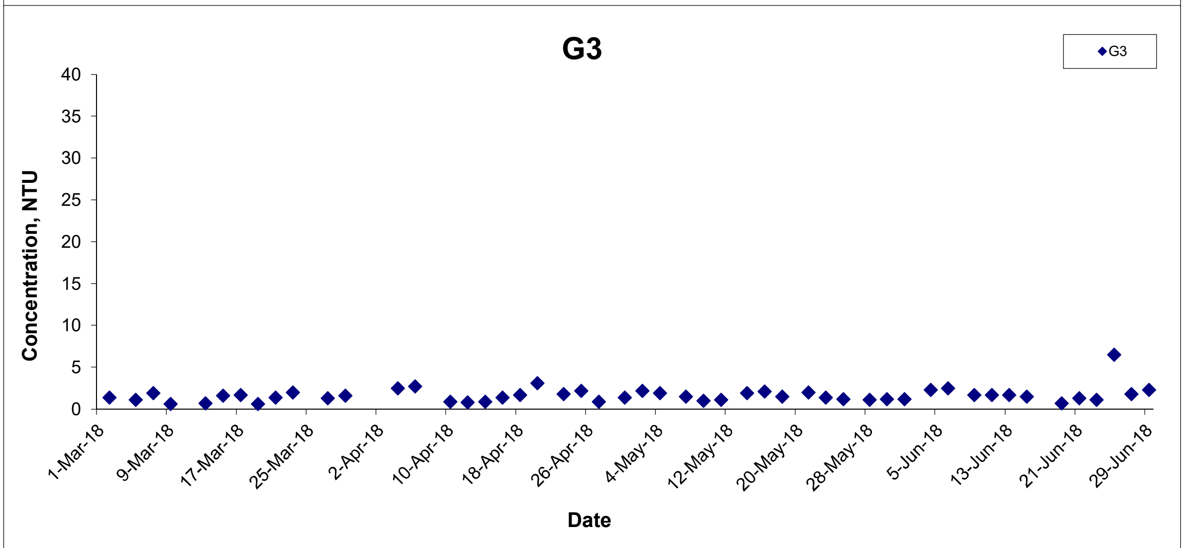
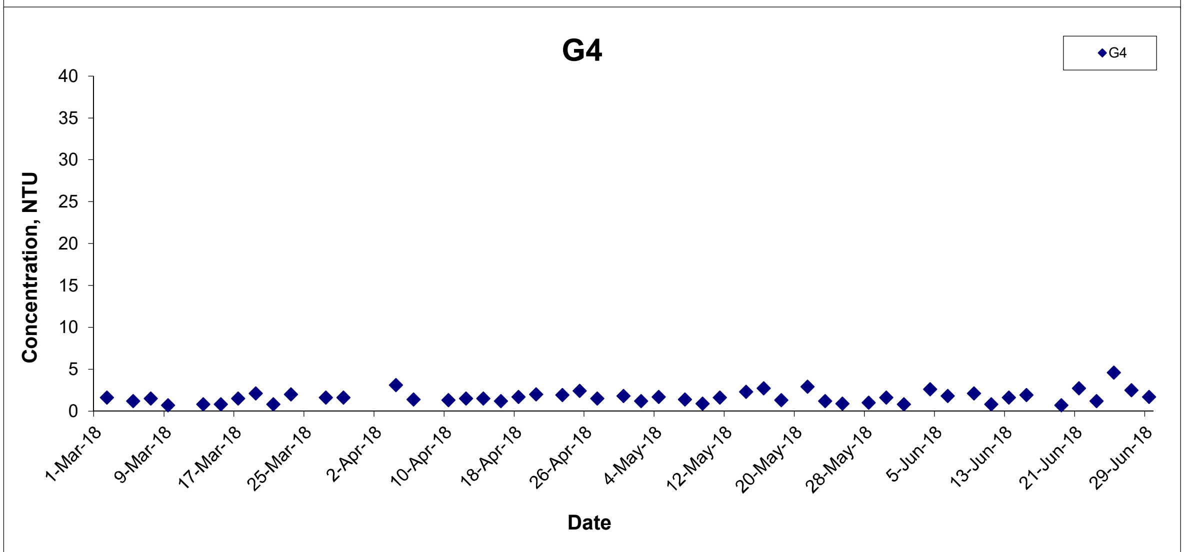
Turbidity (Depth-averaged) at Mid-Ebb Tide







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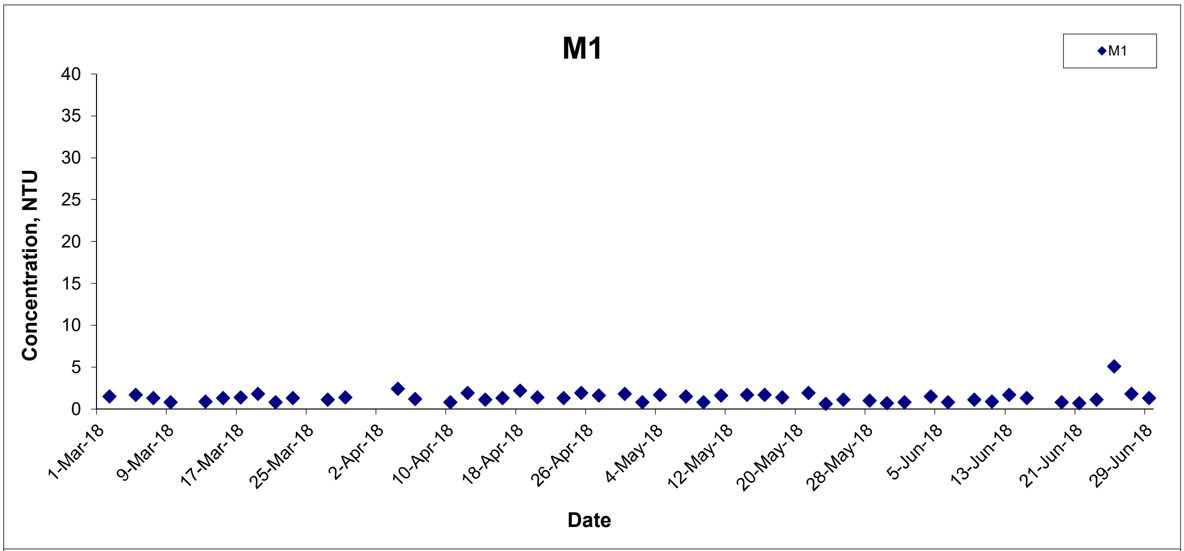
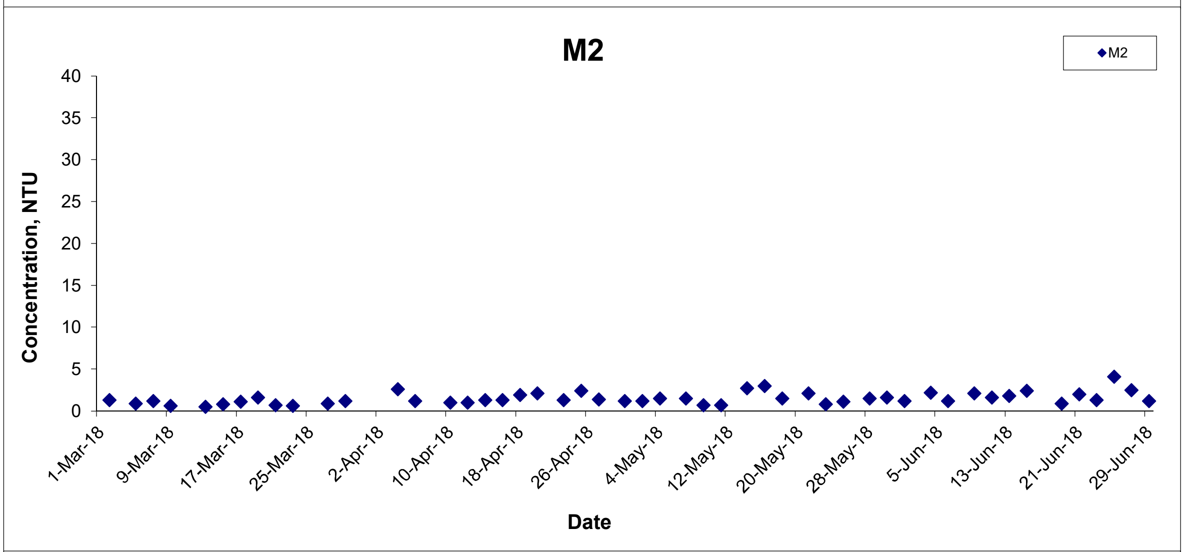
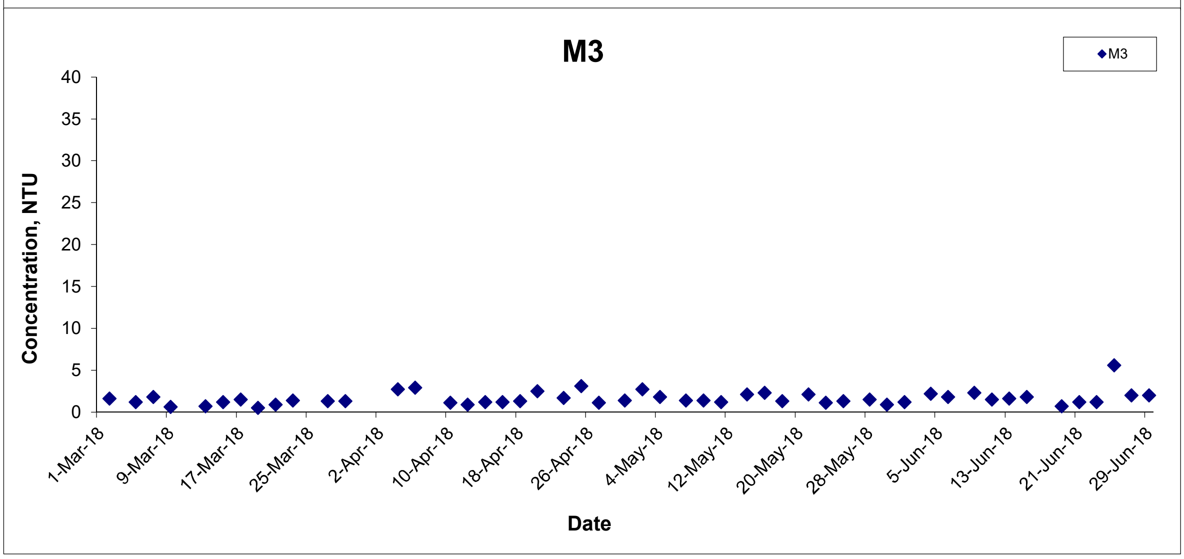
Turbidity (Depth-averaged) at Mid-Ebb Tide







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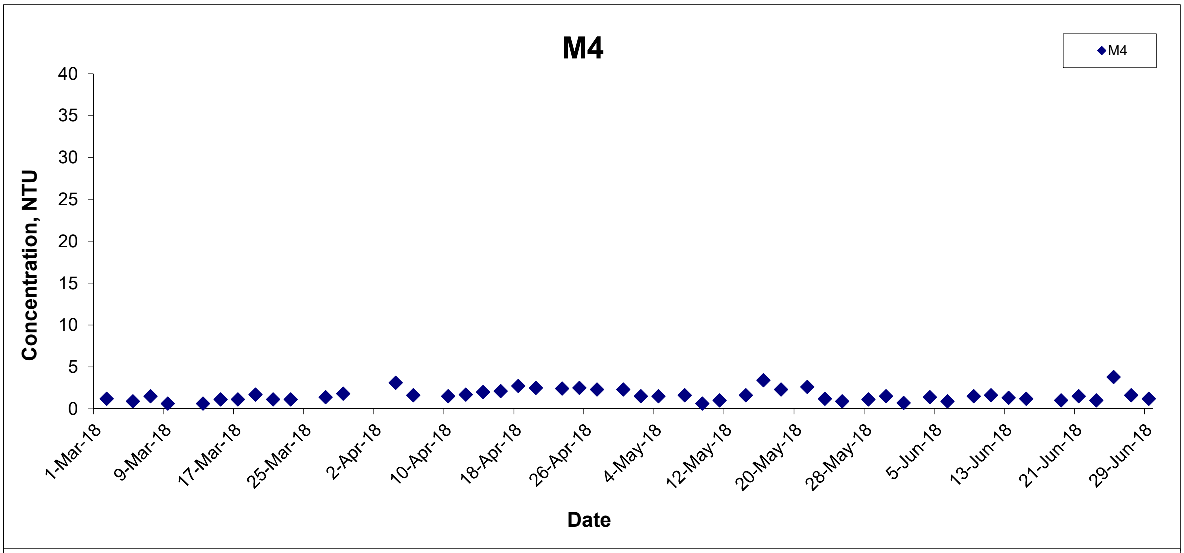
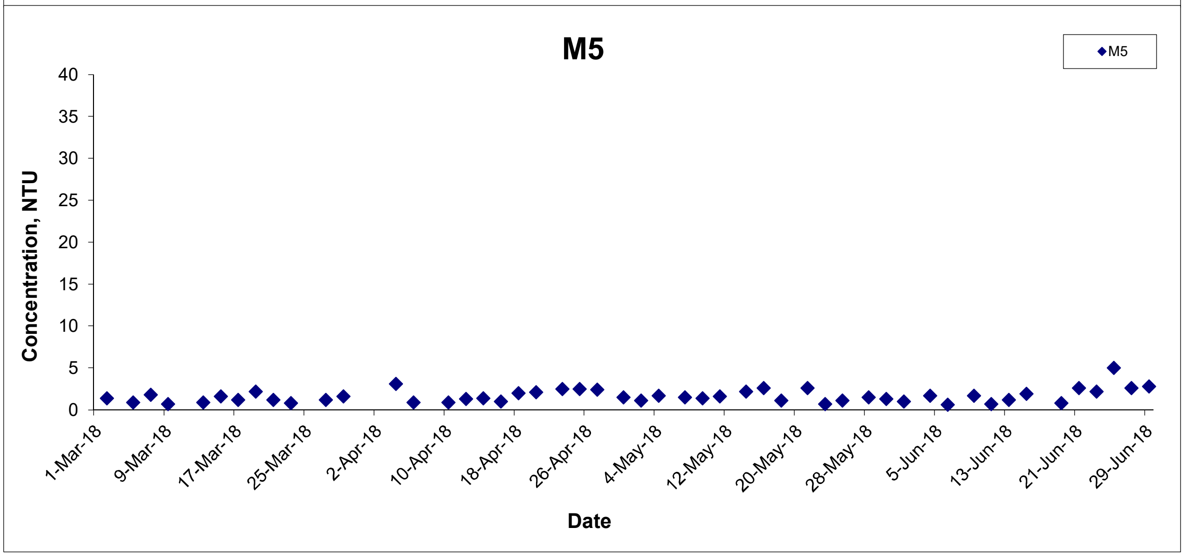
Turbidity (Depth-averaged) at Mid-Ebb Tide





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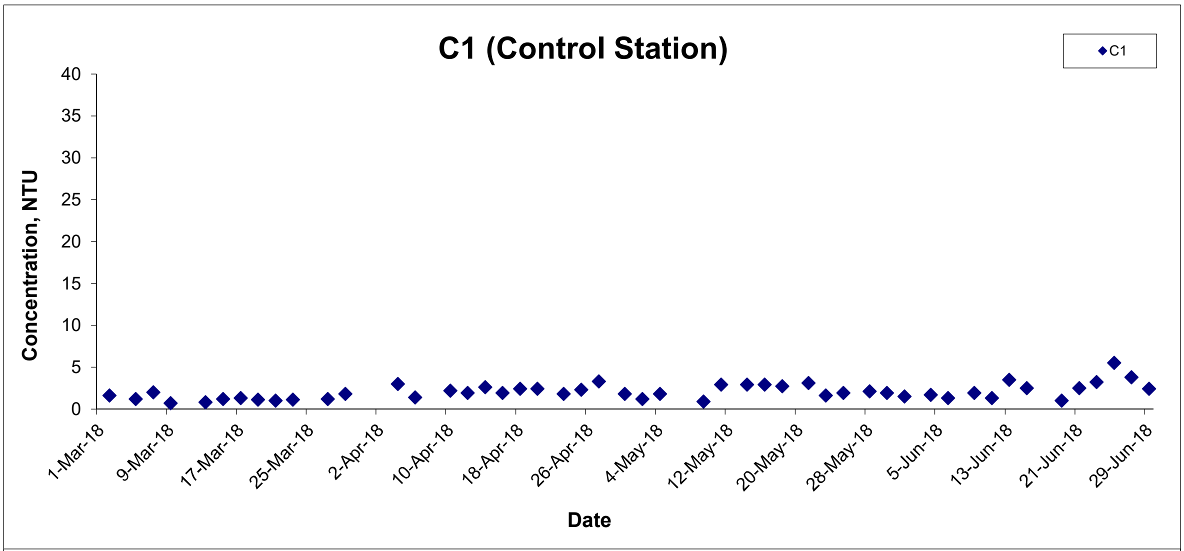
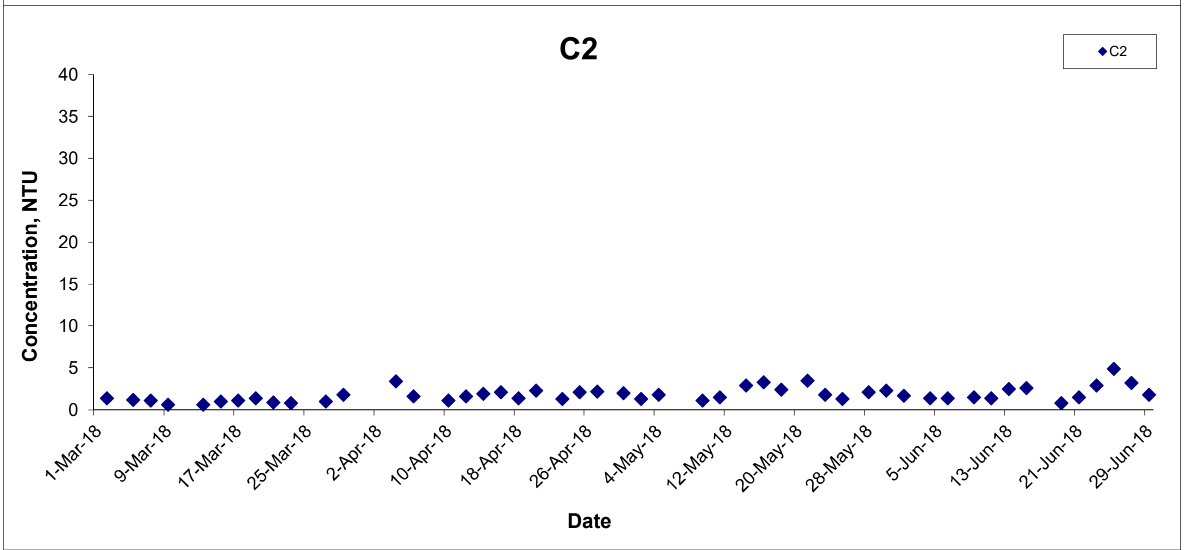
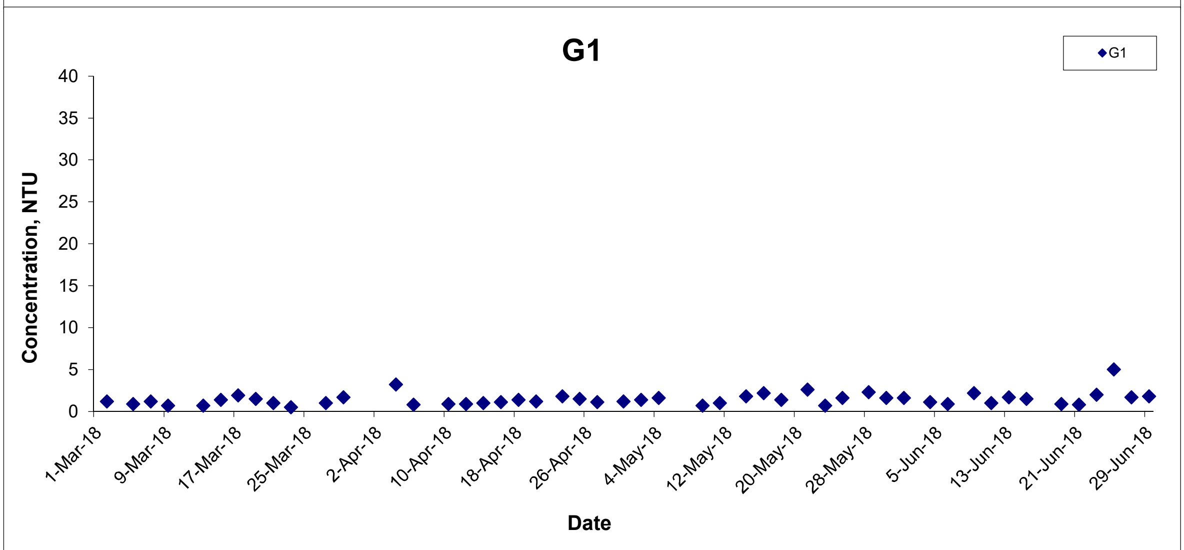
Turbidity (Depth-averaged) at Mid-Flood Tide







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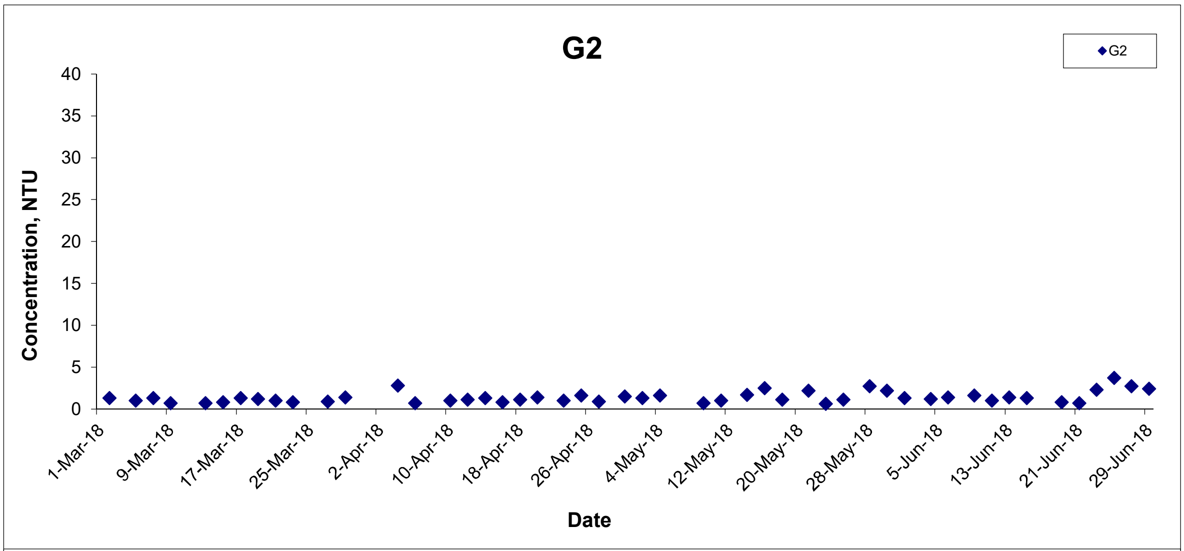
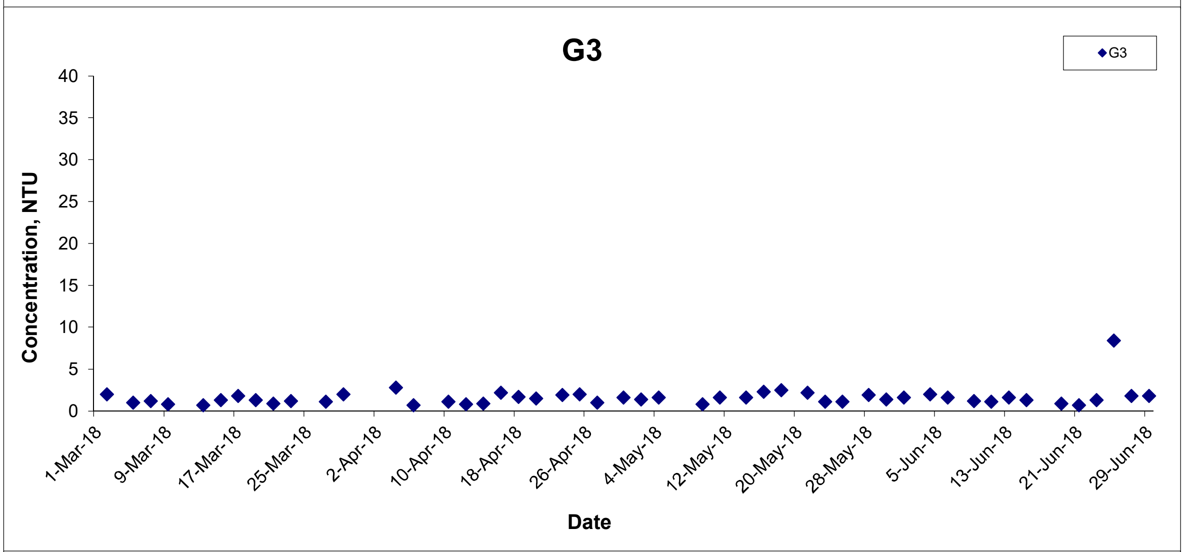
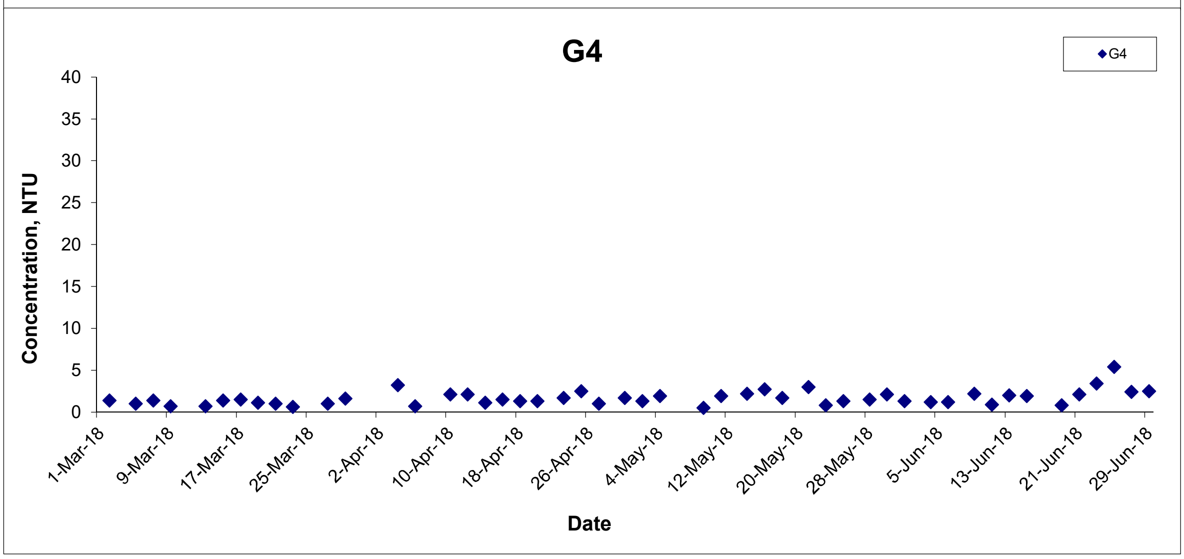
Turbidity (Depth-averaged) at Mid-Flood Tide







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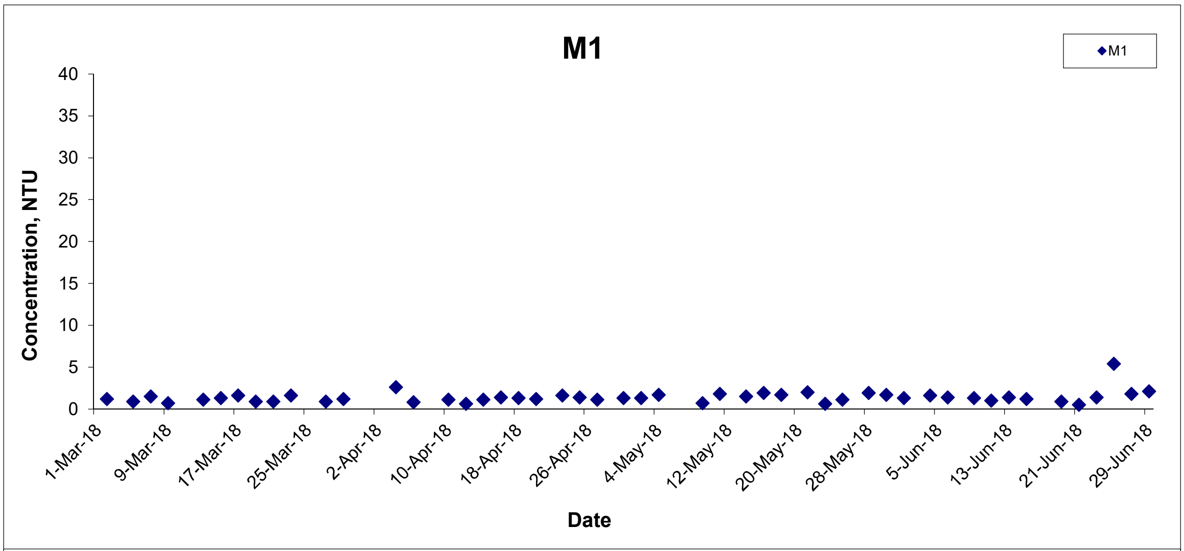
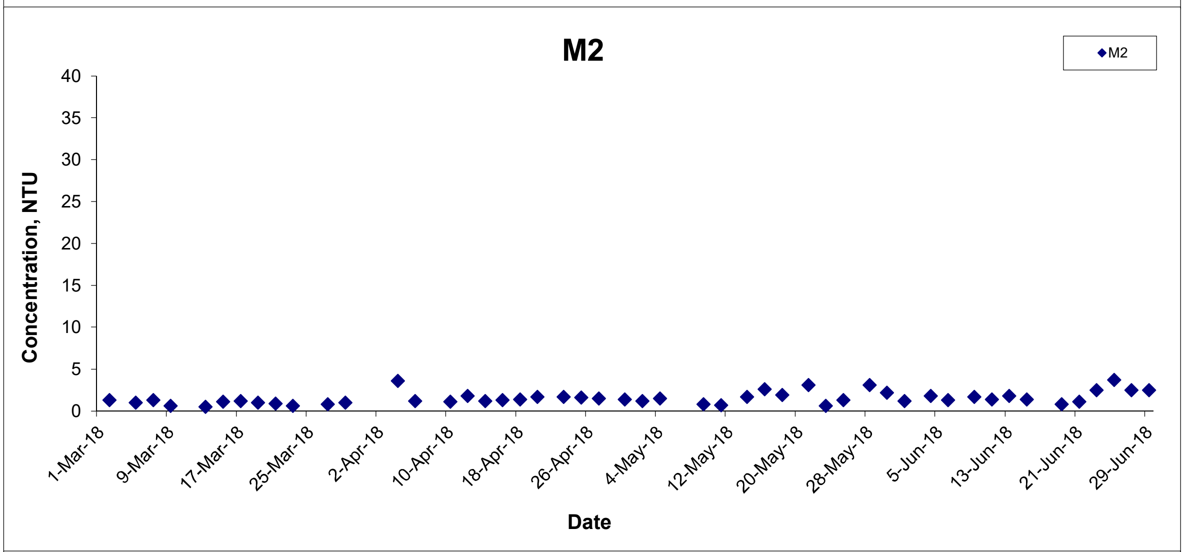
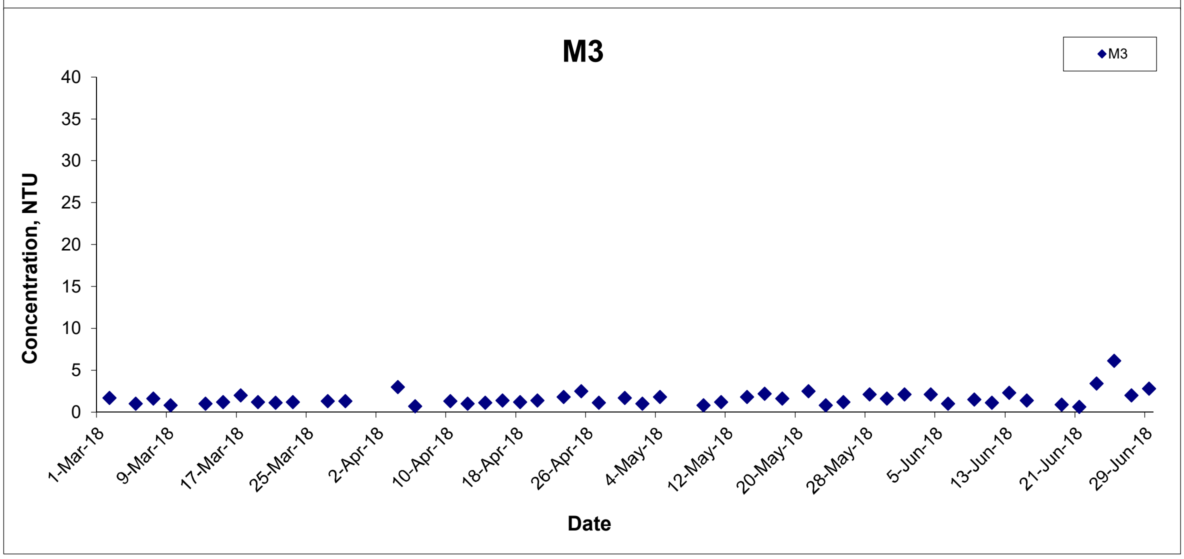
Turbidity (Depth-averaged) at Mid-Flood Tide







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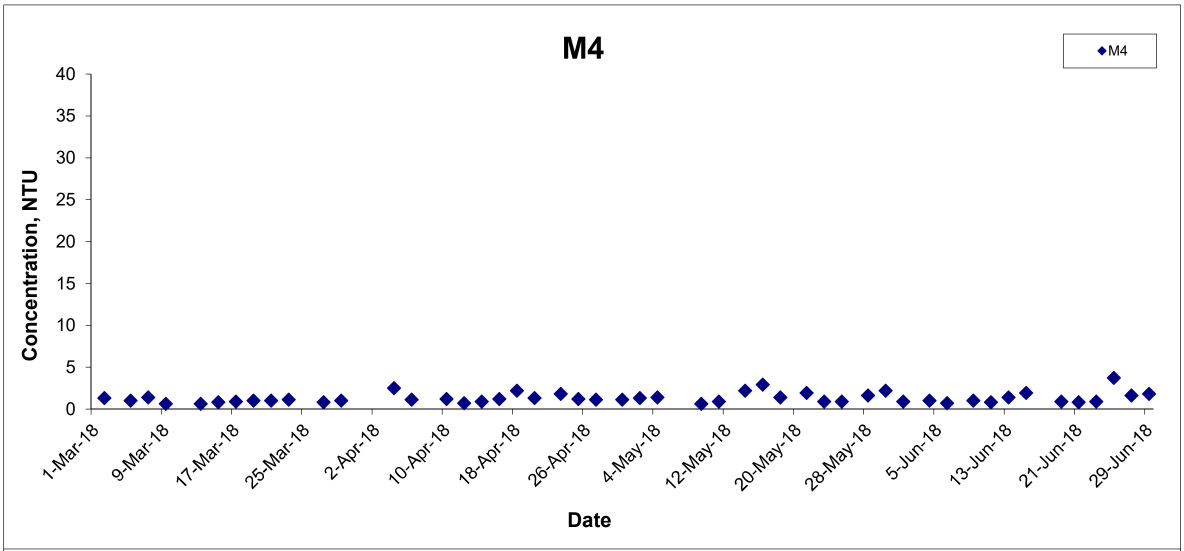
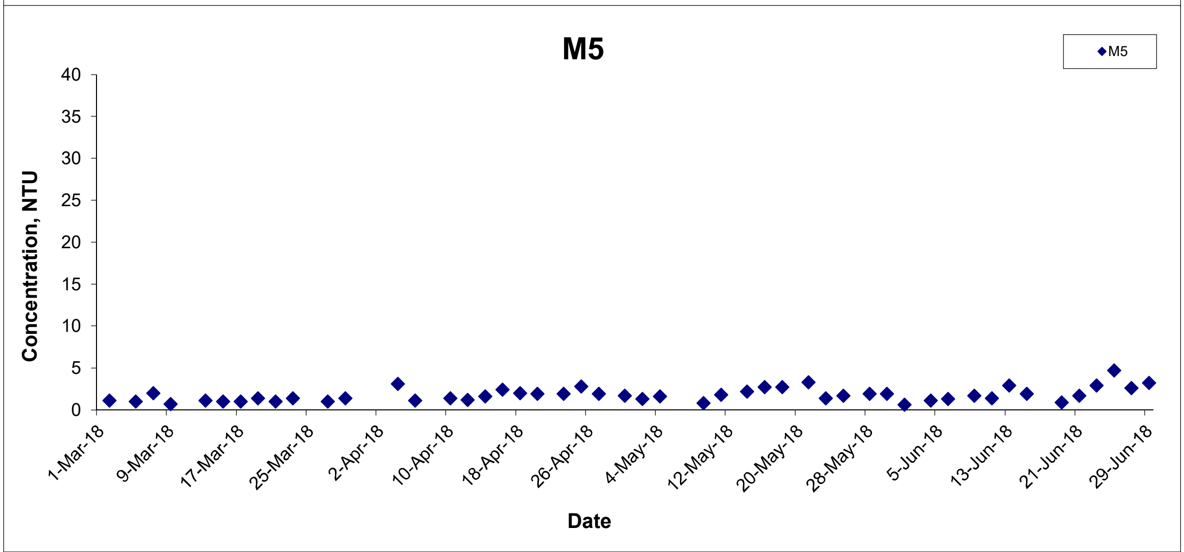
Turbidity (Depth-averaged) at Mid-Flood Tide





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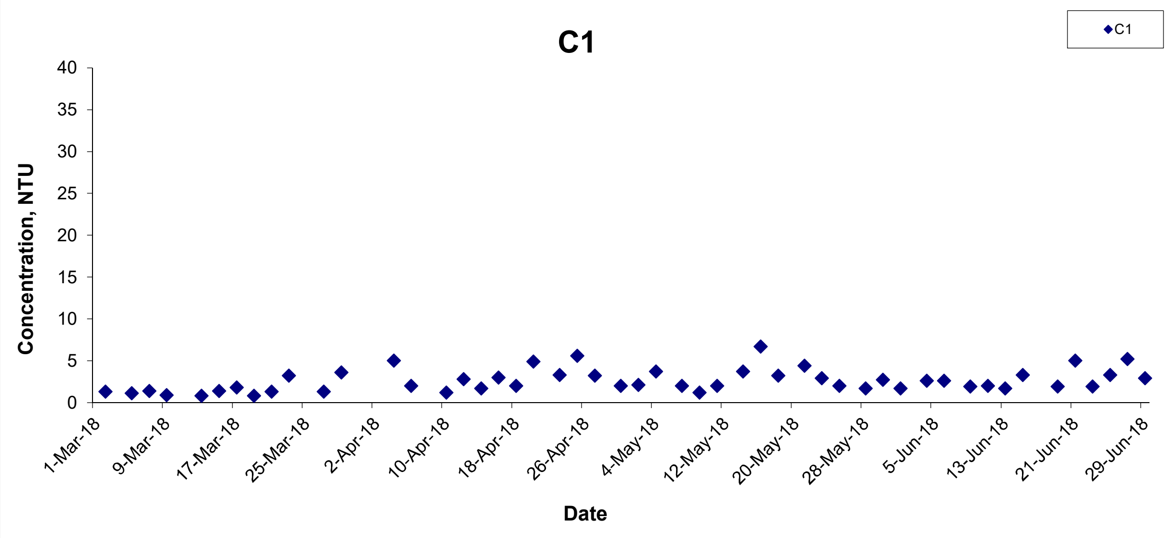
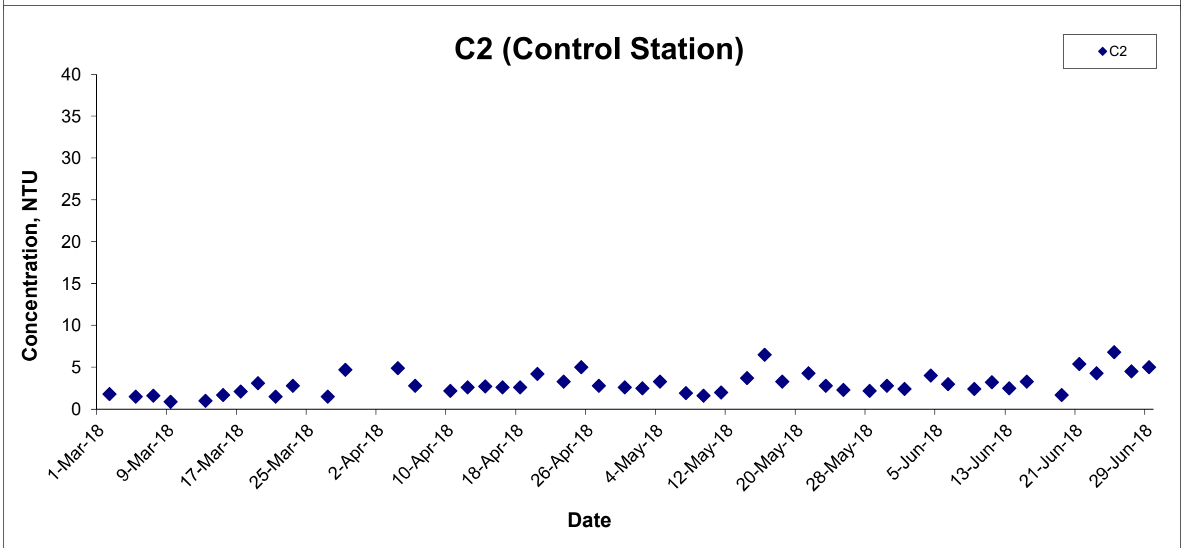
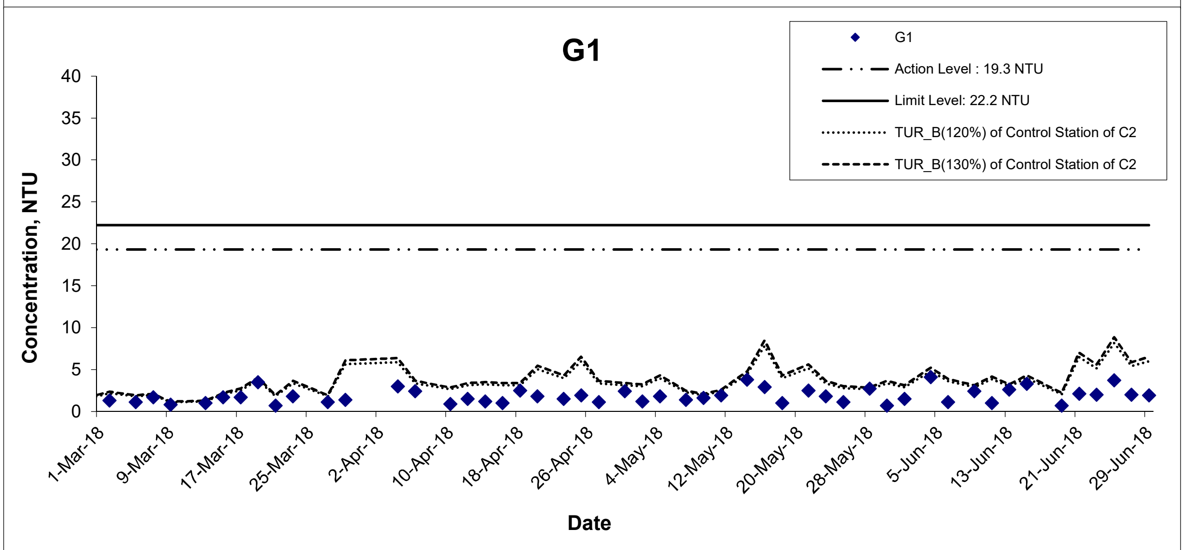
Turbidity (Bottom) at Mid-Ebb Tide







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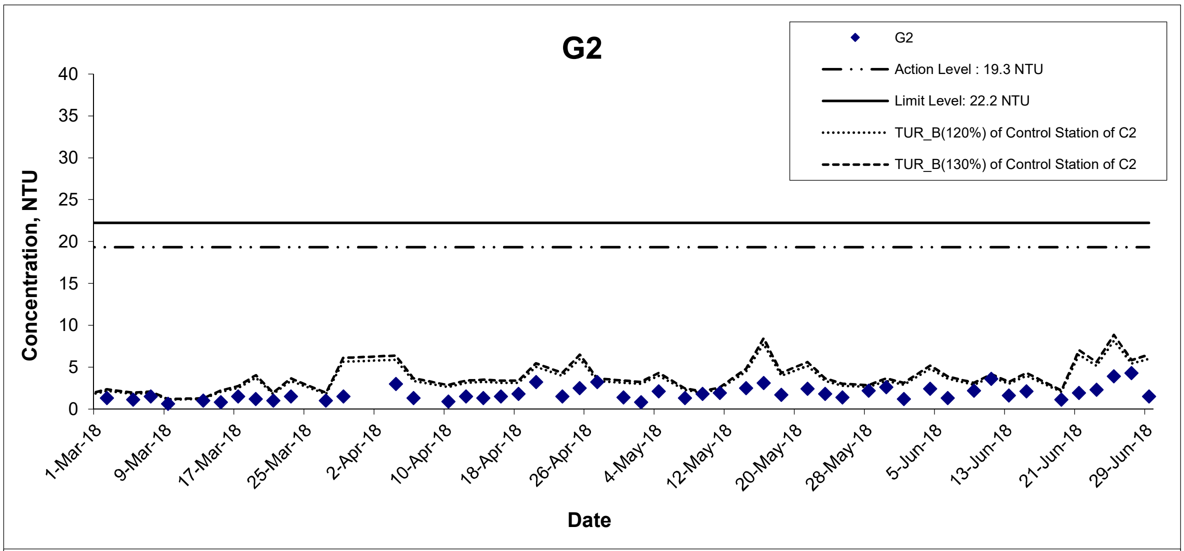
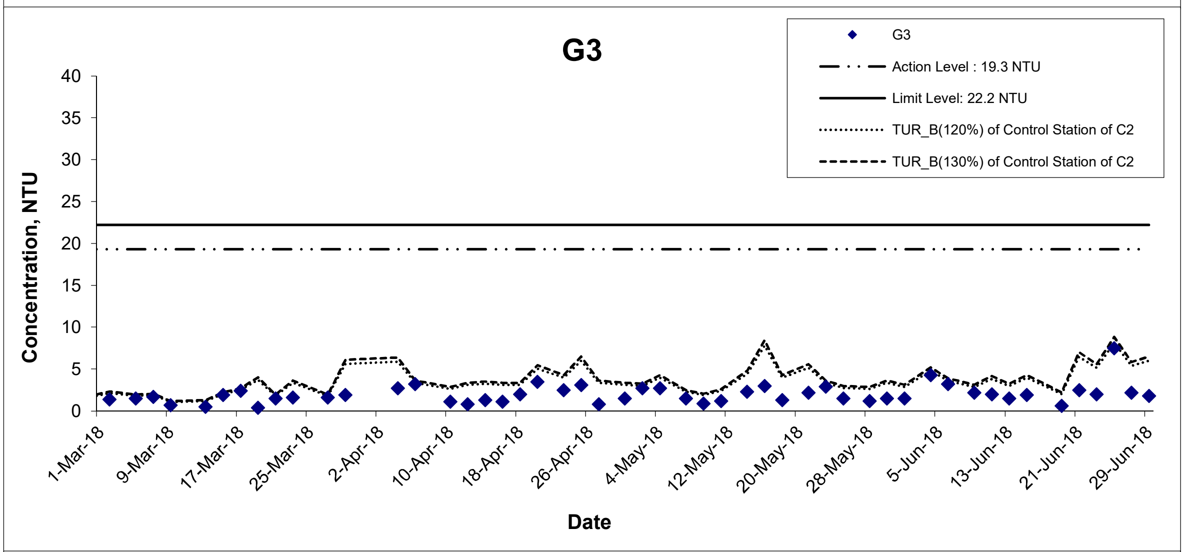
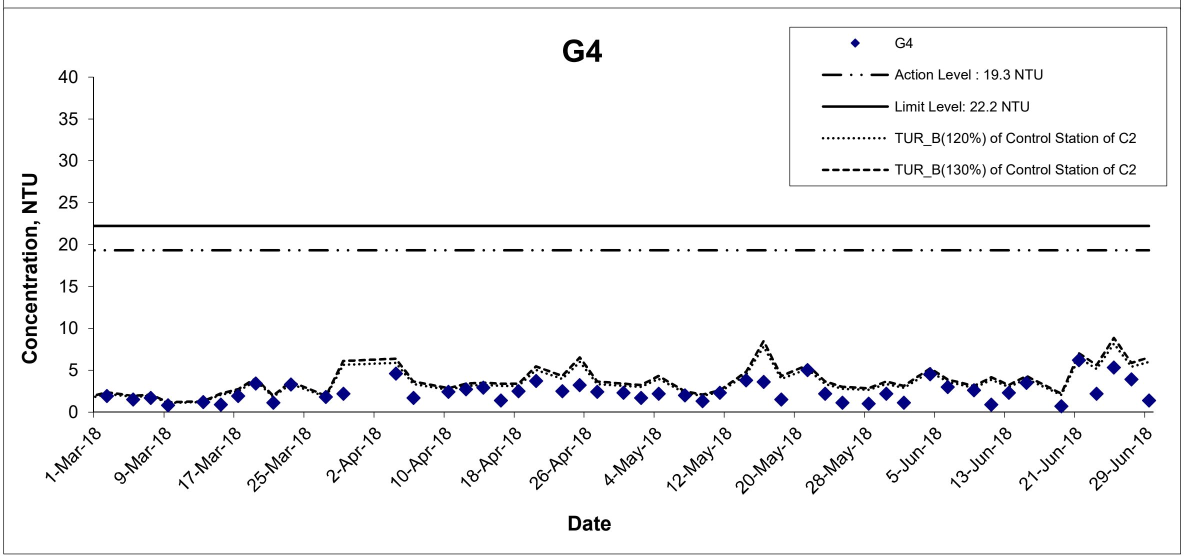
Turbidity (Bottom) at Mid-Ebb Tide







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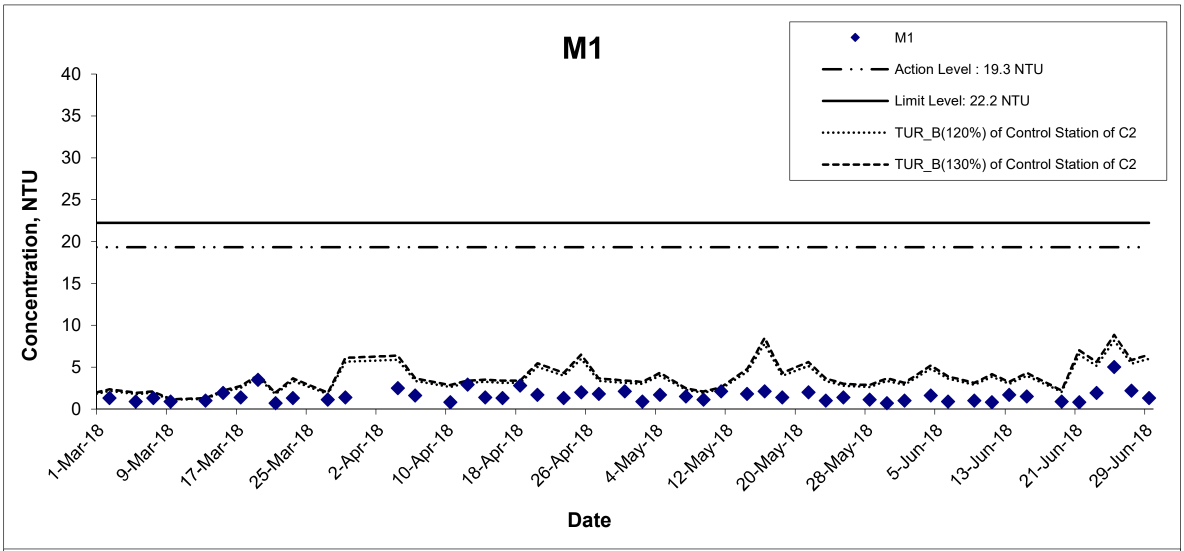
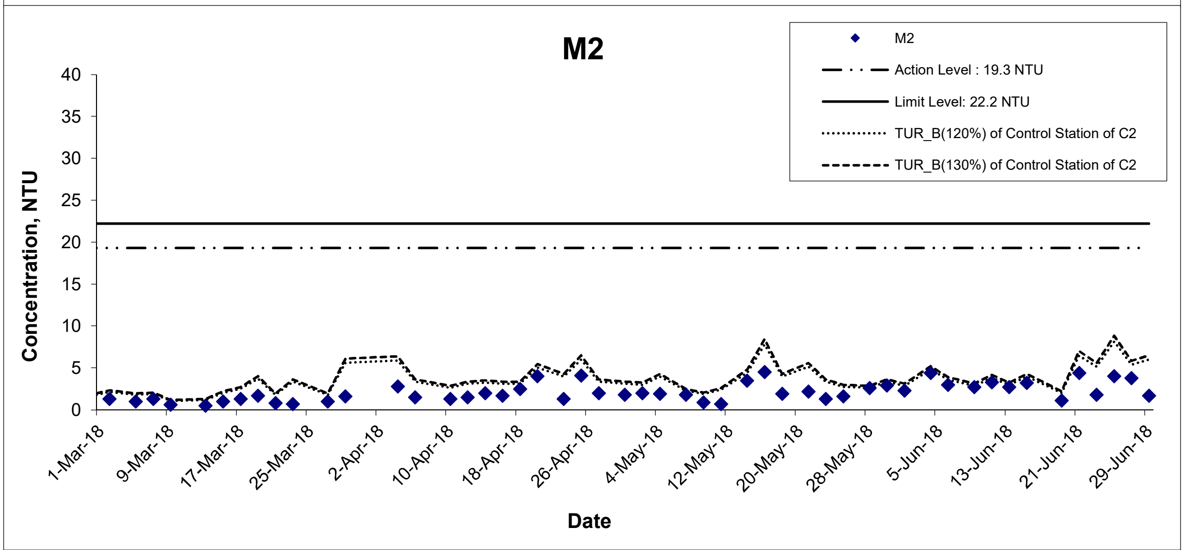
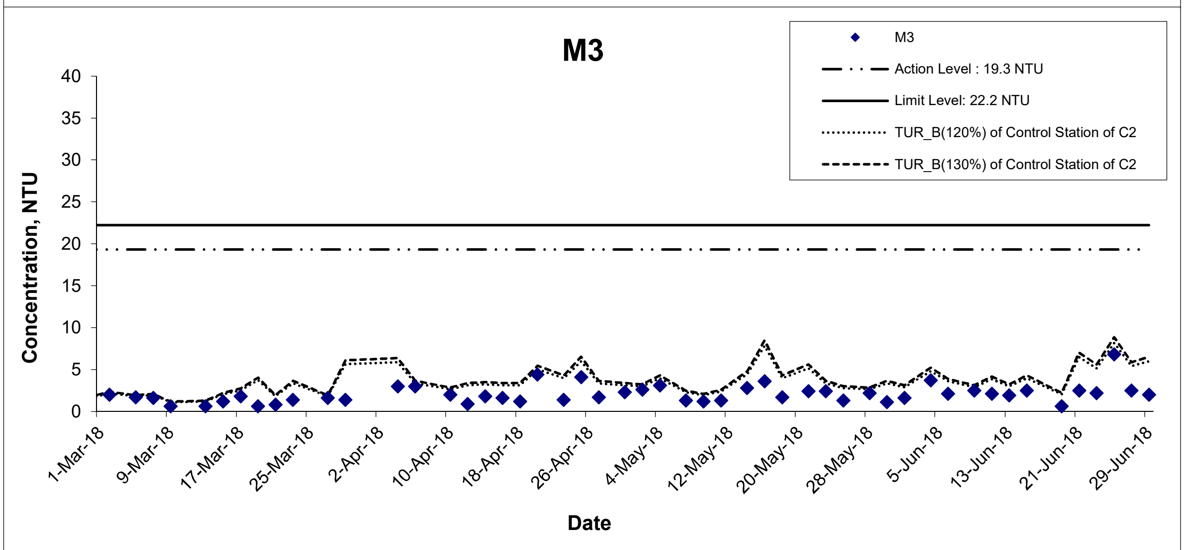
Turbidity (Bottom) at Mid-Ebb Tide







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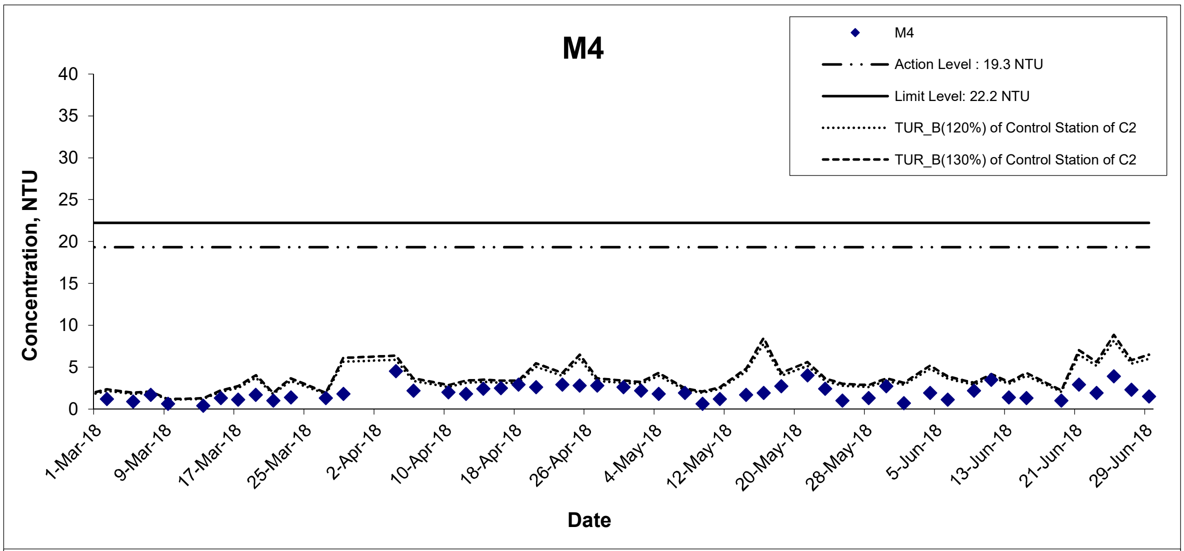
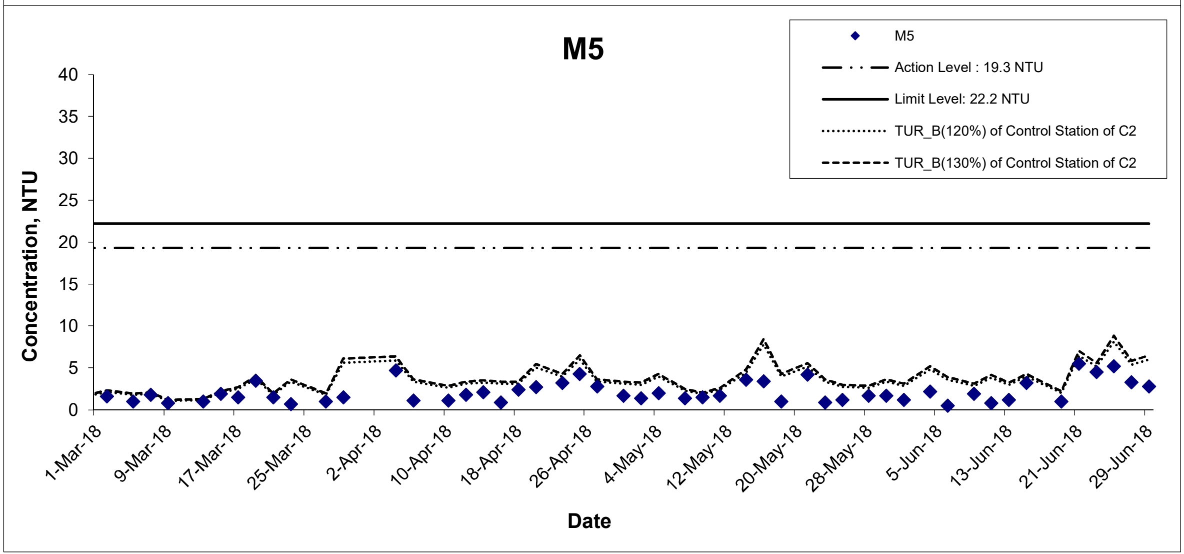
Turbidity (Bottom) at Mid-Ebb Tide





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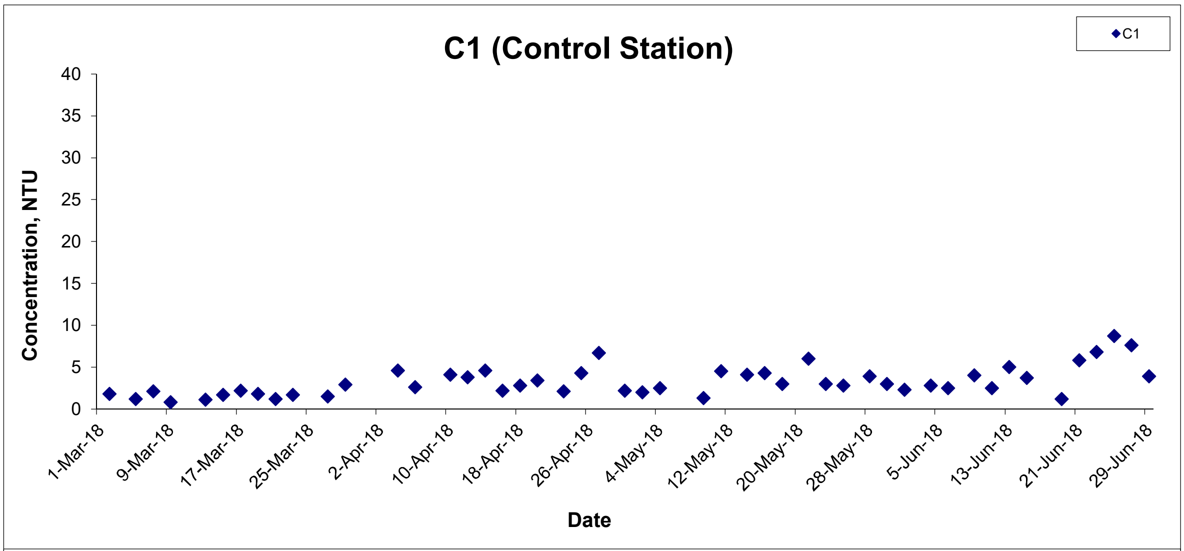
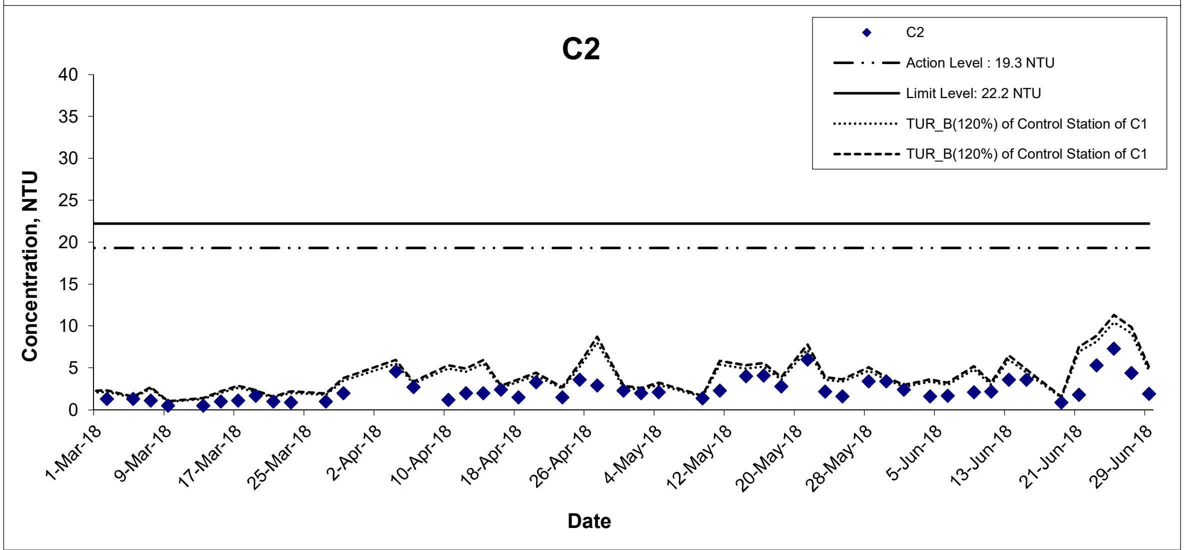
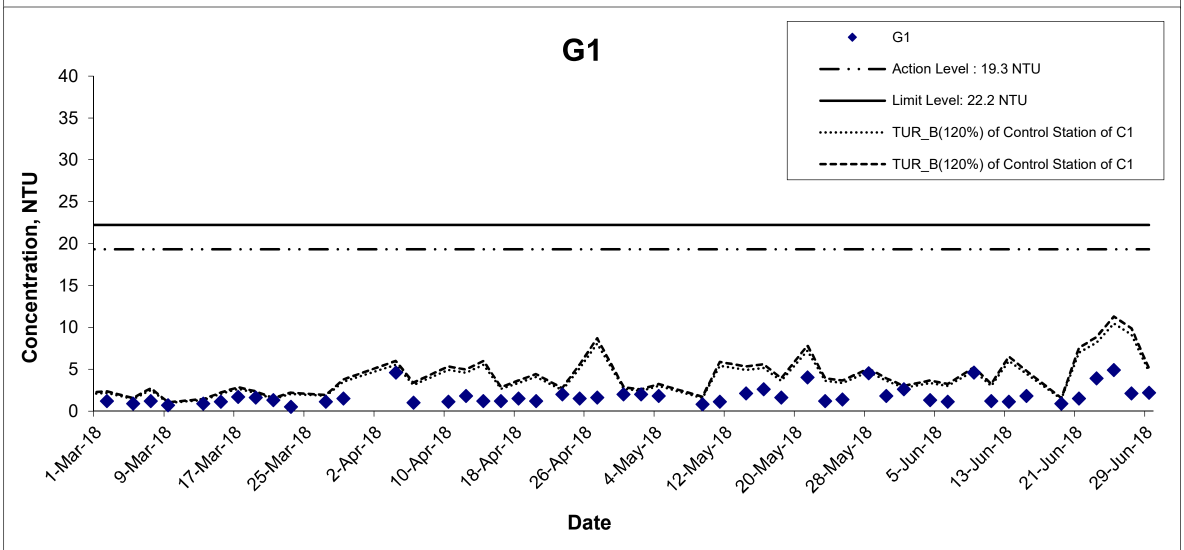
Turbidity (Bottom) at Mid-Flood Tide







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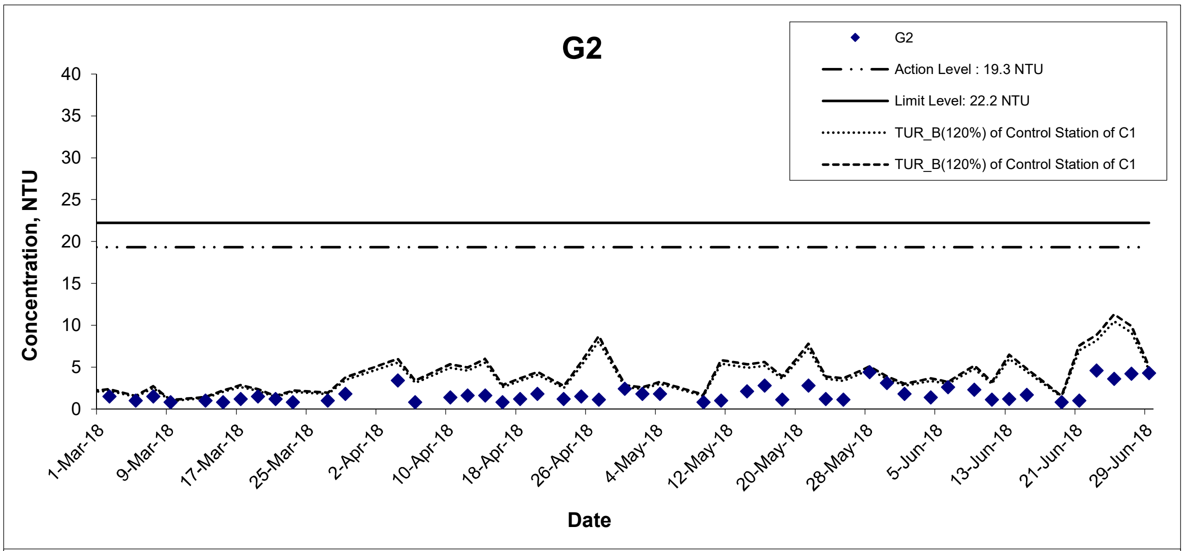
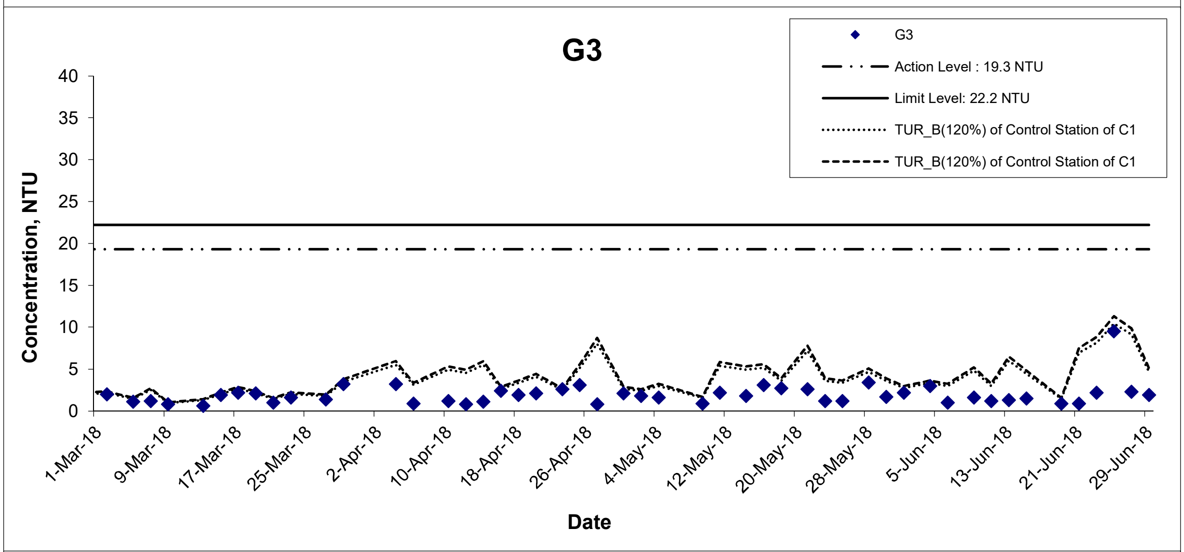
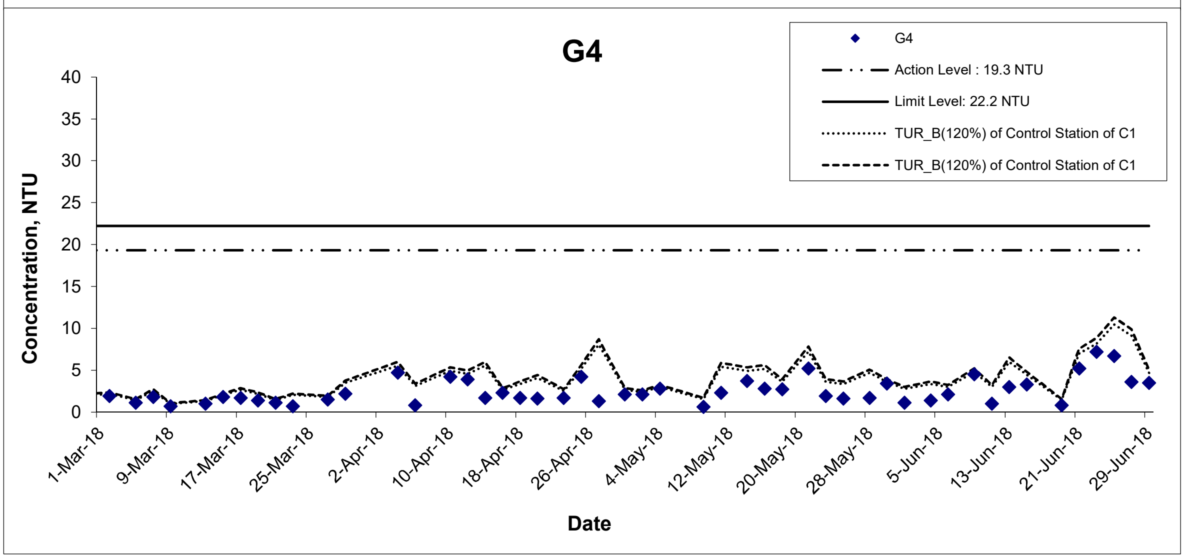
Turbidity (Bottom) at Mid-Flood Tide







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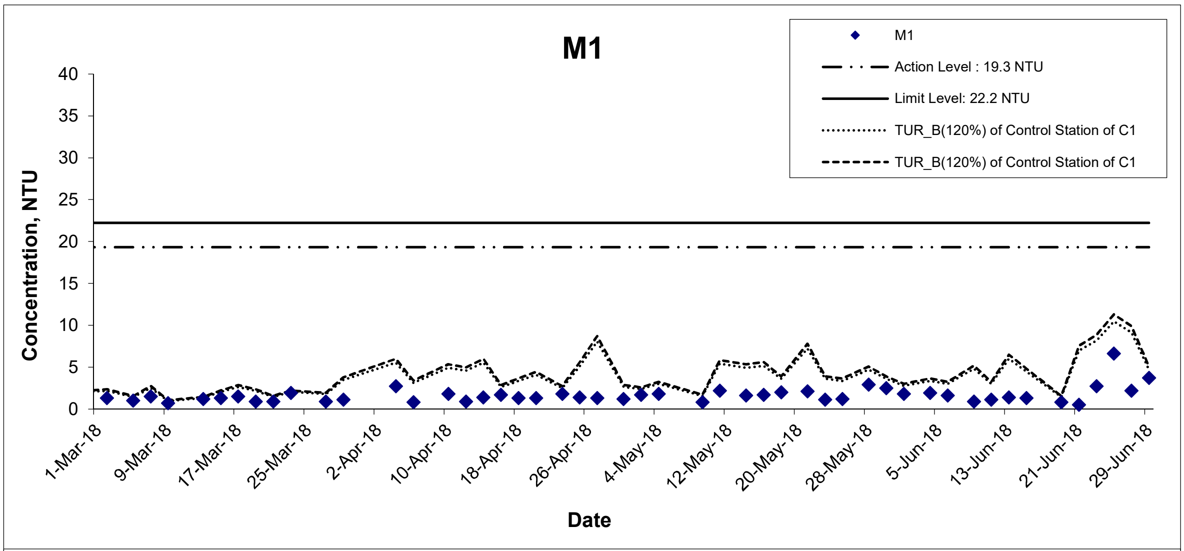
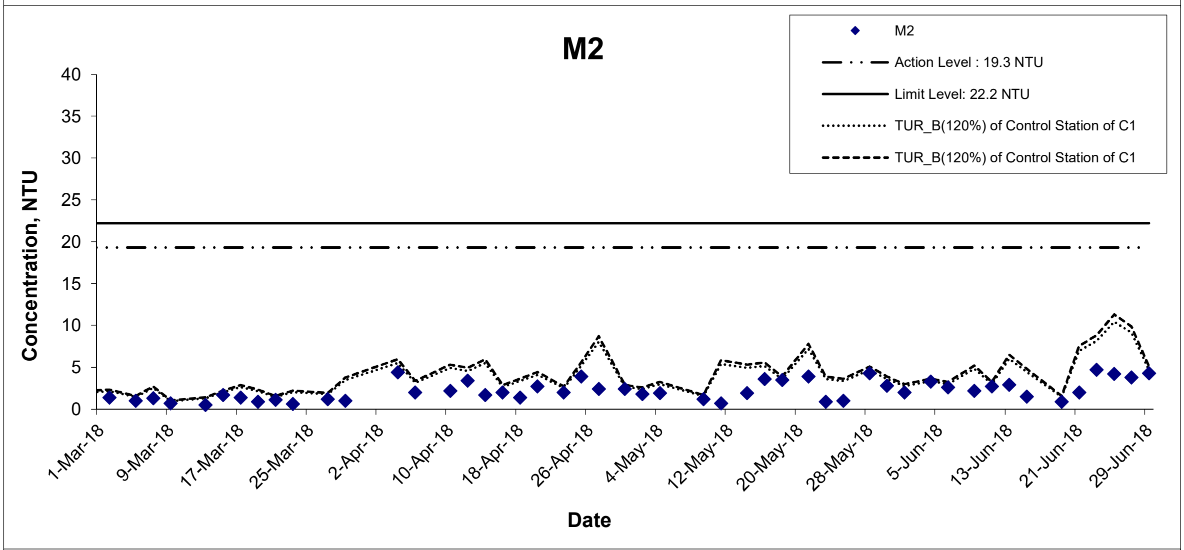
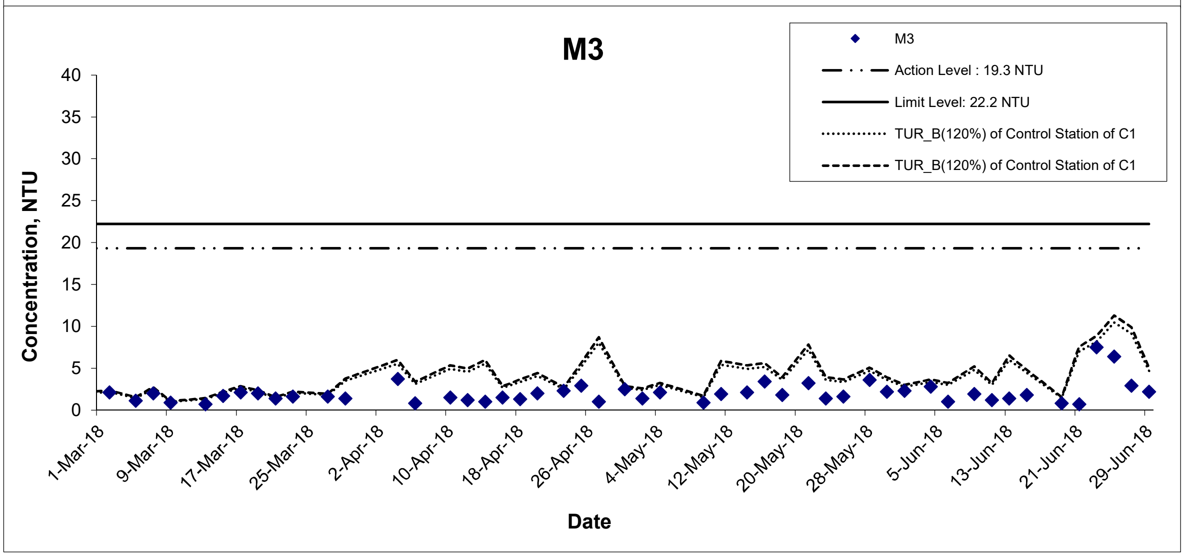
Turbidity (Bottom) at Mid-Flood Tide







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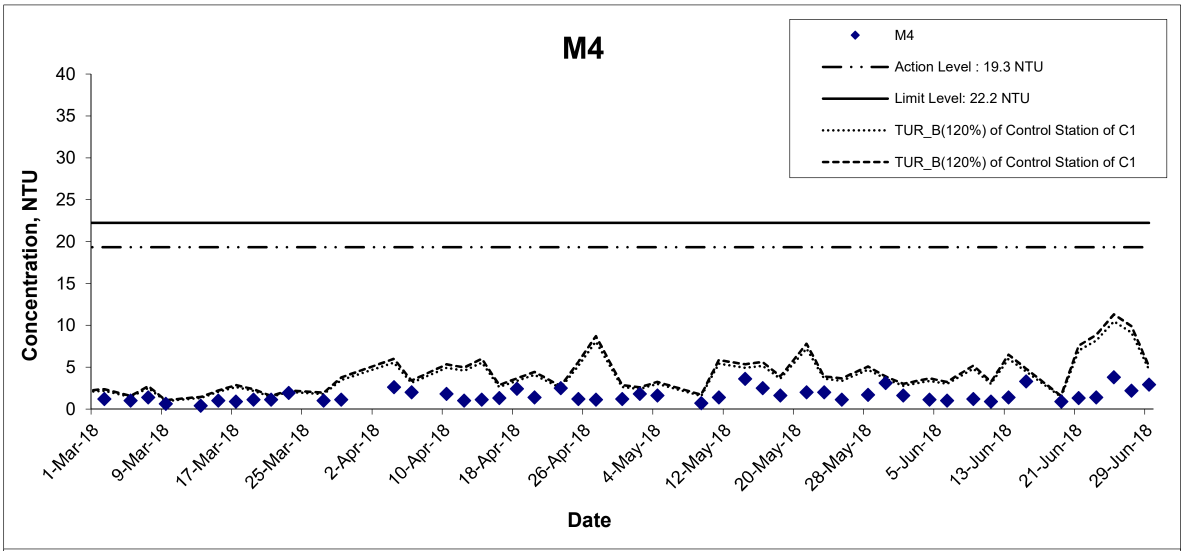
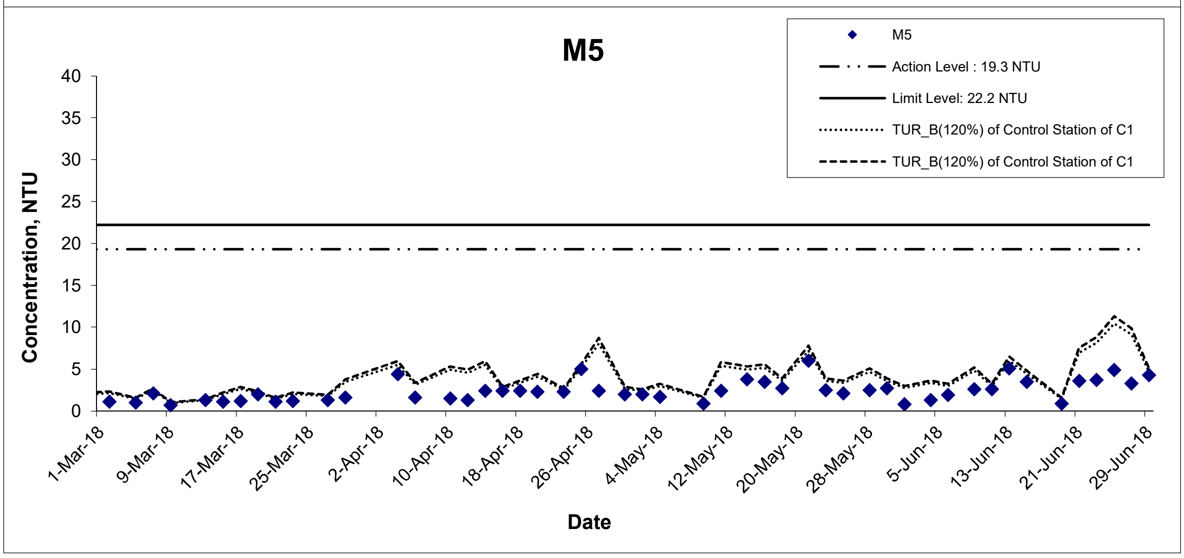
Turbidity (Bottom) at Mid-Flood Tide





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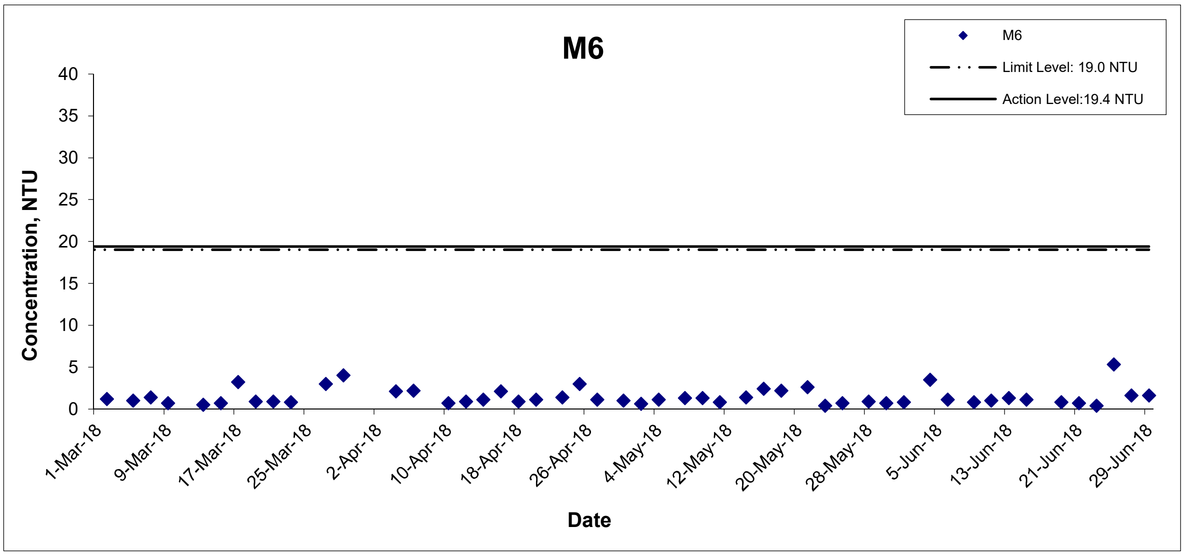
Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



