JOB NO.: TCS00975/18

CEDD CONTRACT AGREEMENT NO. EDO/04/2018 - ENVIRONMENTAL TEAM FOR CROSS BAY LINK, TSEUNG KWAN O

QUARTERLY ENVIRONMENTAL MONITORING AND AUDIT (EM&A) SUMMARY REPORT

(SEPTEMBER TO NOVEMBER 2019)

PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)

Date	Reference No.	Prepared By	Certified By
11 May 2020	TCS00975/18/600/R0334v2		
		Martin Li (Environmental Consultant)	Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	3 February 2020	First Submission
2	11 May 2020	Amended against IEC's comments

Our ref: ASCL-2018009

AECOM Asia Company Limited
8/F., Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, New Territories, Hong Kong

Attention: Mr. Conrad NG

11 May 2020

Dear Sir,

Contract No. NE/2017/07 & NE/2017/08
Cross Bay Link, Tseung Kwan O
Quarterly EM&A Report for September to November 2019

I refer to the email of ET concerning the Quarterly EM&A Report for September to November 2019 (Version 2) with Ref. No. TCS00975/18/600/R0334v2. We have no adverse comment on it and verify the captioned according to section 1.9 of Environmental Permit with No. EP-459-2013.

Yours faithfully,

Li Wai Ming Kevin
Independent Environmental Checker

cc. Mr. T.W. TAM (ETL)
Mr. Wilson CHUNG (CEDD)

EXECUTIVE SUMMARY

ES01 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of the Project Cross Bay Link, Tseung Kwan O (hereinafter referred as "the Project") which is a Designated Project to be implemented under Environmental Permit number EP-459/2013 (hereinafter referred as "the EP-459/2013" or "the EP").

ES02 AUES was awarded the CEDD Contract Agreement No. EDO/04/2018 - Environmental Team for Cross Bay Link, Tseung Kwan O (hereinafter called "the Service Contract"). The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the Approved EM&A Manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Agreement No. CE 43/2008 (HY) Cross Bay Link, Tseung Kwan O - Investigation and other relevant statutory requirements.

ES03 This is the **4th** Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from ***1st September 2019*** to ***30th November 2019*** (hereinafter 'the Reporting Period').

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES04 Environmental monitoring activities under the EM&A program in this Reporting Period are summarized in the following table.

Table ES-4 Summary Environmental Monitoring Activities Undertaken in the Reporting Period

Issues	Environmental Monitoring Parameters / Inspection		Sessions
Air Quality	1-Hour TSP		45
	24-Hr TSP		16
Construction Noise	Leq (30min) Daytime		17
	Leq (5min) Evening(Note 1)		16
Water Quality	Marine Water Sampling(Note 2)		39
Inspection / Audit	Contract 1	ET Regular Environmental Site Inspection	13
		Joint site audit with Project Consultant and IEC	3
	Contract 2	ET Regular Environmental Site Inspection	13
		Joint site audit with Project Consultant and IEC	3

Note 1 Total sessions are counted by every 3 consecutive Leq5min
Note 2 Total sessions are counted by monitoring days

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES05 No air quality monitoring exceedance was recorded in this Reporting Period. No daytime construction noise monitoring exceedance was recorded while fourteen (14) sessions of evening additional construction noise monitoring exceedances were recorded in this Reporting Period. For water quality monitoring, seven (7) Action Level and seven (7) Limit Level exceedances were recorded for Suspended Solids in the reporting period. NOEs were issued to notify EPD, AFCD, WSD, IEC, the Contractor and the Project Consultant. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Table ES-5 Summary Environmental Monitoring Parameter Exceedance in the Reporting Period

Environmental Issues	Monitoring Parameters	Action Level	Limit Level	Event & Action	
				Investigation Results	Corrective Actions
Air Quality	1-Hour TSP	0	0	--	--
	24-Hr TSP	0	0	--	--
Construction Noise	Leq_{30min} Daytime	0	0	--	--
	Leq_{5min} Evening	0	**14**	Not project related	NA
Water Quality (Marine Water)	DO	0	0	--	--
	Turbidity	0	0	--	--
	SS	**7**	**7**	Not project related	NA

Note: NOE – Notification of Exceedance

ES06 For the marine water and evening construction noise monitoring exceedances recorded in the reporting period, investigations were carried out and it was considered that the exceedances recorded are unlikely caused by the Project. Nevertheless, the Contractor was reminded to strictly follow the requirement stipulated in the applied CNP during evening works and check the implementation of silt curtain regularly to ensure no seepage of muddy water into the marine water body.

ENVIRONMENTAL COMPLAINT

ES07 No environmental complaint was recorded in this Reporting Period for the Project. The statistics of environmental complaint are summarized in the following table.

Table ES-6 Summary Environmental Complaint Records in the Reporting Period

Reporting Period	Contract	Environmental Complaint Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 September 2019 – 30 November 2019	1	0	1	NA	NA
	2	0	0	NA	NA

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES08 No environmental summons or prosecutions was received in this Reporting Period for the Project. The statistics of environmental summons or prosecutions are summarized in the following tables.

Table ES-7 Summary Environmental Summons Records in the Reporting Period

Reporting Period	Contract	Environmental Summons Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 September 2019 – 30 November 2019	1	0	0	NA	NA
	2	0	0	NA	NA

Table ES-8 Summary Environmental Prosecutions Records in the Reporting Period

Reporting Period	Contract	Environmental Prosecution Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 September 2019 – 30 November 2019	1	0	0	NA	NA
	2	0	0	NA	NA

SITE INSPECTION BY EXTERNAL PARTIES

ES09 No site inspection was undertaken by AFCD within the Reporting Period. However, EPD inspection were undertaken on 2, 6 & 19 September and 31 October 2019.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of the Project Cross Bay Link, Tseung Kwan O (hereinafter referred as "the Project") which is a Designated Project to be implemented under Environmental Permit number EP-459/2013 (hereinafter referred as "the EP-459/2013" or "the EP").

1.1.2 AUES was awarded the CEDD Contract Agreement No. EDO/04/2018 - Environmental Team for Cross Bay Link, Tseung Kwan O (hereinafter called "the Service Contract"). The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the Approved EM&A Manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Agreement No. CE 43/2008 (HY) Cross Bay Link, Tseung Kwan O - Investigation and other relevant statutory requirements.

1.1.3 As part of the EM&A programme, baseline monitoring shall be undertaken before the Project construction work commencement to determine the ambient environmental condition. The baseline air quality, background noise and water quality monitoring has been carried out between ***21st September 2018*** and ***13th November 2018*** at the designated and interim locations. The baseline monitoring report under the EP-459/2013 has been compiled by the ET and verified by Independent Environmental Checker (hereinafter the "IEC') prior submitted to EPD on ***19th November 2018*** for endorsement.

1.1.4 This is the **4th** Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from ***1st September 2019*** to ***30th November 2019*** (hereinafter 'the Reporting Period').

1.2 REPORT STRUCTURE

1.2.1 The Environmental Monitoring and Audit (EM&A) Monthly Report is structured into the following sections:-

Section 1	*Introduction*
Section 2	*Project Organization and Construction Progress*
Section 3	*Summary of Impact Monitoring Requirements*
Section 4	*Impact Monitoring Results*
Section 5	*Waste Management*
Section 6	*Site Inspections*
Section 7	*Landfill Gas Monitoring*
Section 8	*Environmental Complaints and Non-Compliance*
Section 9	*Implementation Status of Mitigation Measures*
Section 10	*Conclusions and Recommendations*

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS AND SUBMISSION

2.1 PROJECT ORGANIZATION

2.1.1 The project organization is shown in ***Appendix B***. The responsibilities of respective parties can be referred to Monthly Report.

2.2 CONSTRUCTION PROGRESS

2.2.1 3-month rolling construction program of each Works Contract is enclosed in ***Appendix C***; and the major construction activities undertaken in the Reporting Period is presented in below sub-sections.

Contract 1 (Contract No. NE/2017/07)

2.2.2 The major construction activities of Contract 1 undertaken in this Reporting Period are:-

- Piling works at Portion II
- Welding of steel bracket for precast shell installation at Portion II
- Precast shell erection at Portion II
- Precast shell fabrication at Portion II
- Fabrication of bottom deck panels, top deck panels and diaphragm panels at Portion II
- Structure works for E&M Building

Contract 2 (Contract No. NE/2017/08)

2.2.3 The major construction activities of Contract 2 undertaken in this Reporting Period are:-

- Trial Pit Work at Portion VI
- Pre-drill Work at Portion VI
- Bored Pile Work at Portion III, VI & VII
- Excavation Work at Portion VI
- Pre-bored socket H pile at Portion VI
- Drainage Installation Work (Portion III)
- Sheet pile Work (Portion VI)

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 All the documents required under Environmental Permit No. EP-459/2013 were submitted within the required timeframe. The details can be referred to the Monthly Report.

2.3.2 Upon completed baseline monitoring, a Baseline Monitoring Report was verified by IEC on 19 November 2018 and submitted to EPD on that day for endorsement.

2.3.3 The notification of Project dedicated web site to EPD was made on 9 January 2019 (http://www.envcbltko.hk/).

3. SUMMARY OF ENVIRONMENTAL MONITORING PROGRAMMES AND REQUIREMENTS

3.1 GENERAL

3.1.1 The Environmental Monitoring and Audit Programmes and requirements are set out in the Approved EM&A manual. Environmental issues such as air quality, construction noise and water quality were identified as the key issues during the construction phase of the Project. A summary of EM&A programmes and requirements are presented in the sub-sections below.

3.2 MONITORING PARAMETERS

3.2.1 Monitoring parameters of air quality, noise and water quality are summarized in ***Table 3-1***.

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	• 1-hour TSP by Real-Time Portable Dust Meter; and • 24-hour TSP by High Volume Air Sampler
Noise	• Leq (30min) in six consecutive Leq(5 min) between 07:00-19:00 on normal weekdays • Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.
Water Quality	• In-situ measurement – Dissolved Oxygen (DO) concentration (mg/L) & saturation (%), pH, Salinity (mg/L), Temperature (ºC) and Turbidity (NTU); and • Laboratory analysis – SS (mg/L)

3.3 MONITORING LOCATIONS

Air Quality and Construction Noise

3.3.1 According to the Approved EM&A Manual Section 5.4 and Section 6.3, three (3) representative air sensitive receivers (ASR) and four (4) representative noise sensitive receivers were designated as monitoring stations. The designated air quality and noise monitoring locations are listed in ***Table 3-2*** and ***Table 3-3,*** and illustrated in ***Appendix D***.

Table 3-2 Designated Air Quality Monitoring Location recommended in EM&A Manual

ID	Location in the EM&A Manual	Currently Situation
AM1	Tung Wah Group of Hospitals Aided Primary School & Secondary School	Not yet construct
AM2	Lohas Park Stage 2 (Planned Development in Area 86)	Under Construction
AM3	Lohas Park Stage 3 (Planned Development in Area 86)	Under Construction

Table 3-3 Designated Construction Noise Monitoring Location recommended by EM&A Manual

ID	Location	Currently Situation
CNMS-1	Lohas Park Stage 1(Planned Development in Area 86, Package 5) (Southeast facade)	Available for resident occupation in November 2019
CNMS-2	Lohas Park Stage 1 (Planned Development in Area 86, Package 6) (Southeast facade)	Under Construction
CNMS-3	Lohas Park Stage 3 (Planned Development in Area 86,Package 11) (West facade)	Under Construction
CNMS-4	Tung Wah Group of Hospitals Aided Primary School & Secondary School (Southwest facade)	Not yet construct

3.3.2 As observed and confirmed by ET and IEC during the joint site visit on 29th August 2018, the designated air quality and noise monitoring locations are under construction or yet to construct. It is considered that these designated locations are not appropriate to perform air quality and noise monitoring. In this regard, alternative locations were proposed as interim arrangement to carry out air quality and noise monitoring before occupation of the designated monitoring location. A letter enclosed with the alternative location proposal and IEC verification (Our Ref:

TCS00975/18/300/L0038) was sent to EPD on 19th October 2018 and the proposal was agreed by EPD. Therefore, air quality and construction noise impact monitoring would be performed at the agreed alternative locations until the designated sensitive receivers occupied and granted the premises.

3.3.3 The designated and interim alternative monitoring location for impact air quality and noise monitoring in the Reporting Period are summarized in Table 3-4 and illustrated in ***Appendix D***.

Table 3-4 Interim alternative location for air quality and noise monitoring

Location ID	Monitoring Parameter	Location
AM4	1-Hour TSP Air Quality	Podium of Lohas Park Phase 2A (Le Prestige)
AM5	24-Hour TSP Air Quality	Boundary of Site Office near Junction of Wan Po Road and Wan O Road
CNMS-1	Noise (L_{eq}, L_{10} & L_{90})	Podium of Lohas Park Package 4
CNMS-5	Noise (L_{eq}, L_{10} & L_{90})	Podium of Lohas Park Phase 2A (Le Prestige)

Remark: Since 24-Hour TSP Air Quality monitoring is not granted at AM4 Lohas Park Phase 2A, the 24-Hour TSP monitoring was therefore proposed at AM5 which is located at the boundary of the project site office.

Water Quality

3.3.4 According to Table 7.1 of the approved EM&A Manual Section 7.4, two Control Stations (C3 & C4), six (6) sensitive receivers (CC1, CC2, CC3, CC4, CC13 & SWI1) and one (1) Gradient station (I1) are recommended to perform water quality monitoring. Details and coordinate of these water quality monitoring stations are described in ***Table 3-5*** and the locations is shown in ***Appendix D.***

Table 3-5 Location of Water Quality Monitoring Station

Station	Coordinates		Description
	Easting	Northing	
CC1	843201	816416	**Sensitive Receiver** – Coral Sites at Chiu Keng Wan
CC2	844076	817091	**Sensitive Receiver** – Coral Sites at Junk Bay
CC3	844606	817941	**Sensitive Receiver** – Coral Sites at Junk Island
CC4	845444	815595	**Sensitive Receiver** – Coral Sites at Fat Tong Chau West
CC13	844200	817495	**Sensitive Receiver** – Coral Sites at Junk Bay near Chiu Keng Wan
SWI1	845512	817442	**Sensitive Receiver** – Tseung Kwan O Salt Water Intake
C3	843821	816211	**Control Station** (Ebb Tide) – within Junk Bay
C4	844621	815770	**Control Station** (Flood Tide) – within Junk Bay
I1	844602	817675	**Gradient Station** – in between Lam Tin Tunnel (LTT) and CBL

3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 To according with the approved *EM&A Manual*, impact monitoring requirements are presented as follows.

Air Quality Monitoring

3.4.2 Air quality impact monitoring frequency is as follows:

- Once every 6 days of 24-hour TSP and 3 times of 1-hour TSP monitoring; during course of works throughout the construction period

Construction Noise Monitoring

3.4.3 Construction noise monitoring frequency is as follows:

- One set of $Leq_{(30min)}$ measurements in a weekly basis between 07:00 and 19:00 hours on normal weekdays during course of works as throughout the construction period
- If construction works are extended to include works during the hours of 1900-0700, additional weekly impact monitoring shall be carried out during evening and night-time works. Applicable permits under the NCO shall be obtained by the Contractor.

Water Quality (Marine Water) Monitoring

3.4.4 Marine water impact monitoring frequency is as follows:

- Three days a week, at mid ebb and mid flood tides during course of pile excavation works for the bridge pier foundations underway. Moreover, the intervals between 2 consecutive sets of monitoring day shall not be less than 36 hours.

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

3.5.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. A summary of the Action/Limit (A/L) Levels for air quality, construction noise and water quality are shown in ***Tables 3-6, 3-7*** and ***3-8*** respectively.

Table 3-6 Action & Limit Levels of Air Quality (1-Hour & 24-Hr TSP)

Monitoring Station	Action Level (μg /m^3)		Limit Level (μg/m^3)	
	1-Hour TSP	24-Hr TSP	1-Hour TSP	24-Hr TSP
AM4	278	NA	500	NA
AM5	NA	190	NA	260
Note: 1-Hour & 24-Hr TSP of Action Level = (Average Baseline Results × 1.3 + Limit level)/2				

Table 3-7 Action and Limit Levels for Construction Noise, dB(A)

Monitoring Location	Action Level	Limit Level (Leq30min)
	Time Period: 0700-1900 hours on normal weekdays	
CNMS-1	When one or more documented complaints are received	***75*** dB(A)
CNMS-5		

Remarks:

1. *Construction noise monitoring will be resumed at the designated locations CNMS-2, CNMS-3 and CNMS4 once they are available and permission are granted;*
2. *The designated locations CNMS-1, CNMS-2 and CNMS-3 are located at residential building which are still under construction, Limit Level of 75dB(A) will be adopted until they are occupied;*
3. *The designated location CNMS-4 is located at planned school and still not yet to construction. When the school occupied and operated, Limit Level of 70dB(A) should be adopted and should be reduced to 65dB(A) during examination period; and*
4. *If construction works are required during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority shall be followed.*

Table 3-8 Action and Limit Levels for Water Quality

Monitoring Station	Depth Average of SS (mg/L)			
	Action Level		Limit Level	
CC1	7.8	**OR** 120% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide), whichever is higher	9.3	**OR** 130% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide) , whichever is higher
CC2	9.0		9.2	
CC3	8.2		9.0	
CC4	13.8		15.4	
CC13	8.9		10.3	
SWI1	8 mg/L		10 mg/L	

Monitoring Location	Dissolved Oxygen (mg/L)			
	Depth Average of Surface and Mid-depth		Bottom	
	Action Level	Limit Level	Action Level	Limit Level
CC1	5.8	5.7	5.3	5.2
CC2	5.8	5.7	5.3	5.1
CC3	5.5	5.4	4.9	4.7

Monitoring Station	Depth Average of SS (mg/L)			
	Action Level		Limit Level	
CC4	5.7	5.7	5.5	5.4
CC13	5.6	5.5	5.3	5.2
SWI1	5.4	4.8	5.1	5.0

Monitoring Location	Depth Average of Turbidity (NTU)			
	Action Level		Limit Level	
CC1	5.8	**OR** 120% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide) , whichever is higher	6.0	**OR** 130% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide) , whichever is higher
CC2	4.6		5.5	
CC3	4.8		5.4	
CC4	6.1		7.1	
CC13	6.0		6.3	
SWI1	6.1		7.1	

3.5.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan as stated EM&A Manual.

4. IMPACT MONITORING RESULT

4.1 RESULTS OF AIR QUALITY MONITORING IN THE REPORTING MONTH

4.1.1 During the Reporting Period, ***45*** sessions of 1-hour TSP and ***16*** sessions of 24-hours TSP monitoring were carried out and the monitoring results are summarized in ***Table 4-1***. The relevant graphical plots are shown in ***Appendix E***.

Table 4-1 Summary of Air Quality Impact Monitoring Results

Monitoring Location	1-hour TSP (μg/m³)			24-hour TSP (μg/m³)		
	Min	Max	Average	Min	Max	Average
AMS-4	60	124	86			
Record Date	24-Sep-19	18-Sep-19	45 events			
AMS-5				52	177	136
Record Date				17-Sep-19	30-Nov-19	16 events

4.1.2 As shown in ***Table 4-1***, all the 1-hour TSP and 24-hour TSP monitoring results were below the Action / Limit Levels. No Notification of Exceedance (NOE) was issued in this Reporting Period.

4.1.3 No adverse impact due to weather condition on the monitoring result was observed in reporting quarter. The summary of meteorological information for the Reporting Period is shown in ***Appendix F***.

4.2 RESULTS OF CONSTRUCTION NOISE MONITORING

4.2.1 ***4*** sessions of daytime construction noise monitoring and ***3*** sessions of evening construction noise monitoring were performed at the interim alternative location CNMS-1 in the reporting period; and ***13*** sessions of daytime construction noise monitoring and ***13*** sessions of evening construction noise monitoring were performed at the interim alternative location CNMS-5 in the reporting period. The noise monitoring results at interim alternative location CNMS-5 is summarized in ***Table 4-2*** and ***Table 4-3.*** The relevant graphical plots are shown in ***Appendix E***.

Table 4-2 Summary of Daytime Construction Noise Impact Monitoring Results

Monitoring Location	Leq, 30min (dB((A))		
	Min	Max	Average
CNMS-1	55.2	66.5	62.8
Record Date	14-Nov-19	20-Nov-19	4 sessions
CNMS-5	63.6	66.8	65.1
Record Date	30-Sep-19	20-Nov-19	13 sessions

4.2.2 All the measured daytime construction noise results were below 75dB(A) of the acceptance criteria. Furthermore, no complaint on construction noise was registered, indicating no exceedance of Action Level. No non-compliance was therefore found during the Reporting Period.

Table 4-3 Summary of Evening Construction Noise Impact Monitoring Results

Monitoring Location	Leq, 5min (dB((A))		
	Min	Max	Average
CNMS-1	51.9	57.4	54.4
Record Date	14-Nov-19	21-Nov-19	3 sessions
CNMS-5	59.2	63.8	54.6
Record Date	14-Nov-19	3-Oct-19	13 sessions

4.2.3 A total of fourteen (14) limit level evening noise monitoring exceedances were recorded in the reporting period due to the measured results were higher than 55dB(a) of the acceptance criteria. Investigations were undertaken by ET accordingly and it was considered the exceedances recorded were unlikely due to the Project.

4.3 RESULTS OF WATER QUALITY MONITORING

4.3.1 In this Reporting Period, a total of ***39*** sampling days were performed for marine water monitoring at the nine designated locations. Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids are summarized in ***Tables 4-4*** to ***4-7*** and the graphical plots are shown in ***Appendix E***.

Table 4-4 Results Summary of Depth Average (Surface & Middle Layer) of DO (mg/L)

Tidal		CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
Mid-Ebb	Average	6.58	6.45	6.28	6.31	6.50	6.44	6.32	6.31	6.32
	Min	5.82	5.81	5.51	5.76	5.63	5.69	5.53	5.47	5.48
	Max	10.18	8.27	8.36	7.75	9.94	8.60	8.15	7.88	8.21
Mid-Flood	Average	6.58	6.49	6.33	6.38	6.49	6.53	6.40	6.31	6.35
	Min	5.83	5.76	5.58	5.78	5.62	5.55	5.60	5.44	5.53
	Max	8.71	8.25	8.76	8.13	8.58	8.70	8.45	8.00	7.95

Table 4-5 Results Summary of Bottom Depth of DO (mg/L)

Tidal		CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
Mid-Ebb	Average	6.22	6.02	5.77	NA	6.16	6.25	6.05	6.06	5.94
	Min	5.37	5.34	5.04	NA	5.33	5.33	5.32	5.31	5.15
	Max	7.33	7.06	7.52	NA	7.75	8.50	7.22	7.17	7.13
Mid-Flood	Average	6.22	6.05	5.72	NA	6.20	6.24	6.05	6.05	5.90
	Min	5.35	5.34	5.06	NA	5.30	5.33	5.29	5.31	5.27
	Max	7.40	7.46	7.47	NA	8.60	8.93	7.25	7.28	7.05

Remark: No Dissolved Oxygen (Bottom) monitoring data available for CC4 due to the water depth measured at CC4 during the monitoring days were less than 3 meters.

Table 4-6 Results Summary of Depth Average of Turbidity (NTU)

Tidal		CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
Mid-Ebb	Average	1.78	2.22	2.32	2.10	1.74	2.11	2.27	2.27	2.47
	Min	0.61	0.86	0.81	0.58	0.46	0.86	0.85	0.59	0.78
	Max	3.55	4.14	4.42	4.29	3.91	4.79	3.96	5.07	4.15
Mid-Flood	Average	1.93	2.26	2.23	2.33	1.85	2.01	2.35	2.32	2.28
	Min	0.61	0.68	0.84	0.40	0.53	0.30	0.78	0.68	0.63
	Max	4.00	4.59	4.22	6.06	4.28	5.20	5.73	3.78	4.11

Table 4-7 Results Summary of Depth Average of Suspended Solids (mg/L)

Tidal		CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
Mid-Ebb	Average	4.48	4.57	4.54	5.62	4.91	5.08	5.09	4.74	4.78
	Min	1.40	1.38	1.28	1.75	1.70	1.78	1.75	1.52	1.55
	Max	7.12	8.75	12.07	18.05	12.25	15.43	10.92	11.03	13.12
Mid-Flood	Average	4.51	4.54	4.19	5.18	4.67	4.98	4.77	4.69	4.76
	Min	1.50	1.63	1.10	1.65	1.10	1.73	1.23	1.65	1.63
	Max	9.92	8.35	10.73	14.15	14.63	12.38	10.42	10.60	12.08

4.3.2 A summary of exceedances for the four parameters: dissolved oxygen (DO), turbidity and suspended solids (SS) are shown in ***Table 4-8.***

Table 4-8 Summary of Water Quality Exceedance

Station	DO (Ave of Top & mid-depth)		DO (Bottom Depth)		Turbidity (Depth Ave)		SS (Depth Ave)		Total Exceedance for the Station	
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
CC1	0	0	0	0	0	0	**1**	0	**1**	0
CC2	0	0	0	0	0	0	0	0	0	0
CC3	0	0	0	0	0	0	**1**	0	0	0
CC4	0	0	NA	NA	0	0	**1**	**1**	**1**	**1**
CC13	0	0	0	0	0	0	**2**	**2**	**2**	**2**

Station	DO (Ave of Top & mid-depth)		DO (Bottom Depth)		Turbidity (Depth Ave)		SS (Depth Ave)		Total Exceedance for the Station	
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
SWI1	0	0	0	0	0	0	**2**	**4**	**2**	**4**
No of Exceedance	0	0	0	0	0	0	**7**	**7**	**7**	**7**

4.3.3 In this Reporting Period, a total of seven (7) Action Level and seven (7) Limit Level exceedances of Suspended Solids recorded.

4.3.4 Upon confirmation of the monitoring result, Notification of Exceedances (NOEs) have been issued to relevant parties. Investigation for the cause of exceedance was carried out by ET subsequently and it is concluded that the exceedances recorded in this reporting period were unlikely caused by the Project. Nevertheless, the Contractor was reminded to check the implementation of silt curtain regularly to ensure no seepage of muddy water into the marine water body.

5. WASTE MANAGEMENT

5.1 GENERAL WASTE MANAGEMENT

5.1.1 Waste management would be carried out by an on-site Environmental Officer or an Environmental Consultant from time to time.

5.2 RECORDS OF WASTE QUANTITIES

5.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste; and
- General Refuse

5.2.2 According to the information provided by Contractor of Contract 1 and Contract 2, waste disposal was made in the Reporting period are summarized in ***Tables 5-1*** and ***5-2***.

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

Type of Waste	Contract No	Quantity			Disposal Location
		Sep 2019	Oct 2019	Nov 2019	
Total Generated C&D Materials (Inert) (in '000m^3)	1	0.762	1.002	0.744	TKO 137
	2	1.912	4.384	2.351	
Reused in this Project (Inert) (in '000m^3)	1	0	0	0	-
	2	0	0	0	-
Reused in other Projects (Inert) (in '000m^3)	1	0	0	0	-
	2	0.046	0	0	-
Disposal as Public Fill (Inert) (in '000m^3)	1	0.762	1.002	0.744	TKO 137
	2	1.866	4.384	2.351	
Imported Fill (‘000m^3)	1	0	0	0	-
	2	0	0	0	-

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

Type of Waste	Contract No	Quantity			Disposal Location
		Sep 2019	Oct 2019	Nov 2019	
Recycled Metal (‘000kg)	1	0	0	0	-
	2	0	0	8.870	
Recycled Paper / Cardboard Packing (‘000kg)	1	0.085	0.080	0.092	Licensed collector
	2	0	0	0	
Recycled Plastic (‘000kg)	1	0	0	0	-
	2	0	0	0	
Chemical Wastes (‘000kg)	1	0	0	0	-
	2	0	0	0	
General Refuses (‘000m^3)	1	0.054	0.106	0.075	NENT
	2	0.009	0.007	0.004	

5.2.3 The Monthly Summary Waste Flow Table of the Contracts 1 and Contract 2 are shown in ***Appendix G***.

6. SITE INSPECTION

6.1 REQUIREMENTS

6.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

6.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

Contract 1

6.2.1 In this Reporting Period, ***13*** events of weekly joint site inspection was carried out for Contract 1 to evaluate site environmental performance. The summaries of the findings during site inspection are presented in ***Table 6-1*** and the details of site inspection can be found in relevant EM&A monthly report.

Table 6-1 Summary of Site Observations of the Contract 1

Reporting Period	Date of site inspection	Nos. of Findings/ Deficiencies	Follow-Up Status
September 2019	4, 11, 18 & 26 September 2019	8	Completed
October 2019	2, 9, 16, 23 & 31 October 2019	10	Completed
November 2019	6, 13, 20 & 27 November 2019	8	Completed

6.2.2 In the Reporting Period, no non-compliance was recorded for Contract 1; however, ***26*** observations were recorded during the site inspections and the major findings were related to water quality and chemical management mitigation measures. Details of the findings of the inspection in the reporting period can be referred to the Monthly EM&A Report. The findings found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

Contract 2

6.2.3 In this Reporting Period, ***13*** events of weekly joint site inspection was carried out for Contract 2 to evaluate site environmental performance. The summaries of the findings during site inspection are presented in ***Table 6-2*** and the details of site inspection can be found in relevant EM&A monthly report.

Table 6-2 Summary of Site Observations of the Contract 2

Reporting Period	Date of site inspection	Nos. of Findings/ Deficiencies	Follow-Up Status
September 2019	4, 11, 18 & 26 September 2019	3	Completed
October 2019	2, 9, 16, 23 & 31 October 2019	11	Completed
November 2019	6, 13, 20 & 27 November 2019	9	Completed

6.2.4 In the Reporting Period, no non-compliance was recorded for Contract 2; however, ***23*** observations were recorded during the site inspections and the major findings were related to general housekeeping and chemical management mitigation measures. Details of the findings of the inspection in the reporting period can be referred to the Monthly EM&A Report. The findings found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

7. LANDFILL GAS MONITORING

7.1 GENERAL REQUIREMENT

7.1.1 Pursuant to Section 13 of the Project's EM&A Manual, Landfill gas monitoring shall perform during construction activities within the 250m Consultation Zone of Tseung Kwan O Stage II & III Landfill. For landfill gas monitoring requirements, pre entry and routine measurement shall be undertaken in accordance with the *Factories and Industrial Undertaking (Confined Spaces) Regulation*.

7.1.2 According to Environmental Mitigation Implementation Schedule (EMIS) S14.7.6, portable monitoring equipment can be used to conduct landfill gas monitoring. Moreover, the frequency and areas to be monitored should be set down prior to commencement of the works either by the Safety Officer or by an appropriately qualified person.

7.2 LIMIT LEVELS AND EVENT AND ACTION PLAN

7.2.1 In event of the trigger levels specified in Table 14.6 of the EIA report being exceeded, a person, such as the Safety Officer, shall be nominated, with deputies, to be responsible for dealing with any emergency which may occur due to LFG. In an emergency situation the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas. The Limit levels and relevant Action Plans for landfill gas detected in utilities and any on-site areas following construction is listed in ***Table 7-1***.

Table 7-1 Actions in the Event of Landfill Gas Being Detected in Excavations

Parameter	Limit Level	Actions
Methane	>10% LEL (i.e. >0.5% by volume)	• Post "No Smoking" signs • Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. >1% by volume)	• Stop excavation 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 excavation works • Evacuate personnel/prohibit entry • Increase ventilation to restore carbon dioxide to <0.5%
Oxygen	<19%	Ventilation to restore oxygen >19%
	<18%	• Stop excavation works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%

7.2.2 In the event of the trigger levels specified in Table 9-1 being exceeded, the Safety Officer shall be responsible for dealing with any emergency which may occur due to landfill gas.

7.3 LANDFILL GAS MONITORING

7.3.1 In the Reporting Period, landfill gas monitoring was conducted at the zone Wan O Road which excavation work of Contract 2 was carried out.

7.3.2 There were a total of ***35*** days monitoring were carried by the Safety Officer or an approved and qualified persons. The results of landfill gas measurement are summarized in ***Table 7-2***.

Table 7-2 Summary of Landfill Gas Measurement Results

Landfill Gas Parameter	Action Level	Limit Level	Detectable at LMR	
			Min	Max
Methane	>10% LEL (>0.5% v/v)	>20% LEL (>1% v/v)	0.1%	0.1%
Oxygen	<19%	<18%	20.8%	21.1%
Carbon Dioxide	>0.5%	>1.5%	0.1%	0.2%

7.3.3 The measurement results shown that slightly methane concentration was detected, oxygen concentration measured was over 19.0 % and Carbon Dioxide was between 0.1% and 0.2 %. No exceedance was triggered and therefore no corrective action was required accordingly

8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 In the Reporting Period, no environmental complaint, summons and prosecution under the EM&A Programme was lodged for the project. The statistical summary table of environmental complaint is presented in ***Tables 8-1, 8-2*** and ***8-3***. A summarized record of all complaints received was provided in ***Appendix H***.

Table 8-1 Statistical Summary of Environmental Complaints

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 September 2019	1	0	1	NA
1 – 31 October 2019		0	1	NA
1 – 30 November 2019		0	1	NA
1 – 30 September 2019	2	0	0	NA
1 – 31 October 2019		0	0	NA
1 – 30 November 2019		0	0	NA

Table 8-2 Statistical Summary of Environmental Summons

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 September 2019	1	0	0	NA
1 – 31 October 2019		0	0	NA
1 – 30 November 2019		0	0	NA
1 – 30 September 2019	2	0	0	NA
1 – 31 October 2019		0	0	NA
1 – 30 November 2019		0	0	NA

Table 8-3 Statistical Summary of Environmental Prosecution

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 September 2019	1	0	0	NA
1 – 31 October 2019		0	0	NA
1 – 30 November 2019		0	0	NA
1 – 30 September 2019	2	0	0	NA
1 – 31 October 2019		0	0	NA
1 – 30 November 2019		0	0	NA

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 GENERAL REQUIREMENTS

9.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in ***Appendix I.***

9.1.2 The Contractors had been implementing the required environmental mitigation measures according to the Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by the Contractors in this Reporting Month are summarized in ***Table 9-1***.

Table 9-1 Environmental Mitigation Measures in the Reporting Period

Issues	Environmental Mitigation Measures
Construction Noise	• Regularly to maintain all plants, so only the good condition plants were used on-site ; • If possible, all mobile plants onsite operation has located far from NSRs; • When machines and plants (such as trucks) were not in using, it was switched off; • Wherever possible, plant was prevented oriented directly the nearby NSRs; • Provided quiet powered mechanical equipment to use onsite; • Weekly noise monitoring was conducted to ensure construction noise meet the criteria.
Air Quality	• Stockpile of dusty material was covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet; • The construction plants regularly maintained to avoid the emissions of black smoke; • The construction plants switched off when it not in use; • Water spraying on haul road and dry site area was provided regularly; • Where a vehicle leaving the works site is carrying a load of dusty materials, the load has covered entirely with clean impervious sheeting; and • Before any vehicle leaving the works site, wheel watering has been performed.
Water Quality	• Debris and refuse generated on-site collected daily; • Oils and fuels were stored in designated areas; • The chemical waste storage as sealed area provided; • Site hoarding with sealed foot were provided surrounding the boundary of working site to prevent wastewater or site surface water runoff get into public areas; and • Portable chemical toilets were provided on-site. A licensed contractor was regularly disposal and maintenance of these facilities. • Silt curtain was installed and maintained in accordance with EP condition
Waste and Chemical Management	• Excavated material reused on site as far as possible to minimize off-site disposal. • Scrap metals or abandoned equipment should be recycled if possible; • Waste arising kept to a minimum and be handled, transported and disposed of in a suitable manner; • Disposal of C&D wastes to any designated public filling facility and/or landfill followed a trip ticket system; and • Chemical waste handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.
General	• The site is generally kept tidy and clean. • Mosquito control is performed to prevent mosquito breeding on site.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

10.1.1 This is the ***4th*** Quarterly EM&A report as presented the monitoring results and inspection findings for the reporting period from ***1st September 2019*** to ***30th November 2019***.

10.1.2 In the Reporting Period, no daytime construction noise monitoring results that triggered the Limit Level was recorded and no noise complaint (which is an Action Level exceedance) was received by the Project Consultant, EPD and the Contractors. However, fourteen (14) sessions of evening additional construction noise monitoring results triggered the Limit Level. Investigation was undertaken by ET and it was considered that the exceedances recorded are unlikely caused by the Project.