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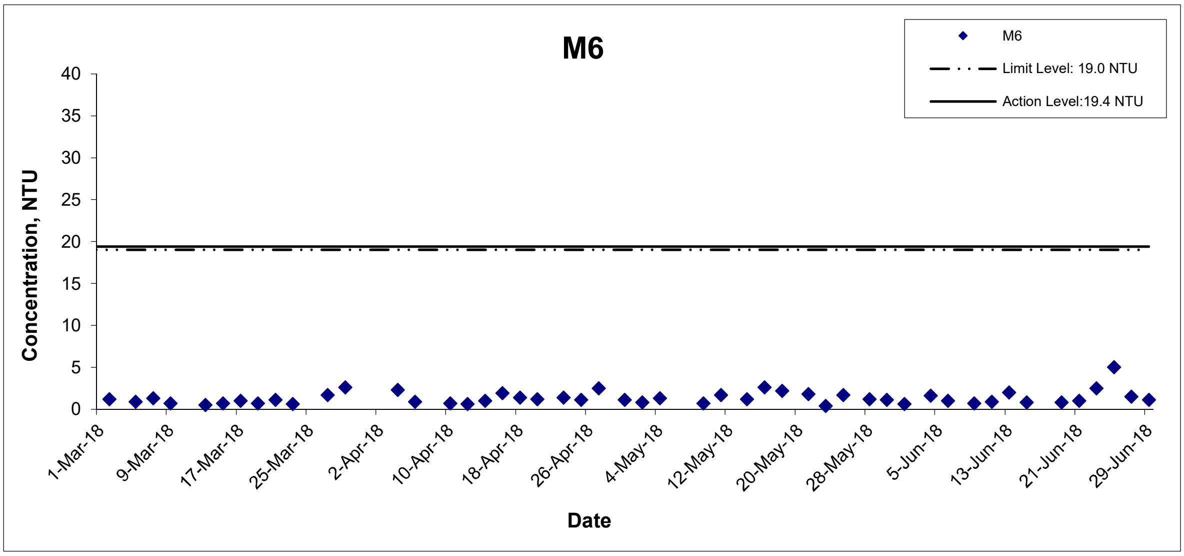
Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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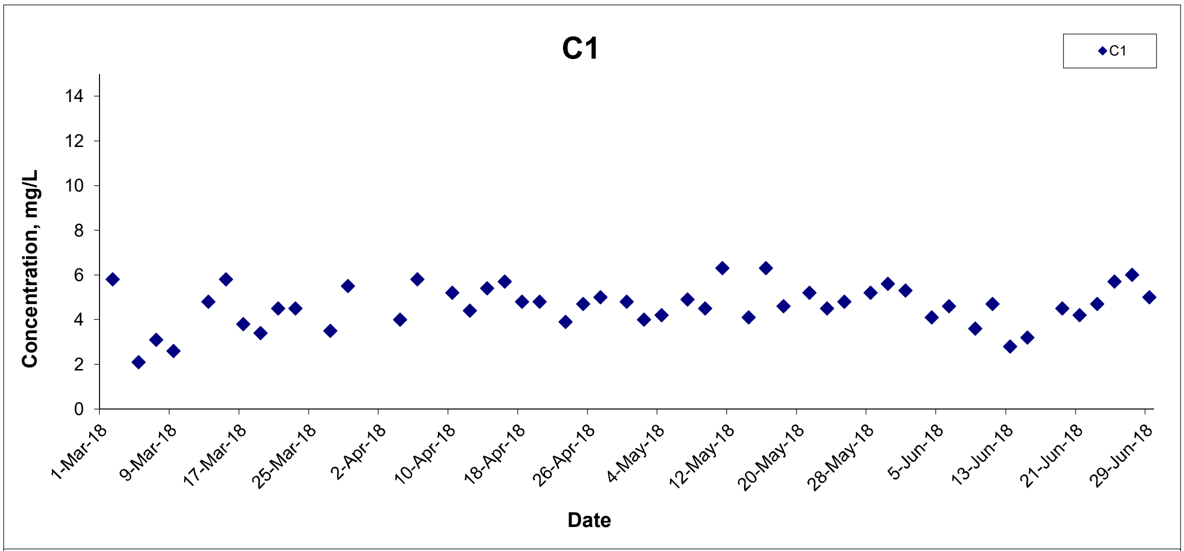
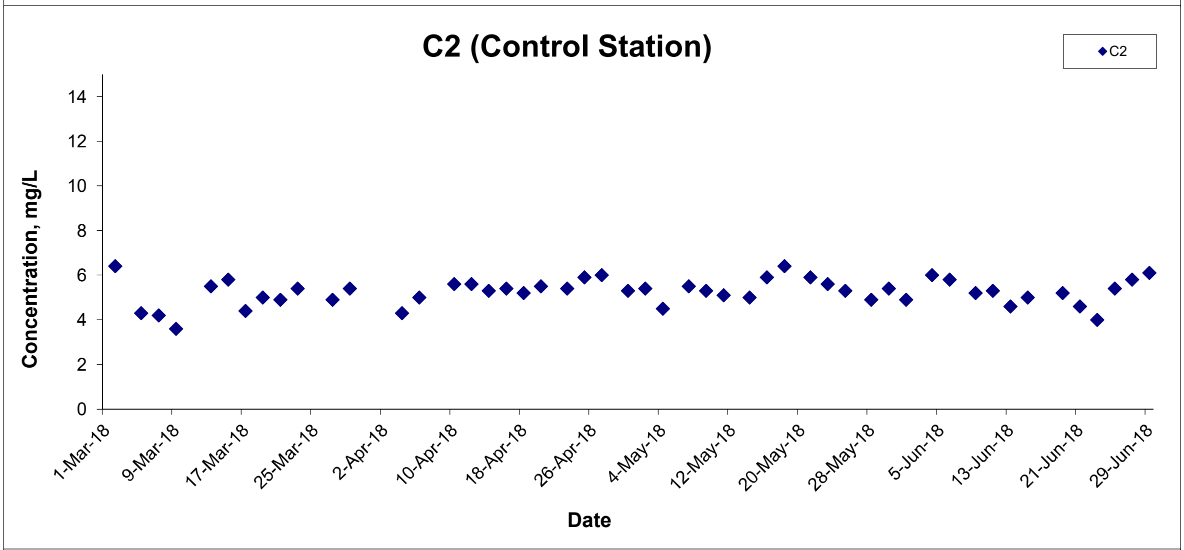
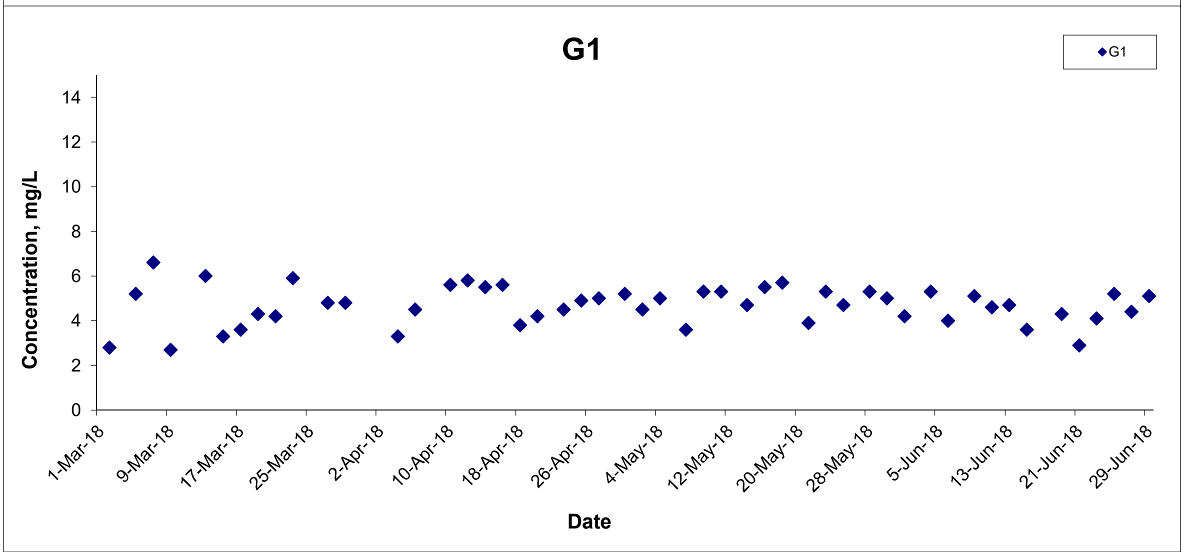
Suspended Solids (Depth-averaged) at Mid-Ebb Tide







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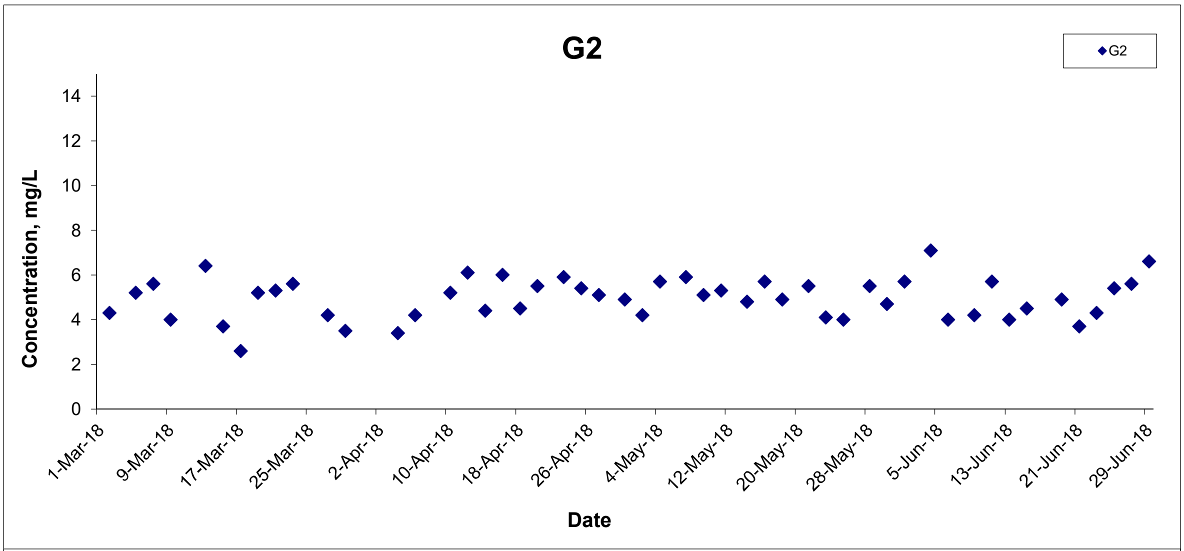
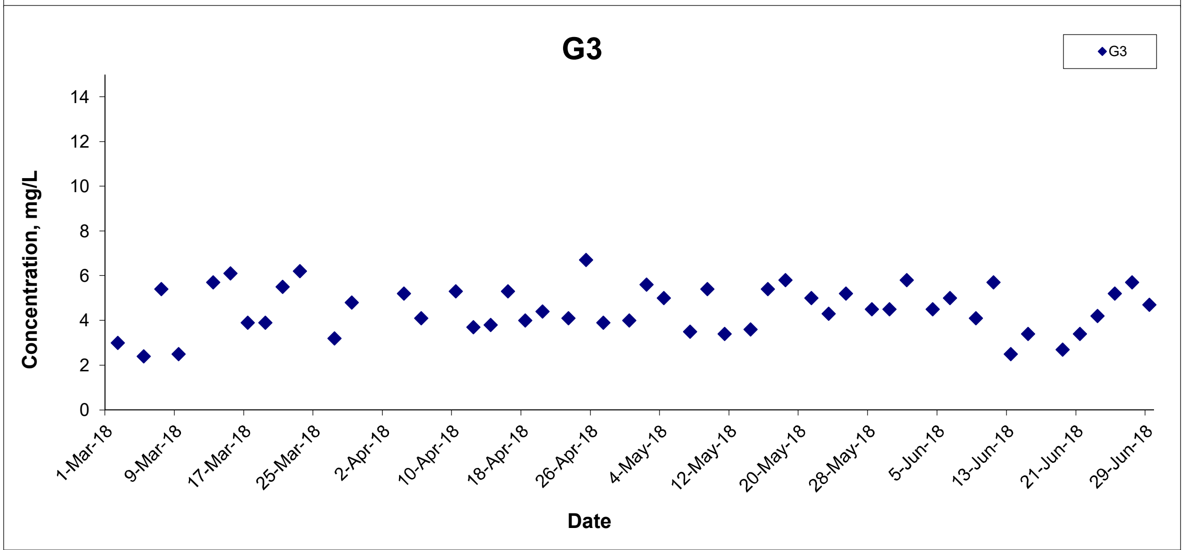
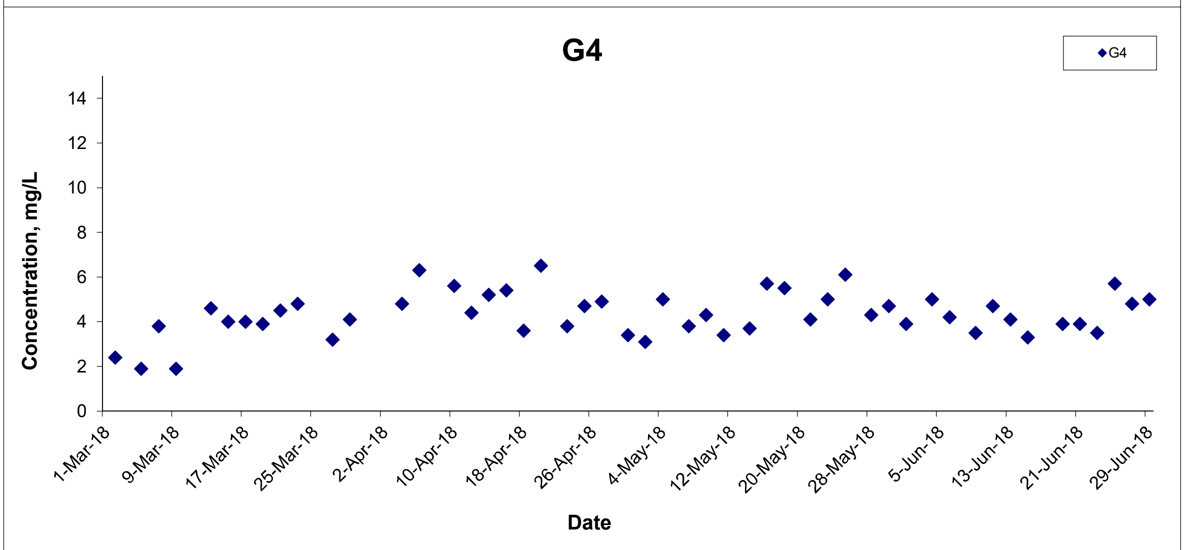
Suspended Solids (Depth-averaged) at Mid-Ebb Tide







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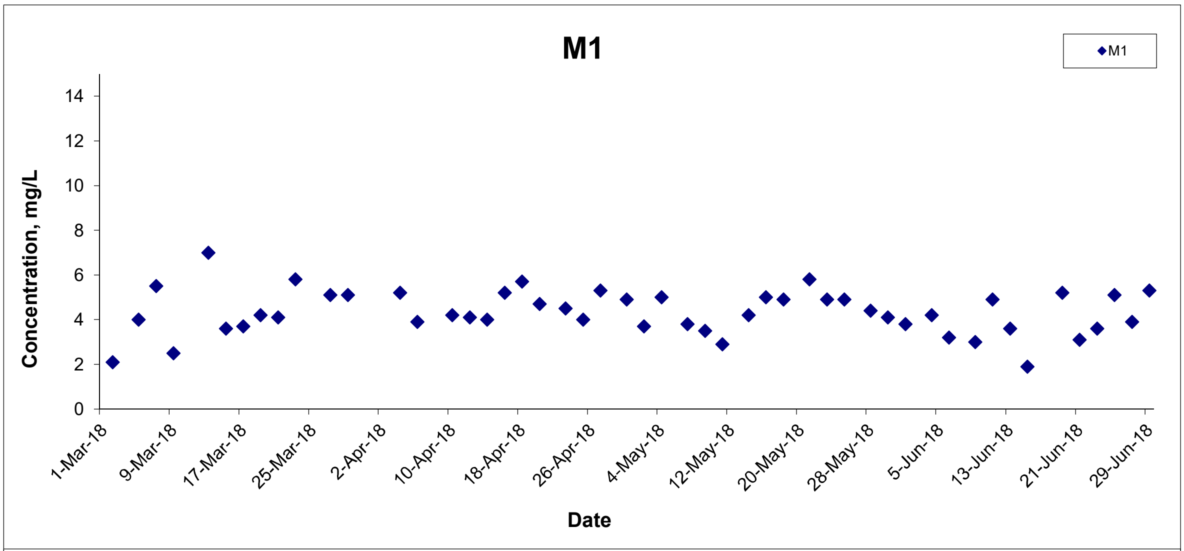
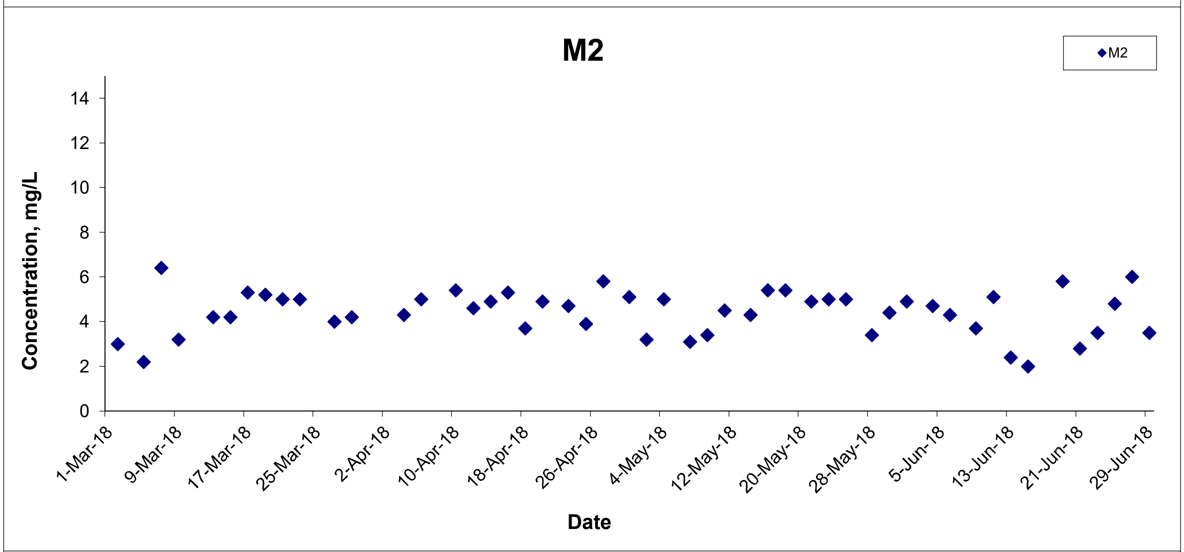
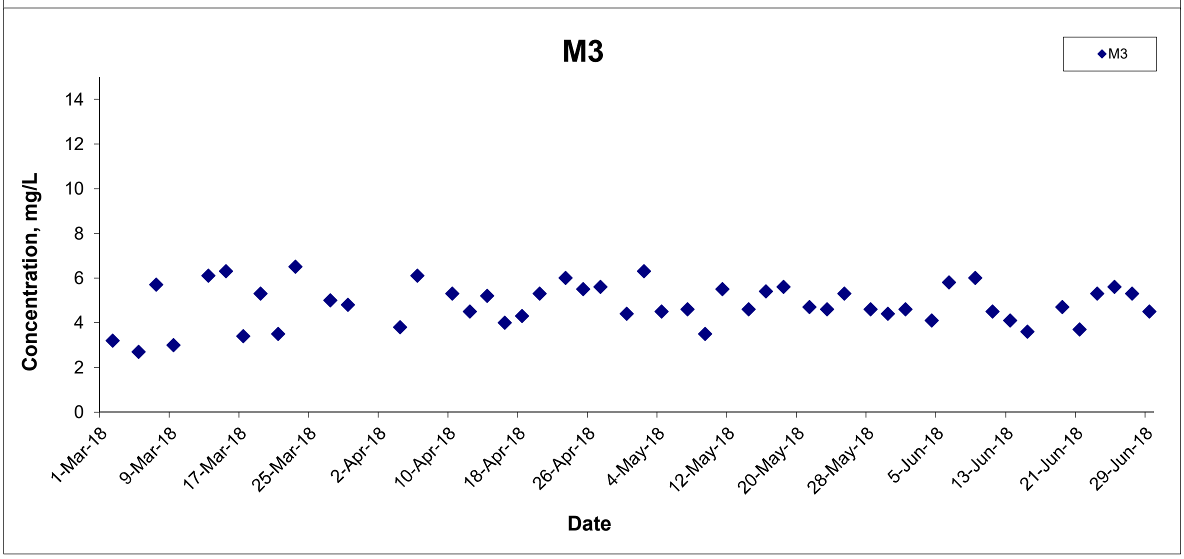
Suspended Solids (Depth-averaged) at Mid-Ebb Tide







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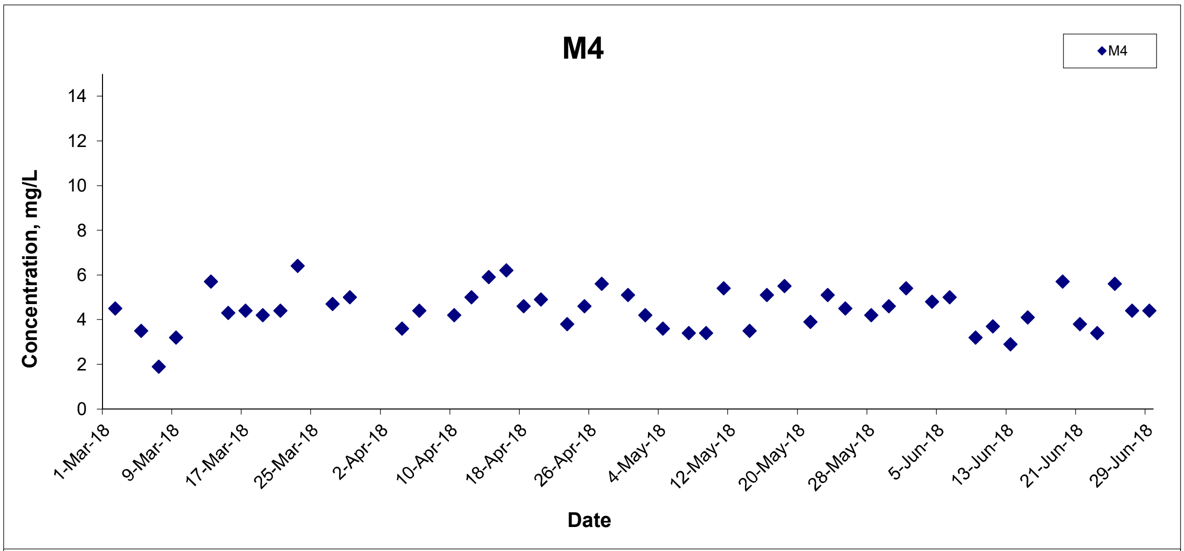
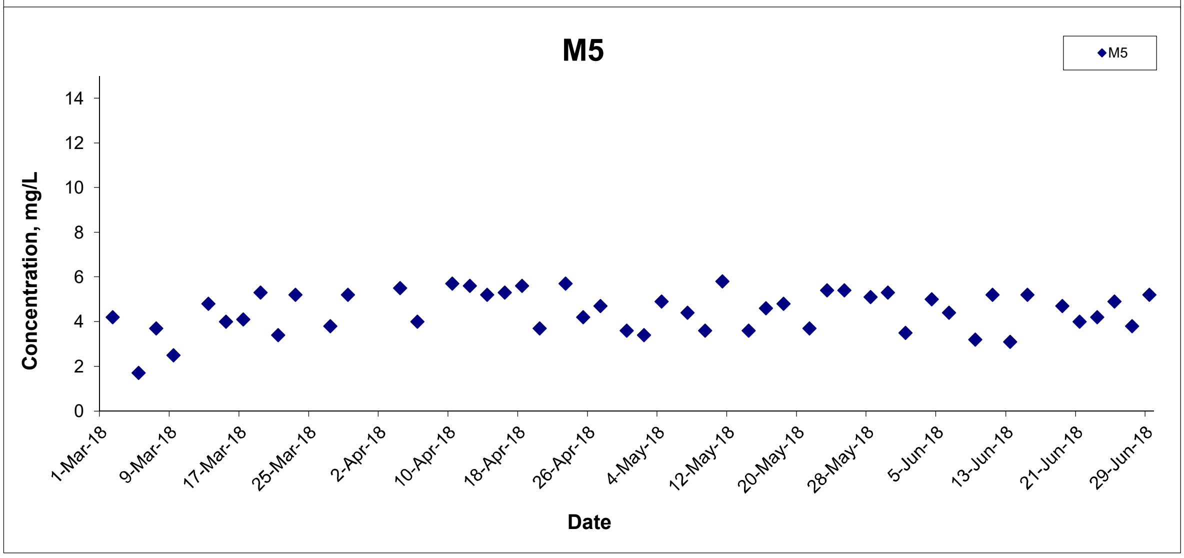
Suspended Solids (Depth-averaged) at Mid-Ebb Tide





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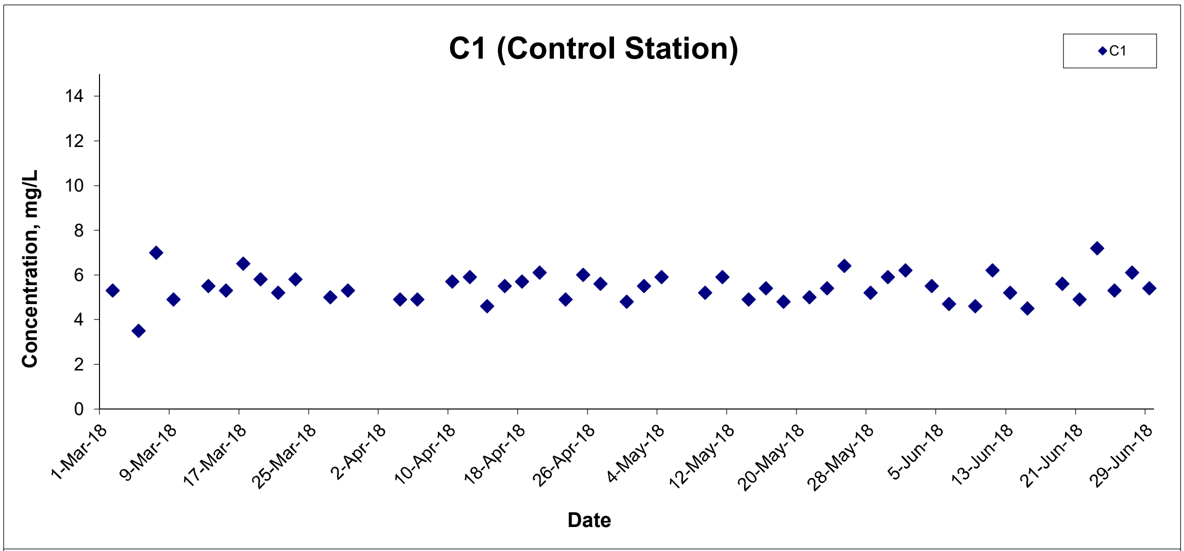
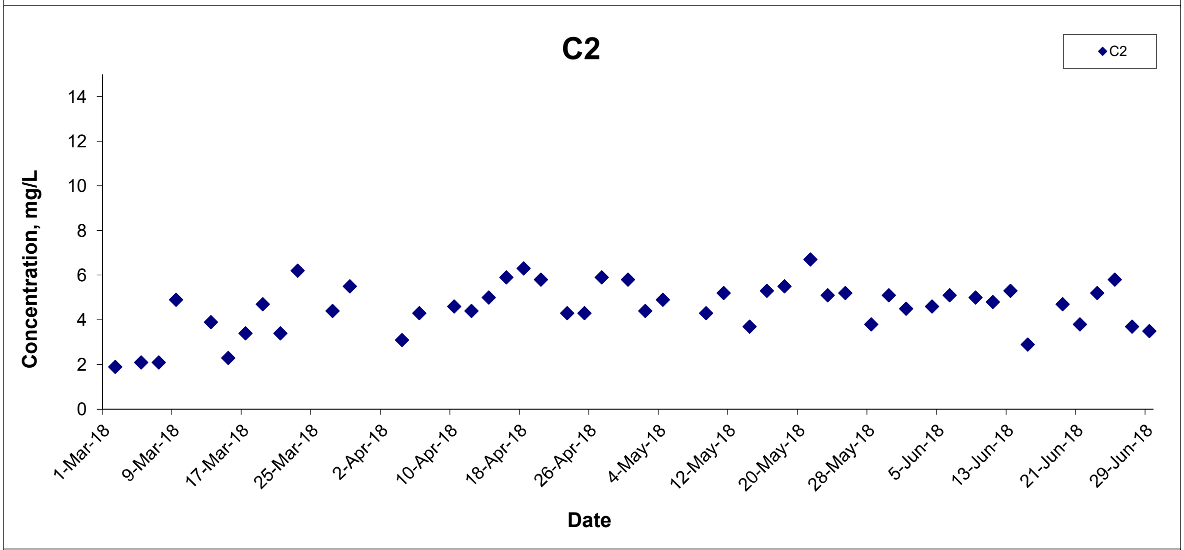
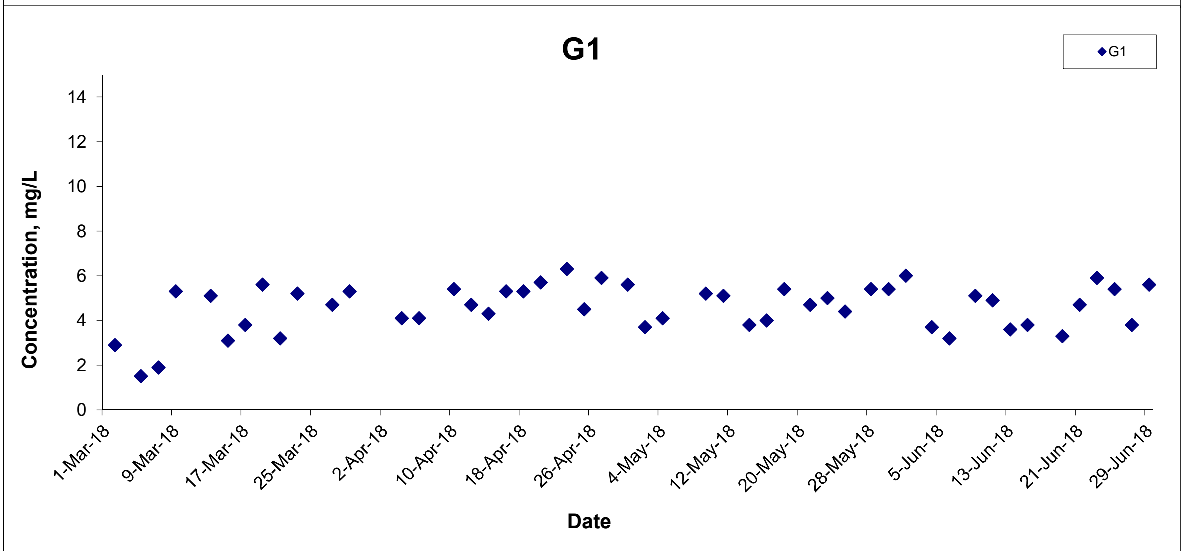
Suspended Solids (Depth-averaged) at Mid-Flood Tide







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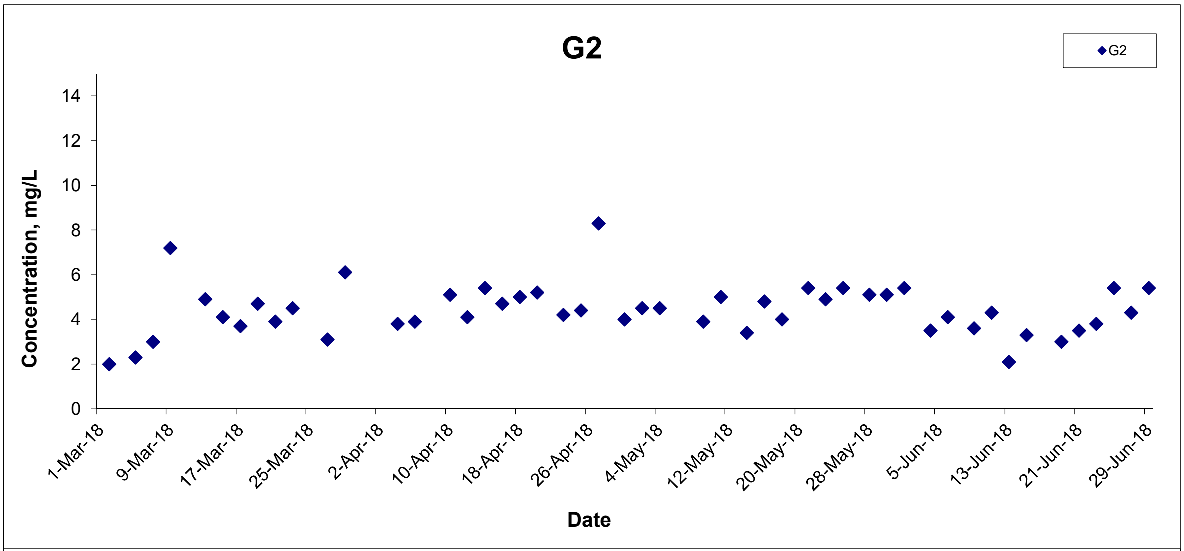
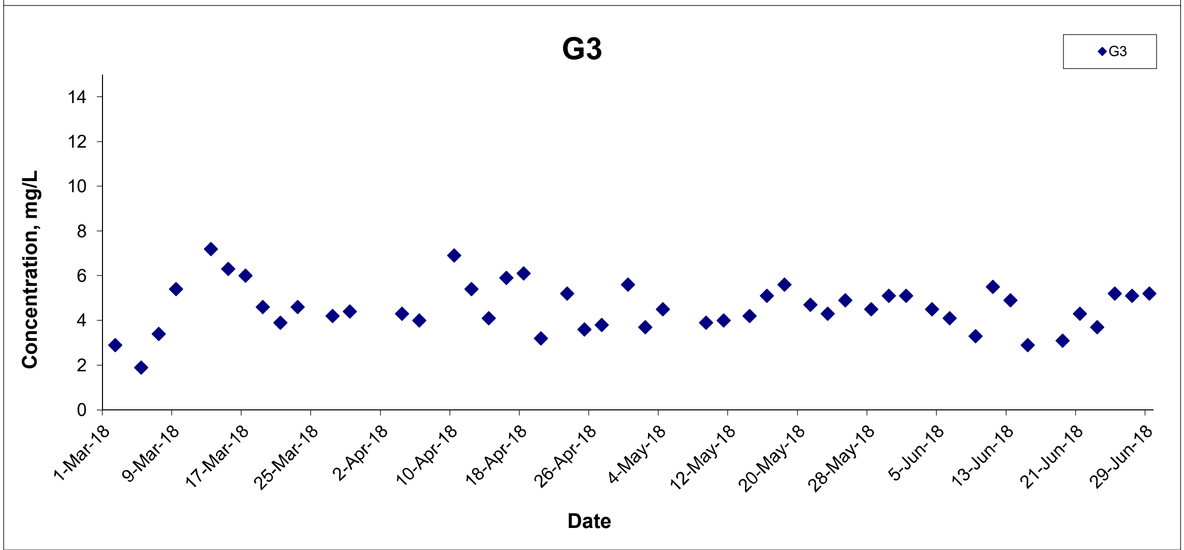
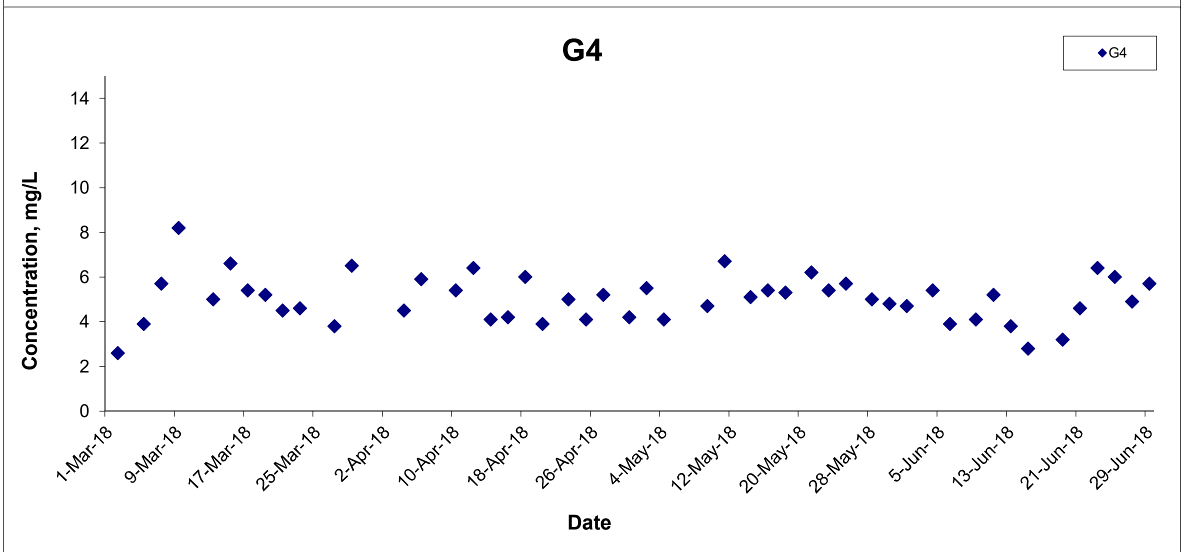
Suspended Solids (Depth-averaged) at Mid-Flood Tide







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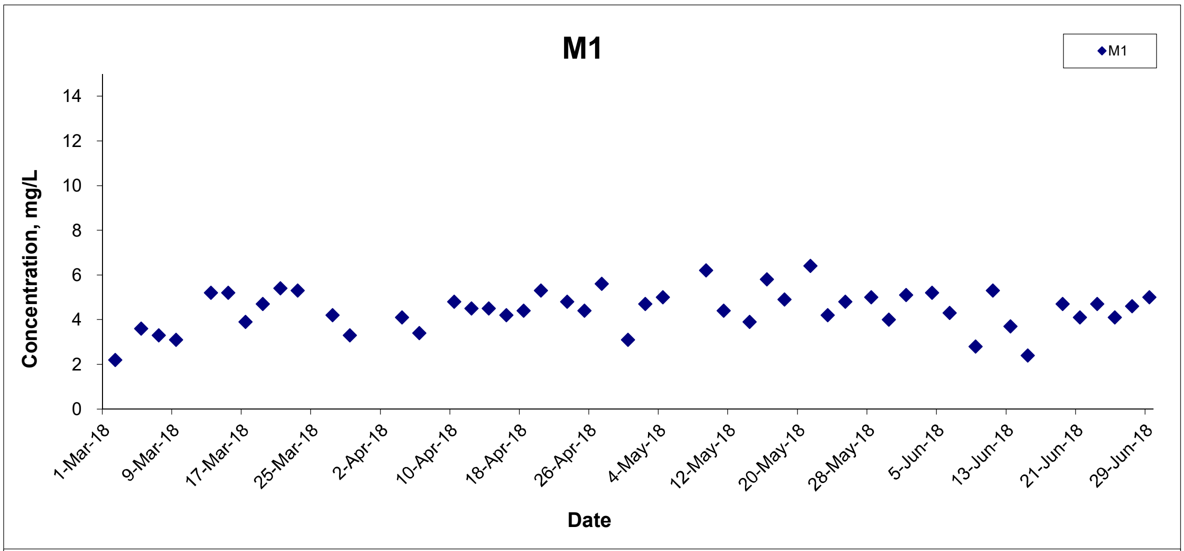
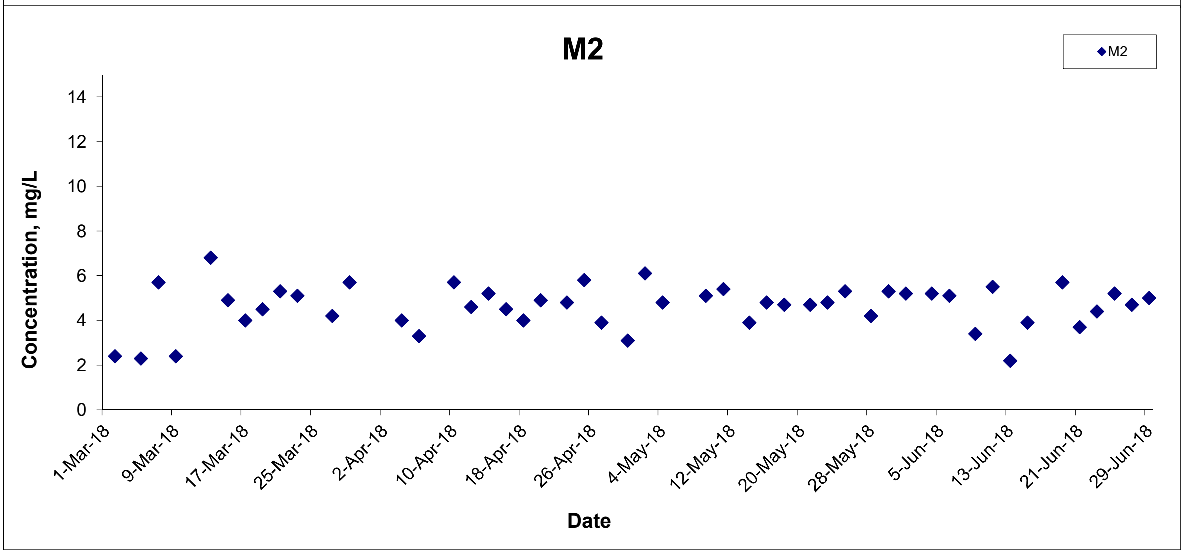
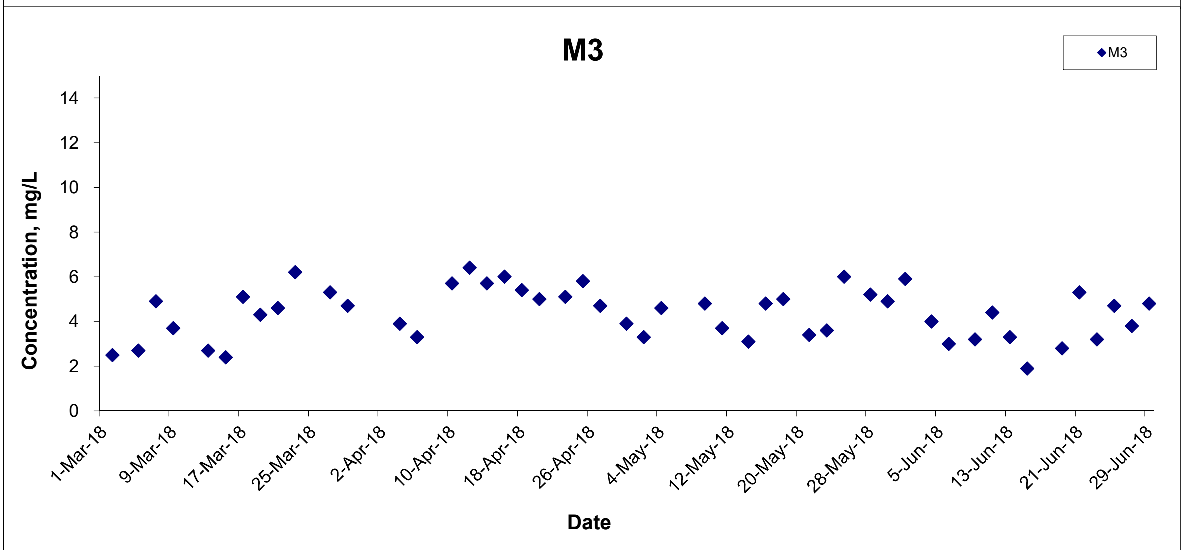
Suspended Solids (Depth-averaged) at Mid-Flood Tide







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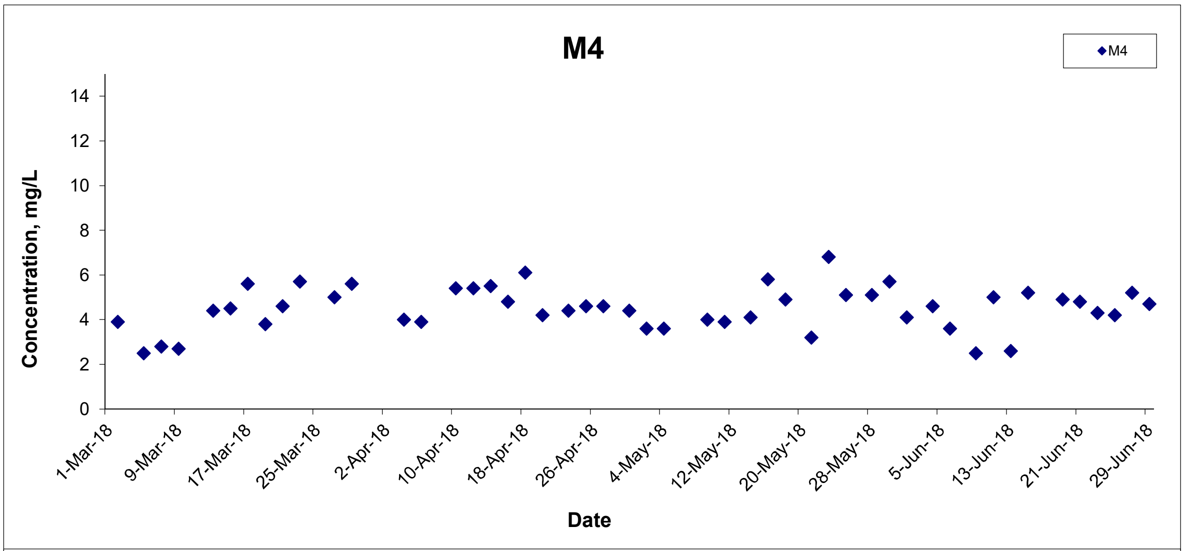

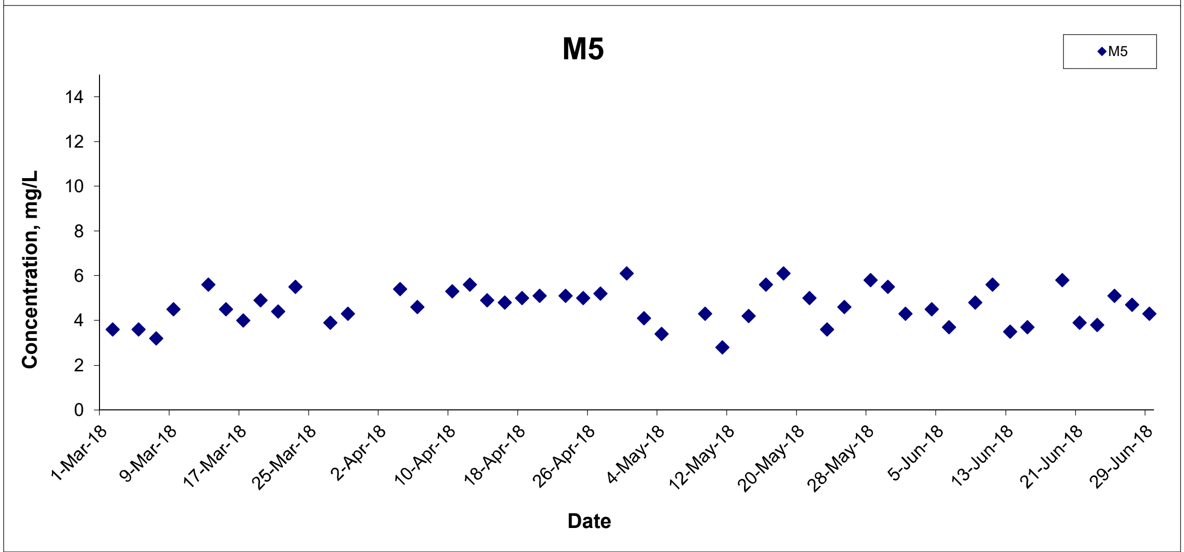

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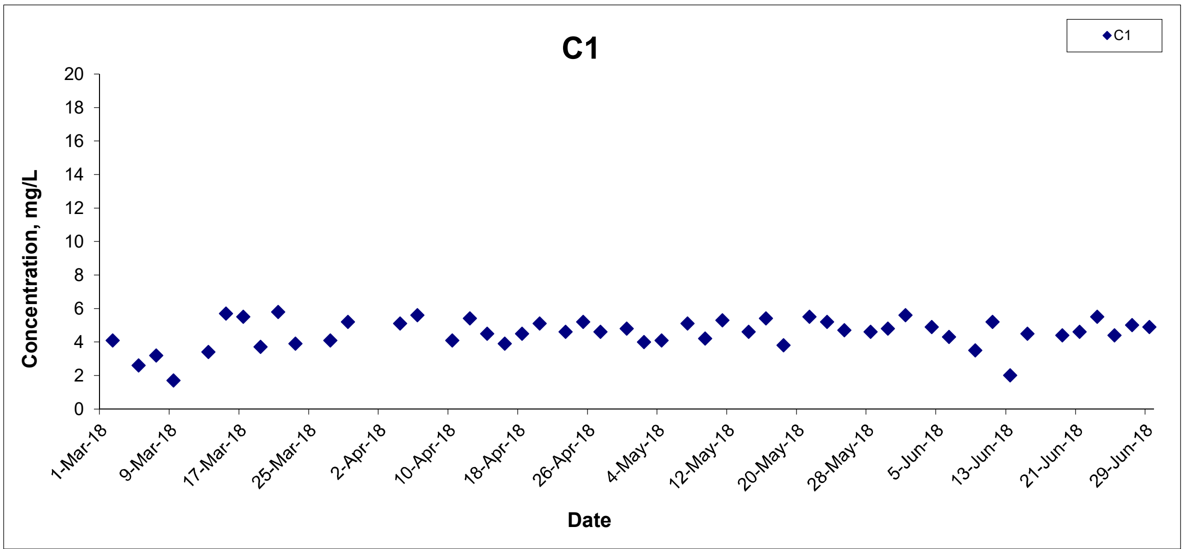
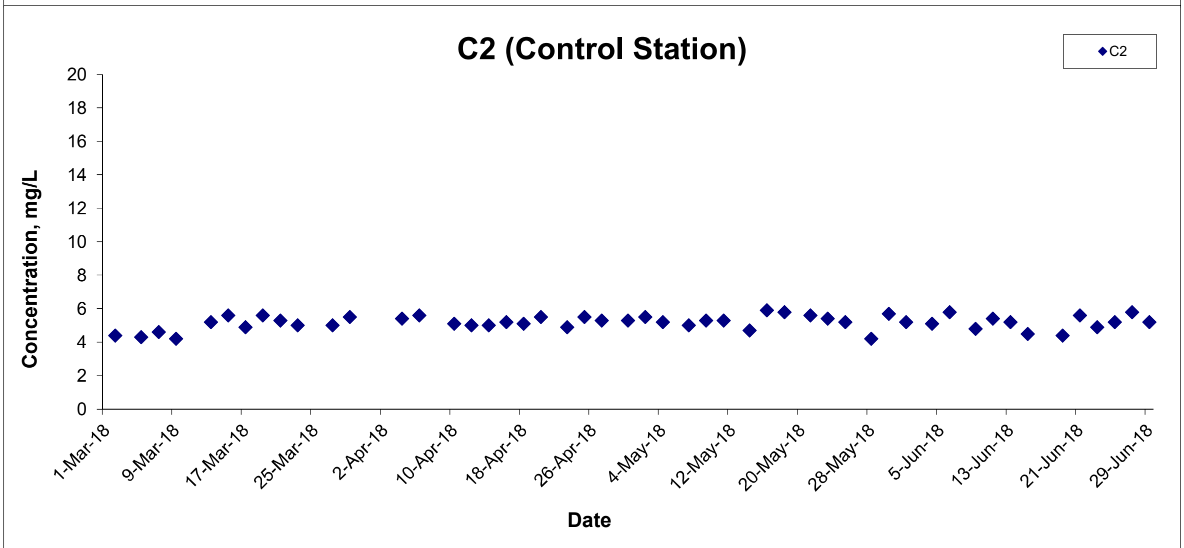
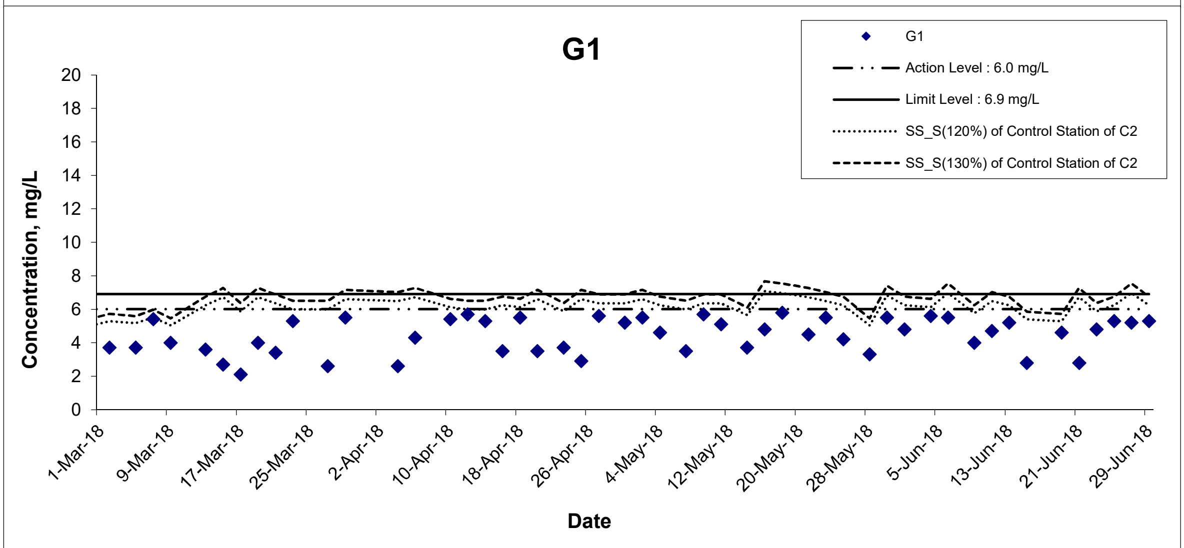
Suspended Solids (Surface) at Mid-Ebb Tide







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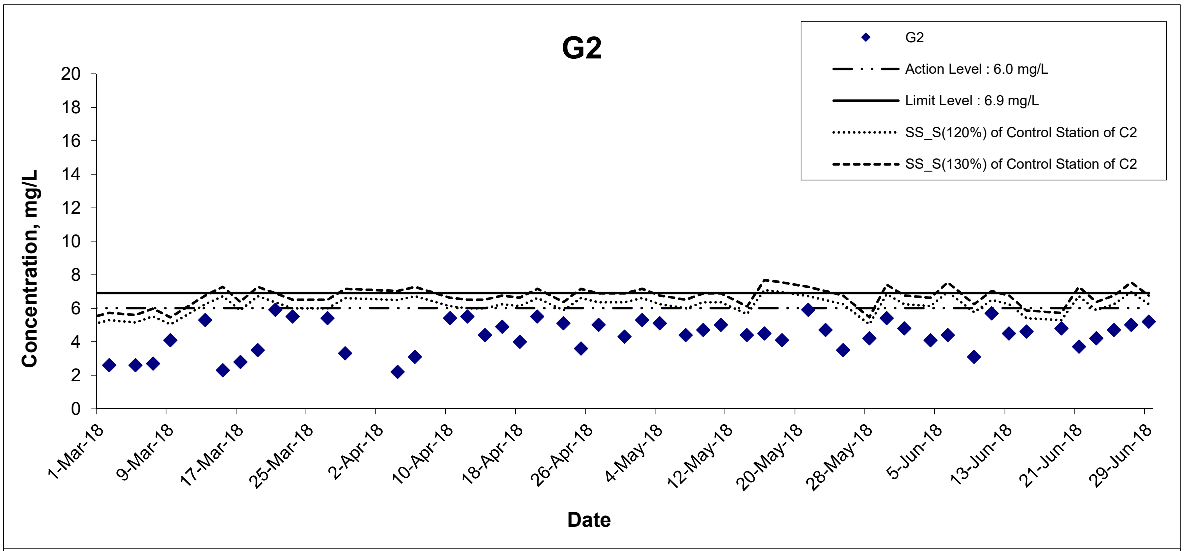
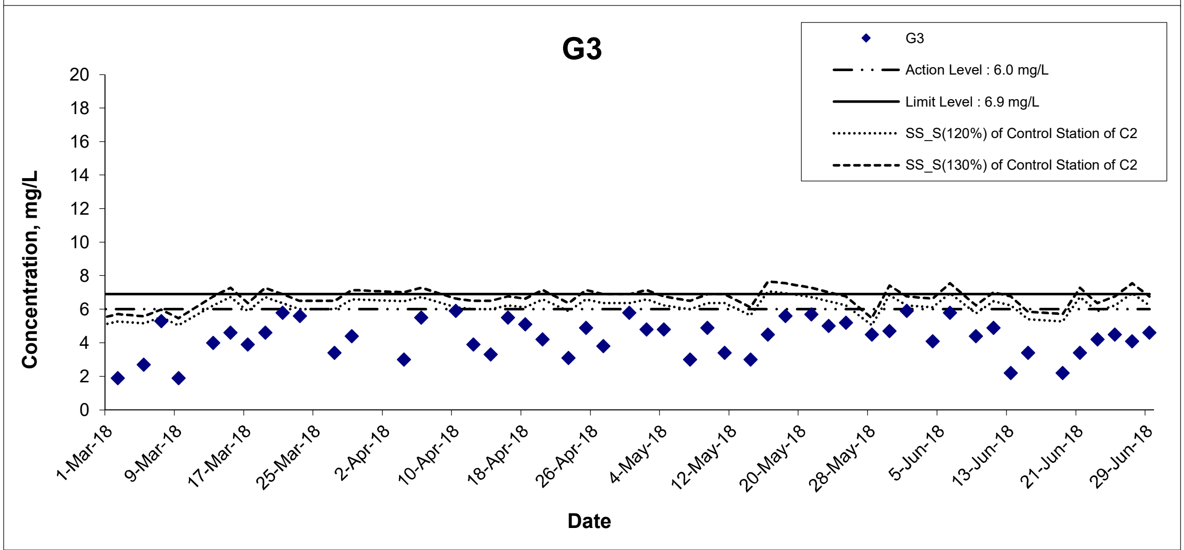
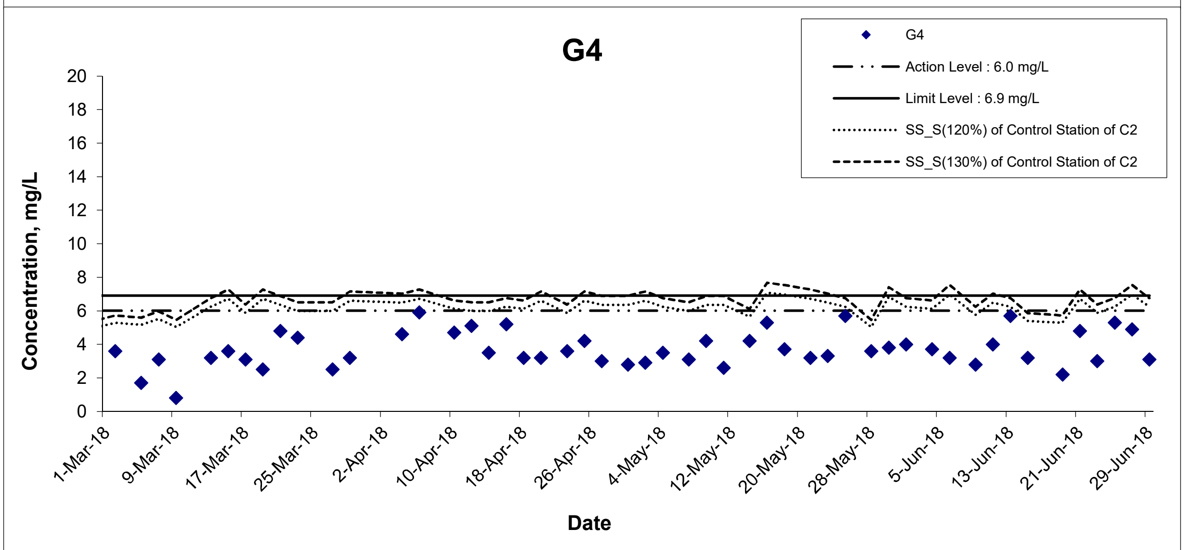
Suspended Solids (Surface) at Mid-Ebb Tide







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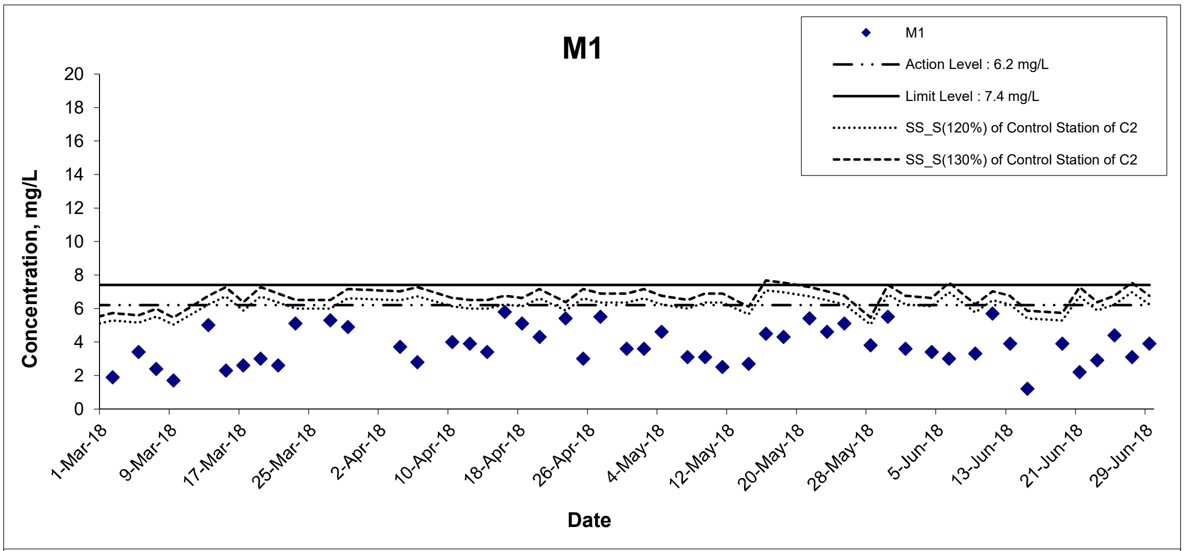
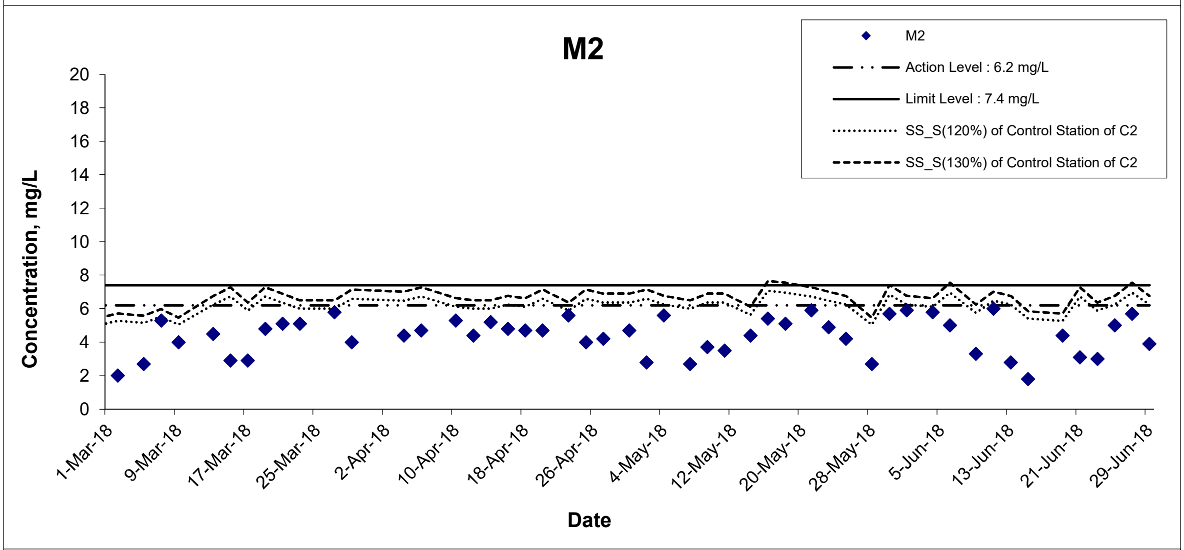
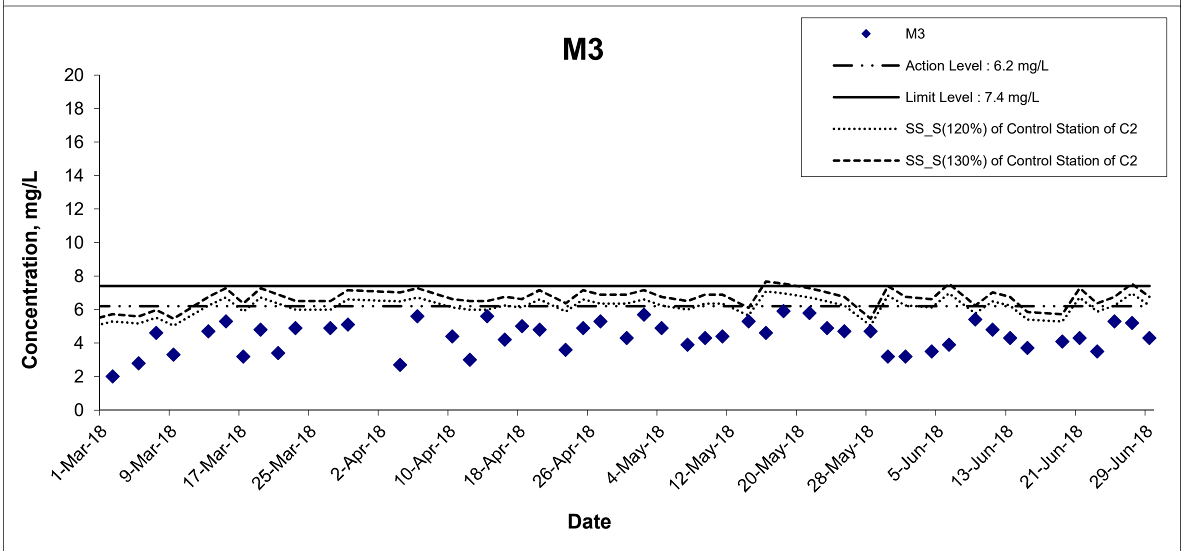
Suspended Solids (Surface) at Mid-Ebb Tide







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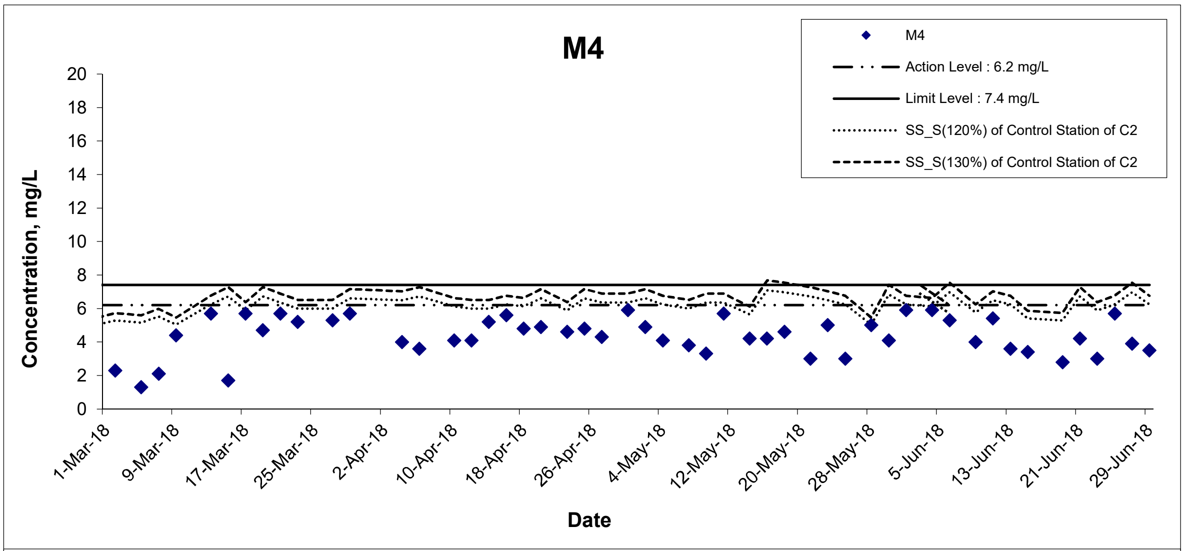
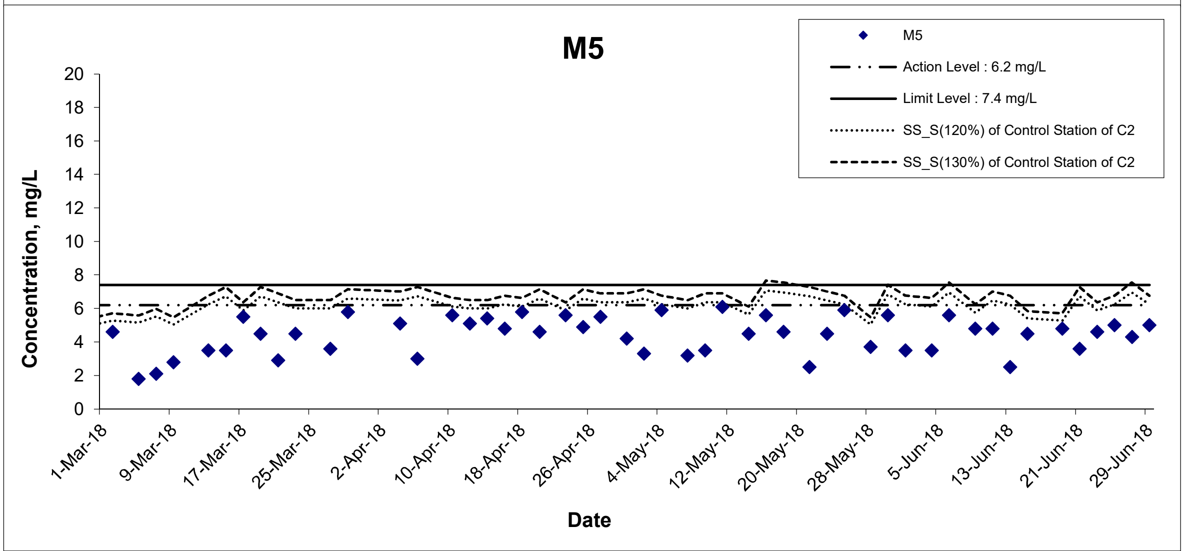
Suspended Solids (Surface) at Mid-Ebb Tide





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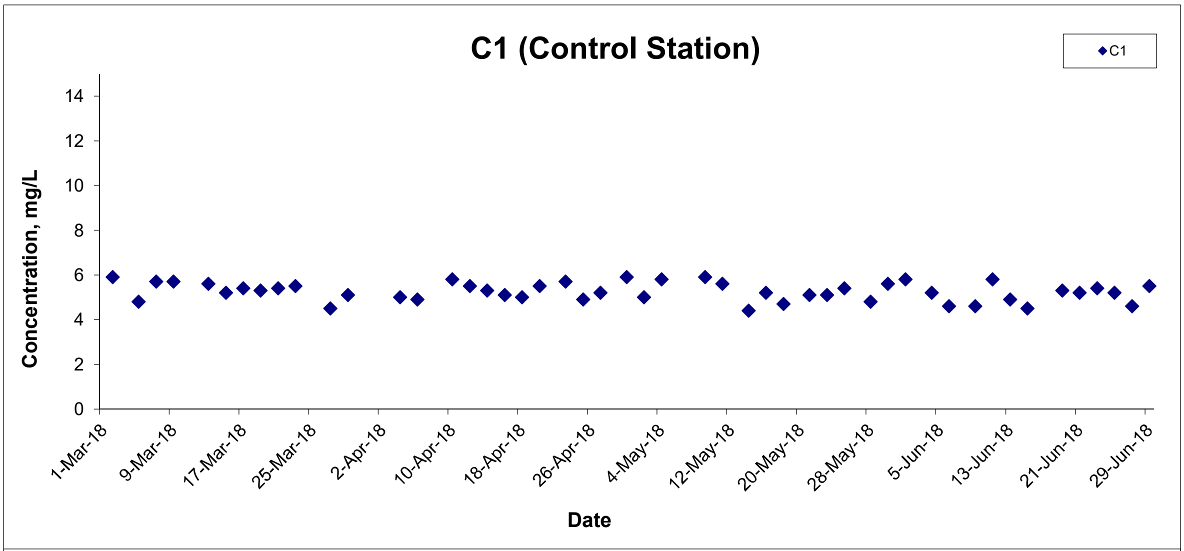
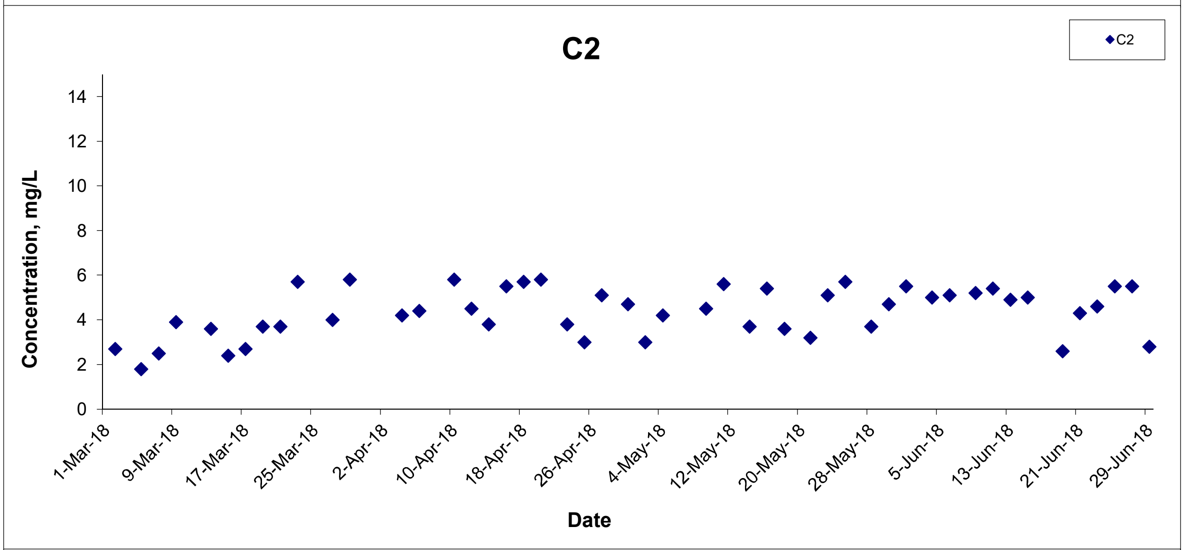
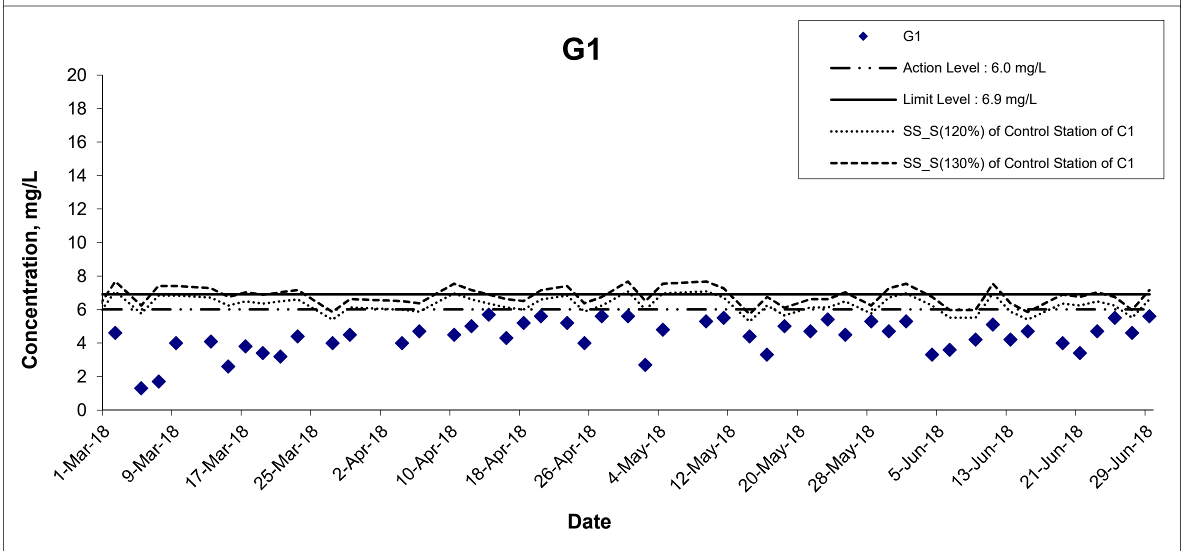
Suspended Solids (Surface) at Mid-Flood Tide







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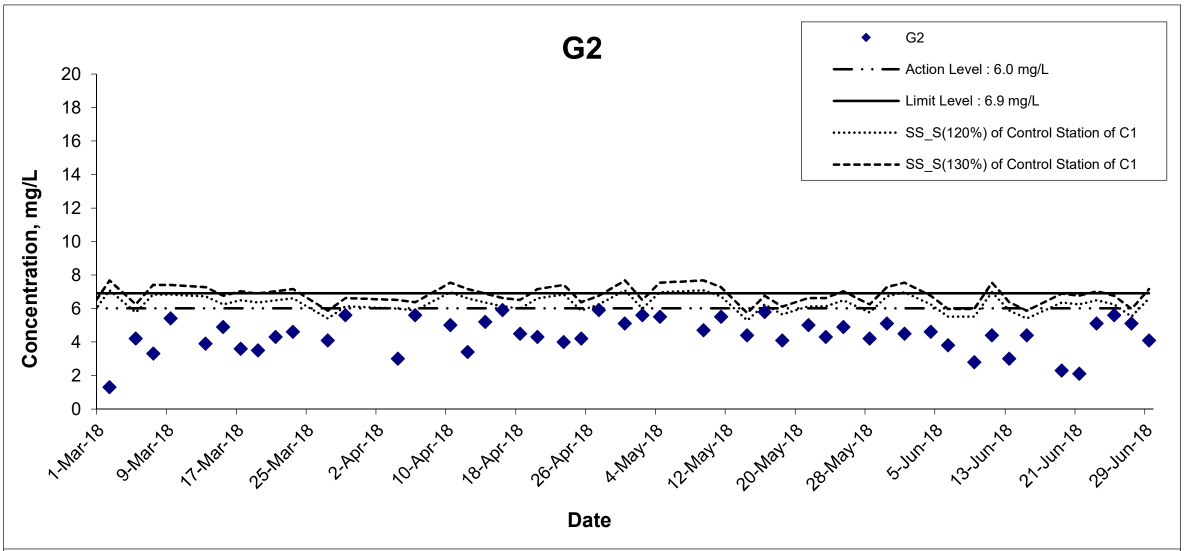
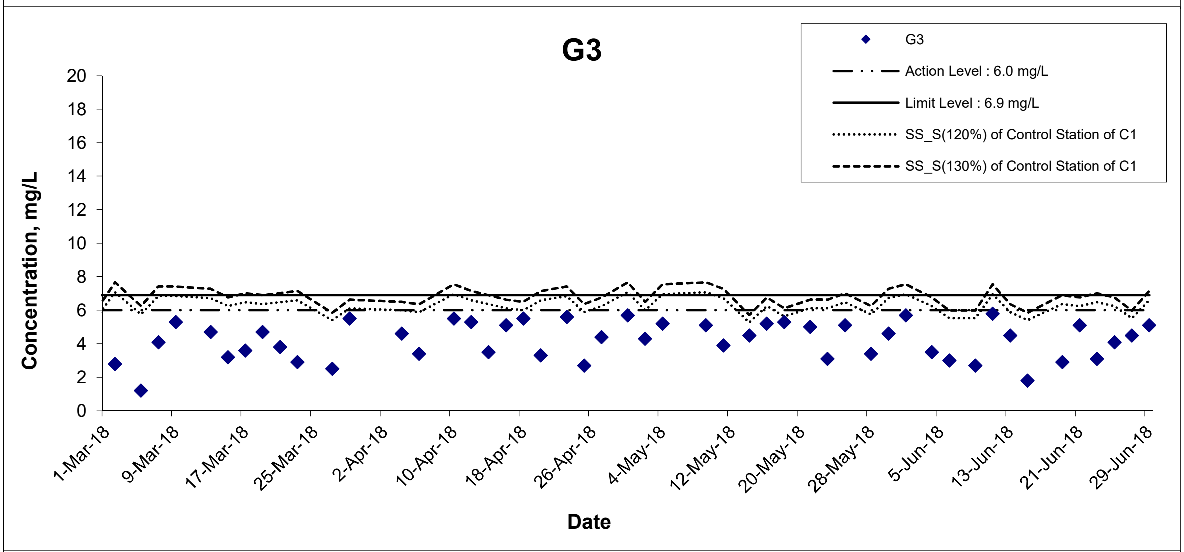
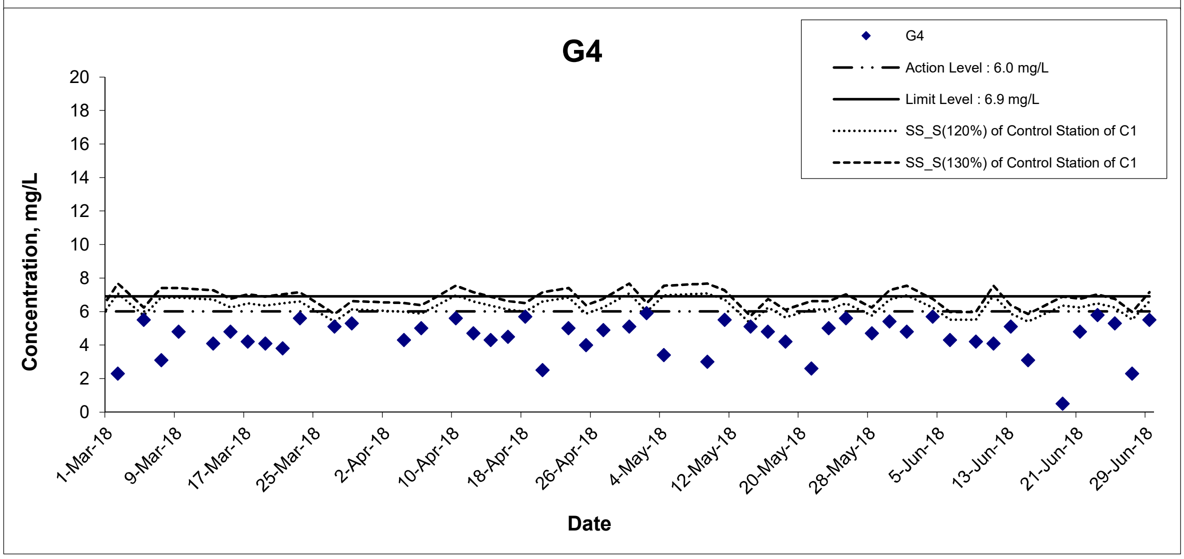
Suspended Solids (Surface) at Mid-Flood Tide







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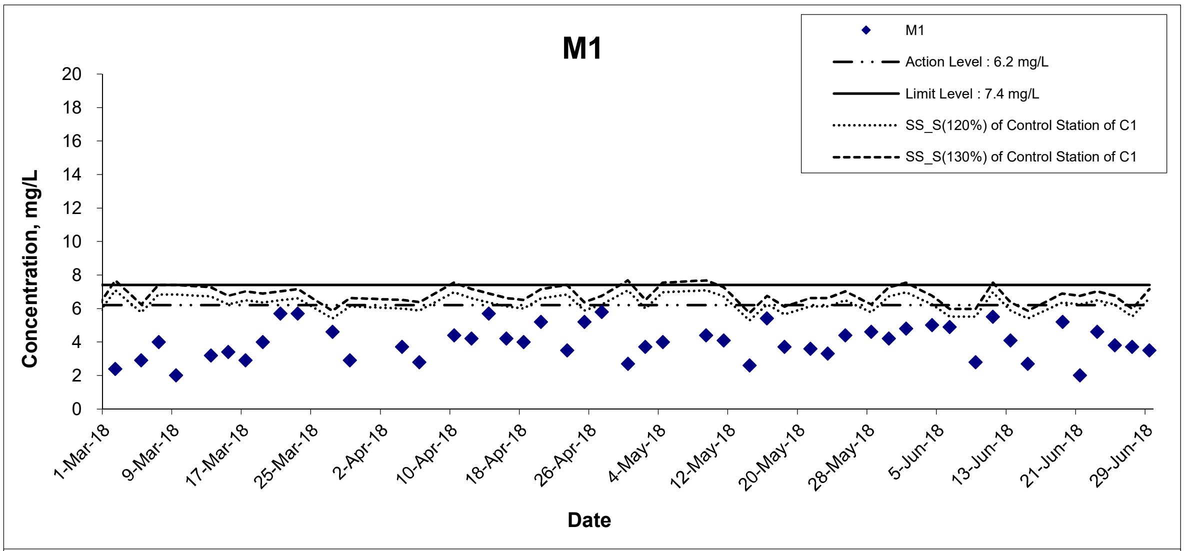
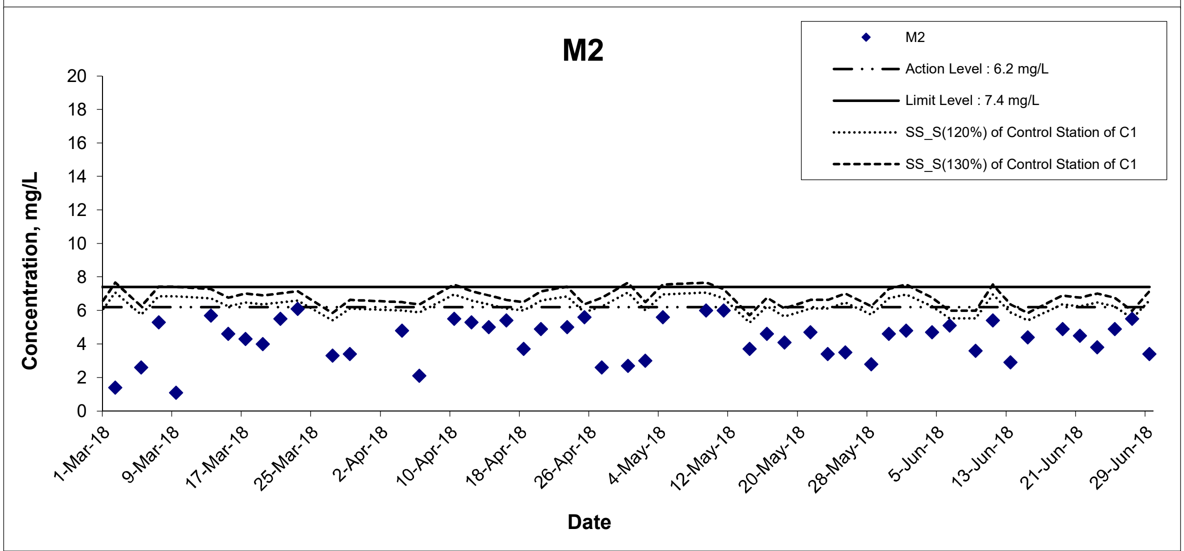
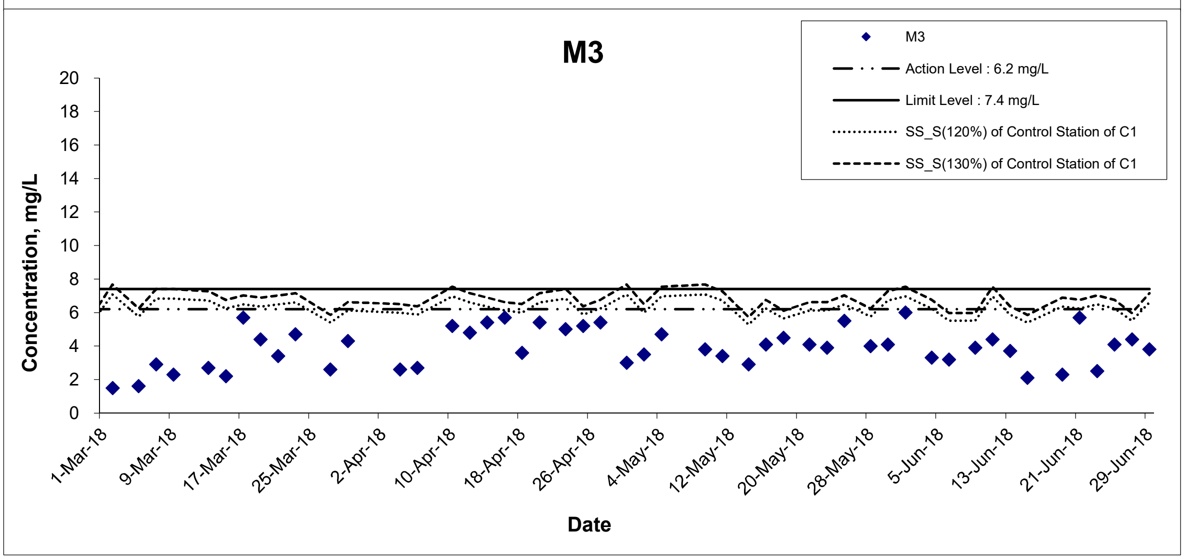
Suspended Solids (Surface) at Mid-Flood Tide