10.1.3 In this Reporting Period, no 1-Hour TSP or 24-Hr TSP air quality monitoring exceedance was recorded. No NOE or the associated corrective actions were therefore issued.

10.1.4 For water quality monitoring, seven (7) Action Level and seven (7) Limit Level exceedance were recorded for Suspended Solids in the reporting period. Investigation for the cause of exceedance was carried out by ET subsequently and it is concluded that the exceedances recorded in this reporting period were unlikely caused by the Project.

10.1.5 No documented complaint, notification of summons or prosecution was received and recorded for the Project.

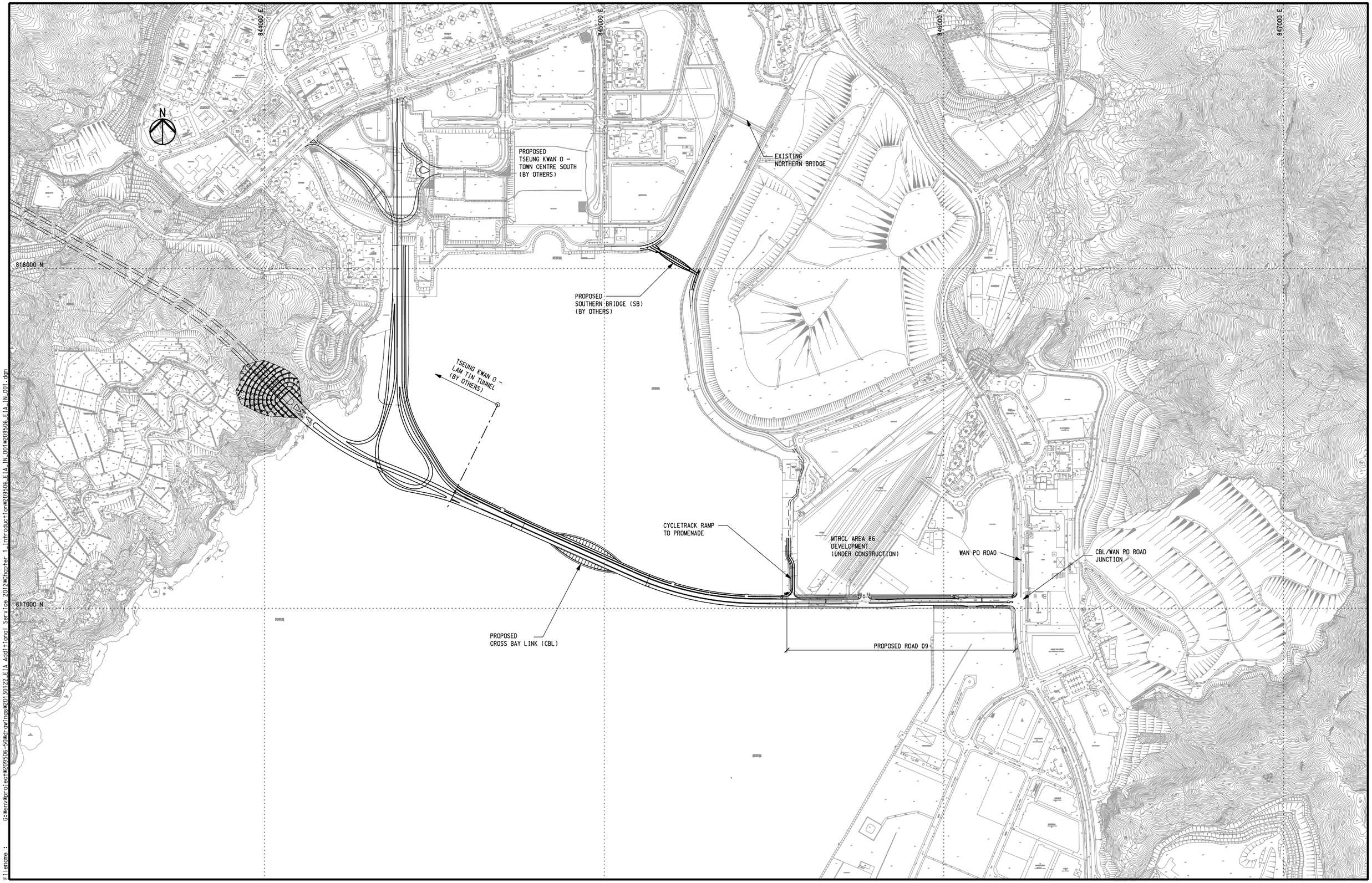
10.2 RECOMMENDATIONS

10.2.1 Due to the dry and windy season has begun in Hong Kong, the Contractors were reminded that all the works to undertaking must be fulfill environmental statutory requirement, especially construction dust come from working sites of the Project.

10.2.2 In regards to the marine works, special attention should be paid on excavation works for the bridge pier foundations underway in which water quality mitigation measures such as erection of silt curtain should be properly implemented and maintained.

Appendix A

Project Layout Plan



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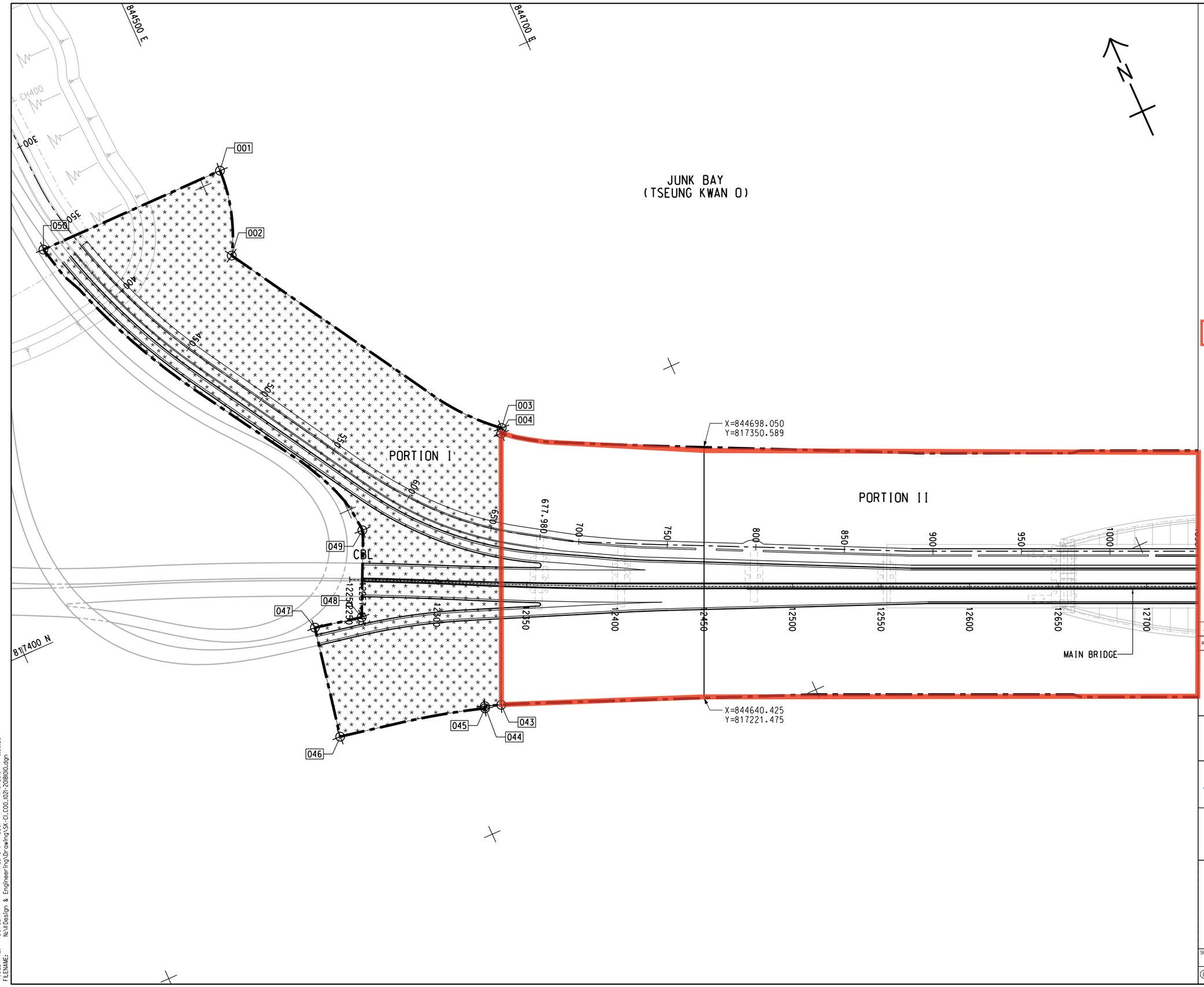
土木工程拓展署 Civil Engineering and Development Department	ARUP Ove Arup & Partners Hong Kong Limited	Job Title: **Agreement No. CE 43/2008(HY) Cross Bay Link, Tseung Kwan O – Investigation**
Drawing Title: GENERAL LAYOUT PLAN		

Rev.	Description	Date
B	SECOND ISSUE	01/13
A	FIRST ISSUE	07/11

Drawn: GL	Date: 01/13	Drawing No.: 209506/EIA/IN/001	
Checked: JP	Approved: ST		
Scale: 1:5000 on A1 & 1:10000 on A3		Status: FINAL	Rev.: B



NOTES:

1. ALL SETTING OUT POINTS SHOWN ON THIS SET OF DRAWINGS ARE FOR REFERENCE ONLY. THE EXACT LIMIT OF SITE BOUNDARY SHALL BE VERIFIED AND DETERMINED BY THE CONTRACTOR ON SITE.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/COO/1022 AND 1023.

LEGEND:

- SITE BOUNDARY
- PORTION I
- PORTION II
- PORTION III
- PORTION IV
- PORTION V
- PORTION VI
- PORTION VII
- WORKS AREA A
- WORKS AREA B
- Works area under Contract 1

Rev	Amendment	By	Chk.	App.	Date
A	FIRST ISSUE	HK	KN	AC	19/09/18

PROJECT MANAGER:

PROJECT MANAGER:

土木工程拓展署
Civil Engineering and Development Department

SUPERVISOR:

AECOM

CONTRACTOR:

中國路橋工程有限責任公司
China Road and Bridge Corp.

CONTRACT NO. AND TITLE:

Contract No. NE/2017/07

CROSS BAY LINK, TSEUNG KWAN O - MAIN BRIDGE AND ASSOCIATED WORKS

DRAWING TITLE:

SCALE @ A1
1 : 1000

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SETTING OUT POINTS

POINTS	EASTING	NORTHING
001	844512.175	817604.422
002	844498.695	817557.993
003	844598.186	817407.065
004	844596.769	817404.339
005	845132.374	817153.641
006	845500.00	817088.580
007	845524.969	817088.226
008	845524.909	817236.307
009	845558.095	817236.307
010	845558.095	817195.885
011	845550.234	817174.288
012	845550.219	817158.042
013	845562.850	817139.744
014	845562.850	817035.700
015	845550.850	817035.670
016	845524.969	817035.670
017	846030.606	817036.089
018	846030.604	817038.387
019	846200.700	817038.418
020	846200.700	817038.796
021	846205.200	817042.796
022	846205.200	817138.796
023	846245.180	817138.796
024	846246.698	816900.099
025	846206.155	816900.099

SETTING OUT POINTS

POINTS	EASTING	NORTHING
026	846204.700	816926.589
027	846199.263	816926.590
028	846144.269	816926.589
029	846091.080	816926.744
030	845969.970	816926.504
031	846199.197	816975.364
032	846188.983	816993.582
033	846144.274	816999.997
034	846144.274	817000.722
035	846091.204	817000.679
036	845970.070	817000.581
037	845970.069	817000.099
038	845550.850	817000.099
039	845524.969	817000.099
040	845550.850	816953.291
041	845500.00	816952.636
042	845076.990	817029.022
043	844534.373	817264.536
044	844525.572	817267.627
045	844525.199	817266.527
046	844444.018	817285.203
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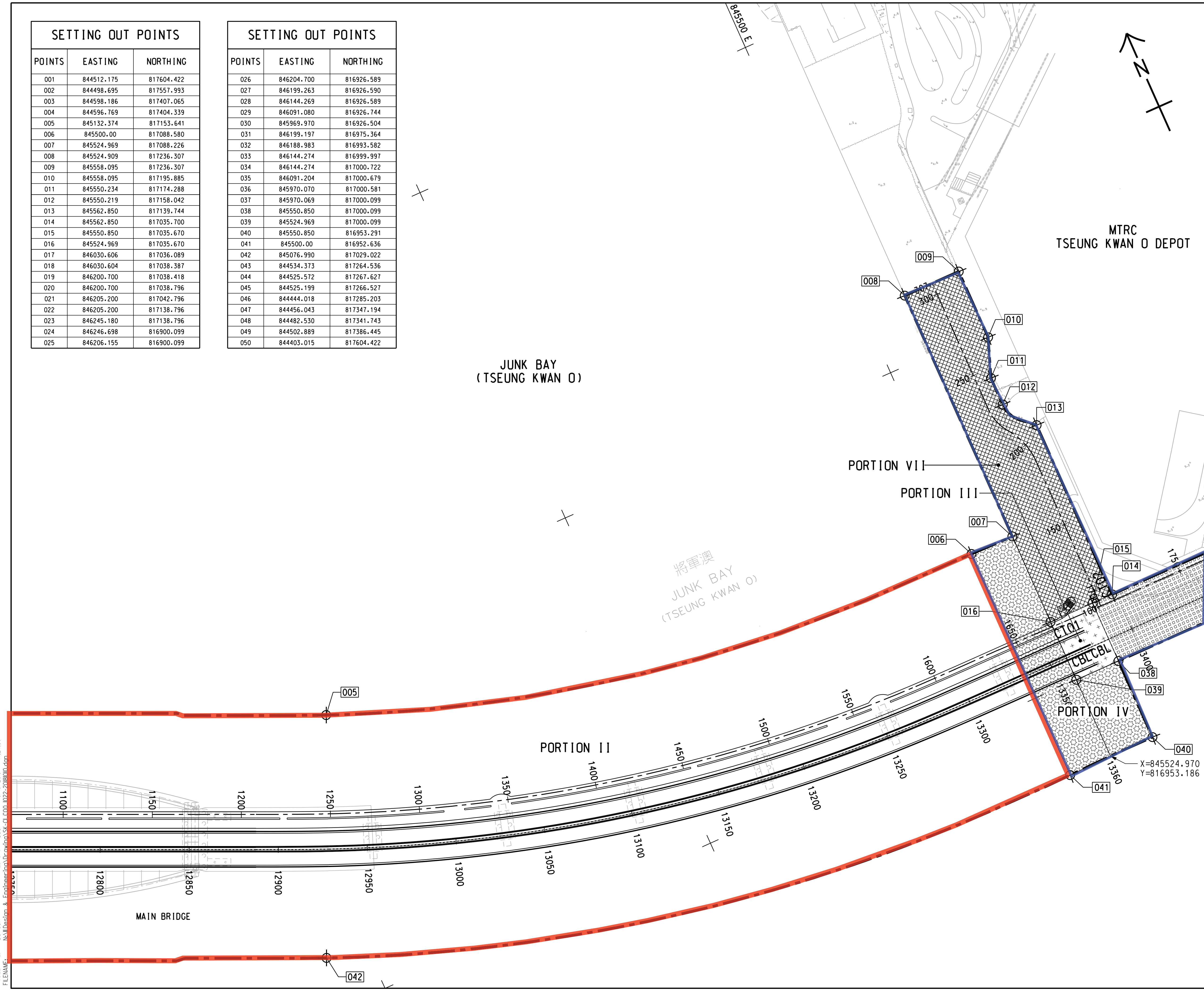

NOTE:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/C00/1021 AND 1023.

LEGEND:

Works area under Contract 1

Works area under Contract 2

Rev	Amendment	By	Chk.	App.	Date

PROJECT MANAGER: PROJECT MANAGER:

土木工程拓展署
Civil Engineering and Development Department

SUPERVISOR: AECOM

CONTRACTOR: 中國路橋工程有限責任公司 China Road and Bridge Corp.

CONTRACT NO. AND TITLE:

Contract No. NE/2017/07

CROSS BAY LINK, TSEUNG KWAN O - MAIN BRIDGE AND ASSOCIATED WORKS

DRAWING TITLE:

SCALE @ A1

DRAWING NO:

NOTE:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/C00/1021 AND 1022.

LEGEND:

Works area under Contract 1

Works area under Contract 2

845700 E

845900 E

846100 E

N

MTRC
TSEUNG KWAN O DEPOT

817200 N

LOHAS PARK

CUT LINE B-B
SEE DRAWING NO. 60329339/C1/C00/1022

PORTION VI

817000 N

E=845869.991
N=817000.014

E=845869.970
N=816926.504

Loading & Unloading Marine Area

100m

WORKS AREA A

WORKS AREA B

PORTION V

JUNK BAY
(TSEUNG KWAN O)

816800 N

017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037

Rev	Amendment	By	Chk.	App.	Date

PROJECT MANAGER:

PROJECT MANAGER:

土木工程拓展署
Civil Engineering and Development Department

SUPERVISOR:

AECOM

CONTRACTOR:

中國路橋工程有限責任公司
China Road and Bridge Corp.

CONTRACT NO. AND TITLE:

Contract No. NE/2017/07

CROSS BAY LINK, TSEUNG KWAN O - MAIN BRIDGE AND ASSOCIATED WORKS

DRAWING TITLE:

SCALE @ A1

DRAWING NO:

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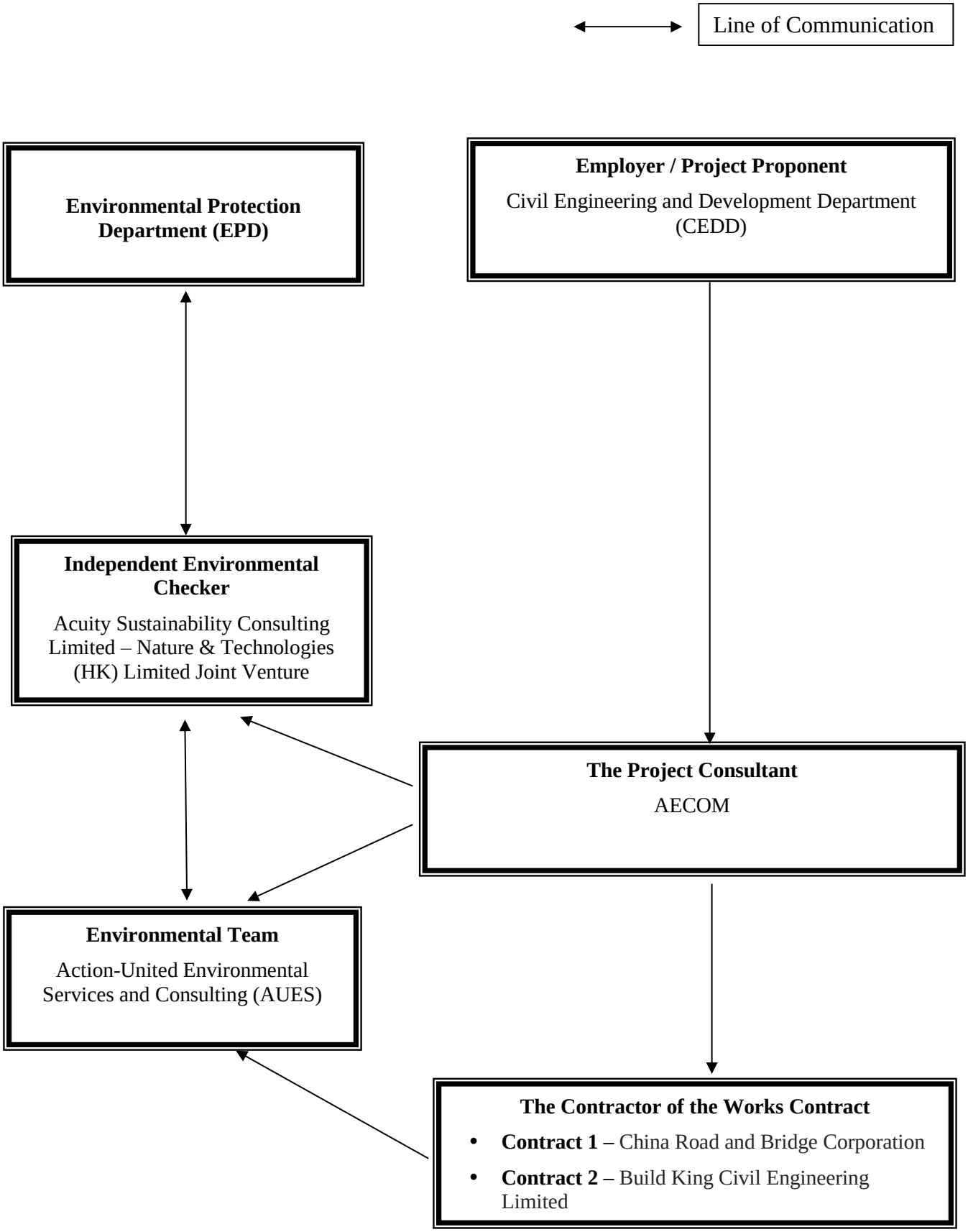
Appendix B

Project Organization Chart & Contact Details of Key Personnel for the Project

Project Organization Structure



Contact Details of Key Personnel for the Project

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Project Proponent	CK Lam	2301 1398	2714 5174
CEDD	Project Proponent	Sheri Leung	2301 1398	2714 5174
AECOM	Senior Resident Engineer	Jackie Chan	3595 8045	3596 6118
AECOM	Resident Engineer	Kingman Chan	3595 8045	3596 6118
ASC – N&T JV	Independent Environmental Checker	Kevin Li	2698 6833	2698 9383
ASC – N&T JV	Senior Environmental Consultant	Tandy Tse	2698 6833	2698 9383
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Martin Li	2959 6059	2959 6079
CRBC	Site Agent	Raymond Suen	9779 8871	2283 1689
CRBC	Environmental Officer	Calvin So	9724 6254	2283 1689
CRBC	Environmental Supervisor	Lila Lui	9790 5433	2283 1689
Build King	Site Agent	Stephen Leung	9071 7657	TBA
Build King	Environmental Officer	Michael Lam	6476 4299	TBA
Build King	Environmental Supervisor	Kenneth Hung	6170 9304	TBA

Legend:

CEDD (Employer) – Civil Engineering and Development Department

AECOM (Project Consultant) – AECOM Asia Co. Ltd.

ASC – N&T JV (IEC) – Acuity Sustainability Consulting Limited – Nature & Technologies (HK) Limited Joint Venture

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

CRBC (the Main Contractor of the Works Contract 1) – China Road and Bridge Corporation

Build King (the Main Contractor of the Works Contract 2) - Build King Civil Engineering Limited

Appendix C

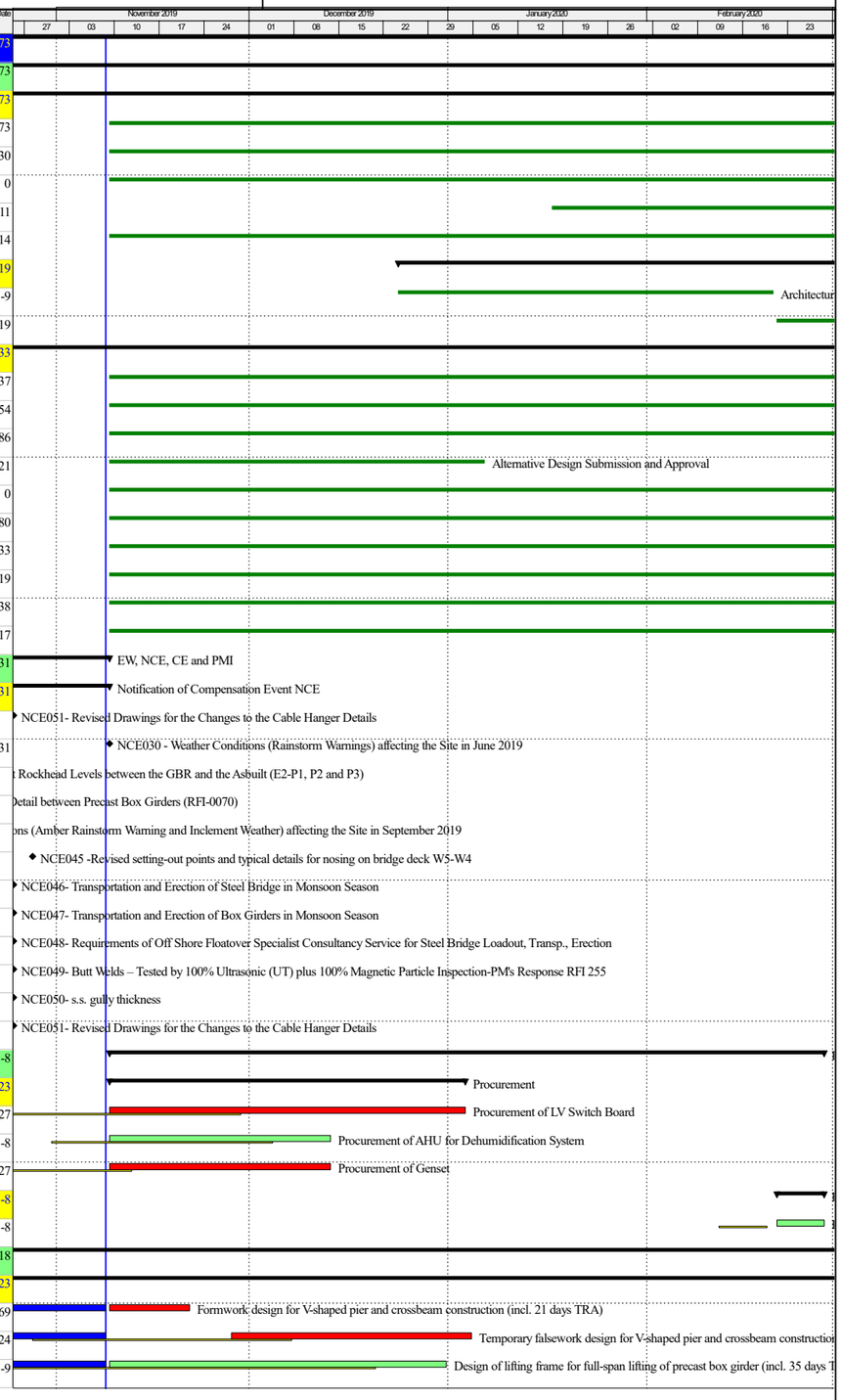
3-Month Rolling Construction Programme

Contract 1

Data Date : 08-Nov-19
Page: 1

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
Cross Bay Link,Tseung Kwan O Main Bridge and Associated Works		1484	913	29-Jun-18 A	29-Jun-18	09-May-22	21-Jul-22	312			73
Executive Summary Programme		1484	913	29-Jun-18 A	29-Jun-18	09-May-22	21-Jul-22	-86			73
ESP Section 2 of Works-All Works within Portion II,III,IV and VI		1240	913	17-Sep-18 A	28-Feb-19	09-May-22	21-Jul-22	-86			73
ESP10920	CBL Main Bridge and Marine Viaduct	1240	913	17-Sep-18 A	28-Feb-19	09-May-22	21-Jul-22	-86	26.37%	0	73
ESP10960	Piling Works	671	136	17-Nov-18 A	18-Apr-19	23-Mar-20	16-Feb-21	49	79.73%	0	330
ESP10980	Pile Cap	321	228	23-Jul-19 A	08-Aug-19	23-Jun-20	23-Jun-20	36	28.97%	0	0
ESP11000	Pier	239	239	17-Jan-20	20-Dec-19	11-Sep-20	31-Aug-20	109	0%	0	-11
ESP11160	E&M Works for CBL Main Bridge and Marine Viaduct	913	913	09-Nov-19	07-Nov-19	09-May-22	25-Apr-22	-86	0%	0	-14
ESP Section 5 of the Works-All Works within Portion V (CBL E&M Plantroom)		405	405	24-Dec-19	14-Dec-19	31-Jan-21	12-Jan-21	-19			-19
ESP11280	Architectural & External Works	59	59	24-Dec-19	14-Dec-19	20-Feb-20	11-Feb-20	-13	0%	0	-9
ESP11300	E&M Works and FSD Inspection	346	346	21-Feb-20	12-Feb-20	31-Jan-21	12-Jan-21	-19	0%	0	-19
Preliminaries, Contractor's Design & Method Statement Submission & Approval		1105	607	29-Jun-18 A	29-Jun-18	07-Jul-21	04-Jun-21	19			-33
ESP10400	Temporary Works Design	695	379	13-Aug-18 A	13-Aug-18	21-Nov-20	07-Jul-20	45	45.47%	0	-137
ESP10420	Method Statement Submission for Major Construction Works	736	451	27-Aug-18 A	27-Aug-18	01-Feb-21	31-Aug-20	2	38.74%	0	-154
ESP10440	Contractor's Design Submission and Approval	869	495	06-Aug-18 A	06-Aug-18	17-Mar-21	21-Dec-20	131	43.04%	0	-86
ESP10460	Alternative Design Submission and Approval	397	59	07-Aug-18 A	07-Aug-18	06-Jan-20	07-Sep-19	1	85.14%	0	-121
ESP10480	General Submission	843	345	29-Jun-18 A	29-Jun-18	18-Oct-20	18-Oct-20	58	59.07%	0	0
ESP10500	Project Manager's Acceptance of Subcontractors	556	115	14-Aug-18 A	21-Feb-19	02-Mar-20	29-Aug-20	346	79.32%	0	180
ESP10560	Procurement, Factory Acceptance Test, Delivery and Temporary Storage of Major E&M Equipment	607	607	09-Nov-19	09-Oct-19	07-Jul-21	04-Jun-21	-17	0%	0	-33
ESP10600	Precasting of Precast Shell	745	431	08-Nov-18 A	28-Apr-19	12-Jan-21	11-May-21	155	42.15%	0	119
ESP10620	Fabrication of Precast Box Girder	713	395	10-Nov-18 A	13-May-19	07-Dec-20	24-Apr-21	-14	44.6%	0	138
ESP10640	Fabrication of Steel Arch Bridge and Side Spans	623	425	28-Mar-19 A	08-Apr-19	06-Jan-21	20-Dec-20	-69	31.78%	0	-17
EW, NCE, CE and PMI		0	0	03-Oct-19 A	09-Oct-19	09-Nov-19	09-Oct-19	1225			-31
Notification of Compensation Event NCE		0	0	03-Oct-19 A	09-Oct-19	09-Nov-19	09-Oct-19	1225			-31
NCE01001	NCE051- Revised Drawings for the Changes to the Cable Hanger Details	0	0	25-Oct-19 A					100%	0	
NCE0581	NCE030 - Weather Conditions (Rainstorm Warnings) affecting the Site in June 2019	0	0	09-Nov-19	09-Oct-19			1225	0%	0	-31
NCE0821	NCE042 - Risk of Different Rockhead Levels between the GBR and the Asbuilt (E2-P1, P2 and P3)	0	0	03-Oct-19 A					100%	0	
NCE0841	NCE043 - Revised U Bar Detail between Precast Box Girders (RFI-0070)	0	0	03-Oct-19 A					100%	0	
NCE0861	NCE044 - Weather Conditions (Amber Rainstorm Warning and Inclement Weather) affecting the Site in September 2019	0	0	03-Oct-19 A					100%	0	
NCE0881	NCE045 -Revised setting-out points and typical details for nosing on bridge deck W5-W4	0	0	28-Oct-19 A					100%	0	
NCE0901	NCE046- Transportation and Erection of Steel Bridge in Monsoon Season	0	0	25-Oct-19 A					100%	0	
NCE0921	NCE047- Transportation and Erection of Box Girders in Monsoon Season	0	0	25-Oct-19 A					100%	0	
NCE0941	NCE048- Requirements of Off Shore Floatover Specialist Consultancy Service for Steel Bridge Loadout, Transp., Erection	0	0	25-Oct-19 A					100%	0	
NCE0961	NCE049- Butt Welds – Tested by 100% Ultrasonic (UT) plus 100% Magnetic Particle Inspection-PM's Response RFI 255	0	0	25-Oct-19 A					100%	0	
NCE0981	NCE050- s.s. gully thickness	0	0	25-Oct-19 A					100%	0	
NCE1001	NCE051- Revised Drawings for the Changes to the Cable Hanger Details	0	0	25-Oct-19 A					100%	0	
Procurement, Factory Acceptance Test, Delivery and Temporary Storage of Major E&M Equip		90	90	09-Nov-19	09-Oct-19	28-Feb-20	19-Feb-20	35			-8
Procurement		45	45	09-Nov-19	09-Oct-19	03-Jan-20	04-Dec-19	20			-23
P-PC10120	Procurement of LV Switch Board	45	45	09-Nov-19	09-Oct-19	03-Jan-20	29-Nov-19	-9	0%	0	-27
P-PC10140	Procurement of AHU for Dehumidification System	30	30	09-Nov-19	31-Oct-19	13-Dec-19	04-Dec-19	35	0%	0	-8
P-PC10160	Procurement of Genset	30	30	09-Nov-19	09-Oct-19	13-Dec-19	12-Nov-19	-9	0%	0	-27
Factory Acceptance Test		7	7	21-Feb-20	12-Feb-20	28-Feb-20	19-Feb-20	35			-8
P-PC10080	Factory Acceptance Test for AHU for Dehumidification System	7	7	21-Feb-20	12-Feb-20	28-Feb-20	19-Feb-20	35	0%	0	-8
Preliminaries, Contractor's Design & Method Statement Submission & Approval		680	451	28-Mar-19 A	08-Apr-19	01-Feb-21	14-Jan-21	2			-18
Temporary Works Design		262	141	06-Jun-19 A	21-Jun-19	21-Apr-20	25-Mar-20	47			-23
TDS2010	Formwork design for V-shaped pier and crossbeam construction (incl. 21 days TRA)	63	11	06-Jun-19 A	21-Jun-19	21-Nov-19	02-Sep-19	13	82.54%	21	-69
TDS2020	Temporary falsework design for V-shaped pier and crossbeam construction (incl. 21 days TRA)	36	33	10-Oct-19 A	28-Oct-19	04-Jan-20	07-Dec-19	13	8.33%	21	-24
TDS2080	Design of lifting frame for full-span lifting of precast box girder (incl. 35 days TRA)	63	45	14-Oct-19 A	09-Oct-19	31-Dec-19	20-Dec-19	131	28.57%	35	-9



Remaining Level of Effort | Remaining Work | Milestone
Primary Baseline | Critical Remaining Work | Summary
Actual Work | Baseline Milestone