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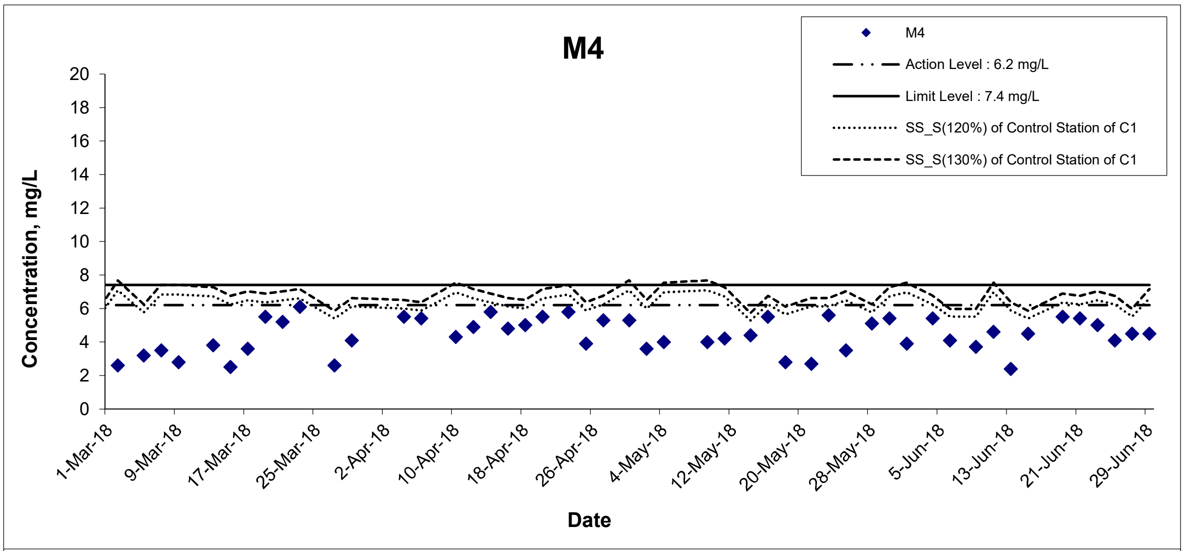
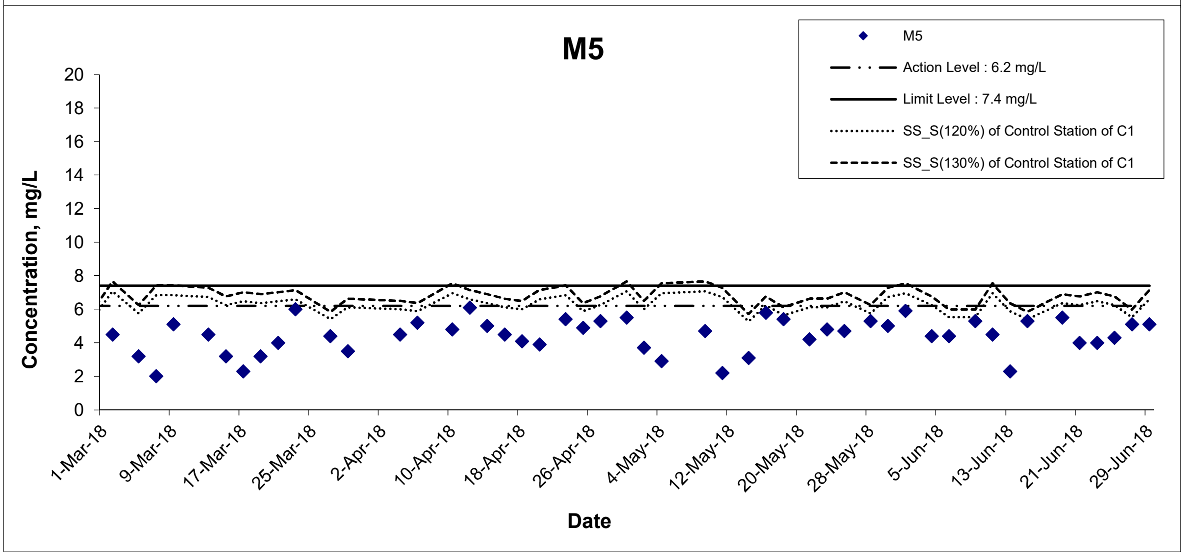
Suspended Solids (Surface) at Mid-Flood Tide





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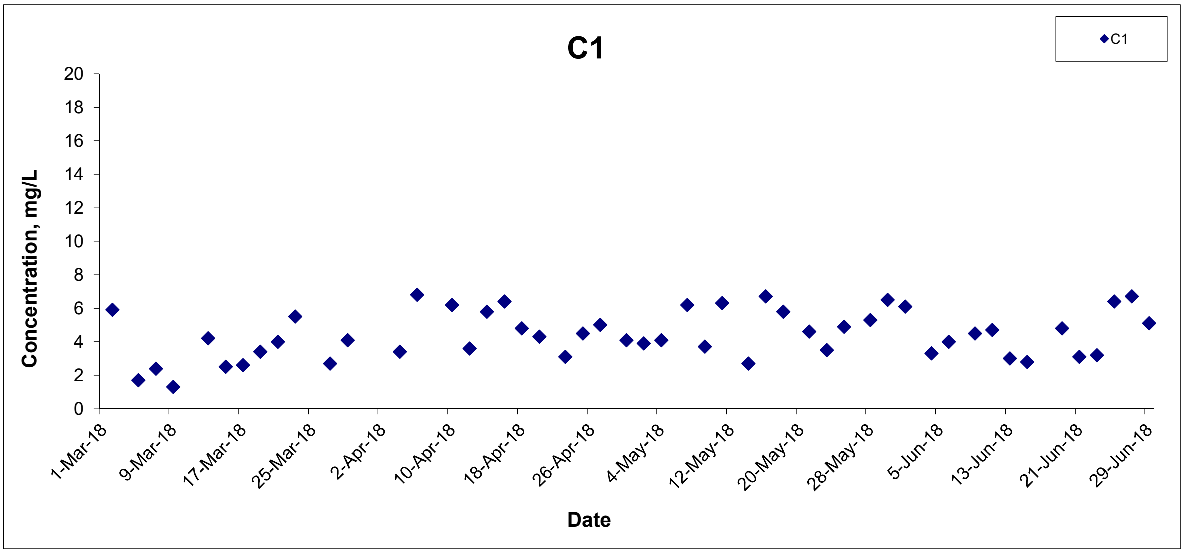
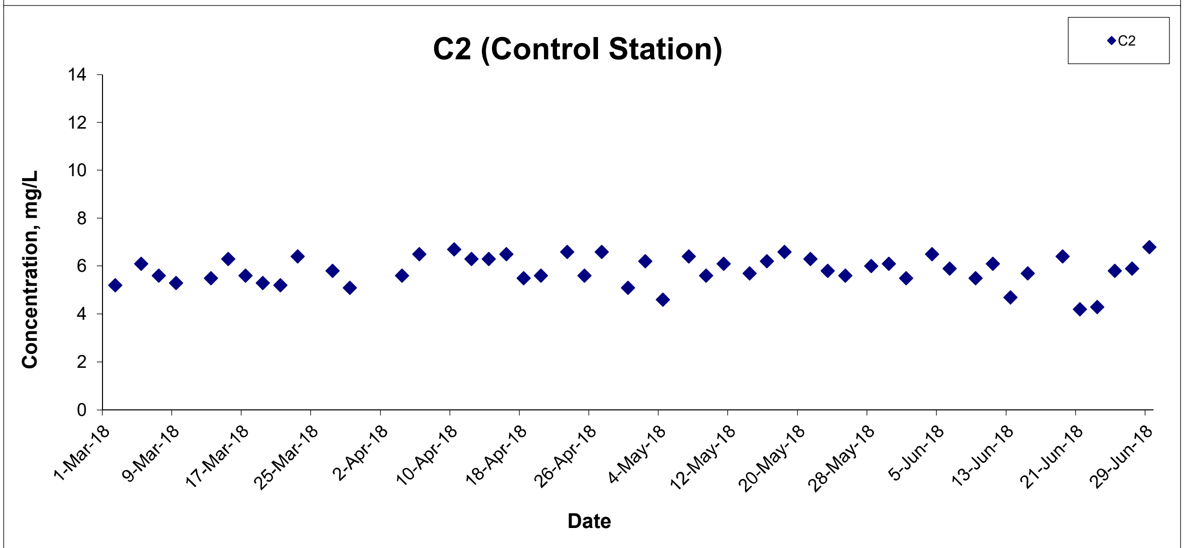
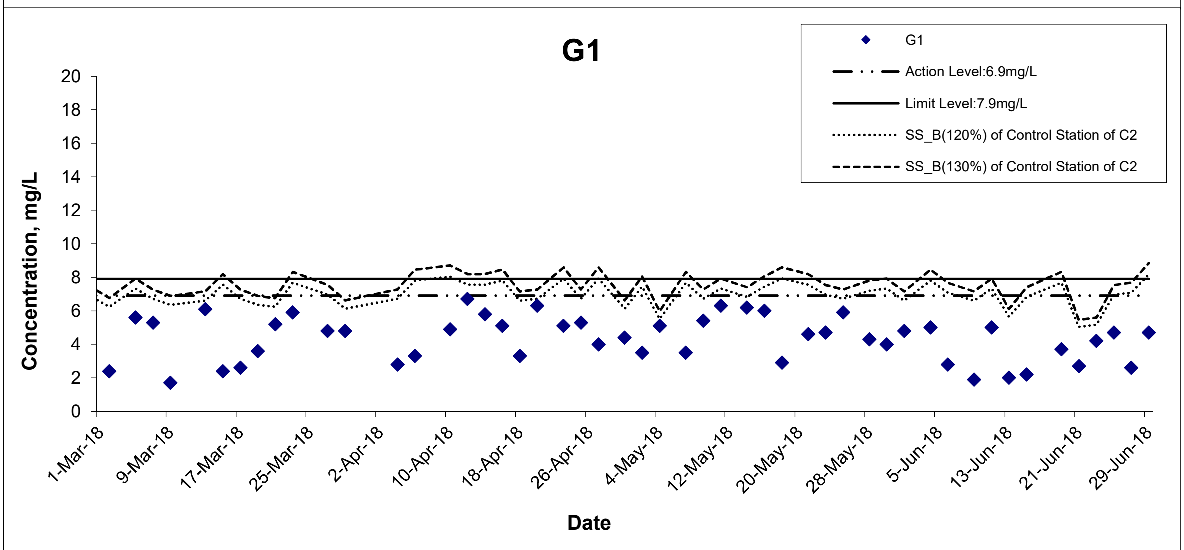
Suspended Solids (Bottom) at Mid-Ebb Tide







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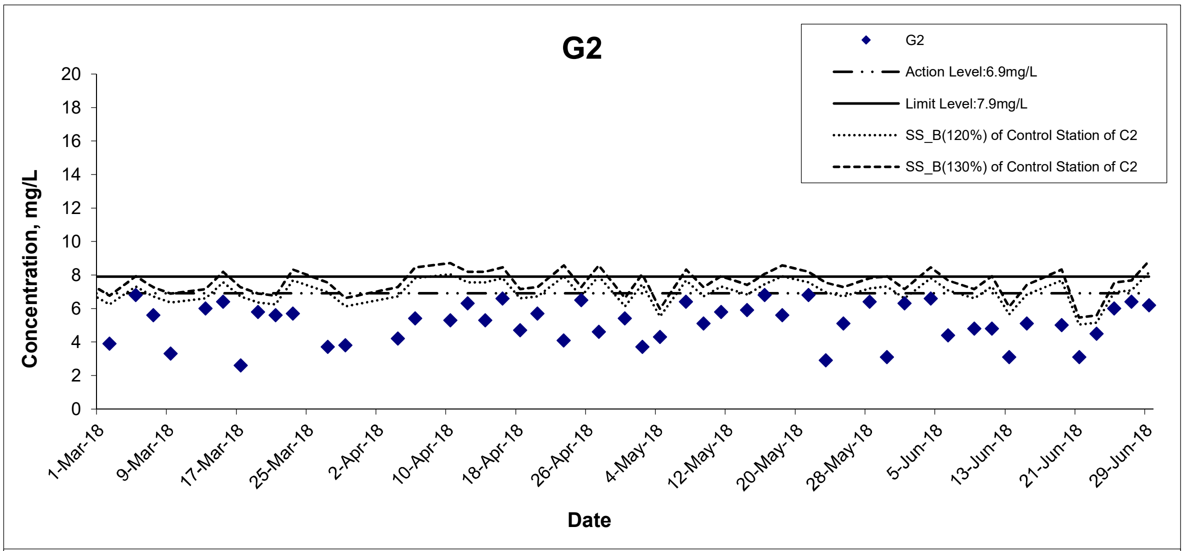
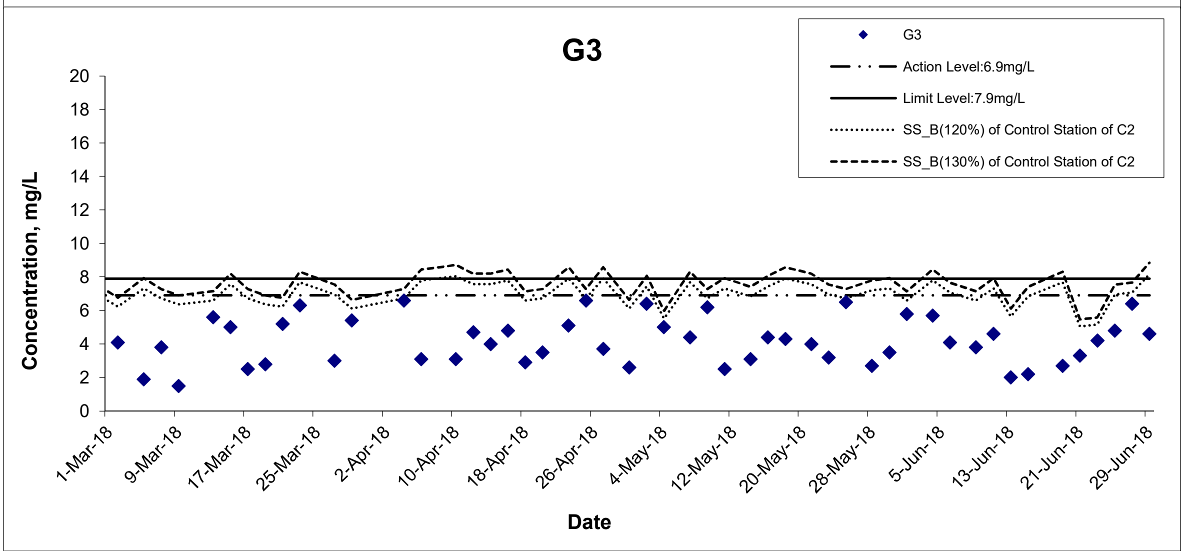
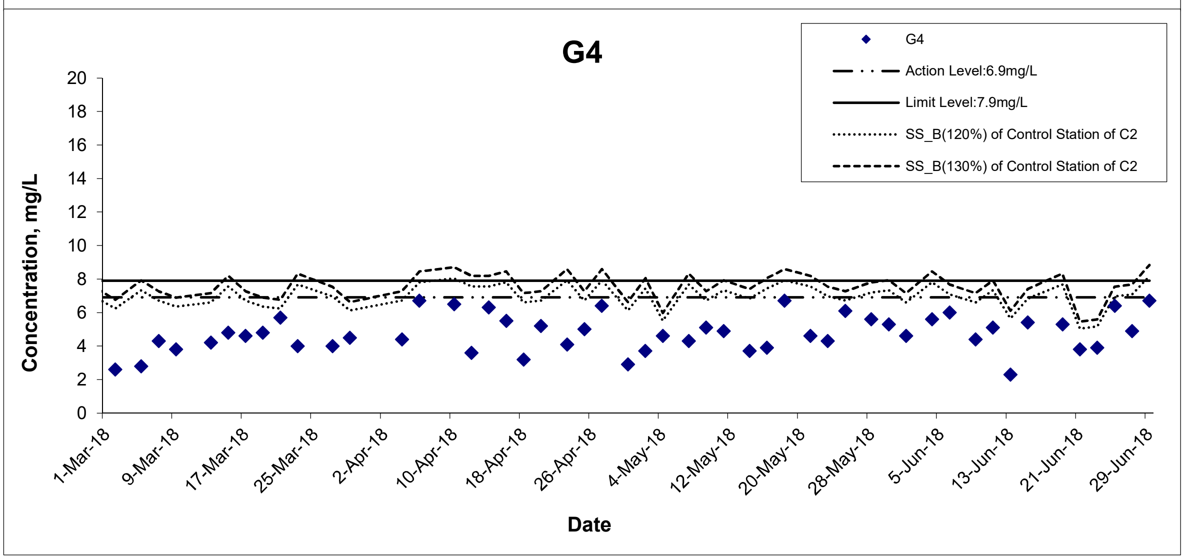
Suspended Solids (Bottom) at Mid-Ebb Tide







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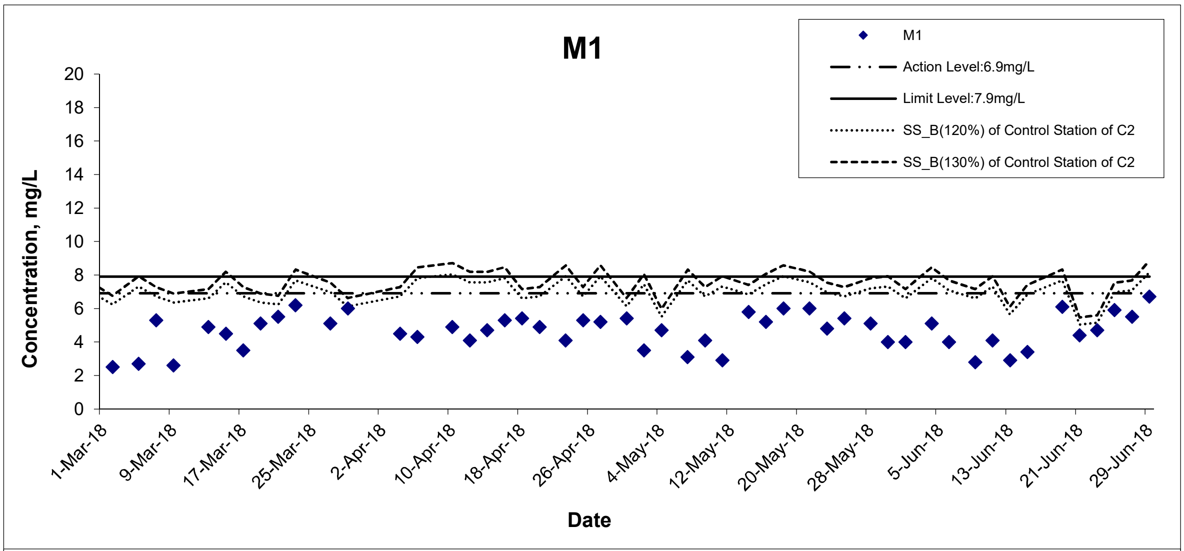
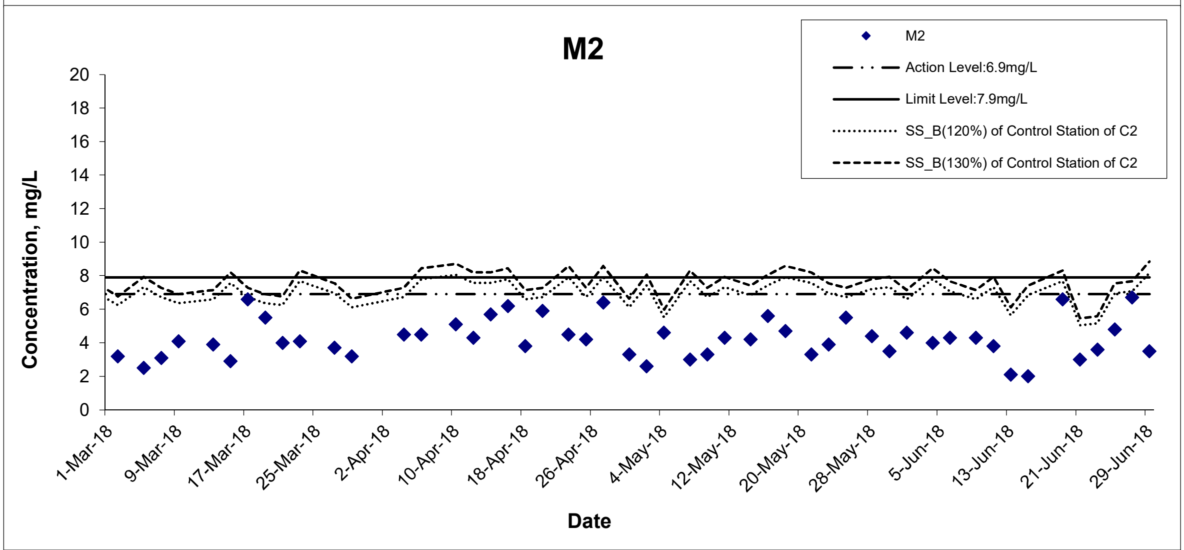
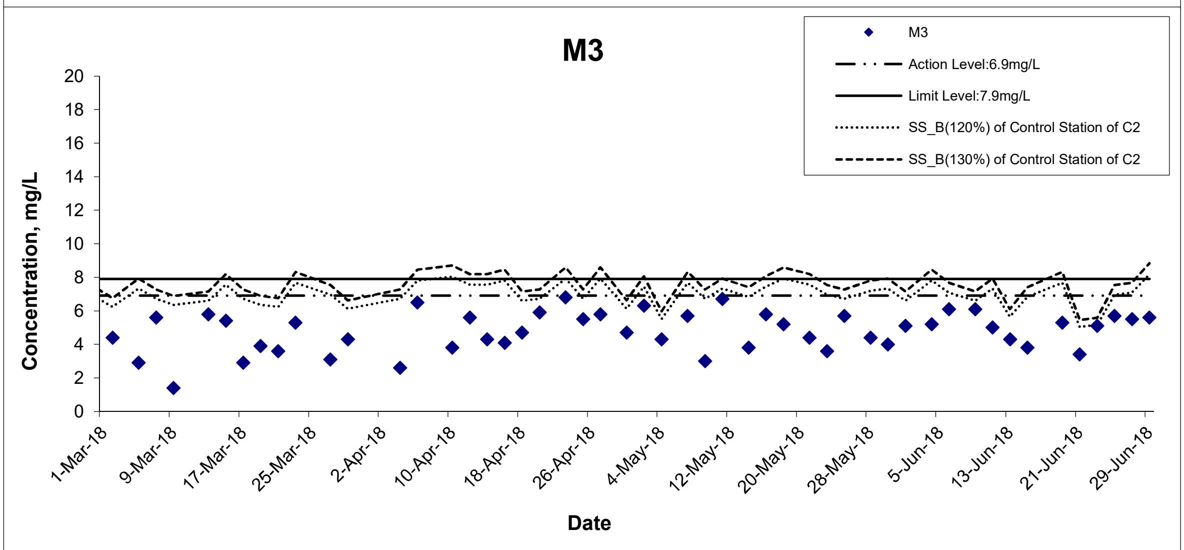
Suspended Solids (Bottom) at Mid-Ebb Tide







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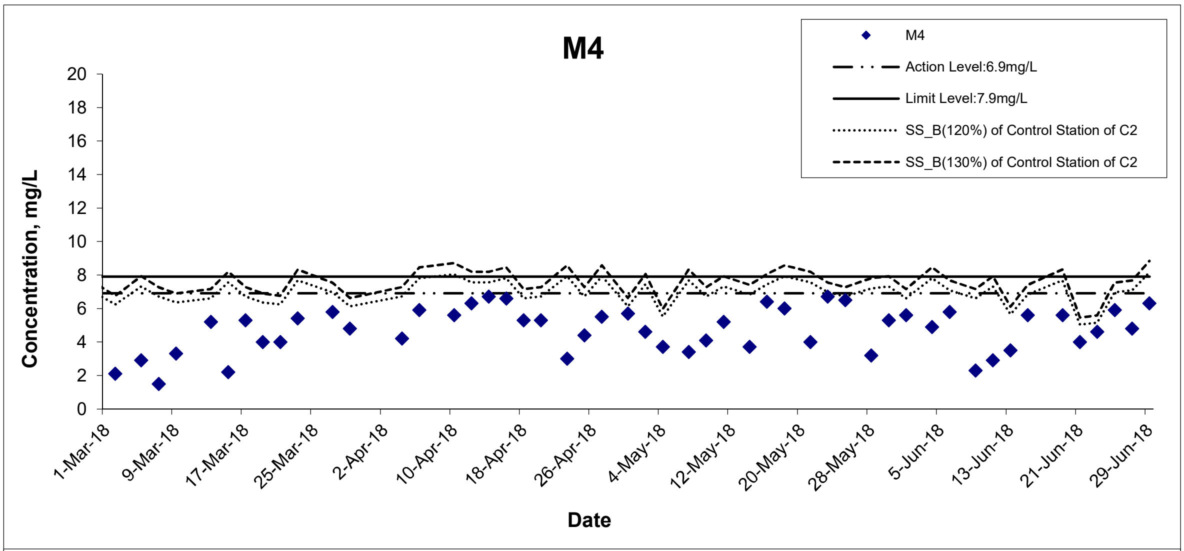
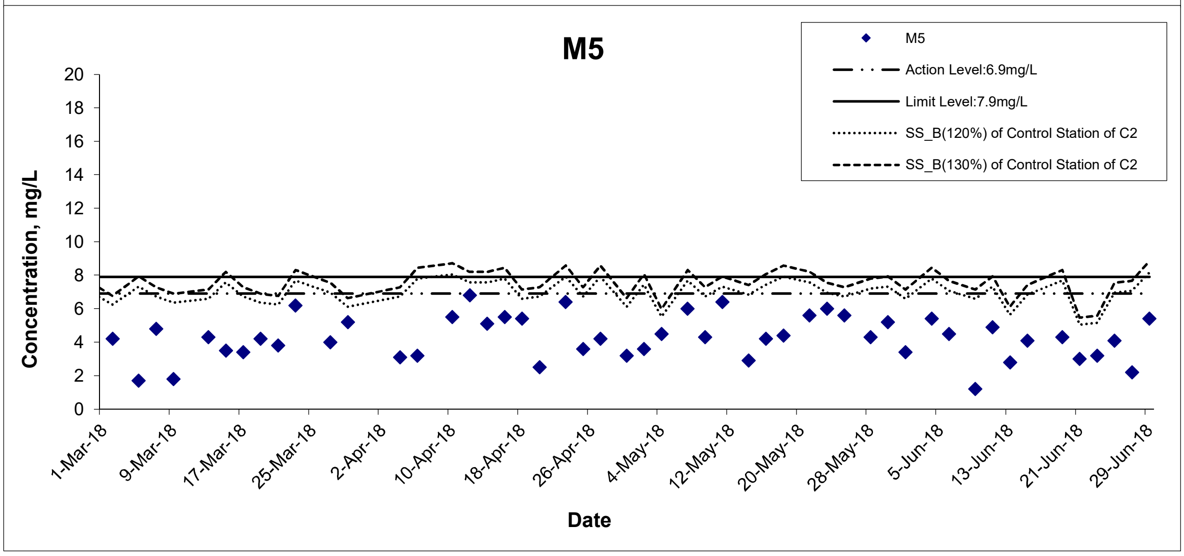
Suspended Solids (Bottom) at Mid-Ebb Tide





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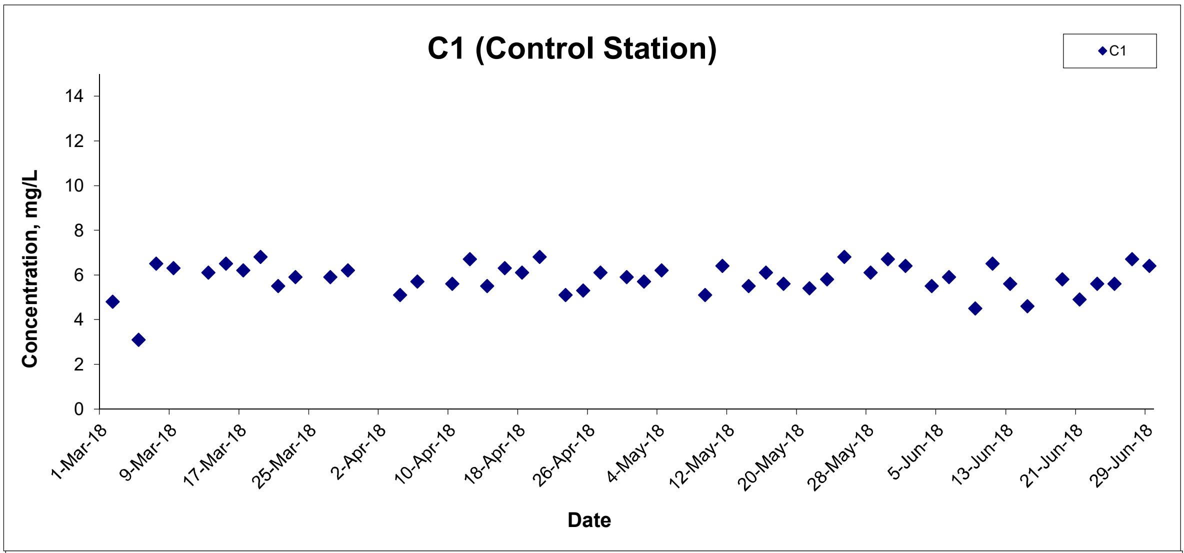
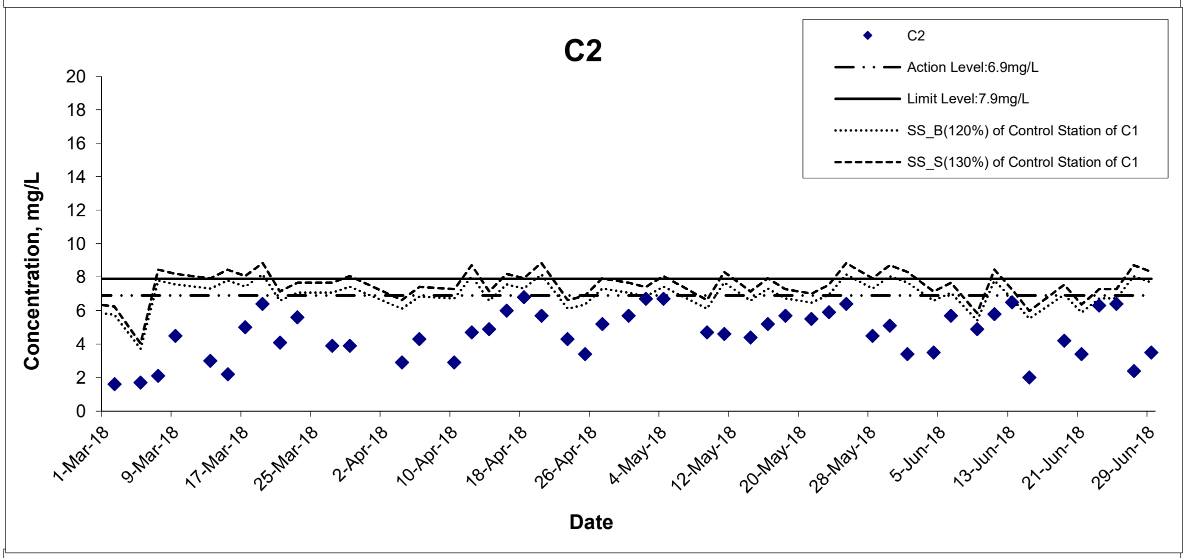
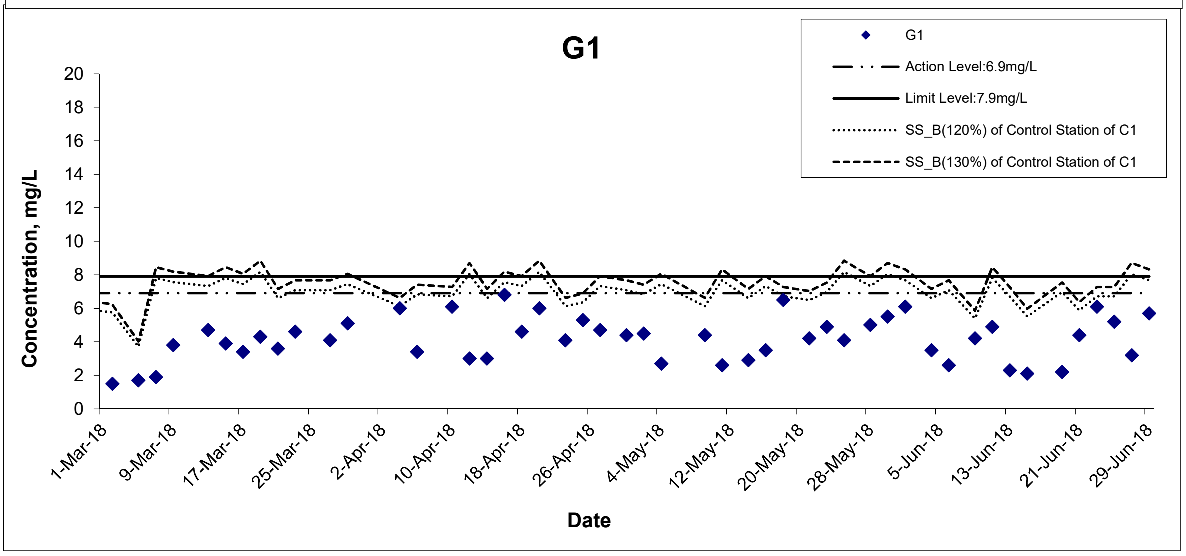
Suspended Solids (Bottom) at Mid-Flood Tide

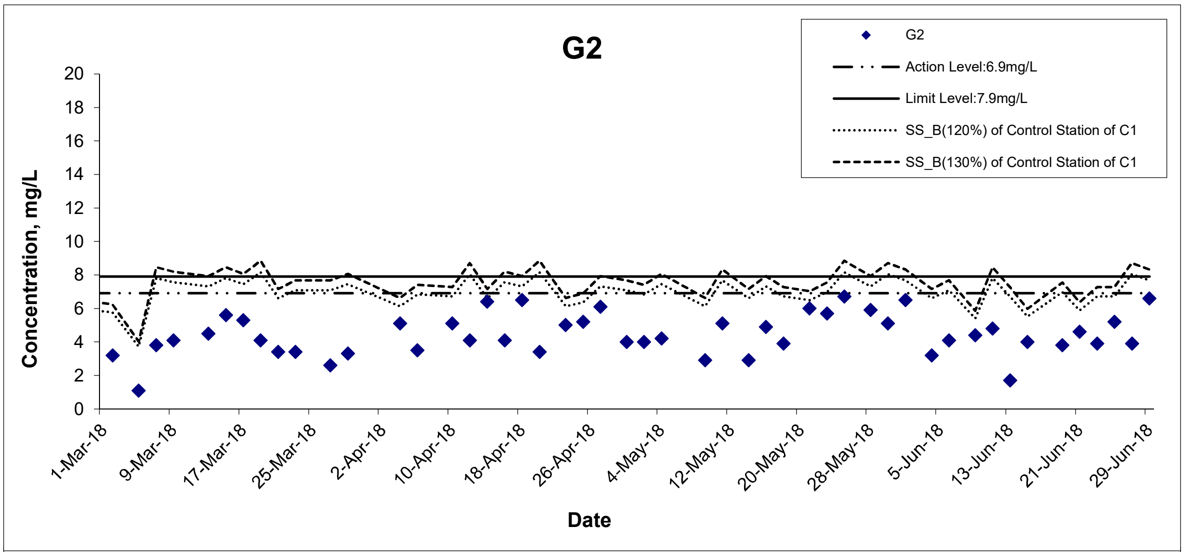


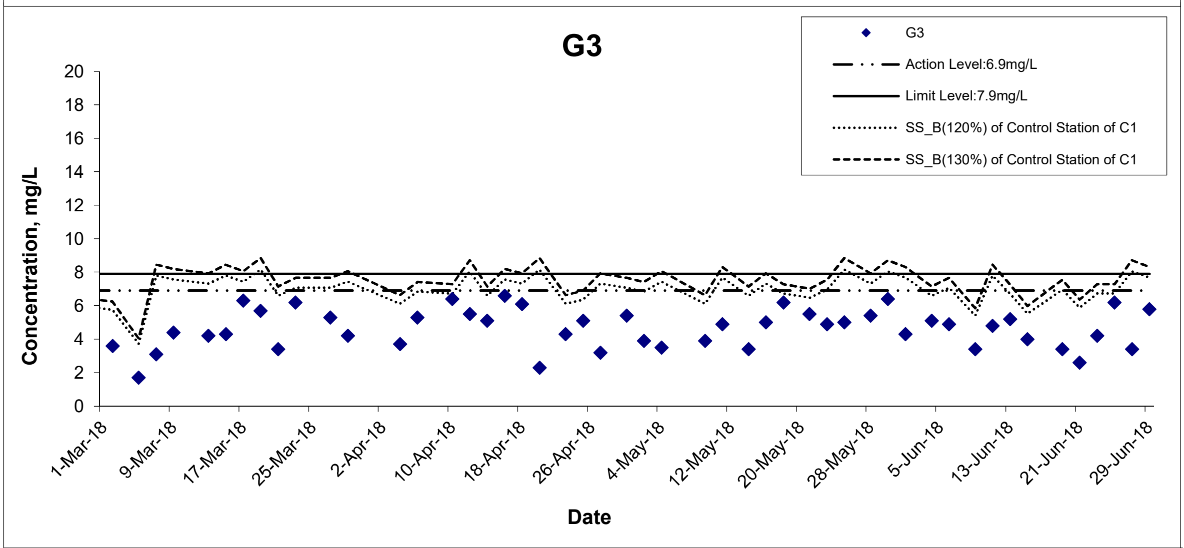


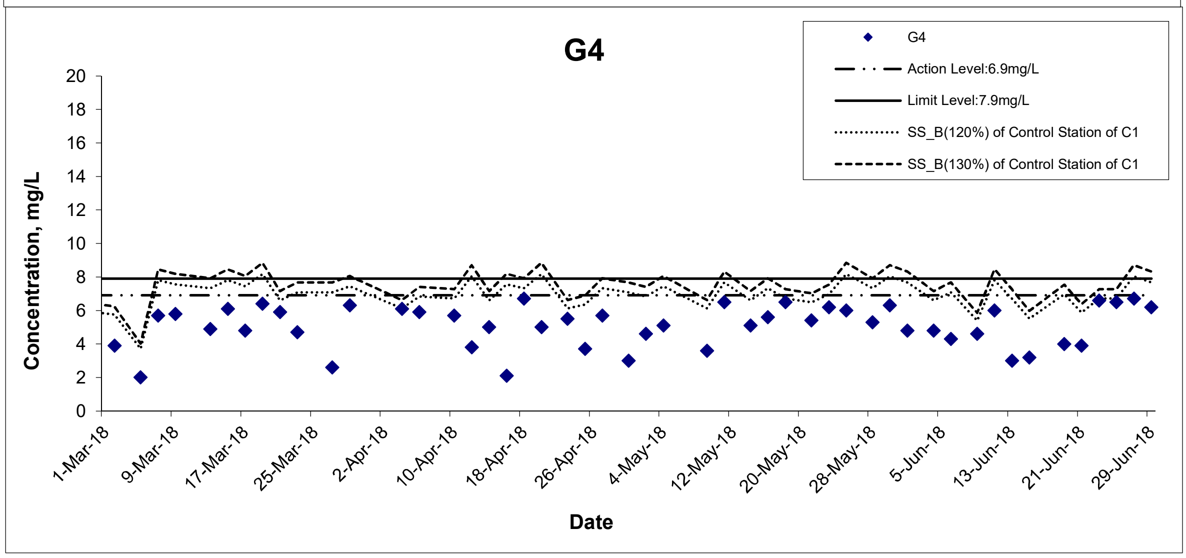


Title	Scale	Project No.	
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	N.T.S	MA16034	CINOTECH
	Date: Jun 18	Appendix: I	

Suspended Solids (Bottom) at Mid-Flood Tide

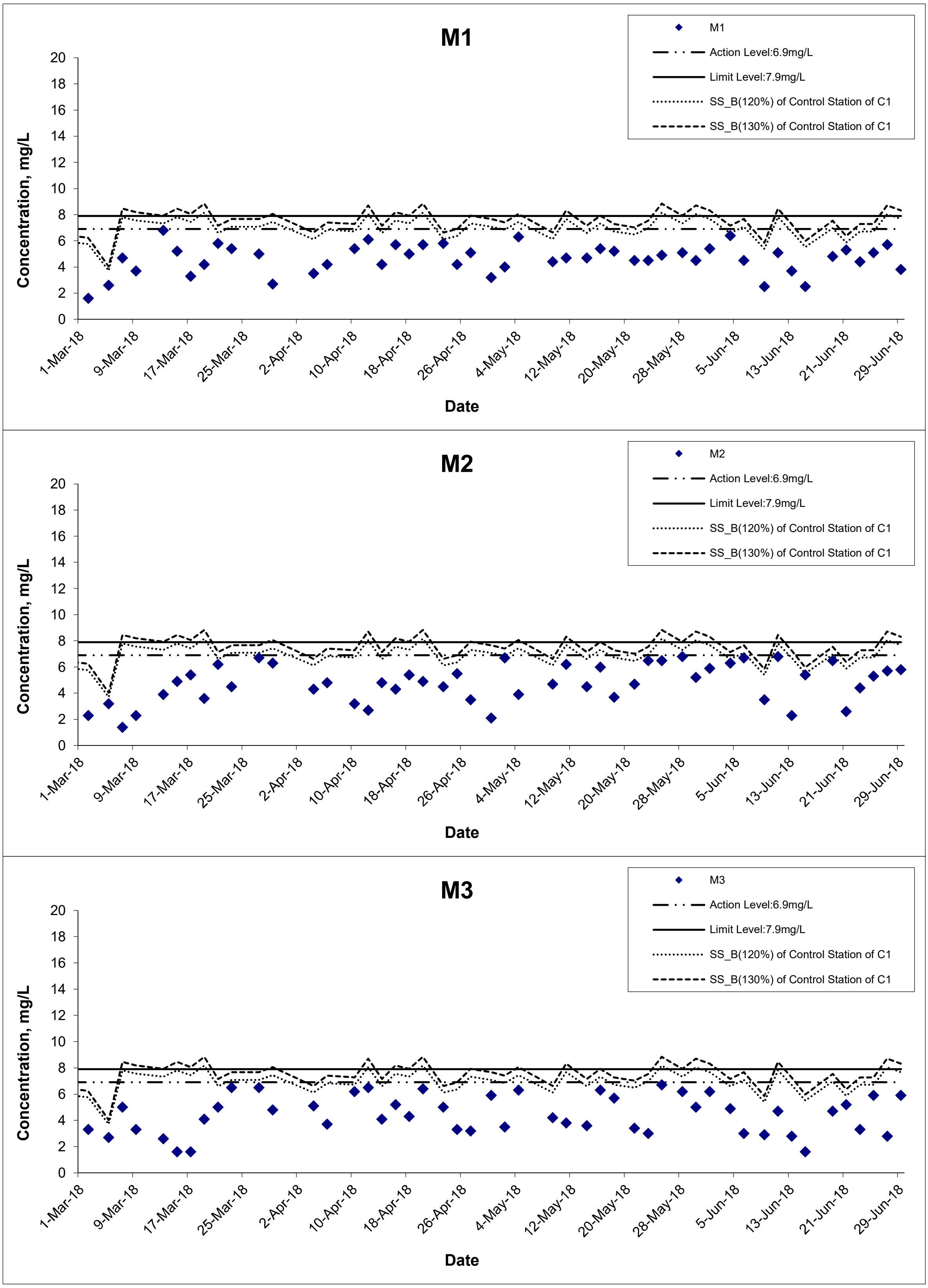






Title	Scale	Project	
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	N.T.S	No. MA16034	CINOTECH
	Date Jun 18	Appendix I	

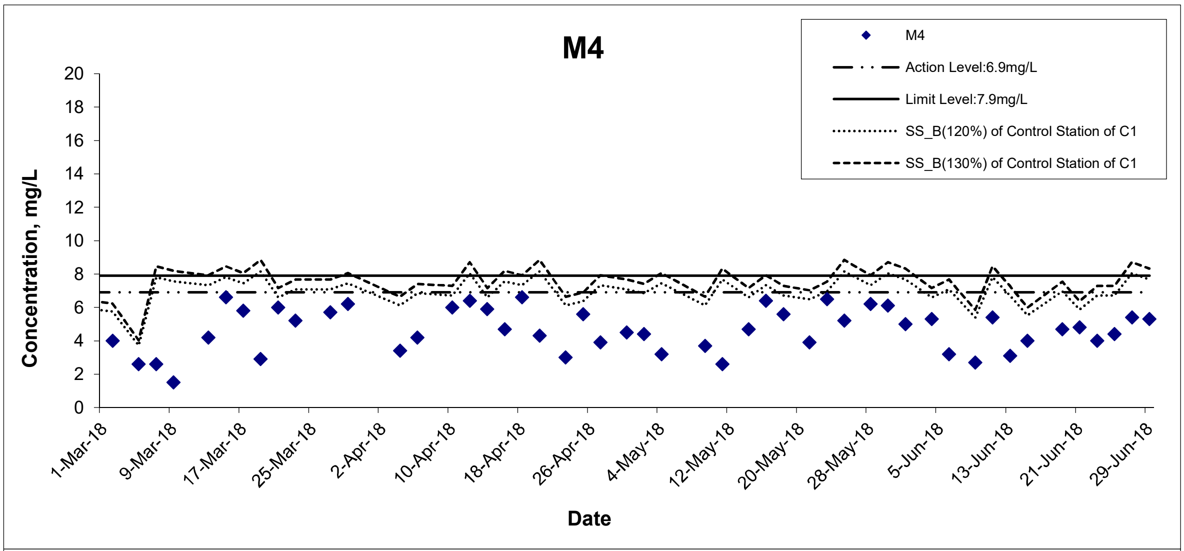
Suspended Solids (Bottom) at Mid-Flood Tide

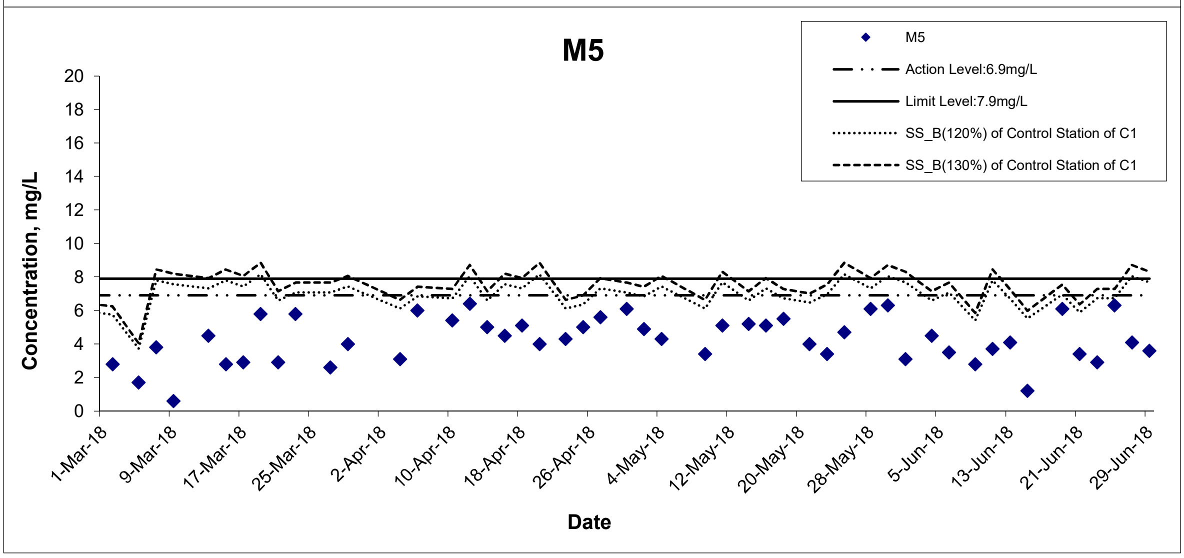


Title	Scale	Project
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	N.T.S	No. MA16034
	Date: Jun 18	Appendix: I

CINOTECH

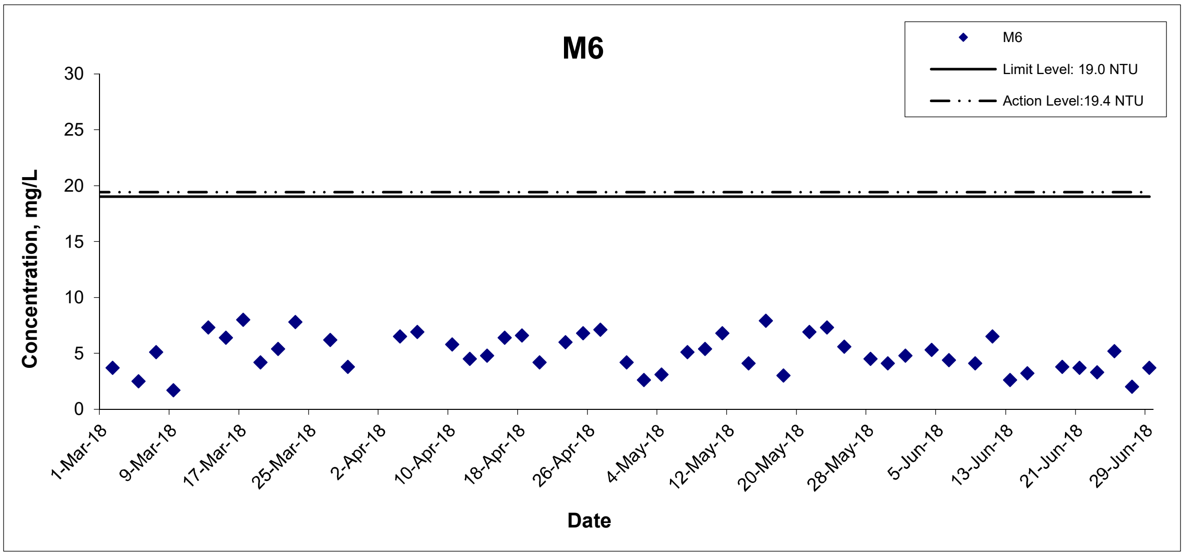
Suspended Solids (Bottom) at Mid-Flood Tide





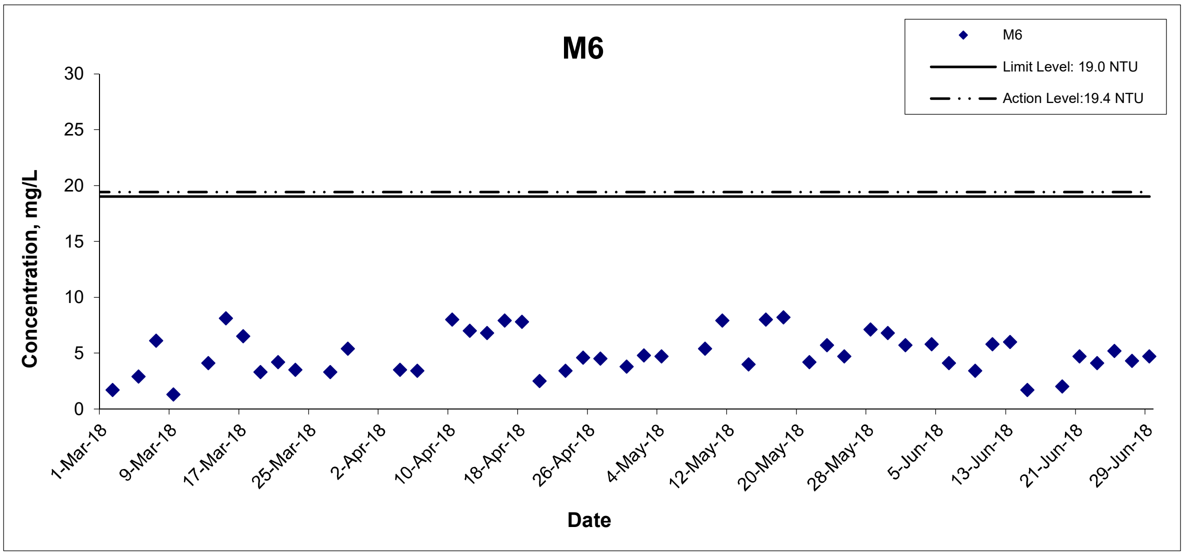
Title	Scale	Project	
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	N.T.S	No. MA16034	CINOTECH
	Date Jun 18	Appendix I	

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



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

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



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

Water Quality Monitoring Results at W1 - Mid-Ebb Tide

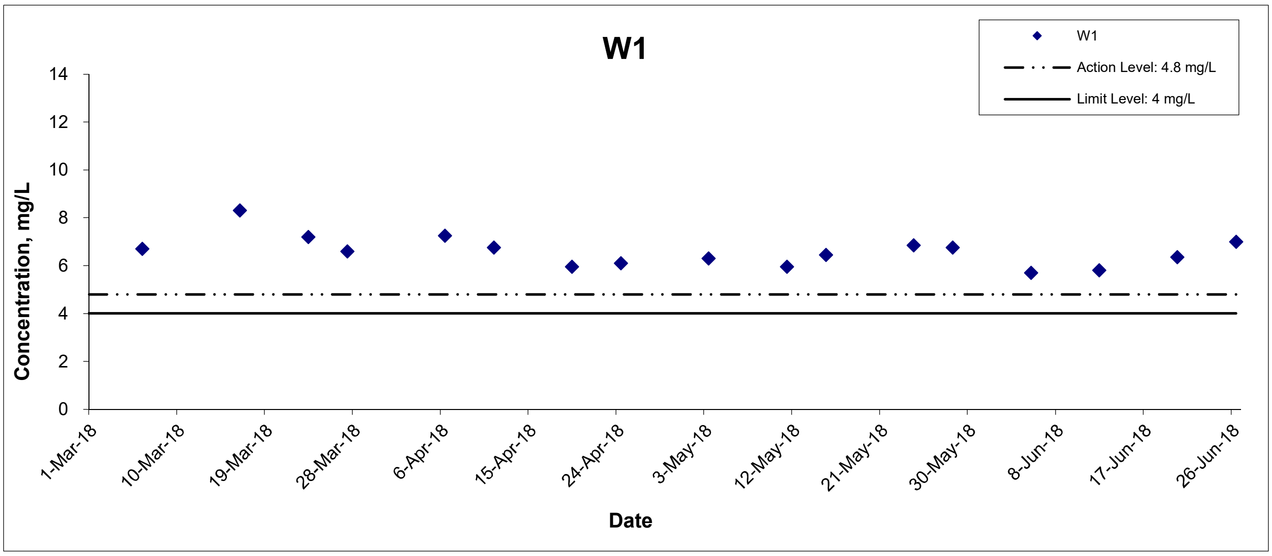
Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	DA*
5-Jun-18	Rainy	Moderate	16:03	Surface	1	27.4 27.4	27.4	8.1 8.1	8.1	31.4 31.4	31.4	86.3 86.3	86.3	5.7 5.7	5.7	5.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	3.1	27.4 27.4	27.4	8.1 8.2	8.2	31.4 31.5	31.5	86.0 85.3	85.7	5.7 5.7	5.7	5.7
12-Jun-18	Cloudy	Calm	12:18	Surface	1	27.8 27.8	27.8	8.2 8.2	8.2	29.4 29.2	29.3	86.3 88.2	87.3	5.8 5.9	5.9	5.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	2.1	27.8 27.8	27.8	8.2 8.2	8.2	29.4 29.4	29.4	84.9 85.0	85.0	5.7 5.7	5.7	5.7
20-Jun-18	Sunny	Calm	16:31	Surface	1	29.0 29.0	29.0	8.2 8.2	8.2	30.2 30.2	30.2	98.1 98.5	98.3	6.4 6.4	6.4	6.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	3.1	29.0 29.0	29.0	8.1 8.1	8.1	30.3 30.3	30.3	96.7 96.6	96.7	6.3 6.3	6.3	6.3
26-Jun-18	Sunny	Calm	11:58	Surface	1	29.2 29.2	29.2	8.4 8.4	8.4	26.4 26.4	26.4	115.6 115.5	115.6	7.7 7.7	7.7	7.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	2.9	28.7 28.7	28.7	8.3 8.3	8.3	27.0 27.0	27.0	95.0 94.5	94.8	6.3 6.3	6.3	6.3

Water Quality Monitoring Results at W1 - Mid-Flood Tide

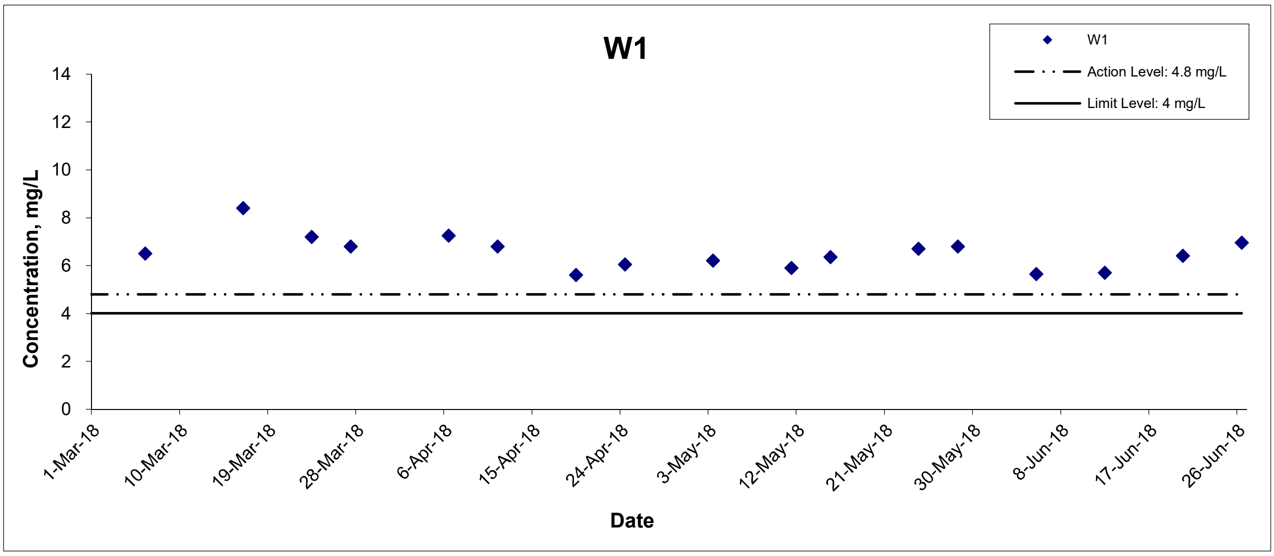
Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	DA*
5-Jun-18	Rainy	Moderate	09:52	Surface	1	27.4 27.4	27.4	8.1 8.1	8.1	31.4 31.2	31.3	86.3 86.4	86.4	5.7 5.7	5.7	5.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	3.1	27.3 27.4	27.4	8.1 8.2	8.2	31.5 31.4	31.5	84.5 84.6	84.6	5.6 5.6	5.6	5.6
12-Jun-18	Rainy	Calm	16:21	Surface	1	27.7 27.7	27.7	8.2 8.2	8.2	29.4 29.4	29.4	85.5 85.4	85.5	5.7 5.7	5.7	5.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	2	27.7 27.7	27.7	8.2 8.2	8.2	29.4 29.4	29.4	84.4 84.6	84.5	5.6 5.7	5.7	5.7
20-Jun-18	Sunny	Calm	10:06	Surface	1	28.7 28.7	28.7	8.2 8.2	8.2	30.3 30.2	30.3	97.2 97.7	97.5	6.3 6.4	6.4	6.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	3.1	28.7 28.6	28.7	8.1 8.1	8.1	30.3 30.3	30.3	97.6 96.8	97.2	6.4 6.3	6.4	6.4
26-Jun-18	Sunny	Calm	17:30	Surface	1	29.1 29.1	29.1	8.3 8.3	8.3	26.4 26.4	26.4	112.0 112.5	112.3	7.5 7.4	7.5	7.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-	
				Bottom	3.1	29.0 28.9	29.0	8.3 8.3	8.3	26.6 26.7	26.7	96.8 95.4	96.1	6.4 6.3	6.4	6.4

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

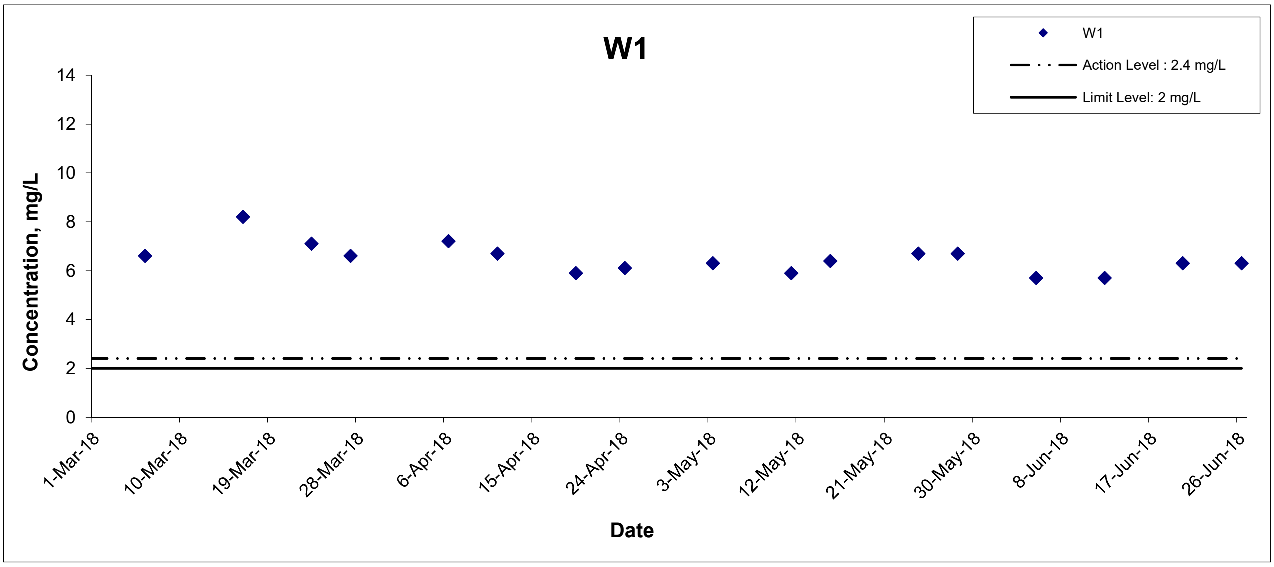


Dissolved Oxygen (Depth-Averaged) at Mid-Flood Tide

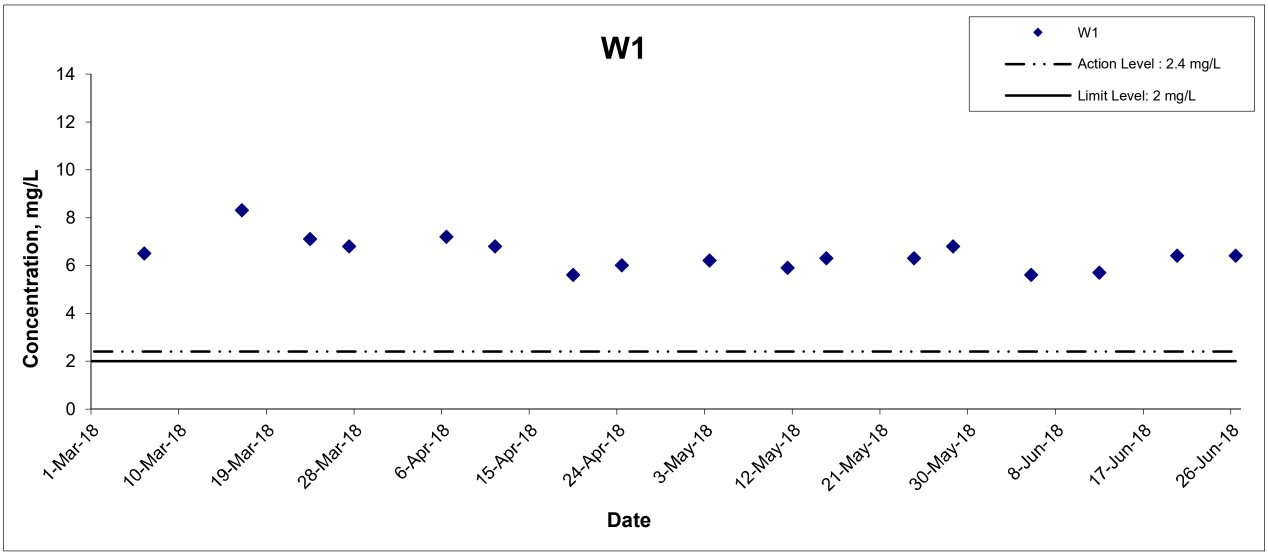


Title	Scale	Project No.	
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Additional Water Quality Monitoring Results	N.T.S	MA16034	CINOTECH
	Date: Jun 18	Appendix: I	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



Dissolved Oxygen (Bottom) at Mid-Flood Tide



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

APPENDIX J
QUALITY CONTROL REPORTS FOR LABORATORY ANALYSIS

WELLAB 滙力
Testing & Research

WELLAB LIMITED
Rms 1502, 1516, 1701-1702 & 1713-1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Report No.:	QC29033
Date of Issue:	2018-06-14
Date Received:	2018-06-05
Date Tested:	2018-06-05
Date Completed:	2018-06-14

ATTN: **Ms. Mei Ling Tang**

QC report:

Method Blank

Parameter	MB 1	Acceptance
Suspended Solids (SS) (mg/L)	<0.5	<0.5
Biochemical Oxygen Demand	N/A	N/A
Total Organic Carbon (mg-TOC/L)	<0.2	<0.2
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (mg NH_3-N/L)	<0.01	<0.01
Total Phosphorus (mg-P/L)	<0.01	<0.01

Method QC

Parameter	MQC1	Acceptance
Suspended Solids (SS) (%)	101	80-120
Biochemical Oxygen Demand (mg O_2/L)	215	170-220
Total Organic Carbon (%)	108	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	115	80-120
Total Phosphorus (%)	109	80-120

Remarks: 1) < = less than
2) N/A = Not applicable
3) This report is the summary of quality control data for report number 29033.

****

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

PATRICK TSE
Laboratory Manager

WELLAB 滙力
Testing & Research

WELLAB LIMITED
Rms 1502, 1516, 1701-1702 & 1713-1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Report No.:	QC29033
Date of Issue:	2018-06-14
Date Received:	2018-06-05
Date Tested:	2018-06-05
Date Completed:	2018-06-14

QC report:

Sample Duplicate

Parameter	29033-3 chk	Acceptance
Suspended Solids (SS) (%)	2	RPD≤20%
Biochemical Oxygen Demand (%)	N/A	RPD≤20%
Total Organic Carbon (%)	1	RPD≤20%
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	N/A	RPD≤20%
Total Phosphorus (%)	3	RPD≤20%

Sample Spike

Parameter	29033-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	109	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	96	80-120
Total Phosphorus (%)	97	80-120

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 29033.

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

WELLAB 匯力
Testing & Research

WELLAB LIMITED
Rms 1502, 1516, 1701-1702 & 1713-1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Report No.:	QC29129
Date of Issue:	2018-06-29
Date Received:	2018-06-20
Date Tested:	2018-06-20
Date Completed:	2018-06-29

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

Method Blank

Parameter	MB 1	Acceptance
Suspended Solids (SS) (mg/L)	<0.5	<0.5
Biochemical Oxygen Demand	N/A	N/A
Total Organic Carbon (mg-TOC/L)	<0.2	<0.2
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (mg NH_3-N/L)	<0.01	<0.01
Total Phosphorus (mg-P/L)	<0.01	<0.01

Method QC

Parameter	MQC1	Acceptance
Suspended Solids (SS) (%)	102	80-120
Biochemical Oxygen Demand (mg O_2/L)	197	170-220
Total Organic Carbon (%)	98	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	105	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 29129.

****

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

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
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Shatin, N.T., Hong Kong.
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Website: www.wellab.com.hk

TEST REPORT

Report No.:	QC29129
Date of Issue:	2018-06-29
Date Received:	2018-06-20
Date Tested:	2018-06-20
Date Completed:	2018-06-29

QC report:

Sample Duplicate

Parameter	29129-3 chk	Acceptance
Suspended Solids (SS) (%)	N/A	RPD≤20%
Biochemical Oxygen Demand (%)	N/A	RPD≤20%
Total Organic Carbon (%)	2	RPD≤20%
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	N/A	RPD≤20%
Total Phosphorus (%)	2	RPD≤20%

Sample Spike

Parameter	29129-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	96	80-120
Nitrogen (Total Kjeldahl + nitrate + nitrite)	N/A	N/A
Ammonia (%)	96	80-120
Total Phosphorus (%)	102	80-120

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 29129.

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

WELLAB 滙力 Testing & Research

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

TEST REPORT

QC REPORT

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

Report No.:	28991
Date of Issue:	2018/6/4
Date Received:	2018/6/1
Date Tested:	2018/6/1
Date Completed:	2018/6/4

Page: 1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/1
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180601

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.8	5.7	3	98

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 滙力 Testing & Research

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

TEST REPORT

QC REPORT

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

Report No.:	29005
Date of Issue:	2018/6/5
Date Received:	2018/6/4
Date Tested:	2018/6/4
Date Completed:	2018/6/5

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: 2018/6/4
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180604

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.8	5.9	1	99

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 滙力 Testing & Research

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

TEST REPORT

QC REPORT

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

Report No.:	29020
Date of Issue:	2018/6/7
Date Received:	2018/6/6
Date Tested:	2018/6/6
Date Completed:	2018/6/7
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/6
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180606

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.3	5.4	1	99

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB Testing & Research 匯力

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

Report No.:	29041
Date of Issue:	2018/6/11
Date Received:	2018/6/9
Date Tested:	2018/6/9
Date Completed:	2018/6/11
Page:	1 of 1

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

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/9
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180609

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.9	4.0	2	101

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 匯力
Testing & Research

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

TEST REPORT

QC REPORT

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

Report No.:	29056
Date of Issue:	2018/6/12
Date Received:	2018/6/11
Date Tested:	2018/6/11
Date Completed:	2018/6/12
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/11
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180611

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5.3	5.1	5	102

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 滙力 Testing & Research

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

TEST REPORT

QC REPORT

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

Report No.:	29072
Date of Issue:	2018/6/14
Date Received:	2018/6/13
Date Tested:	2018/6/13
Date Completed:	2018/6/14

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/13
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180613

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.5	3.6	4	101

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 滙力 Testing & Research

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	29085
Date of Issue:	2018/6/19
Date Received:	2018/6/15
Date Tested:	2018/6/15
Date Completed:	2018/6/19

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/15
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180615

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.3	3.2	4	102

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	29100
Date of Issue:	2018/6/20
Date Received:	2018/6/19
Date Tested:	2018/6/19
Date Completed:	2018/6/20
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/19
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180619

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	2.7	2.6	2	98

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

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

Patrick Tse

PATRICK TSE
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TEST REPORT

QC REPORT

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

Report No.:	29114
Date of Issue:	2018/6/22
Date Received:	2018/6/21
Date Tested:	2018/6/21
Date Completed:	2018/6/22

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/21
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180621

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.1	4.1	1	101

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

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

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TEST REPORT

QC REPORT

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

Report No.:	29131
Date of Issue:	2018/6/25
Date Received:	2018/6/23
Date Tested:	2018/6/23
Date Completed:	2018/6/25

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/23
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180623

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.0	3.1	2	98

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

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

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	29137
Date of Issue:	2018/6/26
Date Received:	2018/6/25
Date Tested:	2018/6/25
Date Completed:	2018/6/26

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/25
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180625

****

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

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

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

Report No.:	29155
Date of Issue:	2018/6/28
Date Received:	2018/6/27
Date Tested:	2018/6/27
Date Completed:	2018/6/28

Page: 1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/27
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180627

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4.0	3.8	4	100

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

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

Patrick Tse

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

Report No.:	29174
Date of Issue:	2018/7/3
Date Received:	2018/6/29
Date Tested:	2018/6/29
Date Completed:	2018/7/3
Page:	1 of 1

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

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2018/6/29
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)180629

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3.5	3.5	1	100

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

APPENDIX K
SUMMARY OF EXCEEDANCE

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

Appendix K – Summary of Exceedance

Reporting Period: June 2018

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

(B) Exceedance Report for Construction Noise

Action Level for Construction Noise
(Four (4) Action Level exceedances were recorded due to the documented complaints received in this reporting month.)

Limit Level for Construction Noise
(12 Limit Level exceedances for nighttime construction noise monitoring were recorded in the reporting month. The limit level exceedances were considered not due to project)

Date	Monitoring Location	Measured Level (L_{eq} dB(A))	Baseline Noise Level (L_{eq} dB(A))	Construction Noise Level (L_{eq} dB(A))	Limit Level
8 June 2018	CM1	65.7	60.5 (54.4 – 69.8)	64.1	55
14 June 2018		64.2		61.8	
20 June 2018		62.3		57.6	
26 June 2018		63.9		61.2	
8 June 2018	CM2	64.9	58.0 (50.8 – 66.8)	63.9	
14 June 2018		63.1		61.5	
20 June 2018		61.1		58.2	
26 June 2018		64.2		63.0	
8 June 2018	CM3	64.1	60.2 (53.0 – 67.4)	61.8	
14 June 2018		64.6		62.6	
20 June 2018		62.9		59.6	
26 June 2018		64.7		62.8	

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

Appendix K – Summary of Exceedance

(C) Exceedance Report for Water Quality
(No exceedance for marine water quality monitoring in the reporting month)

(Twelve (12) Limit Level exceedances in groundwater quality monitoring as followed:

Date	Monitoring Location	Monitoring Parameter	Monitoring Results	Action Level	Limit Level
5 June 2018	Stream 1	Turbidity (NTU)	***7.6***	2.1	2.3
		Suspended Solid (mg/L)	***39***	7.6	12.1
		Total Nitrogen (mg/L)	***2.2***	2.0	2.1
		Total Phosphate (mg-P/L)	***0.11***	0.05	0.05
	Stream 2	Turbidity (NTU)	***72.2***	2.1	2.3
		Suspended Solid (mg/L)	***100***	7.6	12.1
	Stream 3	Turbidity (NTU)	***86.9***	2.1	2.3
		Suspended Solid (mg/L)	***92***	7.6	12.1
		Total Phosphate (mg-P/L)	***0.06***	0.05	0.05
20 June 2018	Stream 1	Turbidity (NTU)	***3.7***	2.1	2.3
	Stream 2		***3.3***		
	Stream 3		***4.2***		

(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
- Notification of Exceedances

NOE No. 180608_noise (CM1-CM3) **Exceedance Level**: Limit

Date of Measurement: 8 June 2018 – 9 June 2018
Time of Measurement: 23:00-00:15

Date of Noise Monitoring: 8 June 2018 – 9 June 2018

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Construction Noise

Station	Location	Time	Measured Level (L_{eq} dB(A))	Baseline Noise Level (L_{eq} dB(A))	Construction Noise Level (L_{eq} dB(A))	Action Level	Limit Level (L_{eq} dB(A))	Level exceeded
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	23:00-23:15	65.7	60.5 (54.4 – 69.8)	***64.1***	When one documented complaint is received.	**55.0**	Limit
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	23:25-23:40	64.9	58.0 (50.8 – 66.8)	***63.9***			
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	00:00-00:15	64.1	60.2 (53.0 – 67.4)	***61.8***			

Field Observation(s) and Conclusion

(a) Statement of exceedance(s)

Construction noise measured at CM1, CM2 & CM3 exceeded the construction noise (night time) limit level.

(b) Cause of exceedance(s)

The exceedance was not considered related to the Project works:

- According to our field observation, road traffic noise were identified as the dominant noise source. No noticeable noise from blasting / associated works was identified.
- No major construction activity was observed in Lam Tin Interchange during monitoring (see photo).
- As confirmed by RE, only construction works inside the tunnel were being conducted with the blast door closed.

Part B – Conclusion: The exceedances of night time noise limit level were not due to the Project.

Part C – Recommendation: No further action is required.

ETL Signature: ____________________ Date: 13 June, 2018

Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel
- Notification of Exceedances

NOE No. 180614_noise (CM1-CM3) **Exceedance Level**: Limit

Date of Measurement: 14 June 2018 – 15 June 2018
Time of Measurement: 23:00-00:05

Date of Noise Monitoring: 14 June 2018 – 15 June 2018

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Construction Noise

Station	Location	Time	Measured Level (L_{eq} dB(A))	Baseline Noise Level (L_{eq} dB(A))	Construction Noise Level (L_{eq} dB(A))	Action Level	Limit Level (L_{eq} dB(A))	Level exceeded
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	23:00-23:10	64.2	60.5 (54.4 – 69.8)	***61.8***	When one documented complaint is received.	**55.0**	Limit
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	23:20-23:30	63.1	58.0 (50.8 – 66.8)	***61.5***			
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	23:55-00:05	64.6	60.2 (53.0 – 67.4)	***62.6***			

Field Observation(s) and Conclusion

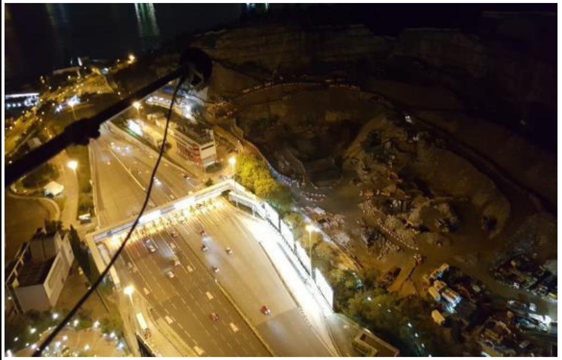
(a) Statement of exceedance(s)

Construction noise measured at CM1, CM2 & CM3 exceeded the construction noise (night time) limit level.

(b) Cause of exceedance(s)

The exceedance was not considered related to the Project works:

- According to our field observation, road traffic noise were identified as the dominant noise source. No noticeable noise from blasting / associated works was identified.
- No major construction activity was observed in Lam Tin Interchange during monitoring (see photo).
- As confirmed by RE, only construction works inside the tunnel were being conducted with the blast door closed.



Part B – Conclusion: The exceedances of night time noise limit level were not due to the Project.

Part C – Recommendation: No further action is required.

ETL Signature:

Date: 15 June, 2018

Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel
- Notification of Exceedances

NOE No. 180620_noise (CM1-CM3) **Exceedance Level**: Limit

Date of Measurement: 20 June 2018 – 21 June 2018
Time of Measurement: 23:35-00:45

Date of Noise Monitoring: 20 June 2018 – 21 June 2018

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Construction Noise

Station	Location	Time	Measured Level (L_{eq} dB(A))	Baseline Noise Level (L_{eq} dB(A))	Construction Noise Level (L_{eq} dB(A))	Action Level	Limit Level (L_{eq} dB(A))	Level exceeded
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	00:35-00:45	62.3	60.5 (54.4 – 69.8)	***57.6***	When one documented complaint is received.	**55.0**	Limit
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	00:05-00:15	61.1	58.0 (50.8 – 66.8)	***58.2***			
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	23:35-23:45	62.9	60.2 (53.0 – 67.4)	***59.6***			

Field Observation(s) and Conclusion

(a) Statement of exceedance(s)

Construction noise measured at CM1, CM2 & CM3 exceeded the construction noise (night time) limit level.

(b) Cause of exceedance(s)

The exceedance was not considered related to the Project works:

- According to our field observation, road traffic noise were identified as the dominant noise source. No noticeable noise from blasting / associated works was identified.
- No major construction activity was observed in Lam Tin Interchange during monitoring (see photo).
- As confirmed by RE, only construction works inside the tunnel were being conducted with the blast door closed.

Part B – Conclusion: The exceedances of night time noise limit level were not due to the Project.

Part C – Recommendation: No further action is required.

ETL Signature: ______________

Date: 21 June, 2018

Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel
- Notification of Exceedances

NOE No. 180626_noise (CM1-CM3) **Exceedance Level**: Limit

Date of Measurement: 26 June 2018 – 27 June 2018
Time of Measurement: 23:00-00:05

Date of Noise Monitoring: 26 June 2018 – 27 June 2018

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Construction Noise

Station	Location	Time	Measured Level (L_{eq} dB(A))	Baseline Noise Level (L_{eq} dB(A))	Construction Noise Level (L_{eq} dB(A))	Action Level	Limit Level (L_{eq} dB(A))	Level exceeded
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	23:50-00:05	63.9	60.5 (54.4 – 69.8)	***61.2***	When one documented complaint is received.	**55.0**	Limit
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	23:28-23:43	64.2	58.0 (50.8 – 66.8)	***63.0***			
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	23:00-23:15	64.7	60.2 (53.0 – 67.4)	***62.8***			

Field Observation(s) and Conclusion

(a) Statement of exceedance(s)

Construction noise measured at CM1, CM2 & CM3 exceeded the construction noise (night time) limit level.

(b) Cause of exceedance(s)

The exceedance was not considered related to the Project works:

- According to our field observation, road traffic noise were identified as the dominant noise source. No noticeable noise from blasting / associated works was identified.
- No major construction activity was observed in Lam Tin Interchange during monitoring (see photo).
- As confirmed by RE, only construction works inside the tunnel were being conducted with the blast door closed.

Part B – Conclusion: The exceedances of night time noise limit level were not due to the Project.

Part C – Recommendation: No further action is required.

ETL Signature: ______________ Date: 28 June, 2018

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

- Notification and Investigation Report for Environmental Quality Action & Limit Exceedances

Monitoring Parameter: Groundwater Quality

Date of Monitoring: 5 June 2018

Part A – Summary of Exceedance Records

Date	Monitoring Parameter	Monitoring Location	Monitoring Results	Action Level	Limit Level	Justification*	Exceedance due to the Project
5 June 2018	Turbidity (NTU)	Stream 1	***7.6***	2.1	2.3	(2), (3)	No
		Stream 2	***72.2***			(1), (3)	No
		Stream 3	***86.9***			(1), (3)	No
	Suspended Solid (mg/L)	Stream 1	***39***	7.6	12.1	(2), (3)	No
		Stream 2	***100***			(1), (3)	No
		Stream 3	***92***			(1), (3)	No
	Total Nitrogen (mg/L)	Stream 1	***2.2***	2.0	2.1	(2), (3)	No
	Total Phosphate (mg-P/L)	Stream 1	***0.11***	0.05	0.05	(2), (3)	No
		Stream 3	***0.06***			(1), (3)	No

Note: For Total Phosphate, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
Bold Italic means Action Level exceedance
Bold Italic with underline means Limit Level exceedance

*Remarks
(1) – No tunnel construction activities in the vicinity of the monitoring location.
(2) –The vertical distance between Stream 1 and the tunnel construction site is more than 44 meters. Therefore, Stream 1 will not affected by any tunnel construction works as its elevation is above the tunnel construction site (**Figure 1 & 2**).
(3) –Other(s): Based on the information from HKO, Standby Signal No. 1 & Thunderstorm Waring were hoisted and rainfall of 28.2mm was recorded on 5 June 2018.

Part B – Conclusions:

1. Based on the justifications in the above table, the exceedances are considered due to adverse weather (i.e heavy rainfall).
2. No increase in monitoring frequency for groundwater quality monitoring and no further action are required.