CRBC
Three Month Rolling Programme

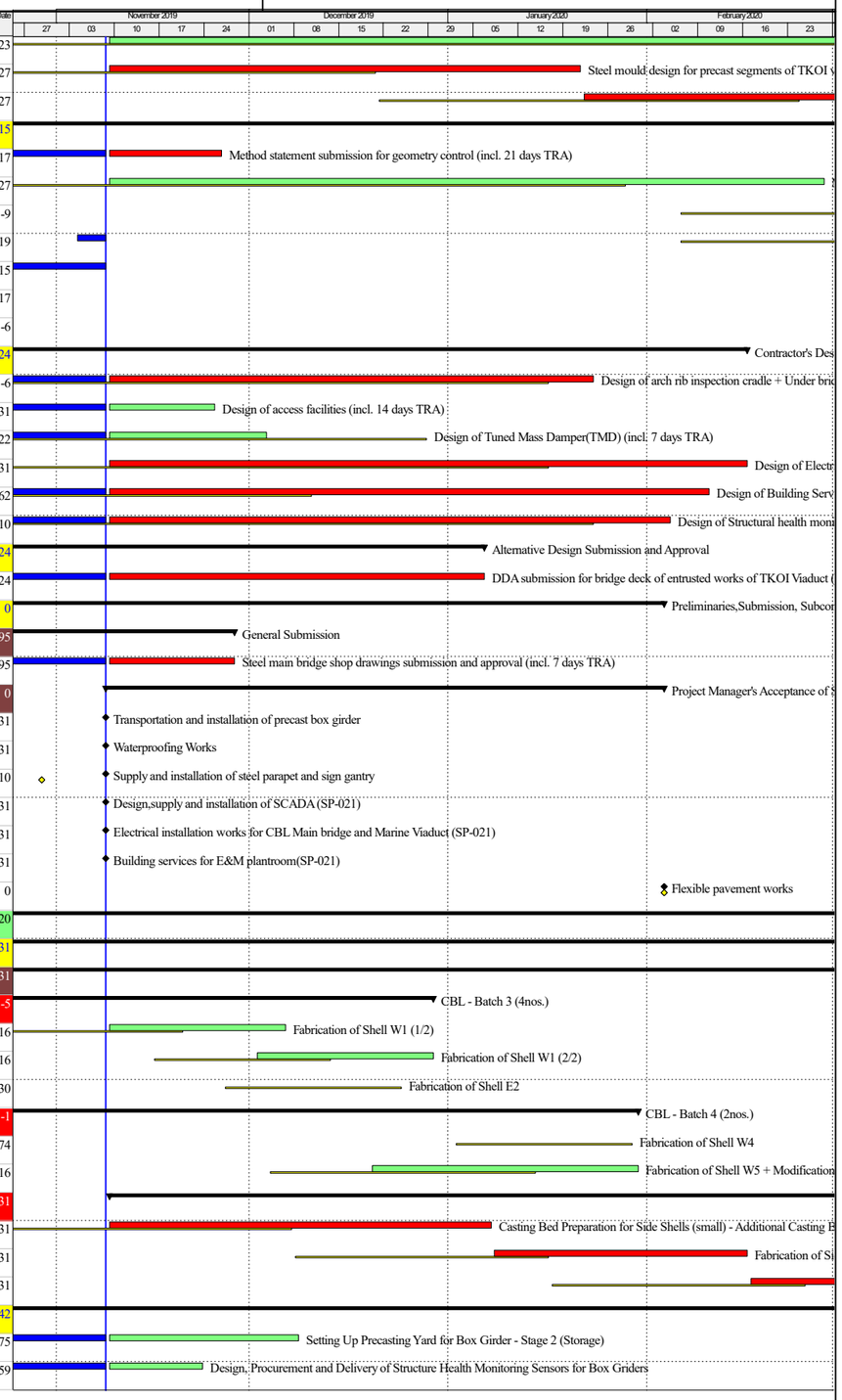
Date	Revision	Checked	Approved
08-Nov-19	Monthly updated on 08 Nov 2019		

Data Date : 08-Nov-19

Page: 2

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
TDS2140	Design of temporary works for superstructure of steel bridge (incl. 35 days TRA)	141	141	09-Nov-19	14-Oct-19	21-Apr-20	25-Mar-20	47	0%	35	-23
TDS2160	Steel mould design for precast segments of TKOI viaducts (incl. 21 days TRA)	63	63	09-Nov-19	09-Oct-19	21-Jan-20	20-Dec-19	-14	0%	21	-27
TDS2180	Design of Pier bracket for erection of pier-head segments (incl. 21 days TRA)	56	56	22-Jan-20	21-Dec-19	26-Mar-20	24-Feb-20	-14	0%	21	-27
Method Statement Submission for Major Construction Works		567	386	28-Mar-19 A	26-Apr-19	01-Feb-21	14-Jan-21	2			-15
MDS1135	Method statement submission for geometry control (incl. 21 days TRA)	67	15	28-Mar-19 A	26-Apr-19	26-Nov-19	12-Jul-19	-63	77.61%	21	-117
MDS1140	Method statement submission for assembly of steel arch bridge (incl. 35 days TRA)	96	96	09-Nov-19	09-Oct-19	28-Feb-20	28-Jan-20	92	0%	35	-27
MDS1170	Method statement submission for delivery of precast box girder (incl. 35 days TRA)	61	43	19-Oct-20 A	06-Feb-20	27-Apr-20	16-Apr-20	30	29.51%	35	-9
MDS1210	Method statement submission for installation of precast box girder (incl. 35 days TRA)	81	73	04-Nov-19 A	06-Feb-20	01-Jun-20	09-May-20	0	9.88%	35	-19
MDS1220	Method statement submission for delivery of steel bridge deck of side span (incl. 35 days TRA)	81	69	23-Aug-19 A	13-Oct-20	01-Feb-21	14-Jan-21	2	15%	35	-15
MDS1230	Method statement submission for installation of the steel bridge deck of side span (incl. 21 days TRA)	67	57	15-Jul-20 A	13-Oct-20	18-Jan-21	29-Dec-20	14	14.93%	21	-17
MDS1270	Method statement submission for installation of steel arch bridge (incl. 21 days TRA)	82	62	15-Jul-20 A	29-Aug-20	09-Dec-20	02-Dec-20	38	24.39%	21	-6
Contractor's Design Submission and Approval		265	100	15-Apr-19 A	28-May-19	16-Feb-20	23-Jan-20	3			-24
CDS1040	Design of arch rib inspection cradle + Under bridge gantry	86	65	16-Sep-19 A	09-Oct-19	23-Jan-20	16-Jan-20	-44	24.42%	0	-6
CDS1060	Design of access facilities (incl. 14 days TRA)	125	14	05-May-19 A	28-May-19	25-Nov-19	19-Oct-19	40	88.8%	14	-31
CDS1080	Design of Tuned Mass Damper(TMD) (incl. 7 days TRA)	150	21	15-Apr-19 A	08-Jul-19	03-Dec-19	28-Dec-19	67	86%	14	22
CDS1160	Design of Electrical system for the E&M plant room	100	100	09-Nov-19	09-Oct-19	16-Feb-20	16-Jan-20	-22	0%	0	-31
CDS1180	Design of Building Services system for the E&M plant room	100	94	02-Sep-19 A	02-Sep-19	10-Feb-20	10-Dec-19	-10	6%	0	-62
CDS1200	Design of Structural health monitoring system (incl. 14 days TRA)	172	75	12-Jun-19 A	08-Jul-19	04-Feb-20	23-Jan-20	-7	56.4%	14	-10
Alternative Design Submission and Approval		111	50	30-Mar-19 A	08-Apr-19	06-Jan-20	14-Aug-19	1			-124
ADS1030	DDA submission for bridge deck of entrusted works of TKOI Viaduct (incl. 35 days TRA)	111	50	30-Mar-19 A	08-Apr-19	06-Jan-20	14-Aug-19	1	54.95%	35	-124
Preliminaries,Submission, Subcontracting and Procurement		302	87	28-Mar-19 A	08-Apr-19	03-Feb-20	03-Feb-20	214			0
General Submission		140	20	28-Mar-19 A	08-Apr-19	28-Nov-19	25-Aug-19	-90			-95
P-GS1480	Steel main bridge shop drawings submission and approval (incl. 7 days TRA)	140	20	28-Mar-19 A	08-Apr-19	28-Nov-19	25-Aug-19	-90	85.71%	7	-95
Project Manager's Acceptance of Subcontractors		87	87	08-Nov-19	08-Oct-19	03-Feb-20	03-Feb-20	214			0
P-SP1400	Transportation and installation of precast box girder	0	0			08-Nov-19	08-Oct-19	1	0%	0	-31
P-SP1540	Waterproofing Works	0	0			08-Nov-19	08-Oct-19	206	0%	0	-31
P-SP1560-0	Supply and installation of steel parapet and sign gantry	0	0			08-Nov-19	29-Oct-19	301	0%	0	-10
P-SP1680	Design,supply and installation of SCADA (SP-021)	0	0			08-Nov-19	08-Oct-19	252	0%	0	-31
P-SP1700	Electrical installation works for CBL Main bridge and Marine Viaduct (SP-021)	0	0			08-Nov-19	08-Oct-19	47	0%	0	-31
P-SP1760	Building services for E&M plantroom(SP-021)	0	0			08-Nov-19	08-Oct-19	-22	0%	0	-31
P-SP1770	Flexible pavement works	0	0			03-Feb-20	03-Feb-20	-32	0%	0	0
Precasting & Fabrication Works		469	291	08-Dec-18 A	28-May-19	25-Aug-20	05-Aug-20	-27			-20
Fabrication of Precast Shell and Precast Segments		140	140	25-Jul-19 A	09-Oct-19	27-Mar-20	25-Feb-20	35			-31
Precast Shell		140	140	25-Jul-19 A	09-Oct-19	27-Mar-20	25-Feb-20	35			-31
CBL - Batch 3 (4nos.)		51	51	04-Aug-19 A	24-Oct-19	29-Dec-19	24-Dec-19	80			-5
P-PS3068	Fabrication of Shell W1 (1/2)	28	28	09-Nov-19	24-Oct-19	06-Dec-19	20-Nov-19	35	0%	0	-16
P-PS3069	Fabrication of Shell W1 (2/2)	28	28	02-Dec-19	16-Nov-19	29-Dec-19	13-Dec-19	35	0%	0	-16
P-PS3138	Fabrication of Shell E2	28	0	04-Aug-19 A	27-Nov-19	16-Aug-19 A	24-Dec-19		100%	0	130
CBL - Batch 4 (2nos.)		42	42	25-Jul-19 A	04-Dec-19	30-Jan-20	29-Jan-20	92			-1
P-PS3142	Fabrication of Shell W4	28	0	25-Jul-19 A	02-Jan-20	08-Aug-19 A	29-Jan-20		100%	0	174
P-PS3143	Fabrication of Shell W5 + Modification of Casting Bed (2 weeks)	42	42	20-Dec-19	04-Dec-19	30-Jan-20	14-Jan-20	92	0%	0	-16
CBL - E1 and W1 Side Shells (4nos.)		140	140	09-Nov-19	09-Oct-19	27-Mar-20	25-Feb-20	18			-31
P-PS9010	Casting Bed Preparation for Side Shells (small) - Additional Casting Beds	60	60	09-Nov-19	09-Oct-19	07-Jan-20	07-Dec-19	-16	0%	0	-31
P-PS9020	Fabrication of Side Shells (small) x2 Sides E1	40	40	08-Jan-20	08-Dec-19	16-Feb-20	16-Jan-20	-16	0%	0	-31
P-PS9040	Fabrication of Side Shells (small) x2 Sides W1	40	40	17-Feb-20	17-Jan-20	27-Mar-20	25-Feb-20	18	0%	0	-31
Fabrication of Precast Box Girder		379	214	08-Dec-18 A	28-May-19	09-Jun-20	28-Apr-20	16			-42
P-BG1415	Setting Up Precasting Yard for Box Girder - Stage 2 (Storage)	120	30	08-Dec-18 A	28-May-19	08-Dec-19	24-Sep-19	162	75%	0	-75
P-BG1435	Design, Procurement and Delivery of Structure Health Monitoring Sensors for Box Griders	80	15	12-Jun-19 A	08-Jul-19	23-Nov-19	25-Sep-19	35	81.25%	0	-59



Remaining Level of Effort | Remaining Work | Milestone
Primary Baseline | Critical Remaining Work | Summary
Actual Work | Baseline Milestone

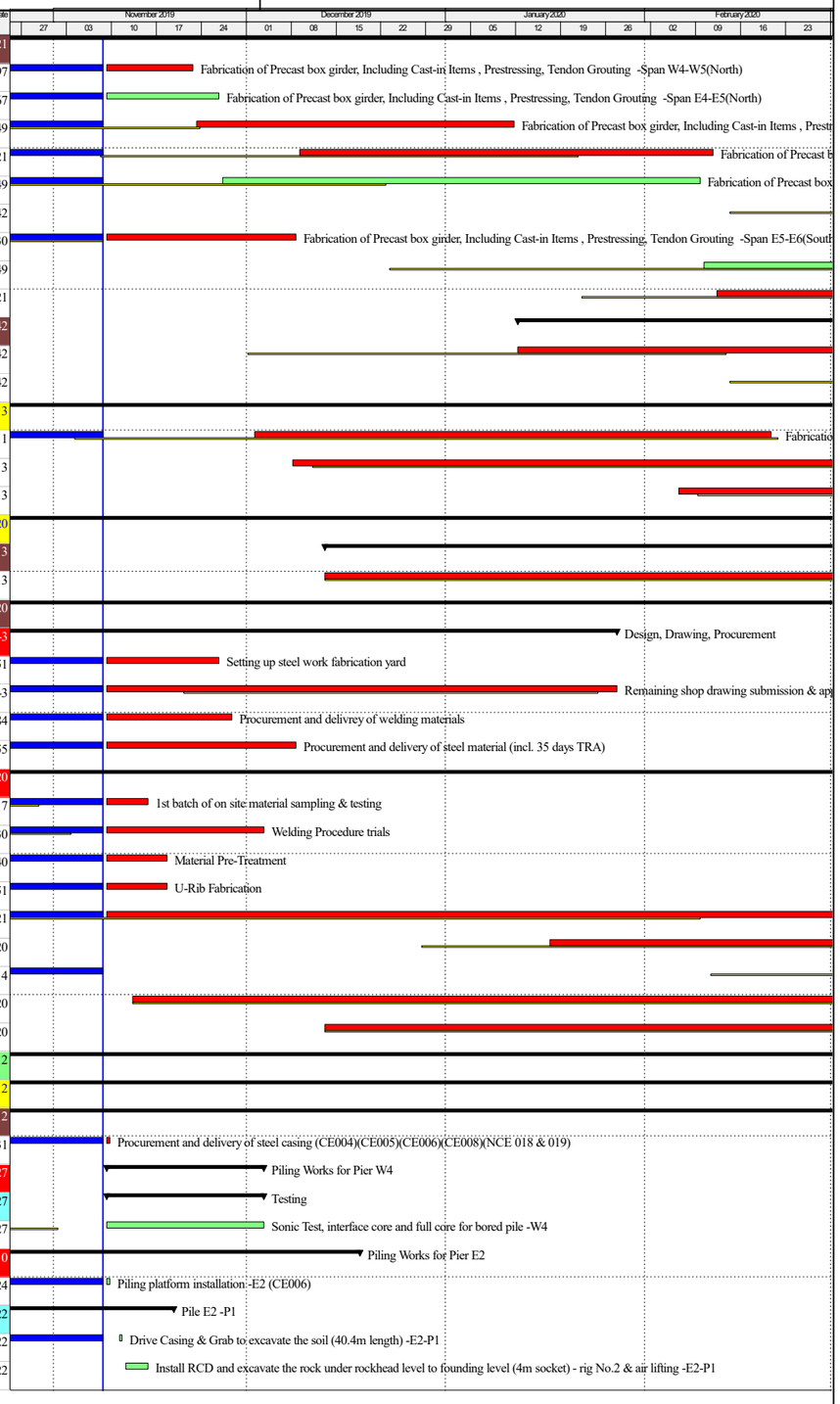
CRBC

Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Nov-19	Monthly updated on 08 Nov 2019		

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
Box Girder Fabrication - 1st Batch (8 Pieces)		328	170	16-May-19 A	04-Jun-19	26-Apr-20	05-Apr-20	60			-21
P-BG1381	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span W4-W5(North)	75	14	16-May-19 A	04-Jun-19	22-Nov-19	17-Aug-19	9	81.33%	0	-97
P-BG1382	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span E4-E5(North)	75	18	29-Jun-19 A	08-Jul-19	26-Nov-19	20-Sep-19	62	76%	0	-67
P-BG1383	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span W3-W4(South)	75	50	26-Aug-19 A	10-Sep-19	11-Jan-20	23-Nov-19	9	33.33%	0	-49
P-BG1384	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span E5-E6 (North)	75	65	04-Sep-19 A	08-Nov-19	11-Feb-20	21-Jan-20	-14	13.33%	0	-21
P-BG1390	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span E6-E7(South)	75	75	09-Oct-19 A	09-Oct-19	09-Feb-20	22-Dec-19	62	0%	0	-49
P-BG1395	Transfer to Stockpiling Area - 1st Batch (by STMP)	20	20	27-Mar-20	14-Feb-20	15-Apr-20	04-Mar-20	53	0%	0	-42
P-BG1406	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span E5-E6(South)	75	30	26-Aug-19 A	26-Aug-19	08-Dec-19	08-Nov-19	-14	60%	0	-30
P-BG1408	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span E6-E7(North)	75	75	10-Feb-20	23-Dec-19	24-Apr-20	06-Mar-20	62	0%	0	-49
P-BG1425	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span E7-Abut(North)	75	75	12-Feb-20	22-Jan-20	26-Apr-20	05-Apr-20	-14	0%	0	-21
Box Girder Fabrication - 2nd Batch (5 Pieces)		150	150	12-Jan-20	01-Dec-19	09-Jun-20	28-Apr-20	9			-42
P-BG1392	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span W2-W3(South)	75	75	12-Jan-20	01-Dec-19	26-Mar-20	13-Feb-20	9	0%	0	-42
P-BG1409	Fabrication of Precast box girder, Including Cast-in Items , Prestressing, Tendon Grouting -Span W3-W4(North)	75	75	27-Mar-20	14-Feb-20	09-Jun-20	28-Apr-20	9	0%	0	-42
Fabrication of Precast Pier		254	226	16-Sep-19 A	04-Nov-19	14-Jul-20	17-Jul-20	15			3
P-PF1230	Fabrication of Precast pier (1st batch 4 nos) - E4, E5, E6, E7 (Include 10 days TRA)	110	81	16-Sep-19 A	04-Nov-19	20-Feb-20	21-Feb-20	15	26.36%	10	1
P-PF1420	Fabrication of Precast pier (2nd batch 4 nos) - W2, W3, E2, E3 (include 10 days TRA)	180	180	08-Dec-19	11-Dec-19	04-Jun-20	07-Jun-20	15	0%	10	3
P-PF1440	Fabrication of Precast pier (3rd batch 2 nos) (incl. 10 days TRA) - W4, W5	160	160	06-Feb-20	09-Feb-20	14-Jul-20	17-Jul-20	15	0%	10	3
Fabrication of Steel Arch Bridge and Side Spans		458	291	19-Apr-19 A	08-Jun-19	25-Aug-20	05-Aug-20	-41			-20
Fabrication of Side Spans		161	161	13-Dec-19	13-Dec-19	21-May-20	08-May-20	-90			-13
P-PF1080	Fabrication of steel deck of Side Spans - C01 to C07	161	161	13-Dec-19	13-Dec-19	21-May-20	08-May-20	-90	0%	7	-13
Fabrication of Steel Arch Bridge		458	291	19-Apr-19 A	08-Jun-19	25-Aug-20	05-Aug-20	-41			-20
Design, Drawing, Procurement		231	80	19-Apr-19 A	08-Jun-19	27-Jan-20	24-Jan-20	-51			-3
P-PF1040	Setting up steel work fabrication yard	60	18	08-Aug-19 A	08-Aug-19	26-Nov-19	06-Oct-19	-48	70%	0	-51
P-PF1045	Remaining shop drawing submission & approval (NCE 014)	65	80	29-Jun-19 A	21-Nov-19	27-Jan-20	24-Jan-20	-51	0%	0	-3
P-PF1047	Procurement and delivrey of welding materials	90	20	06-Jun-19 A	08-Jun-19	28-Nov-19	05-Sep-19	-81	77.78%	0	-84
P-PF1050	Procurement and delivery of steel material (incl. 35 days TRA)	125	30	19-Apr-19 A	12-Jun-19	08-Dec-19	14-Oct-19	-86	76%	35	-55
Fabrication and sub-assembly Work		399	291	25-Jun-19 A	06-Aug-19	25-Aug-20	05-Aug-20	-41			-20
P-PF1055	1st batch of on site material sampling & testing	20	7	25-Jun-19 A	10-Oct-19	15-Nov-19	29-Oct-19	-57	65%	0	-17
P-PF1065	Welding Procedure trials	90	25	29-Jun-19 A	06-Aug-19	03-Dec-19	03-Nov-19	-81	72.22%	0	-30
P-PF1095	Material Pre-Treatment	41	10	30-Aug-19 A	30-Aug-19	18-Nov-19	09-Oct-19	-90	75.61%	0	-40
P-PF1097	U-Rib Fabrication	30	10	30-Aug-19 A	30-Aug-19	18-Nov-19	28-Sep-19	-90	66.67%	0	-51
P-PF1101	Fabrication of panel plate for C08 to C14	177	114	30-Aug-19 A	30-Aug-19	01-Mar-20	09-Feb-20	-90	35.59%	7	-21
P-PF1110	Sub-assembly of Main Span - Decking C08 to C14	120	120	17-Jan-20	28-Dec-19	15-May-20	25-Apr-20	-34	0%	0	-20
P-PF1120	Fabrication of Main Span - Decking C15- C21	190	171	10-Oct-19 A	11-Feb-20	19-Aug-20	05-Aug-20	-85	10%	7	-14
P-PF1170	Fabrication of Main Span - Arch rib NG01 to NG19	257	257	13-Nov-19	13-Nov-19	26-Jul-20	06-Jul-20	-90	0%	7	-20
P-PF1190	Fabrication of Main Span - Arch rib SG01 to NG19	257	257	13-Dec-19	13-Dec-19	25-Aug-20	05-Aug-20	-41	0%	7	-20
Section 2 of Works-All Works within Portion II,III,IV and VI		496	291	23-Nov-18 A	18-Apr-19	25-Aug-20	13-Aug-20	345			-12
CBL Main Bridge and Marine Viaduct		496	291	23-Nov-18 A	18-Apr-19	25-Aug-20	13-Aug-20	345			-12
Piling Works		341	136	23-Nov-18 A	18-Apr-19	23-Mar-20	11-Mar-20	49			-12
S2-PW1010	Procurement and delivery of steel casing (CE004)(CE005)(CE006)(CE008)(NCE 018 & 019)	75	1	23-Nov-18 A	18-Apr-19	09-Nov-19	01-Jul-19	19	98.67%	0	-131
Piling Works for Pier W4		21	21	09-Nov-19	09-Oct-19	03-Dec-19	01-Nov-19	115			-27
Testing		21	21	09-Nov-19	09-Oct-19	03-Dec-19	01-Nov-19	115			-27
S2-PW49	Sonic Test, interface core and full core for bored pile -W4	21	21	09-Nov-19	09-Oct-19	03-Dec-19	01-Nov-19	115	0%	0	-27
Piling Works for Pier E2		71	40	13-Oct-19 A	09-Oct-19	18-Dec-19	18-Dec-19	73			0
S2-PW851(	Piling platform installation -E2 (CE006)	4	1	13-Oct-19 A	09-Oct-19	09-Nov-19	12-Oct-19	57	75%	0	-24
Pile E2 -P1		32	8	17-Oct-19 A	14-Oct-19	19-Nov-19	24-Oct-19	58			-22
S2-PW85	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P1	3	1	17-Oct-19 A	14-Oct-19	11-Nov-19	16-Oct-19	57	66.67%	0	-22
S2-PW85	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -E2-P1	4	4	12-Nov-19	17-Oct-19	15-Nov-19	21-Oct-19	57	0%	0	-22



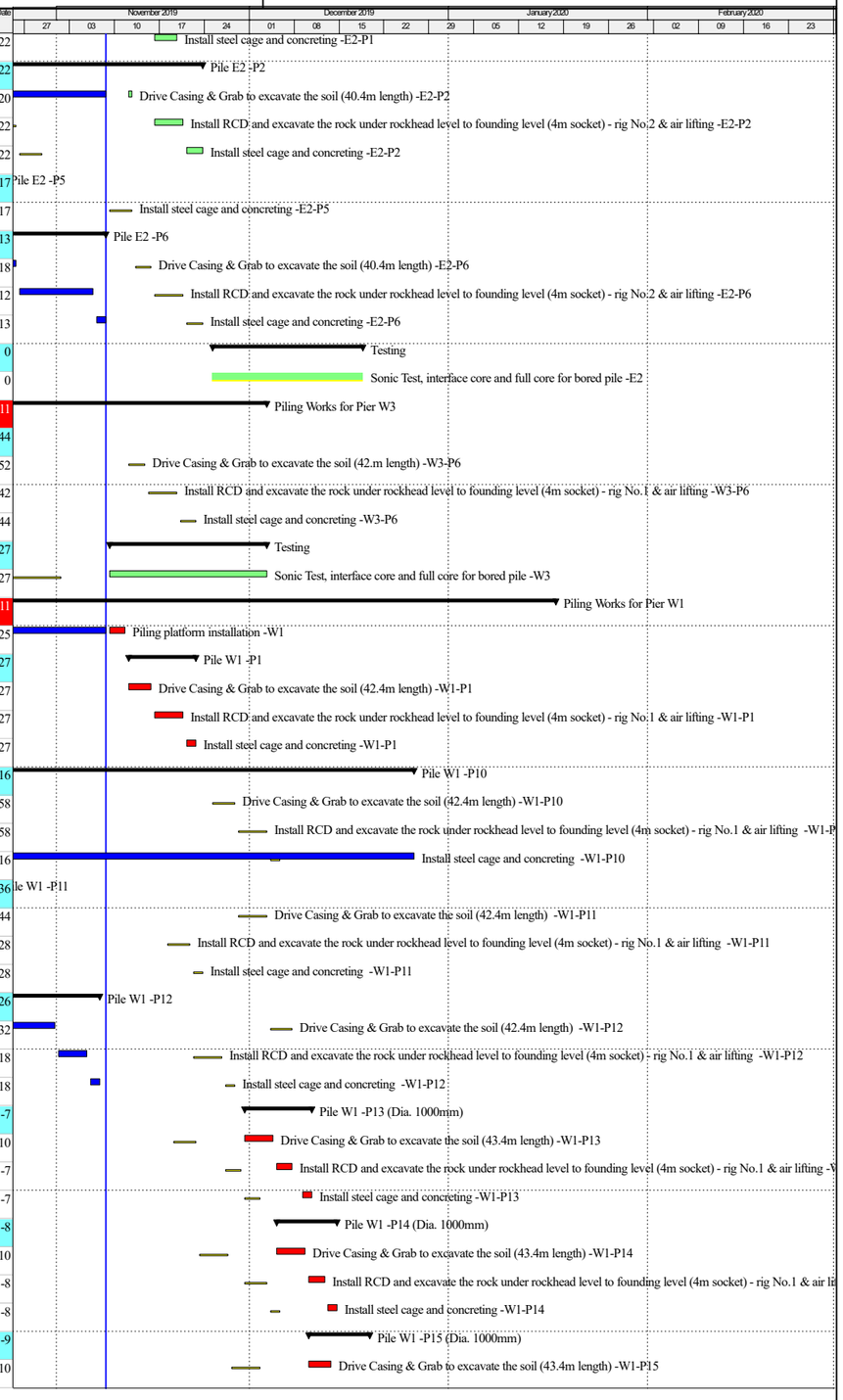
Remaining Level of Effort | Remaining Work | Milestone
Primary Baseline | Critical Remaining Work | Summary
Actual Work | Baseline Milestone

CRBC
Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Nov-19	Monthly updated on 08 Nov 2019		

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
S2-PW86	Install steel cage and concreting -E2-P1	3	3	16-Nov-19	22-Oct-19	19-Nov-19	24-Oct-19	58	0%	0	-22
Pile E2 -P2		33	11	17-Oct-19 A	17-Oct-19	23-Nov-19	29-Oct-19	57			-22
S2-PW86	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P2	3	1	17-Oct-19 A	17-Oct-19	12-Nov-19	19-Oct-19	60	66.67%	0	-20
S2-PW86	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -E2-P2	4	4	16-Nov-19	22-Oct-19	20-Nov-19	25-Oct-19	57	0%	0	-22
S2-PW86	Install steel cage and concreting -E2-P2	3	3	21-Nov-19	26-Oct-19	23-Nov-19	29-Oct-19	57	0%	0	-22
Pile E2 -P5		3	0	22-Oct-19 A	09-Nov-19	23-Oct-19 A	12-Nov-19				17
S2-PW88	Install steel cage and concreting -E2-P5	3	0	22-Oct-19 A	09-Nov-19	23-Oct-19 A	12-Nov-19		100%	0	17
Pile E2 -P6		10	0	17-Oct-19 A	13-Nov-19	08-Nov-19 A	23-Nov-19				13
S2-PW88	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P6	3	0	17-Oct-19 A	13-Nov-19	25-Oct-19 A	15-Nov-19		100%	0	18
S2-PW88	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -E2-P6	4	0	26-Oct-19 A	16-Nov-19	06-Nov-19 A	20-Nov-19		100%	0	12
S2-PW89	Install steel cage and concreting -E2-P6	3	0	07-Nov-19 A	21-Nov-19	08-Nov-19 A	23-Nov-19		100%	0	13
Testing		21	21	25-Nov-19	25-Nov-19	18-Dec-19	18-Dec-19	63			0
S2-PW85	Sonic Test, interface core and full core for bored pile -E2	21	21	25-Nov-19	25-Nov-19	18-Dec-19	18-Dec-19	63	0%	0	0
Piling Works for Pier W3		25	25	09-Sep-19 A	09-Oct-19	03-Dec-19	22-Nov-19	105			-11
Pile W3 -P6		10	0	09-Sep-19 A	12-Nov-19	30-Sep-19 A	22-Nov-19				44
S2-PW36	Drive Casing & Grab to excavate the soil (42.m length) -W3-P6	3	0	09-Sep-19 A	12-Nov-19	11-Sep-19 A	14-Nov-19		100%	0	52
S2-PW36	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W3-P6	4	0	12-Sep-19 A	15-Nov-19	28-Sep-19 A	19-Nov-19		100%	0	42
S2-PW36	Install steel cage and concreting -W3-P6	3	0	28-Sep-19 A	20-Nov-19	30-Sep-19 A	22-Nov-19		100%	0	44
Testing		21	21	09-Nov-19	09-Oct-19	03-Dec-19	01-Nov-19	90			-27
S2-PW21	Sonic Test, interface core and full core for bored pile -W3	21	21	09-Nov-19	09-Oct-19	03-Dec-19	01-Nov-19	90	0%	0	-27
Piling Works for Pier W1		101	70	11-Sep-19 A	09-Oct-19	17-Jan-20	06-Jan-20	-10			-11
S2-PW206	Piling platform installation -W1	4	2	11-Sep-19 A	09-Oct-19	11-Nov-19	12-Oct-19	-9	50%	0	-25
Pile W1 -P1		10	10	12-Nov-19	11-Oct-19	22-Nov-19	22-Oct-19	4			-27
S2-PW36	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P1	4	4	12-Nov-19	11-Oct-19	15-Nov-19	15-Oct-19	-9	0%	0	-27
S2-PW37	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P1	4	4	16-Nov-19	16-Oct-19	20-Nov-19	19-Oct-19	-6	0%	0	-27
S2-PW37	Install steel cage and concreting -W1-P1	2	2	21-Nov-19	21-Oct-19	22-Nov-19	22-Oct-19	4	0%	0	-27
Pile W1 -P10		10	0	16-Sep-19 A	25-Nov-19	26-Dec-19 A	05-Dec-19				-16
S2-PW44	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P10	4	0	16-Sep-19 A	25-Nov-19	19-Sep-19 A	28-Nov-19		100%	0	58
S2-PW44	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P10	4	0	20-Sep-19 A	29-Nov-19	24-Sep-19 A	03-Dec-19		100%	0	58
S2-PW44	Install steel cage and concreting -W1-P10	2	0	25-Sep-19 A	04-Dec-19	26-Dec-19 A	05-Dec-19		100%	0	-16
Pile W1 -P11		14	0	16-Sep-19 A	18-Nov-19	22-Oct-19 A	03-Dec-19				36
S2-PW44	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P11	4	0	16-Sep-19 A	29-Nov-19	12-Oct-19 A	03-Dec-19		100%	0	44
S2-PW45	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P11	4	0	12-Oct-19 A	18-Nov-19	19-Oct-19 A	21-Nov-19		100%	0	28
S2-PW45	Install steel cage and concreting -W1-P11	2	0	21-Oct-19 A	22-Nov-19	22-Oct-19 A	23-Nov-19		100%	0	28
Pile W1 -P12		14	0	16-Sep-19 A	22-Nov-19	07-Nov-19 A	07-Dec-19				26
S2-PW45	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P12	4	0	16-Sep-19 A	04-Dec-19	31-Oct-19 A	07-Dec-19		100%	0	32
S2-PW46	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P12	4	0	01-Nov-19 A	22-Nov-19	05-Nov-19 A	26-Nov-19		100%	0	18
S2-PW46	Install steel cage and concreting -W1-P12	2	0	06-Nov-19 A	27-Nov-19	07-Nov-19 A	28-Nov-19		100%	0	18
Pile W1 -P13 (Dia. 1000mm)		9	9	30-Nov-19	19-Nov-19	10-Dec-19	02-Dec-19	-3			-7
S2-PW46	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P13	4	4	30-Nov-19	19-Nov-19	04-Dec-19	22-Nov-19	-9	0%	0	-10
S2-PW46	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P13	3	3	05-Dec-19	27-Nov-19	07-Dec-19	29-Nov-19	-6	0%	0	-7
S2-PW47	Install steel cage and concreting -W1-P13	2	2	09-Dec-19	30-Nov-19	10-Dec-19	02-Dec-19	-3	0%	0	-7
Pile W1 -P14 (Dia. 1000mm)		9	9	05-Dec-19	23-Nov-19	14-Dec-19	05-Dec-19	-5			-8
S2-PW47	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P14	4	4	05-Dec-19	23-Nov-19	09-Dec-19	27-Nov-19	-9	0%	0	-10
S2-PW47	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P14	3	3	10-Dec-19	30-Nov-19	12-Dec-19	03-Dec-19	-7	0%	0	-8
S2-PW47	Install steel cage and concreting -W1-P14	2	2	13-Dec-19	04-Dec-19	14-Dec-19	05-Dec-19	-5	0%	0	-8
Pile W1 -P15 (Dia. 1000mm)		9	9	10-Dec-19	28-Nov-19	19-Dec-19	09-Dec-19	-7			-9
S2-PW48	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P15	4	4	10-Dec-19	28-Nov-19	13-Dec-19	02-Dec-19	-9	0%	0	-10



Remaining Level of Effort
Primary Baseline
Actual Work
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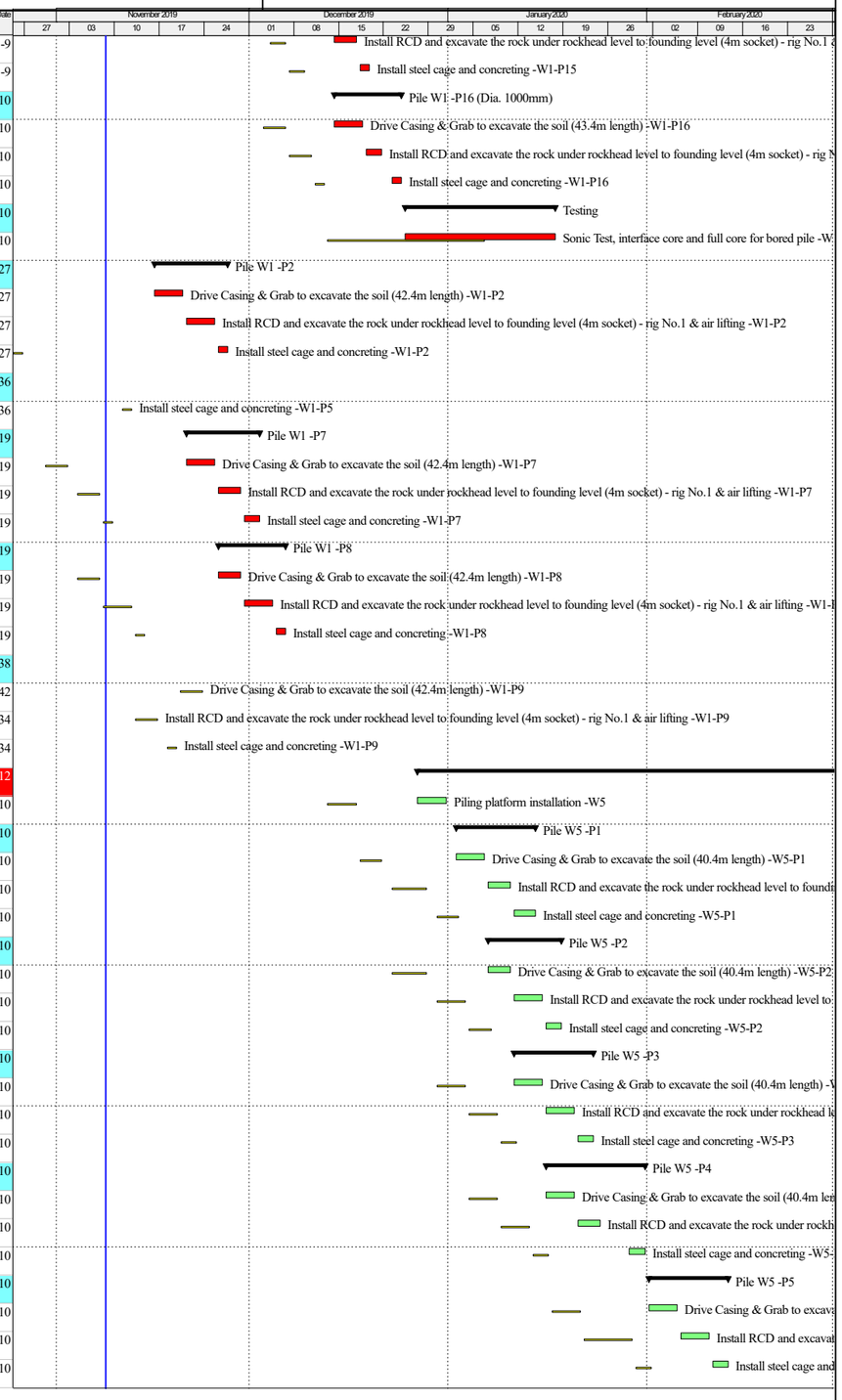
Critical Remaining Work
Baseline Milestone
Milestone
Summary