Part C – Recommendations

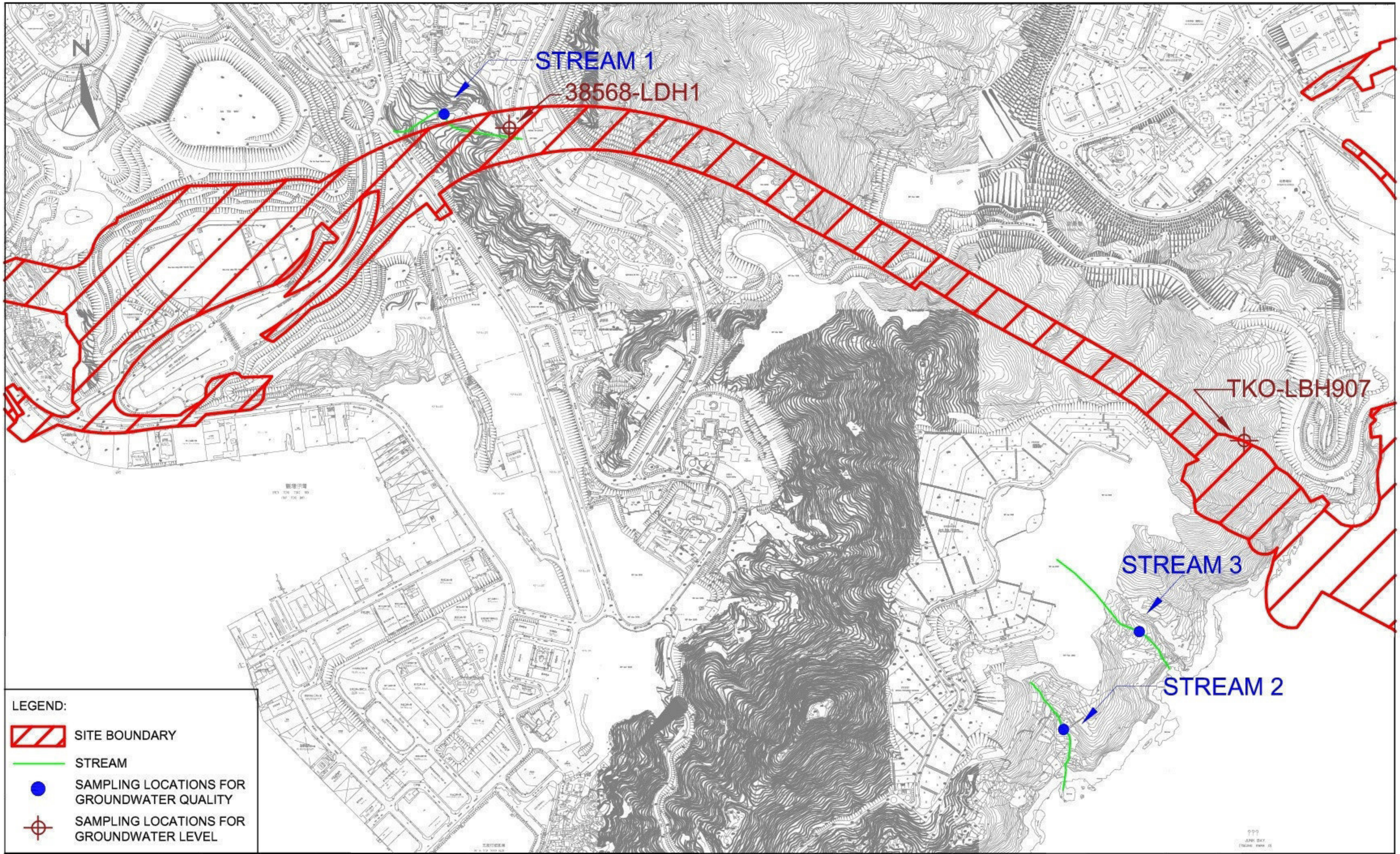
The monitoring of stream water is considered not representative to monitor the potential impacts on groundwater due to the Project after consideration of the location & elevation of the stream(s) and the non-project related factors (e.g. human activities etc.).

Therefore, ET recommend to terminate the water quality monitoring for the streams in accordance with the EM&A Manual, Section 4. For the details, please refer to the separate proposal for termination of monitoring for stream water.

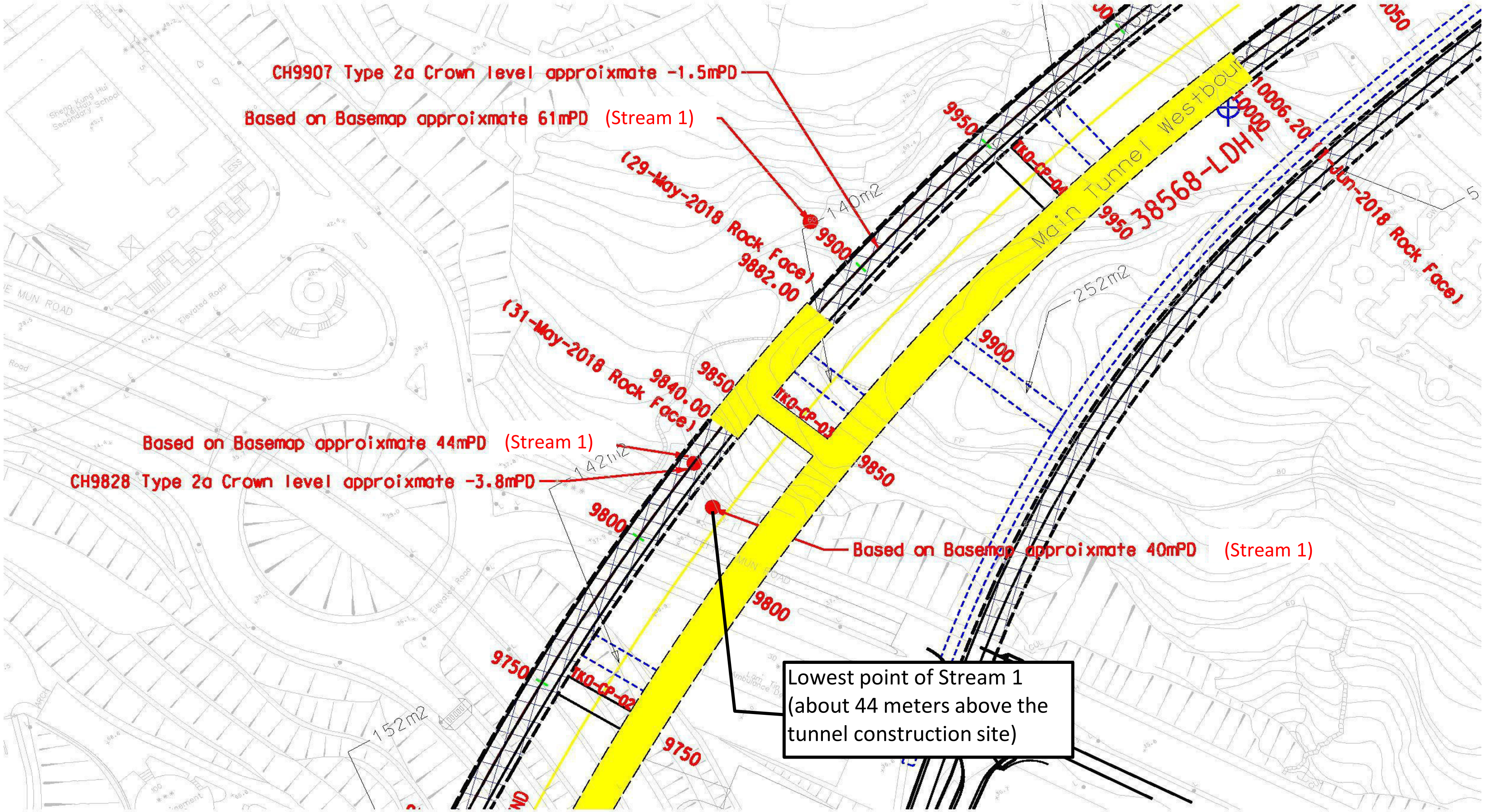
Reviewed by: Dr. Priscilla Choy (Environmental Team Leader) Date: 15 June 2018

Signature:

FIGURE



CINOTECH Cinotech Consultants Limited	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. 1	REV -



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Location of Stream 1 and the Main Tunnel Construction	Scale N.T.S	Project No. MA16034	CINOTECH
	Date May-18	Figure 2	

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

- Notification and Investigation Report for Environmental Quality Action & Limit Exceedances

Monitoring Parameter: <u>Groundwater Quality</u>

Date of Monitoring: <u>20 June 2018</u>

<u>Part A – Summary of Exceedance Records</u>

Date	Monitoring Parameter	Monitoring Location	Monitoring Results	Action Level	Limit Level	Justification*	Exceedance due to the Project
20 June 2018	Turbidity (NTU)	Stream 1	***<u>3.7</u>***	2.1	2.3	(2), (3)	No
		Stream 2	***<u>3.3</u>***			(1), (3)	No
		Stream 3	***<u>4.2</u>***			(1), (3)	No

Note: For Total Phosphate, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
Bold Italic means Action Level exceedance
<u>Bold Italic with underline</u> means Limit Level exceedance

*Remarks
(1) – No tunnel construction activities in the vicinity of the monitoring location.
(2) –The vertical distance between Stream 1 and the tunnel construction site is more than 44 meters. Therefore, Stream 1 will not affected by any tunnel construction works as its elevation is above the tunnel construction site (**Figure 1 & 2**).
(3) –Other(s): Based on the information from HKO, rainfall was recorded on 19 June 2018 (Ref: Daily Rainfall Distribution extracted from HKO).

<u>Part B – Conclusions:</u>

1. Based on the justifications in the above table, there is no direct evidence showing that the exceedances were due to Project. The exceedances are considered properly due to non-project related factor, such as, rainfall or domestic sewage (as observed and reported in the EIA report).
2. No increase in monitoring frequency for groundwater quality monitoring and no further action are required.

<u>Part C – Recommendations</u>

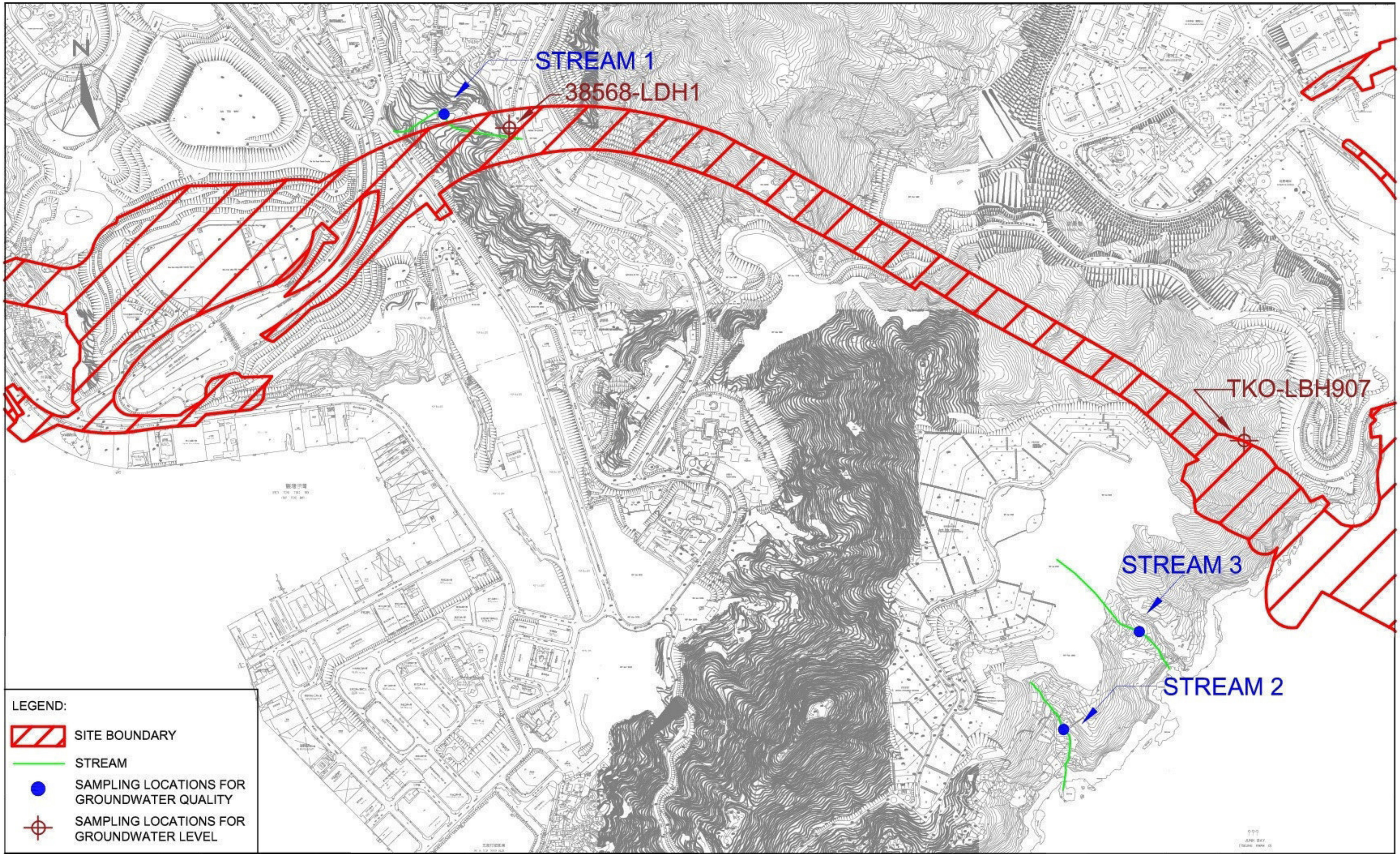
The monitoring of stream water is considered not representative to monitor the potential impacts on groundwater due to the Project after consideration of the location & elevation of the stream(s) and the non-project related factors (e.g. human activities etc.).

Therefore, ET recommend to terminate the water quality monitoring for the streams in accordance with the EM&A Manual, Section 4. For the details, please refer to the separate proposal for termination of monitoring for stream water.

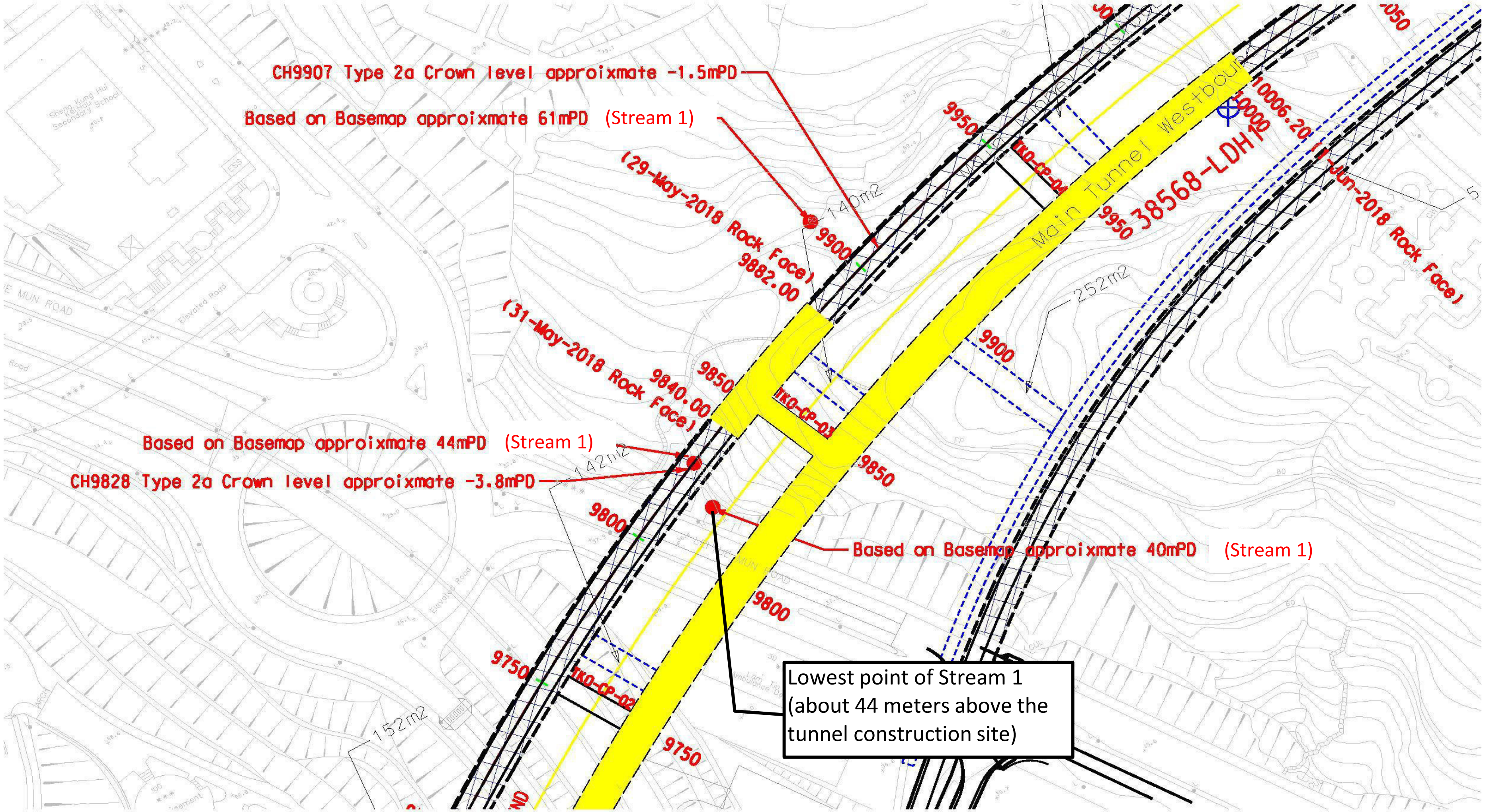
Reviewed by: <u>Dr. Priscilla Choy</u> (Environmental Team Leader) Date: <u>29 June 2018</u>

Signature:

FIGURE



CINOTECH Cinotech Consultants Limited	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.	1	REV -

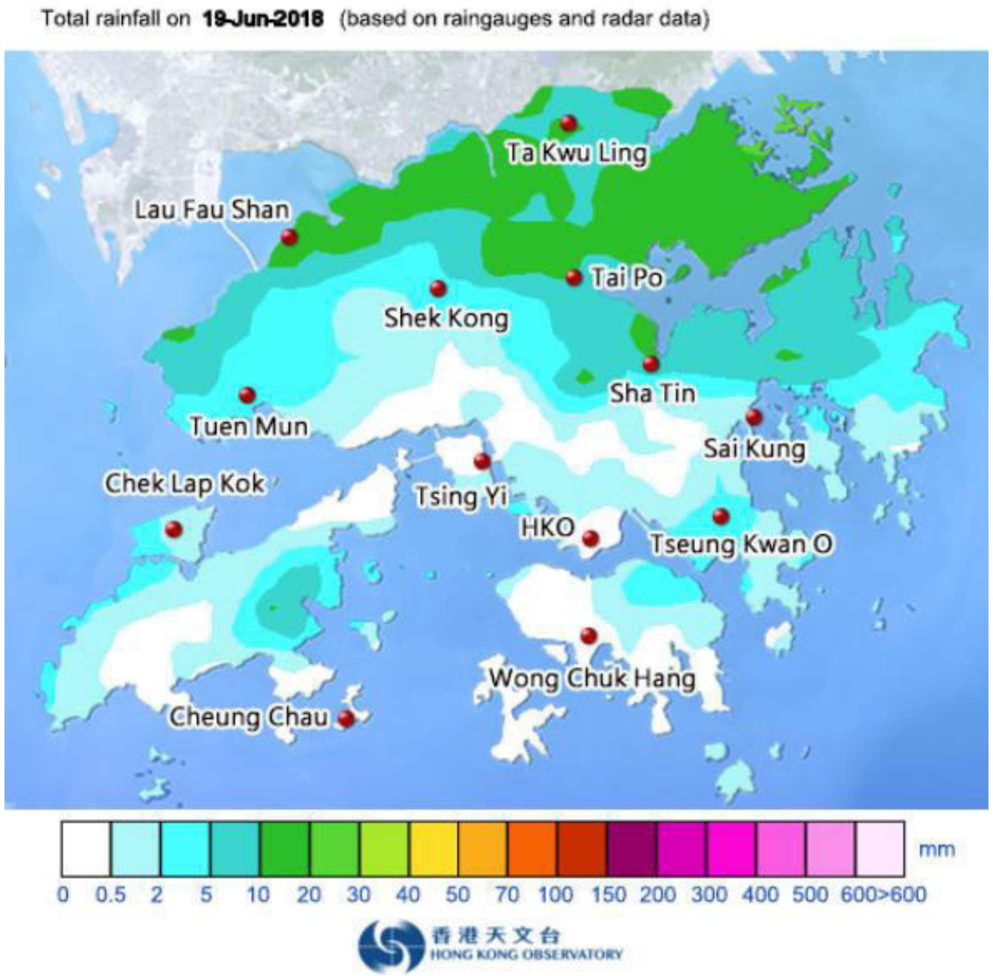


Title		Scale	Project
Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Location of Stream 1 and the Main Tunnel Construction		N.T.S	No. MA16034
		Date May-18	Figure 2

CINOTECH

APPENDIX A
DAILY RAINFALL DISTRIBUTION
EXTRACTED FROM HKO

Daily Rainfall Distribution:



Rainfall recorded in Sai Kung region on **19 June 2018**			
Time	Rainfall (mm)	Standby Signal No. 1	Thunderstorm Warning
23:45-00:45	-	-	-
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	0-1mm	-	-
09:45-10:45	0-1mm	-	-
10:45-11:45	0-1mm	-	-
11:45-12:45	-	-	-
12:45-13:45	-	-	-
13:45-14:45	-	-	-
14:45-15:45	0-6mm	-	-
15:45-16:45	0-1mm	-	-
16:45-17:45	-	-	-
17:45-18:45	-	-	-
18:45-19:45	-	-	-
19:45-20:45	-	-	-
20:45-21:45	-	-	-
21:45-22:45	-	-	-
22:45-23:45	-	-	-

APPENDIX L
SITE AUDIT SUMMARY

Appendix L - Site Audit Summary (June 2018)

Contract No. NE/2015/01

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

Items	Date	Status*	Follow up Action
Water Quality			
The Contractor was reminded to provide silt curtain in accordance with the silt curtain deployment plan at TKO side before the commencement of the construction work.	13 June 2018	✕	Item remarked on 20 June 2018.
	20 June 2018	✕	Item remarked on 28 June 2018
	27 June 2018	#	Follow up action will be reported in next reporting month
Noise			
--	--	--	--
Landscape and Visual			
--	--	--	--
Air Quality			
Water spraying should be provided to exposed slope at LTI and TKO for dust suppression.	30 May 2018	✓	Improved/rectigied on 6 June 2018.
Used cement bags should be removed at Portion IVC (Lam Tin).	6 June 2018	✓	Improved/rectigied on 13 June 2018.
Waste / Chemical Management			
Construction material should be removed from drip tray at TKO marine platform.	30 May 2018	✓	Improved/rectigied on 6 June 2018.
Impact on Cultural Heritage			
--	--	--	--
Permits / Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month
∗ Non-compliance of mitigation measure
• Non-compliance but improved by the contractor

Appendix L - Site Audit Summary (June 2018)

<u>Contract No. NE/2015/02</u>

Tseung Kwan O - Lam Tin Tunnel - Road P2 and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
To regularly maintain the wetsep in Work Area A and drainage system properly to prevent overflowing during rain events.	13 June 2018	✓	Improved/rectified on 20 June 2018.
The stockpile in Work Area A was observed uncovered and its level was much higher than the stone wall. The Contractor should improve the mitigation measures for dust and water quality impact in Work Area A.	20 June 2018	✕	The stockpile was observed partially covered but its level was still over the concrete block. Item remarked on 27 June 2018.
	27 June 2018	#	Follow up action will be reported in next reporting month
Noise			
To properly erect the acoustic mats without gaps for the derrick barge (Superich 206).	30 May 2018	✓	Improved/rectified on 6 June 2018.
Excessive impact noise was produced from the vibration hammer and pile in Portion 6. The Contractor should enhance noise mitigation measures for the piling works in Portion 6 to reduce noise nuisance to nearby NSR.	27 June 2018	#	Follow up action will be reported in next reporting month
Landscape and Visual			
--	--	--	--
Air Quality			
To wrap the drilling rig with impervious sheeting and retractable tube before start of pre-boring works in Portion 4.	6 June 2018	✓	Improved/rectified on 13 June 2018.
The stockpile in Work Area A was observed uncovered and its level was much higher than the stone wall. The Contractor should improve the mitigation measures for dust and water quality impact in Work Area A.	20 June 2018	✕	The stockpile was observed partially covered but its level was still over the concrete block. Item remarked on 27 June 2018. Item remarked on 27 June 2018.
	27 June 2018	#	Follow up action will be reported in next reporting month
Waste / Chemical Management			
Impact on Cultural Heritage			
--	--	--	--
Permits / Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month
∗ Non-compliance of mitigation measure
• Non-compliance but rectified by the contractor

Appendix L - Site Audit Summary (June 2018)

Contract No. NE/2015/03

Tseung Kwan O - Lam Tin Tunnel - Northern Footbridge

Items	Date	Status*	Follow up Action
Water Quality			
To regularly remove the sediment in the sedimentation tank in West Pier.	30 May 2018	✓	Improved/rectified on 6 June 2018.
Sand bunds along West Pier were observed damaged. The Contractor should ensure the interigty of sand bunds at all time.	13 June 2018	✓	Improved/rectified on 20 June 2018.
Noise			
--	--	--	--
Landscape and Visual			
Chemical containers were observed next to the tree protection zone. The Contractor should improve tree protection measures, such as, to relocate the chemical containers away from the TPZ.	20 June 2018	✓	Improved/rectified on 27 June 2018.
Air Quality			
--	--	--	--
Waste / Chemical Management			
To provide drip tray to the chemical container in Portion 2 near East Pier.	30 May 2018	✓	Improved/rectified on 6 June 2018.
Oil stain was observed on the surface of the stagnant water in West Pier. The Contractor should remove the oil stain on the stagnant water.	13 June 2018	✓	Improved/rectified on 20 June 2018.
Impact on Cultural Heritage			
--	--	--	--
Permits / Licenses			
--	--	--	--

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

∗ Non-compliance of mitigation measure
• Non-compliance but rectified by the contractor

Appendix L - Site Audit Summary (June 2018)

<u>Contract No. NE/2017/01</u>

Tseung Kwan O - Lam Tin Tunnel – Tsueng Kwan O Interchange and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
Noise			
--	--	--	--
Landscape and Visual			
--	--	--	--
Air Quality			
Waste / Chemical Management			
The Contractor was reminded to remove the stagnant water inside the drip tray at flat top barge.	13 June 2018	✓	Improved/rectified on 20 June 2018.
Oil leakage should be avoided from the oil container and cleaned up on the derrick barge.	27 June 2018	#	Follow up action will be reported in next reporting month
Impact on Cultural Heritage			
--	--	--	--
Permits / Licenses			

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

∗ Non-compliance of mitigation measure
• Non-compliance but rectified by the contractor

Appendix L - Site Audit Summary (June 2018)

Contract No. NE/2017/02

Tseung Kwan O - Lam Tin Tunnel – Road P2/D4 and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
Stagnant water was observed in Portion I. The Contractor should remove the stagnant water frequently.	13 June 2018	✓	Improved/rectified on 20 June 2018.
Noise			
--	--	--	--
Landscape and Visual			
--	--	--	--
Air Quality			
Stockpile and dry surface were observed in Portion 1. The Contractor should improve the dust mitigation measures in Portion 1.	20 June 2018	✓	Improved/rectified on 27 June 2018.
Waste / Chemical Management			
--	--	--	--
Impact on Cultural Heritage			
--	--	--	--
Permits / Licenses			

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

∗ Non-compliance of mitigation measure
• Non-compliance but rectified by the contractor

APPENDIX M
EVENT AND ACTION PLANS

Event and Action Plan for Air Quality (Dust)

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action level being exceeded by one sampling	1. Identify source, investigate the causes of complaint and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER;	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	8. If exceedance stops, cease additional monitoring.			
Limit level being exceeded by one sampling	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform Contractor ,IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level being exceeded by two or more consecutive sampling	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily;	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals;

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	3. Supervise the implementation of remedial measures.	4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.			

Event and Action Plan for Marine Water Quality

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action level being exceeded by one sampling day at water sensitive receiver(s)	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; • If exceedance is found to be caused by the reclamation activities, repeat *in-situ* measurement to confirm findings; • Inform IEC and contractor; • Check monitoring data, all plant, equipment and Contractor's working methods; • If exceedance occurs at WSD salt water intake, inform WSD; • Discuss mitigation measures with IEC and Contractor; • Repeat measurement on next day of exceedance.	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Discuss with IEC on the proposed mitigation measures; • Make agreement on the mitigation proposal.	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice; • Check all plant and equipment; • Amend working methods if appropriate; • Discuss with ET and IEC and propose mitigation measures to IEC and ER; • Implement the agree mitigation measures.
Action level being exceeded by two or more consecutive	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures;	• Discuss with IEC on the proposed mitigation measures; • Make agreement on the mitigation proposal;	• Inform the Engineer and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
sampling days at water sensitive receiver(s)	• If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IEC and contractor; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC and Contractor; • Ensure mitigation measures are implemented; • Prepare to increase the monitoring frequency to daily; • If exceedance occurs at WSD salt water intake, inform WSD; • Repeat measurement on next day of exceedance.	• Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Assess the effectiveness of the implemented mitigation measures.	• Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; • Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day at water sensitive receiver(s)	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;	• Discuss with IEC, ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods;	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
	• If exceedance is found to be caused by the reclamation activities, repeat *in-situ* measurement to confirm findings; • Inform IEC, contractor, AFCD and EPD • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC, ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level; • If exceedance occurs at WSD salt water intake, inform WSD.	• Assess the effectiveness of the implemented mitigation measures.	• Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures.	• Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and submit proposal of mitigation measures to IEC and ER within 3 working days of notification; • Implement the agreed mitigation measures.
Limit level being exceeded by two or more consecutive sampling days at	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;	• Discuss with IC(E), ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods;	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
water sensitive receiver(s)	• If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IC(E), AFCD, contractor and EPD; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IC(E), ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days; • If exceedance occurs at WSD salt water intake, inform WSD.	• Assess the effectiveness of the implemented mitigation measures.	• Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures; • Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level.	• Check all plant and equipment and consider changes of working methods; • Discuss with ET, IC(E) and ER and submit proposal of mitigation measures to IC(E) and ER within 3 working days of notification; • Implement the agreed mitigation measures; • As directed by the Engineer, to slow down or to stop all or part of the construction activities.

Limit Levels and Action Plan for Landfill Gas

Parameter	Limit Level	Action
Oxygen	<19%	• Ventilate to restore oxygen to >19%
	<18%	• Stop works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%
Methane	>10% LEL (i.e. > 0.5% by volume)	• Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. > 1% by volume)	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore methane to <10% LEL
Carbon Dioxide	>0.5%	• Ventilate to restore carbon dioxide to < 0.5%
	>1.5%	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore carbon dioxide to < 0.5%

Event and Action Plan for Coral Post-Translocation Monitoring

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level Exceedance	1. Check monitoring data; 2. Inform the IEC, ER and Contractor of the findings; 3. Increase the monitoring to at least once a month to confirm findings; 4. Propose mitigation measures for consideration	1.Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.
Limit Level Exceedance	Undertake Steps 1-4 as in the Action Level Exceedance. If further exceedance of Limit Level, suspend construction works until an effective solution is identified.	1.Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.

Mitigation Measures for Vibration Monitoring

Level	Contingency Action
Alert Level	● The Engineer shall be informed immediately. ● The Contractor shall submit an investigation report to describe works being undertaken. To review the instrument responses and to study the cause of undue response. ● The Contractor shall review and increase the instrumentation monitoring and reporting frequency, if applicable. ● The Contractor shall submit a detailed plan of action describing the measures to be taken should the concerned instrument reach the action level to the Engineer for approval.
Alarm Level	● The Engineer shall be informed immediately. ● The active construction works may require to be suspended subject to the Engineer's review of monitoring data. ● The Contractor shall immediately implement the measures as defined in the detailed plan of action to prevent further ground movement and groundwater drawdown etc. ● The Contractor shall prepare a detailed investigation report to study the cause of the exceedance ● The Contractor shall propose a contingency plan for the Engineer's approval in the event that alarm value is reached or exceeded ● The Contractor shall develop an emergency plan for the Engineer's approval in the event the applied contingency measures cannot control the situation. ● The Contractor shall meet the Engineer to discuss the instrument response and review the effectiveness of the implemented measures. ● The Contractor shall carry out design review of the works

Action Level	• Consideration shall be given to suspend all active construction works and the Engineer shall be informed immediately • The Contractor shall immediately implement the measures defined in the contingency plan • The Contractor shall implement the measures defined in the emergency plan in the event that the applied contingency measures are found inadequate • The Contractor shall provide a complete report to examine the construction method and review the response of the instruments with full history of the monitoring data and construction activities and necessary design update • To resume the suspended activities, the Contractor shall demonstrate to the Engineer's satisfaction that it is safe to do so with approval from the Engineer.

APPENDIX N
ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Table I – Recommended Mitigation Measures stipulated in EM&A Manual of the Project

(Further information on observations/reminders/non-compliance made during site audit should refer to Table II)

Key:

^ Mitigation measure was fully implemented.

* Observation/reminder was made during site audit but improved/rectified by the contractor.

Observation/reminder was made during site audit but not yet improved/rectified by the contractor.

X Non-compliance of mitigation measure

• Non-compliance but rectified by the contractor

N/A Not Applicable

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status	E.P Condition
Air Quality Impact								
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	To minimize the dust impact	Contractor	All Active Work Sites	Construction phase	APCO	*(1)	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:	To minimize the dust impact	Contractor	All Construction Work Sites	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation		
	- Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.						*(1)	
	- Use of frequent watering for particularly dusty construction areas and areas close to ASRs.						*(1)	
	- Side enclosure and covering of any aggregate or dusty material storage piles to							

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
	reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.							
	- Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.						*(1)/#(1)	
	- Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.						^	
	- Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.						N/A	
	- 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.						*(1)/#(1)	
	- Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit.						^	
	- Imposition of speed controls for vehicles on site haul roads.						^	
	- Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs						^	
	- Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.						^	
	- Instigation of an environmental monitoring and auditing program to monitor the						^	

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 • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^	
/	Valid No-road Mobile Machinery (NRMM) labels should be provided to regulated machines	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	*(2)	
Noise Impact (Construction Phase)								
S4.8	- Use of quiet PME. Use of movable noise barriers for Excavator, Lorry, Dump Truck, Mobile Crane, Compactor, Concrete Mixer Truck, Concrete Lorry Mixer, Breaker, Mobile Crusher, Backhoe, Vibratory Poker, Saw, Asphalt Paver, Vibratory Roller, Vibrolance, Hydraulic Vibratory Lance and Piling (Vibration Hammer). Use of full enclosure for Air Compressor, Compressor, Bar Bender, Generator, Drilling Rig, Chisel, Large Diameter Bore Piling, Grout Mixer & Pump and Concrete Pump.	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO	#(3)	

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	*(2)	
S4.9	Good Site Practice - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program - Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. - Mobile plant, if any, should be sited as far away from NSRs as possible. - Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. - Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	To minimize construction noise impact arising from the Project at the affected NSRs	Project Proponent	Work sites	Construction Period	EIAO-TM, NCO	 ^ ^ ^ ^ ^ ^	
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	

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						
Water Quality Impact (Construction Phase)								
S5.6.24	The dry density of filling material for the TKO-LT Tunnel reclamation should be 1,900kg/m^3, with fine content of 25% or less	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A	
S5.8.1	Non-dredged method by constructing steel cellular caisson structure with stone column shall be adopted for construction of seawall foundation. During the stone column installation (also 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^3 (i.e. 1,000 m^3 per trip) for the filling operation at the reclamation area for Road P2. All filling works shall be carried out behind the seawall with the use of single silt curtain at the marine access.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A	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

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
	- floating single silt curtain shall be employed for all marine works;	based					*(4)	
	- 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;	construction					^	
	- all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material;						^	
	- excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved;						^	
	- adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;						^	
	- loading of barges and hoppers should be controlled to prevent splashing of filling material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation;						^ ^	
	- any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes;						^	
	- construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds; and						^	
	- before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain.							2.8

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
S5.8.4	Site specific mitigation plan for reclamation areas using public fill materials should be submitted for EPD agreement before commencement of construction phase with due consideration of good site practices.	Control potential impacts from filling activities and marine based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A	
ERR S5.6.1	To minimize water quality impact arising from the dredging and filling works for Reclamation for Road P2, the following mitigation measures shall be implemented: - Before carrying out any dredging and underwater filling works, a temporary barrier shall first be constructed to a height above the high water mark to completely enclose the works site (without any opening at the barrier wall) - The temporary barrier fully enclosing the dredging and underwater filling works site shall not be removed before completion of all dredging and underwater filling works. - Water quality sampling and testing shall be carried out to demonstrate that the water quality inside the enclosed barrier is comparable to the ambient or baseline levels prior to the removal of the fully enclosed barrier. - Silt curtains shall be deployed for the installation and removal of the temporary barrier and at the double water gates marine access opening during its operation. The general of arrangement of silt curtain is shown in Figure 7 of the existing Environmental Permit (No. EP-458/2013/C).	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

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
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)/ #(5)	

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status	E.P Condition
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	^	

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
S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	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)	
S5.8.12	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO S5	^	
S5.8.13	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO S5	^	
S5.8.14	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50m^3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Control potential impacts from construction site runoff and land-	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^	

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status	E.P Condition
		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	

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
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	

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
S5.8.29 - S5.8.31	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an online standby pump of adequate capacity and with automatic alternating devices. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^	
S5.8.32	All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^	
S5.8.33	Bentonite slurries used in diaphragm wall and borepile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A	

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
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	^	

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
	(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: - suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; - chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and - storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO	^ ^ ^	
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,	^	

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
Ecological Impact								
S6.8.4	***Measures to Minimize Disturbance*** - Use of Quiet Mechanical Plant during the construction phase should be adopted wherever possible. - Hoarding or fencing should be erected around the works area boundaries during the construction phase. The hoarding would screen adjacent habitats from construction phase activities, reduce noise disturbance to these habitats and also to restrict access to habitats adjacent to works areas by site workers; - Regular spraying of haul roads to minimize impacts of dust deposition on adjacent vegetation and habitats during the construction activities	Minimize noise, human and traffic disturbance to terrestrial habitat and wildlife; and reduce dust generation	Design Team / Contractor	Land-based works are	Construction Phase	N/A	^ ^ ^	
S6.8.5	***Standard Good Site Practice*** - Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats. - Construction activities should be restricted to works areas that should be clearly demarcated. The works areas should be reinstated after completion of the works. - Waste skips should be provided to collect general refuse and construction wastes. The wastes should be properly disposed off-site in a timely manner. - General drainage arrangements should include sediment and oil traps to collect and control construction site run-off. - Open burning on works sites is illegal, and should be strictly prohibited. - Measures should also be put into place so that litter, fuel and solvents do not enter	Reduce disturbance to surrounding habitats	Contractor	Land-based works are	Construction Phase	N/A	^ ^ ^ ^ ^ ^	

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status	E.P Condition
	the nearby watercourses.							
S6.8.6	***Measure to Minimize Groundwater Inflow*** - The drained tunnel construction method with groundwater inflow control measures would generally be adopted. - During the tunnel excavation, pre-excavation grouting could be adopted to reduce the groundwater inflow and ensure that the tunnel would meet the long term water tightness requirements.	Minimize groundwater inflow	Contractor	Tunnel	Construction Phase	N/A	N/A N/A	
S6.8.8	***Measure to Minimize Impact on Corals*** <u>Coral translocation</u> - It is recommended to translocate the affected coral colonies, except the locally common *Oulastrea crispata*, within the reclamation area and bridge footprint to the other suitable locations as far as practicable. - The coral translocation should be conducted during the winter months (November-March) in order to avoid disturbance during their spawning period (i.e. July to October). - A detailed coral translocation plan with a description on the methodology for pretranslocation coral survey, translocation methodology, identification/proposal of coral recipient site, monitoring methodology for posttranslocation should be prepared during the detailed design stage.	Minimize loss of coral	Design team, contractor, project operator	Within reclamation areas and pier footprint	Prior construction	N/A	^ ^ ^ ^	

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	- 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. <u>Post translocation Monitoring</u> - A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the translocated coral communities - Information gathered during each posttranslocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.						^ ^	
S6.8.9 S6.8.10	***Measure to Control Water Quality Impact*** - Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area. - Diverting of the site runoff to silt trap facilities before discharging into storm drain; - Proper waste and dumping management; and - Standard good-site practice for land-based construction.	Control water quality impact, especially on suspended solid level; minimize the contamination of wastewater discharge, accidental chemical	Design Team, contractor	Marine and landbased works area	Construction phase	WQO	N/A ^ ^ ^	

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		spillage and construction site runoff to the receiving water bodies						
S6.8.11	***Compensation for Vegetation Loss*** - Felling of mature trees should be compensated by planting of standard or heavy standard trees within or in vicinity of the affected area as far as practicable. Such compensatory planting for trees should be provided with at least a 1:1 ratio. In addition, vegetation at the temporarily affected area should be reinstated with species similar to the existing condition.	Compensate for the vegetation loss	Design Team, contractor	Land-based works area	Construction phase	N/A	^	
Fisheries Impact								
S7.7.3	***Measure to Control Water Quality Impact*** - Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area.	Control water quality impact, especially on suspended solid level	Design Team / Contractor	Marine work area	Construction phase	WQO	^	
Waste Management (Construction Phase)								
S8.6.3	***Good Site Practices and Waste Reduction Measures*** - Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;	To reduce waste management impacts	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354)	^	

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
	- Training of site personnel in site cleanliness, proper waste management and chemical handling procedures; - Provision of sufficient waste disposal points and regular collection of waste; - Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.					Land (Miscellaneous Provisions) Ordinance (Cap. 28)	^ ^ ^ *(9)	
S8.6.4	***Good Site Practices and Waste Reduction Measures (con't)*** - Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; - Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce; - Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and - Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)	^ ^ ^ ^	
S8.6.5	***Good Site Practices and Waste Reduction Measures (con't)*** The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^	

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
	avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.							
S8.6.6	***Good Site Practices and Waste Reduction Measures (con't)*** - C&D materials would be reused in the project and other local concurrent projects as far as possible.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^	
S8.6.7	***Storage, Collection and Transportation of Waste*** Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: - Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; - Maintain and clean storage areas routinely; - Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and - Different locations should be designated to stockpile each material to enhance reuse.	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	-	^ ^ ^ ^	
S8.6.8	***Storage, Collection and Transportation of Waste (con't)***	To minimize	Contractor	All work	Construction			

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
	- Remove waste in timely manner; - Waste collectors should only collect wastes prescribed by their permits; - Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; - Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); - Waste should be disposed of at licensed waste disposal facilities; and - Maintain records of quantities of waste generated, recycled and disposed.	potential adverse environmental impacts arising from waste collection and disposal		sites	Phase		^ ^ ^ ^ ^ ^	
S8.6.9	***Storage, Collection and Transportation of Waste (con't)*** - Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials, to monitor disposal of 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.	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	***Sorting of C&D Materials*** - Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. - Specific areas shall be provided by the Contractors for sorting and to provide	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010 ETWB TCW No.	^ ^	

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status	E.P Condition
	temporary storage areas for the sorted materials. - The C&D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled in the reclamation as far as practicable before delivery to PFRFs. While opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills					33/2002 ETWB TCW No. 19/2005	^	
S8.6.15 – S8.6.16	***Sediments*** - Sediment encountered may be reused as filling material on-site after cement stabilization. Cement-stabilization process is undertaken by mixing sediment and cement and will convert sediment to earth filling material. The treated sediment has to comply with Risk-Based Remediation Goals (RBRGs) before being reused in order not to raise any land contamination issue. The adoption of RBRGs to assess stabilized sediment has been proposed in the current C&DMMP. MFC has no adverse comment on the current C&DMMP. The sediment quality indicates that all sediments comply with most stringent RBRGs except for one sediment sample (TKO-EBH501 3-3.95m) with lead exceeding the RBRG. Except for the sediment sample (TKO-EBH501 3-3.95m), the chemical screening results do not indicate sediment as contaminated soil. It is anticipated that reuse of sediment except sediment sample (TKO-EBH501 3-3.95m) will not lead to land contamination. - Despite exceedance of RBRG, onsite reuse of sediment under sample (TKO-EBH501 33.95m) as filling material after cement stabilization is also a suitable	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	RBRG	N/A N/A	

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	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							
S8.6.17 – S8.6.20	***Sediments (con't)***	To determine the best handling and treatment of sediment	Contractor	All works areas with sediments concern	Construction Phase			
	- 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.						N/A	
	- 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).						N/A	
	- 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.						N/A N/A	

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	- 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.							
S8.6.21	***Sediments (con't)*** - Alternatively, excavated sediment can be treated with marine disposal. The basic requirements and procedures for excavated sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. MFC is responsible for the provision and management of disposal capacity and facilities for the excavated sediment, while the permit of marine dumping is required under the Dumping at Sea Ordinance and is the responsibility of the DEP.	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A	
S8.6.23	***Sediments (con't)*** - For allocation of sediment disposal sites and application of marine dumping permit, separate SSTP has to be submitted to EPD for agreement under DASO. Additional site investigation, based on the SSTP, maybe carried out in order to confirm the disposal arrangements for the proposed sediments removal. A Sediment Quality Report (SQR) shall then be required for EPD agreement under DASO prior to the tendering of the construction contract, discussing in details the site investigation, testing results as well as the delineation of each of the categories of excavated materials and the corresponding types of disposal.	To determine the best handling and disposal option of sediment	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A	
S8.6.24 - S8.6.28	***Sediments (con't)*** - The excavated sediments is expected to be loaded onto the barge and	To ensure handling of	Contractor	All works areas with	Construction Phase	ETWB TC(W) No. 34/2002 &	N/A	

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	transported to the designated disposal sites allocated by the MFC. The excaveted sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002.	sediments are in accordance to statutory requirements		sediments concern		Dumping at Sea Ordinance	N/A	
	- Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO).						N/A	
	- In order to minimise the potential odour / dust emissions during boring and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.						N/A	
	- The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to							

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	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. - In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site. - Another possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal.						N/A N/A	
S8.6.26	***Chemical Wastes.*** - If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful,	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	***General Refuse*** - General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)	^	
Impact on Cultural Heritage (Construction Phase)								
S9.6.4	Dust and visual impacts - Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided; - The open yard in front of the temple should be kept as usual for annual Tin Hau festival; - Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple.	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO	 ^ ^ ^	
S9.6.4	Indirect vibration impact - Vibration level is suggest to be controlled within a peak particle velocity (ppv) limit of 5mm/s measured inside the historical buildings; - Monitoring of vibration should be carried out during construction phase.	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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	- Tilting and settlement monitoring should will be applied on the Cha Kwo Ling Tin Hau Temple as well. - A proposal with details for the mitigation measures and monitoring of impacts on built heritage shall be submitted to AMO for comments before commencement of work.						^ ^	3.7 3.7
Landscape and Visual Impact (Construction Phase)								
Table 10.8.1	CM1 - Construction area and contractor's temporary works areas to be minimised to avoid impacts on adjacent landscape.	Avoid impact on adjacent landscape areas	CEDD (via Contractor)	General	Construction planning and during 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				
Landfill Gas Hazard (Design and Construction Phase)								
S11.5.9	A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site throughout the groundworks phase. The Safety Officer should be provided with an intrinsically safe portable instrument, which is appropriately calibrated and able to measure the following gases in the ranges indicated below: Methane 0-100% LEL and 0100% v/v Carbon dioxide 0-100% Oxygen 0-21%	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note	^	
S11.5.10 S11.5.25	***Safety Measures*** - For staff who work in, or have responsibility for "at risk" area, such as all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. - An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out. - No worker should be allowed to work alone at any time in or near to any excavation. At least one other worker should be available to assist with a	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	^ ^ ^	

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	rescue if needed. - Smoking, naked flames and all other sources of ignition should be prohibited within 15m of any excavation or ground-level confined space. "No smoking" and "No naked flame" notices should be posted prominently on the construction site and, if necessary, special areas should be designed for smoking. - Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation. - Welding, flame-cutting or other hot works may only be carried out in trenches or confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Officer (or, in the case of small developments, other appropriately qualified person). - The permit to work procedure should set down clearly the requirements for continuous monitoring for methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure should also require the presence of an appropriately qualified person, in attendance outside the 'confined area', who should be responsible for reviewing the gas measurements as they are made, and who should have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise should be permitted to carry out hot works in confined areas.					Confined Space	^ ^ ^ ^ ^	

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status	E.P Condition
	- Where there are any temporary site offices, or any other buildings located within the Sai Tso Wan Landfill Consultation Zone which have enclosed spaces with the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas (by survey using portable gas detectors); or be raised clear of the ground by a minimum of 500mm. This aims to create a clear void under the structure which is ventilated by natural air movement such that emission of gas from the ground are mixed and diluted by air.						^	
	- Any electrical equipment, such as motors and extension cords, should be intrinsically safe. During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed to prevent the migration of gases through the pipeline/conduit. All piping /conduiting should be capped at the end of each working day.						^ ^ ^	
	- During construction, adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus (BA) sets should be made available on site.						^	
	- Fire drills should be organized at not less than six monthly intervals.							
	- The contractor should formulate a health and safety policy, standards and instructions for site personnel to follow.						^	
	- All personnel who work on the site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices (in Chinese and English) should be posted at prominent position around							

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
	the site warning danger of the potential hazards. - Service runs within the Consultation Zone should be designated as "special routes"; utilities companies should be informed of this and precautionary measures should be implemented. Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces such as manholes and service chambers, and that appropriate monitoring procedures are in place to prevent hazards due to asphyxiating atmospheres in confined spaces. Detailed guidance on entry into confined spaces is given in Code of Practice on Safety and Health at Work in Confined Spaces (Labour Department, Hong Kong). - Periodically during ground-works construction within the 250m Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person.						^	
S11.5.26 - S11.5.31	***Monitoring*** ● Routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note	^	

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status	E.P Condition
	sure that the area is free of landfill gas before any man enters into the area.							
	● For excavations **deeper than 1m**, measurements should be carried out: - at the ground surface before excavation commences;- - immediately before any worker enters the excavation; - at the beginning of each working day for the entire period the excavation remains open; and - periodically throughout the working day whilst workers are in the excavation.						^	
	● For excavations **between 300mm and 1m deep**, measurements should be carried out: - directly after the excavation has been completed; and - periodically whilst the excavation remains open.						^	
	● For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person.						^	
	● Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person.						^	
	● The exact frequency of monitoring should be determined prior to the commencement of works, but should be at least once per day, and be carried out by a suitably qualified or qualified person before starting the work of the day. Measurements shall be recorded and kept as a record of safe working conditions with copies of the site diary and submitted to the Engineer for approval. The Contractor may elect to carry out monitoring via an automated						^	

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
Air Quality Impact					
* (1)	S3.8.1 S3.8.7	Watering eight times a day on active works areas, exposed areas and paved haul roads Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: - Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. - Use of frequent watering for particularly dusty construction areas and areas close to ASRs. - 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. - Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.	NE/2015/01	Construction of Lam Tin Interchange/ TKO Portal	Water spraying should be provided to exposed slope at LTI and TKO for dust suppression.
			NE/2015/01	Construction of Lam Tin Interchange/ TKO Portal	Used cement bags should be removed at Portion IVC (Lam Tin).
			NE/2015/02	Construction of Road P2	To wrap the drilling rig with impervious sheeting and retractable tube before start of pre-boring works in Portion 4.
			NE/2017/02	Construction of Road P2/D4	Stockpile and dry surface were observed in Portion 1. The Contractor should improve the dust mitigation measures in Portion 1.
# (1)			NE/2015/02	Construction of Road P2	The stockpile in Work Area A was observed uncovered and its level was much higher than the stone wall. The Contractor should improve the mitigation measures for dust and water quality impact in Work Area A.

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
Noise Impact (Construction Phase)					
* (2)	Noise Mitigation Plan	Use of Temporary Noise Barriers or Full Enclosure for PME according to the approved Noise Mitigation Plan	NE/2015/02	Construction of Road P2	To properly erect the acoustic mats without gaps for the derrick barge (Superich 206).
# (3)	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.	NE/2015/02	Construction of Road P2	Excessive impact noise was produced from the vibration hammer and pile in Portion 6. The Contractor should enhance noise mitigation measures for the piling works in Portion 6 to reduce noise nuisance to nearby NSR.
Water Quality Impact (Construction Phase)					
# (4)	S5.8.3	Other good site practices should be undertaken during filling operations include: - floating single silt curtain shall be employed for all marine works;	NE/2015/01	Construction of TKO Portal	The Contractor was reminded to provide silt curtain in accordance with the silt curtain deployment plan at TKO side before the commencement of the construction work.
* (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	To regularly maintain the wetsep in Work Area A and drainage system properly to prevent overflowing during rain events.
			NE/2015/03	Construction of Northern Footbridge	Sand bunds along West Pier were observed damaged. The Contractor should ensure the integrity of sand bunds at all time.
			NE/2017/01	Construction of TKO Interchange	Stagnant water was observed in Portion I. The Contractor should remove the stagnant water frequently.

Status / Remark	EIA Ref.	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Observation/Reminder
#(5)			NE/2015/02	Construction of Road P2	The stockpile in Work Area A was observed uncovered and its level was much higher than the stone wall. The Contractor should improve the mitigation measures for dust and water quality impact in Work Area A.
* (6)	S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	NE/2015/02	Construction of Road P2	To regularly maintain the wetsep in Work Area A and drainage system properly to prevent overflowing during rain events.
			NE/2015/03	Construction of Northern Footbridge	To regularly remove the sediment in the sedimentation tank in West Pier.
* (7)	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.	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	Oil stain was observed on the surface of the stagnant water in West Pier. The Contractor should remove the oil stain on the stagnant water
* (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	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.
			NE/2017/01	Construction of TKO Interchange	The Contractor was reminded to remove the stagnant water inside the drip tray at flat top barge.
# (8)			NE/2017/01	Construction of TKO Interchange	Oil leakage should be avoided from the oil container and cleaned up on the derrick barge.

APPENDIX O
SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

Appendix O - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log for Tseung Kwan O - Lam Tin Tunnel

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
195	27th June 2018	26th and 27th June 2018/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained the construction noise at Lam Tin Interchange during night-time.	Y	Under Investigation	On-going
194	25th June 2018	23rd June 2018/ Construction of Road P2	Public	Air Quality	The complainant complained the dark smoke emission from construction barge and the smell from welding works.	N	Under Investigation	On-going
193	22nd June 2018	Not Specific/ Construction of Lam Tin Interchange	Public	Waste Management	The complainant complaint about the housekeeping of the construction site.	N	Under Investigation	On-going
192	20th June 2018	20th June 2018/ Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	The complainant complained about construction noise starting from 6 am.	Y	Under Investigation	On-going
191	7th June 2018	7th June 2018/ Construction of Road P2	Resident of Ocean Shores	Air Quality	The complainant complained about the smell of machinery exhaust affecting the podium of Ocean Shores (swimming pool). The complainant suspected the exhaust was originated from the nearby barges.	N	Under Investigation	On-going
190	6th June 2018	6th June 2018/ Construction of Lam Tin Interchange	Resident of Chung Pak House, Hong Pak Court	Noise	The complainant complained about the construction noise at Lam Tin Interchange.	Y	Under Investigation	On-going
189	6th June 2018	30th May and 30th	SKDC member	Noise	The complainant complained about the	Y	See Investigation / Mitigation Measures for Complaint No. 50 and 81.	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
		September 2017/ Construction of Road P2			noise affecting nearby resident in early morning near Ocean Shores.			
188	6th June 2018	/ Construction of Road P2	SKDC member	Landscape	The complainant complained about excessive tree felling near Ocean Shores.	N	Under Investigation	On-going
187	4th June 2018	4th June 2018/ Construction of Lam Tin Interchange	Resident of Hong Pak Court	N/A	The complainant complained about the blasting works during night-time.	N	Under Investigation	On-going
186	1st June 2018	Not specified/ Construction of Lam Tin Interchange	Sin Fat Road Tennis Court	Air Quality	The complainant complained about the dust	N	Under Investigation	On-going
185	29th May 2018	Not specified/ Construction of Road P2	Public	Air Quality	The complainant complained about the black smoke emission from the construction vessel.	N	According to the information provided and confirmed by the Engineer, dredging and placing rock fill material were conducted during the time of complaint. The Contractors had implemented environmental mitigation measures to reduce construction nuisance from construction activities to the nearby sensitive receivers as follows: Air Quality: ➢ As confirmed by the Engineer, the concerned barge was removed off site for further maintenance; ➢ Additional water filter tank was adopted to reduce emission of dark smoke and exhaust. The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	Closed
	20th June 2018	28th May 2018/ Construction of Road P2	SKDC member	Air Quality	The complainant complained the dark smoke emission from the same construction vessel.	N		
184	25th May 2018	24th 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	N	According to the information provided and confirmed by the Engineer, modification of temporary marine platform and welding works were conducted during the time of complaint.	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
					(60/F and above) of Metrotown Tower 10.		The Contractors had implemented environmental mitigation measures to reduce construction nuisance from construction activities to the nearby sensitive receivers as follows: Air Quality: ➢ Additional water filter tank was adopted to reduce emission of dark smoke and exhaust. The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	
183	24th May 2018	24th May 2018/ Construction of Northern footbridge and Road P2/D4	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	According to the information provided and confirmed by the Engineer, construction works including steel bar fixing, scaffolding, trimming formation level, compaction, and removal of road marking were conducted during the time of complaint. As shown in the Air Quality Monitoring Results, no Action/ Limit Level Exceedance was recorded at Station AM5(A) and AM6(A) in May 2018. It is considered that no adverse construction dust impact was brought to the nearby sensitive receivers during the construction period of this Project The Contractors had implemented environmental mitigation measures to reduce construction nuisance from construction activities to the nearby sensitive receivers as follows: ➢ Water spraying was provided at least 8 times a day; ➢ Surface near public access was hard paved. The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	On-going
182	23rd May 2018	22nd May 2018/ Construction	Public	N/A	The complainant complained construction works was carried out on	N	According to the information provided and confirmed by the Engineer, modification of temporary marine platform and welding works were conducted during the time of complaint.	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
		of TKO Portal			22 May (which was a public holiday) around 1500 hour at the sea area near Ocean shore Block 2.		One valid Construction Nosie Permit (CNP) (No. GE-RE0309-18) was granted to the Contractor (Leighton – China State Joint Venture) (Contract No. NE/2015/01) for the marine construction site near Ocean Shores. According to the CNP, Group O to T of the PME listed in condition 3.a. are allowed to operate during general holiday (including Sunday) from 0900 – 2300 hours. As confirmed by the Engineer, only a group of PME (listed in Group Q) was operated during the time of complaint. No welding machine was operated in Zone A. No derrick barge and flat top barge were operated beyond Zone C. The Contractors had implemented environmental mitigation measures to reduce construction nuisance from construction activities to the nearby sensitive receivers as follows: Noise: ➢ Preinstalled speaker was used on derrick barge to minimize the noise disturbance from on-site communication. The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	
181	22nd 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	See Investigation / Mitigation Measures for Complaint No. 164.	On-going
180	21st May 2018	21st May 2018/ Construction	Public	Air Quality	The complainant complained about dust/dirt being brought	N	According to the information confirmed by the Engineer, all dump trucks were covered and wheel washed before leaving the	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
		of Road P2			onto Tong Yin Street by the vehicles travelling to and from TKO-LTT construction site, causing dust problem and air nuisance.		works site on 21 May 2018. As shown in the Air Quality Monitoring Results, no Action/ Limit Level Exceedance was recorded at Station AM5(A) and AM6(A) in May 2018. It is considered that no adverse construction dust impact was brought to the nearby sensitive receivers during the construction period of this Project The Contractors had implemented environmental mitigation measures to minimize the noise nuisance to the nearby noise sensitive receivers as follows: ➢ Water spraying was provided at least 8 times a day. ➢ Street washing truck would be provided once a week to clean the dust on the public street. ➢ Additional notice would be set up to remind the truck driver to perform wheel-washing properly before leaving site. ➢ Deployed staff at the access to check the dump trucks to ensure the dump truck are properly covered and wheel-washed before leaving site. The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	
179	19th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
178	19th 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	See Investigation / Mitigation Measures for Complaint No. 164	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
177	16th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
176	15th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
175	15th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
174	15th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
173	14th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
172	14th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
171	13th May 2018	Not specified/ Construction of Lam Tin	Resident of Hong Nga Court, Chung	Noise	The complainant complained the noise nuisance due to the	Y	See Investigation / Mitigation Measures for Complaint No. 164	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
		Interchange	Pak House		construction work on Sunday morning and night time blasting works at the Lam Tin Interchange.			
170	13th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
169	13th May 2018	13th 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 13th May 2018 (Sunday morning).	Y	See Investigation / Mitigation Measures for Complaint No. 164	On-going
168	12th May 2018	12th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
167	12th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
166	11th 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	See Investigation / Mitigation Measures for Complaint No. 164	On-going
165	9th May 2018	9th May 2018 / Construction of Road P2	Resident of Ocean Shore	Air Quality	The complainant complained about dark smoke emission from a	N	According to the information provided and confirmed by the Engineer, loading and unloading of marine sediment was	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
					barge working at the sea area under TKO-LTT project near Block 2 of Ocean Shore.		conducted during the time of complaint The Contractors had implemented environmental mitigation measures to reduce construction nuisance from construction activities to the nearby sensitive receivers as follows: ➢ Additional water filter tank was adopted to reduce emission of dark smoke and exhaust smell. The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	
164	4th 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	According to the Engineer's Site Diaries, the major construction activities performed in May 2018 included rock breaking, drilling and excavation at Lam Tin Interchange. Construction works for night-time included blasting and excavation. A valid Construction Noise Permit (CNP) (No. GW-RE0084-18) was granted to the Contractor for the construction site at Lam Tin Interchange. According to the conditions in the CNP, only one group among Group A to H of the powered mechanical equipment is allowed to be operated during 0800-2300 hours on general holidays (including Sundays); and 1900-2300 hours on any day not being a general holiday. The number of excavators, dump trucks, craned lorry and breaker that were used during the day of complaint was covered by the CNP. In addition, Group I to N of the powered mechanical equipment is allowed to be operated during 2300-0700 hours on any day. The operation of charging unit during the time of complaint was covered by the CNP. Therefore, no violation of CNP (No. GW-RE0048-18) conditions was observed during the time of complaint. The Contractor had implemented environmental mitigation	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
							measures in accordance with the "Implementation Schedule of Proposed Mitigation Measures" of EM&A Manual as follows: Air Quality: ➢ Frequent water spraying on unpaved area and haul roads at Lam Tin; Noise: ➢ Ensured blasting doors were closed while blasting associated works was undertaken in the tunnel; ➢ Installed steel-type blasting door mounted with sound absorptive lining to absorb construction noise in the tunnel; ➢ Erected movable cantilever noise barriers and the breaker head was wrapped with Silent Mat and TMD; ➢ Powered mechanical equipment (PME) for rock breaking were equipped with TMD and SilentMat; ➢ Drill rig was covered with Silent Mat and TMR. As shown by the Noise Monitoring Results conducted by ET, no Limit Level Exceedance was recorded at Station CM1, CM2, CM3 and CM4. The summary of noise monitoring results which conducted by ETL in May 2018 at Station CM1, CM2, CM3 and CM4. With the implementation of environmental mitigation measures by Contractors on site, it is considered that air quality and noise nuisance by the works has been brought to a minimum level and no adverse impact was brought to the nearby sensitive receivers during the construction of Lam Tin Interchange under this Project. The environmental conditions of the site and the control of works will be continuously reviewed and monitored by the Engineer and the Environmental Team.	

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	3rd May 2018	2nd and 3rd May 2018 / Construction of Road P2	Public	Odour	The complainant complained the odour nuisance from the construction vessel.	N	According to the information provided and confirmed by the Engineer, major construction activity including dredging, loading and unloading of marine sediment was conducted during the time of complaint The use of dredger and derrick barge conformed to the proposed quantity and type of PME stated in the updated Construction Noise Assessment of CNMP. Based on the noise monitoring results in April and May 2018, no Limit Level Exceedance was recorded at Station CM6(A) and CM7(A). It is considered that no adverse construction noise impact was brought to the nearby sensitive receivers during the construction. The Contractors had implemented environmental mitigation measures to reduce construction nuisance from construction activities to the nearby sensitive receivers as follows: Noise: ➢ Noise source on the barge was covered with acoustic materials. ➢ Additional sound absorptive blankets were used to reduce the nuisance from the engine of the barge. ➢ Nylon rope was used instead of wire rope to reduce friction secure the barge in place. ➢ Maintenance of barge including lubrication of moving parts was performed to minimized noise from worn or loose parts. Air Quality: ➢ Additional water filter tank was adopted to reduce emission of dark smoke and exhaust smell. The Engineer and the Environmental Team have reminded the	Closed
	30th 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		

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
							Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	
162	30th 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	See Investigation / Mitigation Measures for Complaint No. 150.	On-going
161	26th April 2018	26th April 2018 / 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	According to the information provided and confirmed by the Engineer, no major construction activity was conducted at the location of complaint on 26 April 2018. Upon the receipt of the complaint, as confirmed by the Engineer, the Contractor had taken initiatives to maintain the environmental conditions in the works area as shown below: ➢ The spotlights at the Cha Kwo Ling Public Cargo Working Administrative Office were switched off during daytime; and ➢ The illumination angle of spotlights was turned facing downwards to avoid light overspill The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	Closed
160	25th 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	See Investigation / Mitigation Measures for Complaint No. 150.	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
159	23th April 2018	23th April 2018 / 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	According to the information provided and confirmed by the Engineer, construction works including excavation and pre-boring works in Portion IV were conducted on 23 April 2018. One unit of excavator and two units of mini backhoe were in operation for excavation works while two units of drill rigs were in operation for the pre-boring works in Portion IV. As confirmed by the Engineer, no breaking works were carried out during the time of complaint in Portion IV. Therefore, pre-boring works at Portion IV is regarded the source of noise nuisance. The Contractor had implemented environmental mitigation measures to minimize the noise nuisance to the nearby noise sensitive receivers as follows: ➢ Acoustics barriers were provided to the drill rigs for pre-boring works (see photo 1). ➢ Maintenance was provided to the rotary head of the drill rig to minimize noise nuisance from worn or loose parts. ➢ Regular site checking would be performed to ensure the type and quantity of powered mechanical equipment are in order with the updated Construction Noise Assessment. ➢ Acoustic box was utilized for breaking works to minimize noise nuisance The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents. The use of excavator did not conform the proposed quantity of powered mechanical equipment stated in the CNMP. Therefore, it is regarded as a non-compliance.	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
158	23th 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	See Investigation / Mitigation Measures for Complaint No. 150.	On-going
157	23th 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	See Investigation / Mitigation Measures for Complaint No. 150.	On-going
156	20th 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	See Investigation / Mitigation Measures for Complaint No. 150.	On-going
155	18th 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	According to the information provided and confirmed by the Engineer, two units of excavators were in operation for excavation works in Portion VI on 16 and 18 April 2018. Excessive sound from movement of the poorly maintained excavator is considered source of noise nuisance. The Contractor had implemented environmental mitigation measures to minimize the noise nuisance to the nearby noise sensitive receivers as follows: ➢ As confirmed by the Engineer, the use of concerned excavator was stopped and it was replaced with a new excavator. ➢ Regular site checking would be performed to ensure the type and quantity of PME are in order with the updated Construction Noise Assessment The Engineer and the Environmental Team have reminded the	Closed
	16th 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.			

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
							Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents. The use of excavator did not conform the proposed quantity of powered mechanical equipment stated in the CNMP. Therefore, it is regarded as a non-compliance.	
154	17th 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	According to the Engineer's Site Diary, the major construction activities performed in the reporting period included rock breaking and excavation at Lam Tin Interchange. According to the latest CNMP of this Contract, the subgroups of work activities undertaken near noise sensitive receivers in the reporting period are as follows: - Construction of Lam Tin Interchange (LTI); The construction activities of Lam Tin Interchange (Work site No.101) on 17th, 23rd & 25th of April possessed of 7 no. of breakers, which were consistent with the quantities of breakers in the Construction Noise Mitigation Plan (Group 1.1.8) A valid Construction Noise Permit (CNP) (No. GW-RE0084-18) was granted to the Contractor for the construction site at Lam Tin Interchange. According to the conditions in the CNP, only one group among Group A to N of the powered mechanical equipment is allowed to be operated during 08:00 - 23:00 hours on general holiday (including Sunday). The operations on 2nd & 15th of April involved 1 no. of excavator, 2 no. of dump trucks, which were covered by the CNP. Therefore, no violation of CNP (No. GW-RE0084-18) condition was identified during the time of complaints. The Contractor had implemented environmental mitigation measures in accordance with the "Implementation Schedule of	On-going
153	17th 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		On-going
152	15th 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		
151	15th 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		
150	2nd April 2018	Public holiday/ Construction Works near Eastern Habour Crossing tunnel portal	Resident of Yau Lai Estate	Noise	The complainant complained the noise nuisance due to the construction work near Eastern Habour Crossing tunnel portal on public holiday. (started from 9:00 am)	Y		

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance (Y/N)	Investigation/ Mitigation Action	File Closed
							Proposed Mitigation Measures” of EM&A Manual as follows: ➢ Powered mechanical equipment (PME) for rock breaking were equipped with TMD and SilentMat at Slope H in Lam Tin Interchange; ➢ PMEs at Portion IVC were mounted and shielded with SilentMat; ➢ Noise barriers were placed next to the breaker at Slope H in Lam Tin Interchange to reduce the noise nuisance to nearby NSRs; ➢ Cantilevered noise barriers were erected next to breakers wrapped with TMD and SilentMat at Portion IVC; ➢ Ensured blasting doors were closed while mucking out in the tunnel was undertaken; and ➢ Installed steel-type blasting door mounted with sound absorptive lining to absorb noise due to construction works in the tunnel The Engineer and the Environmental Team have reminded the Contractor to properly implement mitigation measures to effectively minimize construction nuisance caused by the construction works to the nearby residents.	

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
June 2018	10	0	0
Total	**191**	**1**	**0**

Cumulative Log for Notifications of Summons

Contract No.	Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
NE/2015/01	--	--	--	--	--	--
NE/2015/02	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

Contract No.	Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
NE/2015/01	--	--	--	--	--	--
NE/2015/02	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	Successful prosecution to the subcontractor on 27 June 2018	1	1
NE/2015/03	--	--	--	--	--	--
NE/2017/01	--	--	--	--	--	--
NE/2017/02	--	--	--	--	--	--

APPENDIX P
WASTE GENERATION IN THE REPORTING MONTH

Name of Department: Civil Engineering Development Department

Contract No.: NE/2015/01

Leighton - China State Joint Venture

Monthly Summary Waste Flow Table for 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^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
January	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	0.294	0.000	1.000	0.034
June	134.902	48.193	0.000	117.435	17.467	0.000	0.000	0.000	0.000	1.322	0.096
Sub-total	708.201	221.326	149.271	394.298	164.632	0.000	0.000	0.990	0.000	5.522	0.380
July											
August											
September											
October											
November											
December											
Total	708.201	221.326	149.271	394.298	164.632	0.000	0.000	0.990	0.000	5.522	0.380

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

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 50,000m3. (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^3; soil = 2.0 tonnes/m^3

(7) excavated: rock = 2.0 tonnes/m^3; soil = 1.8 tonnes/m^3; broken concrete and bitumen = 2.4 tonnes/m^3, soil and rock = 1.9 tonnes/m^3

(8) C&D Waste = 0.9 tonnes/m^3; bentonite slurry = 2.8 tonnes/m^3

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^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m^3]
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	1.62394	0.00000	0.00000	0.00000	1.58194	0.04200	11.32000	0.00000	0.00000	0.00000	0.06814
SUB-TOTAL	24.42186	0.00000	8.47150	0.00000	15.61071	0.33965	117.65000	0.00000	0.00000	0.00000	0.34126
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
TOTAL	24.42186	0.00000	8.47150	0.00000	15.61071	0.33965	117.65000	0.00000	0.00000	0.00000	0.34126

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

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

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

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

Name of Department : CEDD Contract No. : NE/2015/03

Monthly Summary Waste Flow Table for 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^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m^3)
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	0	0	0	0	0	0	0	0	0	0	0
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 m3.

Tseung Kwan O - Lam Tin Tunnel - Tseung Kwan O Interchange and Associated Works
(NE/2017/01)

俊和－上隧－中冶聯營
CW - STEC - CMGC JV

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^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
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	0.0078	0.0000	0.0000	0.0000	0.0078	0.0000	0.0000	0.0000	0.0000	0.0000	0.0055
Sub-total	0.0300	0.0060	0.0000	0.0000	0.0240	0.0000	0.0000	0.0000	0.0000	0.0000	0.0079
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	0.0300	0.0060	0.0000	0.0000	0.0240	0.0000	0.0000	0.0000	0.0000	0.0000	0.0079

Notes:
1. Assume the density of soil fill is 2 ton/m^3.
2. Assume the density of rock and broken concrete is 2.5 ton/m^3.
3. Assume the density of mixed rock and soil is 1.9 ton/m^3.
4. Assume the density of slurry and bentonite is 2.8 ton/m^3.
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^3.
7. The non-inert C&D wastes are disposed at NENT.

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 (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000m^3)
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	0	1.5194	0	0	0	0	0	0	0	0.0455
Sub-total	0	1.5584	0	0	0	0	0	0	0	0.2795
Jul										
Aug										
Sept										
Oct										
Nov										
Dec										
Total	0	1.5584	0	0	0	0	0	0	0	0.2795

Notes:

(1) Broken concrete for recycling into aggregates.

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

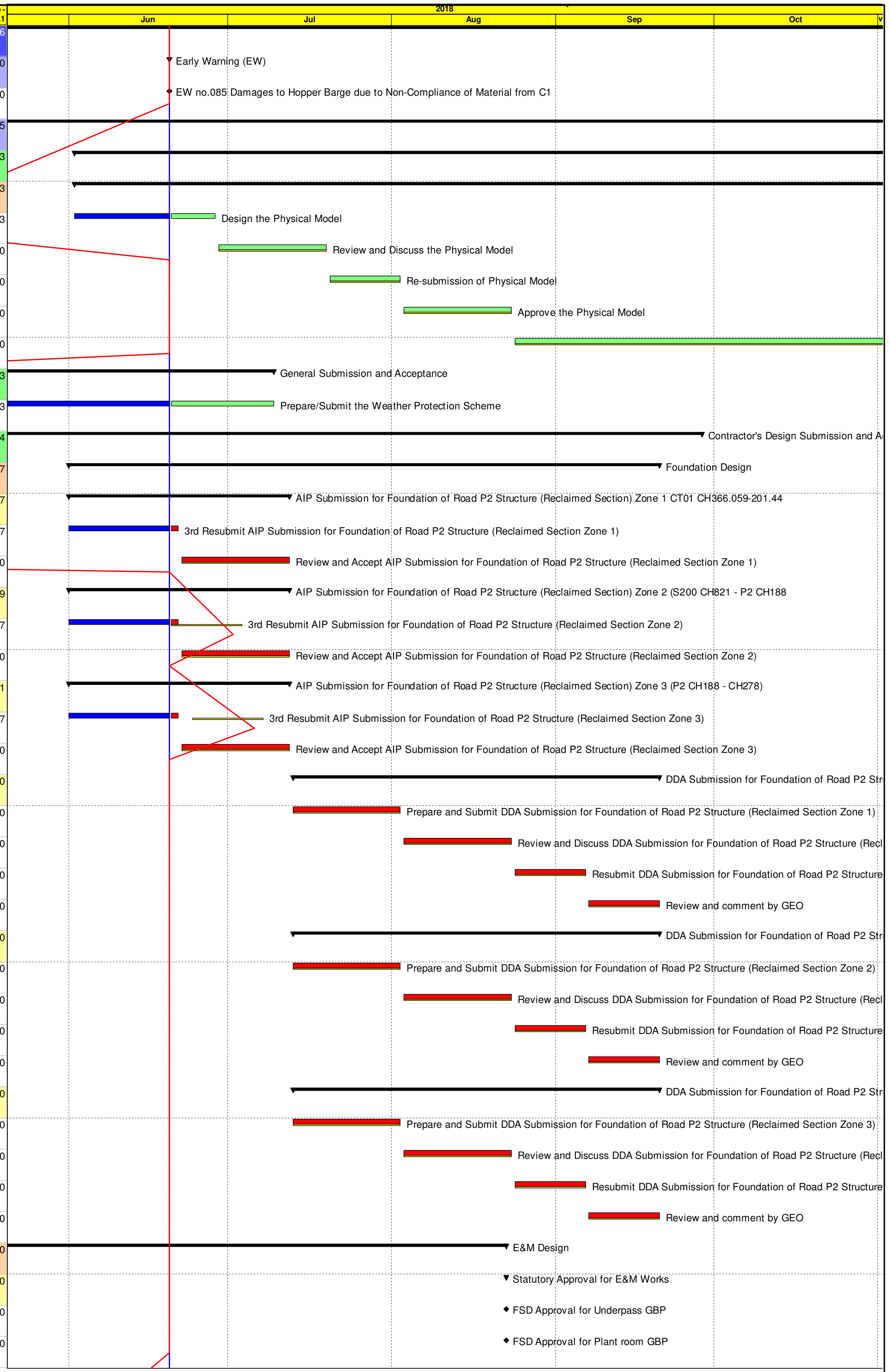
(3) Use the conversion factor: 1 full load of 24t / 30t dumping truck being equivalent to 6.5m3 / 8.125 m3 by volume.

APPENDIX Q
TENTATIVE CONSTRUCTION PROGRAMME

High Level 3 Months Look Ahead Programme

Activities	Jul-18	Aug-18	Sep-18
Lam Tin Interchange			
EHC2 U-Trough			
Site Formation - Area 1G1 & 1G2 &5			
Site Formation - Area 2			
Site Formation - Area 3			
Site Formation - Area 4			
Main Tunnel			
MT Excavation			
TKO Interchange			
Haul Road Construction, Site Formation & Slope Works			
Steel Platform for Bridge Construction			
Cavern Excavation			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	TRA	Variance - BL1
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-18)			1563	1085	12-Jan-17 A	08-Jun-21	365			-46
Early Warning (EW)		P2-Cal.A	0	0	20-Jun-18 A	20-Jun-18 A				0
B31220	EW no.085 Damages to Hopper Barge due to Non-Compliance of Material from C1	P2-Cal.A	0	0	20-Jun-18 A			100%		0
Preliminaries, Submission, Contractor's Design Submission and Approval		P2-Cal.A	1015	564	20-Jan-17 A	04-Jan-20	886			-65
Preliminaries		P2-Cal.A	216	155	02-Jun-18 A	21-Nov-18	586			43
Design Submission of Physical Model		P2-Cal.A	216	155	02-Jun-18 A	21-Nov-18	586			43
LC10242	Design the Physical Model	P2-Cal.A	14	9	02-Jun-18 A	28-Jun-18	586	35.71%		-13
LC10244	Review and Discuss the Physical Model	P2-Cal.A	21	21	29-Jun-18	19-Jul-18	586	0%		0
LC10246	Re-submission of Physical Model	P2-Cal.A	14	14	20-Jul-18	02-Aug-18	586	0%		0
LC10248	Approve the Physical Model	P2-Cal.A	21	21	03-Aug-18	23-Aug-18	586	0%		0
LC10250	Fabrication of Physical Model	P2-Cal.A	90	90	24-Aug-18	21-Nov-18	586	0%		0
General Submission and Acceptance		P2-Cal.A	30	20	21-Aug-17 A	09-Jul-18	721			-293
S10240	Prepare/Submit the Weather Protection Scheme	P2-Cal.A	30	20	21-Aug-17 A	09-Jul-18	721	33.33%		-293
Contractor's Design Submission and Acceptance		P2-Cal.A	487	101	07-Mar-17 A	28-Sep-18	162			-84
Foundation Design		P2-Cal.A	479	93	01-Jun-18 A	20-Sep-18	-104			367
AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 1 CT01 CH366.059-201.44		P2-Cal.A	409	23	01-Jun-18 A	12-Jul-18	-104			367
S11260-03	3rd Resubmit AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	14	2	01-Jun-18 A	21-Jun-18	-104	85.71%		-7
S11260-04	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	22-Jun-18	12-Jul-18	-104	0%		0
AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 2 (S200 CH821 - P2 CH188		P2-Cal.A	23	23	01-Jun-18 A	12-Jul-18	-104			-19
S11270-01	3rd Resubmit AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	14	2	01-Jun-18 A	21-Jun-18	-104	85.71%		-7
S11270-02	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	22-Jun-18	12-Jul-18	-104	0%		0
AIP Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 3 (P2 CH188 - CH278)		P2-Cal.A	21	23	01-Jun-18 A	12-Jul-18	-104			-21
S11279-01	3rd Resubmit AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	14	2	01-Jun-18 A	21-Jun-18	-104	85.71%		-7
S11279-02	Review and Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	22-Jun-18	12-Jul-18	-104	0%		0
DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 1 CT01 CH366.059-201.44		P2-Cal.A	70	70	13-Jul-18	20-Sep-18	-104			0
S11360	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	13-Jul-18	02-Aug-18	-104	0%		0
S11380	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	21	21	03-Aug-18	23-Aug-18	-104	0%		0
S11400	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 1)	P2-Cal.A	14	14	24-Aug-18	06-Sep-18	-104	0%		0
S11410	Review and comment by GEO	P2-Cal.A	14	14	07-Sep-18	20-Sep-18	-104	0%		0
DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 2 (S200 CH821 - P2 CH188		P2-Cal.A	70	70	13-Jul-18	20-Sep-18	-104			0
S11422	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	13-Jul-18	02-Aug-18	-104	0%		0
S11424	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	21	21	03-Aug-18	23-Aug-18	-104	0%		0
S11426	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 2)	P2-Cal.A	14	14	24-Aug-18	06-Sep-18	-104	0%		0
S11428	Review and comment by GEO	P2-Cal.A	14	14	07-Sep-18	20-Sep-18	-104	0%		0
DDA Submission for Foundation of Road P2 Structure (Reclaimed Section) Zone 3 (P2 CH188 - CH278)		P2-Cal.A	70	70	13-Jul-18	20-Sep-18	-104			0
S11432	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	13-Jul-18	02-Aug-18	-104	0%		0
S11434	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	21	21	03-Aug-18	23-Aug-18	-104	0%		0
S11436	Resubmit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section Zone 3)	P2-Cal.A	14	14	24-Aug-18	06-Sep-18	-104	0%		0
S11438	Review and comment by GEO	P2-Cal.A	14	14	07-Sep-18	20-Sep-18	-104	0%		0
E&M Design		P2-Cal.A	354	64	07-Mar-17 A	22-Aug-18	54			-180
Statutory Approval for E&M Works		P2-Cal.A	0	0	22-Aug-18	22-Aug-18	54			0
S11570-11	FSD Approval for Underpass GBP	P2-Cal.A	0	0		22-Aug-18	54	0%		0
S11570-12	FSD Approval for Plant room GBP	P2-Cal.A	0	0		22-Aug-18	54	0%		0



Primary Baseline | Critical Remaining Work
Actual Work | Milestone
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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-18)

3 Monthly Rolling Programme
(Data Date : 20-Jun-2018)

Date	Revision	Checked	Approved
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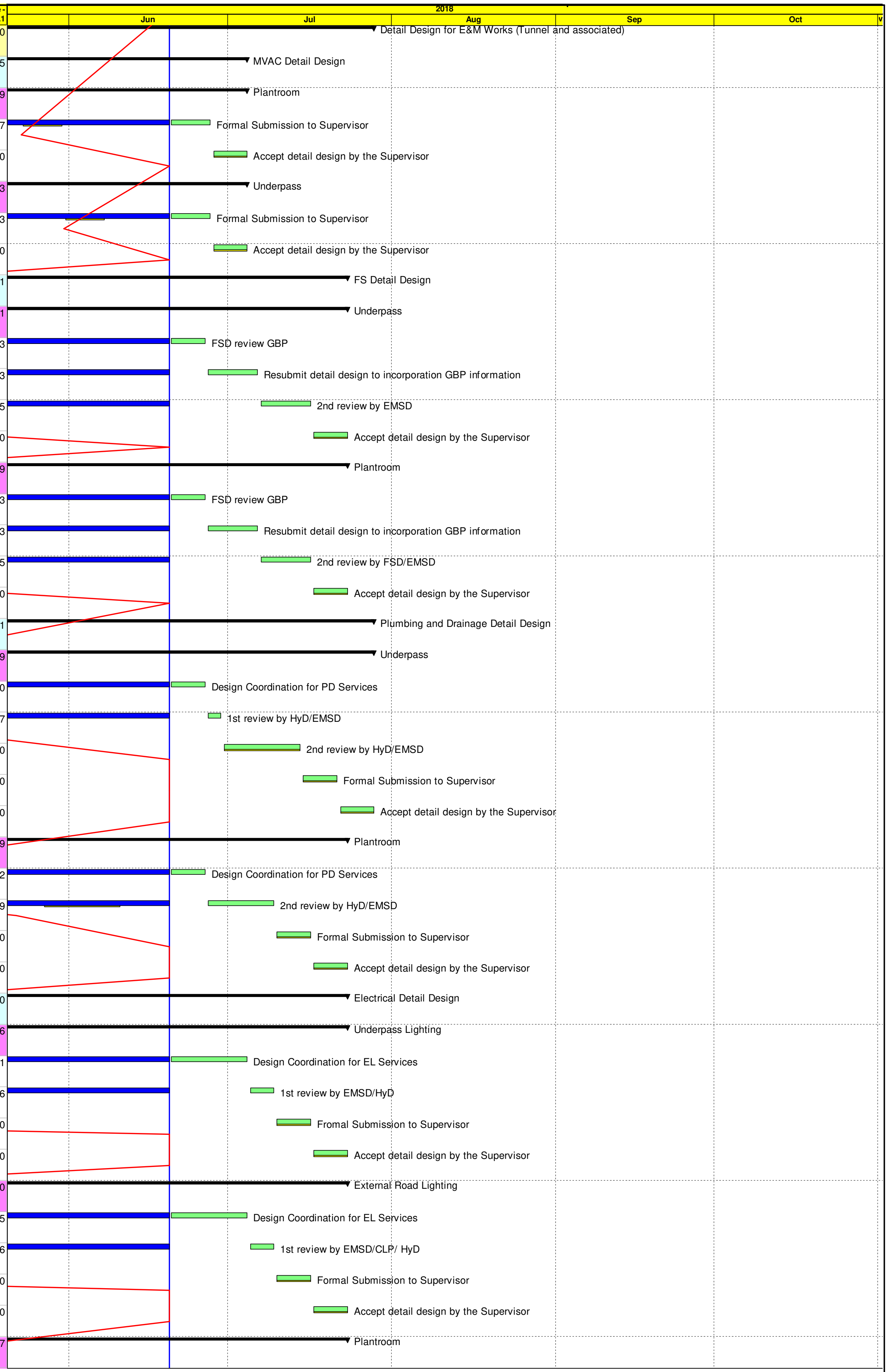
Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	TRA	Variance - BL1
Detail Design for E&M Works (Tunnel and associated)		P2-Cal.A	329	39	07-Mar-17 A	28-Jul-18	79			-180
MVAC Detail Design		P2-Cal.A	43	15	28-Apr-18 A	04-Jul-18	103			-25
Plantroom		P2-Cal.A	43	15	04-May-18 A	04-Jul-18	103			-19
S11577	Formal Submission to Supervisor	P2-Cal.A	8	8	04-May-18 A	27-Jun-18	103	0%		-47
S11578	Accept detail design by the Supervisor	P2-Cal.A	7	7	28-Jun-18	04-Jul-18	103	0%		0
Underpass		P2-Cal.A	35	15	28-Apr-18 A	04-Jul-18	103			-33
S11630	Formal Submission to Supervisor	P2-Cal.A	8	8	28-Apr-18 A	27-Jun-18	103	0%		-53
S11640	Accept detail design by the Supervisor	P2-Cal.A	7	7	28-Jun-18	04-Jul-18	103	0%		0
FS Detail Design		P2-Cal.A	309	34	19-Oct-17 A	23-Jul-18	54			31
Underpass		P2-Cal.A	309	34	19-Oct-17 A	23-Jul-18	54			31
S11649	FSD review GBP	P2-Cal.A	28	7	19-Oct-17 A	26-Jun-18	54	75%		-223
S11649-02	Resubmit detail design to incorporation GBP information	P2-Cal.A	15	10	11-Dec-17 A	06-Jul-18	54	33.33%		-193
S11650-01	2nd review by EMSD	P2-Cal.A	15	10	19-Mar-18 A	16-Jul-18	54	33.33%		-105
S11651	Accept detail design by the Supervisor	P2-Cal.A	7	7	17-Jul-18	23-Jul-18	54	0%		0
Plantroom		P2-Cal.A	239	34	19-Oct-17 A	23-Jul-18	54			-39
S11652-10	FSD review GBP	P2-Cal.A	28	7	19-Oct-17 A	26-Jun-18	54	75%		-223
S11652-19	Resubmit detail design to incorporation GBP information	P2-Cal.A	15	10	11-Dec-17 A	06-Jul-18	54	33.33%		-193
S11652-21	2nd review by FSD/EMSD	P2-Cal.A	15	10	19-Mar-18 A	16-Jul-18	54	33.33%		-105
S11652-23	Accept detail design by the Supervisor	P2-Cal.A	7	7	17-Jul-18	23-Jul-18	54	0%		0
Plumbing and Drainage Detail Design		P2-Cal.A	183	39	01-Apr-17 A	28-Jul-18	79			-301
Underpass		P2-Cal.A	183	39	03-May-17 A	28-Jul-18	79			-269
S11656	Design Coordination for PD Services	P2-Cal.A	60	7	03-May-17 A	26-Jun-18	79	88.33%		-360
S11657	1st review by HyD/EMSD	P2-Cal.A	15	3	09-Apr-18 A	29-Jun-18	79	80%		-67
S11657-01	2nd review by HyD/EMSD	P2-Cal.A	15	15	30-Jun-18	14-Jul-18	79	0%		0
S11658	Formal Submission to Supervisor	P2-Cal.A	7	7	15-Jul-18	21-Jul-18	79	0%		0
S11659	Accept detail design by the Supervisor	P2-Cal.A	7	7	22-Jul-18	28-Jul-18	79	0%		0
Plantroom		P2-Cal.A	170	34	01-Apr-17 A	23-Jul-18	84			-309
S11660-07	Design Coordination for PD Services	P2-Cal.A	60	7	01-Apr-17 A	26-Jun-18	84	88.33%		-392
S11660-09	2nd review by HyD/EMSD	P2-Cal.A	15	13	17-May-18 A	09-Jul-18	84	13.33%		-39
S11660-10	Formal Submission to Supervisor	P2-Cal.A	7	7	10-Jul-18	16-Jul-18	84	0%		0
S11660-11	Accept detail design by the Supervisor	P2-Cal.A	7	7	17-Jul-18	23-Jul-18	84	0%		0
Electrical Detail Design		P2-Cal.A	324	34	07-Mar-17 A	23-Jul-18	84			-180
Underpass Lighting		P2-Cal.A	324	34	30-May-17 A	23-Jul-18	84			-96
S11660-15	Design Coordination for EL Services	P2-Cal.A	60	15	30-May-17 A	04-Jul-18	84	75%		-341
S11660-16	1st review by EMSD/HyD	P2-Cal.A	15	5	10-May-18 A	09-Jul-18	84	66.67%		-46
S11660-18	Fromal Submission to Supervisor	P2-Cal.A	7	7	10-Jul-18	16-Jul-18	84	0%		0
S11660-19	Accept detail design by the Supervisor	P2-Cal.A	7	7	17-Jul-18	23-Jul-18	84	0%		0
External Road Lighting		P2-Cal.A	304	34	07-Mar-17 A	23-Jul-18	84			-200
S11660-23	Design Coordination for EL Services	P2-Cal.A	60	15	07-Mar-17 A	04-Jul-18	84	75%		-425
S11660-24	1st review by EMSD/CLP/ HyD	P2-Cal.A	15	5	10-May-18 A	09-Jul-18	84	66.67%		-46
S11660-26	Formal Submission to Supervisor	P2-Cal.A	7	7	10-Jul-18	16-Jul-18	84	0%		0
S11660-27	Accept detail design by the Supervisor	P2-Cal.A	7	7	17-Jul-18	23-Jul-18	84	0%		0
Plantroom		P2-Cal.A	177	34	07-Mar-17 A	23-Jul-18	84			-327



Primary Baseline | Critical Remaining Work
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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-18)

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S11665	Design Coordination for EL Services	P2-Cal.A	60	15	07-Mar-17 A	04-Jul-18	84	75%		-425
S11666	1st review by EMSD/HyD	P2-Cal.A	15	5	10-May-18 A	09-Jul-18	84	66.67%		-46
S11667	Formal Submission to Supervisor	P2-Cal.A	7	7	10-Jul-18	16-Jul-18	84	0%		0
S11668	Accept detail design by the Supervisor	P2-Cal.A	7	7	17-Jul-18	23-Jul-18	84	0%		0
ELV And SCADA Detail Design		P2-Cal.A	211	29	12-Aug-17 A	18-Jul-18	89			-130
Underpass		P2-Cal.A	211	29	12-Aug-17 A	18-Jul-18	89			-130
S11669-10	Design Coordination for ELV & SCADA	P2-Cal.A	60	10	12-Aug-17 A	29-Jun-18	89	83.33%		-262
S11669-19	2nd review by HyD	P2-Cal.A	15	5	04-May-18 A	04-Jul-18	89	66.67%		-47
S11669-29	Formal Submission to Supervisor	P2-Cal.A	7	7	05-Jul-18	11-Jul-18	89	0%		0
S11669-30	Accept detail design by the Supervisor	P2-Cal.A	7	7	12-Jul-18	18-Jul-18	89	0%		0
Plantroom		P2-Cal.A	172	29	12-Aug-17 A	18-Jul-18	89			-169
S11670-10	Design Coordination for ELV & SCADA	P2-Cal.A	60	10	12-Aug-17 A	29-Jun-18	89	83.33%		-262
S11670-19	2nd review by HyD	P2-Cal.A	15	5	04-May-18 A	04-Jul-18	89	66.67%		-47
S11670-29	Formal Submission to Supervisor	P2-Cal.A	7	7	05-Jul-18	11-Jul-18	89	0%		0
S11670-30	Accept detail design by the Supervisor	P2-Cal.A	7	7	12-Jul-18	18-Jul-18	89	0%		0
Design of Architectural Finishes for Internal Walls of U-Trough Structures		P2-Cal.A	77	77	25-Jun-18	09-Sep-18	151			0
S11675	Prepare and Submit Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and PC Panel)	P2-Cal.A	21	21	25-Jun-18	15-Jul-18	151	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	16-Jul-18	05-Aug-18	151	0%		0
S11700	Resubmit Design of Architectural Finishes for Internal Walls of U-Trough Structures (VE and PC Panel)	P2-Cal.A	14	14	06-Aug-18	19-Aug-18	151	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	20-Aug-18	09-Sep-18	151	0%		0
Irrigation System		P2-Cal.A	98	98	20-Jun-18	25-Sep-18	90			0
S11787-01	2nd review by LCSD/EMSD	P2-Cal.A	21	21	20-Jun-18	10-Jul-18	90	0%		0
S11788	Prepare & Submission of Form 542	P2-Cal.A	14	14	11-Jul-18	24-Jul-18	90	0%		0
S11789	Reviewed by WSD	P2-Cal.A	28	28	25-Jul-18	21-Aug-18	90	0%		0
S11790	Formal Submission to Supervisor	P2-Cal.A	14	14	22-Aug-18	04-Sep-18	90	0%		0
S11800	Review and Accept Submission for Waterpoints and associated elements	P2-Cal.A	21	21	05-Sep-18	25-Sep-18	90	0%		0
Contractor Cost Saving Design		P2-Cal.A	132	101	07-May-18 A	28-Sep-18	162			-13
AIP Submission for CSD2 of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)		P2-Cal.A	90	59	07-May-18 A	17-Aug-18	11			-13
S11930	Review and Discuss AIP Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	3	07-May-18 A	22-Jun-18	11	85.71%		-26
S11940	Resubmit AIP for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	28	28	23-Jun-18	20-Jul-18	11	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	21-Jul-18	10-Aug-18	18	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	21-Jul-18	17-Aug-18	11	0%		0
DDA Submission for CSD2 of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)		P2-Cal.A	42	42	18-Aug-18	28-Sep-18	11			0
S11962	Prepare and Submit DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	18-Aug-18	07-Sep-18	11	0%		0
S11964	Review and Discuss DDA Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	08-Sep-18	28-Sep-18	11	0%		0
AIP Submission for CSD3 of Reclaimed Section (S200 CH821 - P2 CH305)		P2-Cal.A	86	59	07-May-18 A	17-Aug-18	162			-17
S11971	Review and Discuss AIP Submission for CSD of Reclaimed Section (S200 CH821 - P2 CH305)	P2-Cal.A	21	3	07-May-18 A	22-Jun-18	162	85.71%		-26
S11972	Resubmit AIP Submission for CSD of Reclaimed Section (S200 CH821 - P2 CH305)	P2-Cal.A	28	28	23-Jun-18	20-Jul-18	162	0%		0
S11973	Review and Accept AIP Submission for CSD of Reclaimed Section by CEDD (S200 CH821 - P2 CH305)	P2-Cal.A	21	21	21-Jul-18	10-Aug-18	169	0%		0
S11974	Review and Accept AIP Submission for CSD of Reclaimed Section by HyD (S200 CH821 - P2 CH305)	P2-Cal.A	28	28	21-Jul-18	17-Aug-18	162	0%		0
DDA Submission for CSD3 of Reclaimed Section (S200 CH821 - P2 CH305)		P2-Cal.A	42	42	18-Aug-18	28-Sep-18	162			0
S11975	Prepare and Submit DDA Submission for CSD of Reclaimed Section (S200 CH821 - P2 CH305)	P2-Cal.A	21	21	18-Aug-18	07-Sep-18	162	0%		0
S11976	Review and Discuss DDA Submission for CSD of Reclaimed Section (S200 CH821 - P2 CH305)	P2-Cal.A	21	21	08-Sep-18	28-Sep-18	162	0%		0

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Major Temporary Works Design		P2-Cal.A	103	103	20-Jun-18	30-Sep-18	69			0
ELS Design for U-Trough C (CT01 CH 366.059- CH 177.156)		P2-Cal.A	18	18	13-Sep-18	30-Sep-18	69			0
S12780	Prepare and Submit ELS Design for U-Trough C (CT01 CH 366.059- CH 177.156)	P2-Cal.A	18	18	13-Sep-18	30-Sep-18	69	0%		0
Design of Marine Survey Tower		P2-Cal.A	74	74	20-Jun-18	01-Sep-18	-37			0
S13100	Prepare and Submit Marine Survey Tower	P2-Cal.A	18	18	20-Jun-18	07-Jul-18	-37	0%		0
S13120	Review and Discuss Marine Survey Tower	P2-Cal.A	21	21	08-Jul-18	28-Jul-18	-37	0%		0
S13140	Resubmit Temporary Marine Survey Tower	P2-Cal.A	14	14	29-Jul-18	11-Aug-18	-37	0%		0
S13160	Accept Temporary Marine Survey Tower	P2-Cal.A	21	21	12-Aug-18	01-Sep-18	-37	0%		0
Major Construction Works Method Statement		P2-Cal.A	146	106	11-Apr-18 A	03-Oct-18	1344			-30
Construction Road P2 Underpass Structure CH105-318		P2-Cal.A	46	46	11-Aug-18	25-Sep-18	230			0
S13190	Prepare and Submit Method Statement for Construction Road P2 Underpass Structure	P2-Cal.A	18	18	11-Aug-18	28-Aug-18	230	0%		0
S13200	Review and Discuss Method Statement for Construction Road P2 Underpass Structure	P2-Cal.A	21	21	29-Aug-18	18-Sep-18	230	0%		0
S13220	Resubmit Method Statement for Construction Road P2 Underpass Structure	P2-Cal.A	7	7	19-Sep-18	25-Sep-18	230	0%		0
Installation of bored pile for construction of abutment		P2-Cal.A	39	39	18-Aug-18	25-Sep-18	-36			0
S13420	Prepare and Submit Method Statement for Installation of bored piling	P2-Cal.A	18	18	18-Aug-18	04-Sep-18	-36	0%		0
S13440	Review and Discuss Method Statement for Installation of bored piling	P2-Cal.A	21	21	05-Sep-18	25-Sep-18	-36	0%		0
Removal of Temporary Steel Cofferdam		P2-Cal.A	106	106	20-Jun-18	03-Oct-18	-100			0
S13810	Prepare and Submit Method Statement for Removal of Temporary Steel Cofferdam (type 1)	P2-Cal.A	18	18	20-Jun-18	07-Jul-18	-100	0%		0
S13811	Review and Discuss Method Statement for Removal of Temporary Steel Cofferdam (type 1)	P2-Cal.A	21	21	08-Jul-18	28-Jul-18	-100	0%		0
S13812	Resubmit Method Statement for Removal of Temporary Steel Cofferdam (type 1)	P2-Cal.A	7	7	29-Jul-18	04-Aug-18	-100	0%		0
S13813	Accept Method Statement for Removal of Temporary Steel Cofferdam (type 1)	P2-Cal.A	21	21	05-Aug-18	25-Aug-18	-100	0%		0
S13814	Prepare and Submit Method Statement for Removal of Temporary Steel Cofferdam (type 2)	P2-Cal.A	18	18	26-Aug-18	12-Sep-18	-100	0%		0
S13815	Review and Discuss Method Statement for Removal of Temporary Steel Cofferdam (type 2)	P2-Cal.A	21	21	13-Sep-18	03-Oct-18	-100	0%		0
Removal of Water Gate		P2-Cal.A	46	46	06-Aug-18	20-Sep-18	60			0
S13882	Prepare and Submit Method Statement for Removal of Water Gate	P2-Cal.A	18	18	06-Aug-18	23-Aug-18	60	0%		0
S13884	Review and Discuss Method Statement for Removal of Water Gate	P2-Cal.A	21	21	24-Aug-18	13-Sep-18	60	0%		0
S13886	Resubmit Method Statement for Removal of Water Gate	P2-Cal.A	7	7	14-Sep-18	20-Sep-18	60	0%		0
ELS of Underpass (P2 CH105-318)		P2-Cal.A	67	67	27-Jun-18	01-Sep-18	1			0
S14056	Prepare and Submit Method Statement for Excavation and ELS of Underpass (P2 CH105-318)	P2-Cal.A	18	18	27-Jun-18	14-Jul-18	1	0%		0
S14057	1st Review and Discuss Method Statement for Excavation and ELS of Underpass (P2 CH105-318)	P2-Cal.A	21	21	15-Jul-18	04-Aug-18	1	0%		0
S14058	Resubmit Method Statement for Excavation and ELS of Underpass (P2 CH105-318)	P2-Cal.A	7	7	05-Aug-18	11-Aug-18	1	0%		0
S14059	Accept Method Statement for Excavation and ELS of Underpass (P2 CH105-318)	P2-Cal.A	21	21	12-Aug-18	01-Sep-18	1	0%		0
ELS of U-Troughs (P2 CH318-363)		P2-Cal.A	67	67	27-Jun-18	01-Sep-18	-99			0
S14060	Prepare and Submit Method Statement for Excavation and ELS of U-Troughs (P2 CH318-363)	P2-Cal.A	18	18	27-Jun-18	14-Jul-18	-99	0%		0
S14080	1st Review and Discuss Method Statement for Excavation and ELS of U-Troughs (P2 CH318-363)	P2-Cal.A	21	21	15-Jul-18	04-Aug-18	-99	0%		0
S14100	Resubmit Method Statement for Excavation and ELS of U-Troughs (P2 CH318-363)	P2-Cal.A	7	7	05-Aug-18	11-Aug-18	-99	0%		0
S14120-01	Accept Method Statement for Excavation and ELS of U-Troughs (P2 CH318-363)	P2-Cal.A	21	21	12-Aug-18	01-Sep-18	-99	0%		0
Construction of U-Troughs structure (P2 CH318-363)		P2-Cal.A	74	74	27-Jun-18	08-Sep-18	1369			0
S14122	Prepare and Submit Method Statement for Construction of U-Troughs Structure (P2 CH318-363)	P2-Cal.A	18	18	27-Jun-18	14-Jul-18	1369	0%		0
S14124	Review and Discuss Method Statement for Construction of U-Troughs Structure (P2 CH318-363)	P2-Cal.A	21	21	15-Jul-18	04-Aug-18	1369	0%		0
S14126	Resubmit Method Statement for Construction of U-Troughs Structure (P2 CH318-363)	P2-Cal.A	14	14	05-Aug-18	18-Aug-18	1369	0%		0
S14128	Accept Method Statement for Construction of U-Troughs Structure (P2 CH318-363)	P2-Cal.A	21	21	19-Aug-18	08-Sep-18	1369	0%		0
Treatment of Dredged Marine Sediment of Type 1		P2-Cal.A	66	26	11-Apr-18 A	15-Jul-18	-237			-30

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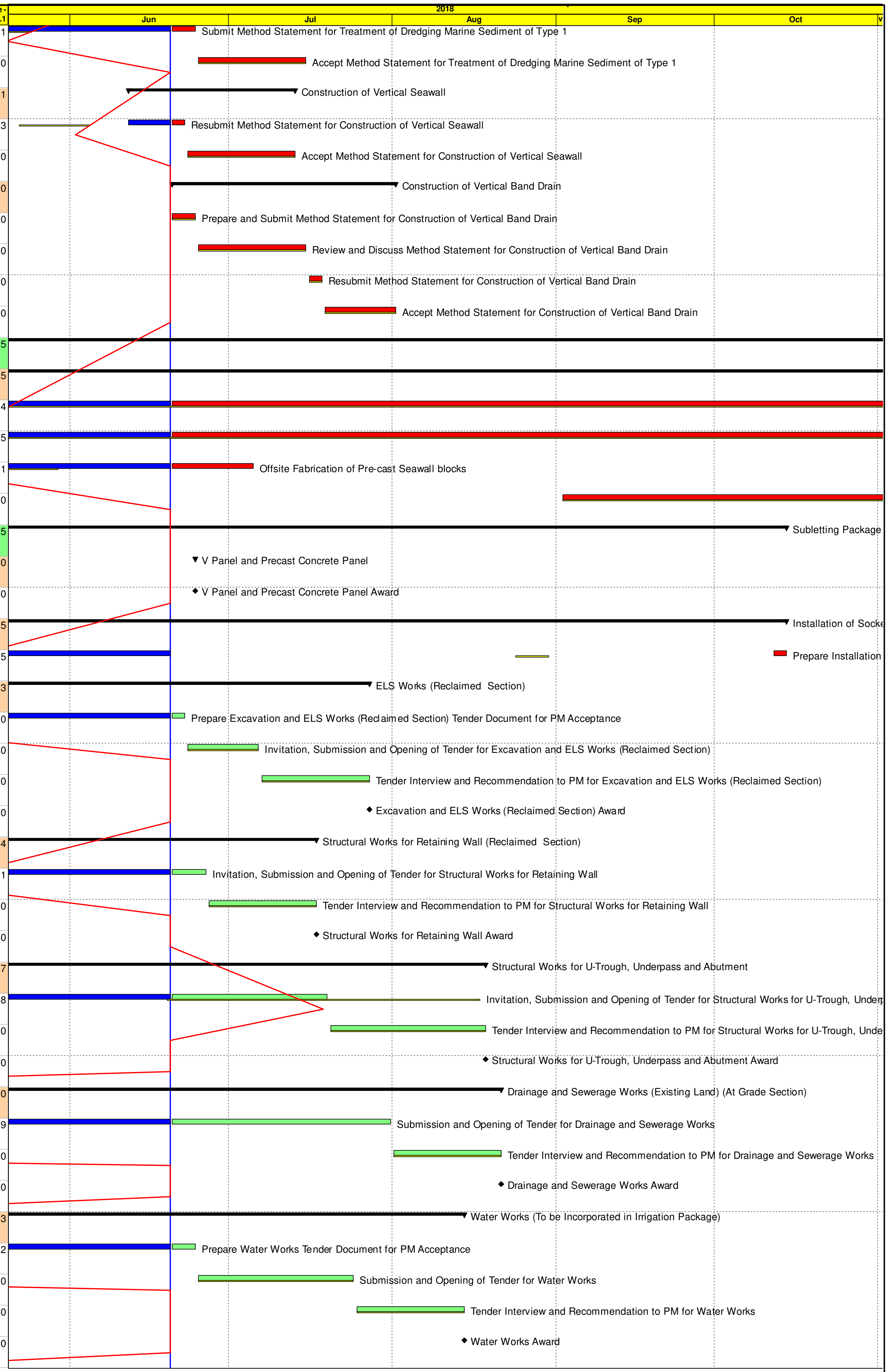
20-Jun-18			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	TRA	Variance - BL1
S14375-02	Submit Method Statement for Treatment of Dredging Marine Sediment of Type 1	P2-Cal.A	14	5	11-Apr-18 A	24-Jun-18	-237	64.29%		-61
S14376	Accept Method Statement for Treatment of Dredging Marine Sediment of Type 1	P2-Cal.A	21	21	25-Jun-18	15-Jul-18	-237	0%		0
Construction of Vertical Seawall		P2-Cal.A	53	24	12-Jun-18 A	13-Jul-18	-218			21
S14938	Resubmit Method Statement for Construction of Vertical Seawall	P2-Cal.A	14	3	12-Jun-18 A	22-Jun-18	-218	78.57%		3
S14938-01	Accept Method Statement for Construction of Vertical Seawall	P2-Cal.A	21	21	23-Jun-18	13-Jul-18	-218	0%		0
Construction of Vertical Band Drain		P2-Cal.A	43	43	20-Jun-18	01-Aug-18	-236			0
S14939	Prepare and Submit Method Statement for Construction of Vertical Band Drain	P2-Cal.A	5	5	20-Jun-18	24-Jun-18	-236	0%		0
S14941	Review and Discuss Method Statement for Construction of Vertical Band Drain	P2-Cal.A	21	21	25-Jun-18	15-Jul-18	-236	0%		0
S14945	Resubmit Method Statement for Construction of Vertical Band Drain	P2-Cal.A	3	3	16-Jul-18	18-Jul-18	-236	0%		0
S14947	Accept Method Statement for Construction of Vertical Band Drain	P2-Cal.A	14	14	19-Jul-18	01-Aug-18	-236	0%		0
Procurement of Major Material		P2-Cal.A	1015	564	20-Jan-17 A	04-Jan-20	-25			-65
Civil/Structural		P2-Cal.A	1015	564	20-Jan-17 A	04-Jan-20	-25			-65
S14981	Procurement and Delivery of Steel H-Pile	P2-Cal.A	800	329	31-Jan-17 A	14-May-19	-112	58.88%		-34
S14983	Procurement and Delivery of ELS Wailing & Struts Members	P2-Cal.A	1015	564	20-Jan-17 A	04-Jan-20	-25	44.43%		-65
S14985	Offsite Fabrication of Pre-cast Seawall blocks	P2-Cal.A	40	16	27-Mar-18 A	05-Jul-18	-247	60%		-61
S14995	Offsite Fabrication of Marine Survey Tower	P2-Cal.A	120	120	02-Sep-18	30-Dec-18	-37	0%		0
Subletting Package		P2-Cal.A	491	117	27-Apr-17 A	14-Oct-18	292			-45
V Panel and Precast Concrete Panel		P2-Cal.A	0	0	24-Jun-18	24-Jun-18	151			0
S15160	V Panel and Precast Concrete Panel Award	P2-Cal.A	0	0		24-Jun-18	151	0%		0
Installation of Socketed H-Pile (Reclaimed Section)		P2-Cal.A	7	3	16-Apr-18 A	14-Oct-18	-104			-175
S16381	Prepare Installation of Pre-bored Socketed H-Pile (Reclaimed Section) Tender for PM Acceptance	P2-Cal.A	7	3	16-Apr-18 A	14-Oct-18	-104	57.14%		-175
ELS Works (Reclaimed Section)		P2-Cal.A	99	38	07-Apr-18 A	27-Jul-18	257			-13
S16385	Prepare Excavation and ELS Works (Reclaimed Section) Tender Document for PM Acceptance	P2-Cal.A	7	3	07-Apr-18 A	22-Jun-18	257	57.14%		-70
S16386	Invitation, Submission and Opening of Tender for Excavation and ELS Works (Reclaimed Section)	P2-Cal.A	14	14	23-Jun-18	06-Jul-18	257	0%		0
S16387	Tender Interview and Recommendation to PM for Excavation and ELS Works (Reclaimed Section)	P2-Cal.A	21	21	07-Jul-18	27-Jul-18	257	0%		0
S16388	Excavation and ELS Works (Reclaimed Section) Award	P2-Cal.A	0	0		27-Jul-18	257	0%		0
Structural Works for Retaining Wall (Reclaimed Section)		P2-Cal.A	82	28	14-Mar-18 A	17-Jul-18	349			-44
S16390	Invitation, Submission and Opening of Tender for Structural Works for Retaining Wall	P2-Cal.A	14	7	14-Mar-18 A	26-Jun-18	349	50%		-91
S16391	Tender Interview and Recommendation to PM for Structural Works for Retaining Wall	P2-Cal.A	21	21	27-Jun-18	17-Jul-18	349	0%		0
S16392	Structural Works for Retaining Wall Award	P2-Cal.A	0	0		17-Jul-18	349	0%		0
Structural Works for U-Trough, Underpass and Abutment		P2-Cal.A	61	60	14-Mar-18 A	18-Aug-18	319			-97
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	19-Jul-18	319	50%		-68
S16440	Tender Interview and Recommendation to PM for Structural Works for U-Trough, Underpass and Abutment	P2-Cal.A	30	30	20-Jul-18	18-Aug-18	319	0%		0
S16460	Structural Works for U-Trough, Underpass and Abutment Award	P2-Cal.A	0	0		18-Aug-18	319	0%		0
Drainage and Sewerage Works (Existing Land) (At Grade Section)		P2-Cal.A	482	63	27-Apr-17 A	21-Aug-18	254			0
S17104	Submission and Opening of Tender for Drainage and Sewerage Works	P2-Cal.A	42	42	27-Apr-17 A	31-Jul-18	254	0%		-419
S17106	Tender Interview and Recommendation to PM for Drainage and Sewerage Works	P2-Cal.A	21	21	01-Aug-18	21-Aug-18	254	0%		0
S17108	Drainage and Sewerage Works Award	P2-Cal.A	0	0		21-Aug-18	254	0%		0
Water Works (To be Incorporated in Irrigation Package)		P2-Cal.A	360	56	07-Aug-17 A	14-Aug-18	353			-13
S17120	Prepare Water Works Tender Document for PM Acceptance	P2-Cal.A	30	5	07-Aug-17 A	24-Jun-18	254	83.33%		-292
S17140	Submission and Opening of Tender for Water Works	P2-Cal.A	30	30	25-Jun-18	24-Jul-18	353	0%		0
S17160	Tender Interview and Recommendation to PM for Water Works	P2-Cal.A	21	21	25-Jul-18	14-Aug-18	353	0%		0
S17180	Water Works Award	P2-Cal.A	0	0		14-Aug-18	353	0%		0



Primary Baseline
Critical Remaining Work
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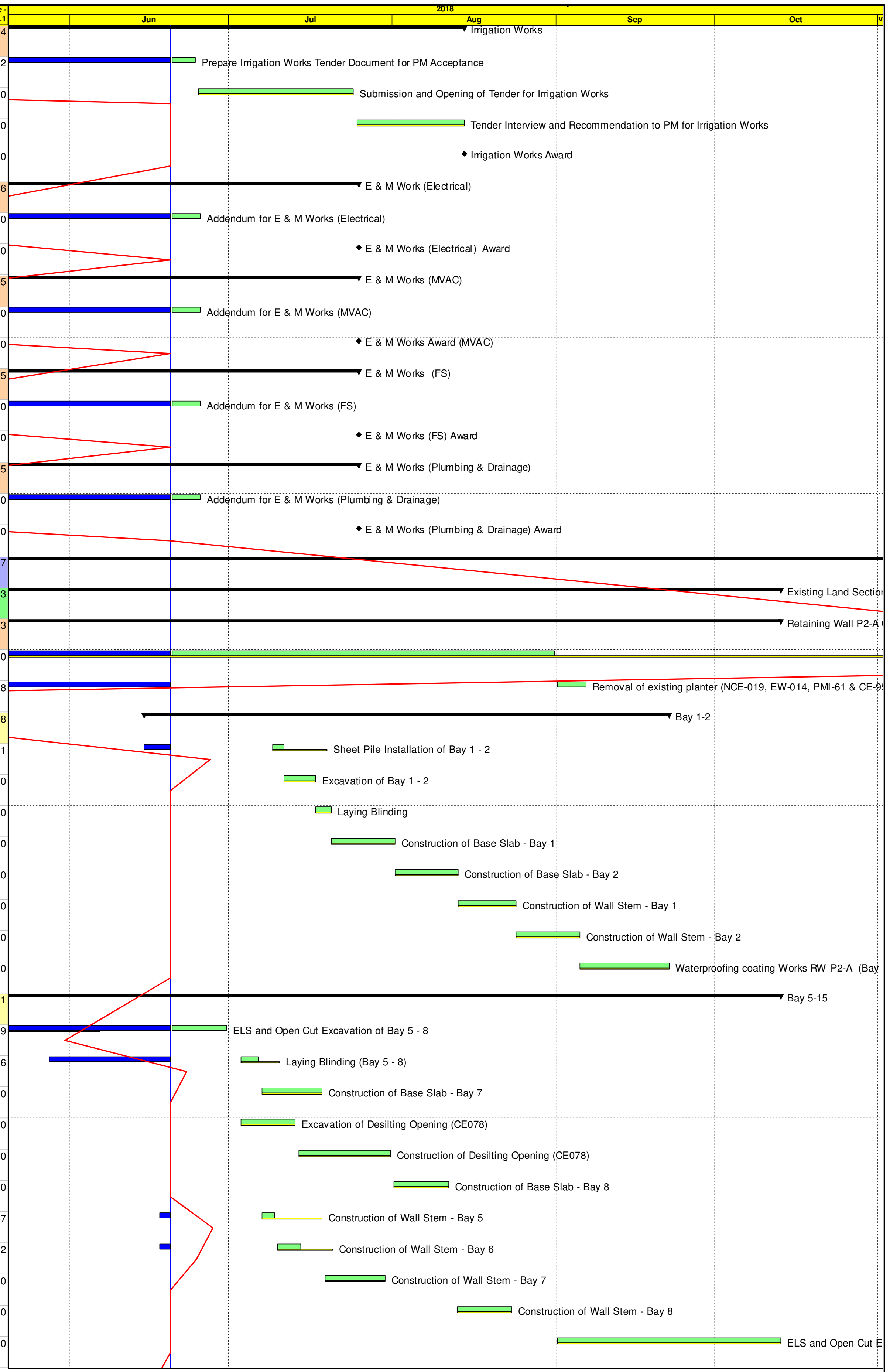
Milestone
Remaining Work
Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-18)

3 Monthly Rolling Programme
(Data Date : 20-Jun-2018)

Date	Revision	Checked	Approved
20-Jun-18			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	TRA	Variance - BL1
Irrigation Works		P2-Cal.A	329	56	07-Aug-17 A	14-Aug-18	254			-44
S17280	Prepare Irrigation Works Tender Document for PM Acceptance	P2-Cal.A	30	5	07-Aug-17 A	24-Jun-18	254	83.33%		-292
S17300	Submission and Opening of Tender for Irrigation Works	P2-Cal.A	30	30	25-Jun-18	24-Jul-18	254	0%		0
S17320	Tender Interview and Recommendation to PM for Irrigation Works	P2-Cal.A	21	21	25-Jul-18	14-Aug-18	254	0%		0
S17340	Irrigation Works Award	P2-Cal.A	0	0		14-Aug-18	254	0%		0
E & M Work (Electrical)		P2-Cal.A	115	36	15-Feb-18 A	25-Jul-18	82			-46
S17410	Addendum for E & M Works (Electrical)	P2-Cal.A	21	6	15-Feb-18 A	25-Jun-18	82	71.43%		-110
S17420	E & M Works (Electrical) Award	P2-Cal.A	0	0		25-Jul-18	82	0%		0
E & M Works (MVAC)		P2-Cal.A	156	36	15-Feb-18 A	25-Jul-18	82			-5
S17424-01	Addendum for E & M Works (MVAC)	P2-Cal.A	21	6	15-Feb-18 A	25-Jun-18	82	71.43%		-110
S17425	E & M Works Award (MVAC)	P2-Cal.A	0	0		25-Jul-18	82	0%		0
E & M Works (FS)		P2-Cal.A	126	36	15-Feb-18 A	25-Jul-18	82			-35
S17428-01	Addendum for E & M Works (FS)	P2-Cal.A	21	6	15-Feb-18 A	25-Jun-18	82	71.43%		-110
S17429	E & M Works (FS) Award	P2-Cal.A	0	0		25-Jul-18	82	0%		0
E & M Works (Plumbing & Drainage)		P2-Cal.A	156	36	15-Feb-18 A	25-Jul-18	82			-5
S17432-01	Addendum for E & M Works (Plumbing & Drainage)	P2-Cal.A	21	6	15-Feb-18 A	25-Jun-18	82	71.43%		-110
S17433	E & M Works (Plumbing & Drainage) Award	P2-Cal.A	0	0		25-Jul-18	82	0%		0
Section 3 of the Works All Works within Portion IV, V, VI, VII,VIII, and IX			494	200	25-Apr-17 A	05-Jan-19	226			-127
Existing Land Section			494	116	25-Apr-17 A	13-Oct-18	310			-43
Retaining Wall P2-A CH 500- 650			494	116	25-Apr-17 A	13-Oct-18	304			-43
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	73	25-Apr-17 A	31-Aug-18	103	85.22%		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	155	58.33%		-108
Bay 1-2		P2-Cal.C	66	66	15-Jun-18 A	22-Sep-18	262			-18
LC11940	Sheet Pile Installation of Bay 1 - 2	P2-Cal.C	10	3	15-Jun-18 A	11-Jul-18	262	75%		-11
LC11940-1	Excavation of Bay 1 - 2	P2-Cal.C	5	5	11-Jul-18	17-Jul-18	262	0%		0
LC11941	Laying Blinding	P2-Cal.C	3	3	17-Jul-18	20-Jul-18	262	0%		0
LC11942	Construction of Base Slab - Bay 1	P2-Cal.C	10	10	20-Jul-18	01-Aug-18	262	0%		0
LC11943	Construction of Base Slab - Bay 2	P2-Cal.C	10	10	01-Aug-18	13-Aug-18	262	0%		0
LC11944	Construction of Wall Stem - Bay 1	P2-Cal.C	10	10	13-Aug-18	24-Aug-18	262	0%		0
LC11945	Construction of Wall Stem - Bay 2	P2-Cal.C	10	10	24-Aug-18	05-Sep-18	262	0%		0
LC11946	Waterproofing coating Works RW P2-A (Bay 1 - 3)	P2-Cal.C	15	15	05-Sep-18	22-Sep-18	262	0%		0
Bay 5-15		P2-Cal.C	142	97	26-Apr-18 A	13-Oct-18	145			1
LC11961	ELS and Open Cut Excavation of Bay 5 - 8	P2-Cal.C	35	10	26-Apr-18 A	30-Jun-18	167	71.43%		-19
LC11962	Laying Blinding (Bay 5 - 8)	P2-Cal.C	7	4	28-May-18 A	06-Jul-18	178	42.86%		-26
LC11965	Construction of Base Slab - Bay 7	P2-Cal.C	10	10	07-Jul-18	18-Jul-18	178	0%		0
LC11965-01	Excavation of Desilting Opening (CE078)	P2-Cal.C	10	10	03-Jul-18	13-Jul-18	167	0%		0
LC11965-02	Construction of Desilting Opening (CE078)	P2-Cal.C	15	15	14-Jul-18	31-Jul-18	167	0%		0
LC11966	Construction of Base Slab - Bay 8	P2-Cal.C	10	10	01-Aug-18	11-Aug-18	167	0%		0
LC11967	Construction of Wall Stem - Bay 5	P2-Cal.C	10	2	18-Jun-18 A	09-Jul-18	221	80%		-7
LC11968	Construction of Wall Stem - Bay 6	P2-Cal.C	10	5	18-Jun-18 A	14-Jul-18	221	50%		-12
LC11969	Construction of Wall Stem - Bay 7	P2-Cal.C	10	10	19-Jul-18	30-Jul-18	208	0%		0
LC11970	Construction of Wall Stem - Bay 8	P2-Cal.C	10	10	13-Aug-18	23-Aug-18	167	0%		0
LC11971	ELS and Open Cut Excavation of Bay 9 - 15	P2-Cal.C	35	35	01-Sep-18	13-Oct-18	85	0%		0



Primary Baseline
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Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-18)

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(Data Date : 20-Jun-2018)

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20-Jun-18			

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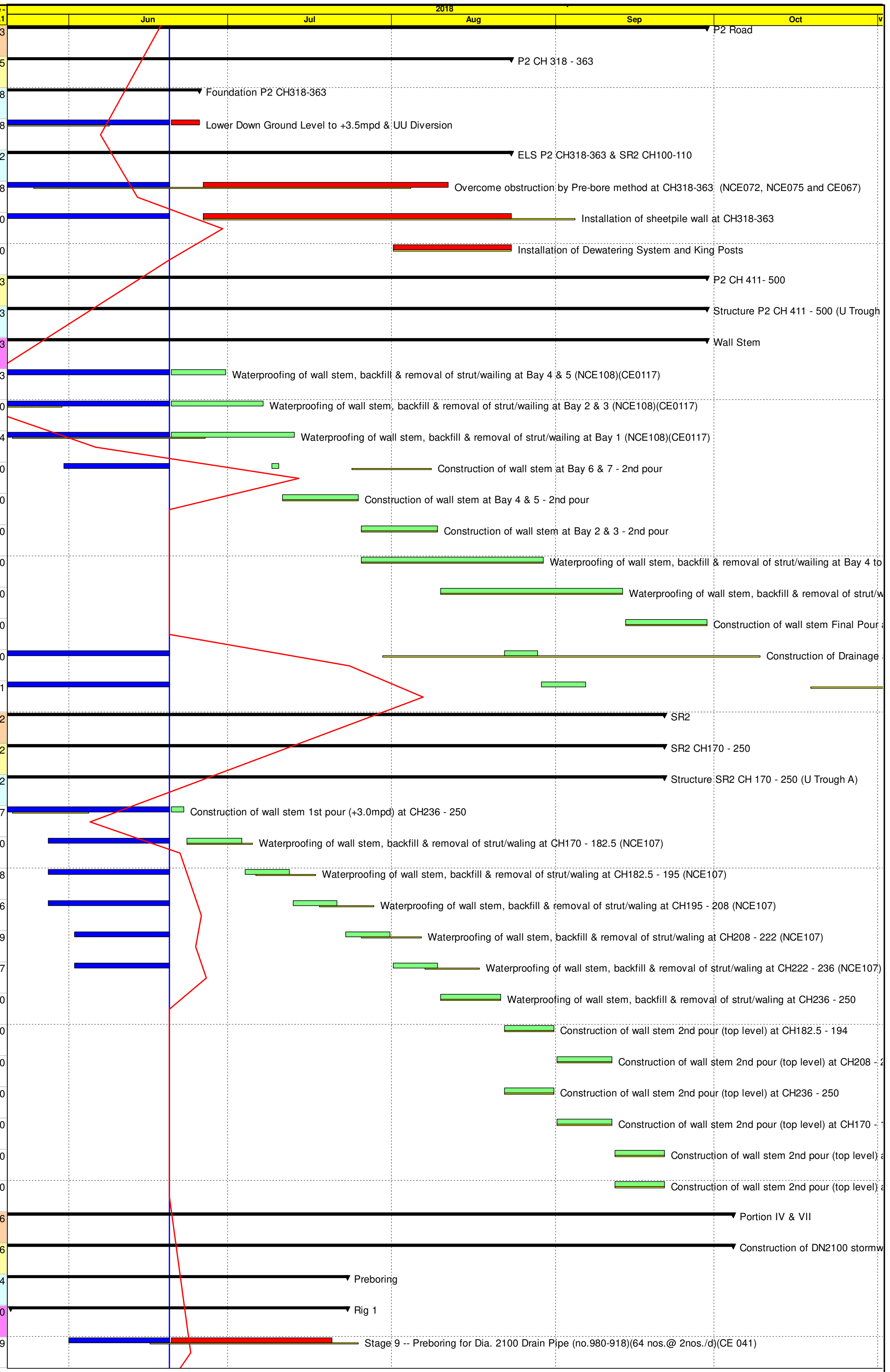
P2 Road		P2-Cal.C	172	86	19-Mar-18 A	29-Sep-18	261			13
P2 CH 318 - 363		P2-Cal.C	113	55	03-Apr-18 A	23-Aug-18	-89			-5
Foundation P2 CH318-363		P2-Cal.C	40	5	03-Apr-18 A	25-Jun-18	-89			-28
LC12949-05	Lower Down Ground Level to +3.5mpd & UU Diversion	P2-Cal.C	40	5	03-Apr-18 A	25-Jun-18	-89	87.5%		-28
ELS P2 CH318-363 & SR2 CH100-110		P2-Cal.C	86	50	16-Apr-18 A	23-Aug-18	-89			-22
LC12951	Overcome obstruction by Pre-bore method at CH318-363 (NCE072, NCE075 and CE067)	P2-Cal.C	60	40	16-Apr-18 A	11-Aug-18	-89	33.33%		-38
LC12952	Installation of sheetpile wall at CH318-363	P2-Cal.C	60	50	19-May-18 A	23-Aug-18	-89	16.67%		-20
LC12953	Installation of Dewatering System and King Posts	P2-Cal.C	20	20	01-Aug-18	23-Aug-18	-89	0%		0
P2 CH 411- 500		P2-Cal.C	172	86	19-Mar-18 A	29-Sep-18	261			13
Structure P2 CH 411 - 500 (U Trough A)		P2-Cal.C	172	86	19-Mar-18 A	29-Sep-18	261			13
Wall Stem		P2-Cal.C	172	86	19-Mar-18 A	29-Sep-18	261			13
LC15120	Waterproofing of wall stem, backfill & removal of strut/wailing at Bay 4 & 5 (NCE108)(CE0117)	P2-Cal.C	30	10	19-Mar-18 A	30-Jun-18	213	66.67%		-53
LC15130	Waterproofing of wall stem, backfill & removal of strut/wailing at Bay 2 & 3 (NCE108)(CE0117)	P2-Cal.C	30	15	13-Apr-18 A	07-Jul-18	213	50%		-40
LC15140	Waterproofing of wall stem, backfill & removal of strut/wailing at Bay 1 (NCE108)(CE0117)	P2-Cal.C	30	20	14-Apr-18 A	13-Jul-18	236	33.33%		-44
LC15150	Construction of wall stem at Bay 6 & 7 - 2nd pour	P2-Cal.C	13	2	31-May-18 A	10-Jul-18	213	84.62%		-20
LC15160	Construction of wall stem at Bay 4 & 5 - 2nd pour	P2-Cal.C	13	13	11-Jul-18	25-Jul-18	213	0%		0
LC15170	Construction of wall stem at Bay 2 & 3 - 2nd pour	P2-Cal.C	13	13	26-Jul-18	09-Aug-18	213	0%		0
LC15185	Waterproofing of wall stem, backfill & removal of strut/wailing at Bay 4 to 7	P2-Cal.C	30	30	26-Jul-18	29-Aug-18	226	0%		0
LC15190	Waterproofing of wall stem, backfill & removal of strut/wailing at Bay 1 to 3	P2-Cal.C	30	30	10-Aug-18	13-Sep-18	213	0%		0
LC15230	Construction of wall stem Final Pour at Bay 2 & 3	P2-Cal.C	13	13	14-Sep-18	29-Sep-18	213	0%		0
LC15250	Construction of Drainage and Manhole	P2-Cal.C	60	6	06-Apr-18 A	28-Aug-18	280	90%		-60
LC15260	Backfilling of Engineered Fill Material (3430m3) inside U-trough	P2-Cal.C	15	8	15-May-18 A	06-Sep-18	280	46.67%		-81
SR2		P2-Cal.C	104	80	07-May-18 A	21-Sep-18	136			-12
SR2 CH170 - 250		P2-Cal.C	104	80	07-May-18 A	21-Sep-18	136			-12
Structure SR2 CH 170 - 250 (U Trough A)		P2-Cal.C	104	80	07-May-18 A	21-Sep-18	136			-12
LC17320	Construction of wall stem 1st pour (+3.0mpd) at CH236 - 250	P2-Cal.C	12	3	07-May-18 A	22-Jun-18	136	75%		-27
LC17340	Waterproofing of wall stem, backfill & removal of strut/waling at CH170 - 182.5 (NCE107)	P2-Cal.C	10	8	28-May-18 A	03-Jul-18	136	20%		-20
LC17345	Waterproofing of wall stem, backfill & removal of strut/waling at CH182.5 - 195 (NCE107)	P2-Cal.C	10	8	28-May-18 A	12-Jul-18	136	20%		-28
LC17350	Waterproofing of wall stem, backfill & removal of strut/waling at CH195 - 208 (NCE107)	P2-Cal.C	10	8	28-May-18 A	21-Jul-18	136	20%		-36
LC17355	Waterproofing of wall stem, backfill & removal of strut/waling at CH208 - 222 (NCE107)	P2-Cal.C	10	8	02-Jun-18 A	31-Jul-18	136	20%		-39
LC17360	Waterproofing of wall stem, backfill & removal of strut/waling at CH222 - 236 (NCE107)	P2-Cal.C	10	8	02-Jun-18 A	09-Aug-18	136	20%		-47
LC17365	Waterproofing of wall stem, backfill & removal of strut/waling at CH236 - 250	P2-Cal.C	10	10	10-Aug-18	21-Aug-18	136	0%		0
LC17370	Construction of wall stem 2nd pour (top level) at CH182.5 - 194	P2-Cal.C	9	9	22-Aug-18	31-Aug-18	136	0%		0
LC17375	Construction of wall stem 2nd pour (top level) at CH208 - 222	P2-Cal.C	9	9	01-Sep-18	11-Sep-18	136	0%		0
LC17380	Construction of wall stem 2nd pour (top level) at CH236 - 250	P2-Cal.C	9	9	22-Aug-18	31-Aug-18	136	0%		0
LC17385	Construction of wall stem 2nd pour (top level) at CH170 - 182.5	P2-Cal.C	9	9	01-Sep-18	11-Sep-18	136	0%		0
LC17390	Construction of wall stem 2nd pour (top level) at CH194 - 208	P2-Cal.C	9	9	12-Sep-18	21-Sep-18	136	0%		0
LC17395	Construction of wall stem 2nd pour (top level) at CH226 - 236	P2-Cal.C	9	9	12-Sep-18	21-Sep-18	136	0%		0
Portion IV & VII		P2-Cal.C	128	89	13-Apr-18 A	04-Oct-18	90			-16
Construction of DN2100 stormwater at Portion IV & VII		P2-Cal.C	128	89	13-Apr-18 A	04-Oct-18	90			-16
Preboring		P2-Cal.C	69	28	13-Apr-18 A	23-Jul-18	-152			-14
Rig 1		P2-Cal.C	32	28	21-May-18 A	23-Jul-18	-152			-20
LC17666	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.980-918)(64 nos.@ 2nos./d)(CE 041)	P2-Cal.C	32	26	01-Jun-18 A	20-Jul-18	-150	18.75%		-9



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 (Jun-18)

3 Monthly Rolling Programme
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LC17666-01	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.981-1003)(28 nos.@ 2nos./d)(CE 041)	P2-Cal.C	14	14	07-Jul-18	23-Jul-18	-152	0%		0
LC17666-02	Stage 9 -- Preboring for Dia. 2100 Drain Pipe (no.854-917)(64 nos.@ 2nos./d)(CE 041)	P2-Cal.C	32	14	21-May-18 A	06-Jul-18	-152	56.25%		-6
Rig 2		P2-Cal.C	52	21	13-Apr-18 A	14-Jul-18	-146			-24
LC17676	Stage 8 -- Preboring for Dia. 2100 Drain Pipe (no.1004-1128)(125nos.@ 2.4nos./d)(CE 041)	P2-Cal.C	52	21	13-Apr-18 A	14-Jul-18	-146	59.62%		-24
ELS		P2-Cal.C	34	34	20-Jun-18	30-Jul-18	-152			0
Installation Sheet Pile - 24m		P2-Cal.C	34	34	20-Jun-18	30-Jul-18	-152			0
LC17687	Stage 8 -- Sheet Pile installation 24m length for SMH9110 - 9109 (105 nos.@15pcs./d)	P2-Cal.C	7	7	20-Jun-18	27-Jun-18	-125	0%		0
LC17687-01	Stage 8 -- Sheet Pile installation 24m length for SMH9109 - 9108 (105 nos.@15pcs./d)	P2-Cal.C	7	7	16-Jul-18	23-Jul-18	-146	0%		0
LC17687-02	Stage 9 -- Sheet Pile installation 24m length for SMH9108 - 9107 (90 nos.@15pcs./d)	P2-Cal.C	6	6	24-Jul-18	30-Jul-18	-152	0%		0
LC17688	Stage 9 -- Sheet Pile installation 24m length for SMH9107 - 9106 (95 nos.@15pcs./d)	P2-Cal.C	6	6	24-Jul-18	30-Jul-18	-152	0%		0
Drainage works		P2-Cal.C	91	89	11-Jun-18 A	04-Oct-18	90			-5
SMH9102-SMH9103		P2-Cal.C	53	53	20-Jul-18	19-Sep-18	101			0
LC17689-06	Preboring and sheet pile installation for Dia. 900 Drain Pipe SMH9102 to SMH9103	P2-Cal.C	20	20	20-Jul-18	11-Aug-18	101	0%		0
LC17689-07	Trench Excavation and Strut Installation for Constrcution of Dia. 900 Drain Pipe (SMH9102 to SMH9103)	P2-Cal.C	10	10	13-Aug-18	23-Aug-18	101	0%		0
LC17689-08	Bedding And Inspection	P2-Cal.C	3	3	24-Aug-18	27-Aug-18	101	0%		0
LC17689-09	Manhole construction and Pipe Laying (SMH9102)	P2-Cal.C	20	20	28-Aug-18	19-Sep-18	101	0%		0
SMH9103-SMH9104		P2-Cal.C	42	42	11-Jun-18 A	08-Aug-18	-119			-7
LC17690	Trench Excavation and Strut Installation for Constrcution of Dia. 2100 Drain Pipe (SMH9103 to SMH9104)	P2-Cal.C	10	7	11-Jun-18 A	27-Jun-18	-119	30%		-4
LC17690-2	Bedding And Inspection	P2-Cal.C	3	3	28-Jun-18	30-Jun-18	-119	0%		0
LC17690-3	Manhole construction and Pipe Laying (SMH9103 and SMH9104)	P2-Cal.C	20	20	03-Jul-18	25-Jul-18	-119	0%		0
LC17690-5	Inspection & Backfill	P2-Cal.C	14	14	24-Jul-18	08-Aug-18	-119	0%		0
SMH9104-SMH9105		P2-Cal.C	43	41	19-Jun-18 A	07-Aug-18	-118			1
LC17691	Trench Excavation and Strut Installation for Constrcution of Dia. 2100 Drain Pipe (SMH9104 to SMH9105)	P2-Cal.C	10	10	19-Jun-18 A	30-Jun-18	-118	0%		-1
LC17691-2	Bedding And Inspection	P2-Cal.C	3	3	03-Jul-18	05-Jul-18	-118	0%		0
LC17691-3	Manhole construction and Pipe Laying (SMH9105)	P2-Cal.C	16	16	06-Jul-18	24-Jul-18	-118	0%		0
LC17691-5	Inspection & Backfill	P2-Cal.C	14	14	23-Jul-18	07-Aug-18	-118	0%		0
SMH9105-SMH9106		P2-Cal.C	41	41	20-Jun-18	07-Aug-18	-118			0
LC17692	Trench Excavation and Strut Installation for Constrcution of Dia. 2100 Drain Pipe (SMH9105 to SMH9106)	P2-Cal.C	10	10	20-Jun-18	30-Jun-18	-118	0%		0
LC17692-2	Bedding And Inspection	P2-Cal.C	3	3	03-Jul-18	05-Jul-18	-118	0%		0
LC17692-3	Manhole construction and Pipe Laying (SMH9106)	P2-Cal.C	16	16	06-Jul-18	24-Jul-18	-118	0%		0
LC17692-5	Inspection & Backfill	P2-Cal.C	14	14	23-Jul-18	07-Aug-18	-118	0%		0
SMH9106-SMH9107		P2-Cal.C	41	41	31-Jul-18	15-Sep-18	-152			0
LC17693	Trench Excavation and Strut Installation for Constrcution of Dia. 2100 Drain Pipe (SMH9106 to SMH9107)	P2-Cal.C	10	10	31-Jul-18	10-Aug-18	-152	0%		0
LC17693-2	Bedding And Inspection	P2-Cal.C	3	3	11-Aug-18	14-Aug-18	-152	0%		0
LC17693-3	Manhole construction and Pipe Laying (SMH9107)	P2-Cal.C	16	16	15-Aug-18	01-Sep-18	-152	0%		0
LC17693-5	Inspection & Backfill	P2-Cal.C	14	14	31-Aug-18	15-Sep-18	-152	0%		0
SMH9107-SMH9108		P2-Cal.C	41	41	31-Jul-18	15-Sep-18	-152			0
LC17694	Trench Excavation and Strut Installation for Constrcution of Dia. 2100 Drain Pipe (SMH9107 to SMH9108)	P2-Cal.C	10	10	31-Jul-18	10-Aug-18	-152	0%		0
LC17695	Bedding And Inspection	P2-Cal.C	3	3	11-Aug-18	14-Aug-18	-152	0%		0
LC17696	Manhole construction and Pipe Laying (SMH9108 & 9108A)	P2-Cal.C	16	16	15-Aug-18	01-Sep-18	-152	0%		0
LC17698	Inspection & Backfill	P2-Cal.C	14	14	31-Aug-18	15-Sep-18	-152	0%		0
SMH9108-SMH9109		P2-Cal.C	41	41	24-Jul-18	08-Sep-18	-146			0
LC17699	Trench Excavation and Strut Installation for Construction of Dia. 2100 Drain Pipe (SMH9108 to SMH9109)	P2-Cal.C	10	10	24-Jul-18	03-Aug-18	-146	0%		0

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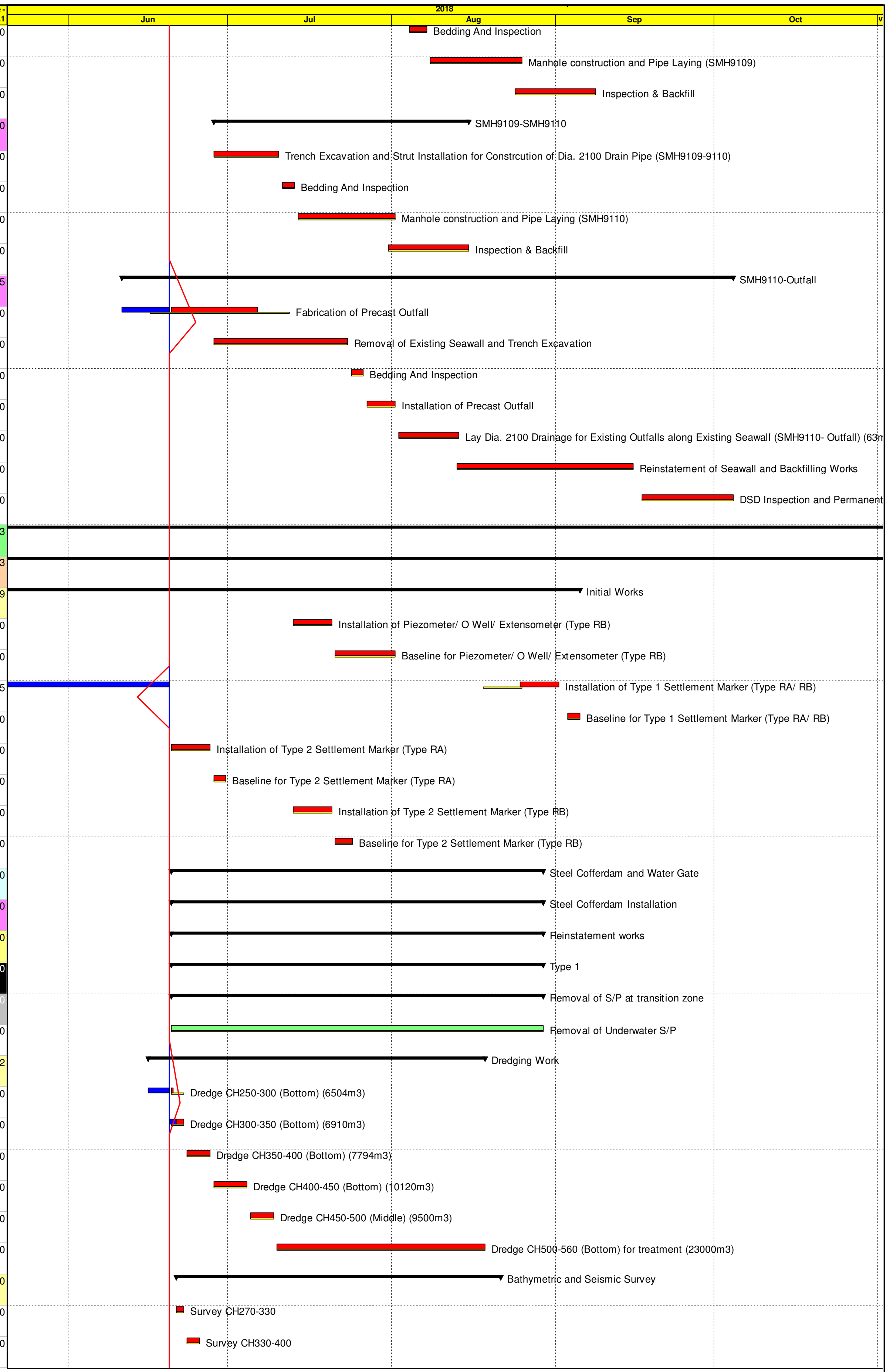
LC17701	Bedding And Inspection	P2-Cal.C	3	3	04-Aug-18	07-Aug-18	-146	0%		0
LC17702	Manhole construction and Pipe Laying (SMH9109)	P2-Cal.C	16	16	08-Aug-18	25-Aug-18	-146	0%		0
LC17704	Inspection & Backfill	P2-Cal.C	14	14	24-Aug-18	08-Sep-18	-146	0%		0
SMH9109-SMH9110		P2-Cal.C	41	41	28-Jun-18	15-Aug-18	-125			0
LC17705	Trench Excavation and Strut Installation for Constrcution of Dia. 2100 Drain Pipe (SMH9109-9110)	P2-Cal.C	10	10	28-Jun-18	10-Jul-18	-125	0%		0
LC17707	Bedding And Inspection	P2-Cal.C	3	3	11-Jul-18	13-Jul-18	-125	0%		0
LC17708	Manhole construction and Pipe Laying (SMH9110)	P2-Cal.C	16	16	14-Jul-18	01-Aug-18	-125	0%		0
LC17710	Inspection & Backfill	P2-Cal.C	14	14	31-Jul-18	15-Aug-18	-125	0%		0
SMH9110-Outfall		P2-Cal.C	91	89	11-Jun-18 A	04-Oct-18	-152			-5
LC17711	Fabrication of Precast Outfall	P2-Cal.C	21	14	11-Jun-18 A	06-Jul-18	-152	33.33%		0
LC17712	Removal of Existing Seawall and Trench Excavation	P2-Cal.C	21	21	28-Jun-18	23-Jul-18	-152	0%		0
LC17713	Bedding And Inspection	P2-Cal.C	3	3	24-Jul-18	26-Jul-18	-152	0%		0
LC17714	Installation of Precast Outfall	P2-Cal.C	5	5	27-Jul-18	01-Aug-18	-152	0%		0
LC17715	Lay Dia. 2100 Drainage for Existing Outfalls along Existing Seawall (SMH9110- Outfall) (63m)	P2-Cal.C	10	10	02-Aug-18	13-Aug-18	-152	0%		0
LC17716	Reinstatement of Seawall and Backfilling Works	P2-Cal.C	30	30	13-Aug-18	15-Sep-18	-152	0%		0
LC17717	DSD Inspection and Permanent Diversion	P2-Cal.C	14	14	17-Sep-18	04-Oct-18	-152	0%		0
New Reclaimed Section			388	200	06-Jan-18 A	05-Jan-19	48			23
Marine Works			388	200	06-Jan-18 A	05-Jan-19	48			23
Initial Works		P2-Cal.C	66	66	03-May-18 A	05-Sep-18	19			-39
MC10060	Installation of Piezometer/ O Well/ Extensometer (Type RB)	P2-Cal.C	7	7	13-Jul-18	20-Jul-18	-166	0%		0
MC10070	Baseline for Piezometer/ O Well/ Extensometer (Type RB)	P2-Cal.C	10	10	21-Jul-18	01-Aug-18	-166	0%		0
MC10080	Installation of Type 1 Settlement Marker (Type RA/ RB)	P2-Cal.C	7	7	03-May-18 A	01-Sep-18	-144	0%		-95
MC10120	Baseline for Type 1 Settlement Marker (Type RA/ RB)	P2-Cal.C	3	3	03-Sep-18	05-Sep-18	-144	0%		0
MC10156	Installation of Type 2 Settlement Marker (Type RA)	P2-Cal.C	7	7	20-Jun-18	27-Jun-18	-175	0%		0
MC10160	Baseline for Type 2 Settlement Marker (Type RA)	P2-Cal.C	3	3	28-Jun-18	30-Jun-18	-175	0%		0
MC10170	Installation of Type 2 Settlement Marker (Type RB)	P2-Cal.C	7	7	13-Jul-18	20-Jul-18	-56	0%		0
MC10175	Baseline for Type 2 Settlement Marker (Type RB)	P2-Cal.C	3	3	21-Jul-18	24-Jul-18	-56	0%		0
Steel Cofferdam and Water Gate		P2-Cal.C	60	60	20-Jun-18	29-Aug-18	25			0
Steel Cofferdam Installation		P2-Cal.C	60	60	20-Jun-18	29-Aug-18	25			0
Reinstatement works		P2-Cal.C	60	60	20-Jun-18	29-Aug-18	25			0
Type 1		P2-Cal.C	60	60	20-Jun-18	29-Aug-18	25			0
Removal of S/P at transition zone		P2-Cal.C	60	60	20-Jun-18	29-Aug-18	25			0
MC10304-02	Removal of Underwater S/P	P2-Cal.C	60	60	20-Jun-18	29-Aug-18	25	0%		0
Dredging Work		P2-Cal.C	51	51	16-Jun-18 A	18-Aug-18	-181			-2
MC10695	Dredge CH250-300 (Bottom) (6504m3)	P2-Cal.C	3	1	16-Jun-18 A	20-Jun-18	-197	66.67%		0
MC10735	Dredge CH300-350 (Bottom) (6910m3)	P2-Cal.C	3	2	20-Jun-18 A	22-Jun-18	-187	33.33%		0
MC10775	Dredge CH350-400 (Bottom) (7794m3)	P2-Cal.C	4	4	23-Jun-18	27-Jun-18	-181	0%		0
MC10815	Dredge CH400-450 (Bottom) (10120m3)	P2-Cal.C	5	5	28-Jun-18	04-Jul-18	-181	0%		0
MC10845	Dredge CH450-500 (Middle) (9500m3)	P2-Cal.C	4	4	05-Jul-18	09-Jul-18	-181	0%		0
MC10855	Dredge CH500-560 (Bottom) for treatment (23000m3)	P2-Cal.C	35	35	10-Jul-18	18-Aug-18	-181	0%		0
Bathymetric and Seismic Survey		P2-Cal.C	52	52	21-Jun-18	21-Aug-18	-181			0
MC10955	Survey CH270-330	P2-Cal.C	2	2	21-Jun-18	22-Jun-18	-197	0%	0	0
MC10975	Survey CH330-400	P2-Cal.C	2	2	23-Jun-18	25-Jun-18	-187	0%	0	0



Primary Baseline | Critical Remaining Work
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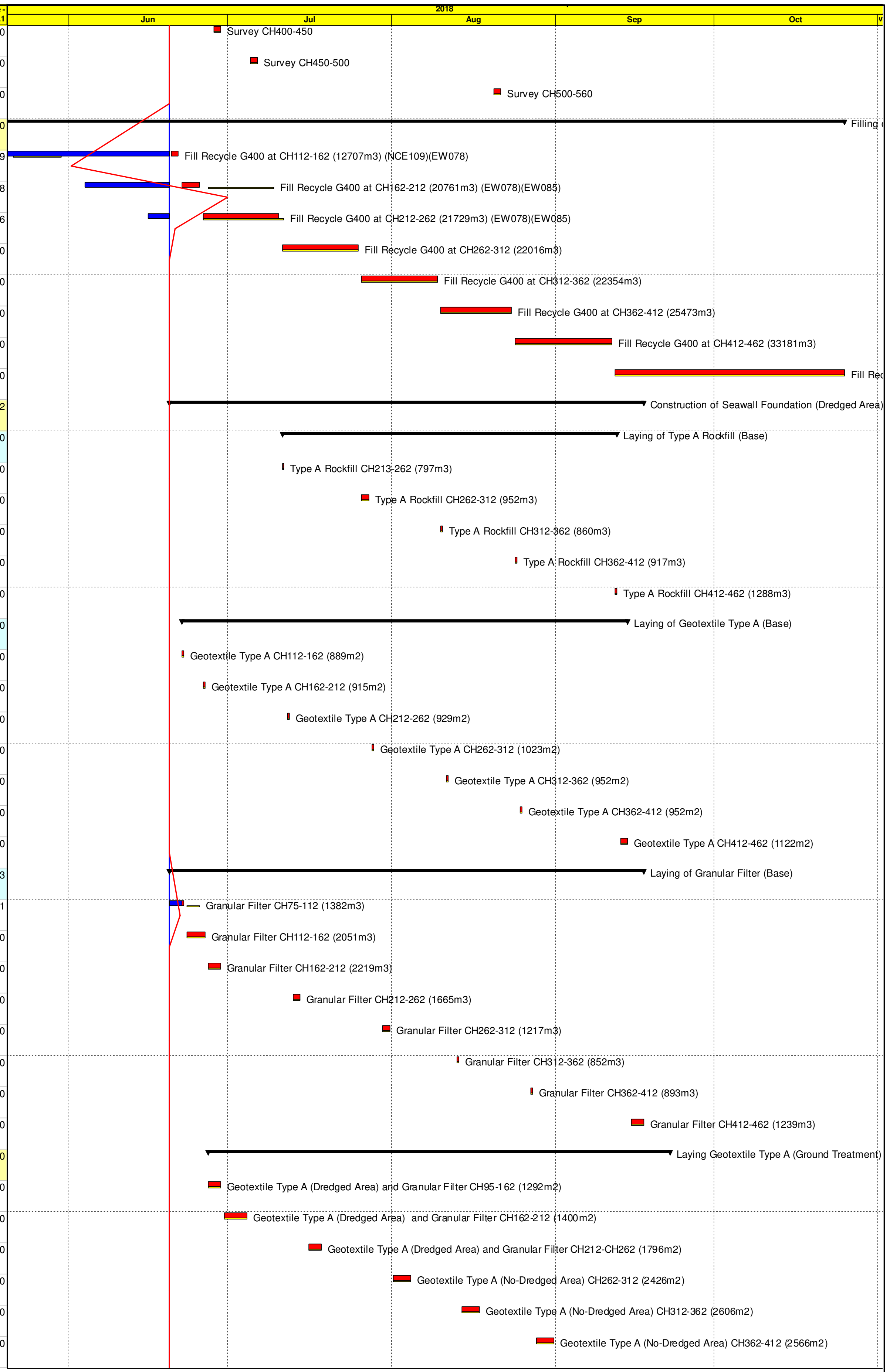
MC10995	Survey CH400-450	P2-Cal.C	2	2	28-Jun-18	29-Jun-18	-178	0%	0	0
MC11015	Survey CH450-500	P2-Cal.C	2	2	05-Jul-18	06-Jul-18	-170	0%	0	0
MC11035	Survey CH500-560	P2-Cal.C	2	2	20-Aug-18	21-Aug-18	-181	0%	0	0
Filling of Recycle G400 Rock at Dredged Trench		P2-Cal.C	130	106	09-May-18 A	25-Oct-18	-199			-10
MC11085	Fill Recycle G400 at CH112-162 (12707m3) (NCE109)(EW078)	P2-Cal.C	7	2	09-May-18 A	21-Jun-18	-207	71.43%	0	-29
MC11105	Fill Recycle G400 at CH162-212 (20761m3) (EW078)(EW085)	P2-Cal.C	10	3	04-Jun-18 A	25-Jun-18	-199	70%	0	-8
MC11125	Fill Recycle G400 at CH212-262 (21729m3) (EW078)(EW085)	P2-Cal.C	13	12	16-Jun-18 A	10-Jul-18	-199	7.69%	0	-6
MC11145	Fill Recycle G400 at CH262-312 (22016m3)	P2-Cal.C	13	13	11-Jul-18	25-Jul-18	-199	0%	0	0
MC11165	Fill Recycle G400 at CH312-362 (22354m3)	P2-Cal.C	13	13	26-Jul-18	09-Aug-18	-199	0%	0	0
MC11185	Fill Recycle G400 at CH362-412 (25473m3)	P2-Cal.C	12	12	10-Aug-18	23-Aug-18	-199	0%	0	0
MC11205	Fill Recycle G400 at CH412-462 (33181m3)	P2-Cal.C	16	16	24-Aug-18	11-Sep-18	-199	0%	0	0
MC11225	Fill Recycle G400 at CH462-512 (72995m3)	P2-Cal.C	35	35	12-Sep-18	25-Oct-18	-199	0%	0	0
Construction of Seawall Foundation (Dredged Area)		P2-Cal.C	74	74	20-Jun-18 A	17-Sep-18	-198			-2
Laying of Type A Rockfill (Base)		P2-Cal.C	55	55	11-Jul-18	12-Sep-18	-198			0
MC11265	Type A Rockfill CH213-262 (797m3)	P2-Cal.C	1	1	11-Jul-18	11-Jul-18	-187	0%	0	0
MC11275	Type A Rockfill CH262-312 (952m3)	P2-Cal.C	2	2	26-Jul-18	27-Jul-18	-192	0%	0	0
MC11285	Type A Rockfill CH312-362 (860m3)	P2-Cal.C	1	1	10-Aug-18	10-Aug-18	-198	0%	0	0
MC11295	Type A Rockfill CH362-412 (917m3)	P2-Cal.C	1	1	24-Aug-18	24-Aug-18	-195	0%	0	0
MC11305	Type A Rockfill CH412-462 (1288m3)	P2-Cal.C	1	1	12-Sep-18	12-Sep-18	-198	0%	0	0
Laying of Geotextile Type A (Base)		P2-Cal.C	72	72	22-Jun-18	14-Sep-18	-198			0
MC11335	Geotextile Type A CH112-162 (889m2)	P2-Cal.C	1	1	22-Jun-18	22-Jun-18	-207	0%	0	0
MC11345	Geotextile Type A CH162-212 (915m2)	P2-Cal.C	1	1	26-Jun-18	26-Jun-18	-180	0%	0	0
MC11355	Geotextile Type A CH212-262 (929m2)	P2-Cal.C	1	1	12-Jul-18	12-Jul-18	-187	0%	0	0
MC11365	Geotextile Type A CH262-312 (1023m2)	P2-Cal.C	1	1	28-Jul-18	28-Jul-18	-192	0%	0	0
MC11375	Geotextile Type A CH312-362 (952m2)	P2-Cal.C	1	1	11-Aug-18	11-Aug-18	-198	0%	0	0
MC11385	Geotextile Type A CH362-412 (952m2)	P2-Cal.C	1	1	25-Aug-18	25-Aug-18	-195	0%	0	0
MC11395	Geotextile Type A CH412-462 (1122m2)	P2-Cal.C	2	2	13-Sep-18	14-Sep-18	-198	0%	0	0
Laying of Granular Filter (Base)		P2-Cal.C	73	74	20-Jun-18 A	17-Sep-18	-198			-3
MC11415	Granular Filter CH75-112 (1382m3)	P2-Cal.C	2	1	20-Jun-18 A	22-Jun-18	-207	50%	0	-1
MC11425	Granular Filter CH112-162 (2051m3)	P2-Cal.C	3	3	23-Jun-18	26-Jun-18	-207	0%	0	0
MC11435	Granular Filter CH162-212 (2219m3)	P2-Cal.C	3	3	27-Jun-18	29-Jun-18	-180	0%	0	0
MC11445	Granular Filter CH212-262 (1665m3)	P2-Cal.C	2	2	13-Jul-18	14-Jul-18	-187	0%	0	0
MC11455	Granular Filter CH262-312 (1217m3)	P2-Cal.C	2	2	30-Jul-18	31-Jul-18	-192	0%	0	0
MC11465	Granular Filter CH312-362 (852m3)	P2-Cal.C	1	1	13-Aug-18	13-Aug-18	-198	0%	0	0
MC11475	Granular Filter CH362-412 (893m3)	P2-Cal.C	1	1	27-Aug-18	27-Aug-18	-195	0%	0	0
MC11485	Granular Filter CH412-462 (1239m3)	P2-Cal.C	2	2	15-Sep-18	17-Sep-18	-198	0%	0	0
Laying Geotextile Type A (Ground Treatment)		P2-Cal.C	75	75	27-Jun-18	22-Sep-18	-198			0
MC12015	Geotextile Type A (Dredged Area) and Granular Filter CH95-162 (1292m2)	P2-Cal.C	3	3	27-Jun-18	29-Jun-18	-207	0%	0	0
MC12025	Geotextile Type A (Dredged Area) and Granular Filter CH162-212 (1400m2)	P2-Cal.C	3	3	30-Jun-18	04-Jul-18	-180	0%	0	0
MC12035	Geotextile Type A (Dredged Area) and Granular Filter CH212-CH262 (1796m2)	P2-Cal.C	3	3	16-Jul-18	18-Jul-18	-187	0%	0	0
MC12045	Geotextile Type A (No-Dredged Area) CH262-312 (2426m2)	P2-Cal.C	4	4	01-Aug-18	04-Aug-18	-192	0%	0	0
MC12055	Geotextile Type A (No-Dredged Area) CH312-362 (2606m2)	P2-Cal.C	4	4	14-Aug-18	17-Aug-18	-198	0%	0	0
MC12065	Geotextile Type A (No-Dredged Area) CH362-412 (2566m2)	P2-Cal.C	4	4	28-Aug-18	31-Aug-18	-195	0%	0	0



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MC12075	Geotextile Type A (No-Dredged Area) CH412-462 (3130m2)	P2-Cal.C	5	5	18-Sep-18	22-Sep-18	-198	0%	0	0
Placing Sand Blanket (Non-Dredged Area)		P2-Cal.C	28	28	03-Aug-18	04-Sep-18	-195			0
MC12105	Sand Blanket CH225-275 (1205m3)	P2-Cal.C	3	3	03-Aug-18	06-Aug-18	-192	0%	0	0
MC12115	Sand Blanket CH275-325 (2316m3)	P2-Cal.C	5	5	16-Aug-18	21-Aug-18	-198	0%	0	0
MC12125	Sand Blanket CH325-375 (2467m3)	P2-Cal.C	5	5	30-Aug-18	04-Sep-18	-195	0%	0	0
Installation of Band Drain (Non-Dredged Area)		P2-Cal.C	64	64	13-Jul-18	26-Sep-18	-198			0
MC12163	Band Drain CH38-75 (1130nos)	P2-Cal.C	12	12	13-Jul-18	26-Jul-18	-203	0%	0	0
MC12165	Band Drain CH75-95 (380nos)	P2-Cal.C	4	4	21-Aug-18	24-Aug-18	-207	0%	0	0
MC12175	Band Drain CH225-275 (693nos)	P2-Cal.C	7	7	07-Aug-18	14-Aug-18	-192	0%	0	0
MC12185	Band Drain CH275-325 (1512nos)	P2-Cal.C	15	15	22-Aug-18	07-Sep-18	-198	0%	0	0
MC12195	Band Drain CH325-375 (1481nos)	P2-Cal.C	15	15	08-Sep-18	26-Sep-18	-198	0%	0	0
Filling of Reclamation Fill to Seabed Level		P2-Cal.C	65	65	30-Jun-18	14-Sep-18	-168			0
MC12335	Reclamation Fill CH95-125 (5480m3)	P2-Cal.C	4	4	30-Jun-18	05-Jul-18	-207	0%	0	0
MC12345	Reclamation Fill CH125-175 (6281m3)	P2-Cal.C	5	5	16-Jul-18	20-Jul-18	-189	0%	0	0
MC12355	Reclamation Fill CH175-225 (8443m3)	P2-Cal.C	6	6	21-Jul-18	27-Jul-18	-189	0%	0	0
MC12365	Reclamation Fill CH225-275 (8657m3)	P2-Cal.C	6	6	15-Aug-18	21-Aug-18	-154	0%	0	0
MC12375	Reclamation Fill CH275-325 (6850m3)	P2-Cal.C	5	5	08-Sep-18	13-Sep-18	-168	0%	0	0
Laying of Geotextile Type A on Top of Reclamation Fill		P2-Cal.C	61	61	06-Jul-18	14-Sep-18	-168			0
MC12415	Geotextile Type A CH80-115 (437m2)	P2-Cal.C	1	1	06-Jul-18	06-Jul-18	-207	0%	0	0
MC12425	Geotextile Type A CH115-165 (683m2)	P2-Cal.C	1	1	21-Jul-18	21-Jul-18	-185	0%	0	0
MC12435	Geotextile Type A CH165-215 (784m2)	P2-Cal.C	1	1	28-Jul-18	28-Jul-18	-189	0%	0	0
MC12445	Geotextile Type A CH215-265 (905m2)	P2-Cal.C	1	1	22-Aug-18	22-Aug-18	-154	0%	0	0
MC12455	Geotextile Type A CH265-315 (1156m2)	P2-Cal.C	1	1	14-Sep-18	14-Sep-18	-168	0%	0	0
Construction of Eastern Seawall Up to +2.5mPD		P2-Cal.C	69	69	15-Jun-18 A	26-Sep-18	-157			-17
Filling of G400 Rock as East Seawall Core (+2.5mPD)		P2-Cal.C	69	69	15-Jun-18 A	26-Sep-18	-168			-17
MC11505	Fill G400 at CH80-115 (2508m3) for Vectrical Seawall	P2-Cal.C	2	2	07-Jul-18	09-Jul-18	-207	0%	0	0
MC11510	Construction of temporary 1500 dia. drain pipe (CH50 - 110)	P2-Cal.C	9	6	15-Jun-18 A	13-Jul-18	-207	33.33%	0	-14
MC11515	Fill G400 at CH115-165 (3900m3) for Vectrical Seawall	P2-Cal.C	2	2	23-Jul-18	24-Jul-18	-185	0%	0	0
MC11525	Fill G400 at CH165-215 (5826m3) for Vectrical Seawall	P2-Cal.C	3	3	30-Jul-18	01-Aug-18	-189	0%	0	0
MC11535	Fill G400 at CH215-265 (10232m3)	P2-Cal.C	6	6	23-Aug-18	29-Aug-18	-154	0%	0	0
MC11545	Fill G400 at CH265-315 (11705m3)	P2-Cal.C	9	9	15-Sep-18	26-Sep-18	-168	0%	0	0
Laying of Type A Rockfill as East Seawall Core (+2.5mPD)		P2-Cal.C	43	43	31-Jul-18	18-Sep-18	-152			0
MC11605	Type A Rockfill CH80-115 (2023m3) After Vectrical Seawall Completion	P2-Cal.C	4	4	31-Jul-18	03-Aug-18	-207	0%	0	0
MC11615	Type A Rockfill CH115-165 (2880m3) After Vectrical Seawall Completion	P2-Cal.C	4	4	04-Aug-18	08-Aug-18	-207	0%	0	0
MC11625	Type A Rockfill CH165-215 (3059m3) After Vectrical Seawall Completion	P2-Cal.C	4	4	13-Sep-18	17-Sep-18	-189	0%	0	0
MC11635	Type A Rockfill CH215-265 (823m3)	P2-Cal.C	1	1	18-Sep-18	18-Sep-18	-152	0%	0	0
Laying of Geotextile Type A as East Seawall Core (+2.5mPD)		P2-Cal.C	40	40	04-Aug-18	19-Sep-18	-152			0
MC11705	Geotextile Type A CH80-115 (757m2)	P2-Cal.C	1	1	04-Aug-18	04-Aug-18	-204	0%	0	0
MC11715	Geotextile Type A CH115-165 (1138m2)	P2-Cal.C	1	1	09-Aug-18	09-Aug-18	-207	0%	0	0
MC11725	Geotextile Type A CH165-215 (1212m2)	P2-Cal.C	1	1	18-Sep-18	18-Sep-18	-189	0%	0	0
MC11735	Geotextile Type A CH215-265 (1243m2)	P2-Cal.C	1	1	19-Sep-18	19-Sep-18	-152	0%	0	0
Laying of Granular Filter as East Seawall Core (+2.5mPD)		P2-Cal.C	40	40	06-Aug-18	20-Sep-18	-189			0
MC11805	Granular Filter CH80-115 (739m3)	P2-Cal.C	1	1	06-Aug-18	06-Aug-18	-204	0%	0	0

Primary Baseline
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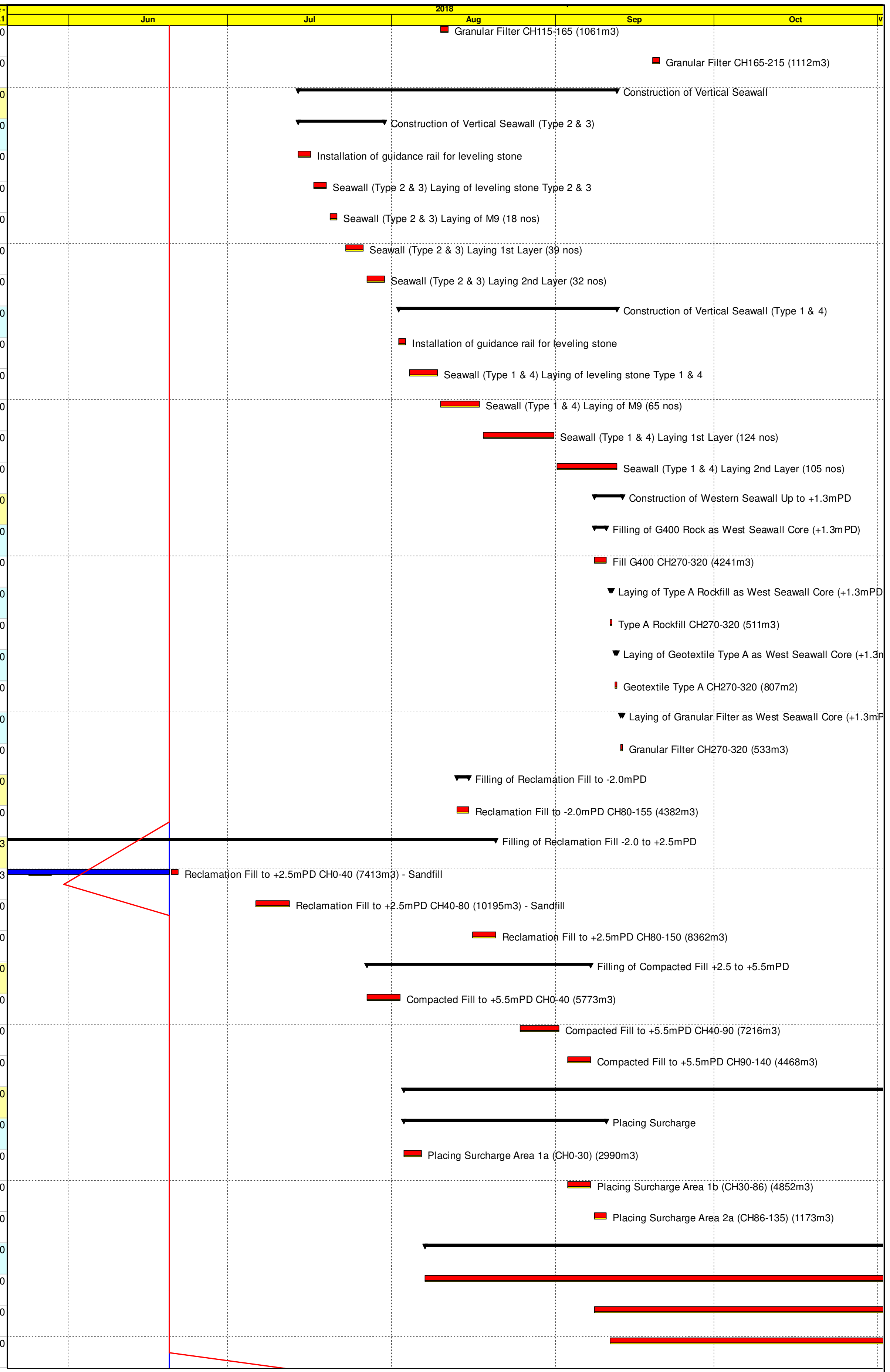
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-18)