CRBC
Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Nov-19	Monthly updated on 08 Nov 2019		

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
S2-PW48	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P15	3	3	14-Dec-19	04-Dec-19	17-Dec-19	06-Dec-19	-8	0%	0	-9
S2-PW48	Install steel cage and concreting -W1-P15	2	2	18-Dec-19	07-Dec-19	19-Dec-19	09-Dec-19	-7	0%	0	-9
Pile W1 -P16 (Dia. 1000mm)		9	9	14-Dec-19	03-Dec-19	24-Dec-19	12-Dec-19	-9			-10
S2-PW48	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P16	4	4	14-Dec-19	03-Dec-19	18-Dec-19	06-Dec-19	-9	0%	0	-10
S2-PW49	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P16	3	3	19-Dec-19	07-Dec-19	21-Dec-19	10-Dec-19	-9	0%	0	-10
S2-PW49	Install steel cage and concreting -W1-P16	2	2	23-Dec-19	11-Dec-19	24-Dec-19	12-Dec-19	-9	0%	0	-10
Testing		21	21	25-Dec-19	13-Dec-19	17-Jan-20	06-Jan-20	-9			-10
S2-PW21	Sonic Test, interface core and full core for bored pile -W1	21	21	25-Dec-19	13-Dec-19	17-Jan-20	06-Jan-20	-9	0%	0	-10
Pile W1 -P2		10	10	16-Nov-19	16-Oct-19	27-Nov-19	26-Oct-19	2			-27
S2-PW37	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P2	4	4	16-Nov-19	16-Oct-19	20-Nov-19	19-Oct-19	-9	0%	0	-27
S2-PW38	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P2	4	4	21-Nov-19	21-Oct-19	25-Nov-19	24-Oct-19	-6	0%	0	-27
S2-PW38	Install steel cage and concreting -W1-P2	2	2	26-Nov-19	25-Oct-19	27-Nov-19	26-Oct-19	2	0%	0	-27
Pile W1 -P5		2	0	26-Sep-19 A	11-Nov-19	28-Sep-19 A	12-Nov-19				36
S2-PW40	Install steel cage and concreting -W1-P5	2	0	26-Sep-19 A	11-Nov-19	28-Sep-19 A	12-Nov-19		100%	0	36
Pile W1 -P7		10	10	21-Nov-19	30-Oct-19	02-Dec-19	09-Nov-19	0			-19
S2-PW41	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P7	4	4	21-Nov-19	30-Oct-19	25-Nov-19	02-Nov-19	-9	0%	0	-19
S2-PW42	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P7	4	4	26-Nov-19	04-Nov-19	29-Nov-19	07-Nov-19	-6	0%	0	-19
S2-PW42	Install steel cage and concreting -W1-P7	2	2	30-Nov-19	08-Nov-19	02-Dec-19	09-Nov-19	0	0%	0	-19
Pile W1 -P8		10	10	26-Nov-19	04-Nov-19	06-Dec-19	14-Nov-19	-2			-19
S2-PW42	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P8	4	4	26-Nov-19	04-Nov-19	29-Nov-19	07-Nov-19	-9	0%	0	-19
S2-PW42	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P8	4	4	30-Nov-19	08-Nov-19	04-Dec-19	12-Nov-19	-6	0%	0	-19
S2-PW43	Install steel cage and concreting -W1-P8	2	2	05-Dec-19	13-Nov-19	06-Dec-19	14-Nov-19	-2	0%	0	-19
Pile W1 -P9		10	0	16-Sep-19 A	13-Nov-19	10-Oct-19 A	23-Nov-19				38
S2-PW43	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P9	4	0	16-Sep-19 A	20-Nov-19	04-Oct-19 A	23-Nov-19		100%	0	42
S2-PW43	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W1-P9	4	0	05-Oct-19 A	13-Nov-19	08-Oct-19 A	16-Nov-19		100%	0	34
S2-PW43	Install steel cage and concreting -W1-P9	2	0	09-Oct-19 A	18-Nov-19	10-Oct-19 A	19-Nov-19		100%	0	34
Piling Works for Pier W5		88	88	27-Dec-19	13-Dec-19	23-Mar-20	11-Mar-20	49			-12
S2-PW539	Piling platform installation -W5	4	4	27-Dec-19	13-Dec-19	31-Dec-19	17-Dec-19	38	0%	0	-10
Pile W5 -P1		11	11	02-Jan-20	18-Dec-19	14-Jan-20	02-Jan-20	41			-10
S2-PW54	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P1	4	4	02-Jan-20	18-Dec-19	06-Jan-20	21-Dec-19	38	0%	0	-10
S2-PW54	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W5-P1	4	4	07-Jan-20	23-Dec-19	10-Jan-20	28-Dec-19	38	0%	0	-10
S2-PW54	Install steel cage and concreting -W5-P1	3	3	11-Jan-20	30-Dec-19	14-Jan-20	02-Jan-20	41	0%	0	-10
Pile W5 -P2		11	11	07-Jan-20	23-Dec-19	18-Jan-20	07-Jan-20	40			-10
S2-PW55	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P2	4	4	07-Jan-20	23-Dec-19	10-Jan-20	28-Dec-19	38	0%	0	-10
S2-PW55	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W5-P2	4	4	11-Jan-20	30-Dec-19	15-Jan-20	03-Jan-20	38	0%	0	-10
S2-PW55	Install steel cage and concreting -W5-P2	3	3	16-Jan-20	04-Jan-20	18-Jan-20	07-Jan-20	40	0%	0	-10
Pile W5 -P3		11	11	11-Jan-20	30-Dec-19	23-Jan-20	11-Jan-20	39			-10
S2-PW55	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P3	4	4	11-Jan-20	30-Dec-19	15-Jan-20	03-Jan-20	38	0%	0	-10
S2-PW55	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W5-P3	4	4	16-Jan-20	04-Jan-20	20-Jan-20	08-Jan-20	38	0%	0	-10
S2-PW56	Install steel cage and concreting -W5-P3	3	3	21-Jan-20	09-Jan-20	23-Jan-20	11-Jan-20	39	0%	0	-10
Pile W5 -P4		11	11	16-Jan-20	04-Jan-20	31-Jan-20	16-Jan-20	38			-10
S2-PW56	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P4	4	4	16-Jan-20	04-Jan-20	20-Jan-20	08-Jan-20	38	0%	0	-10
S2-PW56	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W5-P4	4	4	21-Jan-20	09-Jan-20	24-Jan-20	13-Jan-20	38	0%	0	-10
S2-PW56	Install steel cage and concreting -W5-P4	3	3	29-Jan-20	14-Jan-20	31-Jan-20	16-Jan-20	38	0%	0	-10
Pile W5 -P5		11	11	01-Feb-20	17-Jan-20	13-Feb-20	01-Feb-20	41			-10
S2-PW56	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P5	4	4	01-Feb-20	17-Jan-20	05-Feb-20	21-Jan-20	38	0%	0	-10
S2-PW57	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W5-P5	4	4	06-Feb-20	22-Jan-20	10-Feb-20	29-Jan-20	40	0%	0	-10
S2-PW57	Install steel cage and concreting -W5-P5	3	3	11-Feb-20	30-Jan-20	13-Feb-20	01-Feb-20	41	0%	0	-10



Remaining Level of Effort | Remaining Work | Milestone
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CRBC
Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Nov-19	Monthly updated on 08 Nov 2019		

Data Date : 08-Nov-19

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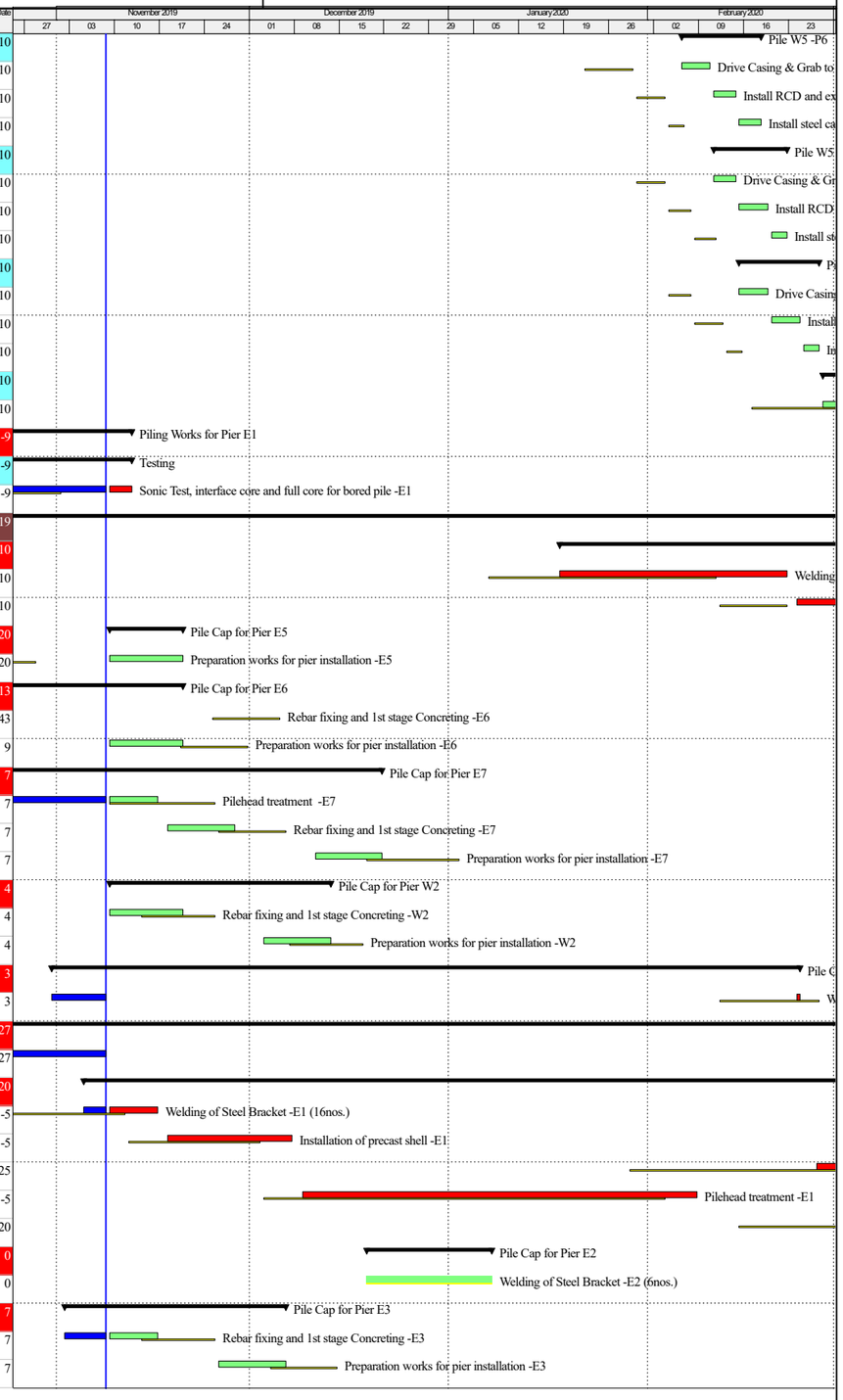
Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
	Pile W5 -P6	11	11	06-Feb-20	22-Jan-20	18-Feb-20	06-Feb-20	40			-10
S2-PW57	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P6	4	4	06-Feb-20	22-Jan-20	10-Feb-20	29-Jan-20	38	0%	0	-10
S2-PW57	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W5-P6	4	4	11-Feb-20	30-Jan-20	14-Feb-20	03-Feb-20	40	0%	0	-10
S2-PW57	Install steel cage and concreting -W5-P6	3	3	15-Feb-20	04-Feb-20	18-Feb-20	06-Feb-20	40	0%	0	-10
	Pile W5 -P7	11	11	11-Feb-20	30-Jan-20	22-Feb-20	11-Feb-20	39			-10
S2-PW93	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P7	4	4	11-Feb-20	30-Jan-20	14-Feb-20	03-Feb-20	38	0%	0	-10
S2-PW93	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W5-P7	4	4	15-Feb-20	04-Feb-20	19-Feb-20	07-Feb-20	39	0%	0	-10
S2-PW93	Install steel cage and concreting -W5-P7	3	3	20-Feb-20	08-Feb-20	22-Feb-20	11-Feb-20	39	0%	0	-10
	Pile W5 -P8	11	11	15-Feb-20	04-Feb-20	27-Feb-20	15-Feb-20	38			-10
S2-PW94	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P8	4	4	15-Feb-20	04-Feb-20	19-Feb-20	07-Feb-20	38	0%	0	-10
S2-PW94	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -W5-P8	4	4	20-Feb-20	08-Feb-20	24-Feb-20	12-Feb-20	38	0%	0	-10
S2-PW94	Install steel cage and concreting -W5-P8	3	3	25-Feb-20	13-Feb-20	27-Feb-20	15-Feb-20	38	0%	0	-10
	Testing	21	21	28-Feb-20	17-Feb-20	23-Mar-20	11-Mar-20	42			-10
S2-PW53	Sonic Test, interface core and full core for bored pile -W5	21	21	28-Feb-20	17-Feb-20	23-Mar-20	11-Mar-20	42	0%	0	-10
	Piling Works for Pier E1	21	3	06-Sep-19 A	09-Oct-19	12-Nov-19	01-Nov-19	4			-9
	Testing	21	3	06-Sep-19 A	09-Oct-19	12-Nov-19	01-Nov-19	4			-9
S2-PW74	Sonic Test, interface core and full core for bored pile -E1	21	3	06-Sep-19 A	09-Oct-19	12-Nov-19	01-Nov-19	4	85.71%	0	-9
	Pile Cap	173	128	09-Oct-19 A	10-Oct-19	17-Apr-20	12-May-20	47			19
	Pile Cap for Pier W1	38	38	18-Jan-20	07-Jan-20	05-Mar-20	22-Feb-20	-9			-10
S2-PC2057	Welding of Steel Bracket -W1 (16nos.)	28	28	18-Jan-20	07-Jan-20	22-Feb-20	11-Feb-20	-9	0%	0	-10
S2-PC2060	Installation of precast shell -W1	10	10	24-Feb-20	12-Feb-20	05-Mar-20	22-Feb-20	-9	0%	0	-10
	Pile Cap for Pier E5	10	10	09-Nov-19	17-Oct-19	20-Nov-19	28-Oct-19	131			-20
S2-PC2820	Preparation works for pier installation -E5	10	10	09-Nov-19	17-Oct-19	20-Nov-19	28-Oct-19	131	0%	0	-20
	Pile Cap for Pier E6	23	10	09-Oct-19 A	20-Nov-19	20-Nov-19	05-Dec-19	146			13
S2-PC2640	Rebar fixing and 1st stage Concreting -E6	10	0	09-Oct-19 A	25-Nov-19	16-Oct-19 A	05-Dec-19		100%	0	43
S2-PC2840	Preparation works for pier installation -E6	10	10	09-Nov-19	20-Nov-19	20-Nov-19	30-Nov-19	146	0%	0	9
	Pile Cap for Pier E7	37	37	11-Oct-19 A	09-Nov-19	21-Dec-19	02-Jan-20	129			7
S2-PC2680	Pilehead treatment -E7	14	7	11-Oct-19 A	09-Nov-19	16-Nov-19	25-Nov-19	129	50%	0	7
S2-PC2700	Rebar fixing and 1st stage Concreting -E7	10	10	18-Nov-19	26-Nov-19	28-Nov-19	06-Dec-19	129	0%	0	7
S2-PC2860	Preparation works for pier installation -E7	10	10	11-Dec-19	19-Dec-19	21-Dec-19	02-Jan-20	129	0%	0	7
	Pile Cap for Pier W2	30	30	09-Nov-19	14-Nov-19	13-Dec-19	18-Dec-19	145			4
S2-PC2040	Rebar fixing and 1st stage Concreting -W2	10	10	09-Nov-19	14-Nov-19	20-Nov-19	25-Nov-19	145	0%	0	4
S2-PC2050	Preparation works for pier installation -W2	10	10	03-Dec-19	07-Dec-19	13-Dec-19	18-Dec-19	145	0%	0	4
	Pile Cap for Pier W3	14	1	31-Oct-19 A	12-Feb-20	24-Feb-20	27-Feb-20	20			3
S2-PC2110	Welding of Steel Bracket -W3 (6nos.)	14	1	31-Oct-19 A	12-Feb-20	24-Feb-20	27-Feb-20	20	92.86%	0	3
	Pile Cap for Pier W4	14	10	12-Oct-19 A	24-Apr-20	03-Apr-20	12-May-20	53			27
S2-PC2200	Pilehead treatment -W4	14	10	12-Oct-19 A	24-Apr-20	03-Apr-20	12-May-20	53	28.57%	0	27
	Pile Cap for Pier E1	154	128	05-Nov-19 A	10-Oct-19	17-Apr-20	20-Mar-20	-14			-20
S2-PC2410	Welding of Steel Bracket -E1 (16nos.)	28	7	05-Nov-19 A	10-Oct-19	16-Nov-19	11-Nov-19	1	75%	0	-5
S2-PC2420	Installation of precast shell -E1	18	18	18-Nov-19	12-Nov-19	07-Dec-19	02-Dec-19	1	0%	0	-5
S2-PC2430	Installation of pre-cast side shell (small) and construction of strucutre gap x2 sides -E1	40	40	27-Feb-20	29-Jan-20	17-Apr-20	14-Mar-20	-14	0%	0	-25
S2-PC2440	Pilehead treatment -E1	48	48	09-Dec-19	03-Dec-19	08-Feb-20	03-Feb-20	1	0%	0	-5
S2-PC2880	Rebar fixing and Concreting -E1	30	30	10-Mar-20	15-Feb-20	17-Apr-20	20-Mar-20	-14	0%	0	-20
	Pile Cap for Pier E2	14	14	19-Dec-19	19-Dec-19	07-Jan-20	07-Jan-20	57			0
S2-PC2290	Welding of Steel Bracket -E2 (6nos.)	14	14	19-Dec-19	19-Dec-19	07-Jan-20	07-Jan-20	57	0%	0	0
	Pile Cap for Pier E3	20	24	02-Nov-19 A	14-Nov-19	06-Dec-19	14-Dec-19	132			7
S2-PC2400	Rebar fixing and 1st stage Concreting -E3	10	7	02-Nov-19 A	14-Nov-19	16-Nov-19	25-Nov-19	132	30%	0	7
S2-PC2920	Preparation works for pier installation -E3	10	10	26-Nov-19	04-Dec-19	06-Dec-19	14-Dec-19	132	0%	0	7



Remaining Level of Effort | Remaining Work | Milestone

Primary Baseline | Critical Remaining Work | Summary

Actual Work | Baseline Milestone

CRBC

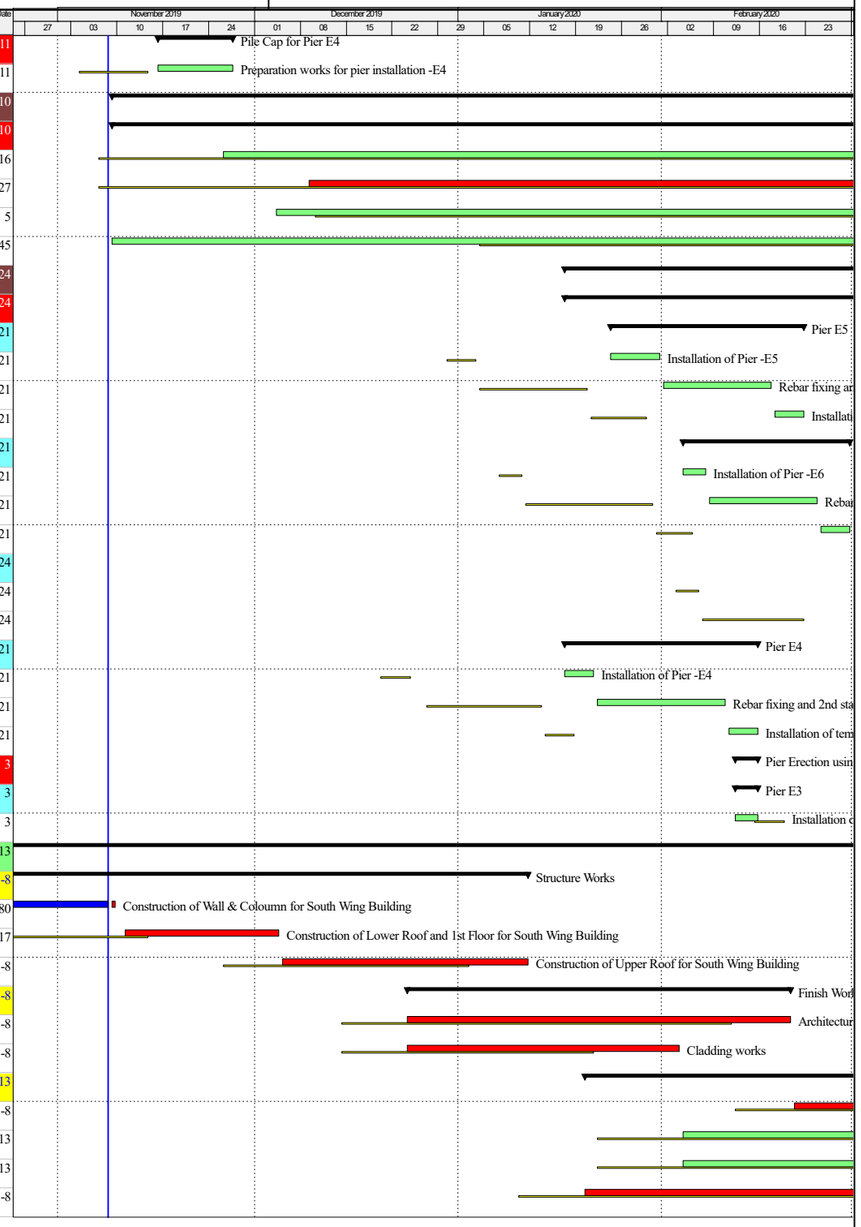
Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Nov-19	Monthly updated on 08 Nov 2019		

Data Date : 08-Nov-19

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
Pile Cap for Pier E4		10	10	16-Nov-19	04-Nov-19	27-Nov-19	14-Nov-19	119			-11
S2-PC2800	Preparation works for pier installation -E4	10	10	16-Nov-19	04-Nov-19	27-Nov-19	14-Nov-19	119	0%	0	-11
Associated, E&M Works for CBL Main Bridge and Marine Viaduct		235	235	09-Nov-19	07-Nov-19	25-Aug-20	13-Aug-20	280			-10
Procurement and Delivery of Associated, E&M Works		235	235	09-Nov-19	07-Nov-19	25-Aug-20	13-Aug-20	280			-10
S2-AW200	Procurement and Delivery Under Bridge mobile gantry	180	180	26-Nov-19	07-Nov-19	08-Jul-20	17-Jun-20	37	0%	0	-16
S2-AW200	Procurement and delivery of arch inspection cradle	210	210	09-Dec-19	07-Nov-19	25-Aug-20	24-Jul-20	-18	0%	0	-27
S2-AW201	Procurement and delivery of of TMD	120	120	04-Dec-19	10-Dec-19	05-May-20	11-May-20	374	0%	0	5
S2-AW201	Procurement and delivery of dehumification system	180	180	09-Nov-19	04-Jan-20	19-Jun-20	13-Aug-20	326	0%	0	45
Pier (Precast Pier under CSD)		53	53	17-Jan-20	20-Dec-19	21-Mar-20	22-Feb-20	75			-24
Pier Erection using Crane Barge <1000T		53	53	17-Jan-20	20-Dec-19	21-Mar-20	22-Feb-20	75			-24
Pier E5		23	23	24-Jan-20	30-Dec-19	22-Feb-20	29-Jan-20	79			-21
S2-PR36	Installation of Pier -E5	4	4	24-Jan-20	30-Dec-19	31-Jan-20	03-Jan-20	79	0%	0	-21
S2-PR36	Rebar fixing and 2nd stage Concreting for connection between pier and pile cap -E5	14	14	01-Feb-20	04-Jan-20	17-Feb-20	20-Jan-20	79	0%	0	-21
S2-PR36	Installation of temp. bearing/jacking system -E5	5	5	18-Feb-20	21-Jan-20	22-Feb-20	29-Jan-20	79	0%	0	-21
Pier E6		23	23	04-Feb-20	07-Jan-20	29-Feb-20	05-Feb-20	88			-21
S2-PR36	Installation of Pier -E6	4	4	04-Feb-20	07-Jan-20	07-Feb-20	10-Jan-20	88	0%	0	-21
S2-PR36	Rebar fixing and 2nd stage Concreting for connection between pier and pile cap -E6	14	14	08-Feb-20	11-Jan-20	24-Feb-20	30-Jan-20	88	0%	0	-21
S2-PR37	Installation of temp. bearing/jacking system -E6	5	5	25-Feb-20	31-Jan-20	29-Feb-20	05-Feb-20	88	0%	0	-21
Pier E7		18	18	02-Mar-20	03-Feb-20	21-Mar-20	22-Feb-20	75			-24
S2-PR37	Installation of Pier -E7	4	4	02-Mar-20	03-Feb-20	05-Mar-20	06-Feb-20	75	0%	0	-24
S2-PR37	Rebar fixing and 2nd stage Concreting for connection between pier and pile cap -E7	14	14	06-Mar-20	07-Feb-20	21-Mar-20	22-Feb-20	75	0%	0	-24
Pier E4		23	23	17-Jan-20	20-Dec-19	15-Feb-20	18-Jan-20	85			-21
S2-PR35	Installation of Pier -E4	4	4	17-Jan-20	20-Dec-19	21-Jan-20	24-Dec-19	79	0%	0	-21
S2-PR35	Rebar fixing and 2nd stage Concreting for connection between pier and pile cap -E4	14	14	22-Jan-20	27-Dec-19	10-Feb-20	13-Jan-20	85	0%	0	-21
S2-PR35	Installation of tem. bearing/ Jacking System -E4	5	5	11-Feb-20	14-Jan-20	15-Feb-20	18-Jan-20	85	0%	0	-21
Pier Erection using Crane Barge >1000T		4	4	12-Feb-20	15-Feb-20	15-Feb-20	19-Feb-20	81			3
Pier E3		4	4	12-Feb-20	15-Feb-20	15-Feb-20	19-Feb-20	81			3
S2-PR34	Installation of Pier -E3	4	4	12-Feb-20	15-Feb-20	15-Feb-20	19-Feb-20	81	0%	0	3
Section 5 of the Works-All Works within Portion V (CBL E&M Plantroom)		387	267	03-Sep-19 A	12-Jul-19	01-Aug-20	19-Jul-20	144			-13
Structure Works		152	52	03-Sep-19 A	12-Jul-19	11-Jan-20	02-Jan-20	-11			-8
S5-PR2061	Construction of Wall & Coloumn for South Wing Building	21	1	03-Sep-19 A	12-Jul-19	09-Nov-19	05-Aug-19	-11	95.24%	0	-80
S5-PR2062	Construction of Lower Roof and 1st Floor for South Wing Building	21	21	11-Nov-19	22-Oct-19	04-Dec-19	14-Nov-19	-11	0%	0	-17
S5-PR2063	Construction of Upper Roof for South Wing Building	30	30	05-Dec-19	26-Nov-19	11-Jan-20	02-Jan-20	-11	0%	0	-8
Finish Works		45	45	24-Dec-19	14-Dec-19	20-Feb-20	11-Feb-20	-11			-8
S5-PR2080	Architectural works	45	45	24-Dec-19	14-Dec-19	20-Feb-20	11-Feb-20	-11	0%	0	-8
S5-PR2090	Cladding works	30	30	24-Dec-19	14-Dec-19	03-Feb-20	21-Jan-20	-11	0%	0	-8
E&M and Remaining Works		195	195	20-Jan-20	10-Jan-20	01-Aug-20	19-Jul-20	144			-13
S5-PR2120	External works	90	90	21-Feb-20	12-Feb-20	11-Jun-20	02-Jun-20	-11	0%	0	-8
S5-PR2140	Submission of WWO46 and WWW0132 to WSD	180	180	04-Feb-20	22-Jan-20	01-Aug-20	19-Jul-20	67	0%	0	-13
S5-PR2150	Submission of FSI/314 to FSD	180	180	04-Feb-20	22-Jan-20	01-Aug-20	19-Jul-20	144	0%	0	-13
S5-PR2160	Building services for E&M plantroom	120	120	20-Jan-20	10-Jan-20	17-Jun-20	08-Jun-20	-11	0%	0	-8



Remaining Level of Effort | Remaining Work | Milestone
Primary Baseline | Critical Remaining Work | Summary
Actual Work | Baseline Milestone

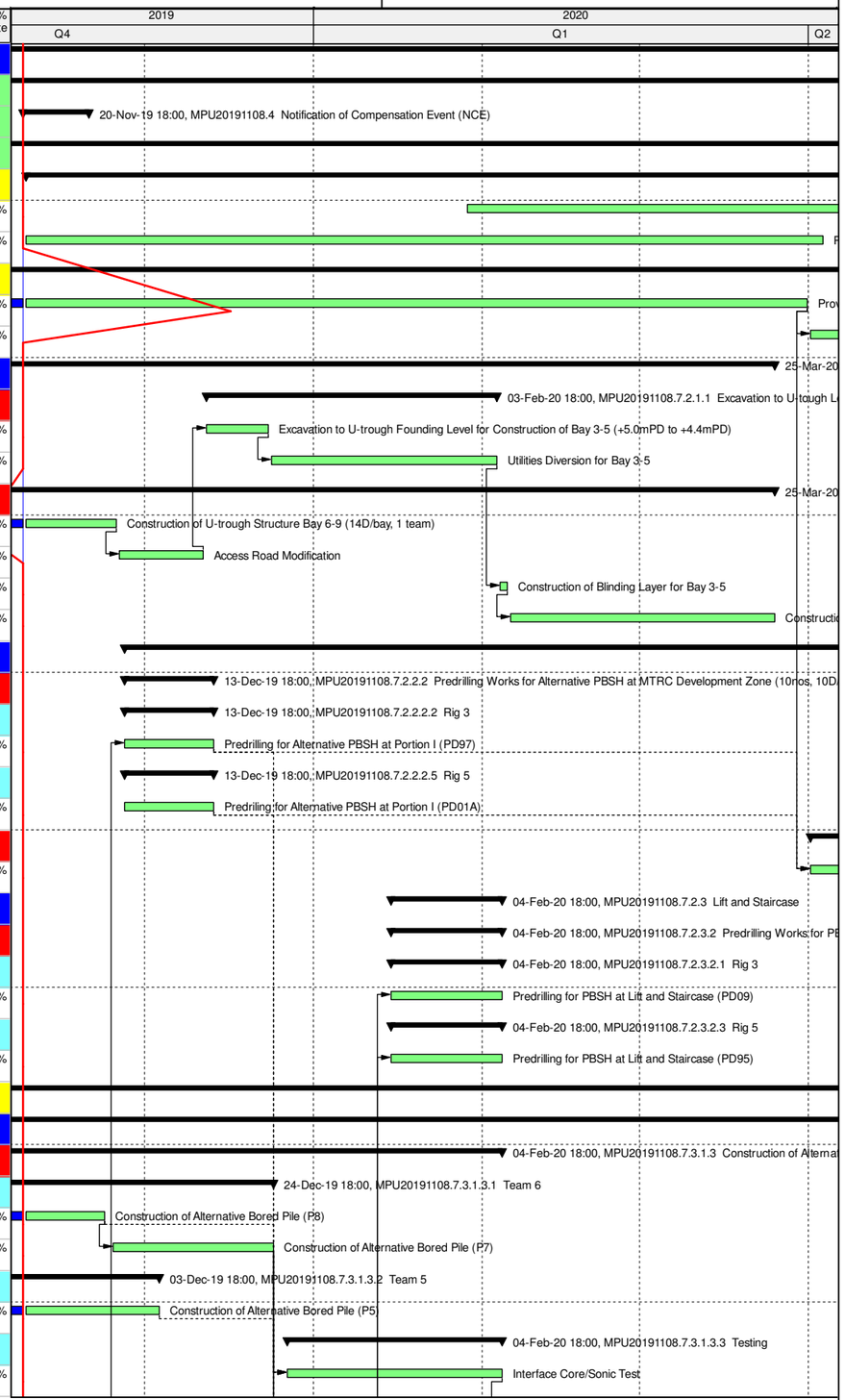
CRBC

Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Nov-19	Monthly updated on 08 Nov 2019		