3 Monthly Rolling Programme
(Data Date : 20-Jun-2018)

Date	Revision	Checked	Approved
20-Jun-18			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	TRA	Variance - BL1
MC11815	Granular Filter CH115-165 (1061m3)	P2-Cal.C	2	2	10-Aug-18	11-Aug-18	-207	0%	0	0
MC11825	Granular Filter CH165-215 (1112m3)	P2-Cal.C	2	2	19-Sep-18	20-Sep-18	-189	0%	0	0
Construction of Vertical Seawall		P2-Cal.C	52	52	14-Jul-18	12-Sep-18	-189			0
Construction of Vertical Seawall (Type 2 & 3)		P2-Cal.C	14	14	14-Jul-18	30-Jul-18	-207			0
MC11905	Installation of guidance rail for leveling stone	P2-Cal.C	2	2	14-Jul-18	16-Jul-18	-207	0%	0	0
MC11915	Seawall (Type 2 & 3) Laying of leveling stone Type 2 & 3	P2-Cal.C	3	3	17-Jul-18	19-Jul-18	-207	0%	0	0
MC11925	Seawall (Type 2 & 3) Laying of M9 (18 nos)	P2-Cal.C	2	2	20-Jul-18	21-Jul-18	-207	0%	0	0
MC11935	Seawall (Type 2 & 3) Laying 1st Layer (39 nos)	P2-Cal.C	4	4	23-Jul-18	26-Jul-18	-207	0%	0	0
MC11945	Seawall (Type 2 & 3) Laying 2nd Layer (32 nos)	P2-Cal.C	3	3	27-Jul-18	30-Jul-18	-207	0%	0	0
Construction of Vertical Seawall (Type 1 & 4)		P2-Cal.C	36	36	02-Aug-18	12-Sep-18	-189			0
MC11955	Installation of guidance rail for leveling stone	P2-Cal.C	2	2	02-Aug-18	03-Aug-18	-189	0%	0	0
MC11965	Seawall (Type 1 & 4) Laying of leveling stone Type 1 & 4	P2-Cal.C	5	5	04-Aug-18	09-Aug-18	-189	0%	0	0
MC11975	Seawall (Type 1 & 4) Laying of M9 (65 nos)	P2-Cal.C	7	7	10-Aug-18	17-Aug-18	-189	0%	0	0
MC11985	Seawall (Type 1 & 4) Laying 1st Layer (124 nos)	P2-Cal.C	12	12	18-Aug-18	31-Aug-18	-189	0%	0	0
MC11995	Seawall (Type 1 & 4) Laying 2nd Layer (105 nos)	P2-Cal.C	10	10	01-Sep-18	12-Sep-18	-189	0%	0	0
Construction of Western Seawall Up to +1.3mPD		P2-Cal.C	5	5	08-Sep-18	13-Sep-18	-142			0
Filling of G400 Rock as West Seawall Core (+1.3mPD)		P2-Cal.C	2	2	08-Sep-18	10-Sep-18	-142			0
MC12495	Fill G400 CH270-320 (4241m3)	P2-Cal.C	2	2	08-Sep-18	10-Sep-18	-142	0%	0	0
Laying of Type A Rockfill as West Seawall Core (+1.3mPD)		P2-Cal.C	1	1	11-Sep-18	11-Sep-18	-142			0
MC12535	Type A Rockfill CH270-320 (511m3)	P2-Cal.C	1	1	11-Sep-18	11-Sep-18	-142	0%	0	0
Laying of Geotextile Type A as West Seawall Core (+1.3mPD)		P2-Cal.C	1	1	12-Sep-18	12-Sep-18	-142			0
MC12575	Geotextile Type A CH270-320 (807m2)	P2-Cal.C	1	1	12-Sep-18	12-Sep-18	-142	0%	0	0
Laying of Granular Filter as West Seawall Core (+1.3mPD)		P2-Cal.C	1	1	13-Sep-18	13-Sep-18	-142			0
MC12615	Granular Filter CH270-320 (533m3)	P2-Cal.C	1	1	13-Sep-18	13-Sep-18	-142	0%	0	0
Filling of Reclamation Fill to -2.0mPD		P2-Cal.C	3	3	13-Aug-18	15-Aug-18	-207			0
MC12665	Reclamation Fill to -2.0mPD CH80-155 (4382m3)	P2-Cal.C	3	3	13-Aug-18	15-Aug-18	-207	0%	0	0
Filling of Reclamation Fill -2.0 to +2.5mPD		P2-Cal.C	74	52	25-Apr-18 A	20-Aug-18	-207			-23
MC12883	Reclamation Fill to +2.5mPD CH0-40 (7413m3) - Sandfill	P2-Cal.C	4	2	25-Apr-18 A	21-Jun-18	-192	50%	0	-43
MC12885	Reclamation Fill to +2.5mPD CH40-80 (10195m3) - Sandfill	P2-Cal.C	6	6	06-Jul-18	12-Jul-18	-203	0%	0	0
MC12895	Reclamation Fill to +2.5mPD CH80-150 (8362m3)	P2-Cal.C	4	4	16-Aug-18	20-Aug-18	-207	0%	0	0
Filling of Compacted Fill +2.5 to +5.5mPD		P2-Cal.C	37	37	27-Jul-18	07-Sep-18	-183			0
MC12950	Compacted Fill to +5.5mPD CH0-40 (5773m3)	P2-Cal.C	6	6	27-Jul-18	02-Aug-18	-203	0%	0	0
MC12955	Compacted Fill to +5.5mPD CH40-90 (7216m3)	P2-Cal.C	7	7	25-Aug-18	01-Sep-18	-207	0%	0	0
MC12965	Compacted Fill to +5.5mPD CH90-140 (4468m3)	P2-Cal.C	5	5	03-Sep-18	07-Sep-18	-183	0%	0	0
Surcharge			156	156	03-Aug-18	05-Jan-19	-258			0
Placing Surcharge		P2-Cal.C	33	33	03-Aug-18	10-Sep-18	-183			0
MC13015	Placing Surcharge Area 1a (CH0-30) (2990m3)	P2-Cal.C	3	3	03-Aug-18	06-Aug-18	-203	0%		0
MC13020	Placing Surcharge Area 1b (CH30-86) (4852m3)	P2-Cal.C	5	5	03-Sep-18	07-Sep-18	-207	0%		0
MC13035	Placing Surcharge Area 2a (CH86-135) (1173m3)	P2-Cal.C	2	2	08-Sep-18	10-Sep-18	-183	0%		0
Surcharging		P2-Cal.A	152	152	07-Aug-18	05-Jan-19	-258			0
MC13155	Surcharge Area 1a (CH0-30) (2990m3)	P2-Cal.A	120	120	07-Aug-18	04-Dec-18	-253	0%		0
MC13160	Surcharge Area 1b (CH30-86) (4852m3)	P2-Cal.A	120	120	08-Sep-18	05-Jan-19	-258	0%		0
MC13175	Surcharge Area 2a (CH86-135) (1173m3)	P2-Cal.A	60	60	11-Sep-18	09-Nov-18	-227	0%		0



Primary Baseline
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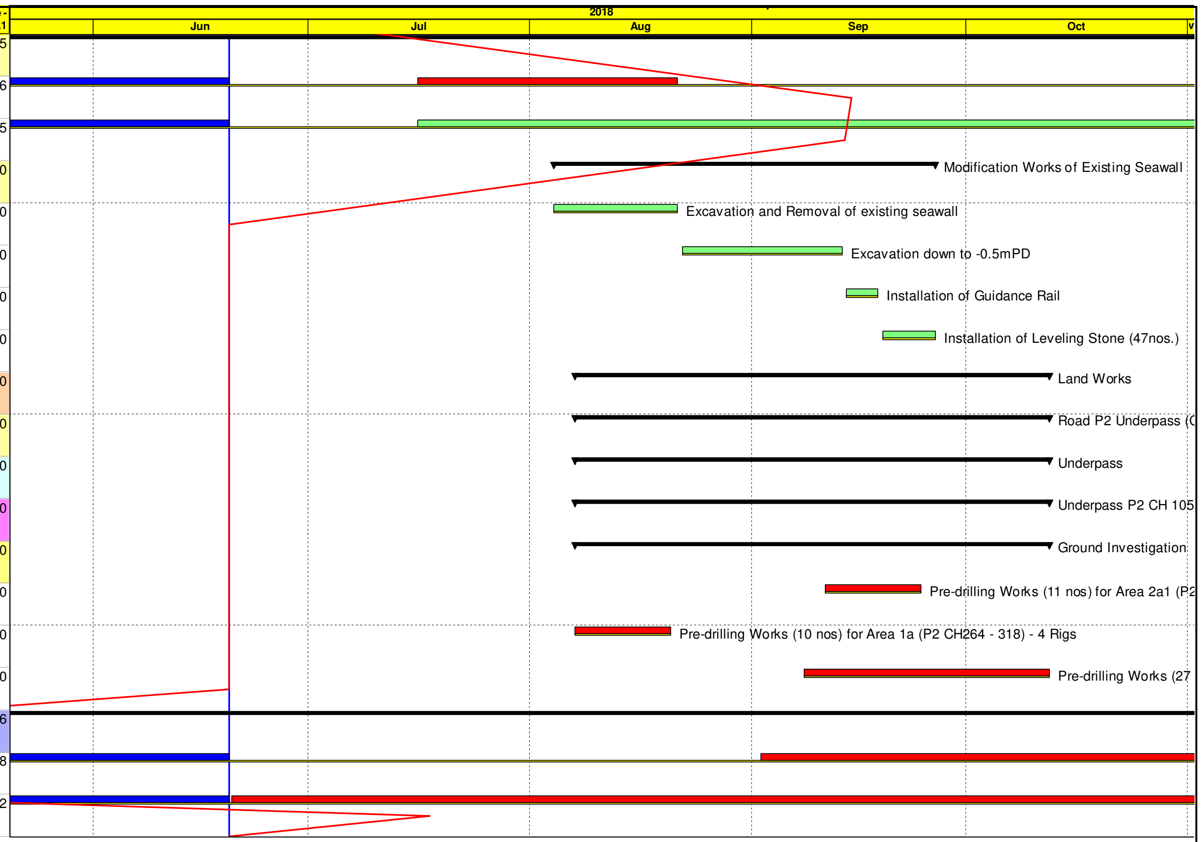
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Jun-18)

3 Monthly Rolling Programme
(Data Date : 20-Jun-2018)

Date	Revision	Checked	Approved
20-Jun-18			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	TRA	Variance - BL1
	Full-scale Treatment of Cement S/S of Marine Sediment	P2-Cal.C	313	96	06-Jan-18 A	07-Nov-18	86			65
MC14075	Treatment	P2-Cal.C	250	32	06-Jan-18 A	21-Aug-18	-189	87.2%		66
MC14080	Curing, Stockpiling and Filling	P2-Cal.C	313	96	06-Jan-18 A	07-Nov-18	86	69.33%		65
	Modification Works of Existing Seawall	P2-Cal.C	45	45	04-Aug-18	26-Sep-18	65			0
MC14145	Excavation and Removal of existing seawall	P2-Cal.C	15	15	04-Aug-18	21-Aug-18	65	0%		0
MC14165	Excavation down to -0.5mPD	P2-Cal.C	20	20	22-Aug-18	13-Sep-18	65	0%		0
MC14185	Installation of Guidance Rail	P2-Cal.C	4	4	14-Sep-18	18-Sep-18	65	0%		0
MC14205	Installation of Leveling Stone (47nos.)	P2-Cal.C	6	6	19-Sep-18	26-Sep-18	65	0%		0
	Land Works	P2-Cal.C	56	56	07-Aug-18	12-Oct-18	-137			0
	Road P2 Underpass (CH105-CH318)	P2-Cal.C	56	56	07-Aug-18	12-Oct-18	-137			0
	Underpass	P2-Cal.C	56	56	07-Aug-18	12-Oct-18	-137			0
	Underpass P2 CH 105 - 318	P2-Cal.C	56	56	07-Aug-18	12-Oct-18	-137			0
	Ground Investigation	P2-Cal.C	56	56	07-Aug-18	12-Oct-18	-137			0
LC17780	Pre-drilling Works (11 nos) for Area 2a1 (P2 CH160 - 202) - 4 Rigs	P2-Cal.C	12	12	11-Sep-18	24-Sep-18	-123	0%		0
LC17784	Pre-drilling Works (10 nos) for Area 1a (P2 CH264 - 318) - 4 Rigs	P2-Cal.C	12	12	07-Aug-18	20-Aug-18	-113	0%		0
LC17789	Pre-drilling Works (27 nos) for Area 1b (P2 CH202 - 264) - 4 Rigs	P2-Cal.C	28	28	08-Sep-18	12-Oct-18	-137	0%		0
	Section 4 of the Works - Preservation and Protection of Existing Trees	P2-Cal.A	1563	1085	12-Jan-17 A	08-Jun-21	-255			-46
LC25260	Preservation and Protection of Existing Trees	P2-Cal.A	1451	1011	12-Jan-17 A	08-Jun-21	-255	30.32%		-158
LC25280	Nursery Transplanted Trees at the Contractor's holding nursery	P2-Cal.A	1177	1011	28-Apr-17 A	26-Mar-21	-181	14.1%		-252



Primary Baseline | Critical Remaining Work
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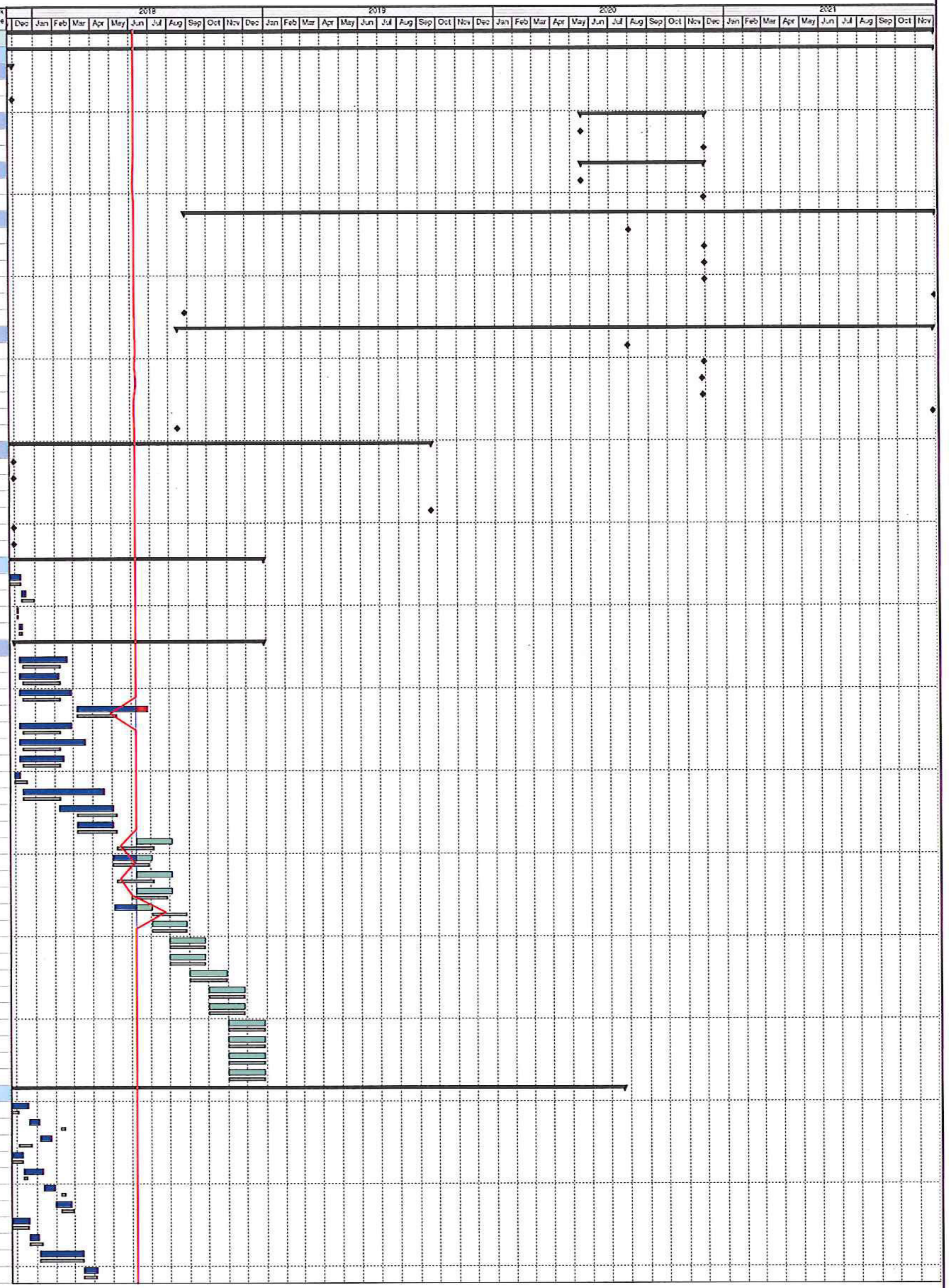
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-
Road P2 and Associated Works (Jun-18)

3 Monthly Rolling Programme
(Data Date : 20-Jun-2018)

Date	Revision	Checked	Approved
20-Jun-18			

NE/2017/02 - Updated Programme (Jun 2018)

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
NE/2017/02 - Updated Programme (Jun 2018)		1471			1271	17-Nov-17 A	29-Nov-21	08-Jun-18	29-Nov-21	08-Jun-18	29-Nov-21	0	
Contractual Dates		1461			1201	17-Nov-17 A	29-Nov-21	08-Jun-18	29-Nov-21	08-Jun-18	29-Nov-21	0	
Commencement Date		0	7d		0	20-Nov-17 A	30-Nov-17 A	08-Jun-18	08-Jun-18	08-Jun-18	08-Jun-18		
K10000	Contract Date	0	7d	100%	0	20-Nov-17 A		08-Jun-18		08-Jun-18			
K10010	Starting Date	0	7d	100%	0	30-Nov-17 A		08-Jun-18		08-Jun-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)		194	7d		194	18-May-20	28-Nov-20	18-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		18-May-20*		18-May-20		18-May-20	0	
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)		1198	7d		1198	16-Aug-18	26-Nov-21	16-Aug-18	26-Nov-21	27-Aug-18	29-Nov-21	3	
K10120	Section 1 - All works not covered by other Sections (planned)	0	7d	0%	0		30-Jul-20*		30-Jul-20		01-Aug-20	2	
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		25-Nov-20*		25-Nov-20		29-Nov-20	4	
K10150	Section 4 - Landscape Softworks (planned)	0	7d	0%	0		26-Nov-20*		26-Nov-20		29-Nov-20	3	
K10160	Section 5 - Establishment Works (planned)	0	7d	0%	0		26-Nov-21*		26-Nov-21		29-Nov-21	3	
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-Jun-18	21-Sep-19	21-Sep-19	29-Nov-21	650	
K10180	Portion I	0	6d	100%	0	30-Nov-17 A		08-Jun-18		29-Nov-21			
K10190	Portion II	0	6d	100%	0	30-Nov-17 A		08-Jun-18		29-Nov-21			
K10200	Portion III	0	6d	100%	0	17-Nov-17 A		08-Jun-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-Jun-18		29-Nov-21			
K10230	Portion VI	0	6d	100%	0	30-Nov-17 A		08-Jun-18		29-Nov-21			
Subcontracting		404			204	20-Nov-17 A	28-Dec-18	08-Jun-18	28-Dec-18	08-Jun-18	10-Aug-20	591	
S10000	Proposal on competitive process for selection of suppliers of Plant and Ma	21	7d	100%	0	20-Nov-17 A	11-Dec-17 A	08-Jun-18	08-Jun-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-Jun-18	08-Jun-18	26-Jun-19	26-Jun-19		
S10020	Subcontracting procedure	3	6d	100%	0	04-Dec-17 A	06-Dec-17 A	08-Jun-18	08-Jun-18	08-Jun-18	08-Jun-18		
S10030	Acceptance of subcontracting procedure	6	7d	100%	0	07-Dec-17 A	12-Dec-17 A	08-Jun-18	08-Jun-18	08-Jun-18	08-Jun-18		
Subcontract Packages		319	6d		168	30-Nov-17 A	28-Dec-18	08-Jun-18	28-Dec-18	08-Jun-18	10-Aug-20	477	
S10040	SC003 - Community Liaison Centre subcontract	48	6d	100%	0	07-Dec-17 A	21-Feb-18 A	08-Jun-18	08-Jun-18	19-Jun-18	19-Jun-18		
S10050	SC004 - Contractor's site office subcontract	48	6d	100%	0	07-Dec-17 A	08-Feb-18 A	08-Jun-18	08-Jun-18	25-Jun-18	25-Jun-18		
S10060	SC002 - Pre-construction condition survey subcontract	48	6d	100%	0	07-Dec-17 A	27-Feb-18 A	08-Jun-18	08-Jun-18	08-Jun-18	08-Jun-18		
S10070	SC011 - Instrumentation subcontract	48	6d	70%	14	08-Mar-18 A	26-Jun-18	08-Jun-18	26-Jun-18	08-Jun-18	26-Jun-18	0	
S10080	SC005 - Site security system subcontract	48	6d	100%	0	07-Dec-17 A	27-Feb-18 A	08-Jun-18	08-Jun-18	20-Jun-18	20-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-Jun-18	08-Jun-18	09-Jun-18	09-Jun-18		
S10100	SC028 - Landscaping subcontract	48	6d	100%	0	07-Dec-17 A	15-Feb-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
S10110	Traffic consultant (1st stage)	17	6d	100%	0	30-Nov-17 A	08-Dec-17 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
S10120	SC008 - Traffic consultant (2nd stage)	48	6d	100%	0	13-Dec-17 A	19-Apr-18 A	08-Jun-18	08-Jun-18	11-Jul-18	11-Jul-18		
S10130	SC013 - Road, Drainage, Watermain subcontract	48	6d	100%	0	08-Feb-18 A	03-May-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
S10150	SC010 - Ground investigation subcontract	48	6d	100%	0	08-Mar-18 A	04-May-18 A	08-Jun-18	08-Jun-18	03-Sep-18	03-Sep-18		
S10160	SC018 - Bored pile subcontract	48	6d	0%	48	08-Jun-18*	04-Aug-18	08-Jun-18	04-Aug-18	18-Sep-18	16-Nov-18	85	
S10170	SC019 - Socketted H-pile subcontract	48	6d	60%	19	02-May-18 A	03-Jul-18	08-Jun-18	03-Jul-18	26-Jul-18	17-Aug-18	39	
S10180	SC031 - Road lighting system subcontract	48	6d	0%	48	08-Jun-18*	04-Aug-18	08-Jun-18	04-Aug-18	31-Oct-18	28-Dec-18	119	
S10190	SC017 - Fences, railing, parapets, crash gate and untensioned beam bar	48	6d	0%	48	08-Jun-18*	04-Aug-18	08-Jun-18	04-Aug-18	26-Oct-18	20-Dec-18	115	
S10200	SC015 - Flexible surfacing, milling and resurfacing	48	6d	60%	19	05-May-18 A	03-Jul-18	08-Jun-18	03-Jul-18	28-Nov-18	20-Dec-18	144	
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	24-Apr-19	22-Jun-19	215	
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 subcontrac	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			774	20-Nov-17 A	20-Jul-20	08-Jun-18	20-Jul-20	08-Jun-18	28-Sep-20	70	
C10000	Draft Safety Plan (submission)	14	7d	100%	0	20-Nov-17 A	19-Dec-17 A	08-Jun-18	08-Jun-18	08-Jun-18	08-Jun-18		
C10010	Safety Plan (submission)	6	6d	100%	0	20-Dec-17 A	06-Jan-18 A	08-Jun-18	08-Jun-18	08-Jun-18	08-Jun-18		
C10020	Safety Plan (PM's acceptance)	21	7d	100%	0	07-Jan-18 A	24-Jan-18 A	08-Jun-18	08-Jun-18	08-Jun-18	08-Jun-18		
C10030	Environmental Management Plan (prepare & submit)	21	7d	100%	0	20-Nov-17 A	11-Dec-17 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10040	Environmental Management Plan (review & discuss)	6	7d	100%	0	12-Dec-17 A	11-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10050	Environmental Management Plan (resubmit)	6	6d	100%	0	12-Jan-18 A	30-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10060	Environmental Management Plan (PM's acceptance)	21	7d	100%	0	31-Jan-18 A	25-Feb-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10070	Subcontractor Management Plan (submission)	30	7d	100%	0	20-Nov-17 A	20-Dec-17 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10080	Subcontractor Management Plan (PM's comments)	21	7d	100%	0	21-Dec-17 A	05-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10090	Subcontractor Management Plan (resubmit)	56	6d	100%	0	06-Jan-18 A	15-Mar-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10100	Subcontractor Management Plan (PM's acceptance)	21	7d	100%	0	16-Mar-18 A	06-Apr-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		



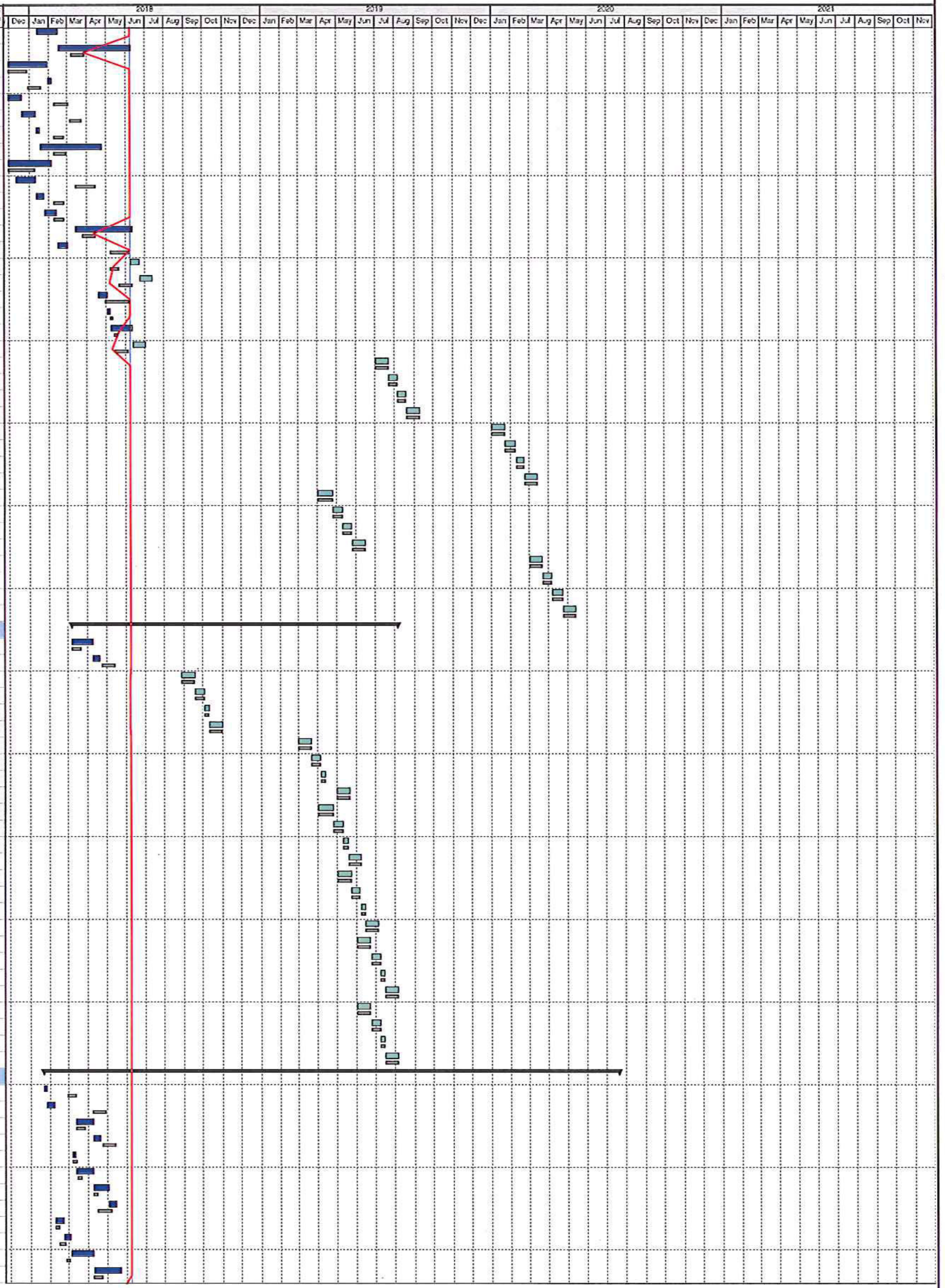
Baseline: Programme of May 2018
Milestone
Actual Work
Summary
Remaining Work
Critical Remaining Work

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel
Road P2/D4 and Associated Works
Updated Programme (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-06 (Data date 8-Jun-18)	TC	

NE/2017/02 - Updated Programme (Jun 2018)

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
C10110	Noise Mitigation Plan (submission)	1	7d	100%	0	13-Jan-18 A	15-Feb-18 A	08-Jun-18	08-Jun-18	20-Jun-18	20-Jun-18		
C10120	Noise Mitigation Plan (acceptance)	21	7d	95%	1	16-Feb-18 A	09-Jun-18	08-Jun-18	09-Jun-18	20-Jun-18	21-Jun-18	13	
C10130	Weather Protection Scheme (prepare & submit)	30	7d	100%	0	30-Nov-17 A	30-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10140	Weather Protection Scheme (accept)	21	7d	100%	0	31-Jan-18 A	05-Feb-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10150	Waste Management Plan (prepare & submit)	18	6d	100%	0	30-Nov-17 A	20-Dec-17 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10160	Waste Management Plan (review & discuss)	18	6d	100%	0	21-Dec-17 A	11-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10170	Waste Management Plan (resubmit)	12	6d	100%	0	12-Jan-18 A	18-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10180	Waste Management Plan (accept)	21	7d	100%	0	19-Jan-18 A	25-Apr-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10190	Site Traffic Safety Management Plan	42	7d	100%	0	30-Nov-17 A	05-Feb-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10200	Construction Impact Assessment (prepare & submit)	24	6d	100%	0	12-Dec-17 A	11-Jan-18 A	09-Jun-18	09-Jun-18	09-Jun-18	09-Jun-18		
C10210	Construction Impact Assessment (review & discuss)	12	6d	100%	0	12-Jan-18 A	24-Jan-18 A	09-Jun-18	09-Jun-18	09-Jun-18	09-Jun-18		
C10220	Construction Impact Assessment (resubmit)	12	6d	100%	0	25-Jan-18 A	13-Feb-18 A	09-Jun-18	09-Jun-18	09-Jun-18	09-Jun-18		
C10230	Construction Impact Assessment (accept)	21	7d	90%	2	14-Mar-18 A	11-Jun-18	09-Jun-18	11-Jun-18	09-Jun-18	11-Jun-18	1	
C10240	Monitoring proposal for Geotechnical Monitoring	30	7d	100%	0	15-Feb-18 A	02-Mar-18 A	08-Jun-18	08-Jun-18	25-Jul-18	25-Jul-18		
C10250	Geotechnical instrumentation programme (prepare & submit)	12	6d	0%	12	08-Jun-18	22-Jun-18	08-Jun-18	22-Jun-18	25-Jul-18	08-Aug-18	38	
C10260	Geotechnical instrumentation programme (accept)	21	7d	0%	21	23-Jun-18	13-Jul-18	23-Jun-18	13-Jul-18	08-Aug-18	29-Aug-18	46	
C10270	Temporary Drainage Management Plan (prepare & submit)	30	6d	100%	0	19-Apr-18 A	03-May-18 A	08-Jun-18	08-Jun-18	21-Jun-18	21-Jun-18		
C10271	Temporary Drainage Management Plan (review & discuss)	5	6d	100%	0	04-May-18 A	08-May-18 A	08-Jun-18	08-Jun-18	21-Jun-18	21-Jun-18		
C10272	Temporary Drainage Management Plan (resubmit)	6	6d	50%	3	09-May-18 A	11-Jun-18	08-Jun-18	11-Jun-18	21-Jun-18	23-Jun-18	10	
C10273	Temporary Drainage Management Plan (accept)	21	7d	0%	21	12-Jun-18	02-Jul-18	12-Jun-18	02-Jul-18	25-Jun-18	15-Jul-18	13	
C10280	Fall Arrest System (prepare & submit)	18	6d	0%	18	02-Jul-19*	22-Jul-19	02-Jul-19	22-Jul-19	03-Jan-20	23-Jan-20	153	
C10290	Fall Arrest System (review & discuss)	12	6d	0%	12	23-Jul-19	05-Aug-19	23-Jul-19	05-Aug-19	24-Jan-20	10-Feb-20	153	
C10300	Fall Arrest System (resubmit)	12	6d	0%	12	06-Aug-19	19-Aug-19	06-Aug-19	19-Aug-19	11-Feb-20	24-Feb-20	153	
C10310	Fall Arrest System (accept)	21	7d	0%	21	20-Aug-19	09-Sep-19	20-Aug-19	09-Sep-19	25-Feb-20	16-Mar-20	189	
C10320	Bridge waterproofing system (prepare & submit)	18	6d	0%	18	02-Jan-20*	22-Jan-20	02-Jan-20	22-Jan-20	30-May-20	19-Jun-20	119	
C10330	Bridge waterproofing system (review & discuss)	12	6d	0%	12	23-Jan-20	08-Feb-20	23-Jan-20	08-Feb-20	20-Jun-20	06-Jul-20	119	
C10340	Bridge waterproofing system (resubmit)	12	6d	0%	12	10-Feb-20	22-Feb-20	10-Feb-20	22-Feb-20	07-Jul-20	20-Jul-20	119	
C10350	Bridge waterproofing system (accept)	21	7d	0%	21	23-Feb-20	14-Mar-20	23-Feb-20	14-Mar-20	21-Jul-20	10-Aug-20	149	
C10360	Particulars of bridge bearings (prepare & submit)	18	6d	0%	18	01-Apr-19*	25-Apr-19	01-Apr-19	25-Apr-19	20-Sep-19	12-Oct-19	139	
C10370	Particulars of bridge bearings (review & discuss)	12	6d	0%	12	26-Apr-19	10-May-19	26-Apr-19	10-May-19	14-Oct-19	26-Oct-19	139	
C10380	Particulars of bridge bearings (resubmit)	12	6d	0%	12	11-May-19	25-May-19	11-May-19	25-May-19	28-Oct-19	09-Nov-19	139	
C10390	Particulars of bridge bearings (accept)	21	7d	0%	21	26-May-19	15-Jun-19	26-May-19	15-Jun-19	11-Nov-19	01-Dec-19	169	
C10400	Pillar box arrangement (prepare & submit)	18	6d	0%	18	02-Mar-20*	21-Mar-20	02-Mar-20	21-Mar-20	02-Jun-20	22-Jun-20	73	
C10410	Pillar box arrangement (review & discuss)	12	6d	0%	12	23-Mar-20	06-Apr-20	23-Mar-20	06-Apr-20	23-Jun-20	08-Jul-20	73	
C10420	Pillar box arrangement (resubmit)	12	6d	0%	12	07-Apr-20	23-Apr-20	07-Apr-20	23-Apr-20	09-Jul-20	22-Jul-20	73	
C10430	Pillar box arrangement (accept)	21	7d	0%	21	24-Apr-20	14-May-20	24-Apr-20	14-May-20	23-Jul-20	12-Aug-20	90	
Temporary Works (TW) Design		516			343	08-Mar-18 A	05-Aug-19	08-Jun-18	05-Aug-19	12-Jun-18	01-Sep-19	27	
C10440	TW for trench excavation (prepare & submit)	12	6d	100%	0	08-Mar-18 A	09-Apr-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10470	TW for trench excavation (accept)	21	7d	100%	0	10-Apr-18 A	20-Apr-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10480	TW for socketted H-pile test (prepare & submit)	18	6d	0%	18	28-Aug-18	18-Sep-18	28-Aug-18	18-Sep-18	08-Mar-19	28-Mar-19	156	
C10490	TW for socketted H-pile test (review & discuss)	12	6d	0%	12	18-Sep-18	04-Oct-18	18-Sep-18	04-Oct-18	29-Mar-19	12-Apr-19	156	
C10500	TW for socketted H-pile test (resubmit)	6	6d	0%	6	04-Oct-18	11-Oct-18	04-Oct-18	11-Oct-18	13-Apr-19	23-Apr-19	156	
C10510	TW for socketted H-pile test (accept)	21	7d	0%	21	11-Oct-18	01-Nov-18	11-Oct-18	01-Nov-18	24-Apr-19	14-May-19	195	
C10520	TW for construction of pile cap (prepare & submit)	18	6d	0%	18	01-Mar-19*	21-Mar-19	01-Mar-19	21-Mar-19	26-Mar-19	16-Apr-19	21	
C10530	TW for construction of pile cap (review & discuss)	12	6d	0%	12	22-Mar-19	04-Apr-19	22-Mar-19	04-Apr-19	17-Apr-19	04-May-19	21	
C10540	TW for construction of pile cap (resubmit)	6	6d	0%	6	06-Apr-19	12-Apr-19	06-Apr-19	12-Apr-19	06-May-19	11-May-19	21	
C10550	TW for construction of pile cap (accept)	21	7d	0%	21	01-May-19*	21-May-19	01-May-19	21-May-19	14-May-19	03-Jun-19	13	
C10560	TW for construction of pier/column (prepare & submit)	18	6d	0%	18	01-Apr-19*	25-Apr-19	01-Apr-19	25-Apr-19	15-Jun-19	06-Jul-19	58	
C10570	TW for construction of pier/column (review & discuss)	12	6d	0%	12	26-Apr-19	10-May-19	26-Apr-19	10-May-19	08-Jul-19	20-Jul-19	58	
C10580	TW for construction of pier/column (resubmit)	6	6d	0%	6	11-May-19	18-May-19	11-May-19	18-May-19	22-Jul-19	27-Jul-19	58	
C10590	TW for construction of pier/column (accept)	21	7d	0%	21	19-May-19	08-Jun-19	19-May-19	08-Jun-19	29-Jul-19	18-Aug-19	71	
C10600	TW for construction of bridge deck (prepare & submit)	18	6d	0%	18	02-May-19*	23-May-19	02-May-19	23-May-19	29-Jun-19	20-Jul-19	48	
C10610	TW for construction of bridge deck (review & discuss)	12	6d	0%	12	24-May-19	06-Jun-19	24-May-19	06-Jun-19	22-Jul-19	03-Aug-19	48	
C10620	TW for construction of bridge deck (resubmit)	6	6d	0%	6	08-Jun-19	14-Jun-19	08-Jun-19	14-Jun-19	05-Aug-19	10-Aug-19	48	
C10630	TW for construction of bridge deck (accept)	21	7d	0%	21	15-Jun-19	05-Jul-19	15-Jun-19	05-Jul-19	12-Aug-19	01-Sep-19	58	
C10640	TW for construction of lift shaft (prepare & submit)	18	6d	0%	18	01-Jun-19*	22-Jun-19	01-Jun-19	22-Jun-19	29-Jun-19	20-Jul-19	23	
C10650	TW for construction of lift shaft (review & discuss)	12	6d	0%	12	24-Jun-19	08-Jul-19	24-Jun-19	08-Jul-19	22-Jul-19	03-Aug-19	23	
C10660	TW for construction of lift shaft (resubmit)	6	6d	0%	6	09-Jul-19	15-Jul-19	09-Jul-19	15-Jul-19	05-Aug-19	10-Aug-19	23	
C10670	TW for construction of lift shaft (accept)	21	7d	0%	21	16-Jul-19	05-Aug-19	16-Jul-19	05-Aug-19	12-Aug-19	01-Sep-19	27	
C10680	TW for construction of staircase (prepare & submit)	18	6d	0%	18	01-Jun-19*	22-Jun-19	01-Jun-19	22-Jun-19	29-Jun-19	20-Jul-19	23	
C10690	TW for construction of staircase (review & discuss)	12	6d	0%	12	24-Jun-19	08-Jul-19	24-Jun-19	08-Jul-19	22-Jul-19	03-Aug-19	23	
C10700	TW for construction of staircase (resubmit)	6	6d	0%	6	09-Jul-19	15-Jul-19	09-Jul-19	15-Jul-19	05-Aug-19	10-Aug-19	23	
C10710	TW for construction of staircase (accept)	21	7d	0%	21	16-Jul-19	05-Aug-19	16-Jul-19	05-Aug-19	12-Aug-19	01-Sep-19	27	
Method Statements (MS)		894			774	22-Jan-18 A	20-Jul-20	08-Jun-18	20-Jul-20	12-Jun-18	28-Sep-20	70	
C10720	MS tree felling (prepare & submit)	12	6d	100%	0	22-Jan-18 A	26-Jan-18 A	08-Jun-18	08-Jun-18	22-Jun-18	22-Jun-18		
C10730	MS tree felling (accept)	21	7d	100%	0	27-Jan-18 A	07-Feb-18 A	08-Jun-18	08-Jun-18	22-Jun-18	22-Jun-18		
C10740	MS for trench excavation (prepare & submit)	12	6d	100%	0	13-Mar-18 A	09-Apr-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10770	MS for trench excavation (accept)	21	7d	100%	0	10-Apr-18 A	20-Apr-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10780	MS for Contractor's site office (prepare & submit)	6	6d	100%	0	08-Mar-18 A	12-Mar-18 A	08-Jun-18	08-Jun-18	25-Jun-18	25-Jun-18		
C10790	MS for Contractor's site office (review & discuss)	6	6d	100%	0	13-Mar-18 A	09-Apr-18 A	08-Jun-18	08-Jun-18	25-Jun-18	25-Jun-18		
C10800	MS for Contractor's site office (resubmit)	6	6d	100%	0	10-Apr-18 A	03-May-18 A	08-Jun-18	08-Jun-18	25-Jun-18	25-Jun-18		
C10810	MS for Contractor's site office (accept)	21	7d	100%	0	04-May-18 A	16-May-18 A	08-Jun-18	08-Jun-18	25-Jun-18	25-Jun-18		
C10820	MS for temporary road construction (prepare & submit)	6	6d	100%	0	08-Feb-18 A	22-Feb-18 A	08-Jun-18	08-Jun-18	04-Jul-18	04-Jul-18		
C10830	MS for temporary road construction (review & discuss)	6	6d	100%	0	23-Feb-18 A	05-Mar-18 A	08-Jun-18	08-Jun-18	04-Jul-18	04-Jul-18		
C10840	MS for temporary road construction (resubmit)	6	6d	100%	0	06-Mar-18 A	10-Apr-18 A	08-Jun-18	08-Jun-18	04-Jul-18	04-Jul-18		
C10850	MS for temporary road construction (accept)	14	7d	100%	0	11-Apr-18 A	23-May-18 A	08-Jun-18	08-Jun-18	04-Jul-18	04-Jul-18		

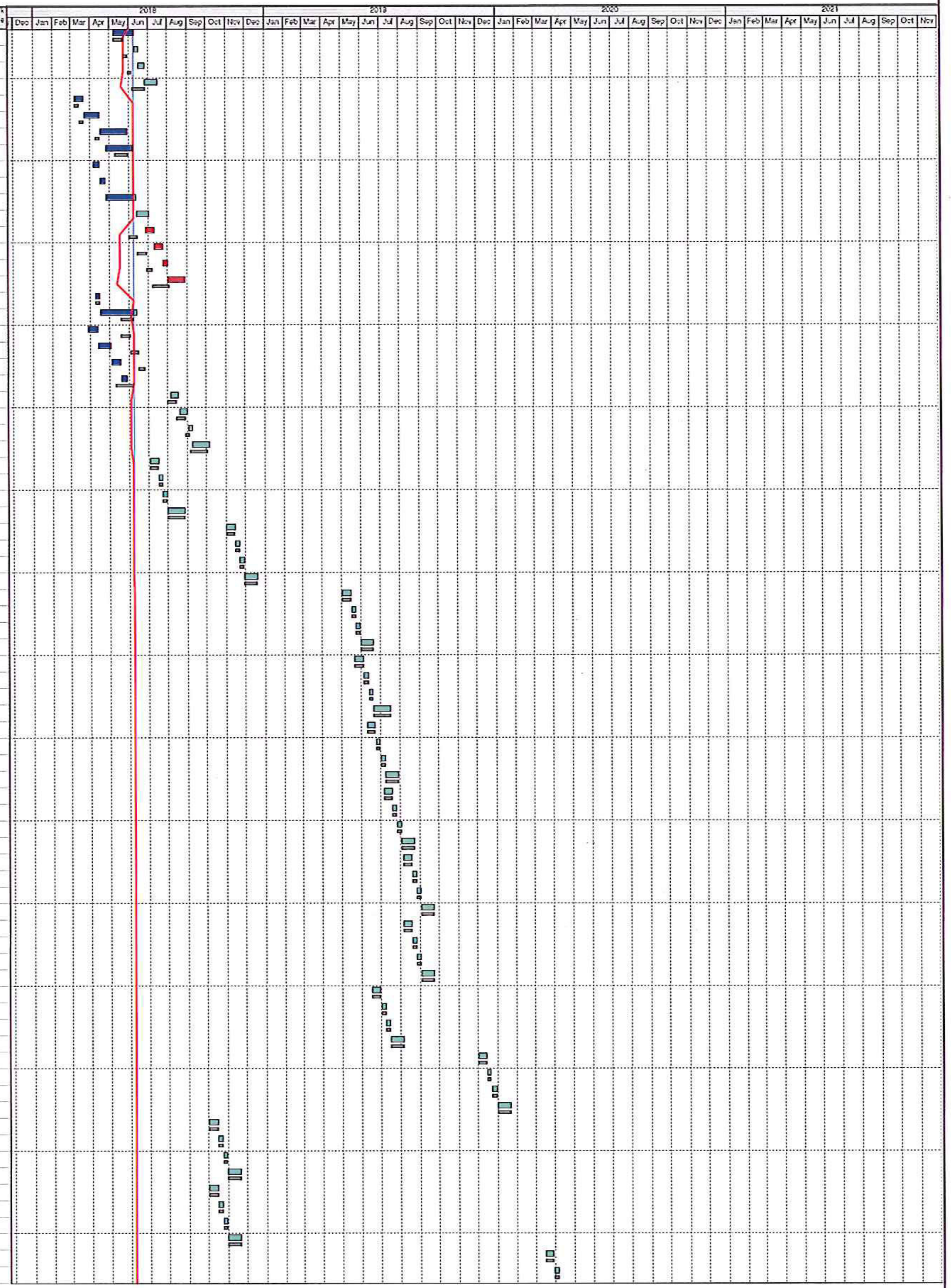


Baseline: Programme of May 2018
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel
Road P2/D4 and Associated Works
Updated Programme (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-06 (Data date 8-Jun-18)	TC	

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
C10860	MS for watermain (prepare & submit)	12	6d	90%	1	08-May-18 A	09-Jun-18	08-Jun-18	09-Jun-18	21-Jun-18	22-Jun-18	11	
C10870	MS for watermain (review & discuss)	6	6d	0%	6	09-Jun-18	16-Jun-18	09-Jun-18	16-Jun-18	23-Jun-18	29-Jun-18	11	
C10880	MS for watermain (resubmit)	6	6d	0%	6	16-Jun-18	25-Jun-18	16-Jun-18	25-Jun-18	30-Jun-18	07-Jul-18	11	
C10890	MS for watermain (accept)	21	7d	0%	21	25-Jun-18	16-Jul-18	25-Jun-18	16-Jul-18	09-Jul-18	29-Jul-18	14	
C10900	MS for tree transplanting (prepare & submit)	6	6d	100%	0	08-Mar-18 A	22-Mar-18 A	08-Jun-18	08-Jun-18	04-Jul-18	04-Jul-18		
C10910	MS for tree transplanting (review & discuss)	6	6d	100%	0	23-Mar-18 A	16-Apr-18 A	08-Jun-18	08-Jun-18	04-Jul-18	04-Jul-18		
C10920	MS for tree transplanting (resubmit)	6	6d	100%	0	17-Apr-18 A	30-May-18 A	08-Jun-18	08-Jun-18	04-Jul-18	04-Jul-18		
C10930	MS for tree transplanting (accept)	21	7d	100%	0	26-Apr-18 A	06-Jun-18 A	08-Jun-18	08-Jun-18	04-Jul-18	04-Jul-18		
C10931	MS for tree protection (prepare & submit)	6	6d	100%	0	06-Apr-18 A	16-Apr-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10932	MS for tree protection (review & discuss)	6	6d	100%	0	17-Apr-18 A	25-Apr-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C10933	MS for tree protection (resubmit)	6	6d	50%	3	26-Apr-18 A	11-Jun-18	08-Jun-18	11-Jun-18	12-Jun-18	14-Jun-18	3	
C10934	MS for tree protection (accept)	21	7d	0%	21	12-Jun-18	02-Jul-18	12-Jun-18	02-Jul-18	15-Jun-18	05-Jul-18	3	
C10940	MS for instrumentation (prepare & submit)	12	6d	0%	12	26-Jun-18	11-Jul-18	26-Jun-18	11-Jul-18	26-Jun-18	11-Jul-18	0	
C10950	MS for instrumentation (review & discuss)	12	6d	0%	12	11-Jul-18	25-Jul-18	11-Jul-18	25-Jul-18	11-Jul-18	25-Jul-18	0	
C10960	MS for instrumentation (resubmit)	6	6d	0%	6	25-Jul-18	01-Aug-18	25-Jul-18	01-Aug-18	25-Jul-18	01-Aug-18	0	
C10970	MS for instrumentation (accept by PM & MTRCL)	28	7d	0%	28	01-Aug-18	29-Aug-18	01-Aug-18	29-Aug-18	01-Aug-18	29-Aug-18	0	
C10980	MS for drainage (prepare & submit)	6	6d	100%	0	09-Apr-18 A	16-Apr-18 A	08-Jun-18	08-Jun-18	21-Jun-18	21-Jun-18		
C11010	MS for drainage (accept)	21	7d	80%	4	17-Apr-18 A	12-Jun-18	08-Jun-18	12-Jun-18	21-Jun-18	25-Jun-18	14	
C11020	MS for ground investigation (prepare & submit)	12	6d	100%	0	29-Mar-18 A	13-Apr-18 A	08-Jun-18	08-Jun-18	03-Sep-18	03-Sep-18		
C11030	MS for ground investigation (review & discuss)	12	6d	100%	0	14-Apr-18 A	04-May-18 A	08-Jun-18	08-Jun-18	03-Sep-18	03-Sep-18		
C11040	MS for ground investigation (resubmit)	6	6d	100%	0	05-May-18 A	19-May-18 A	08-Jun-18	08-Jun-18	03-Sep-18	03-Sep-18		
C11050	MS for ground investigation (accept by PM & MTRCL)	28	7d	100%	0	20-May-18 A	29-May-18 A	08-Jun-18	08-Jun-18	03-Sep-18	03-Sep-18		
C11060	MS for bored pile (prepare & submit)	12	6d	0%	12	06-Aug-18*	18-Aug-18	06-Aug-18	18-Aug-18	16-Nov-18	30-Nov-18	85	
C11070	MS for bored pile (review & discuss)	12	6d	0%	12	20-Aug-18	01-Sep-18	20-Aug-18	01-Sep-18	30-Nov-18	14-Dec-18	85	
C11080	MS for bored pile (resubmit)	6	6d	0%	6	03-Sep-18	08-Sep-18	03-Sep-18	08-Sep-18	14-Dec-18	21-Dec-18	85	
C11090	MS for bored pile (accept by PM & MTRCL)	28	7d	0%	28	09-Sep-18	06-Oct-18	09-Sep-18	06-Oct-18	21-Dec-18	18-Jan-19	103	
C11100	MS for construction of socketted H-pile (prepare & submit)	12	6d	0%	12	03-Jul-18*	17-Jul-18	03-Jul-18	17-Jul-18	17-Aug-18	31-Aug-18	39	
C11110	MS for construction of socketted H-pile (review & discuss)	6	6d	0%	6	17-Jul-18	24-Jul-18	17-Jul-18	24-Jul-18	31-Aug-18	07-Sep-18	39	
C11120	MS for construction of socketted H-pile (resubmit)	6	6d	0%	6	24-Jul-18	31-Jul-18	24-Jul-18	31-Jul-18	07-Sep-18	14-Sep-18	39	
C11130	MS for construction of socketted H-pile (accept by PM & MTRCL)	28	7d	0%	28	31-Jul-18	28-Aug-18	31-Jul-18	28-Aug-18	14-Sep-18	12-Oct-18	45	
C11140	MS for socketted H-pile testing (prepare & submit)	12	6d	0%	12	01-Nov-18	15-Nov-18	01-Nov-18	15-Nov-18	15-May-19	28-May-19	155	
C11150	MS for socketted H-pile testing (review & discuss)	6	6d	0%	6	15-Nov-18	22-Nov-18	15-Nov-18	22-Nov-18	29-May-19	04-Jun-19	155	
C11160	MS for socketted H-pile testing (resubmit)	6	6d	0%	6	22-Nov-18	29-Nov-18	22-Nov-18	29-Nov-18	05-Jun-19	12-Jun-19	155	
C11170	MS for socketted H-pile testing (accept)	21	7d	0%	21	29-Nov-18	20-Dec-18	29-Nov-18	20-Dec-18	13-Jun-19	03-Jul-19	196	
C11180	MS for bored pile testing (prepare & submit)	12	6d	0%	12	02-May-19*	16-May-19	02-May-19	16-May-19	16-Jul-19	29-Jul-19	61	
C11190	MS for bored pile testing (review & discuss)	6	6d	0%	6	17-May-19	23-May-19	17-May-19	23-May-19	30-Jul-19	05-Aug-19	61	
C11200	MS for bored pile testing (resubmit)	6	6d	0%	6	24-May-19	30-May-19	24-May-19	30-May-19	06-Aug-19	12-Aug-19	61	
C11210	MS for bored pile testing (accept)	21	7d	0%	21	31-May-19	20-Jun-19	31-May-19	20-Jun-19	13-Aug-19	02-Sep-19	74	
C11220	MS for construction of pile cap (prepare & submit)	12	6d	0%	12	22-May-19	04-Jun-19	22-May-19	04-Jun-19	04-Jun-19	18-Jun-19	11	
C11230	MS for construction of pile cap (review & discuss)	6	6d	0%	6	05-Jun-19	12-Jun-19	05-Jun-19	12-Jun-19	19-Jun-19	25-Jun-19	11	
C11240	MS for construction of pile cap (resubmit)	6	6d	0%	6	13-Jun-19	19-Jun-19	13-Jun-19	19-Jun-19	26-Jun-19	03-Jul-19	11	
C11250	MS for construction of pile cap (accept by PM & MTRCL)	28	7d	0%	28	20-Jun-19	17-Jul-19	20-Jun-19	17-Jul-19	04-Jul-19	31-Jul-19	14	
C11260	MS for construction of pier/column (prepare & submit)	12	6d	0%	12	10-Jun-19	22-Jun-19	10-Jun-19	22-Jun-19	19-Aug-19	31-Aug-19	59	
C11270	MS for construction of pier/column (review & discuss)	6	6d	0%	6	24-Jun-19	29-Jun-19	24-Jun-19	29-Jun-19	10-Sep-19	17-Sep-19	66	
C11280	MS for construction of pier/column (resubmit)	6	6d	0%	6	02-Jul-19	08-Jul-19	02-Jul-19	08-Jul-19	18-Sep-19	24-Sep-19	66	
C11290	MS for construction of pier/column (accept)	21	7d	0%	21	09-Jul-19	29-Jul-19	09-Jul-19	29-Jul-19	25-Sep-19	15-Oct-19	78	
C11300	MS for construction of bridge deck (prepare & submit)	12	6d	0%	12	06-Jul-19	19-Jul-19	06-Jul-19	19-Jul-19	02-Sep-19	16-Sep-19	49	
C11310	MS for construction of bridge deck (review & discuss)	6	6d	0%	6	20-Jul-19	26-Jul-19	20-Jul-19	26-Jul-19	07-Dec-19	13-Dec-19	117	
C11320	MS for construction of bridge deck (resubmit)	6	6d	0%	6	27-Jul-19	02-Aug-19	27-Jul-19	02-Aug-19	14-Dec-19	20-Dec-19	117	
C11330	MS for construction of bridge deck (accept)	21	7d	0%	21	03-Aug-19	23-Aug-19	03-Aug-19	23-Aug-19	21-Dec-19	10-Jan-20	140	
C11340	MS for construction of lift shaft (prepare & submit)	12	6d	0%	12	06-Aug-19	19-Aug-19	06-Aug-19	19-Aug-19	02-Sep-19	16-Sep-19	23	
C11350	MS for construction of lift shaft (review & discuss)	6	6d	0%	6	20-Aug-19	26-Aug-19	20-Aug-19	26-Aug-19	25-Nov-19	30-Nov-19	80	
C11360	MS for construction of lift shaft (resubmit)	6	6d	0%	6	27-Aug-19	02-Sep-19	27-Aug-19	02-Sep-19	02-Dec-19	07-Dec-19	80	
C11370	MS for construction of lift shaft (accept)	21	7d	0%	21	03-Sep-19	23-Sep-19	03-Sep-19	23-Sep-19	09-Dec-19	29-Dec-19	97	
C11380	MS for construction of staircase (prepare & submit)	12	6d	0%	12	06-Aug-19	19-Aug-19	06-Aug-19	19-Aug-19	02-Sep-19	16-Sep-19	23	
C11390	MS for construction of staircase (review & discuss)	6	6d	0%	6	20-Aug-19	26-Aug-19	20-Aug-19	26-Aug-19	17-Sep-19	23-Sep-19	23	
C11400	MS for construction of staircase (resubmit)	6	6d	0%	6	27-Aug-19	02-Sep-19	27-Aug-19	02-Sep-19	24-Sep-19	30-Sep-19	23	
C11410	MS for construction of staircase (accept)	21	7d	0%	21	03-Sep-19	23-Sep-19	03-Sep-19	23-Sep-19	02-Oct-19	22-Oct-19	29	
C11420	MS for installation of bearing and movement joints (prepare & submit)	12	6d	0%	12	17-Jun-19	29-Jun-19	17-Jun-19	29-Jun-19	02-Dec-19	14-Dec-19	140	
C11430	MS for installation of bearing and movement joints (review & discuss)	6	6d	0%	6	02-Jul-19	08-Jul-19	02-Jul-19	08-Jul-19	16-Dec-19	21-Dec-19	140	
C11440	MS for installation of bearing and movement joints (resubmit)	6	6d	0%	6	09-Jul-19	15-Jul-19	09-Jul-19	15-Jul-19	23-Dec-19	31-Dec-19	140	
C11450	MS for installation of bearing and movement joints (accept)	21	7d	0%	21	16-Jul-19	05-Aug-19	16-Jul-19	05-Aug-19	01-Jan-20	21-Jan-20	169	
C11460	MS for prestressing (prepare & submit)	12	6d	0%	12	02-Dec-19*	14-Dec-19	02-Dec-19	14-Dec-19	17-Feb-20	29-Feb-20	60	
C11470	MS for prestressing (review & discuss)	6	6d	0%	6	16-Dec-19	21-Dec-19	16-Dec-19	21-Dec-19	02-Mar-20	07-Mar-20	60	
C11480	MS for prestressing (resubmit)	6	6d	0%	6	23-Dec-19	31-Dec-19	23-Dec-19	31-Dec-19	09-Mar-20	14-Mar-20	60	
C11490	MS for prestressing (accept)	21	7d	0%	21	01-Jan-20	21-Jan-20	01-Jan-20	21-Jan-20	16-Mar-20	05-Apr-20	75	
C11500	MS for flexible surfacing (prepare & submit)	12	6d	0%	12	02-Oct-18*	15-Oct-18	02-Oct-18	15-Oct-18	21-Dec-18	07-Jan-19	68	
C11510	MS for flexible surfacing (review & discuss)	6	6d	0%	6	16-Oct-18	23-Oct-18	16-Oct-18	23-Oct-18	08-Jan-19	14-Jan-19	68	
C11520	MS for flexible surfacing (resubmit)	6	6d	0%	6	24-Oct-18	30-Oct-18	24-Oct-18	30-Oct-18	15-Jan-19	21-Jan-19	68	
C11530	MS for flexible surfacing (accept)	21	7d	0%	21	31-Oct-18	20-Nov-18	31-Oct-18	20-Nov-18	22-Jan-19	11-Feb-19	83	
C11540	MS for fences, railing, parapets, crash gate and untensioned beam barrie	12	6d	0%	12	02-Oct-18*	15-Oct-18	02-Oct-18	15-Oct-18	21-Dec-18	07-Jan-19	68	
C11550	MS for fences, railing, parapets, crash gate and untensioned beam barrie	6	6d	0%	6	16-Oct-18	23-Oct-18	16-Oct-18	23-Oct-18	08-Jan-19	14-Jan-19	68	
C11560	MS for fences, railing, parapets, crash gate and untensioned beam barrie	6	6d	0%	6	24-Oct-18	30-Oct-18	24-Oct-18	30-Oct-18	15-Jan-19	21-Jan-19	68	
C11570	MS for fences, railing, parapets, crash gate and untensioned beam barrie	21	7d	0%	21	31-Oct-18	20-Nov-18	31-Oct-18	20-Nov-18	22-Jan-19	11-Feb-19	83	
C11580	MS for footbridge waterproofing (prepare & submit)	12	6d	0%	12	16-Mar-20	28-Mar-20	16-Mar-20	28-Mar-20	11-Aug-20	24-Aug-20	119	
C11590	MS for footbridge waterproofing (review & discuss)	6	6d	0%	6	30-Mar-20	06-Apr-20	30-Mar-20	06-Apr-20	25-Aug-20	31-Aug-20	119	



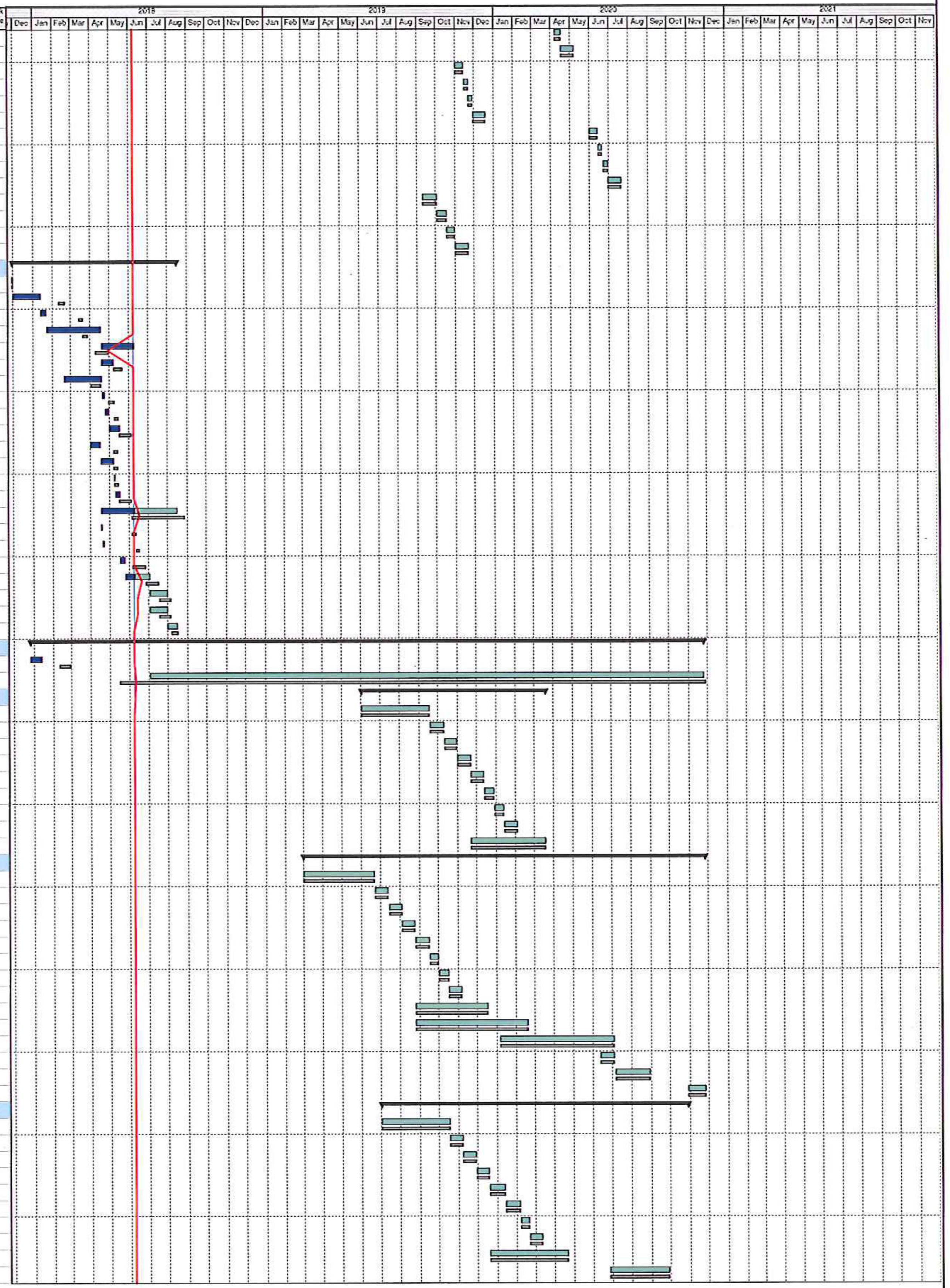
Baseline: Programme of May 2018 ◆ ◆ Milestone
Actual Work — Summary
Remaining Work
Critical Remaining Work

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel
Road P2/D4 and Associated Works
Updated Programme (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-08 (Data date 8-Jun-18)	TC	

NE/2017/02 - Updated Programme (Jun 2018)

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
C11600	MS for footbridge waterproofing (resubmit)	6	6d	0%	6	07-Apr-20	16-Apr-20	07-Apr-20	16-Apr-20	01-Sep-20	07-Sep-20	119	
C11610	MS for footbridge waterproofing (accept)	21	7d	0%	21	17-Apr-20	07-May-20	17-Apr-20	07-May-20	08-Sep-20	28-Sep-20	144	
C11620	MS for footbridge steelworks (steel arch & lift beams) (prepare & submit)	12	6d	0%	12	01-Nov-19*	14-Nov-19	01-Nov-19	14-Nov-19	03-Jan-20	16-Jan-20	51	
C11630	MS for footbridge steelworks (steel arch & lift beams) (review & discuss)	6	6d	0%	6	15-Nov-19	21-Nov-19	15-Nov-19	21-Nov-19	17-Jan-20	23-Jan-20	51	
C11640	MS for footbridge steelworks (steel arch & lift beams) (resubmit)	6	6d	0%	6	22-Nov-19	28-Nov-19	22-Nov-19	28-Nov-19	24-Jan-20	03-Feb-20	51	
C11650	MS for footbridge steelworks (steel arch & lift beams) (accept)	21	7d	0%	21	29-Nov-19	19-Dec-19	29-Nov-19	19-Dec-19	04-Feb-20	24-Feb-20	67	
C11660	MS for footbridge finishing (prepare & submit)	12	6d	0%	12	01-Jun-20*	13-Jun-20	01-Jun-20	13-Jun-20	11-Aug-20	24-Aug-20	59	
C11670	MS for footbridge finishing (review & discuss)	6	6d	0%	6	15-Jun-20	20-Jun-20	15-Jun-20	20-Jun-20	25-Aug-20	31-Aug-20	59	
C11680	MS for footbridge finishing (resubmit)	6	6d	0%	6	22-Jun-20	29-Jun-20	22-Jun-20	29-Jun-20	01-Sep-20	07-Sep-20	59	
C11690	MS for footbridge finishing (accept)	21	7d	0%	21	30-Jun-20	20-Jul-20	30-Jun-20	20-Jul-20	08-Sep-20	28-Sep-20	70	
C11700	MS for fall arrest system (prepare & submit)	18	6d	0%	18	10-Sep-19	02-Oct-19	10-Sep-19	02-Oct-19	17-Mar-20	07-Apr-20	153	
C11710	MS for fall arrest system (review & discuss)	12	6d	0%	12	03-Oct-19	17-Oct-19	03-Oct-19	17-Oct-19	08-Apr-20	24-Apr-20	153	
C11720	MS for fall arrest system (resubmit)	12	6d	0%	12	18-Oct-19	31-Oct-19	18-Oct-19	31-Oct-19	25-Apr-20	11-May-20	153	
C11730	MS for fall arrest system (accept)	21	7d	0%	21	01-Nov-19	21-Nov-19	01-Nov-19	21-Nov-19	12-May-20	01-Jun-20	193	
Community Liaison Centre (CLC)		271			70	30-Nov-17 A	16-Aug-18	08-Jun-18	16-Aug-18	19-Jun-18	27-Aug-18	11	
C11740	PM's written instruction	1	6d	100%	0	30-Nov-17 A	30-Nov-17 A	08-Jun-18	08-Jun-18	19-Jun-18	19-Jun-18		
C11750	Proposed layout (prepare & submit)	6	6d	100%	0	01-Dec-17 A	13-Jan-18 A	08-Jun-18	08-Jun-18	19-Jun-18	19-Jun-18		
C11760	Proposed layout (review & discuss)	6	6d	100%	0	14-Jan-18 A	22-Jan-18 A	08-Jun-18	08-Jun-18	19-Jun-18	19-Jun-18		
C11770	Proposed layout (resubmit)	6	6d	100%	0	23-Jan-18 A	18-Apr-18 A	08-Jun-18	08-Jun-18	19-Jun-18	19-Jun-18		
C11780	Proposed layout (accept)	21	7d	95%	1	19-Apr-18 A	09-Jun-18	08-Jun-18	09-Jun-18	19-Jun-18	20-Jun-18	12	
C11785	Design of CLC foundation (submit & accept)	12	6d	100%	0	19-Apr-18 A	08-May-18 A	09-Jun-18	09-Jun-18	21-Jun-18	21-Jun-18		
C11790	Design of CLC (prepare & submit)	12	6d	100%	0	19-Feb-18 A	19-Apr-18 A	09-Jun-18	09-Jun-18	20-Jun-18	20-Jun-18		
C11800	Design of CLC (review & discuss)	6	6d	100%	0	20-Apr-18 A	24-Apr-18 A	09-Jun-18	09-Jun-18	20-Jun-18	20-Jun-18		
C11810	Design of CLC (resubmit)	6	6d	100%	0	25-Apr-18 A	30-Apr-18 A	09-Jun-18	09-Jun-18	20-Jun-18	20-Jun-18		
C11820	Design of CLC (accept)	21	7d	100%	0	01-May-18 A	18-May-18 A	09-Jun-18	09-Jun-18	20-Jun-18	20-Jun-18		
C11821	MS for CLC (prepare & submit)	6	6d	100%	0	02-Apr-18 A	17-Apr-18 A	08-Jun-18	08-Jun-18	21-Jun-18	21-Jun-18		
C11822	MS for CLC (review & discuss)	6	6d	100%	0	18-Apr-18 A	08-May-18 A	08-Jun-18	08-Jun-18	21-Jun-18	21-Jun-18		
C11823	MS for CLC (resubmit)	6	6d	100%	0	09-May-18 A	10-May-18 A	08-Jun-18	08-Jun-18	21-Jun-18	21-Jun-18		
C11824	MS for CLC (accept)	21	7d	100%	0	11-May-18 A	18-May-18 A	08-Jun-18	08-Jun-18	21-Jun-18	21-Jun-18		
C11830	Construction of CLC	69	6d	18%	57	18-Apr-18 A	16-Aug-18	09-Jun-18	16-Aug-18	20-Jun-18	27-Aug-18	9	
C11830-1	Site formation	5	6d	100%	0	18-Apr-18 A	19-Apr-18 A	09-Jun-18	09-Jun-18	21-Jun-18	21-Jun-18		
C11830-2	Concrete slab	5	6d	100%	0	20-Apr-18 A	23-Apr-18 A	09-Jun-18	09-Jun-18	21-Jun-18	21-Jun-18		
C11830-3	Steel frame	17	6d	100%	0	18-May-18 A	25-May-18 A	09-Jun-18	09-Jun-18	21-Jun-18	21-Jun-18		
C11830-4	Wall, ceiling, doors, windows	24	6d	25%	18	26-May-18 A	03-Jul-18	09-Jun-18	03-Jul-18	21-Jun-18	13-Jul-18	9	
C11830-5	Furnishing	24	6d	0%	24	03-Jul-18	31-Jul-18	03-Jul-18	31-Jul-18	13-Jul-18	10-Aug-18	9	
C11830-6	E&M	24	6d	0%	24	03-Jul-18	31-Jul-18	03-Jul-18	31-Jul-18	13-Jul-18	10-Aug-18	9	
C11830-7	T&C of CLC	14	6d	0%	14	31-Jul-18	16-Aug-18	31-Jul-18	16-Aug-18	10-Aug-18	27-Aug-18	9	
Preservation and Protection of Existing Trees		826	6d		715	27-Dec-17 A	25-Nov-20	08-Jun-18	25-Nov-20	12-Jun-18	28-Nov-20	3	
C11840	Tree survey and tree report	12	6d	100%	0	27-Dec-17 A	13-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C11850	Preservation and protection of existing trees	715	6d	0%	715	03-Jul-18	25-Nov-20	03-Jul-18	25-Nov-20	06-Jul-18	28-Nov-20	3	
Footbridge Canopy		293			293	01-Jun-19	19-Mar-20	01-Jun-19	19-Mar-20	13-Aug-19	01-Jun-20	74	
C11860	Design of steel canopy & cladding of arch (prepare & submit)	90	6d	0%	90	01-Jun-19*	17-Sep-19	01-Jun-19	17-Sep-19	13-Aug-19	28-Nov-19	60	
C11870	Design of steel canopy & cladding of arch (review & discuss)	18	6d	0%	18	18-Sep-19	10-Oct-19	18-Sep-19	10-Oct-19	29-Nov-19	19-Dec-19	60	
C11880	Design of steel canopy & cladding of arch (resubmit)	18	6d	0%	18	11-Oct-19	31-Oct-19	11-Oct-19	31-Oct-19	20-Dec-19	13-Jan-20	60	
C11890	Design of steel canopy & cladding of arch (accept)	21	7d	0%	21	01-Nov-19	21-Nov-19	01-Nov-19	21-Nov-19	14-Jan-20	03-Feb-20	74	
C11900	MS for steel canopy & cladding of arch (prepare & submit)	18	6d	0%	18	22-Nov-19	12-Dec-19	22-Nov-19	12-Dec-19	17-Mar-20	07-Apr-20	93	
C11910	MS for steel canopy & cladding of arch (review & discuss)	12	6d	0%	12	13-Dec-19	28-Dec-19	13-Dec-19	28-Dec-19	08-Apr-20	24-Apr-20	93	
C11920	MS for steel canopy & cladding of arch (resubmit)	12	6d	0%	12	30-Dec-19	13-Jan-20	30-Dec-19	13-Jan-20	25-Apr-20	11-May-20	93	
C11930	MS for steel canopy & cladding of arch (accept)	21	7d	0%	21	14-Jan-20	03-Feb-20	14-Jan-20	03-Feb-20	12-May-20	01-Jun-20	119	
C11940	Material order, fabrication and delivery of footbridge canopy & cladding of	96	6d	0%	96	22-Nov-19	19-Mar-20	22-Nov-19	19-Mar-20	04-Feb-20	01-Jun-20	57	
Lift System		636			636	01-Mar-19	26-Nov-20	01-Mar-19	26-Nov-20	22-May-19	28-Nov-20	3	
C11950	Design of lift system (prepare & submit)	90	6d	0%	90	01-Mar-19*	21-Jun-19	01-Mar-19	21-Jun-19	22-May-19	05-Sep-19	64	
C11960	Design of lift system (review & discuss)	18	6d	0%	18	22-Jun-19	13-Jul-19	22-Jun-19	13-Jul-19	06-Sep-19	27-Sep-19	64	
C11970	Design of lift system (resubmit)	18	6d	0%	18	15-Jul-19	03-Aug-19	15-Jul-19	03-Aug-19	28-Sep-19	21-Oct-19	64	
C11980	Design of lift system (accept)	21	7d	0%	21	04-Aug-19	24-Aug-19	04-Aug-19	24-Aug-19	22-Oct-19	11-Nov-19	79	
C11990	MS for lift installation (prepare & submit)	18	6d	0%	18	26-Aug-19	16-Sep-19	26-Aug-19	16-Sep-19	24-Dec-19	16-Jan-20	100	
C12000	MS for lift installation (review & discuss)	12	6d	0%	12	17-Sep-19	30-Sep-19	17-Sep-19	30-Sep-19	17-Jan-20	03-Feb-20	100	
C12010	MS for lift installation (resubmit)	12	6d	0%	12	02-Oct-19	16-Oct-19	02-Oct-19	16-Oct-19	04-Feb-20	17-Feb-20	100	
C12020	MS for lift installation (accept)	21	7d	0%	21	17-Oct-19	06-Nov-19	17-Oct-19	06-Nov-19	18-Feb-20	09-Mar-20	124	
C12030	Material order and delivery of lift system	96	6d	0%	96	26-Aug-19	18-Dec-19	26-Aug-19	18-Dec-19	12-Nov-19	09-Mar-20	64	
C12040	Application for electricity supply	144	6d	0%	144	26-Aug-19	19-Feb-20	26-Aug-19	19-Feb-20	10-Mar-20	02-Sep-20	160	
C12050	Install lift system	144	6d	0%	144	07-Jan-20	04-Jul-20	07-Jan-20	04-Jul-20	10-Mar-20	02-Sep-20	51	
C12060	Pillar box construction	18	6d	0%	18	12-Jun-20	04-Jul-20	12-Jun-20	04-Jul-20	13-Aug-20	02-Sep-20	51	
C12070	Testing and commissioning of lift system	48	6d	0%	48	06-Jul-20	29-Aug-20	06-Jul-20	29-Aug-20	03-Sep-20	31-Oct-20	51	
C12080	EMSD inspection	24	6d	0%	24	29-Oct-20	26-Nov-20	29-Oct-20	26-Nov-20	02-Nov-20	28-Nov-20	3	
Electrical System for Footbridge		485			485	02-Jul-19	29-Oct-20	02-Jul-19	29-Oct-20	06-Sep-19	31-Oct-20	3	
C12090	Design of electrical system for footbridge (prepare & submit)	90	6d	0%	90	02-Jul-19*	17-Oct-19	02-Jul-19	17-Oct-19	06-Sep-19	23-Dec-19	57	
C12100	Design of electrical system for footbridge (review & discuss)	18	6d	0%	18	18-Oct-19	07-Nov-19	18-Oct-19	07-Nov-19	24-Dec-19	16-Jan-20	57	
C12110	Design of electrical system for footbridge (resubmit)	18	6d	0%	18	08-Nov-19	28-Nov-19	08-Nov-19	28-Nov-19	17-Jan-20	10-Feb-20	57	
C12120	Design of electrical system for footbridge (accept)	21	7d	0%	21	29-Nov-19	19-Dec-19	29-Nov-19	19-Dec-19	11-Feb-20	02-Mar-20	74	
C12130	MS for electrical system (prepare & submit)	18	6d	0%	18	20-Dec-19	13-Jan-20	20-Dec-19	13-Jan-20	14-Apr-20	06-May-20	89	
C12140	MS for electrical system (review & discuss)	18	6d	0%	18	14-Jan-20	06-Feb-20	14-Jan-20	06-Feb-20	07-May-20	27-May-20	89	
C12150	MS for electrical system (resubmit)	12	6d	0%	12	07-Feb-20	20-Feb-20	07-Feb-20	20-Feb-20	28-May-20	10-Jun-20	89	
C12160	MS for electrical system (accept)	21	7d	0%	21	21-Feb-20	12-Mar-20	21-Feb-20	12-Mar-20	11-Jun-20	01-Jul-20	111	
C12170	Material order and delivery of footbridge electrical system	96	6d	0%	96	20-Dec-19	21-Apr-20	20-Dec-19	21-Apr-20	03-Mar-20	30-Jun-20	57	
C12180	Install electrical system for footbridge (incl. footbridge lighting system)	78	6d	0%	78	27-Jun-20	28-Sep-20	27-Jun-20	28-Sep-20	02-Jul-20	30-Sep-20	3	

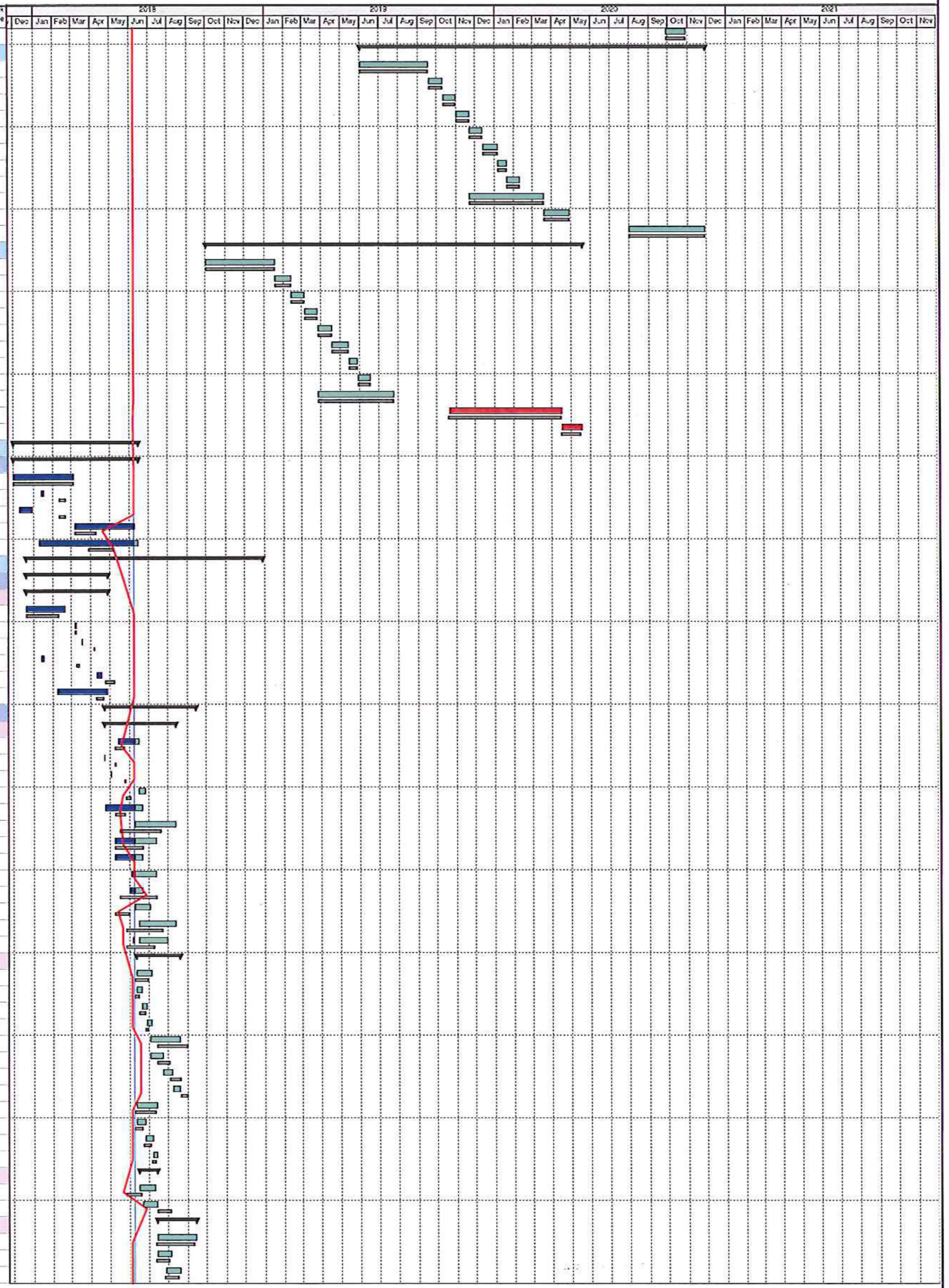


Baseline: Programme of May 2018
Milestone
Actual Work
Summary
Remaining Work
Critical Remaining Work

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel
Road P2/D4 and Associated Works
Updated Programme (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-06 (Data date 8-Jun-18)	TC	