Contract 2

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Late Start	Late Finish	Total Float	TRA	Activity % Complete
MPU20191108	NE/2017/08 Programme Update (Nov 2019)	1161.0	311.0	866.0		02-Jan-19 08:00 A	23-Mar-22 18:00	02-Nov-19 13:00	30-Mar-23 18:00	372.0		
MPU20191108.2	Design and Method Statement, Material Submissions	412.0	299.0	167.0	NE/2017/08(7days)	14-Jan-19 08:00 A	23-Apr-20 18:00	11-Nov-19 18:00	13-Apr-21 13:00	354.5		
MPU20191108.4	Notification of Compensation Event (NCE)	12.0	0.0	12.0	NE/2017/08(7days)	08-Nov-19 18:00	20-Nov-19 18:00	30-Mar-23 18:00	30-Mar-23 18:00	1226.0		
MPU20191108.7	Construction Works	450.0	130.0	358.0		02-Jul-19 08:00 A	31-Oct-20 18:00	02-Nov-19 13:00	30-Mar-23 18:00	880.0		
MPU20191108.7.1	Preliminaries	183.0	0.0	183.0	NE/2017/08(6days)	09-Nov-19 08:00	23-Jun-20 18:00	27-Dec-19 08:00	20-Apr-21 18:00	244.0		
PREL1150	Procurement, factory acceptance test and delivery for lift and assoicated	120.0	0.0	120.0	NE/2017/08(6days)	29-Jan-20 08:00*	23-Jun-20 18:00	21-Nov-20 08:00	20-Apr-21 18:00	244.0	0	0%
PREL1250	Procurement, Factory Accpetance Test and Delivery of Bearing	120.0	0.0	120.0	NE/2017/08(6days)	09-Nov-19 08:00	03-Apr-20 18:00	27-Dec-19 08:00	26-May-20 18:00	39.0	0	0%
MPU20191108.7.2	Construction Works of Portion I	450.0	130.0	358.0		02-Jul-19 08:00 A	31-Oct-20 18:00	09-Jan-20 08:00	11-Feb-21 13:00	102.5		
PORI.A1000	Provide Access to MTRC P10 at Elevated Cycle Track Area	274.0	130.0	144.0	NE/2017/08(7days)	02-Jul-19 08:00 A	31-Mar-20 18:00	09-Jan-20 08:00	31-May-20 18:00	61.0	0	47.45%
PORI.A1010	Provide Access to MTRC P10 at U-trough Section	214.0	0.0	214.0	NE/2017/08(7days)	01-Apr-20 08:00	31-Oct-20 18:00	12-Jul-20 13:00	11-Feb-21 13:00	102.5		0%
MPU20191108.7.2.1	Cycle Track - U-trough	162.0	50.0	112.0	NE/2017/08(6days)	09-Sep-19 08:00 A	25-Mar-20 18:00	26-Sep-20 13:00	11-Feb-21 13:00	262.5		
MPU20191108.7.2.1.1	Excavation to U-tough Level(+5.0mPD to +4.4mPD) (700m3)	40.0	0.0	40.0	NE/2017/08(6days)	12-Dec-19 08:00	03-Feb-20 18:00	02-Nov-20 13:00	18-Dec-20 13:00	262.5		
PORI.UT.EX1030	Excavation to U-trough Founding Level for Construction of Bay 3-5 (+5.0mPD to +4.4mPD)	10.0	0.0	10.0	NE/2017/08(6days)	12-Dec-19 08:00	23-Dec-19 18:00	02-Nov-20 13:00	13-Nov-20 13:00	262.5	0	0%
PORI.UT.EX1040	Utilities Diversion for Bay 3-5	30.0	0.0	30.0	NE/2017/08(6days)	24-Dec-19 08:00	03-Feb-20 18:00	13-Nov-20 13:00	18-Dec-20 13:00	262.5	0	0%
MPU20191108.7.2.1.2	Construction of U-trough Structure (9 Bays, 27D/Bay, 1 Team)	162.0	50.0	112.0	NE/2017/08(6days)	09-Sep-19 08:00 A	25-Mar-20 18:00	26-Sep-20 13:00	11-Feb-21 13:00	262.5		
PORI.UT.ST1010	Construction of U-trough Structure Bay 6-9 (14D/bay, 1 team)	56.0	50.0	14.0	NE/2017/08(6days)	09-Sep-19 08:00 A	25-Nov-19 18:00	26-Sep-20 13:00	15-Oct-20 13:00	262.5	0	75%
PORI.UT.ST1020	Access Road Modification	14.0	0.0	14.0	NE/2017/08(6days)	26-Nov-19 08:00	11-Dec-19 18:00	15-Oct-20 13:00	02-Nov-20 13:00	262.5	0	0%
PORI.UT.ST1030	Construction of Blinding Layer for Bay 3-5	2.0	0.0	2.0	NE/2017/08(6days)	04-Feb-20 08:00	05-Feb-20 18:00	18-Dec-20 13:00	21-Dec-20 13:00	262.5	0	0%
PORI.UT.ST1040	Construction of U-trough Structure Bay 3-5 (14D/bay, 1 team)	42.0	0.0	42.0	NE/2017/08(6days)	06-Feb-20 08:00	25-Mar-20 18:00	21-Dec-20 13:00	11-Feb-21 13:00	262.5	0	0%
MPU20191108.7.2.2	Elevated Cycle Track	107.0	0.0	107.0	NE/2017/08(6days)	27-Nov-19 08:00	07-Apr-20 18:00	24-Apr-20 13:00	05-Jun-20 18:00	46.0		
MPU20191108.7.2.2.2	Predrilling Works for Alternative PBSH at MTRC Development Zone (10nos, 10D/pile+5	15.0	0.0	15.0	NE/2017/08(6days)	27-Nov-19 08:00	13-Dec-19 18:00	24-Apr-20 13:00	14-May-20 13:00	118.5		
MPU20191108.7.2.2.2.2	Rig 3	15.0	0.0	15.0	NE/2017/08(6days)	27-Nov-19 08:00	13-Dec-19 18:00	24-Apr-20 13:00	14-May-20 13:00	118.5		
PORI.ED.PD1070	Predrilling for Alternative PBSH at Portion I (PD97)	15.0	0.0	15.0	NE/2017/08(6days)	27-Nov-19 08:00	13-Dec-19 18:00	24-Apr-20 13:00	14-May-20 13:00	118.5	5	0%
MPU20191108.7.2.2.2.5	Rig 5	15.0	0.0	15.0	NE/2017/08(6days)	27-Nov-19 08:00	13-Dec-19 18:00	24-Apr-20 13:00	14-May-20 13:00	118.5		
PORI.ED.PD1120	Predrilling for Alternative PBSH at Portion I (PD01A)	15.0	0.0	15.0	NE/2017/08(6days)	27-Nov-19 08:00	13-Dec-19 18:00	24-Apr-20 13:00	14-May-20 13:00	118.5	5	0%
MPU20191108.7.2.2.1	Mobilization of Piling Rigs	5.0	0.0	5.0	NE/2017/08(6days)	01-Apr-20 08:00	07-Apr-20 18:00	01-Jun-20 08:00	05-Jun-20 18:00	46.0		
PORI.ED.EX1040	Mobilization of Piling Rigs for PBSH	5.0	0.0	5.0	NE/2017/08(6days)	01-Apr-20 08:00	07-Apr-20 18:00	01-Jun-20 08:00	05-Jun-20 18:00	46.0	0	0%
MPU20191108.7.2.3	Lift and Staircase	15.0	0.0	15.0	NE/2017/08(6days)	15-Jan-20 08:00	04-Feb-20 18:00	27-Oct-20 08:00	12-Nov-20 18:00	231.0		
MPU20191108.7.2.3.2	Predrilling Works for PBSH (5nos, 10D/pile+5D TRA, 1-5rigs)	15.0	0.0	15.0	NE/2017/08(6days)	15-Jan-20 08:00	04-Feb-20 18:00	27-Oct-20 08:00	12-Nov-20 18:00	231.0		
MPU20191108.7.2.3.2.1	Rig 3	15.0	0.0	15.0	NE/2017/08(6days)	15-Jan-20 08:00	04-Feb-20 18:00	27-Oct-20 08:00	12-Nov-20 18:00	231.0		
PORI.LS.PD1010	Predrilling for PBSH at Lift and Staircase (PD09)	15.0	0.0	15.0	NE/2017/08(6days)	15-Jan-20 08:00	04-Feb-20 18:00	27-Oct-20 08:00	12-Nov-20 18:00	231.0	5	0%
MPU20191108.7.2.3.2.3	Rig 5	15.0	0.0	15.0	NE/2017/08(6days)	15-Jan-20 08:00	04-Feb-20 18:00	27-Oct-20 08:00	12-Nov-20 18:00	231.0		
PORI.LS.PD1040	Predrilling for PBSH at Lift and Staircase (PD95)	15.0	0.0	15.0	NE/2017/08(6days)	15-Jan-20 08:00	04-Feb-20 18:00	27-Oct-20 08:00	12-Nov-20 18:00	231.0	5	0%
MPU20191108.7.3	Construction Works of Portion II	137.0	13.0	124.0	NE/2017/08(6days)	25-Oct-19 08:00 A	09-Apr-20 18:00	23-Dec-19 08:00	18-Aug-20 13:00	104.5		
MPU20191108.7.3.1	Abutment 2A	135.0	13.0	122.0	NE/2017/08(6days)	25-Oct-19 08:00 A	07-Apr-20 18:00	23-Dec-19 08:00	26-May-20 18:00	37.0		
MPU20191108.7.3.1.3	Construction of Alternative Bored Pile (8nos, 21D/pile, 1-2 teams)	82.0	13.0	69.0	NE/2017/08(6days)	25-Oct-19 08:00 A	04-Feb-20 18:00	23-Dec-19 08:00	18-Mar-20 18:00	37.0		
MPU20191108.7.3.1.3.1	Team 6	52.0	13.0	39.0	NE/2017/08(6days)	25-Oct-19 08:00 A	24-Dec-19 18:00	23-Dec-19 08:00	12-Feb-20 18:00	37.0		
PORII.AB.BP1060	Construction of Alternative Bored Pile (P8)	26.0	13.0	13.0	NE/2017/08(6days)	25-Oct-19 08:00 A	23-Nov-19 18:00	23-Dec-19 08:00	09-Jan-20 18:00	37.0	5	50%
PORII.AB.BP1080	Construction of Alternative Bored Pile (P7)	26.0	0.0	26.0	NE/2017/08(6days)	25-Nov-19 08:00	24-Dec-19 18:00	10-Jan-20 08:00	12-Feb-20 18:00	37.0	5	0%
MPU20191108.7.3.1.3.2	Team 5	26.0	5.0	21.0	NE/2017/08(6days)	04-Nov-19 08:00 A	03-Dec-19 18:00	16-Jan-20 08:00	12-Feb-20 18:00	55.0		
PORII.AB.BP111 0	Construction of Alternative Bored Pile (P5)	26.0	5.0	21.0	NE/2017/08(6days)	04-Nov-19 08:00 A	03-Dec-19 18:00	16-Jan-20 08:00	12-Feb-20 18:00	55.0	5	19.23%
MPU20191108.7.3.1.3.3	Testing	30.0	0.0	30.0	NE/2017/08(6days)	27-Dec-19 08:00	04-Feb-20 18:00	13-Feb-20 08:00	18-Mar-20 18:00	37.0		
PORII.AB.BP1030	Interface Core/Sonic Test	30.0	0.0	30.0	NE/2017/08(6days)	27-Dec-19 08:00	04-Feb-20 18:00	13-Feb-20 08:00	18-Mar-20 18:00	37.0	0	0%



Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
summary

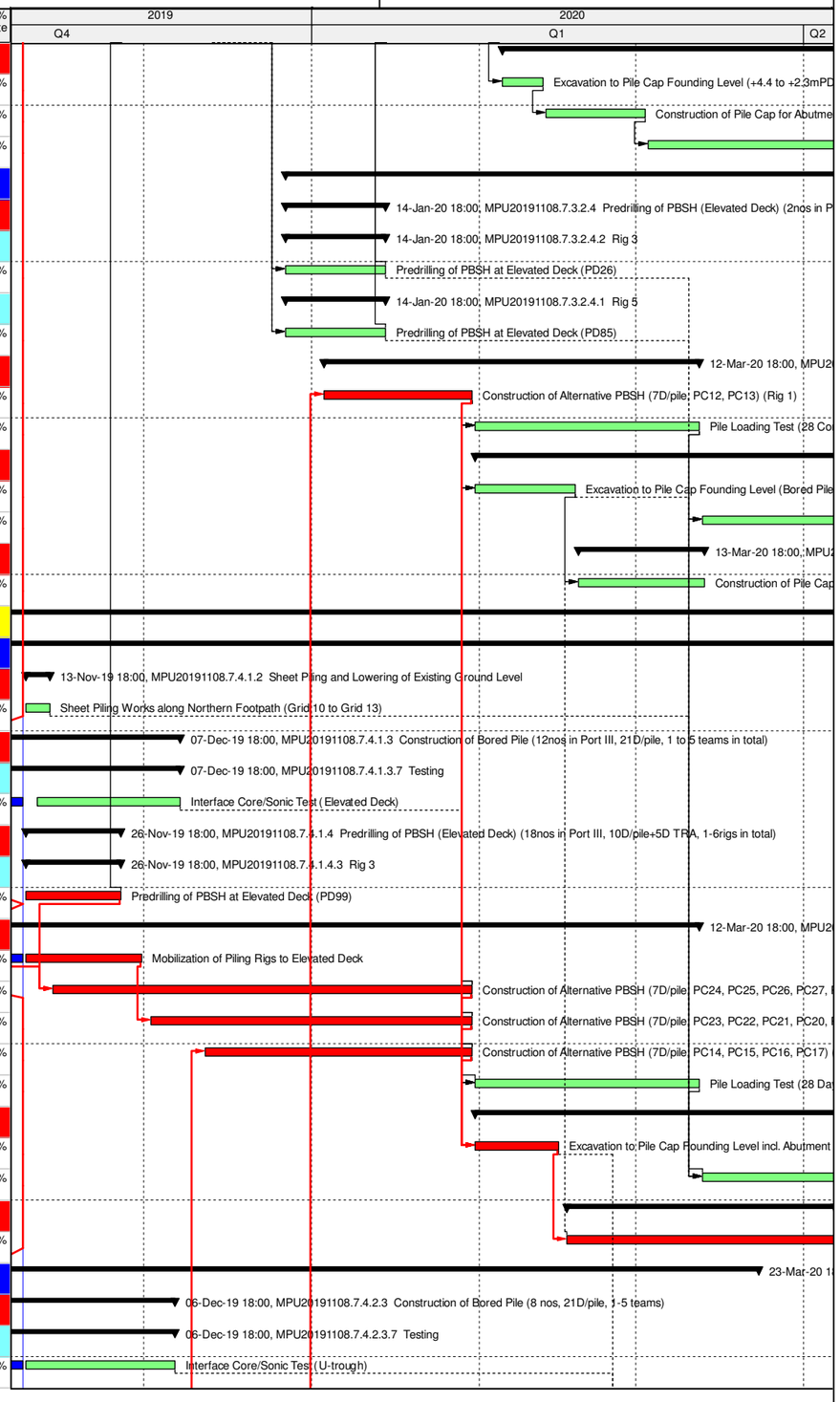
CEDD 土木工程拓展署 Civil Engineering and Development Department

Contract No.: NE/2017/08
Cross Bay Link, Tseung Kwan O
Road D9 and Associated Works

Build King

Date	Revision	Checked	Approved
08-Nov-19	3 Month Rolling Programme (Dec to Feb)	TT	StL

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Late Start	Late Finish	Total Float	TRA	Activity % Complete
MPU20191108.7.3.1.4	Construction of Abutment Structure	53.0	0.0	53.0	NE/2017/08(6days)	05-Feb-20 08:00	07-Apr-20 18:00	19-Mar-20 08:00	26-May-20 18:00	37.0		
PORII.AB.ST1010	Excavation to Pile Cap Founding Level (+4.4 to +2.3mPD) (500m3)	7.0	0.0	7.0	NE/2017/08(6days)	05-Feb-20 08:00	12-Feb-20 18:00	19-Mar-20 08:00	26-Mar-20 18:00	37.0	0	0%
PORII.AB.ST1020	Construction of Pile Cap for Abutment Structure	16.0	0.0	16.0	NE/2017/08(6days)	13-Feb-20 08:00	02-Mar-20 18:00	27-Mar-20 08:00	18-Apr-20 18:00	37.0	0	0%
PORII.AB.ST1030	Construction of Abutment Structure	30.0	0.0	30.0	NE/2017/08(6days)	03-Mar-20 08:00	07-Apr-20 18:00	20-Apr-20 08:00	26-May-20 18:00	37.0	0	0%
MPU20191108.7.3.2	Elevated Deck	85.0	0.0	85.0	NE/2017/08(6days)	27-Dec-19 08:00	09-Apr-20 18:00	24-Dec-19 13:00	18-Aug-20 13:00	104.5		
MPU20191108.7.3.2.4	Predrilling of PBSH (Elevated Deck) (2nos in Port II, 10D/pile+5D TRA, 2rigs in total)	15.0	0.0	15.0	NE/2017/08(6days)	27-Dec-19 08:00	14-Jan-20 18:00	14-May-20 13:00	01-Jun-20 13:00	109.5		
MPU20191108.7.3.2.4.2	Rig 3	15.0	0.0	15.0	NE/2017/08(6days)	27-Dec-19 08:00	14-Jan-20 18:00	14-May-20 13:00	01-Jun-20 13:00	109.5		
PORII.ED.PD.HP1010	Predrilling of PBSH at Elevated Deck (PD26)	15.0	0.0	15.0	NE/2017/08(6days)	27-Dec-19 08:00	14-Jan-20 18:00	14-May-20 13:00	01-Jun-20 13:00	109.5	5	0%
MPU20191108.7.3.2.4.1	Rig 5	15.0	0.0	15.0	NE/2017/08(6days)	27-Dec-19 08:00	14-Jan-20 18:00	14-May-20 13:00	01-Jun-20 13:00	109.5		
PORII.ED.PD.HP1020	Predrilling of PBSH at Elevated Deck (PD85)	15.0	0.0	15.0	NE/2017/08(6days)	27-Dec-19 08:00	14-Jan-20 18:00	14-May-20 13:00	01-Jun-20 13:00	109.5	5	0%
MPU20191108.7.3.2.5	Construction of Alternative PBSH (5nos in Port II, 7D/pile, 1 to 5rigs)	57.0	0.0	57.0	NE/2017/08(6days)	03-Jan-20 08:00	12-Mar-20 18:00	24-Dec-19 13:00	01-Jun-20 13:00	62.5		
PORII.ED.HP1010	Construction of Alternative PBSH (7D/pile, PC12, PC13) (Rig 1)	21.0	0.0	21.0	NE/2017/08(6days)	03-Jan-20 08:00	30-Jan-20 18:00	24-Dec-19 13:00	21-Jan-20 13:00	-5.5	0	0%
PORII.ED.HP1060	Pile Loading Test (28 Concrete Cube + 14D Setup)	36.0	0.0	36.0	NE/2017/08(6days)	31-Jan-20 08:00	12-Mar-20 18:00	17-Apr-20 13:00	01-Jun-20 13:00	62.5	0	0%
MPU20191108.7.3.2.6	Excavation to Pile Cap Level (+4.4mPD to +2.3mPD)	59.0	0.0	59.0	NE/2017/08(6days)	31-Jan-20 08:00	09-Apr-20 18:00	15-Feb-20 13:00	18-Aug-20 13:00	104.5		
PORII.ED.1060	Excavation to Pile Cap Founding Level (Bored Pile Area) (+4.4mPD to +2.3mPD)	16.0	0.0	16.0	NE/2017/08(6days)	31-Jan-20 08:00	18-Feb-20 18:00	15-Feb-20 13:00	05-Mar-20 13:00	13.5	0	0%
PORII.ED.1070	Excavation to Pile Cap Founding Level (PBSH Area) (+4.4mPD to +2.3mPD)	23.0	0.0	23.0	NE/2017/08(6days)	13-Mar-20 08:00	09-Apr-20 18:00	22-Jul-20 13:00	18-Aug-20 13:00	104.5	0	0%
MPU20191108.7.3.2.11	Construction of Pile Cap at Bored Pile Area(Elevated Deck)(cap+ cantilever beam, 21	21.0	0.0	21.0	NE/2017/08(6days)	19-Feb-20 08:00	13-Mar-20 18:00	05-Mar-20 13:00	30-Mar-20 13:00	13.5		
PORII.ED.PCBP1000	Construction of Pile Cap at Bored Pile Area (1 PC+cantilever beam, 21D/cap, 1team)	21.0	0.0	21.0	NE/2017/08(6days)	19-Feb-20 08:00	13-Mar-20 18:00	05-Mar-20 13:00	30-Mar-20 13:00	13.5	0	0%
MPU20191108.7.4	Construction Works of Portion III	233.0	80.0	153.0		21-Aug-19 08:00 A	09-Apr-20 18:00	02-Nov-19 13:00	30-Nov-20 13:00	234.5		
MPU20191108.7.4.1	Construction of Elevated Deck and Abutment 2B	190.0	66.0	124.0	NE/2017/08(6days)	21-Aug-19 08:00 A	09-Apr-20 18:00	02-Nov-19 13:00	29-Jun-20 13:00	62.5		
MPU20191108.7.4.1.2	Sheet Piling and Lowering of Existing Ground Level	4.0	0.0	4.0	NE/2017/08(6days)	09-Nov-19 08:00	13-Nov-19 18:00	27-May-20 13:00	01-Jun-20 13:00	159.5		
PORIII.ED.EX1060	Sheet Piling Works along Northern Footpath (Grid 10 to Grid 13)	4.0	0.0	4.0	NE/2017/08(6days)	09-Nov-19 08:00	13-Nov-19 18:00	27-May-20 13:00	01-Jun-20 13:00	159.5	0	0%
MPU20191108.7.4.1.3	Construction of Bored Pile (12nos in Port III, 21D/pile, 1 to 5 teams in total)	42.0	66.0	24.0	NE/2017/08(6days)	21-Aug-19 08:00 A	07-Dec-19 18:00	20-Dec-19 13:00	21-Jan-20 13:00	34.5		
MPU20191108.7.4.1.3.7	Testing	42.0	66.0	24.0	NE/2017/08(6days)	21-Aug-19 08:00 A	07-Dec-19 18:00	20-Dec-19 13:00	21-Jan-20 13:00	34.5		
PORIII.ED.BP1200	Interface Core/Sonic Test (Elevated Deck)	42.0	66.0	24.0	NE/2017/08(6days)	21-Aug-19 08:00 A	07-Dec-19 18:00	20-Dec-19 13:00	21-Jan-20 13:00	34.5	0	42.86%
MPU20191108.7.4.1.4	Predrilling of PBSH (Elevated Deck) (18nos in Port III, 10D/pile+5D TRA, 1-6rigs in total)	15.0	0.0	15.0	NE/2017/08(6days)	09-Nov-19 08:00	26-Nov-19 18:00	02-Nov-19 13:00	20-Nov-19 13:00	-5.5		
MPU20191108.7.4.1.4.3	Rig 3	15.0	0.0	15.0	NE/2017/08(6days)	09-Nov-19 08:00	26-Nov-19 18:00	02-Nov-19 13:00	20-Nov-19 13:00	-5.5		
PORIII.ED.PD.HP1235	Predrilling of PBSH at Elevated Deck (PD99)	15.0	0.0	15.0	NE/2017/08(6days)	09-Nov-19 08:00	26-Nov-19 18:00	02-Nov-19 13:00	20-Nov-19 13:00	-5.5	5	0%
MPU20191108.7.4.1.5	Construction of Alternative PBSH (45nos in Port III, 7D/pile, 1-5rigs in total)	115.0	14.0	101.0	NE/2017/08(6days)	24-Oct-19 08:00 A	12-Mar-20 18:00	02-Nov-19 13:00	01-Jun-20 13:00	62.5		
PORIII.ED.HP1000	Mobilization of Piling Rigs to Elevated Deck	6.0	14.0	19.0	NE/2017/08(6days)	24-Oct-19 08:00 A	30-Nov-19 18:00	02-Nov-19 13:00	25-Nov-19 13:00	-5.5	0	0%
PORIII.ED.HP1010	Construction of Alternative PBSH (7D/pile, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31) (Rig 3)	61.0	0.0	61.0	NE/2017/08(6days)	14-Nov-19 08:00	30-Jan-20 18:00	07-Nov-19 13:00	21-Jan-20 13:00	-5.5	0	0%
PORIII.ED.HP1020	Construction of Alternative PBSH (7D/pile, PC23, PC22, PC21, PC20, PC19, PC18) (Rig 4)	46.0	0.0	46.0	NE/2017/08(6days)	02-Dec-19 08:00	30-Jan-20 18:00	25-Nov-19 13:00	21-Jan-20 13:00	-5.5		0%
PORIII.ED.HP1030	Construction of Alternative PBSH (7D/pile, PC14, PC15, PC16, PC17) (Rig 2)	37.0	0.0	37.0	NE/2017/08(6days)	12-Dec-19 08:00	30-Jan-20 18:00	05-Dec-19 13:00	21-Jan-20 13:00	-5.5		0%
PORIII.ED.HP1470	Pile Loading Test (28 Days Concrete Cube + 14D Setup)	36.0	0.0	36.0	NE/2017/08(6days)	31-Jan-20 08:00	12-Mar-20 18:00	17-Apr-20 13:00	01-Jun-20 13:00	62.5	0	0%
MPU20191108.7.4.1.6	Excavation to Pile Cap Level (+4.4mPD to +2.3mPD)	59.0	0.0	59.0	NE/2017/08(6days)	31-Jan-20 08:00	09-Apr-20 18:00	21-Jan-20 13:00	29-Jun-20 13:00	62.5		
PORIII.ED1060	Excavation to Pile Cap Founding Level incl. Abutment 2B (+4.4mPD to +2.3mPD) (Bored Pile Area)	14.0	0.0	14.0	NE/2017/08(6days)	31-Jan-20 08:00	15-Feb-20 18:00	21-Jan-20 13:00	10-Feb-20 13:00	-5.5	0	0%
PORIII.ED1070	Excavation to Pile Cap Founding Level incl. Abutment 2B (+4.4mPD to +2.3mPD) (PBSH Area)	23.0	0.0	23.0	NE/2017/08(6days)	13-Mar-20 08:00	09-Apr-20 18:00	01-Jun-20 13:00	29-Jun-20 13:00	62.5	0	0%
MPU20191108.7.4.1.11	Construction of Pile Cap at Bored Pile Area(Elevated Deck)(9nos cap+cantilever bean	42.0	0.0	42.0	NE/2017/08(6days)	17-Feb-20 08:00	06-Apr-20 18:00	10-Feb-20 13:00	30-Mar-20 13:00	-5.5		
PORIII.ED.PCBP1000	Construction of Pile Cap at Bored Pile Area (9nos caps+cantilever beam,21D/pc,5teams)	42.0	0.0	42.0	NE/2017/08(6days)	17-Feb-20 08:00	06-Apr-20 18:00	10-Feb-20 13:00	30-Mar-20 13:00	-5.5	0	0%
MPU20191108.7.4.2	Construction of U-trough Structure	213.0	77.0	136.0		24-Aug-19 08:00 A	23-Mar-20 18:00	02-Nov-19 13:00	30-Nov-20 13:00	251.5		
MPU20191108.7.4.2.3	Construction of Bored Pile (8 nos, 21D/pile, 1-5 teams)	42.0	63.0	24.0	NE/2017/08(6days)	24-Aug-19 08:00 A	06-Dec-19 18:00	07-Oct-20 13:00	05-Nov-20 13:00	269.5		
MPU20191108.7.4.2.3.7	Testing	42.0	63.0	24.0	NE/2017/08(6days)	24-Aug-19 08:00 A	06-Dec-19 18:00	07-Oct-20 13:00	05-Nov-20 13:00	269.5		
PORIII.UT.BP1030	Interface Core/Sonic Test (U-trough)	42.0	63.0	24.0	NE/2017/08(6days)	24-Aug-19 08:00 A	06-Dec-19 18:00	07-Oct-20 13:00	05-Nov-20 13:00	269.5	0	42.86%



Actual Level of Effort
Actual Work
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Milestone
summary

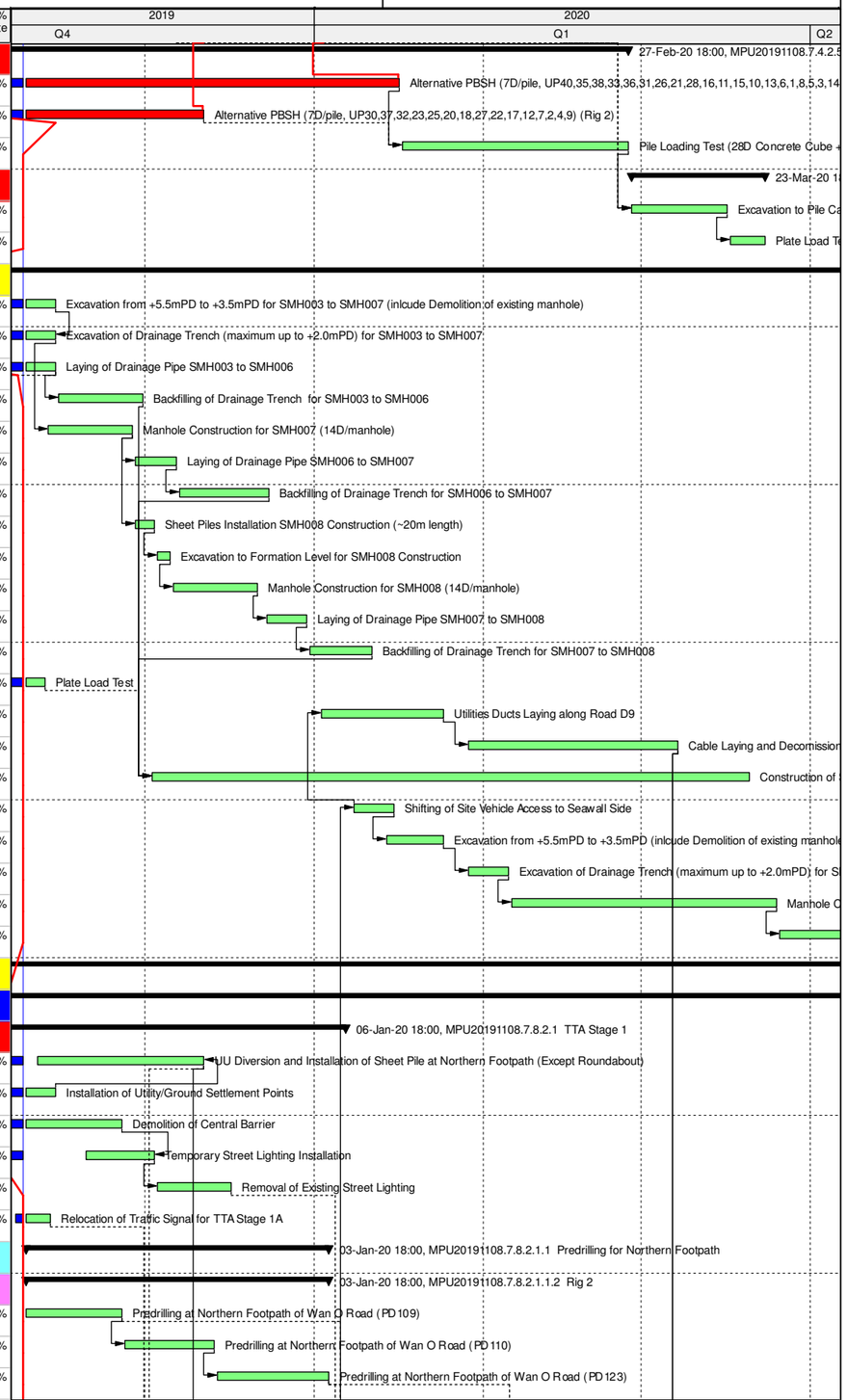
土木工程拓展署
Civil Engineering and Development Department

Contract No.: NE/2017/08
Cross Bay Link, Tseung Kwan O
Road D9 and Associated Works

Build King

Date	Revision	Checked	Approved
08-Nov-19	3 Month Rolling Programme (Dec to Feb)	TT	StL

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Late Start	Late Finish	Total Float	TRA	Activity % Complete
MPU20191108.7.4.2.5	**Construction of Alternative PBSH (40nos, 7D/pile, 1 to 5rigs)**	112.0	61.0	89.0	NE/2017/08(6days)	27-Aug-19 08:00 A	27-Feb-20 18:00	02-Nov-19 13:00	05-Nov-20 13:00	204.5		
PORIII.UT.HP1010	Alternative PBSH (7D/pile, UP40,35,38,33,36,31,26,21,28,16,11,15,10,13,6,1,8,5,3,14,19,24,29,34,39) (Rig1)	28.0	61.0	56.0	NE/2017/08(6days)	27-Aug-19 08:00 A	16-Jan-20 18:00	02-Nov-19 13:00	10-Jan-20 13:00	-5.5	0	0%
PORIII.UT.HP1020	Alternative PBSH (7D/pile, UP30,37,32,23,25,20,18,27,22,17,12,7,2,4,9) (Rig 2)	45.0	22.0	28.0	NE/2017/08(6days)	15-Oct-19 08:00 A	11-Dec-19 18:00	02-Nov-19 13:00	05-Dec-19 13:00	-5.5	0	37.78%
PORIII.UT.HP1410	Pile Loading Test (28D Concrete Cube + 14D Setup)	33.0	0.0	33.0	NE/2017/08(6days)	17-Jan-20 08:00	27-Feb-20 18:00	24-Sep-20 13:00	05-Nov-20 13:00	204.5	0	0%
MPU20191108.7.4.2.6	**Construction of U-trough Structure**	25.0	0.0	25.0		28-Feb-20 08:00	23-Mar-20 18:00	05-Nov-20 13:00	30-Nov-20 13:00	251.5		
PORIII.UT.ST1010	Excavation to Pile Cap Founding Level (+4.4mPD to +3.8mPD)(2000m3)	15.0	0.0	15.0	NE/2017/08(6days)	28-Feb-20 08:00	16-Mar-20 18:00	05-Nov-20 13:00	23-Nov-20 13:00	204.5	0	0%
PORIII.UT.ST1020	Plate Load Test	7.0	0.0	7.0	NE/2017/08(7days)	17-Mar-20 08:00	23-Mar-20 18:00	23-Nov-20 13:00	30-Nov-20 13:00	251.5	0	0%
MPU20191108.7.6	**Construction of the At-grade Noise Semi Enclosures**	203.0	76.0	127.0	NE/2017/08(6days)	09-Aug-19 08:00 A	16-Apr-20 18:00	14-Dec-19 13:00	02-May-20 13:00	11.5		
PORIII.AG.1010	Excavation from +5.5mPD to +3.5mPD for SMH003 to SMH007 (inlcude Demolition of existing manhole)	30.0	76.0	5.0	NE/2017/08(6days)	09-Aug-19 08:00 A	14-Nov-19 18:00	14-Dec-19 13:00	20-Dec-19 13:00	30.5	0	83.33%
PORIII.AG.1020	Excavation of Drainage Trench (maximum up to +2.0mPD) for SMH003 to SMH007	7.0	47.0	5.0	NE/2017/08(6days)	12-Sep-19 08:00 A	14-Nov-19 18:00	14-Dec-19 13:00	20-Dec-19 13:00	30.5	0	28.57%
PORIII.AG.1035	Laying of Drainage Pipe SMH003 to SMH006	14.0	15.0	5.0	NE/2017/08(6days)	23-Oct-19 08:00 A	14-Nov-19 18:00	14-Dec-19 13:00	20-Dec-19 13:00	30.5	0	64.29%
PORIII.AG.1040	Backfilling of Drainage Trench for SMH003 to SMH006	14.0	0.0	14.0	NE/2017/08(6days)	15-Nov-19 08:00	30-Nov-19 18:00	20-Dec-19 13:00	09-Jan-20 13:00	30.5	0	0%
PORIII.AG.1042	Manhole Construction for SMH007 (14D/manhole)	14.0	0.0	14.0	NE/2017/08(6days)	13-Nov-19 08:00	28-Nov-19 18:00	18-Dec-19 13:00	07-Jan-20 13:00	30.5	0	0%
PORIII.AG.1044	Laying of Drainage Pipe SMH006 to SMH007	7.0	0.0	7.0	NE/2017/08(6days)	29-Nov-19 08:00	06-Dec-19 18:00	07-Jan-20 13:00	15-Jan-20 13:00	30.5	0	0%
PORIII.AG.1046	Backfilling of Drainage Trench for SMH006 to SMH007	14.0	0.0	14.0	NE/2017/08(6days)	07-Dec-19 08:00	23-Dec-19 18:00	15-Jan-20 13:00	04-Feb-20 13:00	30.5	0	0%
PORIII.AG.1048	Sheet Piles Installation SMH008 Construction (~20m length)	3.0	0.0	3.0	NE/2017/08(6days)	29-Nov-19 08:00	02-Dec-19 18:00	07-Jan-20 13:00	10-Jan-20 13:00	30.5	0	0%
PORIII.AG.1048-01	Excavation to Formation Level for SMH008 Construction	3.0	0.0	3.0	NE/2017/08(6days)	03-Dec-19 08:00	05-Dec-19 18:00	10-Jan-20 13:00	14-Jan-20 13:00	30.5	0	0%
PORIII.AG.1048-02	Manhole Construction for SMH008 (14D/manhole)	14.0	0.0	14.0	NE/2017/08(6days)	06-Dec-19 08:00	21-Dec-19 18:00	14-Jan-20 13:00	03-Feb-20 13:00	30.5	0	0%
PORIII.AG.1048-03	Laying of Drainage Pipe SMH007 to SMH008	5.0	0.0	5.0	NE/2017/08(6days)	23-Dec-19 08:00	30-Dec-19 18:00	03-Feb-20 13:00	08-Feb-20 13:00	30.5	0	0%
PORIII.AG.1048-04	Backfilling of Drainage Trench for SMH007 to SMH008	10.0	0.0	10.0	NE/2017/08(6days)	31-Dec-19 08:00	11-Jan-20 18:00	08-Feb-20 13:00	20-Feb-20 13:00	30.5	0	0%
PORIII.AG.1050	Plate Load Test	7.0	4.0	3.0	NE/2017/08(6days)	05-Nov-19 08:00 A	12-Nov-19 18:00	06-Jan-20 13:00	09-Jan-20 13:00	46.5	0	57.14%
PORIII.AG.1055	Utilities Ducts Laying along Road D9	20.0	0.0	20.0	NE/2017/08(6days)	02-Jan-20 08:00	24-Jan-20 18:00	30-Jan-20 13:00	22-Feb-20 13:00	21.5	0	0%
PORIII.AG.1057	Cable Laying and Decomissioning of Existing Cross Road UUs at Wan O Road	34.0	0.0	34.0	NE/2017/08(6days)	29-Jan-20 08:00	07-Mar-20 18:00	22-Feb-20 13:00	02-Apr-20 13:00	21.5	0	0%
PORIII.AG.1060	Construction of SMH003-007 Footing (North and South) & SMH003-004 Footing (North) (14D/bay, 2-4 teams, 18 bays)	89.0	0.0	89.0	NE/2017/08(6days)	02-Dec-19 08:00	20-Mar-20 18:00	09-Jan-20 13:00	02-May-20 13:00	30.5	0	0%
PORIII.AG.1070	Shifting of Site Vehicle Access to Seawall Side	7.0	0.0	7.0	NE/2017/08(6days)	08-Jan-20 08:00	15-Jan-20 18:00	21-Jan-20 13:00	01-Feb-20 13:00	11.5	0	0%
PORIII.AG.1080	Excavation from +5.5mPD to +3.5mPD (inlcude Demolition of existing manhole) (SMH001A-SMH003)	10.0	0.0	10.0	NE/2017/08(6days)	14-Jan-20 08:00	24-Jan-20 18:00	30-Jan-20 13:00	11-Feb-20 13:00	11.5	0	0%
PORIII.AG.1090	Excavation of Drainage Trench (maximum up to +2.0mPD) for SMH001A to SMH003	7.0	0.0	7.0	NE/2017/08(6days)	29-Jan-20 08:00	05-Feb-20 18:00	11-Feb-20 13:00	19-Feb-20 13:00	11.5	0	0%
PORIII.AG.1100	Manhole Construction and pipe laying for SMH001A to SMH003	42.0	0.0	42.0	NE/2017/08(6days)	06-Feb-20 08:00	25-Mar-20 18:00	19-Feb-20 13:00	09-Apr-20 13:00	11.5	0	0%
PORIII.AG.1105	Backfilling of Drainage Trench for SMH001A to SMH003 (max 4 layers, 5D/layer)	15.0	0.0	15.0	NE/2017/08(6days)	26-Mar-20 08:00	16-Apr-20 18:00	09-Apr-20 13:00	02-May-20 13:00	11.5	0	0%
MPU20191108.7.8	**Wan O Road**	178.0	22.0	156.0	NE/2017/08(6days)	15-Oct-19 08:00 A	22-May-20 18:00	06-Dec-19 13:00	30-Mar-23 18:00	849.0		
MPU20191108.7.8.2	**Carriage Way Excavation Permit**	178.0	22.0	156.0	NE/2017/08(6days)	15-Oct-19 08:00 A	22-May-20 18:00	06-Dec-19 13:00	30-Mar-23 18:00	849.0		
MPU20191108.7.8.2.1	**TTA Stage 1**	69.0	22.0	47.0	NE/2017/08(6days)	15-Oct-19 08:00 A	06-Jan-20 18:00	06-Dec-19 13:00	05-Feb-20 13:00	22.5		
WO.CA.TTA1030	UU Diversion and Installation of Sheet Pile at Northern Footpath (Except Roundabout)	38.0	11.0	27.0	NE/2017/08(6days)	28-Oct-19 08:00 A	11-Dec-19 18:00	07-Dec-19 13:00	11-Jan-20 13:00	23.5	0	28.95%
WO.CA.TTA1040	Installation of Utility/Ground Settlement Points	15.0	22.0	5.0	NE/2017/08(6days)	15-Oct-19 08:00 A	14-Nov-19 18:00	06-Dec-19 13:00	12-Dec-19 13:00	23.5	0	66.67%
WO.CA.TTA1060	Demolition of Central Barrier	15.0	13.0	15.0	NE/2017/08(6days)	25-Oct-19 08:00 A	26-Nov-19 18:00	10-Dec-19 13:00	30-Dec-19 13:00	26.5	0	0%
WO.CA.TTA1070	Temporary Street Lighting Installation	21.0	5.0	11.0	NE/2017/08(6days)	04-Nov-19 08:00 A	02-Dec-19 18:00	20-Dec-19 13:00	06-Jan-20 13:00	26.5	0	47.62%
WO.CA.TTA1080	Removal of Existing Street Lighting	12.0	0.0	12.0	NE/2017/08(6days)	03-Dec-19 08:00	16-Dec-19 18:00	06-Jan-20 13:00	20-Jan-20 13:00	26.5	0	0%
WO.CA.TTA1110	Relocation of Traffic Signal for TTA Stage 1A	6.0	2.0	4.0	NE/2017/08(6days)	07-Nov-19 08:00 A	13-Nov-19 18:00	11-Dec-19 13:00	16-Dec-19 13:00	27.5	0	33.33%
MPU20191108.7.8.2.1.1	**Predrilling for Northern Footpath**	45.0	0.0	45.0	NE/2017/08(6days)	09-Nov-19 08:00	03-Jan-20 18:00	07-Dec-19 13:00	05-Feb-20 13:00	24.5		
MPU20191108.7.8.2.1.1.2	**Rig 2**	45.0	0.0	45.0	NE/2017/08(6days)	09-Nov-19 08:00	03-Jan-20 18:00	07-Dec-19 13:00	05-Feb-20 13:00	24.5		
WO.CA.TTA.PD1090	Predrilling at Northern Footpath of Wan O Road (PD109)	15.0	0.0	15.0	NE/2017/08(6days)	09-Nov-19 08:00	26-Nov-19 18:00	07-Dec-19 13:00	27-Dec-19 13:00	24.5	5	0%
WO.CA.TTA.PD1120	Predrilling at Northern Footpath of Wan O Road (PD110)	15.0	0.0	15.0	NE/2017/08(6days)	27-Nov-19 08:00	13-Dec-19 18:00	27-Dec-19 13:00	15-Jan-20 13:00	24.5	5	0%
WO.CA.TTA.PD1130	Predrilling at Northern Footpath of Wan O Road (PD123)	15.0	0.0	15.0	NE/2017/08(6days)	14-Dec-19 08:00	03-Jan-20 18:00	15-Jan-20 13:00	05-Feb-20 13:00	24.5		0%



Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
summary

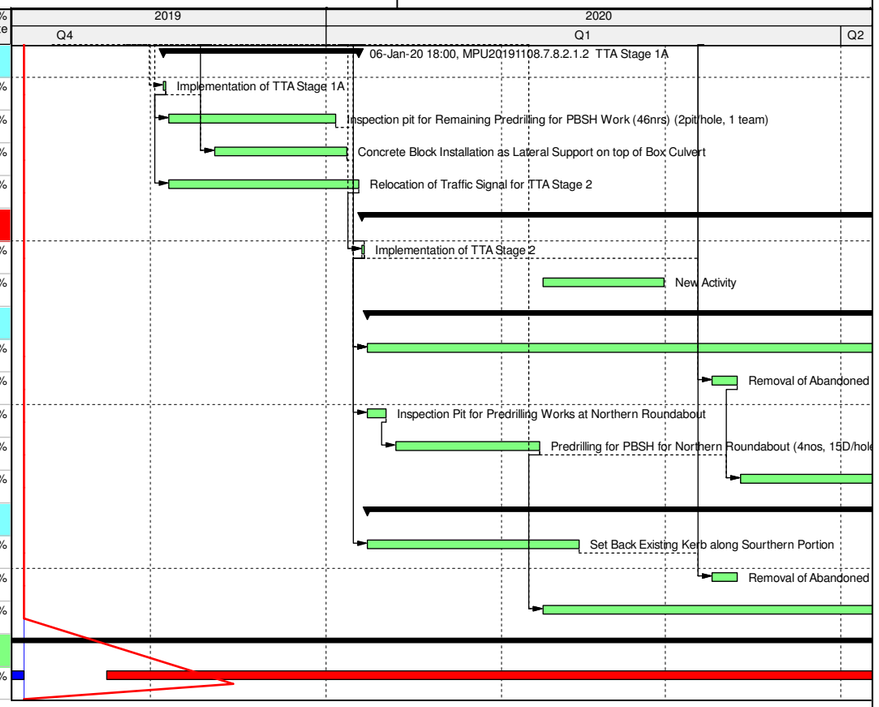
CEDD 土木工程拓展署 Civil Engineering and Development Department

Contract No.: NE/2017/08
Cross Bay Link, Tseung Kwan O
Road D9 and Associated Works

Build King

Date	Revision	Checked	Approved
08-Nov-19	3 Month Rolling Programme (Dec to Feb)	TT	StL

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Late Start	Late Finish	Total Float	TRA	Activity % Complete
MPU20191108.7.8.2.1.2 TTA Stage 1A		27.0	0.0	27.0	NE/2017/08(6days)	03-Dec-19 08:00	06-Jan-20 18:00	16-Dec-19 13:00	05-Feb-20 13:00	22.5		
WO.CA.TTA1A010	Implementation of TTA Stage 1A	1.0	0.0	1.0	NE/2017/08(6days)	03-Dec-19 08:00	03-Dec-19 18:00	16-Dec-19 13:00	17-Dec-19 13:00	11.5	0	0%
WO.CA.TTA1A050	Inspection pit for Remaining Predrilling for PBSH Work (46nrs) (2pit/hole, 1 team)	23.0	0.0	23.0	NE/2017/08(6days)	04-Dec-19 08:00	02-Jan-20 18:00	06-Jan-20 13:00	05-Feb-20 13:00	25.5	0	0%
WO.CA.TTA1A060	Concrete Block Installation as Lateral Support on top of Box Culvert	18.0	0.0	18.0	NE/2017/08(6days)	12-Dec-19 08:00	04-Jan-20 18:00	11-Jan-20 13:00	05-Feb-20 13:00	23.5	0	0%
WO.CA.TTA1A070	Relocation of Traffic Signal for TTA Stage 2	26.0	0.0	26.0	NE/2017/08(6days)	04-Dec-19 08:00	06-Jan-20 18:00	17-Dec-19 13:00	20-Jan-20 13:00	11.5	0	0%
MPU20191108.7.8.2.3 TTA Stage 2		109.0	0.0	109.0	NE/2017/08(6days)	07-Jan-20 08:00	22-May-20 18:00	20-Jan-20 13:00	30-Mar-23 18:00	849.0		
WO.CA.TTA2010	Implementation of TTA Stage 2	1.0	0.0	1.0	NE/2017/08(6days)	07-Jan-20 08:00*	07-Jan-20 18:00	20-Jan-20 13:00	21-Jan-20 13:00	11.5	0	0%
WO.CA.TTA2020	New Activity	19.0	0.0	19.0	NE/2017/08(6days)	08-Feb-20 08:00*	29-Feb-20 18:00	09-Mar-23 08:00	30-Mar-23 18:00	914.0		0%
MPU20191108.7.8.2.3.1 Northern Portion		108.0	0.0	108.0	NE/2017/08(6days)	08-Jan-20 08:00	22-May-20 18:00	05-Feb-20 13:00	17-Jun-20 13:00	21.5		
WO.CA.TTA2NP.1020	Construction of PBSH (Northern Footpath except Roundabout) (46nos, 7D/pile, 2 to 4rigs)	108.0	0.0	108.0	NE/2017/08(6days)	08-Jan-20 08:00	22-May-20 18:00	05-Feb-20 13:00	17-Jun-20 13:00	21.5	0	0%
WO.CA.TTA2NP.1030	Removal of Abandoned Duct (North Part)	5.0	0.0	5.0	NE/2017/08(6days)	09-Mar-20 08:00	13-Mar-20 18:00	02-Apr-20 13:00	09-Apr-20 13:00	21.5	0	0%
WO.CA.TTA2NP.1035	Inspection Pit for Predrilling Works at Northern Roundabout	4.0	0.0	4.0	NE/2017/08(6days)	08-Jan-20 08:00	11-Jan-20 18:00	05-Feb-20 13:00	10-Feb-20 13:00	21.5	0	0%
WO.CA.TTA2NP.1040	Predrilling for PBSH for Northern Roundabout (4nos, 15D/hole, 3 rigs)	20.0	0.0	20.0	NE/2017/08(6days)	13-Jan-20 08:00	07-Feb-20 18:00	10-Feb-20 13:00	04-Mar-20 13:00	21.5	7	0%
WO.CA.TTA2NP.1050	Construction of PBSH (14nos, 7D/pile, 2 to 4rigs) (Roundabout North Portion)	34.0	0.0	34.0	NE/2017/08(6days)	14-Mar-20 08:00	27-Apr-20 18:00	09-Apr-20 13:00	25-May-20 13:00	21.5	0	0%
MPU20191108.7.8.2.3.2 Southern Portion and Central Barrier		108.0	0.0	108.0	NE/2017/08(6days)	08-Jan-20 08:00	22-May-20 18:00	04-Mar-20 13:00	17-Jun-20 13:00	21.5		
WO.CA.TTA2SP.1010	Set Back Existing Kerb along Sourthern Portion	30.0	0.0	30.0	NE/2017/08(6days)	08-Jan-20 08:00	14-Feb-20 18:00	07-May-20 13:00	11-Jun-20 13:00	94.5	0	0%
WO.CA.TTA2SP.1020	Removal of Abandoned Duct (South Part)	5.0	0.0	5.0	NE/2017/08(6days)	09-Mar-20 08:00	13-Mar-20 18:00	11-Jun-20 13:00	17-Jun-20 13:00	75.5	0	0%
WO.CA.TTA2SP.1030	Predrilling for PBSH (16nos at Central Barrier and Roundabout Southern Portion, 15D/hole, 3rigs)	84.0	0.0	84.0	NE/2017/08(6days)	08-Feb-20 08:00	22-May-20 18:00	04-Mar-20 13:00	17-Jun-20 13:00	21.5	27	0%
MPU20191108.8 Miscellaneous Works (Portion I, II and III)		939.0	253.0	691.0	NE/2017/08(6days)	02-Jan-19 08:00 A	23-Mar-22 18:00	16-Nov-19 13:00	17-Mar-22 13:00	-5.5		
MISC4030	Tree Preservation and Protection Works	939.0	253.0	691.0	NE/2017/08(6days)	02-Jan-19 08:00 A	23-Mar-22 18:00	16-Nov-19 13:00	17-Mar-22 13:00	-5.5	0	26.41%



Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
summary

土木工程拓展署
Civil Engineering and Development Department

Contract No.: NE/2017/08
Cross Bay Link, Tseung Kwan O
Road D9 and Associated Works

Build King

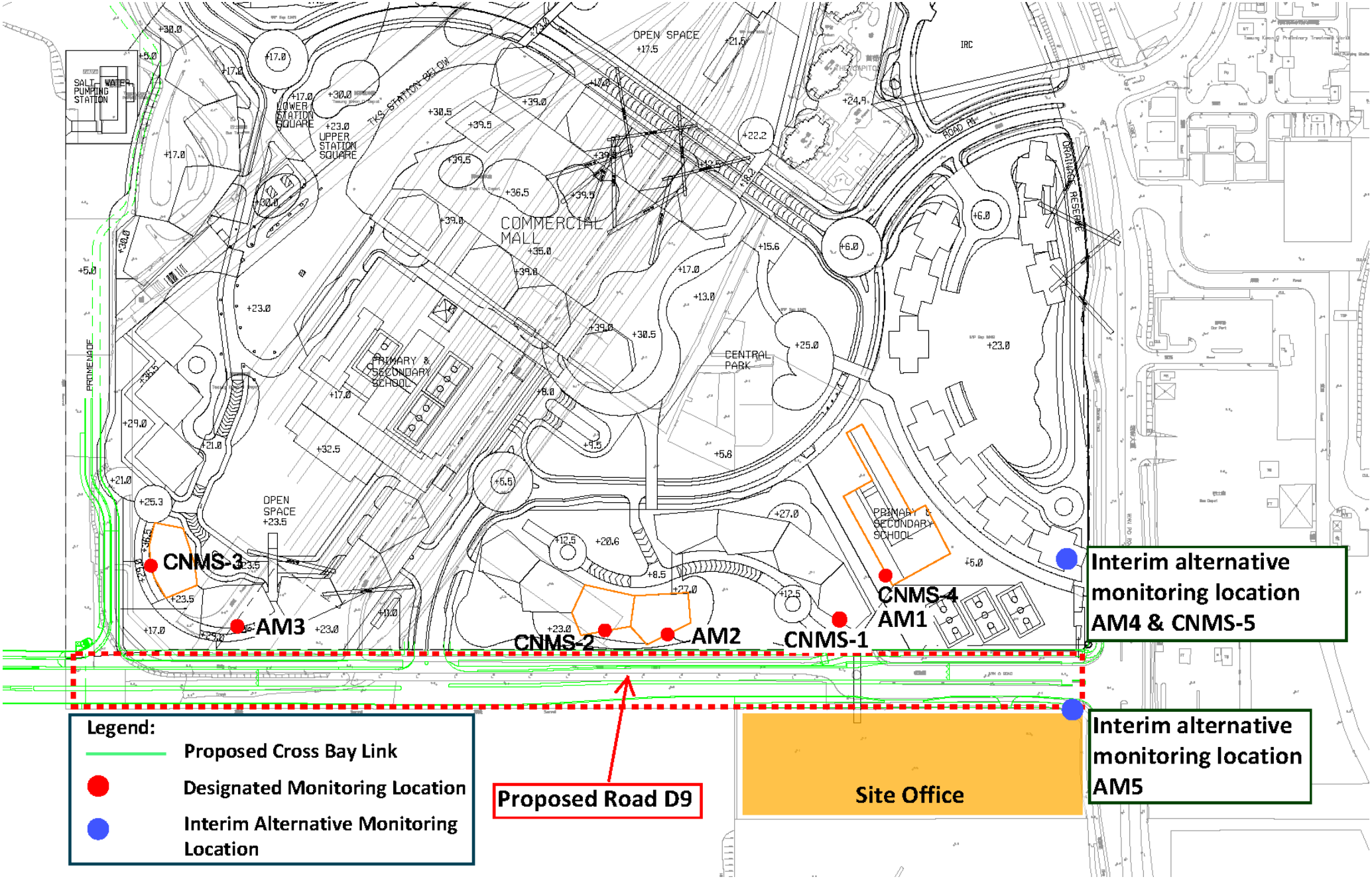
Date	Revision	Checked	Approved
08-Nov-19	3 Month Rolling Programme (Dec to Feb)	TT	StL

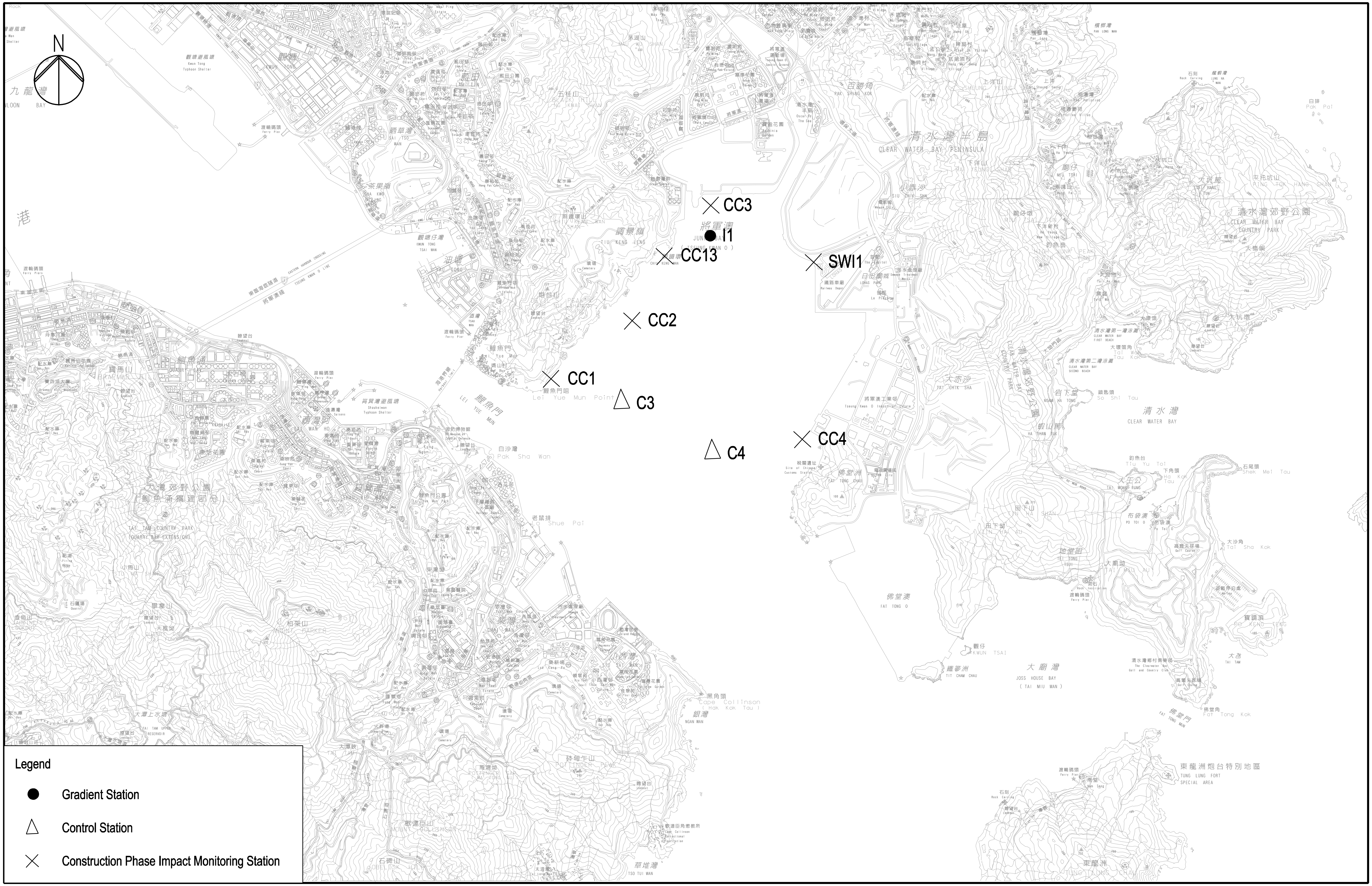
Appendix D

Monitoring Location
(Air Quality, Noise and Water Quality)

CEDD Contract Agreement No. EDO/04/2018 -
Environmental Team for Cross Bay Link, Tseung Kwan O
Designated and Interim Alternative Air Quality and Noise Monitoring Location

AUES





土木工程拓展署
Civil Engineering and Development Department

ARUP Ove Arup & Partners Hong Kong Limited

Job Title

Agreement No. CE 43/2008(HY)
Cross Bay Link, Tseung Kwan O - Investigation

Drawing Title

Locations of Water Quality Monitoring Stations

Rev.	Description	Date
C	THIRD ISSUE	03/13
B	SECOND ISSUE	01/13
A	FIRST ISSUE	03/11

Drawn: GL	Date: 03/13
Checked: JP	Approved: ST
Scale: 1:30000 (A3)	

Drawing No. 209506/EMA/WQ/001

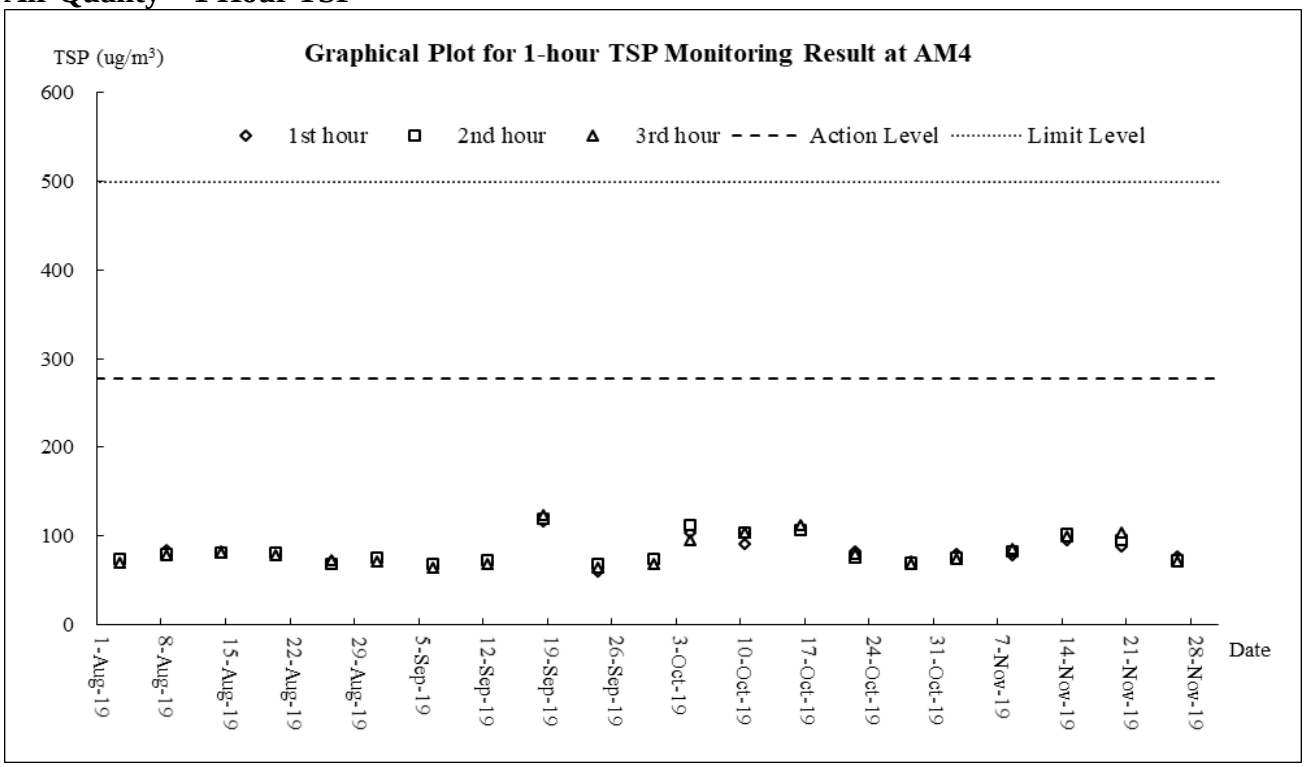
Status: FINAL

Rev. C

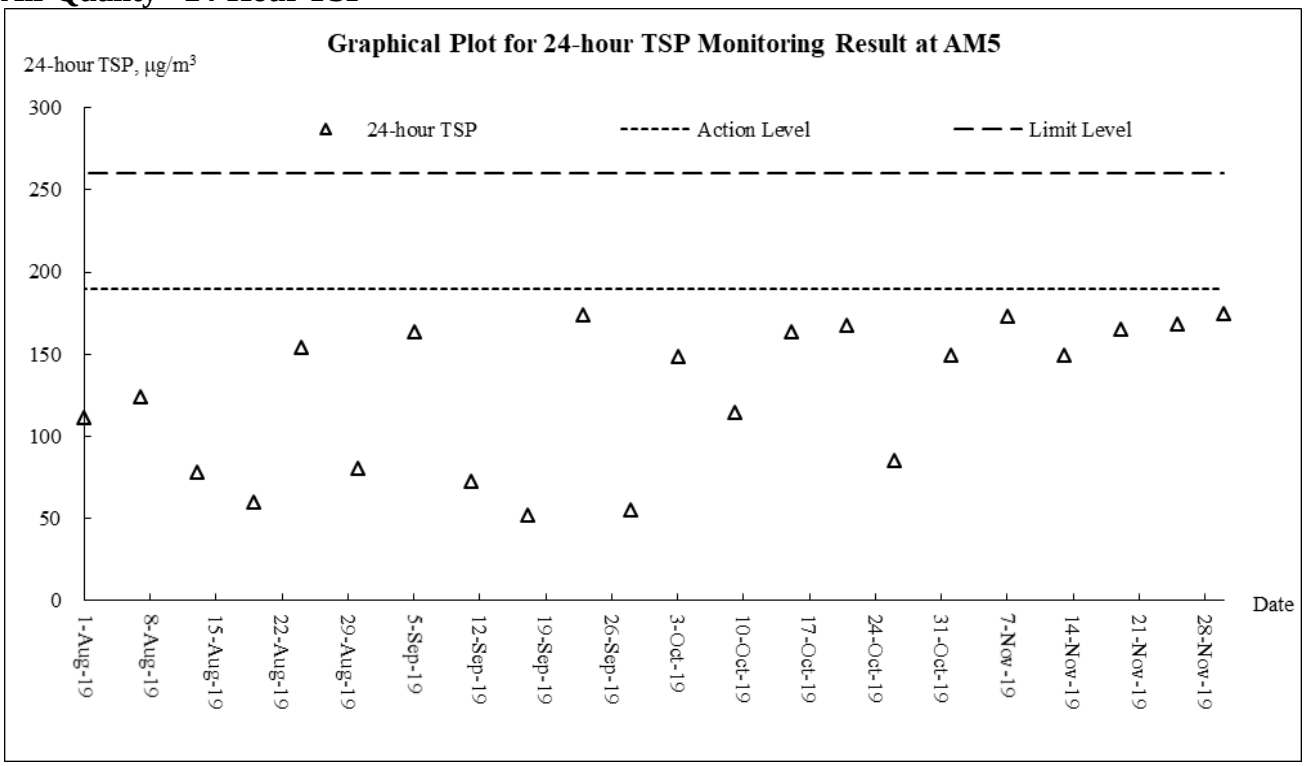
Appendix E

Graphical Plots of Monitoring Results

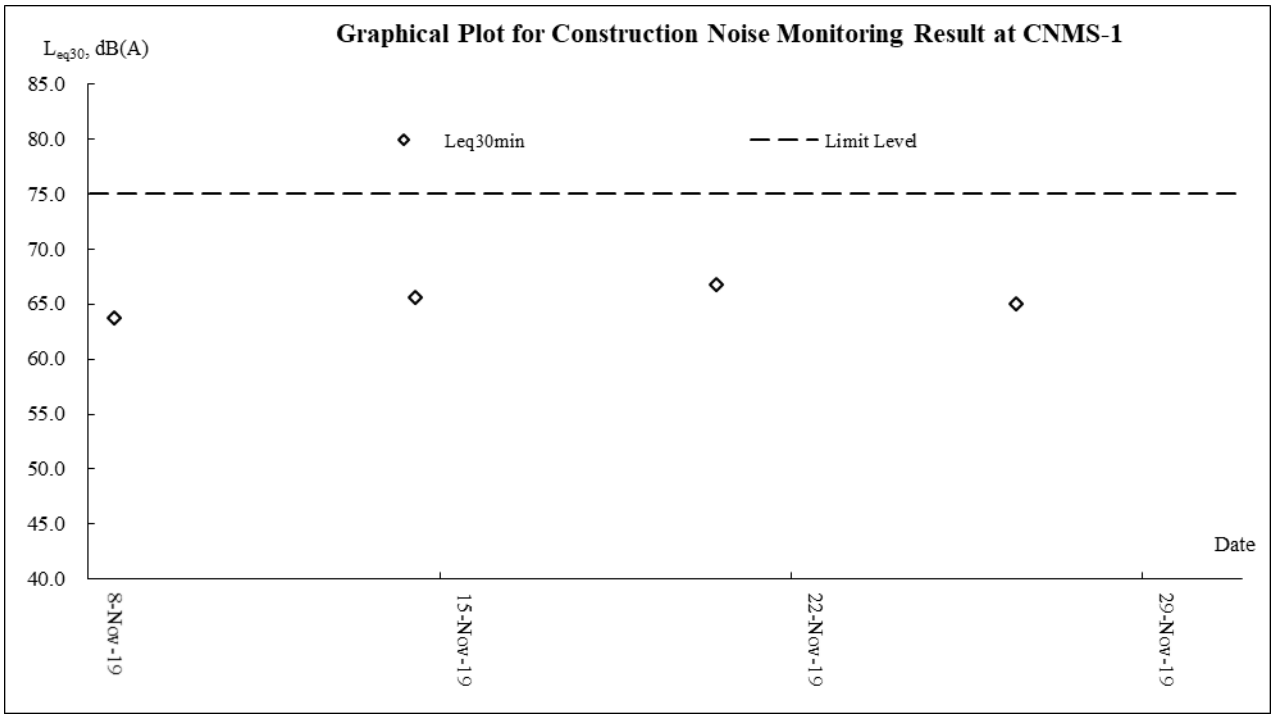
Air Quality – 1 Hour TSP

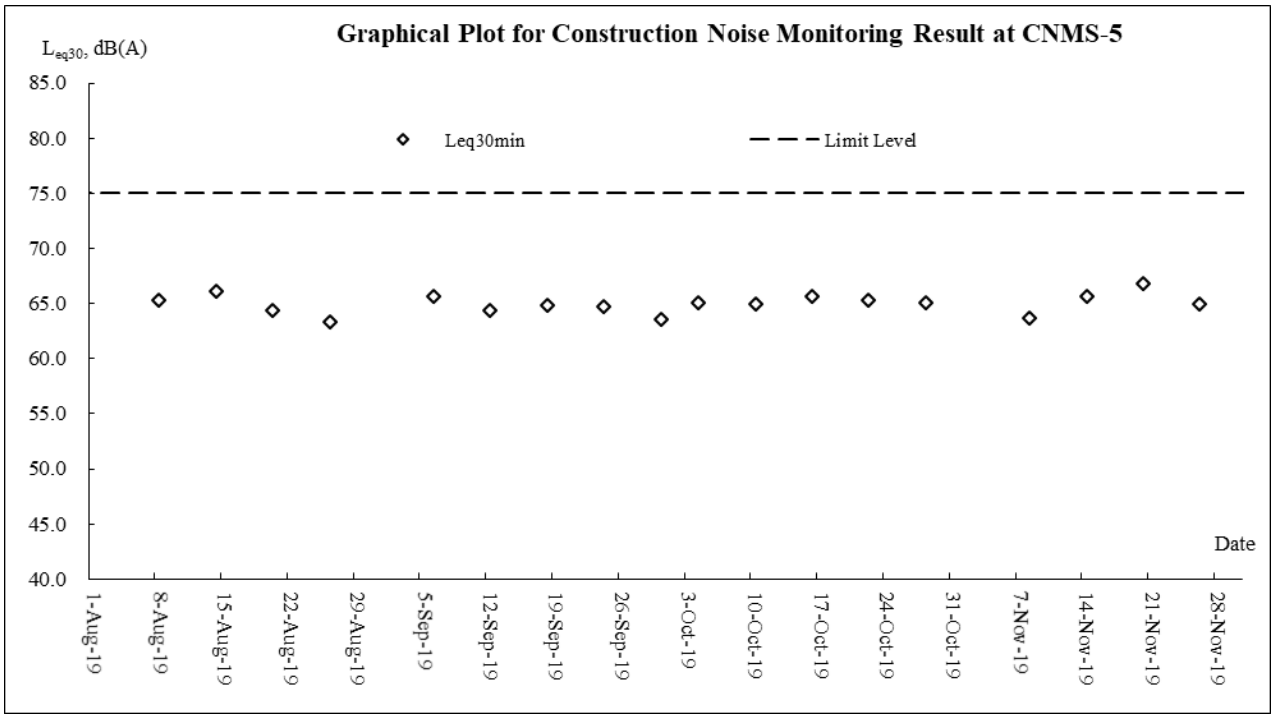


Air Quality - 24-Hour TSP

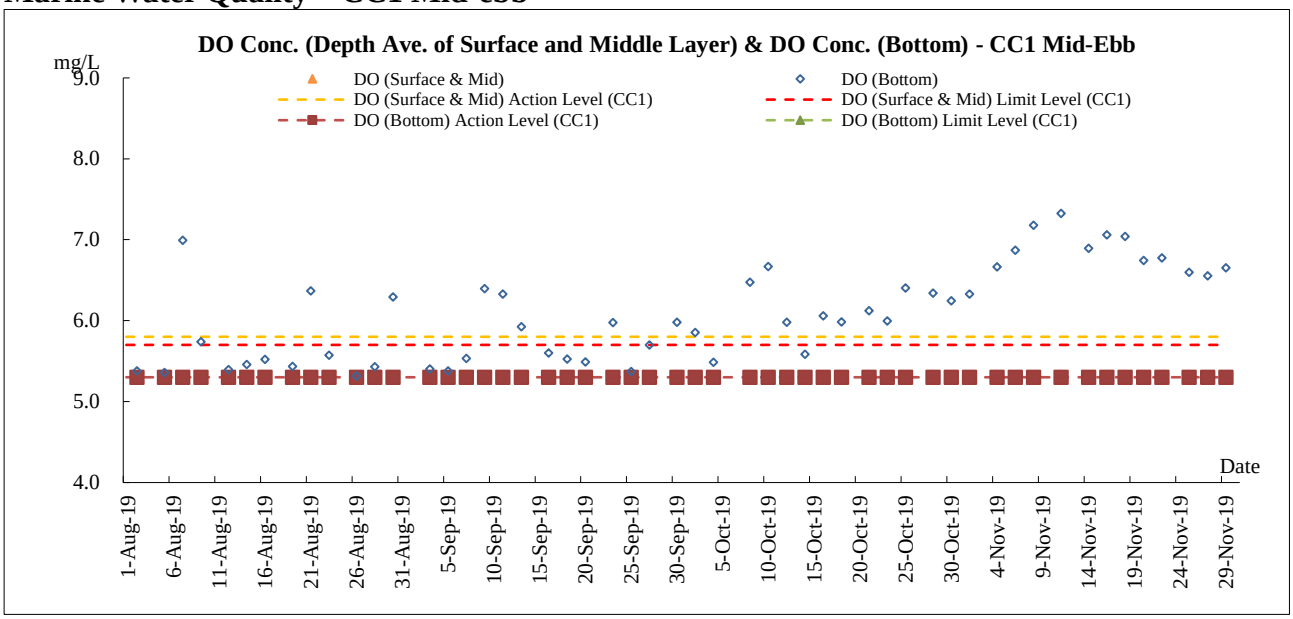


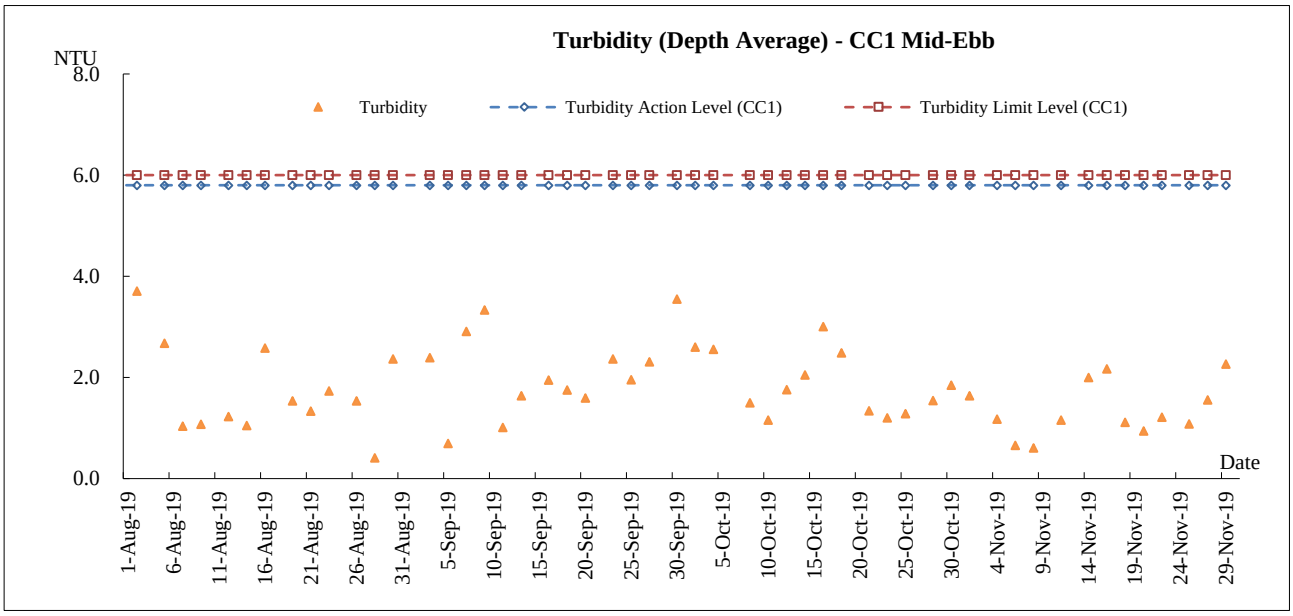
Construction Noise

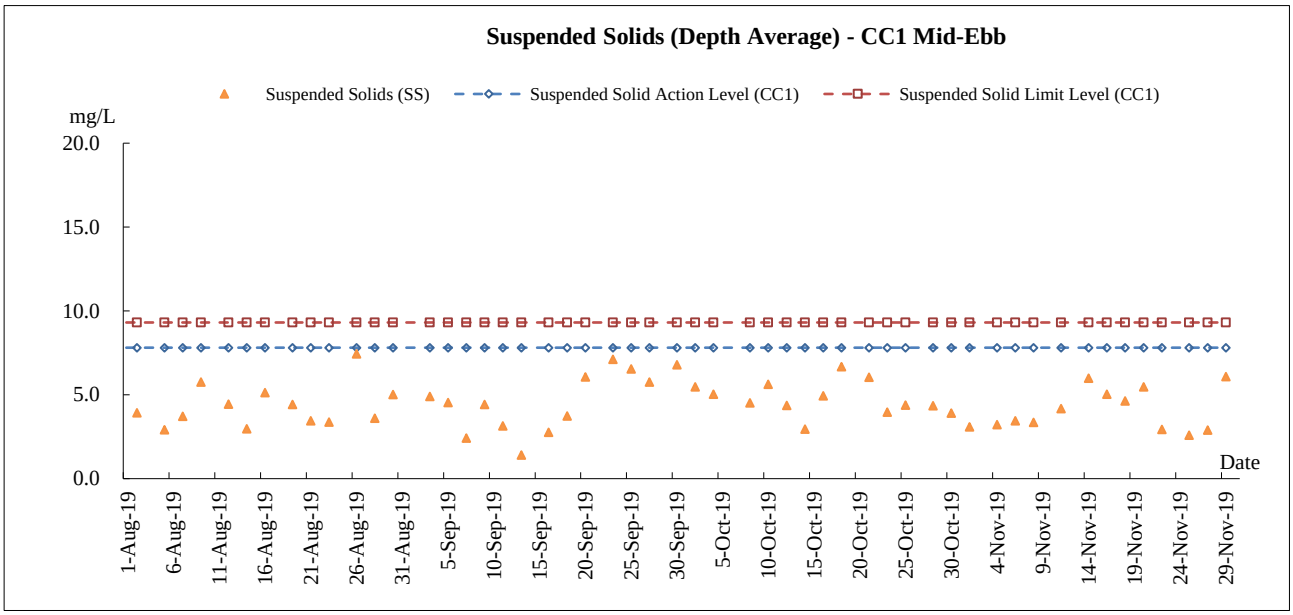




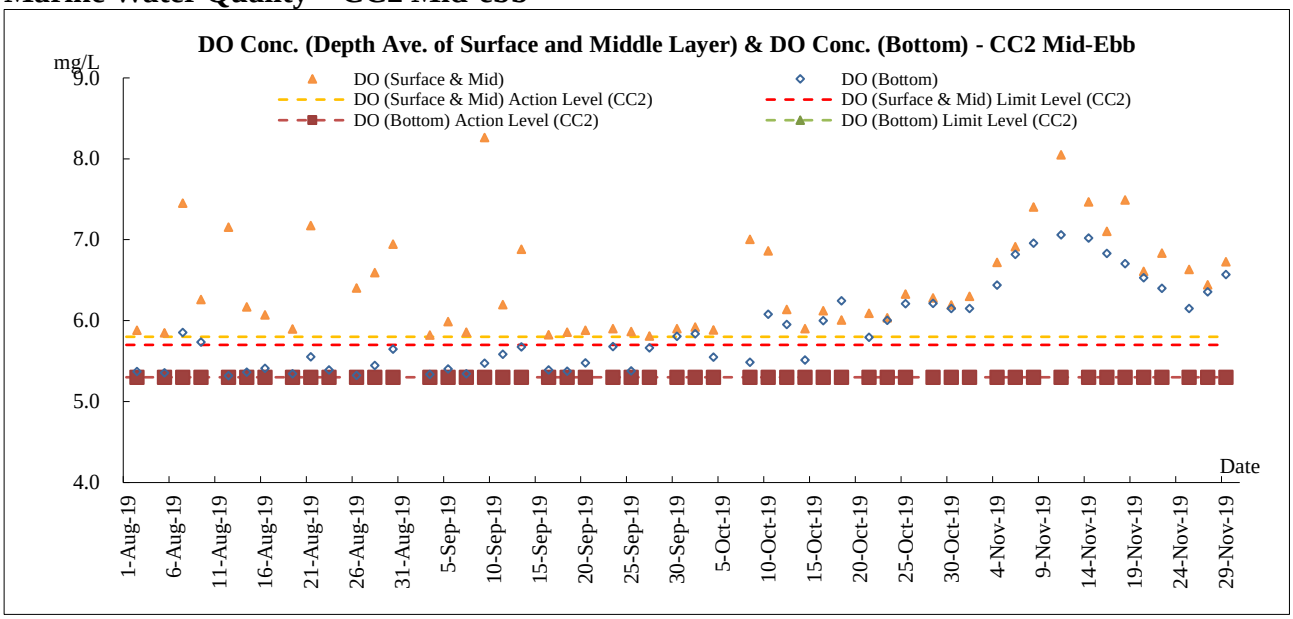
Marine Water Quality – CC1 Mid-ebb

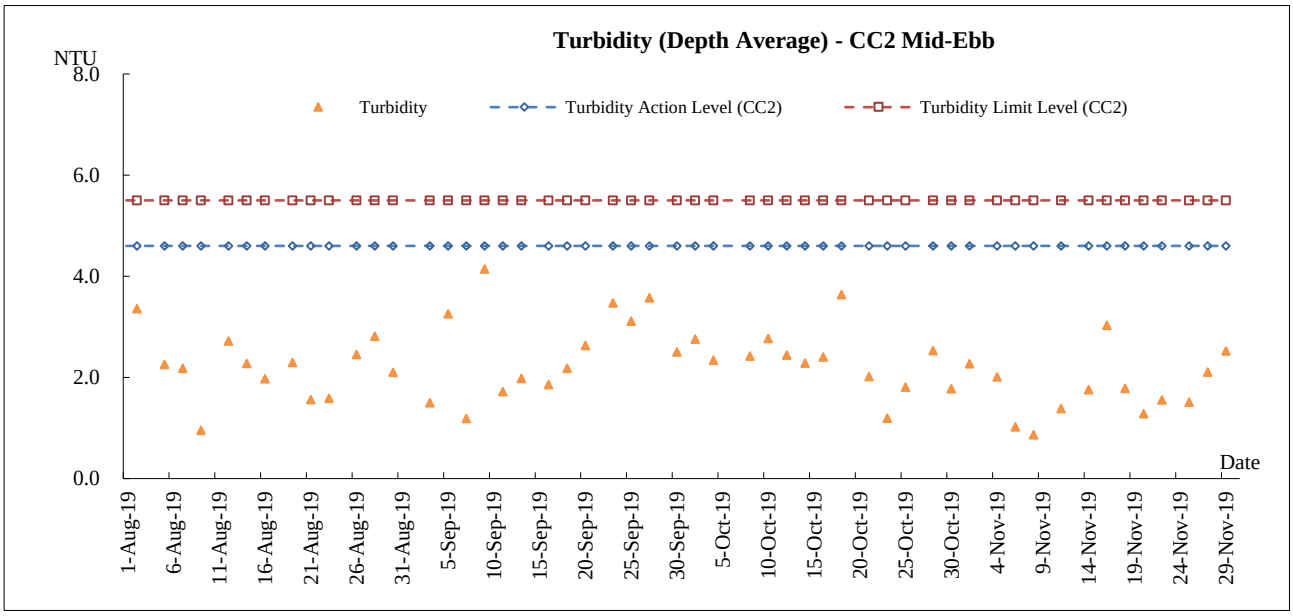


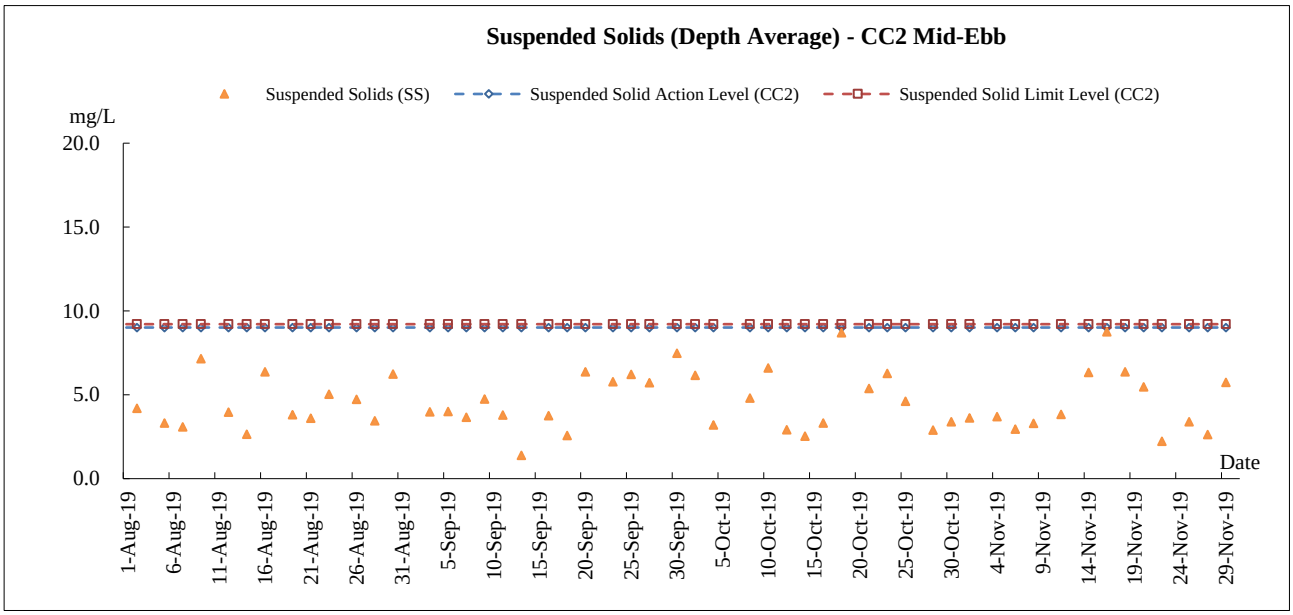




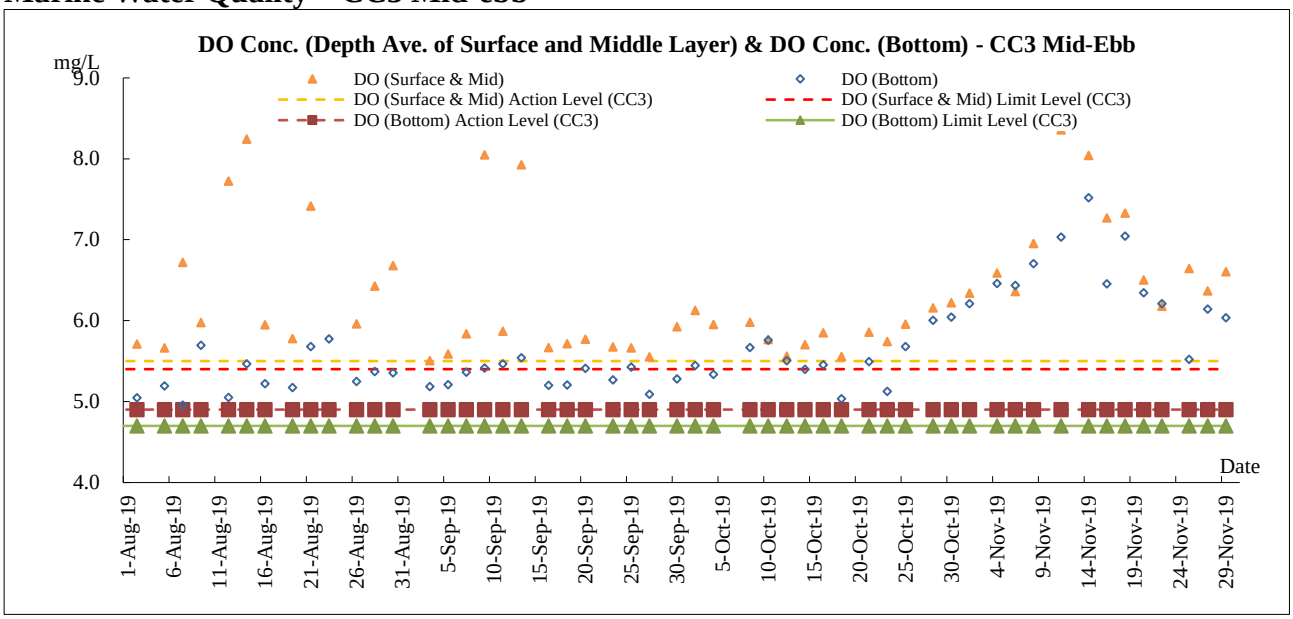
Marine Water Quality – CC2 Mid-ebb

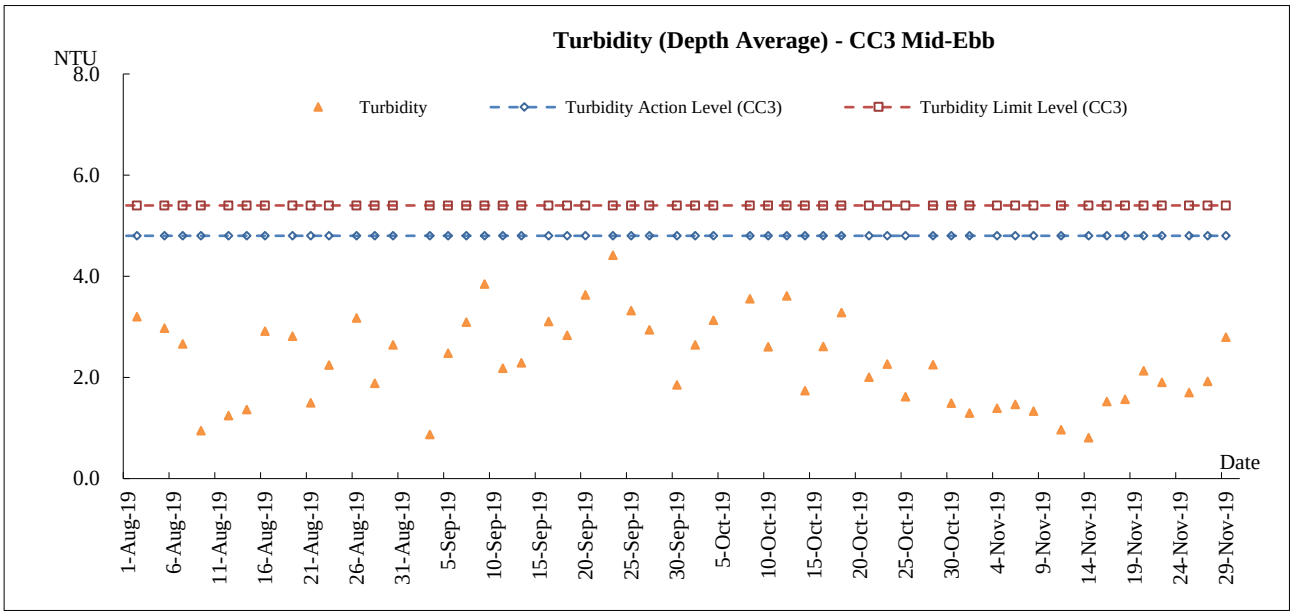


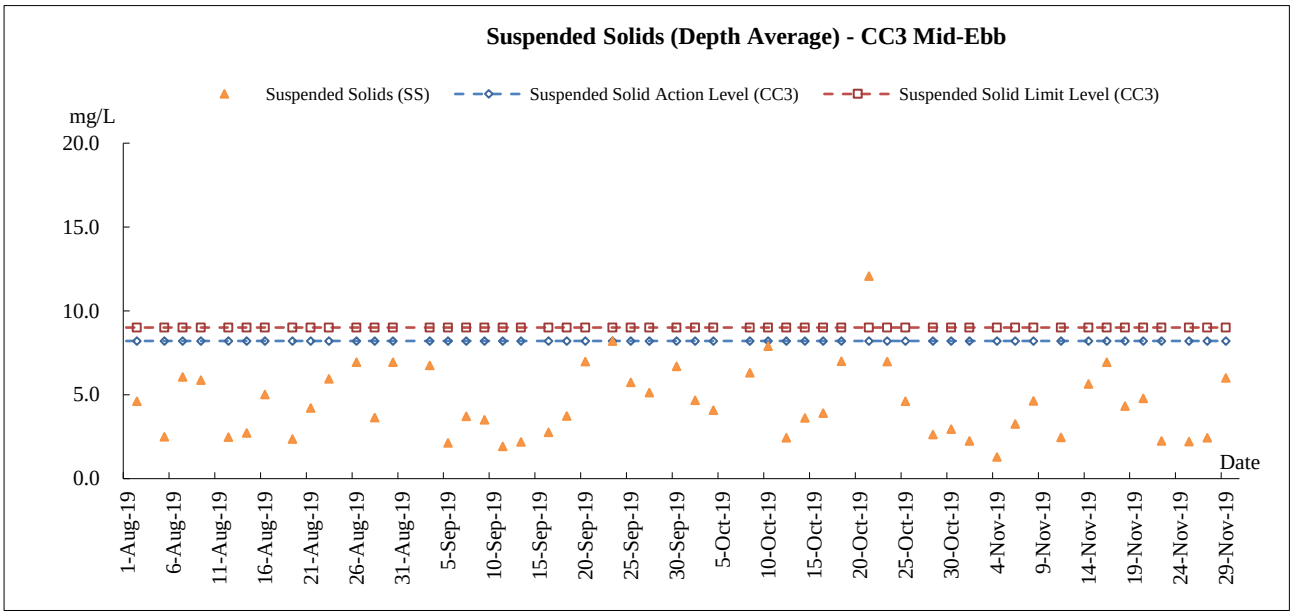




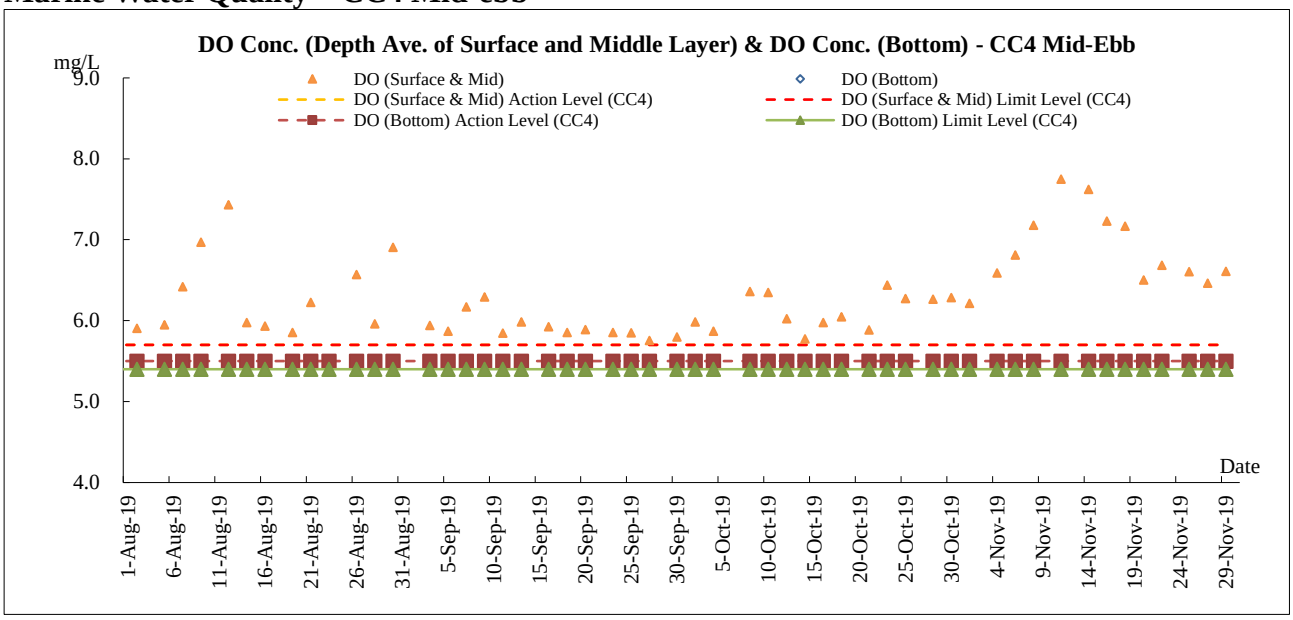
Marine Water Quality – CC3 Mid-ebb

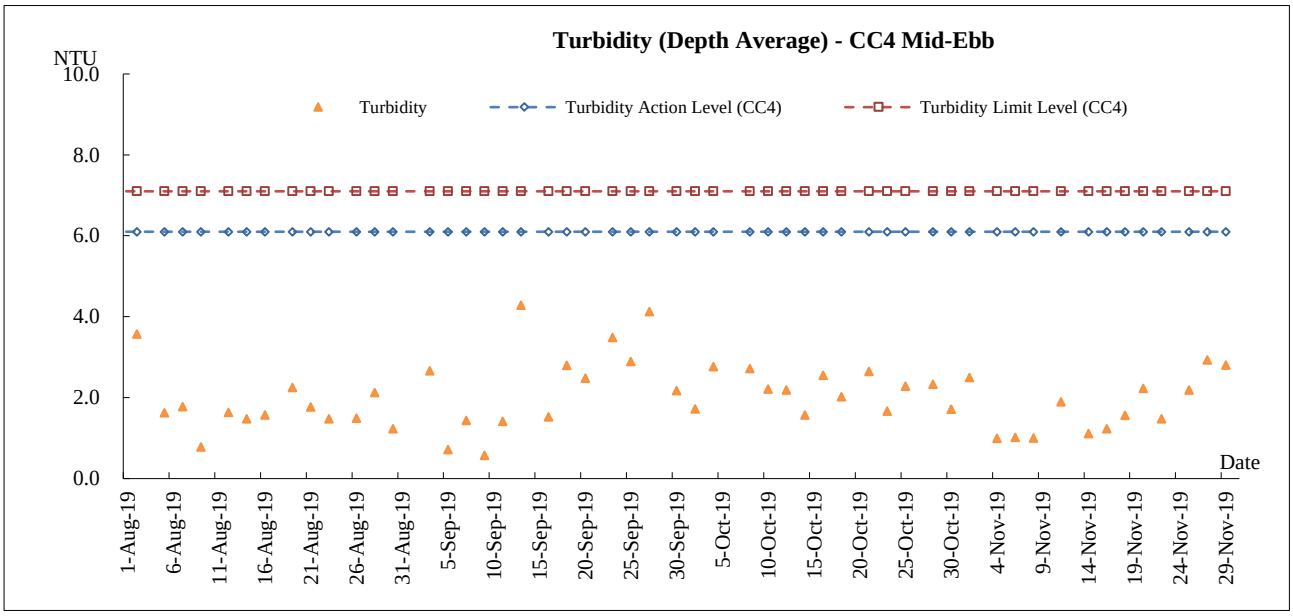


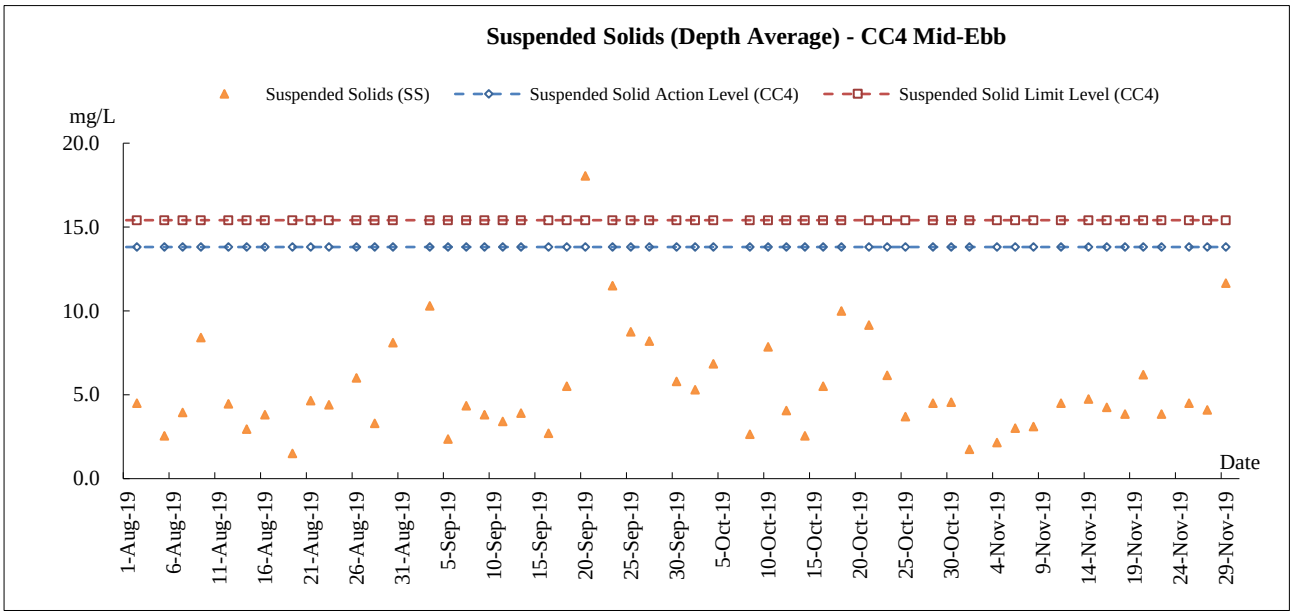




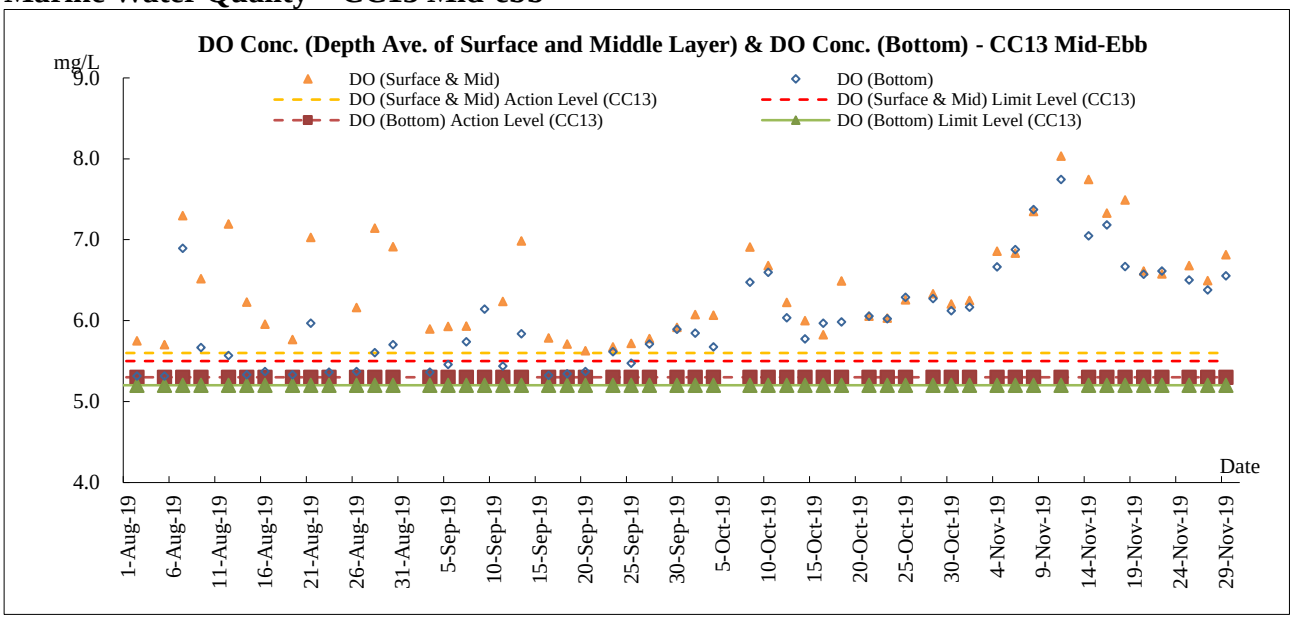