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
C12190	Testing and commissioning of electrical system for footbridge	24	6d	0%	24	28-Sep-20	29-Oct-20	28-Sep-20	29-Oct-20	03-Oct-20	31-Oct-20	3	
Glazing System		546			546	01-Jun-19	28-Nov-20	01-Jun-19	28-Nov-20	30-Aug-19	28-Nov-20	1	
C12200	Design of glazing system (prepare & submit)	90	6d	0%	90	01-Jun-19*	17-Sep-19	01-Jun-19	17-Sep-19	30-Aug-19	16-Dec-19	75	
C12210	Design of glazing system (review & discuss)	18	6d	0%	18	18-Sep-19	10-Oct-19	18-Sep-19	10-Oct-19	17-Dec-19	09-Jan-20	75	
C12220	Design of glazing system (resubmit)	18	6d	0%	18	11-Oct-19	31-Oct-19	11-Oct-19	31-Oct-19	10-Jan-20	03-Feb-20	75	
C12230	Design of glazing system (accept)	21	7d	0%	21	01-Nov-19	21-Nov-19	01-Nov-19	21-Nov-19	04-Feb-20	24-Feb-20	95	
C12240	MS for glazing system (prepare & submit)	18	6d	0%	18	22-Nov-19	12-Dec-19	22-Nov-19	12-Dec-19	31-Mar-20	24-Apr-20	105	
C12250	MS for glazing system (review & discuss)	18	6d	0%	18	13-Dec-19	08-Jan-20	13-Dec-19	08-Jan-20	25-Apr-20	18-May-20	105	
C12260	MS for glazing system (resubmit)	12	6d	0%	12	07-Jan-20	20-Jan-20	07-Jan-20	20-Jan-20	19-May-20	01-Jun-20	105	
C12270	MS for glazing system (accept)	21	7d	0%	21	21-Jan-20	10-Feb-20	21-Jan-20	10-Feb-20	02-Jun-20	22-Jun-20	133	
C12280	Material order and delivery of glazing system	96	6d	0%	96	22-Nov-19	19-Mar-20	22-Nov-19	19-Mar-20	25-Feb-20	22-Jun-20	75	
C12290	Install glazing system (lift)	30	6d	0%	30	20-Mar-20	28-Apr-20	20-Mar-20	28-Apr-20	23-Jun-20	29-Jul-20	75	
C12300	Install glazing system (canopy)	100	6d	0%	100	31-Jul-20	28-Nov-20	31-Jul-20	28-Nov-20	01-Aug-20	28-Nov-20	1	
Road Lighting System		594			594	02-Oct-18	18-May-20	02-Oct-18	18-May-20	28-Dec-18	18-May-20	0	
C12310	Design of road lighting system (prepare & submit)	90	6d	0%	90	02-Oct-18*	18-Jan-19	02-Oct-18	18-Jan-19	28-Dec-18	18-Apr-19	72	
C12320	Design of road lighting system (review & discuss)	18	6d	0%	18	19-Jan-19	12-Feb-19	19-Jan-19	12-Feb-19	18-Apr-19	15-May-19	72	
C12330	Design of road lighting system (resubmit)	18	6d	0%	18	13-Feb-19	05-Mar-19	13-Feb-19	05-Mar-19	15-May-19	05-Jun-19	72	
C12340	Design of road lighting system (accept)	21	7d	0%	21	06-Mar-19	26-Mar-19	06-Mar-19	26-Mar-19	05-Jun-19	26-Jun-19	91	
C12350	MS for road lighting system (prepare & submit)	18	6d	0%	18	27-Mar-19	17-Apr-19	27-Mar-19	17-Apr-19	03-Aug-19	24-Aug-19	103	
C12360	MS for road lighting system (review & discuss)	18	6d	0%	18	18-Apr-19	14-May-19	18-Apr-19	14-May-19	24-Aug-19	16-Sep-19	103	
C12370	MS for road lighting system (resubmit)	12	6d	0%	12	15-May-19	28-May-19	15-May-19	28-May-19	16-Sep-19	30-Sep-19	103	
C12380	MS for road lighting system (accept)	21	7d	0%	21	29-May-19	18-Jun-19	29-May-19	18-Jun-19	30-Sep-19	21-Oct-19	124	
C12390	Material order and delivery of road lighting system	96	6d	0%	96	27-Mar-19	25-Jul-19	27-Mar-19	25-Jul-19	26-Jun-19	21-Oct-19	71	
C12400	Install road lighting system	144	6d	0%	144	21-Oct-19	17-Apr-20	21-Oct-19	17-Apr-20	21-Oct-19	17-Apr-20	0	
C12410	Testing and commissioning of road lighting system	24	6d	0%	24	17-Apr-20	18-May-20	17-Apr-20	18-May-20	17-Apr-20	18-May-20	0	
Stage 0 Works		124	6d		6	01-Dec-17 A	14-Jun-18	08-Jun-18	14-Jun-18	08-Jun-18	30-Jun-18	13	
Preliminary Works		124	6d		6	01-Dec-17 A	14-Jun-18	08-Jun-18	14-Jun-18	08-Jun-18	30-Jun-18	13	
C12420	Application of XP	75	6d	100%	0	01-Dec-17 A	05-Mar-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C12430	Utilities detection (Road P2 south of interchange)	6	6d	100%	0	13-Jan-18 A	18-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C12440	Initial site survey	6	6d	100%	0	11-Dec-17 A	30-Dec-17 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C12450	Pre-construction condition survey and manhole survey	24	6d	95%	1	08-Mar-18 A	09-Jun-18	08-Jun-18	09-Jun-18	08-Jun-18	09-Jun-18	1	
C12460	Contractor's site office	30	6d	80%	6	10-Jan-18 A	14-Jun-18*	08-Jun-18	14-Jun-18	25-Jun-18	30-Jun-18	13	
Stage 1 Works		374			204	20-Dec-17 A	28-Dec-18	08-Jun-18	28-Dec-18	12-Jun-18	12-Jul-19	196	
TTA Stage 1A		109	6d		0	20-Dec-17 A	28-Apr-18 A	08-Jun-18	09-Jun-18	12-Jun-18	04-Jul-18		
TTA		109	6d		0	20-Dec-17 A	28-Apr-18 A	08-Jun-18	09-Jun-18	12-Jun-18	04-Jul-18		
C12470	Design and acceptance of TTA Stage 1A, 1B-1 and 1B-2	42	6d	100%	0	20-Dec-17 A	20-Feb-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C12480	Implementation of TTA Stage 1A (trial pits)	2	6d	100%	0	08-Mar-18 A	09-Mar-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		1
C12490	Implementation of TTA Stage 1A (roundabout)	2	6d	100%	0	19-Mar-18 A	19-Mar-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		1
C12500	Utilities detection (Po Shun Road north of interchange)	4	6d	100%	0	13-Jan-18 A	18-Jan-18 A	08-Jun-18	08-Jun-18	12-Jun-18	12-Jun-18		
C12510	Modification of road layout at roundabout	12	6d	100%	0	11-Apr-18 A	18-Apr-18 A	09-Jun-18	09-Jun-18	04-Jul-18	04-Jul-18		
C12530	Tree felling (Road P2 south of interchange, TGC01 & TGC02)	12	6d	100%	0	08-Feb-18 A	28-Apr-18 A	09-Jun-18	09-Jun-18	22-Jun-18	22-Jun-18		
TTA Stage 1B-1 & 1B-2		107	6d		81	23-Apr-18 A	14-Sep-18	09-Jun-18	14-Sep-18	12-Jun-18	29-Dec-18	87	
TTA		80	6d		54	23-Apr-18 A	14-Aug-18	09-Jun-18	14-Aug-18	04-Jul-18	29-Dec-18	114	
C12520	Temporary footpath and cycle track at south of Chui Ling Road / Po Yap F	12	6d	50%	6	14-May-18 A	16-Jun-18	09-Jun-18	16-Jun-18	17-Aug-18	24-Aug-18	57	
C12550	Implementation of TTA Stage 1B-1	2	6d	100%	0	23-Apr-18 A	23-Apr-18 A	09-Jun-18	09-Jun-18	04-Jul-18	04-Jul-18		1
C12560	Implementation of TTA Stage 1B-2	2	6d	100%	0	04-May-18 A	04-May-18 A	16-Jun-18	16-Jun-18	24-Aug-18	24-Aug-18		1
C12570	Utilities detection (Chui Ling Road south - existing cycle track)	6	6d	0%	6	16-Jun-18	25-Jun-18	16-Jun-18	25-Jun-18	31-Aug-18	07-Sep-18	63	
C12580	Tree felling (Po Yap Road)	12	6d	20%	10	24-Apr-18 A	21-Jun-18	09-Jun-18	21-Jun-18	08-Nov-18	19-Nov-18	125	
C12590	Tree transplanting (Po Yap Road)	54	6d	0%	54	09-Jun-18	14-Aug-18	09-Jun-18	14-Aug-18	03-Aug-18	08-Oct-18	45	
C12600	Modify central median (Po Yap Road) and north-east island at roundabou	36	6d	25%	27	09-May-18 A	13-Jul-18	09-Jun-18	13-Jul-18	08-Nov-18	08-Dec-18	125	
C12600-1	Modify north-east island at roundabout (Po Shun Road / Po Yap Road)	36	6d	75%	9	09-May-18 A	21-Jun-18	09-Jun-18	21-Jun-18	29-Nov-18	08-Dec-18	143	
C12600-2	Modify central median (Po Yap Road)	36	6d	25%	27	04-Jun-18 A	13-Jul-18	09-Jun-18	13-Jul-18	08-Nov-18	08-Dec-18	125	
C12610	Tree transplanting (adjacent TKO Sports Centre)	48	6d	80%	10	01-Jun-18 A	21-Jun-18	09-Jun-18	21-Jun-18	04-Jul-18	14-Jul-18	19	
C12620	Temporary footpath and cycle track (for TTA Stage 1C)	18	6d	0%	18	09-Jun-18	03-Jul-18	09-Jun-18	03-Jul-18	14-Sep-18	08-Oct-18	81	
C12630	Tree transplanting (Chui Ling Road)	48	6d	0%	48	16-Jun-18	14-Aug-18	16-Jun-18	14-Aug-18	02-Nov-18	29-Dec-18	114	
C12650	Modification of central median (Chui Ling Road)	36	6d	0%	36	06-Jun-18 A	31-Jul-18	16-Jun-18	31-Jul-18	24-Aug-18	08-Oct-18	57	
Drainage		59	6d		59	11-Jun-18	20-Aug-18	11-Jun-18	20-Aug-18	12-Jun-18	01-Sep-18	11	
C12660	Stormwater SMH5101-SMH5102 and SMH5102-SMH9201	19	6d	0%	19	11-Jun-18	05-Jul-18	11-Jun-18	05-Jul-18	22-Jun-18	14-Jul-18	9	1
C12660-1	Install ELS & excavate	7	6d	0%	7	11-Jun-18	20-Jun-18	11-Jun-18	20-Jun-18	22-Jun-18	29-Jun-18	9	
C12660-2	Lay drain pipe	7	6d	0%	7	20-Jun-18	28-Jun-18	20-Jun-18	28-Jun-18	30-Jun-18	09-Jul-18	9	
C12660-3	Backfill	5	6d	0%	5	28-Jun-18	05-Jul-18	28-Jun-18	05-Jul-18	10-Jul-18	14-Jul-18	9	
C12670	Stormwater 900 dia. near Pier 02 and connection to manholes	42	6d	0%	42	03-Jul-18	20-Aug-18	03-Jul-18	20-Aug-18	16-Jul-18	01-Sep-18	11	1
C12670-1	Install ELS & excavate	18	6d	0%	18	03-Jul-18	23-Jul-18	03-Jul-18	23-Jul-18	16-Jul-18	04-Aug-18	11	
C12670-2	Lay drain pipe	14	6d	0%	14	24-Jul-18	08-Aug-18	24-Jul-18	08-Aug-18	06-Aug-18	21-Aug-18	11	
C12670-3	Backfill	10	6d	0%	10	09-Aug-18	20-Aug-18	09-Aug-18	20-Aug-18	22-Aug-18	01-Sep-18	11	
C12680	Stormwater SMH6602-SMH5001, SMH5001-SMH5002, SMH5002-SMH	27	6d	0%	27	11-Jun-18	14-Jul-18	11-Jun-18	14-Jul-18	12-Jun-18	14-Jul-18	1	1
C12680-1	Install ELS & excavate	11	6d	0%	11	11-Jun-18	25-Jun-18	11-Jun-18	25-Jun-18	12-Jun-18	25-Jun-18	1	
C12680-2	Lay drain pipe	10	6d	0%	10	25-Jun-18	07-Jul-18	25-Jun-18	07-Jul-18	26-Jun-18	07-Jul-18	1	
C12680-3	Backfill	6	6d	0%	6	07-Jul-18	14-Jul-18	07-Jul-18	14-Jul-18	09-Jul-18	14-Jul-18	1	
Utilities		23	6d		23	16-Jun-18	14-Jul-18	16-Jun-18	14-Jul-18	03-Sep-18	08-Oct-18	71	
C12690	Gas main at Chui Ling Road (South) by HKCG	19	6d	0%	19	16-Jun-18	11-Jul-18	16-Jun-18	11-Jul-18	13-Sep-18	08-Oct-18	74	1
C12700	Gas main at Po Shun Road by HKCG	19	6d	0%	19	21-Jun-18	14-Jul-18	21-Jun-18	14-Jul-18	03-Sep-18	24-Sep-18	61	1
Fresh Watermain		53	6d		53	14-Jul-18	14-Sep-18	14-Jul-18	14-Sep-18	16-Jul-18	14-Sep-18	1	
C12830	Fresh watermain CHB 0 to 37.202, CHC 0 to 74.858, CHD 0 to 29.591	53	6d	0%	53	14-Jul-18	14-Sep-18	14-Jul-18	14-Sep-18	16-Jul-18	14-Sep-18	1	
C12830-1	Install ELS & excavate CHC	19	6d	0%	19	14-Jul-18	06-Aug-18	14-Jul-18	06-Aug-18	16-Jul-18	06-Aug-18	1	
C12830-2	Lay fresh watermain CHC	19	6d	0%	19	28-Jul-18	20-Aug-18	28-Jul-18	20-Aug-18	30-Jul-18	20-Aug-18	1	



Baseline: Programme of May 2018
Actual Work
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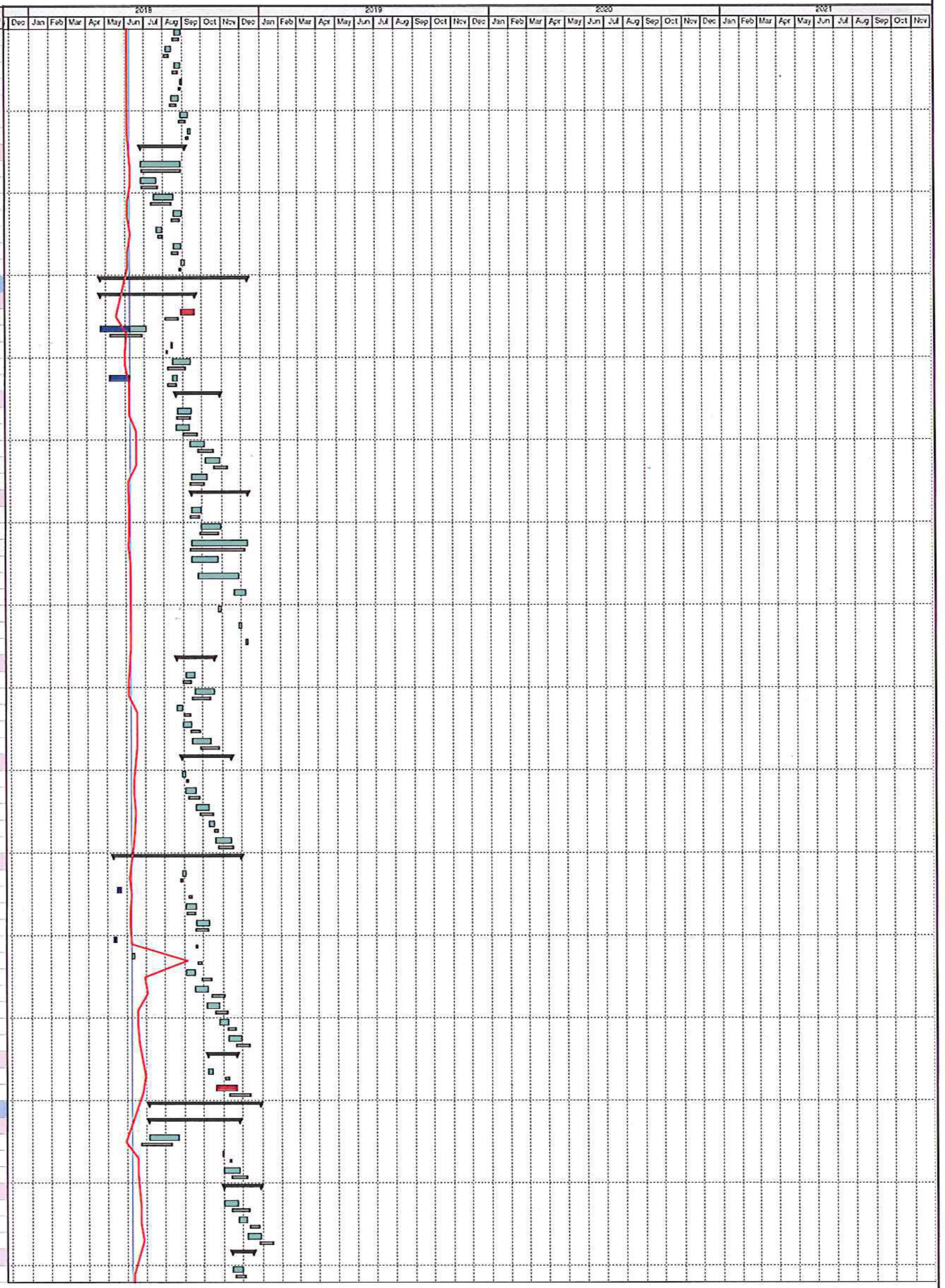
Critical Remaining Work
Milestone
Summary

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel
Road P2/D4 and Associated Works
Updated Programme (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-06 (Data date 8-Jun-18)	TC	

NE/2017/02 - Updated Programme (Jun 2018)

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
C12830-3	Backfill CHC	9	6d	0%	9	20-Aug-18	30-Aug-18	20-Aug-18	30-Aug-18	05-Sep-18	14-Sep-18	14	
C12830-4	Install ELS & excavate CHD	8	6d	0%	8	06-Aug-18	15-Aug-18	06-Aug-18	15-Aug-18	09-Aug-18	17-Aug-18	3	
C12830-5	Lay fresh watermain CHD	8	6d	0%	8	20-Aug-18	29-Aug-18	20-Aug-18	29-Aug-18	21-Aug-18	29-Aug-18	1	
C12830-6	Backfill CHD	3	6d	0%	3	29-Aug-18	01-Sep-18	29-Aug-18	01-Sep-18	12-Sep-18	14-Sep-18	12	
C12830-7	Install ELS & excavate CHB	10	6d	0%	10	15-Aug-18	27-Aug-18	15-Aug-18	27-Aug-18	18-Aug-18	29-Aug-18	3	
C12830-8	Lay fresh watermain CHB	10	6d	0%	10	29-Aug-18	10-Sep-18	29-Aug-18	10-Sep-18	30-Aug-18	10-Sep-18	1	
C12830-9	Backfill CHB	4	6d	0%	4	10-Sep-18	14-Sep-18	10-Sep-18	14-Sep-18	11-Sep-18	14-Sep-18	1	
Salt Watermain		60	6d		60	25-Jun-18	04-Sep-18	25-Jun-18	04-Sep-18	17-Sep-18	22-Nov-18	66	
C12710	Salt watermain CHA 0 to 84.786, CHB 0 to 25.141	55	6d	0%	55	25-Jun-18	29-Aug-18	25-Jun-18	29-Aug-18	17-Sep-18	22-Nov-18	71	
C12710-1	Install ELS & excavate CHA	22	6d	0%	22	25-Jun-18	21-Jul-18	25-Jun-18	21-Jul-18	17-Sep-18	13-Oct-18	71	
C12710-2	Lay salt watermain CHA	29	6d	0%	29	16-Jul-18	18-Aug-18	16-Jul-18	18-Aug-18	03-Oct-18	06-Nov-18	66	
C12710-3	Backfill CHA	11	6d	0%	11	18-Aug-18	31-Aug-18	18-Aug-18	31-Aug-18	10-Nov-18	22-Nov-18	69	
C12710-4	Install ELS & excavate CHB	7	6d	0%	7	21-Jul-18	30-Jul-18	21-Jul-18	30-Jul-18	30-Oct-18	06-Nov-18	83	
C12710-5	Lay salt watermain CHB	10	6d	0%	10	18-Aug-18	30-Aug-18	18-Aug-18	30-Aug-18	07-Nov-18	17-Nov-18	66	
C12710-6	Backfill CHB	4	6d	0%	4	30-Aug-18	04-Sep-18	30-Aug-18	04-Sep-18	19-Nov-18	22-Nov-18	66	
TTA Stage 1C		217			186	23-Apr-18 A	11-Dec-18	08-Jun-18	11-Dec-18	11-Jul-18	12-Jul-19	214	
TTA		112	6d		86	23-Apr-18 A	19-Sep-18	08-Jun-18	19-Sep-18	11-Jul-18	12-Dec-18	70	
C12640	Install instrumentation	18	6d	0%	18	29-Aug-18	19-Sep-18	29-Aug-18	19-Sep-18	29-Aug-18	19-Sep-18	0	
C12740	Design and acceptance of TTA Stage 1C	42	6d	50%	21	23-Apr-18 A	04-Jul-18	08-Jun-18	04-Jul-18	11-Jul-18	03-Aug-18	26	
C12750	Implementation of TTA Stage 1C	2	6d	0%	2	14-Aug-18	16-Aug-18	14-Aug-18	16-Aug-18	08-Oct-18	10-Oct-18	45	1
C12760	Temporary footpath and cycle track (for TTA Stage 1D)	24	6d	0%	24	16-Aug-18	13-Sep-18	16-Aug-18	13-Sep-18	13-Oct-18	10-Nov-18	48	
C12770	Tree felling (Chui Ling Road)	12	6d	50%	6	07-May-18 A	23-Aug-18	16-Aug-18	23-Aug-18	06-Dec-18	12-Dec-18	93	
Utilities		57	6d		57	21-Aug-18	29-Oct-18	21-Aug-18	29-Oct-18	03-Sep-18	11-May-19	156	
C12780	Telecom cables at Chui Ling Road by HGC, CATV, PCCW (incl. Chui Shi	19	6d	0%	19	23-Aug-18	14-Sep-18	23-Aug-18	14-Sep-18	13-Dec-18	07-Jan-19	93	1
C12790	11kV cables at Po Shun Road by CLPP	19	6d	0%	19	21-Aug-18	11-Sep-18	21-Aug-18	11-Sep-18	03-Sep-18	24-Sep-18	11	1
C12800	Gas main at Chui Ling Road (North and central median) by HKCG	19	6d	0%	19	12-Sep-18	05-Oct-18	12-Sep-18	05-Oct-18	26-Sep-18	19-Oct-18	11	1
C12810	Telecom cables at Po Shun Road (North) by HGC, HKBN, CATV, PCCW	19	6d	0%	19	06-Oct-18	29-Oct-18	06-Oct-18	29-Oct-18	20-Oct-18	10-Nov-18	11	1
C12820	Lay CLP 11kV cable at Road P2 south of interchange (By CLPP)	19	6d	0%	19	14-Sep-18	09-Oct-18	14-Sep-18	09-Oct-18	16-Apr-19	11-May-19	173	1
Fresh Watermain		72	6d		72	14-Sep-18	11-Dec-18	14-Sep-18	11-Dec-18	15-Sep-18	07-Jan-19	21	
C12840	Fresh watermain testing CHB, CHC, CHD	12	6d	0%	12	14-Sep-18	29-Sep-18	14-Sep-18	29-Sep-18	23-Nov-18	06-Dec-18	57	
C12850	Connection of fresh watermain CHB, CHC, CHD	24	6d	0%	24	29-Sep-18	30-Oct-18	29-Sep-18	30-Oct-18	07-Dec-18	07-Jan-19	57	
C12860	Fresh watermain CHA 0 to 127.921, CHA1 0 to 15.540	72	6d	0%	72	14-Sep-18	11-Dec-18	14-Sep-18	11-Dec-18	15-Sep-18	11-Dec-18	1	
C12860-1	Install ELS & excavate CHA	32	6d	0%	32	14-Sep-18	25-Oct-18	14-Sep-18	25-Oct-18	15-Sep-18	25-Oct-18	1	
C12860-2	Lay fresh watermain CHA	52	6d	0%	52	24-Sep-18	27-Nov-18	24-Sep-18	27-Nov-18	26-Sep-18	27-Nov-18	1	
C12860-3	Backfill CHA	16	6d	0%	16	20-Nov-18	08-Dec-18	20-Nov-18	08-Dec-18	21-Nov-18	08-Dec-18	1	
C12860-4	Install ELS & excavate CHA1	4	6d	0%	4	25-Oct-18	30-Oct-18	25-Oct-18	30-Oct-18	30-Nov-18	04-Dec-18	31	
C12860-5	Lay fresh watermain CHA1	4	6d	0%	4	27-Nov-18	01-Dec-18	27-Nov-18	01-Dec-18	05-Dec-18	08-Dec-18	7	
C12860-6	Backfill CHA1	2	6d	0%	2	08-Dec-18	11-Dec-18	08-Dec-18	11-Dec-18	10-Dec-18	11-Dec-18	1	
Salt Watermain		48	6d		48	21-Aug-18	19-Oct-18	21-Aug-18	19-Oct-18	17-Sep-18	07-Jan-19	66	
C12870	Salt watermain testing CHA, CHB	12	6d	0%	12	04-Sep-18	18-Sep-18	04-Sep-18	18-Sep-18	23-Nov-18	06-Dec-18	66	
C12880	Connection and commissioning of salt watermain CHA, CHB	24	6d	0%	24	18-Sep-18	19-Oct-18	18-Sep-18	19-Oct-18	07-Dec-18	07-Jan-19	66	
C12890	Salt watermain CHC 0 to 9.178	9	6d	0%	9	21-Aug-18	30-Aug-18	21-Aug-18	30-Aug-18	17-Sep-18	27-Sep-18	23	
C12900	Salt watermain testing CHC	12	6d	0%	12	31-Aug-18	13-Sep-18	31-Aug-18	13-Sep-18	28-Sep-18	12-Oct-18	23	
C12910	Connection and commissioning of salt watermain CHC	24	6d	0%	24	14-Sep-18	13-Oct-18	14-Sep-18	13-Oct-18	13-Oct-18	10-Nov-18	23	
CCTV High Mast		77			77	29-Aug-18	14-Nov-18	29-Aug-18	14-Nov-18	03-Sep-18	11-May-19	179	
C12920	Predrilling at CCTV/PH1 (1 no.) PD#1	4	6d	0%	4	29-Aug-18	03-Sep-18	29-Aug-18	03-Sep-18	03-Sep-18	07-Sep-18	4	
C12930	Propose founding levels at CCTV high mast	14	6d	0%	14	03-Sep-18	19-Sep-18	03-Sep-18	19-Sep-18	28-Feb-19	15-Mar-19	144	
C12940	Acceptance of proposed founding level at CCTV high mast	21	7d	0%	21	19-Sep-18	10-Oct-18	19-Sep-18	10-Oct-18	16-Mar-19	05-Apr-19	178	
C12950	Mobilize plant SP#1	6	6d	0%	6	10-Oct-18	18-Oct-18	10-Oct-18	18-Oct-18	06-Apr-19	12-Apr-19	145	
C12960	Socketted H-piles at CCTV High Mast (3 nos.) SP#1	21	6d	0%	21	20-Oct-18	14-Nov-18	20-Oct-18	14-Nov-18	13-Apr-19	11-May-19	143	3
Footbridge Predrilling		175			175	11-May-18 A	29-Nov-18	08-Jun-18	29-Nov-18	03-Sep-18	12-Jul-19	225	
C12720	Predrilling at PC5/PH4 (1 no.) PD#1	4	6d	0%	4	29-Aug-18	03-Sep-18	29-Aug-18	03-Sep-18	10-Oct-18	15-Oct-18	34	
C12970	Predrilling at PC1-3/PH1 (1 no.) PD#1	4	6d	100%	0	17-May-18 A	23-May-18 A	03-Sep-18	03-Sep-18	07-Sep-18	07-Sep-18		
C12980	Propose founding level (PC1-1, PC8)	14	6d	0%	14	03-Sep-18	19-Sep-18	03-Sep-18	19-Sep-18	15-Oct-18	01-Nov-18	34	
C12990	Acceptance of founding level (PC1-1, PC8)	21	7d	0%	21	19-Sep-18	10-Oct-18	19-Sep-18	10-Oct-18	01-Nov-18	22-Nov-18	43	
C13010	Predrilling at PC7/PH1 (1 no.) PD#1	4	6d	100%	0	11-May-18 A	16-May-18 A	08-Jun-18	08-Jun-18	03-Sep-18	03-Sep-18		
C13020	Predrilling at PC4/PH1 (1 no.) PD#1	4	6d	0%	4	08-Jun-18	12-Jun-18	08-Jun-18	12-Jun-18	03-Sep-18	07-Sep-18	72	
C13030	Propose founding level (PC1-3, PC3-1(P1 & P3), PC7, PC4)	12	6d	0%	12	03-Sep-18	17-Sep-18	03-Sep-18	17-Sep-18	07-Sep-18	21-Sep-18	4	
C13040	Acceptance of founding level (PC1-3, PC3-1(P1 & P3), PC7, PC4)	21	7d	0%	21	17-Sep-18	08-Oct-18	17-Sep-18	08-Oct-18	21-Sep-18	12-Oct-18	4	
C13050	Predrilling at PC2-1/PH1 to PH4 (Pier 02) (4 nos.) PD#1	16	6d	0%	16	06-Oct-18	25-Oct-18	06-Oct-18	25-Oct-18	31-Oct-18	19-Nov-18	20	
C13060	Propose founding level (Pier 02)	12	6d	0%	12	26-Oct-18	08-Nov-18	26-Oct-18	08-Nov-18	08-Jun-19	21-Jun-19	180	
C13070	Acceptance of founding level (Pier 02)	21	7d	0%	21	09-Nov-18	29-Nov-18	09-Nov-18	29-Nov-18	22-Jun-19	12-Jul-19	225	
Footbridge Piling		38	6d		38	08-Oct-18	22-Nov-18	08-Oct-18	22-Nov-18	12-Oct-18	22-Nov-18	0	
C13140	Mobilize plant SP#2	6	6d	0%	6	08-Oct-18	15-Oct-18	08-Oct-18	15-Oct-18	12-Oct-18	20-Oct-18	4	
C13150	Socketted H-piles at PC4 (4 nos.) SP#2	28	6d	0%	28	20-Oct-18	22-Nov-18	20-Oct-18	22-Nov-18	20-Oct-18	22-Nov-18	0	4
TTA Stage 1D		177			177	05-Jul-18	28-Dec-18	05-Jul-18	28-Dec-18	04-Aug-18	15-Jun-19	169	
TTA		121	6d		121	05-Jul-18	26-Nov-18	05-Jul-18	26-Nov-18	04-Aug-18	08-Dec-18	11	
C13080	Design and acceptance of TTA Stage 1D	42	6d	0%	42	05-Jul-18	22-Aug-18	05-Jul-18	22-Aug-18	04-Aug-18	21-Sep-18	26	
C13090	Implementation of TTA Stage 1D	2	6d	0%	2	30-Oct-18	31-Oct-18	30-Oct-18	31-Oct-18	12-Nov-18	13-Nov-18	11	1
C13100	Modification of road layout	22	6d	0%	22	01-Nov-18	26-Nov-18	01-Nov-18	26-Nov-18	14-Nov-18	08-Dec-18	11	
Footbridge Predrilling		58			58	01-Nov-18	28-Dec-18	01-Nov-18	28-Dec-18	19-Nov-18	18-Jan-19	20	
C13110	Predrilling at PC5-PH1 to PH3, PH5, PH6 (Pier 01) (5 nos.) PD#1	20	6d	0%	20	01-Nov-18	23-Nov-18	01-Nov-18	23-Nov-18	19-Nov-18	12-Dec-18	15	
C13120	Propose founding level (Pier 01)	12	6d	0%	12	24-Nov-18	07-Dec-18	24-Nov-18	07-Dec-18	12-Dec-18	28-Dec-18	15	
C13130	Acceptance of founding level (Pier 01)	21	7d	0%	21	08-Dec-18	28-Dec-18	08-Dec-18	28-Dec-18	28-Dec-18	18-Jan-19	20	
Footbridge Piling		28	6d		28	14-Nov-18	17-Dec-18	14-Nov-18	17-Dec-18	22-Nov-18	15-Jun-19	143	
C13160	Socketted H-piles at PC3-1 P1 & P3 (2 nos.) SP#1	14	6d	0%	14	14-Nov-18	30-Nov-18	14-Nov-18	30-Nov-18	14-May-19	29-May-19	143	2



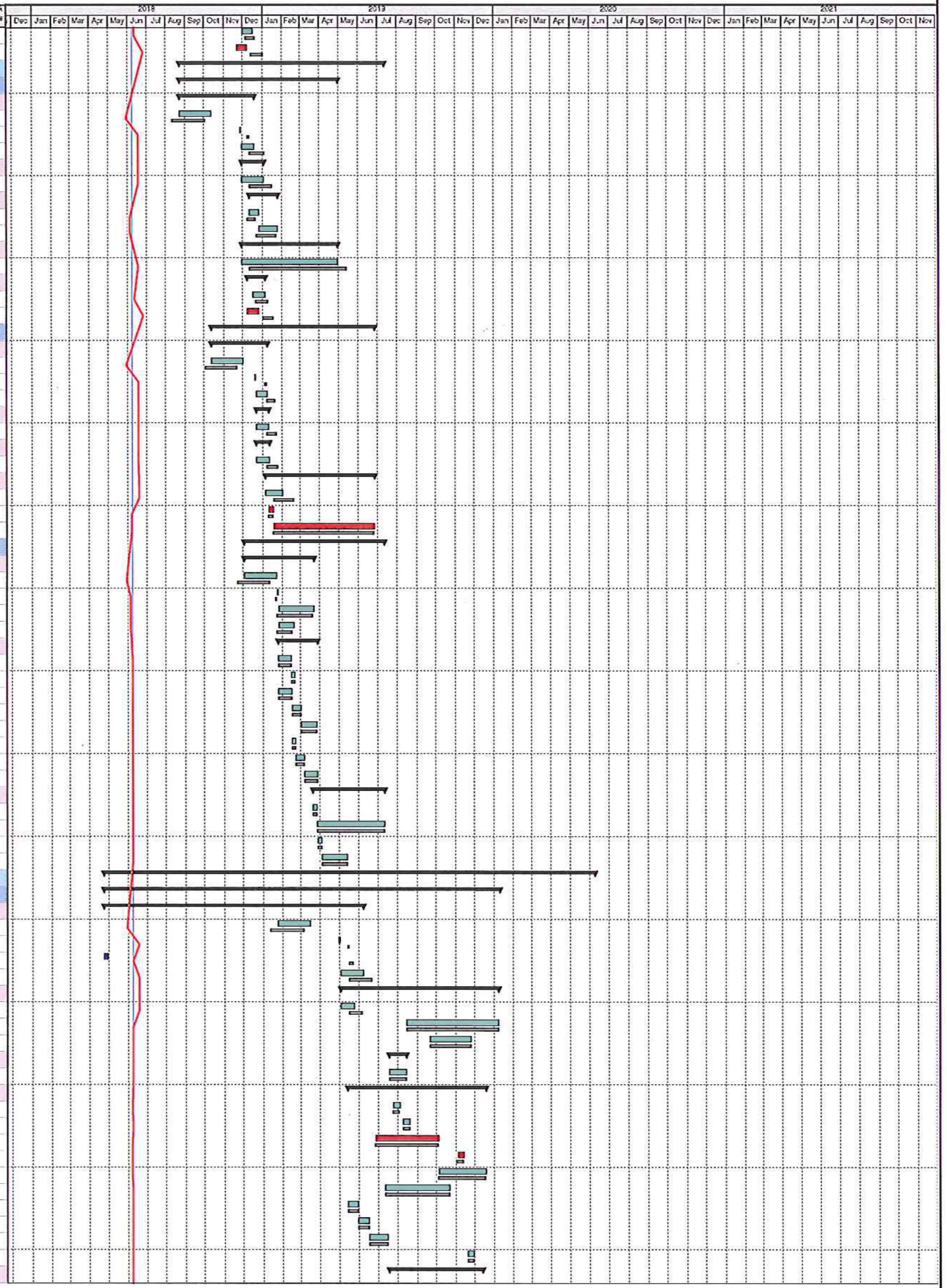
Baseline: Programme of May 2018 ◆ ◆ Milestone
Actual Work Summary
Remaining Work
Critical Remaining Work

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel
Road P2/D4 and Associated Works
Updated Programme (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-06 (Data date 8-Jun-18)	TC	

NE/2017/02 - Updated Programme (Jun 2018)

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
C13170	Socketted H-piles at PC1-3 (2 nos.) SP#1	14	6d	0%	14	30-Nov-18	17-Dec-18	30-Nov-18	17-Dec-18	30-May-19	15-Jun-19	143	2
C13250	Socketted H-piles at PC1-1 (2 nos.) SP#2	14	6d	0%	14	22-Nov-18	08-Dec-18	22-Nov-18	08-Dec-18	22-Nov-18	08-Dec-18	0	2
Stage 2 Works		323			323	23-Aug-18	12-Jul-19	23-Aug-18	12-Jul-19	22-Sep-18	17-Dec-19	158	
TTA Stage 2A		201	6d		201	23-Aug-18	29-Apr-19	23-Aug-18	29-Apr-19	22-Sep-18	10-Jul-19	58	
TTA		99	6d		99	23-Aug-18	19-Dec-18	23-Aug-18	19-Dec-18	22-Sep-18	04-Jan-19	11	
C13180	Design and acceptance of TTA Stage 2A	42	6d	0%	42	23-Aug-18	12-Oct-18	23-Aug-18	12-Oct-18	22-Sep-18	13-Nov-18	26	
C13190	Implementation of TTA Stage 2A	2	6d	0%	2	27-Nov-18	28-Nov-18	27-Nov-18	28-Nov-18	10-Dec-18	11-Dec-18	11	1
C13200	Temporary footpath and cycle track (for TTA Stage 2B)	18	6d	0%	18	29-Nov-18	19-Dec-18	29-Nov-18	19-Dec-18	12-Dec-18	04-Jan-19	11	
Drainage		28	6d		28	29-Nov-18	03-Jan-19	29-Nov-18	03-Jan-19	06-Jun-19	10-Jul-19	150	
C13210	Stormwater SMH6401-SMH6402 and SMH6402-exist.manhole	28	6d	0%	28	29-Nov-18	03-Jan-19	29-Nov-18	03-Jan-19	06-Jun-19	10-Jul-19	150	1
Fresh Watermain		36	6d		36	11-Dec-18	25-Jan-19	11-Dec-18	25-Jan-19	12-Dec-18	25-Jan-19	1	
C13220	Fresh watermain testing CHA, CHA1	12	6d	0%	12	11-Dec-18	27-Dec-18	11-Dec-18	27-Dec-18	12-Dec-18	27-Dec-18	1	
C13310	Connection of fresh watermain CHA, CHA1	24	6d	0%	24	27-Dec-18	25-Jan-19	27-Dec-18	25-Jan-19	28-Dec-18	25-Jan-19	1	
Roadworks		120	6d		120	29-Nov-18	29-Apr-19	29-Nov-18	29-Apr-19	12-Feb-19	10-Jul-19	58	
C13230	Roadworks at Chui Ling Road & Po Yap Road (South)	120	6d	0%	120	29-Nov-18	29-Apr-19	29-Nov-18	29-Apr-19	12-Feb-19	10-Jul-19	58	
Footbridge Piling		21	6d		21	08-Dec-18	05-Jan-19	08-Dec-18	05-Jan-19	08-Dec-18	03-Jul-19	143	
C13240	Socketted H-piles at PC7 (2 nos.) SP#1	14	6d	0%	14	17-Dec-18	05-Jan-19	17-Dec-18	05-Jan-19	17-Jun-19	03-Jul-19	143	2
C13260	Socketted H-piles at PC8 (2 nos.) SP#2	14	6d	0%	14	08-Dec-18	27-Dec-18	08-Dec-18	27-Dec-18	08-Dec-18	27-Dec-18	0	2
TTA Stage 2B		205	6d		205	13-Oct-18	26-Jun-19	13-Oct-18	26-Jun-19	14-Nov-18	17-Dec-19	145	
TTA		71	6d		71	13-Oct-18	08-Jan-19	13-Oct-18	08-Jan-19	14-Nov-18	14-May-19	99	
C13270	Design and acceptance of TTA Stage 2B	42	6d	0%	42	13-Oct-18	01-Dec-18	13-Oct-18	01-Dec-18	14-Nov-18	04-Jan-19	26	
C13280	Implementation of TTA Stage 2B	2	6d	0%	2	20-Dec-18	21-Dec-18	20-Dec-18	21-Dec-18	05-Jan-19	07-Jan-19	11	1
C13290	Temporary road for Chui Shin Street (for TTA Stage 2C)	12	6d	0%	12	22-Dec-18	08-Jan-19	22-Dec-18	08-Jan-19	29-Apr-19	14-May-19	99	
Drainage		14	6d		14	22-Dec-18	10-Jan-19	22-Dec-18	10-Jan-19	30-Nov-19	17-Dec-19	277	
C13300	Stormwater SMH6601-SMH6602	14	6d	0%	14	22-Dec-18	10-Jan-19	22-Dec-18	10-Jan-19	30-Nov-19	17-Dec-19	277	1
Footbridge Predrilling		16	6d		16	22-Dec-18	12-Jan-19	22-Dec-18	12-Jan-19	08-Jan-19	25-Jan-19	11	
C13320	Predrilling at PC2-2/PH1 to PH4 (Pier 03) (4 nos.) PD#1	16	6d	0%	16	22-Dec-18	12-Jan-19	22-Dec-18	12-Jan-19	08-Jan-19	25-Jan-19	11	
Footbridge Piling		137	6d		137	05-Jan-19	26-Jun-19	05-Jan-19	26-Jun-19	11-Jan-19	31-Jul-19	30	
C13330	First loading test (socketted H-piles)	24	6d	0%	24	05-Jan-19	02-Feb-19	05-Jan-19	02-Feb-19	04-Jul-19	31-Jul-19	143	
C13340	Mobilize plant BP#1	6	6d	0%	6	11-Jan-19	18-Jan-19	11-Jan-19	18-Jan-19	11-Jan-19	18-Jan-19	0	
C13350	Bored piles at PC5 (Pier 01) (6 nos.) BP#1	126	6d	0%	126	18-Jan-19	26-Jun-19	18-Jan-19	26-Jun-19	18-Jan-19	26-Jun-19	0	6
TTA Stage 2C		221			221	03-Dec-18	12-Jul-19	03-Dec-18	12-Jul-19	26-Jan-19	12-Sep-19	62	
TTA		89	6d		89	03-Dec-18	22-Mar-19	03-Dec-18	22-Mar-19	20-Mar-19	10-Jul-19	86	
C13360	Design and acceptance of TTA Stage 2C	42	6d	0%	42	03-Dec-18	23-Jan-19	03-Dec-18	23-Jan-19	20-Mar-19	14-May-19	86	
C13370	Implementation of TTA - Stage 2C	2	6d	0%	2	24-Jan-19	25-Jan-19	24-Jan-19	25-Jan-19	15-May-19	16-May-19	86	1
C13380	Modification of road formation and layout	45	6d	0%	45	26-Jan-19	22-Mar-19	26-Jan-19	22-Mar-19	17-May-19	10-Jul-19	86	
C13390	Temporary footpath and cycle track (for TTA Stage 3A)	18	6d	0%	18	26-Jan-19	19-Feb-19	26-Jan-19	19-Feb-19	19-Jun-19	10-Jul-19	113	
Footbridge Predrilling		62			62	25-Jan-19	28-Mar-19	25-Jan-19	28-Mar-19	26-Jan-19	03-Aug-19	128	
C13400	Predrilling at PC6/PH1 to PH3 (Pier 05) (3 nos.) PD#1	15	6d	0%	15	25-Jan-19	15-Feb-19	25-Jan-19	15-Feb-19	26-Jan-19	15-Feb-19	1	
C13410	Predrilling at PC1-2/PH1 (1 no.) PD#1	4	6d	0%	4	15-Feb-19	20-Feb-19	15-Feb-19	20-Feb-19	24-Jun-19	28-Jun-19	103	
C13420	Predrilling at PC2-3/PH1 to PH4 (Pier 04) (4 nos.) PD#2	16	6d	0%	16	25-Jan-19	16-Feb-19	25-Jan-19	16-Feb-19	26-Jan-19	16-Feb-19	1	
C13430	Propose founding level (Pier 03, 04, 05)	12	6d	0%	12	16-Feb-19	02-Mar-19	16-Feb-19	02-Mar-19	18-Feb-19	02-Mar-19	1	
C13440	Acceptance of founding level (Pier 03, 04, 05)	21	6d	0%	21	02-Mar-19	27-Mar-19	02-Mar-19	27-Mar-19	04-Mar-19	27-Mar-19	1	
C13450	Predrilling at PC3-2 (1 no.) PD#2	4	6d	0%	4	16-Feb-19	21-Feb-19	16-Feb-19	21-Feb-19	24-Jun-19	28-Jun-19	102	
C13460	Propose founding level (PC3-2, PC1-2, PC3-1 (P2 & P4))	12	6d	0%	12	21-Feb-19	07-Mar-19	21-Feb-19	07-Mar-19	28-Jun-19	13-Jul-19	102	
C13470	Acceptance of founding level (PC3-2, PC1-2, PC3-1(P2 & P4))	21	7d	0%	21	07-Mar-19	28-Mar-19	07-Mar-19	28-Mar-19	13-Jul-19	03-Aug-19	128	
Footbridge Piling		90	6d		90	20-Mar-19	12-Jul-19	20-Mar-19	12-Jul-19	21-Mar-19	12-Sep-19	53	
C13480	Mobilize plant BP#2	6	6d	0%	6	20-Mar-19	27-Mar-19	20-Mar-19	27-Mar-19	21-Mar-19	27-Mar-19	1	
C13490	Bored piles at PC2-2 (Pier 03) (4 nos.) BP#2	84	6d	0%	84	27-Mar-19	12-Jul-19	27-Mar-19	12-Jul-19	28-Mar-19	12-Jul-19	1	4
C13500	Mobilize plant SP#2	6	6d	0%	6	28-Mar-19	04-Apr-19	28-Mar-19	04-Apr-19	03-Aug-19	10-Aug-19	102	
C13510	Socketted H-piles at PC3-2 (4 nos.) SP#2	28	6d	0%	28	04-Apr-19	14-May-19	04-Apr-19	14-May-19	10-Aug-19	12-Sep-19	102	4
Stage 3 Works		404	6d		404	24-Apr-18 A	09-Jun-20	24-Jan-19	09-Jun-20	21-May-19	28-Nov-20	144	
TTA Stage 3A		286	6d		286	24-Apr-18 A	11-Jan-20	24-Jan-19	11-Jan-20	21-May-19	04-Jun-20	115	
TTA		107	6d		107	24-Apr-18 A	08-Jun-19	24-Jan-19	08-Jun-19	21-May-19	19-May-20	279	
C13520	Design and acceptance of TTA Stage 3A	42	6d	0%	42	24-Jan-19	16-Mar-19	24-Jan-19	16-Mar-19	21-May-19	10-Jul-19	91	
C13530	Implementation of TTA - Stage 3A	2	6d	0%	2	30-Apr-19	02-May-19	30-Apr-19	02-May-19	11-Jul-19	12-Jul-19	58	1
C13540	Tree felling (Po Shun Road central median)	6	6d	100%	0	24-Apr-18 A	30-Apr-18 A	02-May-19	02-May-19	19-May-20	19-May-20		
C13550	Modification of existing roundabout to temporary signalized junction	30	6d	0%	30	03-May-19	08-Jun-19	03-May-19	08-Jun-19	08-Nov-19	13-Dec-19	156	
Roadworks		206	6d		206	03-May-19	08-Jan-20	03-May-19	08-Jan-20	22-Nov-19	02-Jun-20	115	
C13570	Footpath and cycle track (for TTA Stage 3B)	18	6d	0%	18	03-May-19	24-May-19	03-May-19	24-May-19	22-Nov-19	13-Dec-19	168	
C13580	Roadworks at Chui Ling Road (North), Po Shun Road (North), Po Yap Rc	120	6d	0%	120	15-Aug-19	08-Jan-20	15-Aug-19	08-Jan-20	17-Dec-19	19-May-20	103	
C13590	Roadwork within Portion IV	54	6d	0%	54	21-Sep-19	25-Nov-19	21-Sep-19	25-Nov-19	24-Mar-20	02-Jun-20	150	
CCTV High Mast		24	6d		24	18-Jul-19	14-Aug-19	18-Jul-19	14-Aug-19	19-Nov-19	17-Dec-19	103	
C13600	Pile cap for CCTV high mast	24	6d	0%	24	18-Jul-19	14-Aug-19	18-Jul-19	14-Aug-19	19-Nov-19	17-Dec-19	103	
Footbridge Piling		183	6d		183	14-May-19	19-Dec-19	14-May-19	19-Dec-19	26-Jun-19	30-Mar-20	82	
C13610	Bored pile testing (Pier 01)	9	6d	0%	9	25-Jul-19	05-Aug-19	25-Jul-19	05-Aug-19	12-Nov-19	21-Nov-19	91	
C13620	Bored pile testing (Pier 03)	9	6d	0%	9	09-Aug-19	20-Aug-19	09-Aug-19	20-Aug-19	03-Sep-19	12-Sep-19	21	
C13630	Bored piles at PC2-3 (Pier 04) (4 nos.) BP#1	84	6d	0%	84	26-Jun-19	05-Oct-19	26-Jun-19	05-Oct-19	26-Jun-19	05-Oct-19	0	4
C13640	Bored pile testing (Pier 04)	9	6d	0%	9	04-Nov-19	14-Nov-19	04-Nov-19	14-Nov-19	04-Nov-19	14-Nov-19	0	
C13650	Bored piles at PC6 (Pier 05) (3 nos.) BP#1	63	6d	0%	63	05-Oct-19	19-Dec-19	05-Oct-19	19-Dec-19	14-Jan-20	30-Mar-20	82	3
C13660	Bored pile at PC2-1 (Pier 02) (4 nos.) BP#2	84	6d	0%	84	12-Jul-19	22-Oct-19	12-Jul-19	22-Oct-19	13-Jul-19	22-Oct-19	1	4
C13670	Socketted H-piles at PC3-1 P2 & P4 (2 nos.) SP#2	14	6d	0%	14	14-May-19	30-May-19	14-May-19	30-May-19	12-Sep-19	30-Sep-19	102	2
C13680	Socketted H-piles at PC1-2 (2 nos.) SP#2	14	6d	0%	14	30-May-19	17-Jun-19	30-May-19	17-Jun-19	30-Sep-19	18-Oct-19	102	2
C13690	Second loading test (socketted H-piles)	24	6d	0%	24	17-Jun-19	16-Jul-19	17-Jun-19	16-Jul-19	18-Oct-19	15-Nov-19	102	
C14020	Bored pile testing (Pier 02)	9	6d	0%	9	19-Nov-19	29-Nov-19	19-Nov-19	29-Nov-19	20-Nov-19	29-Nov-19	1	
Footbridge Substructure		125	6d		125	18-Jul-19	13-Dec-19	18-Jul-19	13-Dec-19	01-Aug-19	04-Jun-20	137	

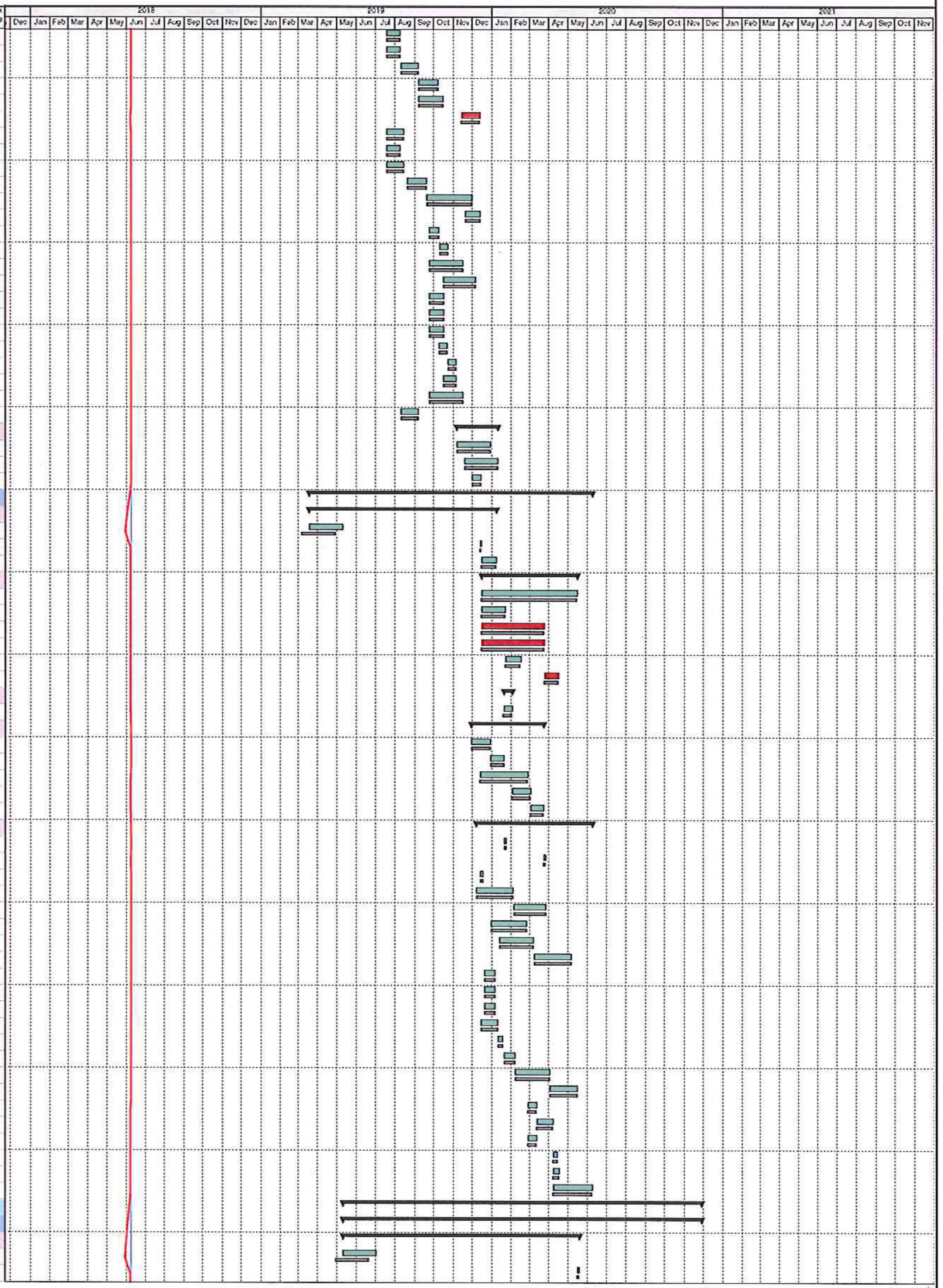


Baseline: Programme of May 2018
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel
Road P2/D4 and Associated Works
Updated Programme (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-06 (Data date 8-Jun-18)	TC	

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
C13700	Pile cap PC1-3	20	6d	0%	20	18-Jul-19	09-Aug-19	18-Jul-19	09-Aug-19	01-Aug-19	23-Aug-19	12	
C13710	Pile cap PC1-1	20	6d	0%	20	18-Jul-19	09-Aug-19	18-Jul-19	09-Aug-19	30-Sep-19	24-Oct-19	62	
C13720	Pile cap PC8	24	6d	0%	24	10-Aug-19	06-Sep-19	10-Aug-19	06-Sep-19	25-Oct-19	21-Nov-19	62	
C13730	Pile cap PC4	24	6d	0%	24	07-Sep-19	08-Oct-19	07-Sep-19	08-Oct-19	23-Sep-19	22-Oct-19	12	
C13740	Pile cap PC5 (Pier 01)	30	6d	0%	30	07-Sep-19	15-Oct-19	07-Sep-19	15-Oct-19	22-Nov-19	28-Dec-19	62	
C13750	Pile cap PC2-3 (Pier 04)	25	6d	0%	25	14-Nov-19	13-Dec-19	14-Nov-19	13-Dec-19	14-Nov-19	13-Dec-19	0	
C13760	Pile cap PC3-2	24	6d	0%	24	18-Jul-19	14-Aug-19	18-Jul-19	14-Aug-19	15-Nov-19	13-Dec-19	100	
C13770	Pile cap PC1-2	20	6d	0%	20	18-Jul-19	09-Aug-19	18-Jul-19	09-Aug-19	05-Feb-20	27-Feb-20	164	
C13780	Pile cap PC3-1	24	6d	0%	24	18-Jul-19	14-Aug-19	18-Jul-19	14-Aug-19	29-Nov-19	28-Dec-19	112	
C13790	Pile cap PC2-2 (Pier 03)	25	6d	0%	25	20-Aug-19	19-Sep-19	20-Aug-19	19-Sep-19	13-Sep-19	15-Oct-19	21	
C13800	Column at PC2-2 (Pier 03)	60	6d	0%	60	19-Sep-19	30-Nov-19	19-Sep-19	30-Nov-19	16-Oct-19	24-Dec-19	21	
C13810	Column at PC5 (Pier 01)	21	6d	0%	21	20-Nov-19	13-Dec-19	20-Nov-19	13-Dec-19	12-May-20	04-Jun-20	137	
C13820	Column PC1-2 (Staircase 01) - 1st pour	12	6d	0%	12	24-Sep-19	09-Oct-19	24-Sep-19	09-Oct-19	28-Feb-20	12-Mar-20	127	
C13830	Column PC1-2 (Staircase 01) - 3rd pour	12	6d	0%	12	10-Oct-19	23-Oct-19	10-Oct-19	23-Oct-19	13-Mar-20	26-Mar-20	127	
C13840	Wall at PC3-1 (Lift shaft 1A & 1B)	45	6d	0%	45	24-Sep-19	16-Nov-19	24-Sep-19	16-Nov-19	30-Dec-19	24-Feb-20	79	
C13850	Wall at PC5 (Lift shaft 2A & 2B)	45	6d	0%	45	16-Oct-19	06-Dec-19	16-Oct-19	06-Dec-19	30-Dec-19	24-Feb-20	62	
C13860	Column at PC1-1 (Staircase 02) - 1st pour	18	6d	0%	18	24-Sep-19	16-Oct-19	24-Sep-19	16-Oct-19	05-May-20	25-May-20	178	
C13870	Wall at PC8 (Staircase 02) - 2nd pour	18	6d	0%	18	24-Sep-19	16-Oct-19	24-Sep-19	16-Oct-19	05-May-20	25-May-20	178	
C13880	Column at PC1-3 (Staircase 01) - 2nd pour	18	6d	0%	18	24-Sep-19	16-Oct-19	24-Sep-19	16-Oct-19	06-Mar-20	26-Mar-20	133	
C13890	Wall at PC4 (Staircase 03) - 1st pour	12	6d	0%	12	09-Oct-19	22-Oct-19	09-Oct-19	22-Oct-19	23-Oct-19	05-Nov-19	12	
C13900	Wall at PC4 (Staircase 03) - 2nd pour	12	6d	0%	12	23-Oct-19	05-Nov-19	23-Oct-19	05-Nov-19	06-Nov-19	19-Nov-19	12	
C13910	Wall at PC7 (Staircase 01) - 4th pour	18	6d	0%	18	16-Oct-19	05-Nov-19	16-Oct-19	05-Nov-19	06-Mar-20	26-Mar-20	116	
C13920	Wall at PC3-2 (Lift shaft 3A & 3B)	45	6d	0%	45	24-Sep-19	16-Nov-19	24-Sep-19	16-Nov-19	30-Dec-19	24-Feb-20	79	
C14040	Pile cap PC7	24	6d	0%	24	10-Aug-19	06-Sep-19	10-Aug-19	06-Sep-19	24-Aug-19	21-Sep-19	12	
Footbridge Superstructure		55	6d		55	06-Nov-19	11-Jan-20	06-Nov-19	11-Jan-20	20-Nov-19	25-May-20	106	
C14150	Staircase 03 structure - 3rd pour	45	6d	0%	45	06-Nov-19	30-Dec-19	06-Nov-19	30-Dec-19	20-Nov-19	14-Jan-20	12	
C14170	Staircase 01 structure - 5th pour	45	6d	0%	45	18-Nov-19	11-Jan-20	18-Nov-19	11-Jan-20	27-Mar-20	25-May-20	106	
C14230	Falsework Portion 1	12	6d	0%	12	30-Nov-19	14-Dec-19	30-Nov-19	14-Dec-19	27-Dec-19	10-Jan-20	21	
TTA Stage 3B		362	6d		362	18-Mar-19	09-Jun-20	18-Mar-19	09-Jun-20	25-Oct-19	28-Nov-20	144	
TTA		241	6d		241	18-Mar-19	09-Jan-20	18-Mar-19	09-Jan-20	25-Oct-19	19-May-20	103	
C13930	Design and acceptance of TTA Stage 3B	42	6d	0%	42	18-Mar-19	10-May-19	18-Mar-19	10-May-19	25-Oct-19	13-Dec-19	179	
C13940	Implementation of TTA - Stage 3B	2	6d	0%	2	13-Dec-19	16-Dec-19	13-Dec-19	16-Dec-19	13-Dec-19	16-Dec-19	0	1
C13950	Permanent footpath and cycle track (for TTA Stage 4A)	18	6d	0%	18	16-Dec-19	09-Jan-20	16-Dec-19	09-Jan-20	25-Apr-20	19-May-20	103	
Roadworks		119	6d		119	16-Dec-19	16-May-20	16-Dec-19	16-May-20	16-Dec-19	19-May-20	2	
C13960	Drainage works along Chui Ling Road and Po Yap Road	119	6d	0%	119	16-Dec-19	16-May-20	16-Dec-19	16-May-20	18-Dec-19	19-May-20	2	
C13970	Directional sign DS26,27,28 (incl. footing & steel frame)	30	6d	0%	30	16-Dec-19	23-Jan-20	16-Dec-19	23-Jan-20	17-Feb-20	23-Mar-20	48	
C13980	Roadwork for carriageway and cycle track	80	6d	0%	80	16-Dec-19	25-Mar-20	16-Dec-19	25-Mar-20	16-Dec-19	25-Mar-20	0	
C13990	Ductings for TCSS and road lighting	80	6d	0%	80	16-Dec-19	25-Mar-20	16-Dec-19	25-Mar-20	16-Dec-19	25-Mar-20	0	
C14000	Signage	18	6d	0%	18	23-Jan-20	17-Feb-20	23-Jan-20	17-Feb-20	23-Mar-20	17-Apr-20	48	
C14010	Lighting posts	16	6d	0%	16	25-Mar-20	17-Apr-20	25-Mar-20	17-Apr-20	25-Mar-20	17-Apr-20	0	
Footbridge Piling		9	6d		9	20-Jan-20	03-Feb-20	20-Jan-20	03-Feb-20	05-May-20	14-May-20	82	
C14030	Bored pile testing (Pier 05)	9	6d	0%	9	20-Jan-20	03-Feb-20	20-Jan-20	03-Feb-20	05-May-20	14-May-20	82	
Footbridge Substructure		93	6d		93	29-Nov-19	24-Mar-20	29-Nov-19	24-Mar-20	30-Nov-19	06-Jul-20	82	
C14050	Pile Cap PC2-1 (Pier 02)	24	6d	0%	24	29-Nov-19	30-Dec-19	29-Nov-19	30-Dec-19	30-Nov-19	30-Dec-19	1	
C14060	Column at PC2-1 (Pier 02)	18	6d	0%	18	30-Dec-19	21-Jan-20	30-Dec-19	21-Jan-20	31-Dec-19	21-Jan-20	1	
C14070	Column at PC2-3 (Pier 04)	60	6d	0%	60	13-Dec-19	28-Feb-20	13-Dec-19	28-Feb-20	27-Dec-19	10-Mar-20	10	
C14090	Pile Cap PC6 (Pier 05)	25	6d	0%	25	03-Feb-20	03-Mar-20	03-Feb-20	03-Mar-20	15-May-20	12-Jun-20	82	
C14100	Column at PC6 (Pier 05)	18	6d	0%	18	03-Mar-20	24-Mar-20	03-Mar-20	24-Mar-20	13-Jun-20	06-Jul-20	82	
Footbridge Superstructure		146	6d		146	07-Dec-19	09-Jun-20	07-Dec-19	09-Jun-20	11-Jan-20	28-Nov-20	144	
C14080	Bearing Pier 02	3	6d	0%	3	21-Jan-20	24-Jan-20	21-Jan-20	24-Jan-20	22-Jan-20	24-Jan-20	1	
C14110	Bearing Pier 05	3	6d	0%	3	24-Mar-20	27-Mar-20	24-Mar-20	27-Mar-20	21-Jul-20	23-Jul-20	94	
C14120	Bearing Pier 01	3	6d	0%	3	14-Dec-19	17-Dec-19	14-Dec-19	17-Dec-19	19-Jun-20	22-Jun-20	149	
C14130	Staircase 02 structure - 3rd pour	45	6d	0%	45	07-Dec-19	04-Feb-20	07-Dec-19	04-Feb-20	26-May-20	18-Jul-20	134	
C14140	Staircase 02 structure - 4th pour	45	6d	0%	45	05-Feb-20	27-Mar-20	05-Feb-20	27-Mar-20	20-Jul-20	09-Sep-20	134	
C14160	Staircase 03 structure -4th pour	45	6d	0%	45	31-Dec-19	25-Feb-20	31-Dec-19	25-Feb-20	15-Jan-20	10-Mar-20	12	
C14180	Staircase 01 structure - 6th pour	45	6d	0%	45	13-Jan-20	07-Mar-20	13-Jan-20	07-Mar-20	26-May-20	18-Jul-20	106	
C14190	Staircase 01 structure - 7th pour	45	6d	0%	45	09-Mar-20	06-May-20	09-Mar-20	06-May-20	20-Jul-20	09-Sep-20	106	
C14200	Lift shaft steelworks (Lift 1A & 1B)	12	6d	0%	12	20-Dec-19	06-Jan-20	20-Dec-19	06-Jan-20	25-Feb-20	09-Mar-20	51	
C14210	Lift shaft steelworks (Lift 2A & 2B)	12	6d	0%	12	20-Dec-19	06-Jan-20	20-Dec-19	06-Jan-20	25-Feb-20	09-Mar-20	51	
C14220	Lift shaft steelworks (Lift 3A & 3B)	12	6d	0%	12	20-Dec-19	06-Jan-20	20-Dec-19	06-Jan-20	25-Feb-20	09-Mar-20	51	
C14240	Deck structure Portion 1	21	6d	0%	21	14-Dec-19	11-Jan-20	14-Dec-19	11-Jan-20	11-Jan-20	07-Feb-20	21	
C14250	Remove falsework Portion 1	6	6d	0%	6	11-Jan-20	18-Jan-20	11-Jan-20	18-Jan-20	23-Nov-20	28-Nov-20	257	
C14260	Falsework Portion 2	12	6d	0%	12	21-Jan-20	07-Feb-20	21-Jan-20	07-Feb-20	22-Jan-20	07-Feb-20	1	
C14270	Deck structure Portion 2	48	6d	0%	48	07-Feb-20	03-Apr-20	07-Feb-20	03-Apr-20	08-Feb-20	03-Apr-20	1	
C14280	Cure and prestress Portion 2 (Stage 1 stressing)	31	6d	0%	31	03-Apr-20	16-May-20	03-Apr-20	16-May-20	06-Apr-20	16-May-20	1	1
C14290	Falsework at Portion 0 (Pier 04)	12	6d	0%	12	28-Feb-20	13-Mar-20	28-Feb-20	13-Mar-20	11-Mar-20	24-Mar-20	10	
C14300	Deck structure Portion 0 (Pier 04)	21	6d	0%	21	13-Mar-20	08-Apr-20	13-Mar-20	08-Apr-20	25-Mar-20	22-Apr-20	10	
C14310	Falsework Portion 3a	12	6d	0%	12	28-Feb-20	13-Mar-20	28-Feb-20	13-Mar-20	06-Apr-20	22-Apr-20	31	
C14370	Bearing Pier 04	3	6d	0%	3	08-Apr-20	15-Apr-20	08-Apr-20	15-Apr-20	29-Jul-20	31-Jul-20	89	
C14380	Remove falsework Portion 0 (Pier 04)	6	6d	0%	6	08-Apr-20	18-Apr-20	08-Apr-20	18-Apr-20	23-Nov-20	28-Nov-20	186	
C14390	Deck structure Portion 3a	48	6d	0%	48	08-Apr-20	09-Jun-20	08-Apr-20	09-Jun-20	23-Apr-20	19-Jun-20	10	
Stage 4 Works		463	6d		463	11-May-19	28-Nov-20	11-May-19	28-Nov-20	17-Mar-20	28-Nov-20	1	
TTA Stage 4A		463	6d		463	11-May-19	28-Nov-20	11-May-19	28-Nov-20	17-Mar-20	28-Nov-20	1	
TTA		302	6d		302	11-May-19	19-May-20	11-May-19	19-May-20	17-Mar-20	21-May-20	2	
C14320	Design and acceptance of TTA Stage 4A	42	6d	0%	42	11-May-19	02-Jul-19	11-May-19	02-Jul-19	17-Mar-20	12-May-20	254	
C14330	Implementation of TTA - Stage 4A	2	6d	0%	2	16-May-20	19-May-20	16-May-20	19-May-20	19-May-20	21-May-20	2	1

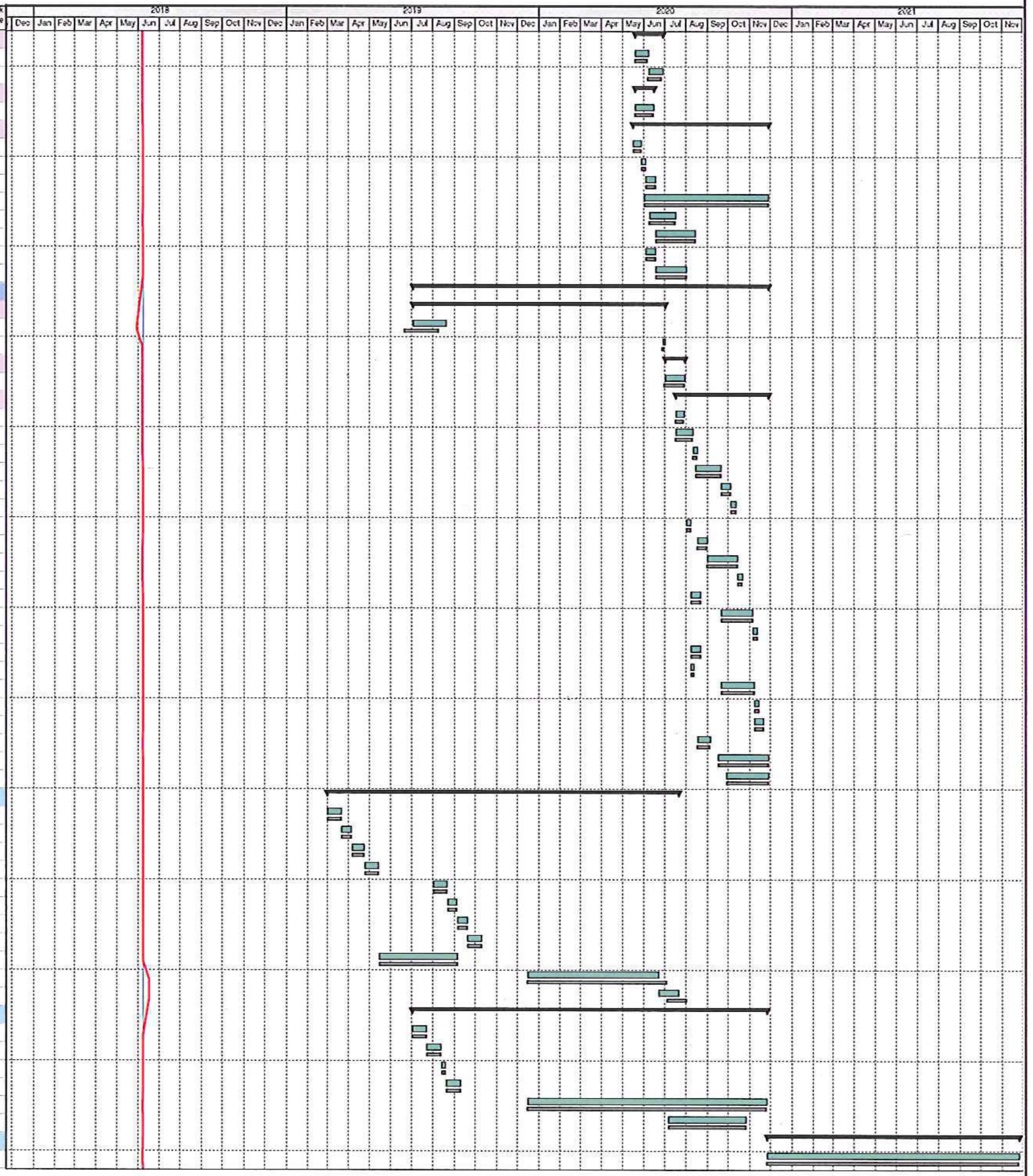


Baseline: Programme of May 2018
Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone
Summary

NE/2017/02 - Tseung Kwan O - Lam Tin Tunnel
Road P2/D4 and Associated Works
Updated Programme (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-06 (Data date 8-Jun-18)	TC	

Activity ID	Activity Name	Original Duration	Calendar	Activity % Complete	Remaining Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Float	Time Risk Allowance
Drainage		34	6d		34	19-May-20	29-Jun-20	19-May-20	29-Jun-20	21-May-20	02-Jul-20	2	
C14340	Stormwater SMH6501 to SMH6503	17	6d	0%	17	19-May-20	08-Jun-20	19-May-20	08-Jun-20	21-May-20	10-Jun-20	2	1
C14350	Stormwater SMH 6503 to SMH 6502	17	6d	0%	17	08-Jun-20	29-Jun-20	08-Jun-20	29-Jun-20	10-Jun-20	02-Jul-20	2	1
Roadworks		24	6d		24	19-May-20	16-Jun-20	19-May-20	16-Jun-20	02-Jun-20	02-Jul-20	12	
C14360	Roadworks at Po Shun Road north and west of interchange	24	6d	0%	24	19-May-20	16-Jun-20	19-May-20	16-Jun-20	02-Jun-20	02-Jul-20	12	
Footbridge superstructure		163	6d		163	16-May-20	28-Nov-20	16-May-20	28-Nov-20	18-May-20	28-Nov-20	1	
C14400	Deck outer section Portion 2	10	6d	0%	10	16-May-20	28-May-20	16-May-20	28-May-20	18-May-20	28-May-20	1	
C14410	Remove falsework Portion 2	6	6d	0%	6	28-May-20	04-Jun-20	28-May-20	04-Jun-20	29-May-20	04-Jun-20	1	
C14420	Falsework Portion 3b	12	6d	0%	12	04-Jun-20	18-Jun-20	04-Jun-20	18-Jun-20	05-Jun-20	18-Jun-20	1	
C14460	Erect steel canopy	150	6d	0%	150	01-Jun-20	28-Nov-20	01-Jun-20	28-Nov-20	02-Jun-20	28-Nov-20	1	
C14470	Cure and prestress Portion 3a (Stage 2 stressing)	31	6d	0%	31	09-Jun-20	17-Jul-20	09-Jun-20	17-Jul-20	20-Jun-20	28-Jul-20	10	1
C14510	Deck structure Portion 3b	48	6d	0%	48	18-Jun-20	15-Aug-20	18-Jun-20	15-Aug-20	19-Jun-20	15-Aug-20	1	
C14550	Falsework Portion 4	12	6d	0%	12	04-Jun-20	18-Jun-20	04-Jun-20	18-Jun-20	07-Jul-20	20-Jul-20	26	
C14560	Deck structure Portion 4	36	6d	0%	36	18-Jun-20	01-Aug-20	18-Jun-20	01-Aug-20	21-Jul-20	31-Aug-20	26	
TTA Stage 4B		421	6d		421	03-Jul-19	28-Nov-20	03-Jul-19	28-Nov-20	12-May-20	28-Nov-20	1	
TTA		296	6d		296	03-Jul-19	02-Jul-20	03-Jul-19	02-Jul-20	12-May-20	04-Jul-20	2	
C14430	Design and acceptance of TTA Stage 4B	42	6d	0%	42	03-Jul-19	20-Aug-19	03-Jul-19	20-Aug-19	12-May-20	02-Jul-20	254	
C14440	Implementation of TTA - Stage 4B	2	6d	0%	2	29-Jun-20	02-Jul-20	29-Jun-20	02-Jul-20	02-Jul-20	04-Jul-20	2	1
Roadworks		24	6d		24	02-Jul-20	30-Jul-20	02-Jul-20	30-Jul-20	04-Jul-20	01-Aug-20	2	
C14450	Roadworks at Po Shun Road north of interchange	24	6d	0%	24	02-Jul-20	30-Jul-20	02-Jul-20	30-Jul-20	04-Jul-20	01-Aug-20	2	
Footbridge superstructure		112	6d		112	17-Jul-20	28-Nov-20	17-Jul-20	28-Nov-20	29-Jul-20	28-Nov-20	1	
C14480	Deck outer section Portion 3a	10	6d	0%	10	17-Jul-20	29-Jul-20	17-Jul-20	29-Jul-20	11-Aug-20	21-Aug-20	21	
C14490	Deck structure Portion 3a adjacent Portion 0	21	6d	0%	21	17-Jul-20	11-Aug-20	17-Jul-20	11-Aug-20	29-Jul-20	21-Aug-20	10	
C14500	Remove falsework Portion 3a	6	6d	0%	6	11-Aug-20	18-Aug-20	11-Aug-20	18-Aug-20	22-Aug-20	28-Aug-20	10	
C14520	Cure and prestress Portion 3b (Stage 3 stressing)	31	6d	0%	31	15-Aug-20	21-Sep-20	15-Aug-20	21-Sep-20	17-Aug-20	21-Sep-20	1	1
C14530	Deck outer section Portion 3b	10	6d	0%	10	21-Sep-20	05-Oct-20	21-Sep-20	05-Oct-20	28-Oct-20	07-Nov-20	29	
C14540	Remove falsework Portion 3b	6	6d	0%	6	05-Oct-20	12-Oct-20	05-Oct-20	12-Oct-20	23-Nov-20	28-Nov-20	41	
C14570	Remove falsework Portion 4	6	6d	0%	6	01-Aug-20	08-Aug-20	01-Aug-20	08-Aug-20	01-Sep-20	07-Sep-20	26	
C14580	Falsework Portion 5	12	6d	0%	12	18-Aug-20	01-Sep-20	18-Aug-20	01-Sep-20	10-Sep-20	23-Sep-20	20	
C14590	Deck structure Portion 5	36	6d	0%	36	01-Sep-20	15-Oct-20	01-Sep-20	15-Oct-20	24-Sep-20	07-Nov-20	20	
C14600	Remove falsework Portion 5	6	6d	0%	6	15-Oct-20	22-Oct-20	15-Oct-20	22-Oct-20	23-Nov-20	28-Nov-20	32	
C14610	Falsework Portion 6a	12	6d	0%	12	08-Aug-20	22-Aug-20	08-Aug-20	22-Aug-20	10-Sep-20	23-Sep-20	28	
C14620	Deck structure Portion 6a	36	6d	0%	36	21-Sep-20	05-Nov-20	21-Sep-20	05-Nov-20	24-Sep-20	07-Nov-20	3	
C14630	Remove falsework Portion 6a	6	6d	0%	6	05-Nov-20	12-Nov-20	05-Nov-20	12-Nov-20	23-Nov-20	28-Nov-20	15	
C14640	Falsework Portion 6b	12	6d	0%	12	08-Aug-20	22-Aug-20	08-Aug-20	22-Aug-20	08-Sep-20	21-Sep-20	26	
C14650	Bearing Portion 6b	3	6d	0%	3	08-Aug-20	12-Aug-20	08-Aug-20	12-Aug-20	22-Sep-20	24-Sep-20	38	
C14660	Deck structure Portion 6b	38	6d	0%	38	21-Sep-20	07-Nov-20	21-Sep-20	07-Nov-20	22-Sep-20	07-Nov-20	1	2
C14670	Remove falsework Portion 6b	6	6d	0%	6	07-Nov-20	14-Nov-20	07-Nov-20	14-Nov-20	23-Nov-20	28-Nov-20	13	
C14680	Install fabricated movement joints (4 nos.)	12	6d	0%	12	07-Nov-20	21-Nov-20	07-Nov-20	21-Nov-20	09-Nov-20	21-Nov-20	1	
C14690	Falsework for arch structure and arch cladding	16	6d	0%	16	18-Aug-20	05-Sep-20	18-Aug-20	05-Sep-20	29-Aug-20	16-Sep-20	10	
C14700	Erect arch structure and arch cladding	60	6d	0%	60	16-Sep-20	28-Nov-20	16-Sep-20	28-Nov-20	17-Sep-20	28-Nov-20	1	
C14710	Finishing works	50	6d	0%	50	28-Sep-20	28-Nov-20	28-Sep-20	28-Nov-20	29-Sep-20	28-Nov-20	1	
Irrigation System		509			509	01-Mar-19	22-Jul-20	01-Mar-19	22-Jul-20	22-Jun-19	01-Aug-20	10	
C14720	Details of irrigation system (prepare & submit)	18	6d	0%	18	01-Mar-19*	21-Mar-19	01-Mar-19	21-Mar-19	22-Jun-19	15-Jul-19	90	
C14730	Details of irrigation system (review & discuss)	12	6d	0%	12	22-Mar-19	04-Apr-19	22-Mar-19	04-Apr-19	15-Jul-19	29-Jul-19	90	
C14740	Details of irrigation system (resubmit)	12	6d	0%	12	06-Apr-19	23-Apr-19	06-Apr-19	23-Apr-19	29-Jul-19	12-Aug-19	90	
C14750	Details of irrigation system (accept)	21	7d	0%	21	24-Apr-19	14-May-19	24-Apr-19	14-May-19	12-Aug-19	02-Sep-19	110	
C14760	MS for irrigation system (prepare & submit)	18	6d	0%	18	01-Aug-19*	21-Aug-19	01-Aug-19	21-Aug-19	19-Oct-19	09-Nov-19	65	
C14770	MS for irrigation system (review & discuss)	12	6d	0%	12	22-Aug-19	04-Sep-19	22-Aug-19	04-Sep-19	09-Nov-19	23-Nov-19	65	
C14780	MS for irrigation system (resubmit)	12	6d	0%	12	05-Sep-19	19-Sep-19	05-Sep-19	19-Sep-19	23-Nov-19	07-Dec-19	65	
C14790	MS for irrigation system (accept)	21	7d	0%	21	20-Sep-19	10-Oct-19	20-Sep-19	10-Oct-19	07-Dec-19	28-Dec-19	78	
C14800	Material order and delivery of irrigation system	96	6d	0%	96	15-May-19	05-Sep-19	15-May-19	05-Sep-19	02-Sep-19	28-Dec-19	92	
C14810	Install irrigation system	150	6d	0%	150	16-Dec-19	22-Jun-20	16-Dec-19	22-Jun-20	28-Dec-19	04-Jul-20	9	
C14820	Testing and commissioning of irrigation system	24	6d	0%	24	22-Jun-20	22-Jul-20	22-Jun-20	22-Jul-20	04-Jul-20	01-Aug-20	9	
Landscaping Softworks		513			513	02-Jul-19	26-Nov-20	02-Jul-19	26-Nov-20	10-Oct-19	28-Nov-20	3	
C14830	MS for landscaping works (prepare & submit)	18	6d	0%	18	02-Jul-19*	22-Jul-19	02-Jul-19	22-Jul-19	10-Oct-19	30-Oct-19	83	
C14840	MS for landscaping works (review & discuss)	18	6d	0%	18	23-Jul-19	12-Aug-19	23-Jul-19	12-Aug-19	31-Oct-19	20-Nov-19	83	
C14850	MS for landscaping works (resubmit)	6	6d	0%	6	13-Aug-19	19-Aug-19	13-Aug-19	19-Aug-19	21-Nov-19	27-Nov-19	83	
C14860	MS for landscaping works (accept)	21	7d	0%	21	20-Aug-19	09-Sep-19	20-Aug-19	09-Sep-19	28-Nov-19	18-Dec-19	100	
C14870	Landscaping Softworks (at-grade)	280	6d	0%	280	16-Dec-19	26-Nov-20	16-Dec-19	26-Nov-20	19-Dec-19	28-Nov-20	3	
C14880	Landscaping Softworks (on footbridge)	94	6d	0%	94	06-Jul-20	27-Oct-20	06-Jul-20	27-Oct-20	08-Aug-20	28-Nov-20	29	
Establishment Works		365	7d		365	26-Nov-20	26-Nov-21	26-Nov-20	26-Nov-21	29-Nov-20	29-Nov-21	3	
C14890	Establishment Works	365	7d	0%	365	26-Nov-20	26-Nov-21	26-Nov-20	26-Nov-21	29-Nov-20	29-Nov-21	3	



Baseline: Programme of May 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 (June 2018)

Date	Revision	Checked	Approved
15-Jun-18	RWP-2018-06 (Data date 8-Jun-18)	TC	

NE/2015/03

Subject: 3 Months Look Ahead Programme			
Activities	Jul-18	Aug-18	Sep-18
Construction of lift shaft and sum pit			
Construction of main deck			
Temporary works erection and bearing installation			

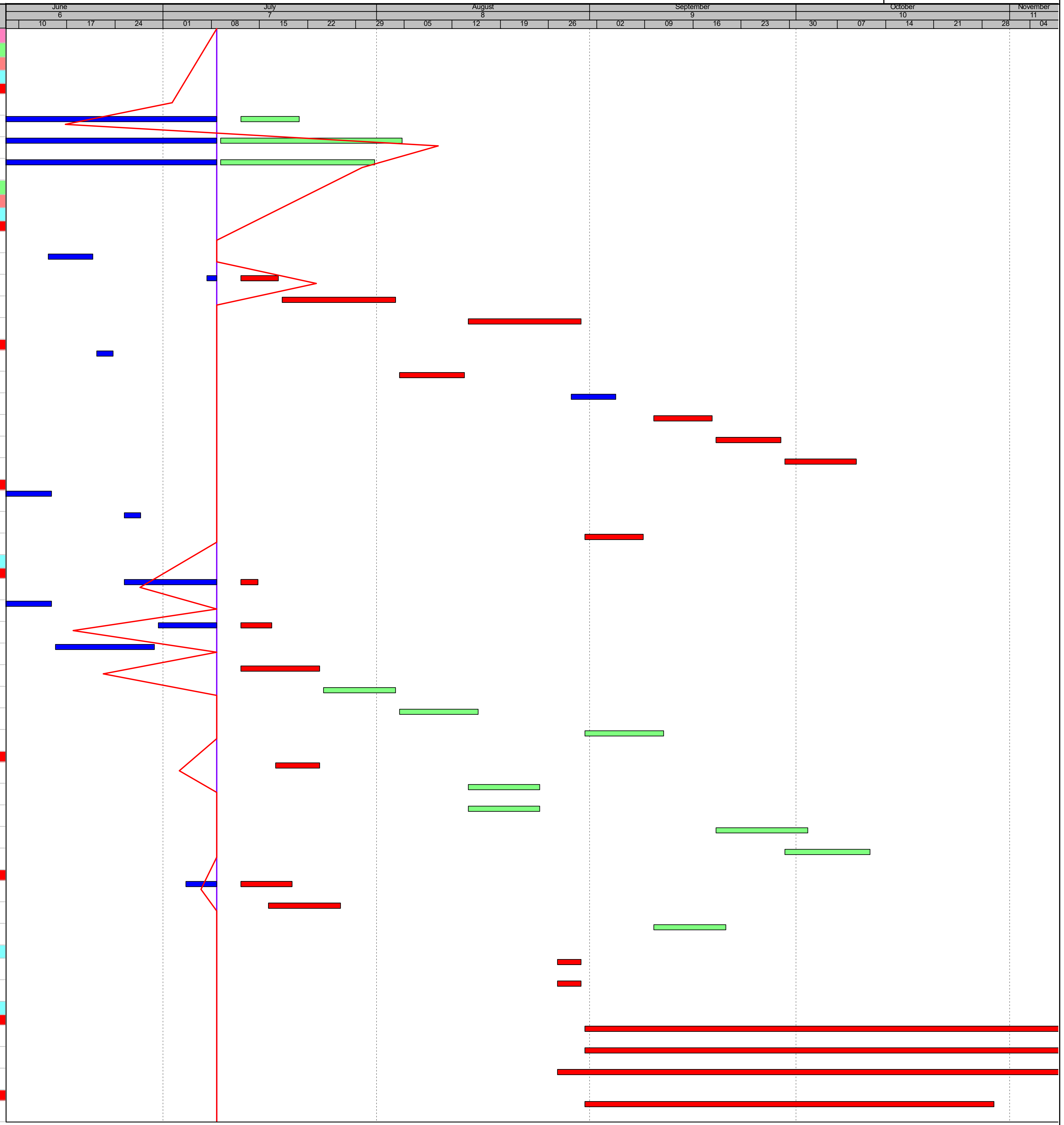
Subject: Construction Programme (Jun, 2018)				
Activities	wk1	wk2	wk3	wk4
Construction of lift shaft and sum pit				
Construction of main deck				

俊和－上隧－中冶聯營

NE/2017/01 Tseung Kwan O - Lam Tin Tunnel- Tseung Kwan O Interchange and Associated Works

Rolling programme (June 2018 to September 2018)

Activity ID	Activity Name	Original Duration	Start	Finish
Tseung Kwan O Lam Tin Tunnel - Tseung Kwan O Interchange and Associated Works		1127	26-Feb-18 A	27-Apr-21
Preliminary & Pre-Construction Work		1127	26-Feb-18 A	27-Apr-21
Pre-Construction Work		1127	26-Feb-18 A	27-Apr-21
Site Accommodation		1127	26-Feb-18 A	27-Apr-21
Site Accommodation (Construction Work)		1127	26-Feb-18 A	27-Apr-21
PRE-11790	Maintenance CSA during Contract Period including the Furniture,Equipment, Personnel,Computer Facilities, Land Transport	1012	21-Jul-18	27-Apr-21
PRE-11760	Erection of Contractor's Site Accommodation (CSA) including the Furniture ,Equiment , Personnel ,Computer Facilties,etc.	90	26-Feb-18 A	20-Jul-18
PRE-11770	Hoarding Erection	90	07-Mar-18 A	04-Aug-18
PRE-11780	Construction of Project Signboard	75	07-May-18 A	31-Jul-18
Construction Work		158	26-May-18 A	28-Nov-18
Pre-Drilling & Piling Work		158	26-May-18 A	28-Nov-18
Temporary Platform erection for Pre-drilling & Piling		116	26-May-18 A	09-Oct-18
Bridge ML		84	26-May-18 A	30-Aug-18
CON-10020	Temporary Platform Erection & Silt Curtain Installation for Pier 1F-N & 1F-S	26	26-May-18 A	05-Jun-18 A
CON-10030	Temporary Platform Erection & Silt Curtain Installation for Pier 1GN & 1GS	5	14-Jun-18 A	20-Jun-18 A
CON-10040	Temporary Platform Erection & Silt Curtain Installation for Pier 1HN & 1HS	15	07-Jul-18 A	17-Jul-18
CON-10050	Temporary Platform Erection & Silt Curtain Installation for Pier 1JN & 1JS	15	18-Jul-18	03-Aug-18
CON-10060	Temporary Platform Erection & Silt Curtain Installation for Pier 1KN & 1KS	15	14-Aug-18	30-Aug-18
Bridge S300		91	21-Jun-18 A	09-Oct-18
CON-10070	Temporary Platform Erection & Silt Curtain Installation for Pier 4A	8	21-Jun-18 A	23-Jun-18 A
CON-10080	Temporary Platform Erection & Silt Curtain Installation for Pier 4E	8	04-Aug-18	13-Aug-18
CON-10090	Temporary Platform Erection & Silt Curtain Installation for Pier 4B	8	29-Aug-18 A	04-Sep-18 A
CON-10100	Temporary Platform Erection & Silt Curtain Installationfor Pier 4F	8	10-Sep-18	18-Sep-18
CON-10110	Temporary Platform Erection & Silt Curtain Installation for Pier 4C	8	19-Sep-18	28-Sep-18
CON-10120	Temporary Platform Erection & Silt Curtain Installation for Pier 4G	8	29-Sep-18	09-Oct-18
Bridge S200		77	07-Jun-18 A	08-Sep-18
CON-10170	Temporary Platform Erection & Silt Curtain Installation for Pier 2E	6	07-Jun-18 A	14-Jun-18 A
CON-10180	Temporary Platform Erection & Silt Curtain Installation for Pier 2F	8	25-Jun-18 A	27-Jun-18 A
CON-10190	Temporary Platform Erection & Silt Curtain Installation for Pier 2G	8	31-Aug-18	08-Sep-18
Pre-drilling		103	28-May-18 A	11-Oct-18
Bridge ML		79	28-May-18 A	11-Sep-18
CON-10360	Pre-drill 1F-N Including Plant Mobilisation and Demobilisation (2 nos./Team 4)	11	25-Jun-18 A	14-Jul-18
CON-10350	Pre-drill 1E-S Including Plant Mobilisation and Demobilisation (2 nos./Team 1)	11	28-May-18 A	14-Jun-18 A
CON-10370	Pre-drill 1F-S Including Plant Mobilisation and Demobilisation (2 nos./Team 3)	11	30-Jun-18 A	16-Jul-18
CON-10340	Pre-drill 1E-N Including Plant Mobilisation and Demobilisation (2 nos./Team 2)	11	15-Jun-18 A	29-Jun-18 A
CON-10380	Pre-drill 1G Including Plant Mobilisation and Demobilisation (2 nos./Team 1)	10	12-Jul-18	23-Jul-18
CON-10390	Pre-drill 1H Including Plant Mobilisation and Demobilisation (2 nos./Team 1)	10	24-Jul-18	03-Aug-18
CON-10400	Pre-drill 1J Including Plant Mobilisation and Demobilisation (2 nos./Team 3)	10	04-Aug-18	15-Aug-18
CON-10410	Pre-drill 1K Including Plant Mobilisation and Demobilisation (2 nos./Team 2)	10	31-Aug-18	11-Sep-18
Bridge S300		73	17-Jul-18	11-Oct-18
CON-10420	Pre-drill 4A Including Plant Mobilisation and Demobilisation (1 nos./Team 3)	6	17-Jul-18	23-Jul-18
CON-10440	Pre-drill 4B Including Plant Mobilisation and Demobilisation (2 nos./Team 4)	10	14-Aug-18	24-Aug-18
CON-10430	Pre-drill 4E Including Plant Mobilisation and Demobilisation (2 nos./Team 2)	10	14-Aug-18	24-Aug-18
CON-10450	Pre-drill 4F Including Plant Mobilisation and Demobilisation (2 nos./Team 3)	10	19-Sep-18	02-Oct-18
CON-10460	Pre-drill 4C Including Plant Mobilisation and Demobilisation (2 nos./Team 4)	10	29-Sep-18	11-Oct-18
Bridge S200		69	04-Jul-18 A	20-Sep-18
CON-10520	Pre-drill 2E Including Plant Mobilisation and Demobilisation (2 nos./Team 2)	10	04-Jul-18 A	19-Jul-18
CON-10530	Pre-drill 2F Including Plant Mobilisation and Demobilisation (2 nos./Team 4)	10	16-Jul-18	26-Jul-18
CON-10540	Pre-drill 2G Including Plant Mobilisation and Demobilisation (2 nos./Team 1)	10	10-Sep-18	20-Sep-18
Establishment of Bored Pile Machine		4	27-Aug-18	30-Aug-18
CON-10631	Establishment of Piling Plant for Bridge ML (1st Piling of the Bridge)	4	27-Aug-18	30-Aug-18
CON-10632	Establishment of Piling Plant for Bridge S300 (1st Piling of the Bridge)	4	27-Aug-18	30-Aug-18
Bored Pile Include Fabrication & Delivery of Pile Cage and Casing		78	27-Aug-18	28-Nov-18
Bridge ML		78	27-Aug-18	28-Nov-18
CON-10660	Bored Pile 1F-N Including Plant Demobilisation (2 nos. Pile / Team 2)	74	31-Aug-18	28-Nov-18
CON-10670	Bored Pile 1F-S Including Plant Demobilisation (2 nos. Pile / Team 3)	74	31-Aug-18	28-Nov-18
CON-10680	Bored Pile 1G Including Plant Mobilisation and Demobilisation (2 nos. Pile / Team 1)	78	27-Aug-18	28-Nov-18
Bridge S300		48	31-Aug-18	29-Oct-18
CON-10720	Bored Pile 4A Including Plant Demobilisation (1 nos. Pile / Team 4)	48	31-Aug-18	29-Oct-18



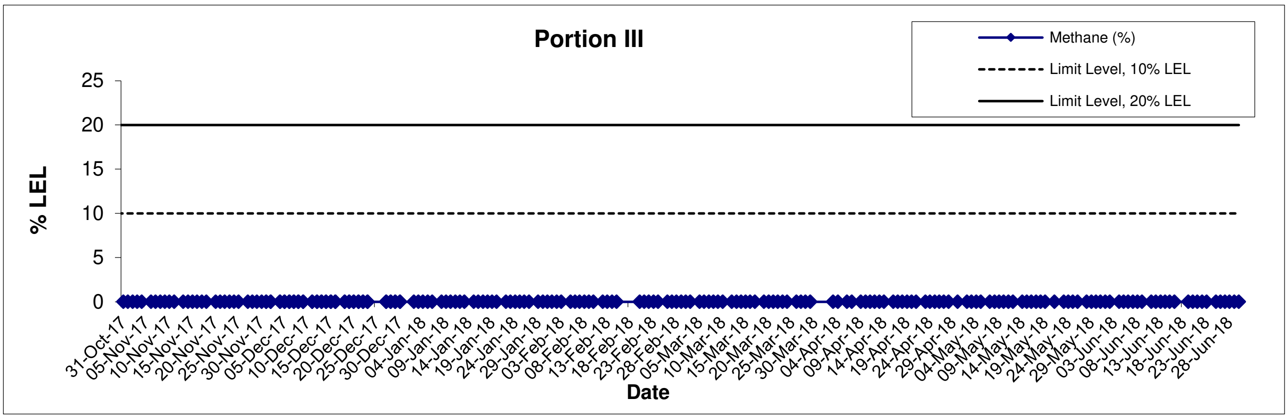
Milestone | Works | Critical Works | Actual | Actual Progress of Regular Submission | BL Milestone

APPENDIX R
RECORD OF LANDFILL GAS MONITORING BY CONTRACTOR

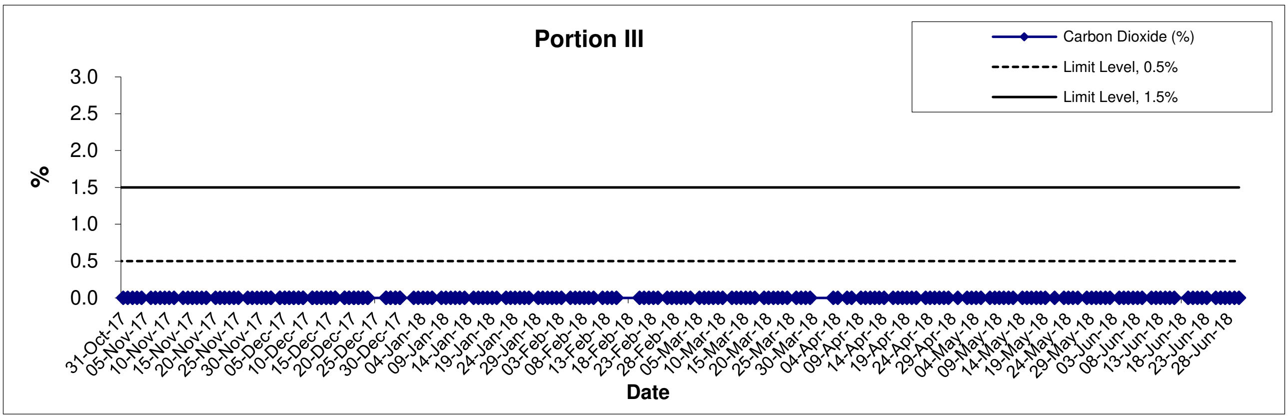
APPENDIX R - RECORD OF LANDFILL GAS MONITORING BY THE CONTRACTOR

Location	Date of Measurement	Sampling time	Weather Condition	Temperature (°C)	Methane (%)	Carbon dioxide (%)	Oxygen (%)
Portion III	1-Jun-18	08:30	Sunny	27	0	0	20.9
	1-Jun-18	13:03	Sunny	35	0	0	20.9
	2-Jun-18	08:30	Cloudy	27	0	0	20.9
	2-Jun-18	13:00	Cloudy	33	0	0	20.9
	4-Jun-18	08:30	Rainy	26	0	0	20.9
	4-Jun-18	13:02	Rainy	31	0	0	20.9
	5-Jun-18	08:31	Rainy	26	0	0	20.9
	5-Jun-18	13:00	Rainy	30	0	0	20.9
	6-Jun-18	08:30	Rainy	26	0	0	20.9
	6-Jun-18	13:05	Rainy	29	0	0	20.9
	7-Jun-18	08:30	Rainy	26	0	0	20.9
	7-Jun-18	13:02	Rainy	29	0	0	20.9
	8-Jun-18	08:30	Rainy	25	0	0	20.9
	8-Jun-18	13:02	Rainy	30	0	0	20.9
	9-Jun-18	08:30	Cloudy	28	0	0	20.9
	9-Jun-18	13:01	Cloudy	30	0	0	20.9
	11-Jun-18	08:30	Sunny	28	0	0	20.9
	11-Jun-18	13:02	Sunny	34	0	0	20.9
	12-Jun-18	08:30	Rainy	25	0	0	20.9
	12-Jun-18	13:00	Rainy	30	0	0	20.9
	13-Jun-18	08:30	Rainy	25	0	0	20.9
	13-Jun-18	13:00	Rainy	29	0	0	20.9
	14-Jun-18	08:30	Cloudy	25	0	0	20.9
	14-Jun-18	13:05	Cloudy	28	0	0	20.9
	15-Jun-18	08:30	Cloudy	25	0	0	20.9
	15-Jun-18	13:00	Cloudy	29	0	0	20.9
	16-Jun-18	08:30	Cloudy	26	0	0	20.9
	16-Jun-18	13:05	Cloudy	31	0	0	20.9
	19-Jun-18	08:30	Cloudy	28	0	0	20.9
	19-Jun-18	13:00	Cloudy	31	0	0	20.9
	20-Jun-18	08:30	Cloudy	28	0	0	20.9
	20-Jun-18	13:03	Cloudy	32	0	0	20.9
	21-Jun-18	08:30	Cloudy	28	0	0	20.9
	21-Jun-18	13:01	Cloudy	31	0	0	20.9
	22-Jun-18	08:30	Rainy	25	0	0	20.9
	22-Jun-18	13:00	Rainy	30	0	0	20.9
	23-Jun-18	08:30	Rainy	24	0	0	20.9
	23-Jun-18	13:00	Rainy	30	0	0	20.9
	25-Jun-18	08:30	Cloudy	26	0	0	20.9
	25-Jun-18	13:00	Cloudy	31	0	0	20.9
	26-Jun-18	08:30	Cloudy	25	0	0	20.9
	26-Jun-18	13:00	Cloudy	33	0	0	20.9
	27-Jun-18	08:30	Cloudy	27	0	0	20.9
	27-Jun-18	13:04	Cloudy	32	0	0	20.9
	28-Jun-18	08:30	Cloudy	27	0	0	20.9
	28-Jun-18	13:00	Cloudy	32	0	0	20.9
	29-Jun-18	08:30	Cloudy	28	0	0	20.9
	29-Jun-18	13:02	Cloudy	32	0	0	20.9
	30-Jun-18	08:30	Cloudy	28	0	0	20.9
	30-Jun-18	13:02	Cloudy	32	0	0	20.9

Methane



Carbon Dioxide



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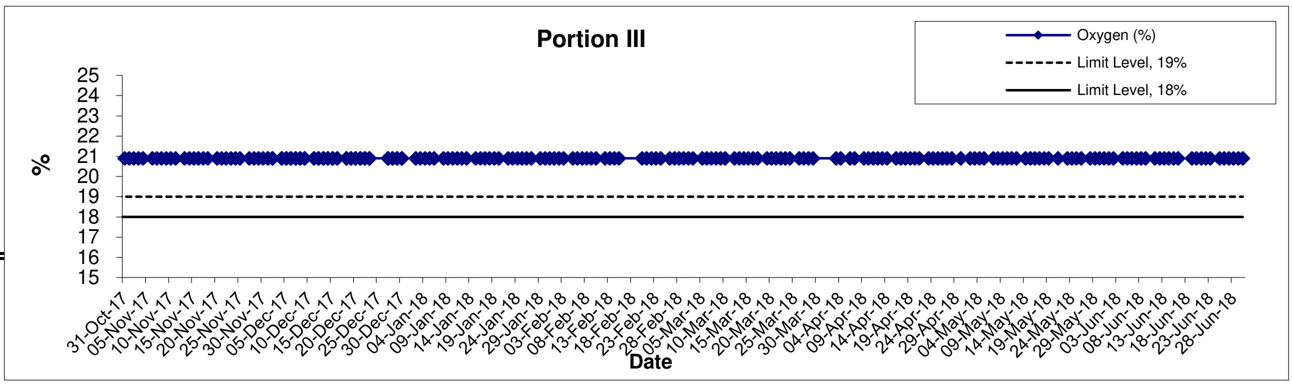
Oxygen



Title Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction Graphical Presentation of Landfill Gas Measurement	Scale N.T.S	Project No. MA16034	CINOTECH
	Date June 18	Appendix R	

APPENDIX S
UPDATED CONSTRUCTION NOISE ASSESSMENT

CINOTECH 漢臻
consultants limited

Room 1710, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel.: (852) 2151 2083 Fax: (852) 3107 1388
Website : http://www.cinotech.com.hk
E-mail : info@cinotech.com.hk

Our Ref: MA16034/Corres/Out/vc180608_NMP_Contract 2

Civil Engineering and Development Department
New Territories East Development Office
Branch 1
Project Division (1)
Suite 1213 Chinachem Golden Plaza,
77 Mody Road,
Tsim Sha Tsui East, Kowloon

By E-mail

Attn: Mr. CHIANG Nin Tat, Eric

8th June 2018

Dear Mr. Chiang,

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel - Design and Construction
(Environmental Permit (EP) No. EP-458/2013/C)
Contract No. NE/2015/02 – Noise Mitigation Plan (Rev. 08)

We refer to the Noise Mitigation Plan (Rev. 08) received from CRBC - Build King Joint Venture on 8th June 2018 via email.

We noted that only the plant list was updated and construction noise assessment was revised according to the updated plant list. We are pleased to inform you that we have no further comment on your plan with reference to the approved Noise Mitigation Plan in November 2017.

Should you have any queries, please contact our Ms. Vivian Choi at 2157 3881 or the undersigned at 2151 2089.

Yours faithfully,

For and on behalf of
Cinotech Consultants Limited

Dr. Priscilla Choy
Environmental Team Leader

c.c.	AECOM	Mr. KY Chan	By E-mail
	ANewR	Mr. Adi Lee	By E-mail
	CBJV	Mr. Gary Fung	By E-mail

CRBC - Build King Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: CM6 (0-39m)

Mitigation Measures Scenario

Noise Criteria: 75dB(A)

Portion	Activity	PME	TM Ref. / other Ref.	No. of plants	SWL	Total SWL	On-time, %	Time Factor	Distance from Notional Sources, m	Distance Attenuation*,dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)
IX	U - Trough (Piling)	Crane (62 kw)	BS D7/114	10	101	111	50	-3	225	-55.10	0	3	55.93	
		Drill Rig, Rotary Type (Diesel)	CNP 072	10	110	120	30	-5	225	-55.10	-5	3	57.71	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	10	100	110	50	-3	225	-55.10	0	3	54.93	
		Air Compressor	CNP 002	10	102	112	30	-5	225	-55.10	0	3	54.71	
		Excavator (73 kw)	BS D8/13	10	110	120	50	-3	225	-55.10	0	3	64.93	
		Concrete Lorry Mixer	BS D6/33	10	96	106	50	-3	225	-55.10	0	3	50.93	
		Piling, Vibration Hammer	CNP 172	10	115	125	30	-5	225	-55.10	0	3	67.71	
		Power pack (diesel)	CNP 174	10	100	110	30	-5	225	-55.10	0	3	52.71	
		Water pump, subersible (electric)	CNP 283	10	85	95	50	-3	225	-55.10	0	3	39.93	
		Piling, large diameter bored, reverse circulation drill	CNP 166	3	100	105	30	-5	225	-55.10	-5	3	42.49	70.39
IX	U - Trough (ELS)	Crane (62 kw)	BS D7/114	4	101	107	50	-3	225	-55.10	0	3	51.95	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	8	100	109	50	-3	225	-55.10	0	3	53.96	
		Piling, Vibration Hammer	CNP 172	4	115	121	30	-5	225	-55.10	0	3	63.73	
		Power pack (diesel)	CNP 174	4	100	106	30	-5	225	-55.10	0	3	48.73	
		Excavator (73 kw)	BS D8/13	8	110	119	50	-3	225	-55.10	0	3	63.96	
		Dump Truck	CNP 068	8	105	114	50	-3	225	-55.10	0	3	58.96	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	225	-55.10	0	3	35.95	
		Derrick Barge	CNP 061	2	104	107	50	-3	225	-55.10	0	3	51.94	67.98
IX	U - Trough (Structure)	Crane (62 kw)	BS D7/114	2	101	104	50	-3	225	-55.10	0	3	48.94	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	225	-55.10	0	3	47.94	
		Air Blower	CNP 006	10	95	105	50	-3	225	-55.10	0	3	49.93	
		Saw, Circular Wood	CNP 201	10	108	118	50	-3	225	-55.10	0	3	62.93	
		Concrete Lorry Mixer (6 m3)	BS D6/33	4	96	102	50	-3	225	-55.10	0	3	46.95	
		Concrete pump, stationary/lorry mounted	CNP 047	4	109	115	50	-3	225	-55.10	0	3	59.95	
		Poker, vibratory, hand-held	CNP 170	4	113	119	50	-3	225	-55.10	0	3	63.95	
		Water pump, subersible (electric)	CNP 283	12	85	96	50	-3	225	-55.10	0	3	40.72	67.59
IX	U - Trough (Road and Drainage Works)	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	225	-55.10	0	3	54.93	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	225	-55.10	0	3	45.93	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	225	-55.10	0	3	40.93	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	225	-55.10	0	3	45.93	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	225	-55.10	0	3	35.95	
		Dump Truck	CNP 068	1	105	105	50	-3	225	-55.10	0	3	49.93	
		Road Roller	CNP 185	1	108	108	50	-3	225	-55.10	0	3	52.93	58.46
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	163	-52.20	0	3	48.77	
		Piling, large diameter bored, oscillator	CNP 165	1	115	115	30	-5	163	-52.20	0	3	60.56	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	163	-52.20	0	3	57.77	
		Water pump, subersible (electric)	CNP 283	2	85	88	50	-3	163	-52.20	0	3	35.78	62.59
VI	Road P2 Underpass, U Trough (Piling)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	163	-52.20	0	3	48.77	
		Drill Rig, Rotary Type (Diesel)	CNP 072	1	110	110	30	-5	163	-52.20	-5	3	50.56	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	163	-52.20	0	3	47.77	
		Air Compressor	CNP 002	2	102	105	30	-5	163	-52.20	0	3	50.57	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	163	-52.20	0	3	57.77	
		Concrete Lorry Mixer	BS D6/33	1	96	96	50	-3	163	-52.20	0	3	43.77	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	163	-52.20	0	3	38.79	59.97
VI	Road P2 Underpass, U Trough (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	163	-52.20	0	3	48.77	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	163	-52.20	0	3	47.77	
		Piling, Vibration Hammer	CNP 172	1	115	115	30	-5	163	-52.20	0	3	60.56	
		Power pack (diesel)	CNP 174	1	100	100	30	-5	163	-52.20	0	3	45.56	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	163	-52.20	0	3	57.77	
		Dump Truck	CNP 068	1	105	105	50	-3	163	-52.20	0	3	52.77	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	163	-52.20	0	3	38.79	63.23
VI	Road P2 Underpass, U Trough (Structure)	Crane (62 kw)	BS D7/114	2	101	104	50	-3	163	-52.20	0	3	51.78	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	163	-52.20	0	3	50.78	
		Air Compressor	CNP 002	2	102	105	50	-3	163	-52.20	0	3	52.78	
		Saw, Circular Wood	CNP 201	2	108	111	50	-3	163	-52.20	0	3	58.78	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	163	-52.20	0	3	43.77	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	163	-52.20	0	3	38.79	60.96
VI	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	163	-52.20	0	3	57.77	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	163	-52.20	0	3	48.77	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	163	-52.20	0	3	43.77	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	163	-52.20	0	3	48.77	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	163	-52.20	0	3	38.79	
		Dump Truck	CNP 068	1	105	105	50	-3	163	-52.20	0	3	52.77	
		Road Roller	CNP 185	1	108	108	50	-3	163	-52.20	0	3	55.77	61.3

Note: SPL = SWL + TF + DC + BC + FC, where

SPL = Predicted noise level in dB(A)

SWL = Sound Power Level in dB(A)

TF = Time factor in dB(A) = 10 log (P)

P = On-time percentage

DC = Distance attenuation correction in dB(A) = -(20 log D + 8)

D = Distance in m between the noise source and the receiver

BC = Barrier correction in dB(A)

FC = Façade correction in dB(A) = 3 dB(A)

CRBC - Build King Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: CM6 (0-39m) Noise Criteria: 75dB(A)

Mitigation Measures Scenario

Portion	Activity	PME	TM Ref. / other Ref.	No. of plants	SWL	Total SWL	On-time, %	Time Factor	Distance from Notional Sources, m	Distance Attenuation*, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)
I	DSD Transformer Room	Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	213	-54.57	0	3	45.42	
		Bar Bender and Cutter	CNP 021	1	90	90	50	-3	213	-54.57	0	3	35.42	
		Breaker, hand-held, mass > 10kg < 20kg	CNP 024	1	108	108	50	-3	213	-54.57	0	3	53.42	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	213	-54.57	0	3	41.42	
		Saw, Circular Wood	CNP 201	1	108	108	50	-3	213	-54.57	0	3	53.42	
		Water pump, subersible (electric)	CNP 283	2	85	88	50	-3	213	-54.57	0	3	33.43	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	213	-54.57	0	3	55.42	
		Dump Truck	CNP 068	1	105	105	50	-3	213	-54.57	0	3	50.42	59.78
IV	Road P2 Underpass (Piling)	Crane (62 kw)	BS D7/114	3	101	106	50	-3	47	-41.39	-5	3	59.37	
		Drill Rig, Rotary Type (Diesel)	CNP 072	3	110	115	30	-5	47	-41.39	-11.7	3	59.46	
		Air Compressor	CNP 002	6	102	110	30	-5	47	-41.39	-5	3	61.17	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	47	-41.39	-5	3	63.60	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	47	-41.39	-5	3	49.60	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	47	-41.39	-5	3	44.62	
		G. I. drilling rig	BS C2/43	1	102	102	50	-3	47	-41.39	-5	3	55.60	
		Breaker, excavator mounted (hydraulic)	CNP 028	1	122	122	10	-10	47	-41.39	-10	3	63.61	69.10
IV	Road P2 Underpass (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	47	-41.39	-5	3	54.60	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	47	-41.39	-5	3	53.60	
		Piling, Vibration Hammer	CNP 172	2	115	118	30	-5	47	-41.39	-5	3	69.39	
		Power pack (diesel)	CNP 174	2	100	103	30	-5	47	-41.39	-5	3	54.39	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	47	-41.39	-5	3	63.60	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	47	-41.39	-5	3	44.62	70.72
IV	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	47	-41.39	-5	3	63.60	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	47	-41.39	-5	3	54.60	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	47	-41.39	-5	3	49.60	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	47	-41.39	-5	3	54.60	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	47	-41.39	-5	3	44.62	
		Dump Truck	CNP 068	1	105	105	50	-3	47	-41.39	-5	3	58.60	
		Road Roller	CNP 185	1	108	108	50	-3	47	-41.39	-5	3	61.60	67.13
V	Road P2 Underpass, U Trough (Piling)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	146	-51.26	0	3	49.73	
		Drill Rig, Rotary Type (Diesel)	CNP 072	1	110	110	30	-5	146	-51.26	-5	3	51.51	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	146	-51.26	0	3	48.73	
		Air Compressor	CNP 002	2	102	105	30	-5	146	-51.26	0	3	51.52	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	146	-51.26	0	3	58.73	
		Concrete Lorry Mixer	BS D6/33	1	96	96	50	-3	146	-51.26	0	3	44.73	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	146	-51.26	0	3	39.75	
		Breaker, excavator mounted (hydraulic)	CNP 028	1	122	122	10	-10	146	-51.26	-10	3	53.74	61.69
V	Road P2 Underpass, U Trough (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	146	-51.26	0	3	49.73	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	146	-51.26	0	3	48.73	
		Piling, Vibration Hammer	CNP 172	1	115	115	30	-5	146	-51.26	0	3	61.51	
		Power pack (diesel)	CNP 174	1	100	100	30	-5	146	-51.26	0	3	46.51	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	146	-51.26	0	3	58.73	
		Dump Truck	CNP 068	1	105	105	50	-3	146	-51.26	0	3	53.73	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	146	-51.26	0	3	39.75	64.19
V	Road P2 Underpass, U Trough (Structure)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	146	-51.26	0	3	49.73	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	146	-51.26	0	3	51.74	
		Air Compressor	CNP 002	2	102	105	50	-3	146	-51.26	0	3	53.74	
		Saw, Circular Wood	CNP 201	2	108	111	50	-3	146	-51.26	0	3	59.74	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	146	-51.26	0	3	44.73	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	146	-51.26	0	3	39.75	61.65
V	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	146	-51.26	0	3	58.73	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	146	-51.26	0	3	49.73	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	146	-51.26	0	3	44.73	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	146	-51.26	0	3	49.73	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	146	-51.26	0	3	39.75	
		Dump Truck	CNP 068	1	105	105	50	-3	146	-51.26	0	3	53.73	
		Road Roller	CNP 185	1	108	108	50	-3	146	-51.26	0	3	56.73	62.25
VII	Road P2 Underpass, U Trough (Piling)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	119	-49.50	-5	3	46.50	
		Drill Rig, Rotary Type (Diesel)	CNP 072	1	110	110	30	-5	119	-49.50	-5	3	53.29	
		Air Compressor	CNP 002	2	102	105	30	-5	119	-49.50	-5	3	48.30	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	119	-49.50	-5	3	55.50	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	119	-49.50	-5	3	41.50	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	119	-49.50	-5	3	36.52	58.45
VII	Road P2 Underpass, U Trough (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	119	-49.50	-5	3	46.50	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	119	-49.50	-5	3	45.50	
		Breaker, Excavator mounted (hydraulic)	CNP 028	1	122	122	10	-10	119	-49.50	-10	3	55.51	
		Piling, Vibration Hammer	CNP 172	1	115	115	30	-5	119	-49.50	-5	3	58.29	
		Power pack (diesel)	CNP 174	1	100	100	30	-5	119	-49.50	-5	3	43.29	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	119	-49.50	-5	3	55.50	
		Dump Truck	CNP 068	1	105	105	50	-3	119	-49.50	-5	3	50.50	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	119	-49.50	-5	3	36.52	62.05
VII	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	119	-49.50	-5	3	55.50	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	119	-49.50	-5	3	46.50	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	119	-49.50	-5	3	41.50	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	119	-49.50	-5	3	46.50	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	119	-49.50	-5	3	36.52	
		Dump Truck	CNP 068	1	105	105	50	-3	119	-49.50	-5	3	50.50	
		Road Roller	CNP 185	1	108	108	50	-3	119	-49.50	-5	3	53.50	59.03
IX	Dredging and Reclamation	Dredger	CNP 070	2	103	106	50	-3	225	-55.10	0	3	50.94	
		Derrick Barge	CNP 061	4	104	110	50	-3	225	-55.10	0	3	54.95	
		Tug boat	CNP 221	2	110	113	50	-3	225	-55.10	0	3	57.94	
		Water pump, subersible (electric)	CNP 283	6	85	93	50	-3	225	-55.10	0	3	37.71	
		Dump Truck	CNP 068	6	105	113	50	-3	225	-55.10	0	3	57.71	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	4	100	106	50	-3	225	-55.10	0	3	50.95	
		Winch (Electric)	CNP 262	4	95	101	50	-3	225	-55.10	0	3	45.95	
		Excavator (73 kw)	BS D8/13	3	110	115	50	-3	225	-55.10	0	3	59.70	
		Vibration Hammer	CNP 172	1	115	115	50	-3	225	-55.10	0	3	59.93	
		Hopper barge	-	6	-	-	50	-3	225	-55.10	0	3	-	65.73
IX	Steel Cofferdam and Water Gate	Derrick Barge	CNP 061	3	104	109	50	-3	225	-55.10	0	3	53.70	
		Tug boat	CNP 221	2	110	113	50	-3	225	-55.10	0	3	57.94	59.33
IX	Marine Ground Treatment	Band Drain Machine (hydarulic Vibratory lance starting up)	BS D4/107a	1	113	113	50	-3	225	-55.10	0	3	57.93	57.93

Note: SPL = SWL + TF + DC + BC + FC, where

SPL = Predicted noise level in dB(A)

SWL = Sound Power Level in dB(A)

TF = Time factor in dB(A) = 10 log (P)

P = On-time percentage

DC = Distance attenuation correction in dB(A) = -(20 log D + 8)

D = Distance in m between the noise source and the receiver

BC = Barrier correction in dB(A)

FC = Façade correction in dB(A) = 3 dB(A)

CRBC - Build King Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: CM7

Mitigation Measures Scenario

Noise Criteria: 75dB(A)

Portion	Activity	PME	TM Ref. / other Ref.	No. of plants	SWL	Total SWL	On-time, %	Time Factor	Distance from Notional Sources, m	Distance Attenuation*, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)
VI	Road P2 Underpass, U-Trough	Crane (62 kw)	BS D7/114	1	101	101	50	-3	157	-51.92	0	3	49.07	
	(Removal of Existing Abandoned Box Culver	Piling, large diameter bored, oscillator	CNP 165	1	115	115	30	-5	157	-51.92	-5	3	55.85	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	157	-51.92	0	3	58.07	
		Water pump, subersible (electric)	CNP 283	2	85	88	50	-3	157	-51.92	0	3	36.08	60.46
VI	Road P2 Underpass, U Trough (Piling)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	157	-51.92	0	3	49.07	
		Drill Rig, Rotary Type (Diesel)	CNP 072	1	110	110	30	-5	157	-51.92	-5	3	50.85	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	157	-51.92	0	3	48.07	
		Air Compressor	CNP 002	2	102	105	30	-5	157	-51.92	0	3	50.86	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	157	-51.92	0	3	58.07	
		Concrete Lorry Mixer	BS D6/33	1	96	96	50	-3	157	-51.92	0	3	44.07	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	157	-51.92	0	3	39.09	60.27
VI	Road P2 Underpass, U Trough (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	157	-51.92	0	3	49.07	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	157	-51.92	0	3	48.07	
		Piling, Vibration Hammer	CNP 172	1	115	115	30	-5	157	-51.92	0	3	60.85	
		Power pack (diesel)	CNP 174	1	100	100	30	-5	157	-51.92	0	3	45.85	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	157	-51.92	0	3	58.07	
		Dump Truck	CNP 068	1	105	105	50	-3	157	-51.92	0	3	53.07	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	157	-51.92	0	3	39.09	63.53
VI	Road P2 Underpass, U Trough (Structure)	Crane (62 kw)	BS D7/114	2	101	104	50	-3	157	-51.92	0	3	52.08	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	157	-51.92	0	3	51.08	
		Air Compressor	CNP 002	2	102	105	50	-3	157	-51.92	0	3	53.08	
		Saw, Circular Wood	CNP 201	2	108	111	50	-3	157	-51.92	0	3	59.08	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	157	-51.92	0	3	44.07	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	157	-51.92	0	3	39.09	61.26
VI	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	157	-51.92	0	3	58.07	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	157	-51.92	0	3	49.07	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	157	-51.92	0	3	44.07	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	157	-51.92	0	3	49.07	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	157	-51.92	0	3	39.09	
		Dump Truck	CNP 068	1	105	105	50	-3	157	-51.92	0	3	53.07	
		Road Roller	CNP 185	1	108	108	50	-3	157	-51.92	0	3	56.07	61.6
VIII	Road P2 Underpass, U Trough (Piling)	Crane (62 kw)	BS D7/114	2	101	104	50	-3	224	-55.00	0	3	49.00	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	4	100	106	50	-3	224	-55.00	0	3	51.01	
		Air Compressor	CNP 002	4	102	108	50	-3	224	-55.00	0	3	53.01	
		Drill Rig, Rotary Type (Diesel)	CNP 072	2	110	113	50	-3	224	-55.00	-5	3	53.00	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	224	-55.00	0	3	54.98	
		Concrete Lorry Mixer (6 m3)	BS D6/33	2	96	99	50	-3	224	-55.00	0	3	44.00	
		Piling, Vibration Hammer	CNP 172	1	115	115	50	-3	224	-55.00	0	3	59.98	
		Power pack (diesel)	CNP 174	1	100	100	50	-3	224	-55.00	0	3	44.98	
		Water pump, subersible (electric)	CNP 283	2	85	88	50	-3	224	-55.00	0	3	33.00	62.95
VIII	Road P2 Underpass, U Trough (ELS)	Crane (62 kw)	BS D7/114	2	101	104	50	-3	224	-55.00	0	3	49.00	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	4	100	106	50	-3	224	-55.00	0	3	51.01	
		Air Compressor	CNP 002	4	102	108	50	-3	224	-55.00	0	3	53.01	
		Piling, Vibration Hammer	CNP 172	2	115	118	50	-3	224	-55.00	0	3	63.00	
		Power pack (diesel)	CNP 174	2	100	103	50	-3	224	-55.00	0	3	48.00	
		Excavator (73 kw)	BS D8/13	4	110	116	50	-3	224	-55.00	0	3	61.01	
		Breaker, Excavator mounted (hydraulic)	CNP 028	1	122	122	50	-3	224	-55.00	-10	3	56.98	
		Dump Truck	CNP 068	2	105	108	50	-3	224	-55.00	0	3	53.00	
		Water pump, subersible (electric)	CNP 283	16	85	97	50	-3	224	-55.00	0	3	42.03	66.47
VIII	Road P2 Underpass, U Trough (Structure)	Crane (62 kw)	BS D7/114	2	101	104	50	-3	224	-55.00	0	3	49.00	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	224	-55.00	0	3	48.00	
		Air Compressor	CNP 002	1	102	102	50	-3	224	-55.00	0	3	46.98	
		Saw, Circular Wood	CNP 201	2	108	111	50	-3	224	-55.00	0	3	56.00	
		Concrete Lorry Mixer (6 m3)	BS D6/33	2	96	99	50	-3	224	-55.00	0	3	44.00	
		Water pump, subersible (electric)	CNP 283	16	85	97	50	-3	224	-55.00	0	3	42.03	58
VIII	Road and Drainage Works	Excavator (73 kw)	BS D8/13	2	110	113	50	-3	224	-55.00	0	3	58.00	
		Roller, Vibratory (51 kw)	BS D8/30	2	101	104	50	-3	224	-55.00	0	3	49.00	
		Saw, Circular Wood	CNP 201	2	108	111	50	-3	224	-55.00	0	3	56.00	
		Asphalt Paver	BS D8/24	1	101	101	50	-3	224	-55.00	0	3	45.98	
		Dump Truck	CNP 068	2	105	108	50	-3	224	-55.00	0	3	53.00	
		Lorry	BS D8/25	2	96	99	50	-3	224	-55.00	0	3	44.00	
		Crane (62 kw)	BS D7/114	2	101	104	50	-3	224	-55.00	0	3	49.00	
		Water pump, subersible (electric)	CNP 283	16	85	97	50	-3	224	-55.00	0	3	42.03	61.66
Area Y		Bar Bender and Cutter	CNP 021	4	90	96	50	-3	180	-53.11	0	3	42.90	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	180	-53.11	0	3	49.89	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	180	-53.11	0	3	37.90	50.91

Note: SPL = SWL + TF + DC + BC + FC, where

SPL = Predicted noise level in dB(A)

SWL = Sound Power Level in dB(A)

TF = Time factor in dB(A) = 10 log (P)

P = On-time percentage

DC = Distance attenuation correction in dB(A) = -(20 log D + 8)

D = Distance in m between the noise source and the receiver

BC = Barrier correction in dB(A)

FC = Façade correction in dB(A) = 3 dB(A)

CRBC - Build King Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: CM8

Noise Criteria: 75dB(A)

Portion	Activity	PME	TM Ref. / other Ref.	No. of plants	SWL	Total SWL	On-time, %	Time Factor	Distance from Notional Sources, m	Distance Attenuation*,dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)	Total Predicted Noise Level Portion II dB(A)
III	Demolition of DSD Transformer Room	Breaker, Excavator mounted (hydraulic)	CNP 028	1	122	122	50	-3	116	-49.29	-5	3	67.70		
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	116	-49.29	0	3	60.70		
		Lorry	BS D8/25	1	96	96	50	-3	116	-49.29	0	3	46.70		
		Water pump, subersible (electric)	CNP 283	2	85	88	50	-3	116	-49.29	0	3	38.71	68.52	68.52
II	Retaining Wall	Excavator (73 kw)	BS D8/13	2	110	113	50	-3	257	-56.20	0	3	56.80		
		Dump Truck	CNP 068	2	105	108	50	-3	257	-56.20	0	3	51.80		
		Saw, Circular Wood	CNP 201	4	108	114	50	-3	257	-56.20	0	3	57.81		
		Bar Bender and Cutter	CNP 021	4	90	96	50	-3	257	-56.20	0	3	39.81		
		Lorry	BS D8/25	2	96	99	50	-3	257	-56.20	0	3	42.80		
		Water pump, subersible (electric)	CNP 283	2	85	88	50	-3	257	-56.20	0	3	31.80		
		Concrete Lorry Mixer (6 m3)	BS D6/33	2	96	99	50	-3	257	-56.20	0	3	42.80		
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	257	-56.20	0	3	44.79	61.18	61.18
Area A		Breaker, Excavator mounted (hydraulic)	CNP 028	1	122	122	50	-3	217	-54.73	-5	3	62.26		
		Excavator (73 kw)	BS D8/13	6	110	118	50	-3	217	-54.73	0	3	63.04		
		Dump Truck	CNP 068	7	105	113	50	-3	217	-54.73	0	3	58.71		
		Water pump, subersible (electric)	CNP 283	3	85	90	50	-3	217	-54.73	0	3	35.03	66.48	66.48
Construction of Northern Footbridge	Pre-drilling works (Near Tiu Keng Leng Sports Centre) Feb 17 to Mar, 17	Drill Rig	CNP 072	1	110	110	20	-7	60	-43.56	-5	3	57.45		
		Breaker, excavator mounted (hydraulic)	CNP 028	1	122	122	20	-7	60	-43.56	-5	3	69.45	69.71	69.71
Construction of Northern Footbridge	Construction of soldier wall (Near Tiu Keng Leng Sports Centre) Apr 17 to Oct 17	Air Compressor	CNP 002	1	102	102	20	-7	60	-43.56	-5	3	49.45		
		Crane	BS D7/114	1	101	101	20	-7	60	-43.56	0	3	53.45		
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	40	-4	60	-43.56	0	3	55.46		
		Concrete Lorry Mixer	BS D6/33	2	96	99	20	-7	60	-43.56	0	3	51.46		
		Piling, Vibration Hammer	CNP 172	1	115	115	20	-7	60	-43.56	-5	3	62.45		
		Water Pump, Submersible (electric)	CNP 283	1	85	85	10	-10	60	-43.56	0	3	34.44		
		Excavator	BS D8/13	1	110	110	20	-7	60	-43.56	0	3	62.45	66.35	
Construction of Northern Footbridge	Pre-drilling & Piling works (Near Park Central Block 6) Aug 17 to Oct, 17	Drill Rig	CNP 072	1	110	110	30	-5	93	-47.37	-5	3	55.40		
		Breaker, excavator mounted (hydraulic)	CNP 028	1	122	122	30	-5	93	-47.37	-5	3	67.40		
		Air Compressor	CNP 002	1	102	102	20	-7	93	-47.37	-5	3	45.64		
		Crane	BS D7/114	1	101	101	20	-7	93	-47.37	0	3	49.64		
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	40	-4	93	-47.37	0	3	51.65		
		Concrete Lorry Mixer	BS D6/33	2	96	99	20	-7	93	-47.37	0	3	47.65		
		Piling, Vibration Hammer	CNP 172	1	115	115	20	-7	93	-47.37	-5	3	58.64		
		Water Pump, Submersible (electric)	CNP 283	1	85	85	10	-10	93	-47.37	0	3	30.63		
		Excavator	BS D8/13	1	110	110	20	-7	93	-47.37	0	3	58.64	68.83	70.78
Construction of Northern Footbridge	Construction of Footbridge (Near Park Central Block 6) Nov 17 to Apr 19	Crane	BS D7/114	1	101	101	40	-4	60	-43.56	0	3	56.46		
		Dump Truck	BS D8/25	1	105	105	20	-7	60	-43.56	0	3	57.45		
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	70	-2	60	-43.56	0	3	57.89		
		Concrete Lorry Mixer	BS D6/33	2	96	99	30	-5	60	-43.56	0	3	53.22		
		Saw, Circular Wood	CNP 201	4	108	114	60	-2	60	-43.56	-5	3	66.22		
		Water Pump, Submersible (electric)	CNP 283	1	85	85	20	-7	60	-43.56	0	3	37.45	67.79	
Construction of Northern Footbridge	Construction of Footbridge (Near Tiu Keng Leng Sports Centre) Nov 17 to Apr 19	Crane	BS D7/114	1	101	101	40	-4	93	-47.37	0	3	52.65		
		Dump Truck	BS D8/25	1	105	105	20	-7	93	-47.37	0	3	53.64		
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	70	-2	93	-47.37	0	3	54.08		
		Concrete Lorry Mixer	BS D6/33	2	96	99	30	-5	93	-47.37	0	3	49.41		
		Saw, Circular Wood	CNP 201	4	108	114	60	-2	93	-47.37	-5	3	62.41		
		Water Pump, Submersible (electric)	CNP 283	1	85	85	20	-7	93	-47.37	0	3	33.64	63.99	69.30

Note: SPL = SWL + TF + DC + BC + FC, where

SPL = Predicted noise level in dB(A)

SWL = Sound Power Level in dB(A)

TF = Time factor in dB(A) = 10 log (P)

P = On-time percentage

DC = Distance attenuation correction in dB(A) = -(20 log D + 8)

D = Distance in m between the noise source and the receiver

BC = Barrier correction in dB(A)

FC = Façade correction in dB(A) = 3 dB(A)

NE/2015/02

Associated Cumulative Noise Levels

NSR CM6

Portion	Activity	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017
I	DSD Transformer Room	59.78	59.78	59.78	59.78	59.78	59.78	59.78	59.78	59.78	59.78	59.78	59.78	59.78	
IV	Road P2 Underpass (Piling)							69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1
IV	Road P2 Underpass (ELS)										70.72	70.72	70.72	70.72	70.72
IV	Road and Drainage Works														
V	Road P2 Underpass, U Trough (Piling)									61.69	61.69	61.69	61.69	61.69	
V	Road P2 Underpass, U Trough (ELS)														
V	Road P2 Underpass, U Trough (Structure)														
V	Road and Drainage Works														
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)														
VI	Road P2 Underpass, U Trough (Piling)														
VI	Road P2 Underpass, U Trough (ELS)														
VI	Road P2 Underpass, U Trough (Structure)														
VI	Road and Drainage Works														
VII	Road P2 Underpass, U Trough (Piling)									58.45	58.45	58.45	58.45		
VII	Road P2 Underpass, U Trough (ELS)														
VII	Road and Drainage Works														
IX	Steel Cofferdam & Water Gate	59.33	59.33	59.33	59.33	59.33	59.33	59.33	59.33	59.33	59.33	59.33	59.33	59.33	
IX	Dredging & Reclamation													65.73	65.73
IX	Marine Ground Treatment														
IX	Road P2 Underpass, U Trough (Piling)														
IX	Road P2 Underpass, U Trough (ELS)														
IX	Road P2 Underpass, U Trough (Structure)														
IX	Road and Drainage Works														
	Cumulative Noise / dB(A)	63	63	63	63	63	63	70	70	71	74	74	74	74	74

Portion	Activity	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018
I	DSD Transformer Room												
IV	Road P2 Underpass (Piling)	69.1	69.1	69.1	69.1	69.1	69.1						
IV	Road P2 Underpass (ELS)	70.72	70.72	70.72	70.72	70.72	70.72						
IV	Road and Drainage Works							67.13	67.13	67.13	67.13	67.13	67.13
V	Road P2 Underpass, U Trough (Piling)				61.69	61.69	61.69	61.69					
V	Road P2 Underpass, U Trough (ELS)					64.19	64.19	64.19	64.19				
V	Road P2 Underpass, U Trough (Structure)								61.65	61.65	61.65	61.65	61.65
V	Road and Drainage Works												
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)		62.59	62.59	62.59								
VI	Road P2 Underpass, U Trough (Piling)					59.97	59.97	59.97					
VI	Road P2 Underpass, U Trough (ELS)						63.23	63.23	63.23				
VI	Road P2 Underpass, U Trough (Structure)								60.96	60.96	60.96	60.96	60.96
VI	Road and Drainage Works												
VII	Road P2 Underpass, U Trough (Piling)				58.45	58.45	58.45	58.45					
VII	Road P2 Underpass, U Trough (ELS)					62.05	62.05	62.05					
VII	Road and Drainage Works							59.03	59.03	59.03	59.03	59.03	59.03
IX	Steel Cofferdam & Water Gate												
IX	Dredging & Reclamation	65.73	65.73	65.73	65.73	65.73	65.73	65.73	65.73	65.73	65.73	65.73	65.73
IX	Marine Ground Treatment				57.93	57.93	57.93	57.93					
IX	Road P2 Underpass, U Trough (Piling)										70.39	70.39	70.39
IX	Road P2 Underpass, U Trough (ELS)												
IX	Road P2 Underpass, U Trough (Structure)												
IX	Road and Drainage Works												
	Cumulative Noise / dB(A)	74	74	74	75	75	75	73	72	71	74	74	74

Portion	Activity	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
I	DSD Transformer Room												
IV	Road P2 Underpass (Piling)												
IV	Road P2 Underpass (ELS)												
IV	Road and Drainage Works	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13
V	Road P2 Underpass, U Trough (Piling)												
V	Road P2 Underpass, U Trough (ELS)												
V	Road P2 Underpass, U Trough (Structure)	61.65	61.65	61.65	61.65	61.65	61.65						
V	Road and Drainage Works			62.25	62.25	62.25	62.25	62.25	62.25	62.25	62.25	62.25	62.25
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)												
VI	Road P2 Underpass, U Trough (Piling)												
VI	Road P2 Underpass, U Trough (ELS)												
VI	Road P2 Underpass, U Trough (Structure)	60.96	60.96	60.96	60.96	60.96	60.96						
VI	Road and Drainage Works			61.30	61.30	61.30	61.30	61.30	61.30	61.30	61.30	61.30	61.30
VII	Road P2 Underpass, U Trough (Piling)												
VII	Road P2 Underpass, U Trough (ELS)												
VII	Road and Drainage Works	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03
IX	Steel Cofferdam & Water Gate												
IX	Dredging & Reclamation	65.73	65.73	65.73	65.73	65.73							
IX	Marine Ground Treatment												
IX	Road P2 Underpass, U Trough (Piling)	70.39	70.39	70.39	70.39	70.39	70.39	70.39					
IX	Road P2 Underpass, U Trough (ELS)	67.98	67.98	67.98	67.98	67.98	67.98	67.98	67.98	67.98	67.98	67.98	
IX	Road P2 Underpass, U Trough (Structure)										67.59	67.59	67.59
IX	Road and Drainage Works												
	Cumulative Noise / dB(A)	75	75	75	75	75	75	74	72	72	73	73	72

Portion	Activity	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020	Aug 2020	Sep 2020	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021
I	DSD Transformer Room																
IV	Road P2 Underpass (Piling)																
IV	Road P2 Underpass (ELS)																
IV	Road and Drainage Works	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13	67.13					
V	Road P2 Underpass, U Trough (Piling)																
V	Road P2 Underpass, U Trough (ELS)																
V	Road P2 Underpass, U Trough (Structure)																
V	Road and Drainage Works																
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)																
VI	Road P2 Underpass, U Trough (Piling)																
VI	Road P2 Underpass, U Trough (ELS)																
VI	Road P2 Underpass, U Trough (Structure)																
VI	Road and Drainage Works																
VII	Road P2 Underpass, U Trough (Piling)																
VII	Road P2 Underpass, U Trough (ELS)																
VII	Road and Drainage Works	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03	59.03				
IX	Steel Cofferdam & Water Gate																
IX	Dredging & Reclamation																
IX	Marine Ground Treatment																
IX	Road P2 Underpass, U Trough (Piling)																
IX	Road P2 Underpass, U Trough (ELS)																
IX	Road P2 Underpass, U Trough (Structure)	67.59	67.59	67.59	67.59	67.59	67.59	67.59	67.59	67.59	67.59						
IX	Road and Drainage Works										58.46	58.46	58.46	58.46	58.46	58.46	58.46
	Cumulative Noise / dB(A)	71	71	71	71	71	71	71	71	71	71	68	62	58	58	58	58

NSR CM7

Portion	Activity	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)														
VI	Road P2 Underpass, U Trough (Piling)														
VI	Road P2 Underpass, U Trough (ELS)														
VI	Road P2 Underpass, U Trough (Structure)														
VI	Road and Drainage Works														
VIII	Road P2 Underpass, U Trough (Piling)				62.95	62.95	62.95	62.95	62.95	62.95					
VIII	Road P2 Underpass, U Trough (ELS)				66.47	66.47	66.47	66.47	66.47	66.47	66.47	66.47	66.47	66.47	66.47
VIII	Road P2 Underpass, U Trough (Structure)												58	58	58
VIII	Road and Drainage Works														
Area Y			50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	
	Cumulative Noise / dB(A)		51	51	68	68	68	68	68	68	67	67	67	67	67

Portion	Activity	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)		60.46	60.46	60.46								
VI	Road P2 Underpass, U Trough (Piling)					60.27	60.27	60.27					
VI	Road P2 Underpass, U Trough (ELS)						63.53	63.53	63.53				
VI	Road P2 Underpass, U Trough (Structure)								61.26	61.26	61.26	61.26	61.26
VI	Road and Drainage Works												
VIII	Road P2 Underpass, U Trough (Piling)												
VIII	Road P2 Underpass, U Trough (ELS)												
VIII	Road P2 Underpass, U Trough (Structure)	58	58	58	58	58	58	58					
VIII	Road and Drainage Works						61.66	61.66	61.66	61.66	61.66	61.66	61.66
Area Y													
	Cumulative Noise / dB(A)	58	62	62	62	62	67	67	67	64	64	64	64

Portion	Activity	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)												
VI	Road P2 Underpass, U Trough (Piling)												
VI	Road P2 Underpass, U Trough (ELS)												
VI	Road P2 Underpass, U Trough (Structure)	61.26	61.26	61.26	61.26	61.26	61.26						
VI	Road and Drainage Works			61.60	61.60	61.60	61.60	61.60	61.60	61.60	61.60	61.60	61.60
VIII	Road P2 Underpass, U Trough (Piling)								62.95	62.95	62.95		
VIII	Road P2 Underpass, U Trough (ELS)										66.47	66.47	66.47
VIII	Road P2 Underpass, U Trough (Structure)												
VIII	Road and Drainage Works	61.66	61.66	61.66	61.66	61.66	61.66	61.66	61.66	61.66	61.66	61.66	61.66
Area Y													
	Cumulative Noise / dB(A)	64	64	66	66	66	66	65	67	67	70	69	69

Portion	Activity	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020	Aug 2020	Sep 2020	Oct 2020
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)										
VI	Road P2 Underpass, U Trough (Piling)										
VI	Road P2 Underpass, U Trough (ELS)										
VI	Road P2 Underpass, U Trough (Structure)										
VI	Road and Drainage Works										
VIII	Road P2 Underpass, U Trough (Piling)										
VIII	Road P2 Underpass, U Trough (ELS)	66.47									
VIII	Road P2 Underpass, U Trough (Structure)	58	58	58	58	58	58	58	58	58	
VIII	Road and Drainage Works	61.66						61.66	61.66	61.66	61.66
Area Y											
	Cumulative Noise / dB(A)	68	58	58	58	58	58	63	63	63	62

NSR CM8

Portion	Activity	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017
III	Demolition of DSD Transformer Room													68.52	68.52
II	Retaining Wall														
Area A		66.48	66.48	66.48	66.48	66.48	66.48	66.48	66.48	66.48	66.48	66.48	66.48	66.48	66.48
Construction of Northern Footbridge	Pre-drilling works (Near Tiu Keng Leng Sports Centre)					69.71									
Construction of Northern Footbridge	Construction of soldier wall (Near Tiu Keng Leng Sports Centre)						66.35	66.35	66.35	66.35	66.35	66.35	66.35		
Construction of Northern Footbridge	Pre-drilling & Piling works (Near Park Central Block 6)						68.83	68.83	68.83	68.83	68.83	68.83	68.83		
Construction of Northern Footbridge	Construction of Footbridge (Near Park Central Block 6)													67.79	67.79
Construction of Northern Footbridge	Construction of Footbridge (Near Tiu Keng Leng Sports Centre)													63.99	63.99
	Cumulative Noise / dB(A)	66	66	66	66	71	72	72	72	72	72	72	72	73	73

Portion	Activity	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018
III	Demolition of DSD Transformer Room												
II	Retaining Wall							61.18	61.18	61.18	61.18	61.18	61.18
Area A		66.48	66.48	66.48	66.48	66.48	66.48	66.48					
Construction of Northern Footbridge	Pre-drilling works (Near Tiu Keng Leng Sports Centre)												
Construction of Northern Footbridge	Construction of soldier wall (Near Tiu Keng Leng Sports Centre)												
Construction of Northern Footbridge	Pre-drilling & Piling works (Near Park Central Block 6)												
Construction of Northern Footbridge	Construction of Footbridge (Near Park Central Block 6)	67.79	67.79	67.79	67.79	67.79	67.79	67.79	67.79	67.79	67.79	67.79	67.79
Construction of Northern Footbridge	Construction of Footbridge (Near Tiu Keng Leng Sports Centre)	63.99	63.99	63.99	63.99	63.99	63.99	63.99	63.99	63.99	63.99	63.99	63.99
	Cumulative Noise / dB(A)	71	71	71	71	71	71	72	70	70	70	70	70

Portion	Activity	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019
III	Demolition of DSD Transformer Room										
II	Retaining Wall	61.18	61.18	61.18	61.18	61.18	61.18	61.18	61.18	61.18	61.18
Area A											
Construction of Northern Footbridge	Pre-drilling works (Near Tiu Keng Leng Sports Centre)										
Construction of Northern Footbridge	Construction of soldier wall (Near Tiu Keng Leng Sports Centre)										
Construction of Northern Footbridge	Pre-drilling & Piling works (Near Park Central Block 6)										
Construction of Northern Footbridge	Construction of Footbridge (Near Park Central Block 6)	67.79	67.79	67.79	67.79						
Construction of Northern Footbridge	Construction of Footbridge (Near Tiu Keng Leng Sports Centre)	63.99	63.99	63.99	63.99						
	Cumulative Noise / dB(A)	70	70	70	70	61	61	61	61	61	61

CRBC - Build King Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: CM6 (Above 39m)

Noise Criteria: 75dB(A)

Mitigation Measures Scenario

Portion	Activity	PME	TM Ref. / other Ref.	No. of plants	SWL	Total SWL	On-time, %	Time Factor	Distance from Notional Sources, m	Distance Attenuation*,dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)
IX	U - Trough (Piling)	Crane (62 kw)	BS D7/114	10	101	111	50	-3	228	-55.20	0	3	55.82	
		Drill Rig, Rotary Type (Diesel)	CNP 072	10	110	120	30	-5	228	-55.20	-5	3	57.60	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	10	100	110	50	-3	228	-55.20	0	3	54.82	
		Air Compressor	CNP 002	10	102	112	30	-5	228	-55.20	0	3	54.60	
		Excavator (73 kw)	BS D8/13	10	110	120	50	-3	228	-55.20	0	3	64.82	
		Concrete Lorry Mixer	BS D6/33	10	96	106	50	-3	228	-55.20	0	3	50.82	
		Piling, Vibration Hammer	CNP 172	10	115	125	30	-5	228	-55.20	0	3	67.60	
		Power pack (diesel)	CNP 174	10	100	110	30	-5	228	-55.20	0	3	52.60	
		Water pump, subersible (electric)	CNP 283	10	85	95	50	-3	228	-55.20	0	3	39.82	
		Piling, large diameter bored, reverse circulation drill	CNP 166	3	100	105	30	-5	228	-55.20	-5	3	42.37	70.28
IX	U - Trough (ELS)	Crane (62 kw)	BS D7/114	4	101	107	50	-3	228	-55.20	0	3	51.84	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	8	100	109	50	-3	228	-55.20	0	3	53.85	
		Piling, Vibration Hammer	CNP 172	4	115	121	30	-5	228	-55.20	0	3	63.62	
		Power pack (diesel)	CNP 174	4	100	106	30	-5	228	-55.20	0	3	48.62	
		Excavator (73 kw)	BS D8/13	8	110	119	50	-3	228	-55.20	0	3	63.85	
		Dump Truck	CNP 068	8	105	114	50	-3	228	-55.20	0	3	58.85	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	228	-55.20	0	3	35.84	
		Derrick Barge	CNP 061	2	104	107	50	-3	228	-55.20	0	3	51.83	67.87
IX	U - Trough (Structure)	Crane (62 kw)	BS D7/114	2	101	104	50	-3	228	-55.20	0	3	48.83	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	228	-55.20	0	3	47.83	
		Air Blower	CNP 006	10	95	105	50	-3	228	-55.20	0	3	49.82	
		Saw, Circular Wood	CNP 201	10	108	118	50	-3	228	-55.20	0	3	62.82	
		Concrete Lorry Mixer (6 m3)	BS D6/33	4	96	102	50	-3	228	-55.20	0	3	46.84	
		Concrete pump, stationary/lorry mounted	CNP 047	4	109	115	50	-3	228	-55.20	0	3	59.84	
		Poker, vibratory, hand-held	CNP 170	4	113	119	50	-3	228	-55.20	0	3	63.84	
		Water pump, subersible (electric)	CNP 283	12	85	96	50	-3	228	-55.20	0	3	40.61	67.47
IX	U - Trough (Road and Drainage Works)	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	228	-55.20	0	3	54.82	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	228	-55.20	0	3	45.82	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	228	-55.20	0	3	40.82	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	228	-55.20	0	3	45.82	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	228	-55.20	0	3	35.84	
		Dump Truck	CNP 068	1	105	105	50	-3	228	-55.20	0	3	49.82	
		Road Roller	CNP 185	1	108	108	50	-3	228	-55.20	0	3	52.82	58.34
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	167	-52.40	0	3	48.55	
		Piling, large diameter bored, oscillator	CNP 165	1	115	115	30	-5	167	-52.40	0	3	60.34	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	167	-52.40	0	3	57.55	
		Water pump, subersible (electric)	CNP 283	2	85	88	50	-3	167	-52.40	0	3	35.57	62.37
VI	Road P2 Underpass, U Trough (Piling)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	167	-52.40	0	3	48.55	
		Drill Rig, Rotary Type (Diesel)	CNP 072	1	110	110	30	-5	167	-52.40	-5	3	50.34	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	167	-52.40	0	3	47.55	
		Air Compressor	CNP 002	2	102	105	30	-5	167	-52.40	0	3	50.35	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	167	-52.40	0	3	57.55	
		Concrete Lorry Mixer	BS D6/33	1	96	96	50	-3	167	-52.40	0	3	43.55	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	167	-52.40	0	3	38.58	59.75
VI	Road P2 Underpass, U Trough (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	167	-52.40	0	3	48.55	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	167	-52.40	0	3	47.55	
		Piling, Vibration Hammer	CNP 172	1	115	115	30	-5	167	-52.40	0	3	60.34	
		Power pack (diesel)	CNP 174	1	100	100	30	-5	167	-52.40	0	3	45.34	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	167	-52.40	0	3	57.55	
		Dump Truck	CNP 068	1	105	105	50	-3	167	-52.40	0	3	52.55	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	167	-52.40	0	3	38.58	63.01
VI	Road P2 Underpass, U Trough (Structure)	Crane (62 kw)	BS D7/114	2	101	104	50	-3	167	-52.40	0	3	51.57	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	167	-52.40	0	3	50.57	
		Air Compressor	CNP 002	2	102	105	50	-3	167	-52.40	0	3	52.57	
		Saw, Circular Wood	CNP 201	2	108	111	50	-3	167	-52.40	0	3	58.57	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	167	-52.40	0	3	43.55	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	167	-52.40	0	3	38.58	60.74
VI	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	167	-52.40	0	3	57.55	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	167	-52.40	0	3	48.55	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	167	-52.40	0	3	43.55	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	167	-52.40	0	3	48.55	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	167	-52.40	0	3	38.58	
		Dump Truck	CNP 068	1	105	105	50	-3	167	-52.40	0	3	52.55	
		Road Roller	CNP 185	1	108	108	50	-3	167	-52.40	0	3	55.55	61.08

Note: SPL = SWL + TF + DC + BC + FC, where

SPL = Predicted noise level in dB(A)

SWL = Sound Power Level in dB(A)

TF = Time factor in dB(A) = 10 log (P)

P = On-time percentage

DC = Distance attenuation correction in dB(A) = -(20 log D + 8)

D = Distance in m between the noise source and the receiver

BC = Barrier correction in dB(A)

FC = Façade correction in dB(A) = 3 dB(A)

CRBC - Build King Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: CM6 (Above 39m)　　　Noise Criteria:　75dB(A)

Mitigation Measures Scenario

Portion	Activity	PME	TM Ref. / other Ref.	No. of plants	SWL	Total SWL	On-time, %	Time Factor	Distance from Notional Sources, m	Distance Attenuation*, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)
I	DSD Transformer Room	Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	217	-54.70	0	3	45.29	
		Bar Bender and Cutter	CNP 021	1	90	90	50	-3	217	-54.70	0	3	35.29	
		Breaker, hand-held, mass > 10kg < 20kg	CNP 024	1	108	108	50	-3	217	-54.70	0	3	53.29	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	217	-54.70	0	3	41.29	
		Saw, Circular Wood	CNP 201	1	108	108	50	-3	217	-54.70	0	3	53.29	
		Water pump, subersible (electric)	CNP 283	2	85	88	50	-3	217	-54.70	0	3	33.30	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	217	-54.70	0	3	55.29	
		Dump Truck	CNP 068	1	105	105	50	-3	217	-54.70	0	3	50.29	59.65
IV	Road P2 Underpass (Piling)	Crane (62 kw)	BS D7/114	3	101	106	50	-3	60	-43.50	-5	3	57.26	
		Drill Rig, Rotary Type (Diesel)	CNP 072	3	110	115	30	-5	60	-43.50	0	3	69.05	
		Air Compressor	CNP 002	6	102	110	30	-5	60	-43.50	-5	3	59.06	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	60	-43.50	-5	3	61.49	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	60	-43.50	-5	3	47.49	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	60	-43.50	-5	3	42.51	
		G. I. drilling rig	BS C2/43	1	102	102	50	-3	60	-43.50	-5	3	53.49	
		Breaker, excavator mounted (hydraulic)	CNP 028	1	122	122	10	-10	60	-43.50	-10	3	61.50	70.96
IV	Road P2 Underpass (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	60	-43.50	-5	3	52.49	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	60	-43.50	-5	3	51.49	
		Piling, Vibration Hammer	CNP 172	2	115	118	30	-5	60	-43.50	-5	3	67.28	
		Power pack (diesel)	CNP 174	2	100	103	30	-5	60	-43.50	-5	3	52.28	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	60	-43.50	-5	3	61.49	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	60	-43.50	-5	3	42.51	68.61
IV	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	60	-43.50	-5	3	61.49	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	60	-43.50	-5	3	52.49	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	60	-43.50	-5	3	47.49	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	60	-43.50	-5	3	52.49	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	60	-43.50	-5	3	42.51	
		Dump Truck	CNP 068	1	105	105	50	-3	60	-43.50	-5	3	56.49	
		Road Roller	CNP 185	1	108	108	50	-3	60	-43.50	-5	3	59.49	65.02
V	Road P2 Underpass, U Trough (Piling)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	150	-51.50	0	3	49.46	
		Drill Rig, Rotary Type (Diesel)	CNP 072	1	110	110	30	-5	150	-51.50	-5	3	51.24	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	150	-51.50	0	3	48.46	
		Air Compressor	CNP 002	2	102	105	30	-5	150	-51.50	0	3	51.25	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	150	-51.50	0	3	58.46	
		Concrete Lorry Mixer	BS D6/33	1	96	96	50	-3	150	-51.50	0	3	44.46	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	150	-51.50	0	3	39.48	
		Breaker, excavator mounted (hydraulic)	CNP 028	1	122	122	10	-10	150	-51.50	-10	3	53.47	61.42
V	Road P2 Underpass, U Trough (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	150	-51.50	0	3	49.46	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	150	-51.50	0	3	48.46	
		Piling, Vibration Hammer	CNP 172	1	115	115	30	-5	150	-51.50	0	3	61.24	
		Power pack (diesel)	CNP 174	1	100	100	30	-5	150	-51.50	0	3	46.24	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	150	-51.50	0	3	58.46	
		Dump Truck	CNP 068	1	105	105	50	-3	150	-51.50	0	3	53.46	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	150	-51.50	0	3	39.48	63.91
V	Road P2 Underpass, U Trough (Structure)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	150	-51.50	0	3	49.46	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	2	100	103	50	-3	150	-51.50	0	3	51.47	
		Air Compressor	CNP 002	2	102	105	50	-3	150	-51.50	0	3	53.47	
		Saw, Circular Wood	CNP 201	2	108	111	50	-3	150	-51.50	0	3	59.47	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	150	-51.50	0	3	44.46	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	150	-51.50	0	3	39.48	61.38
V	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	150	-51.50	0	3	58.46	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	150	-51.50	0	3	49.46	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	150	-51.50	0	3	44.46	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	150	-51.50	0	3	49.46	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	150	-51.50	0	3	39.48	
		Dump Truck	CNP 068	1	105	105	50	-3	150	-51.50	0	3	53.46	
		Road Roller	CNP 185	1	108	108	50	-3	150	-51.50	0	3	56.46	61.98
VII	Road P2 Underpass, U Trough (Piling)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	124	-49.90	-5	3	46.10	
		Drill Rig, Rotary Type (Diesel)	CNP 072	1	110	110	30	-5	124	-49.90	-5	3	52.88	
		Air Compressor	CNP 002	2	102	105	30	-5	124	-49.90	-5	3	47.89	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	124	-49.90	-5	3	55.10	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	124	-49.90	-5	3	41.10	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	124	-49.90	-5	3	36.12	58.04
VII	Road P2 Underpass, U Trough (ELS)	Crane (62 kw)	BS D7/114	1	101	101	50	-3	124	-49.90	-5	3	46.10	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	1	100	100	50	-3	124	-49.90	-5	3	45.10	
		Breaker, Excavator mounted (hydraulic)	CNP 028	1	122	122	10	-10	124	-49.90	-10	3	55.11	
		Piling, Vibration Hammer	CNP 172	1	115	115	30	-5	124	-49.90	-5	3	57.88	
		Power pack (diesel)	CNP 174	1	100	100	30	-5	124	-49.90	-5	3	42.88	
		Excavator (73 kw)	BS D8/13	1	110	110	50	-3	124	-49.90	-5	3	55.10	
		Dump Truck	CNP 068	1	105	105	50	-3	124	-49.90	-5	3	50.10	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	124	-49.90	-5	3	36.12	61.65
VII	Road and Drainage Works	Excavator (73 kw)	BS D8/13	1	110	110	50	-3	124	-49.90	-5	3	55.10	
		Roller, Vibratory (51 kw)	BS D8/30	1	101	101	50	-3	124	-49.90	-5	3	46.10	
		Concrete Lorry Mixer (6 m3)	BS D6/33	1	96	96	50	-3	124	-49.90	-5	3	41.10	
		Light goods vehicle, gross vehicle weight < 5.5 tonne	CNP 143	1	101	101	50	-3	124	-49.90	-5	3	46.10	
		Water pump, subersible (electric)	CNP 283	4	85	91	50	-3	124	-49.90	-5	3	36.12	
		Dump Truck	CNP 068	1	105	105	50	-3	124	-49.90	-5	3	50.10	
		Road Roller	CNP 185	1	108	108	50	-3	124	-49.90	-5	3	53.10	58.63
IX	Dredging and Reclamation	Dredger	CNP 070	2	103	106	50	-3	228	-55.20	0	3	50.83	
		Derrick Barge	CNP 061	4	104	110	50	-3	228	-55.20	0	3	54.84	
		Tug boat	CNP 221	2	110	113	50	-3	228	-55.20	0	3	57.83	
		Water pump, subersible (electric)	CNP 283	6	85	93	50	-3	228	-55.20	0	3	37.60	
		Dump Truck	CNP 068	6	105	113	50	-3	228	-55.20	0	3	57.60	
		Generator, Silenced,<=75 dB(A) at 7m	CNP 102	4	100	106	50	-3	228	-55.20	0	3	50.84	
		Winch (Electric)	CNP 262	4	95	101	50	-3	228	-55.20	0	3	45.84	
		Excavator (73 kw)	BS D8/13	3	110	115	50	-3	228	-55.20	0	3	59.59	
		Vibration Hammer	CNP 172	1	115	115	50	-3	228	-55.20	0	3	59.82	
		Hopper barge	-	6	-	-	50	-3	228	-55.20	0	3	-	65.61
IX	Steel Cofferdam and Water Gate	Derrick Barge	CNP 061	3	104	109	50	-3	228	-55.20	0	3	53.59	
		Tug boat	CNP 221	2	110	113	50	-3	228	-55.20	0	3	57.83	59.22
IX	Marine Ground Treatment	Band Drain Machine (hydarulic Vibratory lance starting up)	BS D4/107a	1	113	113	50	-3	228	-55.20	0	3	57.82	57.82

Note: SPL = SWL + TF + DC + BC + FC, where

SPL = Predicted noise level in dB(A)

SWL = Sound Power Level in dB(A)

TF = Time factor in dB(A) = 10 log (P)

P = On-time percentage

DC = Distance attenuation correction in dB(A) = -(20 log D + 8)

D = Distance in m between the noise source and the receiver

BC = Barrier correction in dB(A)

FC = Façade correction in dB(A) = 3 dB(A)

NE/2015/02

Associated Cumulative Noise Levels

NSR CM6 (Above 39m)

Portion	Activity	2016		2017											
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
I	DSD Transformer Room	59.65	59.65	59.65	59.65	59.65	59.65	59.65	59.65	59.65	59.65	59.65	59.65	59.65	
IV	Road P2 Underpass (Piling)							70.96	70.96	70.96	70.96	70.96	70.96	70.96	70.96
IV	Road P2 Underpass (ELS)										68.61	68.61	68.61	68.61	68.61
IV	Road and Drainage Works														
V	Road P2 Underpass, U Trough (Piling)									61.42	61.42	61.42	61.42	61.42	
V	Road P2 Underpass, U Trough (ELS)														
V	Road P2 Underpass, U Trough (Structure)														
V	Road and Drainage Works														
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)														
VI	Road P2 Underpass, U Trough (Piling)														
VI	Road P2 Underpass, U Trough (ELS)														
VI	Road P2 Underpass, U Trough (Structure)														
VI	Road and Drainage Works														
VII	Road P2 Underpass, U Trough (Piling)									58.04	58.04	58.04	58.04		
VII	Road P2 Underpass, U Trough (ELS)														
VII	Road and Drainage Works														
IX	Steel Cofferdam & Water Gate	59.22	59.22	59.22	59.22	59.22	59.22	59.22	59.22	59.22	59.22	59.22	59.22	59.22	
IX	Dredging & Reclamation													65.61	65.61
IX	Marine Ground Treatment														
IX	Road P2 Underpass, U Trough (Piling)														
IX	Road P2 Underpass, U Trough (ELS)														
IX	Road P2 Underpass, U Trough (Structure)														
IX	Road and Drainage Works														
	Cumulative Noise / dB(A)	62	62	62	62	62	62	72	72	72	74	74	74	74	74
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		2016		2017											

Portion	Activity	2018											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
I	DSD Transformer Room												
IV	Road P2 Underpass (Piling)	70.96	70.96	70.96	70.96	70.96	70.96						
IV	Road P2 Underpass (ELS)	68.61	68.61	68.61	68.61	68.61	68.61						
IV	Road and Drainage Works							65.02	65.02	65.02	65.02	65.02	65.02
V	Road P2 Underpass, U Trough (Piling)				61.42	61.42	61.42	61.42					
V	Road P2 Underpass, U Trough (ELS)					63.91	63.91	63.91	63.91				
V	Road P2 Underpass, U Trough (Structure)								61.38	61.38	61.38	61.38	61.38
V	Road and Drainage Works												
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)		62.37	62.37	62.37								
VI	Road P2 Underpass, U Trough (Piling)					59.75	59.75	59.75					
VI	Road P2 Underpass, U Trough (ELS)						63.01	63.01	63.01				
VI	Road P2 Underpass, U Trough (Structure)								60.74	60.74	60.74	60.74	60.74
VI	Road and Drainage Works												
VII	Road P2 Underpass, U Trough (Piling)				58.04	58.04	58.04	58.04					
VII	Road P2 Underpass, U Trough (ELS)					61.65	61.65	61.65					
VII	Road and Drainage Works							58.63	58.63	58.63	58.63	58.63	58.63
IX	Steel Cofferdam & Water Gate												
IX	Dredging & Reclamation	65.61	65.61	65.61	65.61	65.61	65.61	65.61	65.61	65.61	65.61	65.61	65.61
IX	Marine Ground Treatment				57.82	57.82	57.82	57.82					
IX	Road P2 Underpass, U Trough (Piling)										70.28	70.28	70.28
IX	Road P2 Underpass, U Trough (ELS)												
IX	Road P2 Underpass, U Trough (Structure)												
IX	Road and Drainage Works												
	Cumulative Noise / dB(A)	74	74	74	74	75	75	72	72	70	73	73	73
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		2018											

Portion	Activity	2019											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
I	DSD Transformer Room												
IV	Road P2 Underpass (Piling)												
IV	Road P2 Underpass (ELS)												
IV	Road and Drainage Works	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02
V	Road P2 Underpass, U Trough (Piling)												
V	Road P2 Underpass, U Trough (ELS)												
V	Road P2 Underpass, U Trough (Structure)	61.38	61.38	61.38	61.38	61.38	61.38						
V	Road and Drainage Works			61.98	61.98	61.98	61.98	61.98	61.98	61.98	61.98	61.98	61.98
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)												
VI	Road P2 Underpass, U Trough (Piling)												
VI	Road P2 Underpass, U Trough (ELS)												
VI	Road P2 Underpass, U Trough (Structure)	60.74	60.74	60.74	60.74	60.74	60.74						
VI	Road and Drainage Works			61.08	61.08	61.08	61.08	61.08	61.08	61.08	61.08	61.08	61.08
VII	Road P2 Underpass, U Trough (Piling)												
VII	Road P2 Underpass, U Trough (ELS)												
VII	Road and Drainage Works	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63
IX	Steel Cofferdam & Water Gate												
IX	Dredging & Reclamation	65.61	65.61	65.61	65.61	65.61							
IX	Marine Ground Treatment												
IX	Road P2 Underpass, U Trough (Piling)	70.28	70.28	70.28	70.28	70.28	70.28	70.28					
IX	Road P2 Underpass, U Trough (ELS)	67.87	67.87	67.87	67.87	67.87	67.87	67.87	67.87	67.87	67.87	67.87	
IX	Road P2 Underpass, U Trough (Structure)										67.47	67.47	67.47
IX	Road and Drainage Works												
	Cumulative Noise / dB(A)	74	74	75	75	75	74	74	71	71	73	73	71
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		2019											

Portion	Activity	2020												2021			
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
I	DSD Transformer Room																
IV	Road P2 Underpass (Piling)																
IV	Road P2 Underpass (ELS)																
IV	Road and Drainage Works	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02	65.02					
V	Road P2 Underpass, U Trough (Piling)																
V	Road P2 Underpass, U Trough (ELS)																
V	Road P2 Underpass, U Trough (Structure)																
V	Road and Drainage Works																
VI	Road P2 Underpass, U-Trough (Removal of Existing Abandoned Box Culvert)																
VI	Road P2 Underpass, U Trough (Piling)																
VI	Road P2 Underpass, U Trough (ELS)																
VI	Road P2 Underpass, U Trough (Structure)																
VI	Road and Drainage Works																
VII	Road P2 Underpass, U Trough (Piling)																
VII	Road P2 Underpass, U Trough (ELS)																
VII	Road and Drainage Works	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63	58.63				
IX	Steel Cofferdam & Water Gate																
IX	Dredging & Reclamation																
IX	Marine Ground Treatment																
IX	Road P2 Underpass, U Trough (Piling)																
IX	Road P2 Underpass, U Trough (ELS)																
IX	Road P2 Underpass, U Trough (Structure)	67.47	67.47	67.47	67.47	67.47	67.47	67.47	67.47	67.47	67.47						
IX	Road and Drainage Works										58.34	58.34	58.34	58.34	58.34	58.34	58.34
	Cumulative Noise / dB(A)	70	70	70	70	70	70	70	70	70	70	67	61	58	58	58	58
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
		2020												2021			

APPENDIX T
CULTURAL HERITAGE MONITORING RESULTS

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
1-Jun-18	14:35	1 : 4597	1 : 7009	-1 : 16901	+3	+0	+1	0.254	0.254	0.254
2-Jun-18	14:38	1 : 4597	1 : 7009	-1 : 16901	+3	+1	+1	0.127	0.254	0.381
4-Jun-18	14:23	0	1 : 4673	1 : 5634	+1	+1	-2	0.254	0.254	0.254
5-Jun-18	14:43	-1 : 13792	0	1 : 16901	+1	+2	+1	0.254	0.254	0.254
6-Jun-18	14:47	Bad weather			Bad weather			0.127	0.254	0.254
7-Jun-18	14:50	1 : 13792	1 : 7009	1 : 16901	+2	+1	+0	0.127	0.254	0.254
8-Jun-18	14:52	Bad weather			Bad weather			0.127	0.254	0.127
9-Jun-18	14:56	1 : 13792	1 : 14018	0	+2	+1	+1	0.127	0.254	0.127
11-Jun-18	15:00	1 : 4597	1 : 7009	-1 : 16901	+3	+0	+1	0.254	0.381	0.381
12-Jun-18	15:00	1 : 4597	1 : 4673	0	+4	+1	+1	0.127	0.127	0.254
13-Jun-18	15:00	1 : 4597	1 : 7009	-1 : 16901	+3	+0	+1	0.762	0.889	1.016
14-Jun-18	15:04	0	1 : 7009	1 : 8451	+1	+1	-1	0.127	0.254	0.127
15-Jun-18	15:04	-1 : 13792	1 : 14018	1 : 8451	+0	+1	-1	0.127	0.254	0.254
16-Jun-18	15:06	Measurement missing			Measurement missing			0.127	0.254	0.254
19-Jun-18	15:07	1 : 4597	1 : 4673	0	+3	+0	+0	0.127	0.254	0.254
20-Jun-18	15:09	1 : 6896	1 : 7009	0	+2	+0	+0	0.254	0.254	0.127
21-Jun-18	17:21	1 : 6896	1 : 7009	0	+2	+0	+0	0.126	0.134	0.158
22-Jun-18	15:10	1 : 4597	1 : 4673	0	+3	+0	+0	0.127	0.254	0.127
23-Jun-18	15:10	1 : 4597	1 : 4673	0	+3	+0	+0	0.127	0.254	0.381
25-Jun-18	16:16	1 : 13792	1 : 14018	0	+3	+2	+2	0.118	0.071	0.189
26-Jun-18	15:11	1 : 3448	1 : 3505	0	+4	+0	+0	0.762	1.016	0.889
27-Jun-18	15:11	1 : 4597	1 : 7009	-1 : 16901	+3	+0	+1	0.254	0.381	0.381
28-Jun-18	15:12	1 : 4597	1 : 7009	-1 : 16901	+2	-1	+0	0.127	0.254	0.254
29-Jun-18	15:24	1 : 6896	1 : 7009	0	+3	+1	+1	0.762	0.889	0.889
30-Jun-18	15:24	1 : 4597	1 : 4673	0	+3	+0	+0	0.127	0.254	0.254
Alert Level		1:2000			6			4.5		
Alarm Level		1:1500			8			4.8		
Action Level		1:1000			10			5		

Note: ***Bold*** means Alert Level exceedance ***Bold Italic*** means Alarm Level exceedance <u>***Bold Italic with underline***</u> means Action Level exceedance

APPENDIX U
PIEZOMETER MONITORING RESULTS

Appendix U – Construction Phase Daily Piezometer Monitoring Results

<table>
<tr><th rowspan="2">Date</th><th colspan="2">Daily Piezometer Monitoring</th></tr>
<tr><th>38568-LDH1</th><th>TKO-LBH907</th></tr>
<tr><td>1-Jun-18</td><td rowspan="28">Construction phase daily piezometer monitoring by the Contactor was not carried out as the monitoring point was being blocked by heavy overgrown vegetation.</td><td rowspan="30">Tunnel construction activities are not within +/-50m of the piezometer gate in plan.</td></tr>
<tr><td>2-Jun-18</td></tr>
<tr><td>3-Jun-18</td></tr>
<tr><td>4-Jun-18</td></tr>
<tr><td>5-Jun-18</td></tr>
<tr><td>6-Jun-18</td></tr>
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<tr><td>25-Jun-18</td></tr>
<tr><td>26-Jun-18</td></tr>
<tr><td>27-Jun-18</td></tr>
<tr><td>28-Jun-18</td></tr>
<tr><td>29-Jun-18</td><td>+87.65</td></tr>
<tr><td>30-Jun-18</td><td>+87.55</td></tr>
</table>

Date	Daily Piezometer Monitoring	
	38568-LDH1	TKO-LBH907
Action Level(mpD)	+74.65	+17.59

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