Marine Water Quality – CC4 Mid-ebb

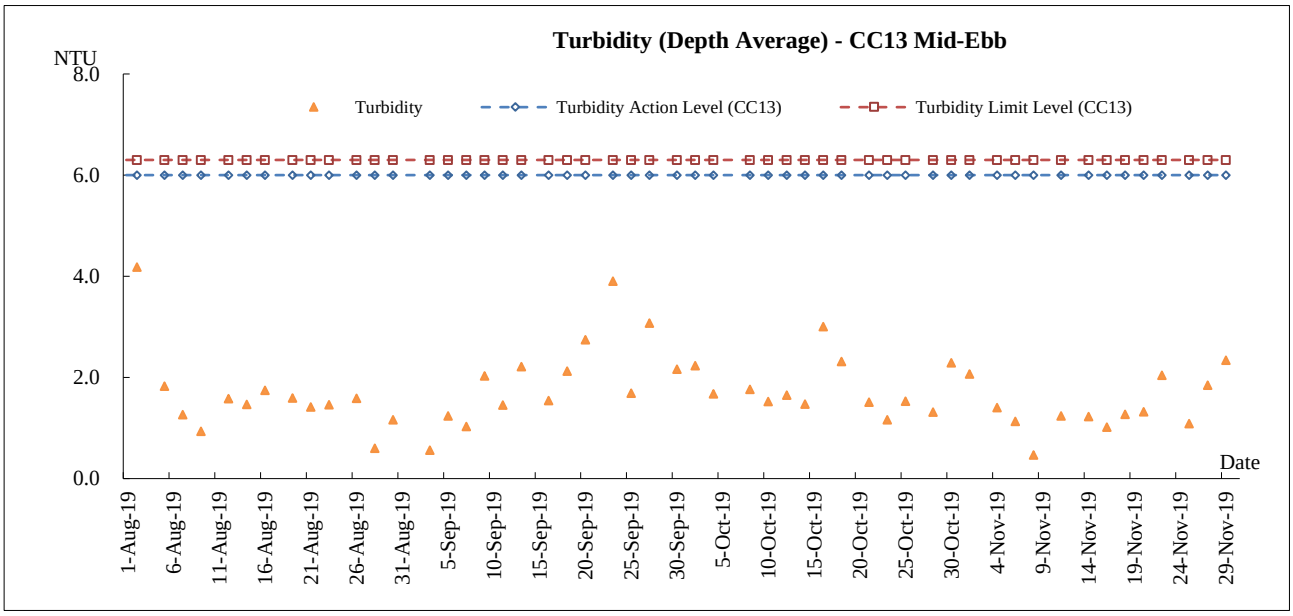


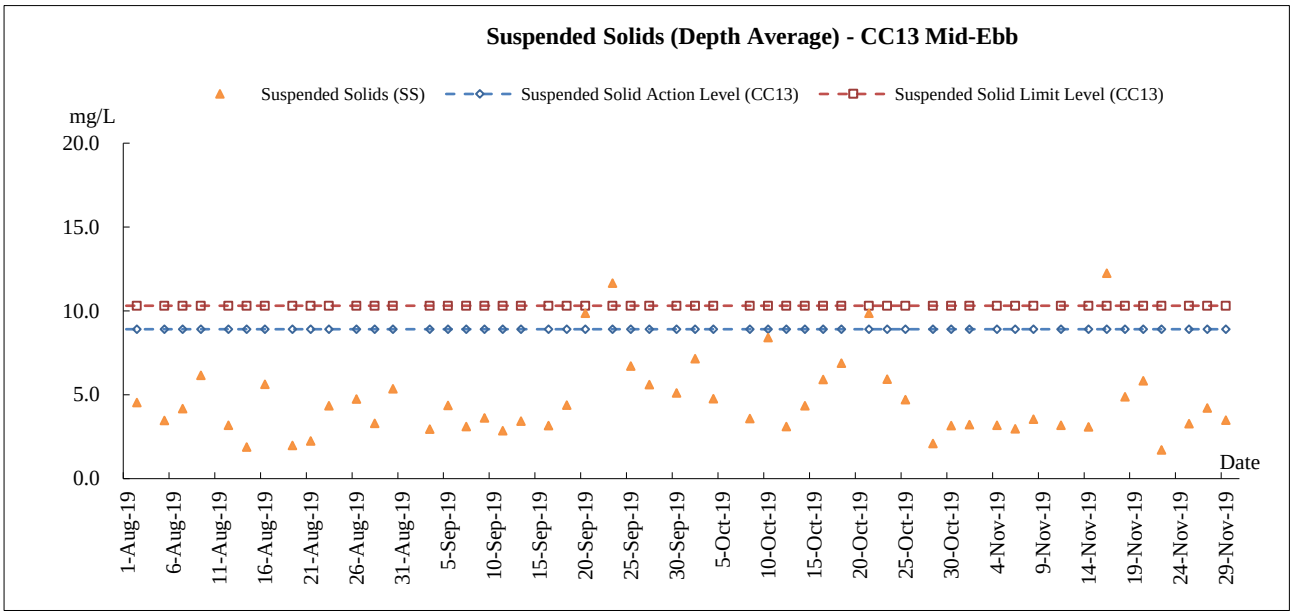




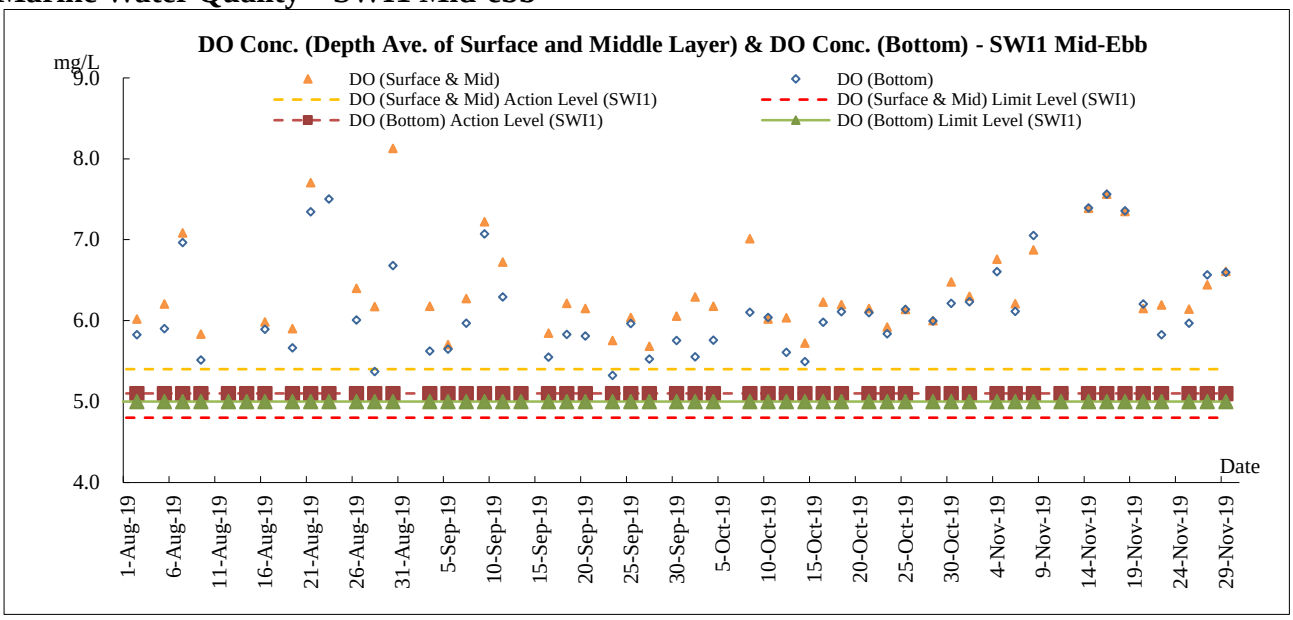
Marine Water Quality – CC13 Mid-ebb

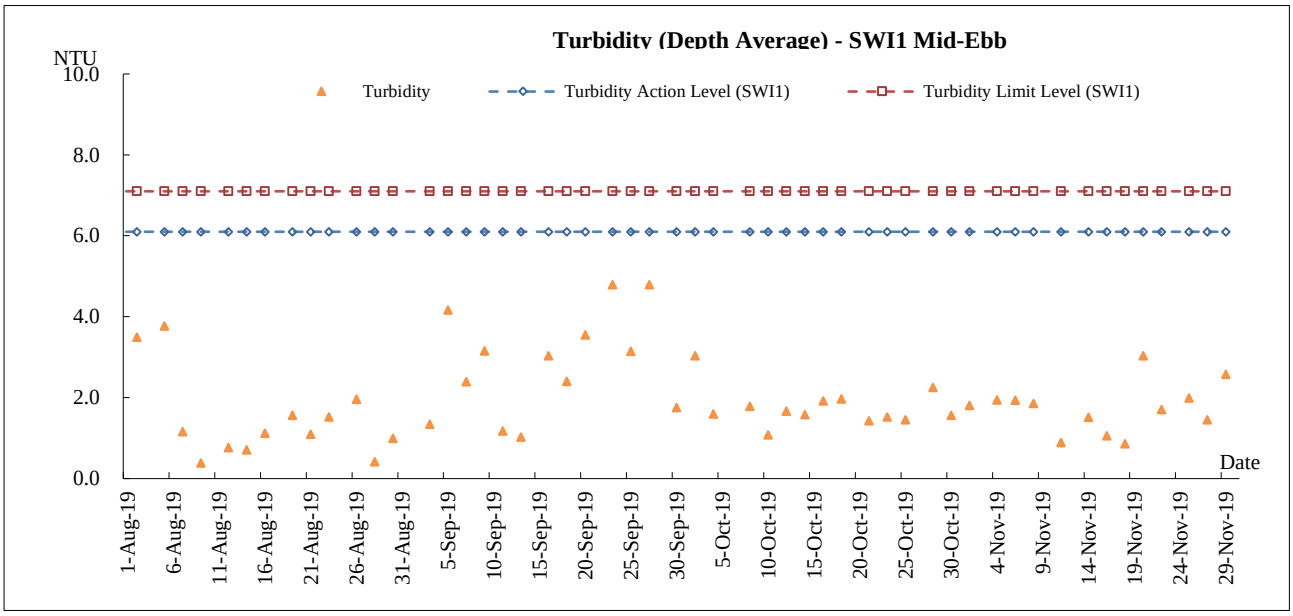


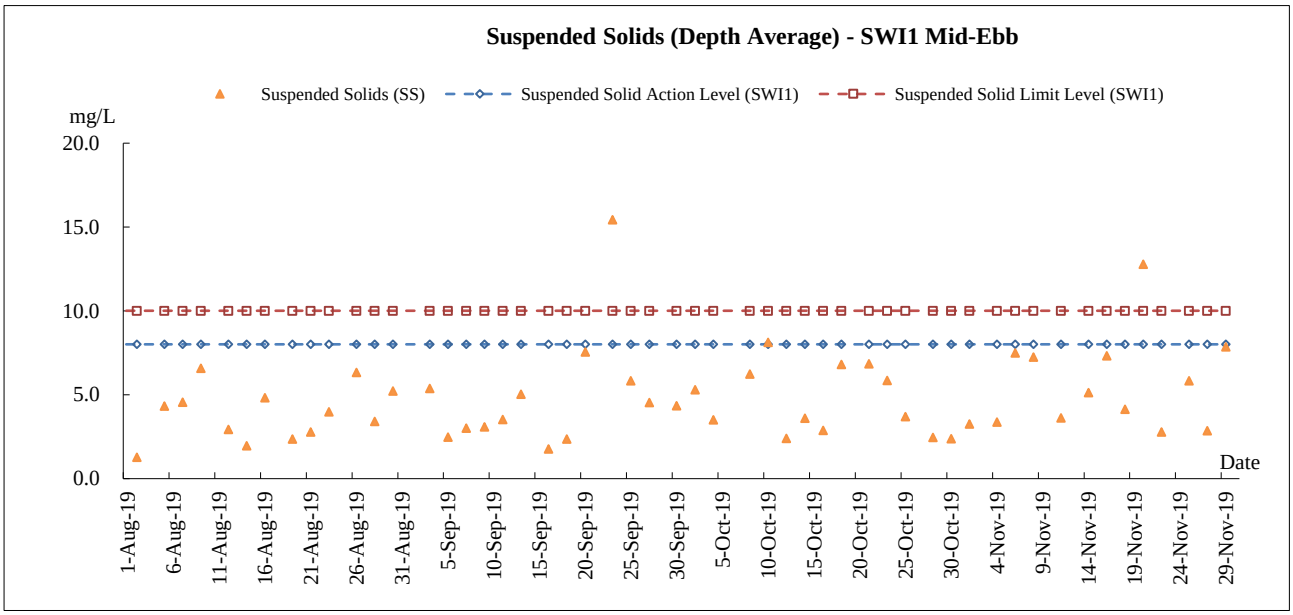




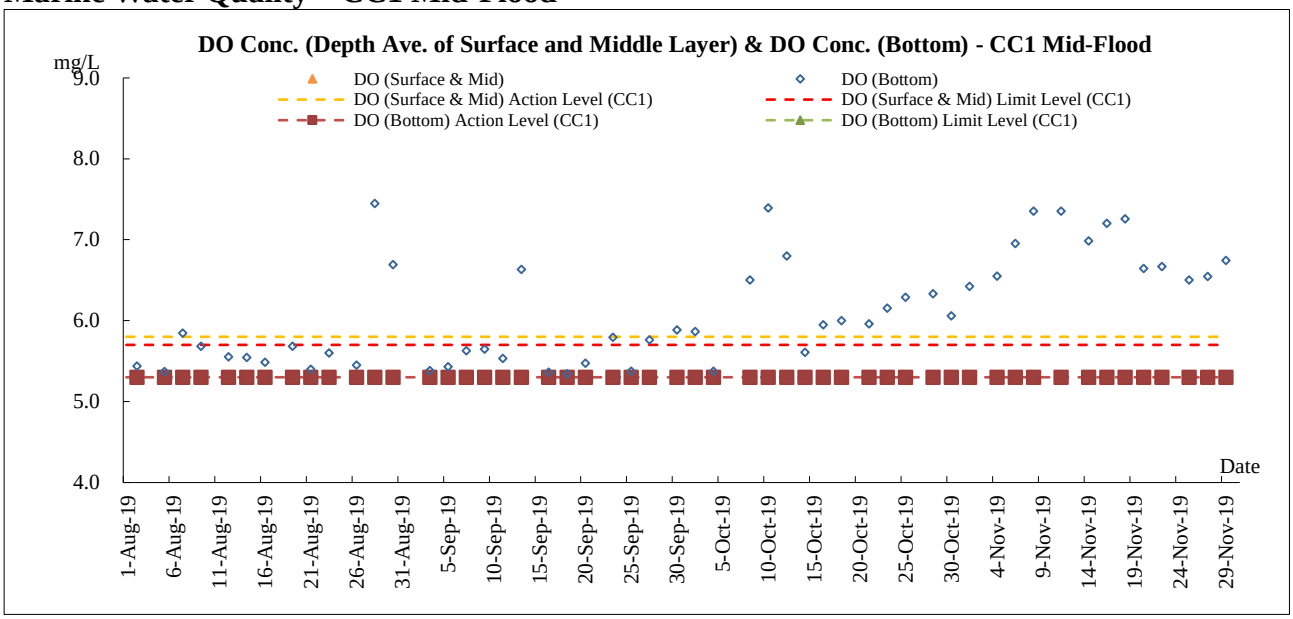
Marine Water Quality – SWI1 Mid-ebb

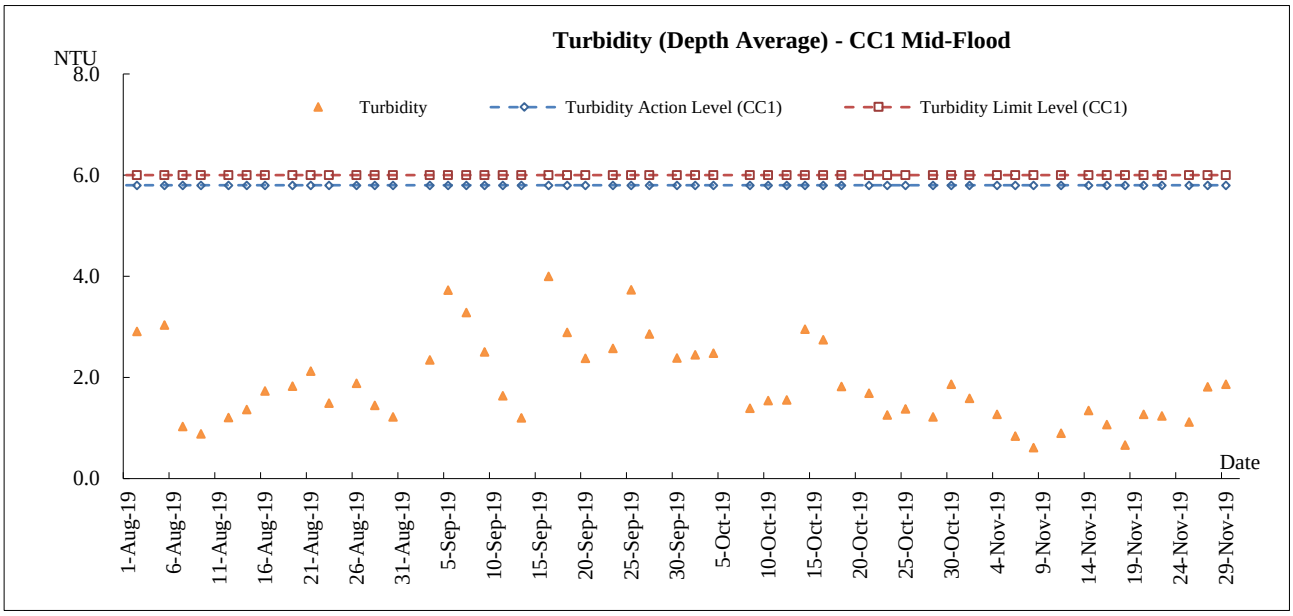


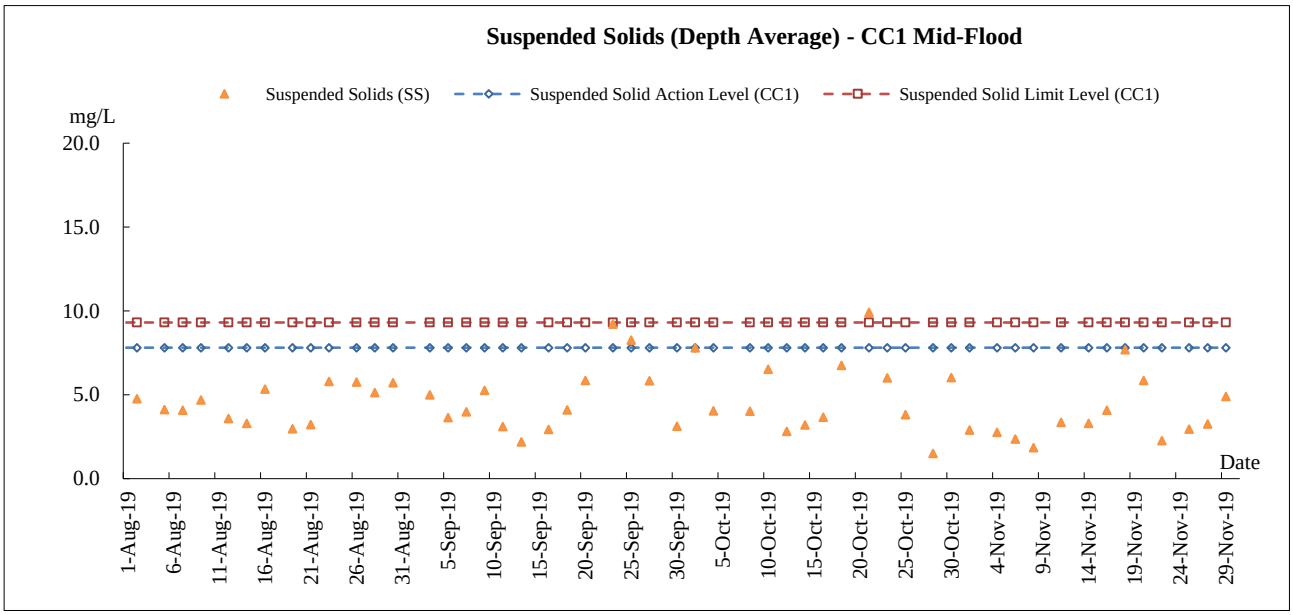




Marine Water Quality – CC1 Mid-Flood







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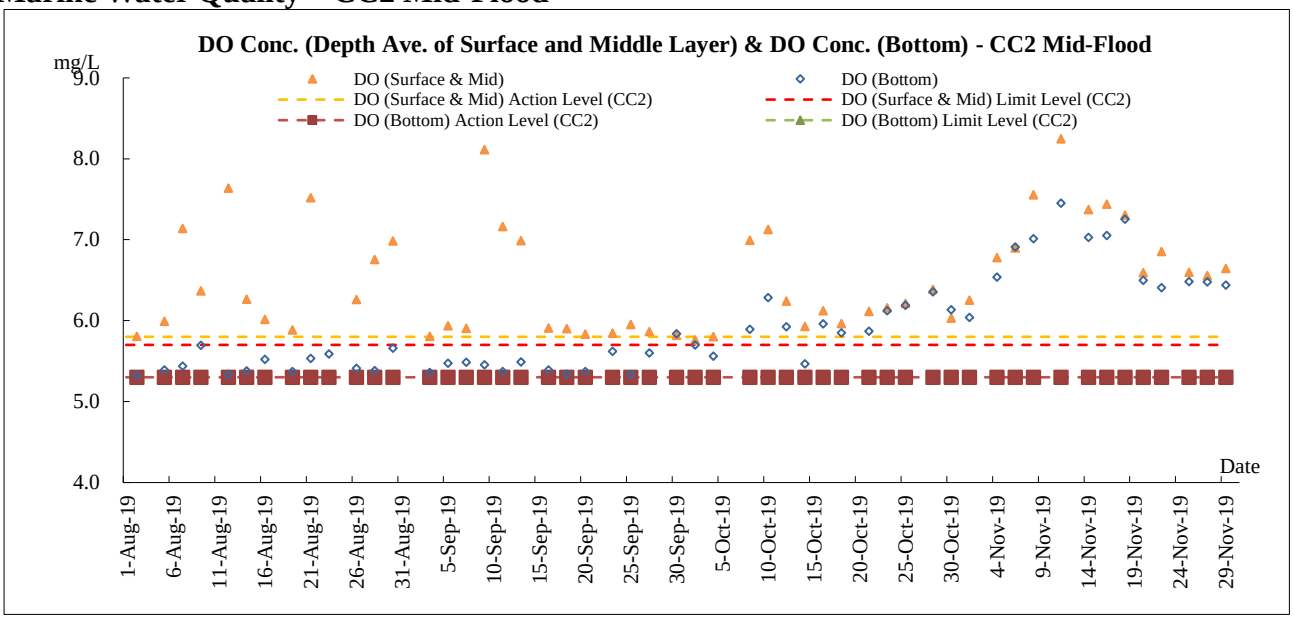

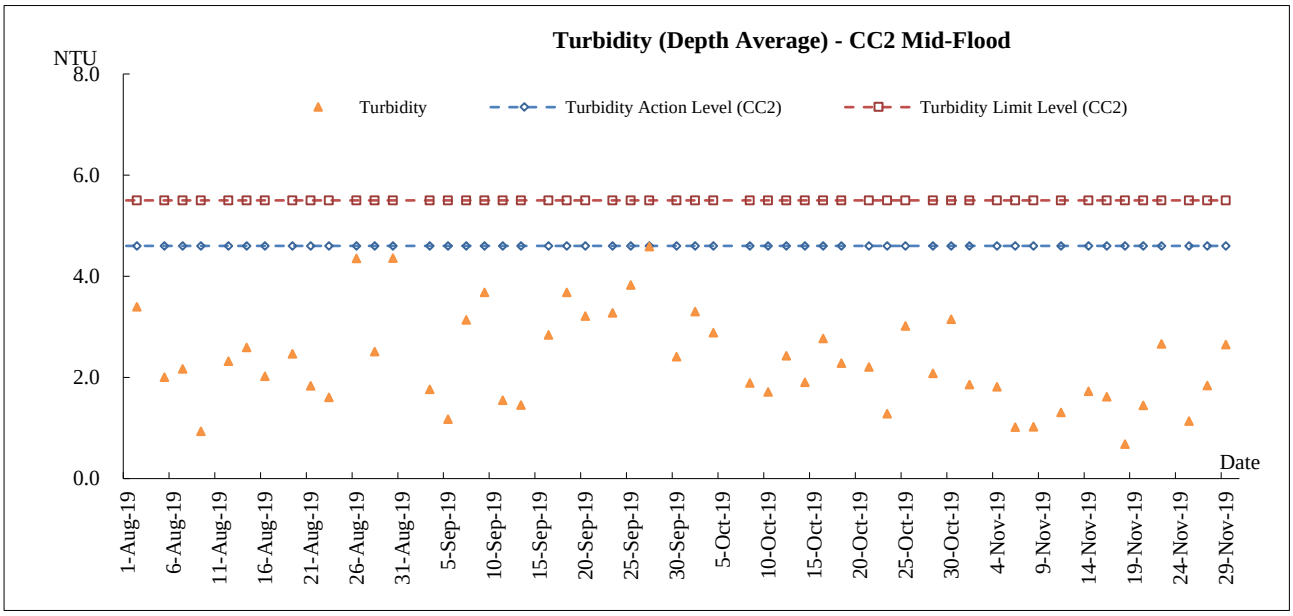

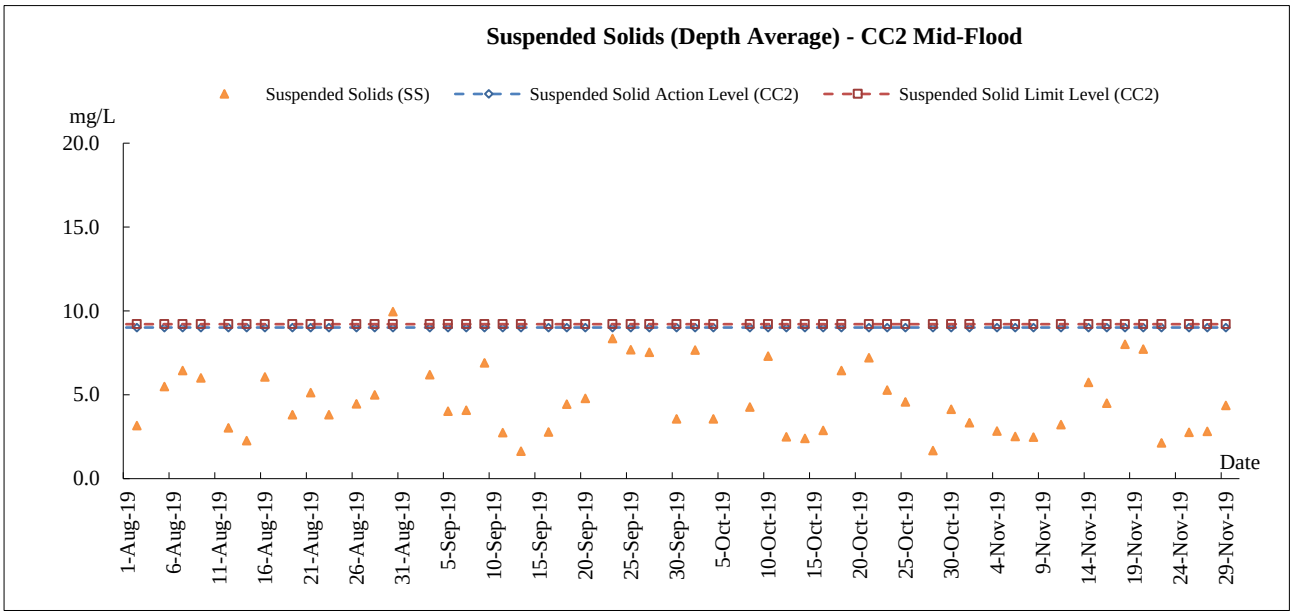

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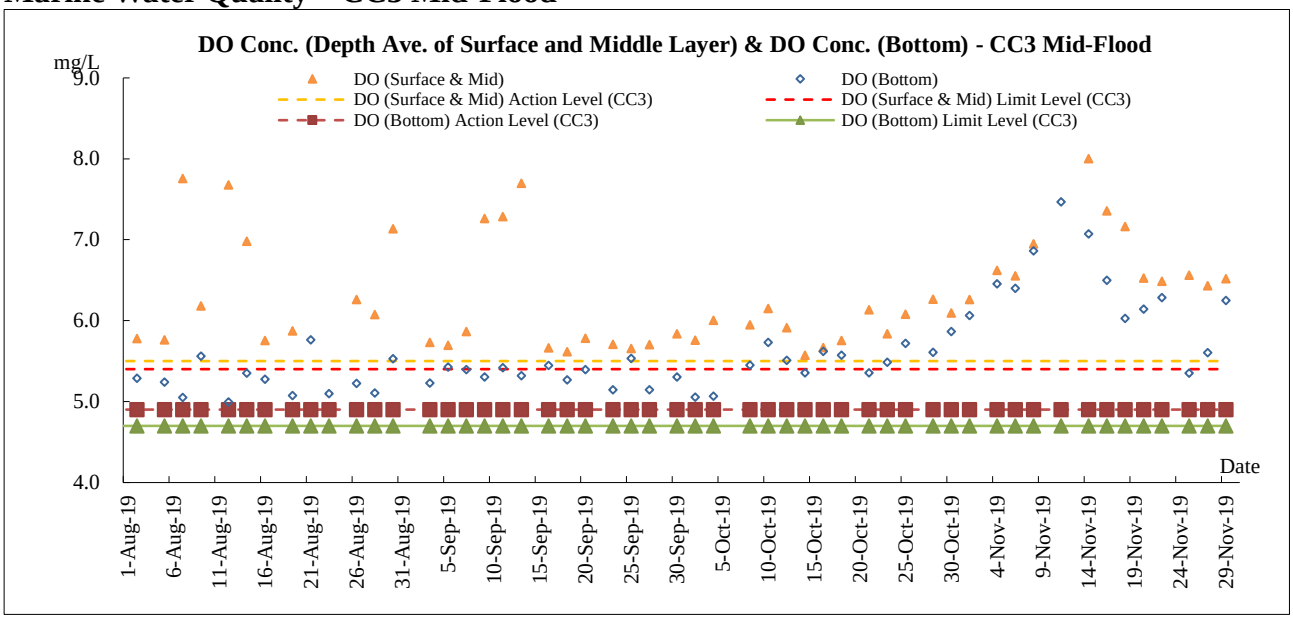

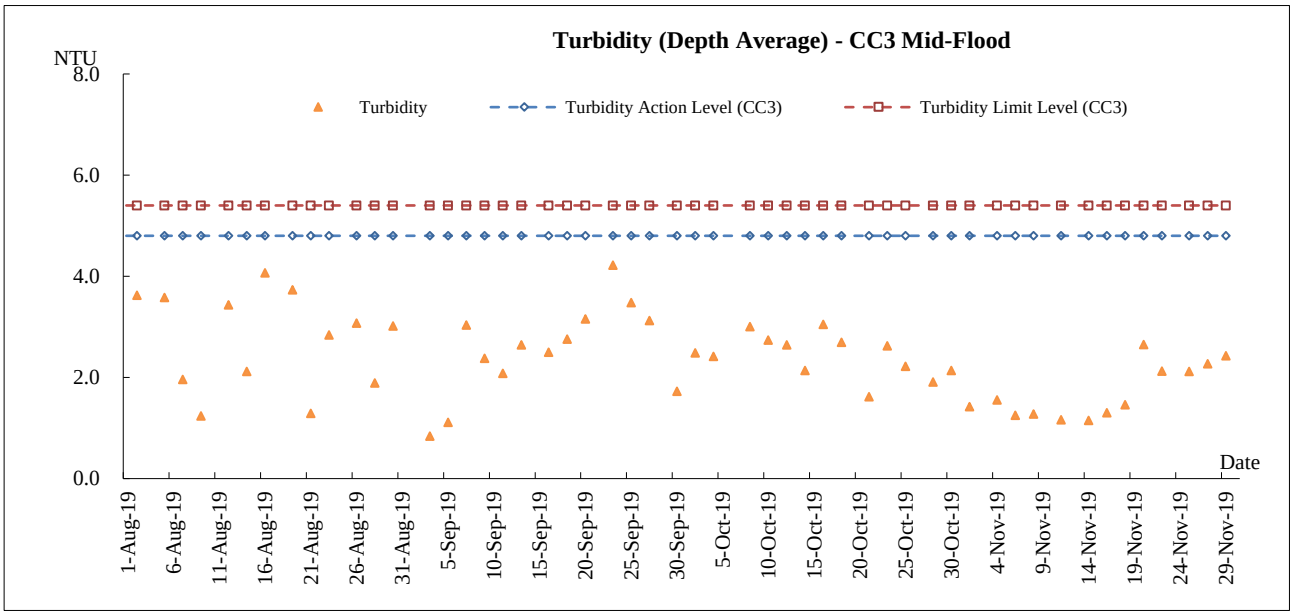

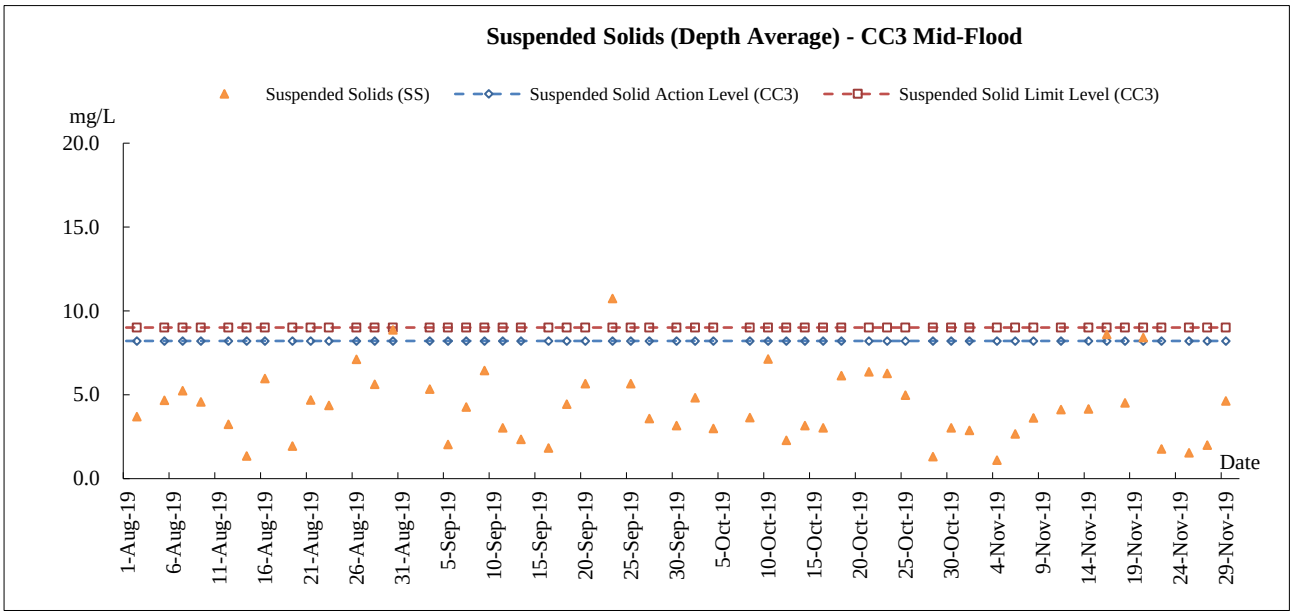

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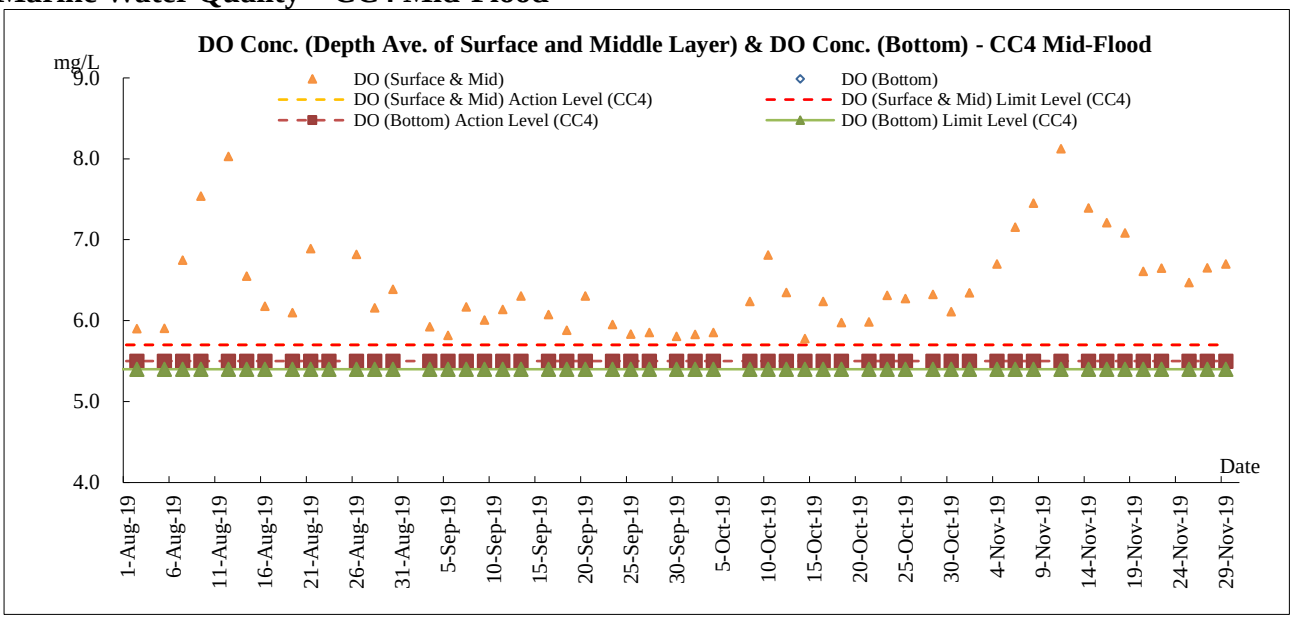

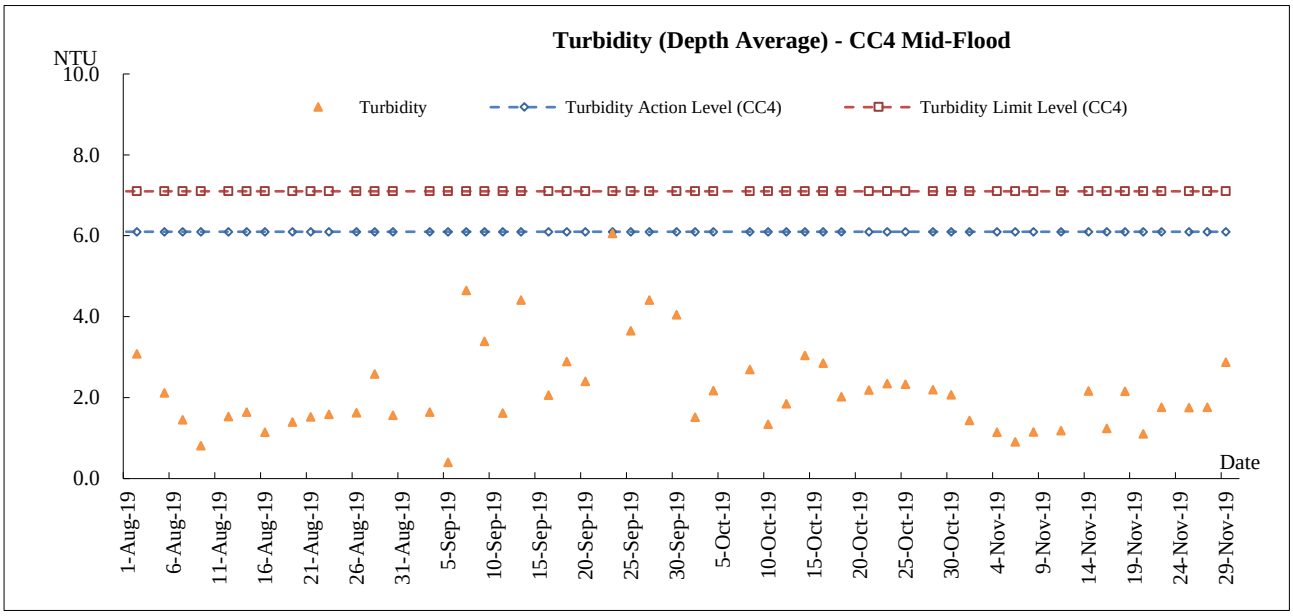

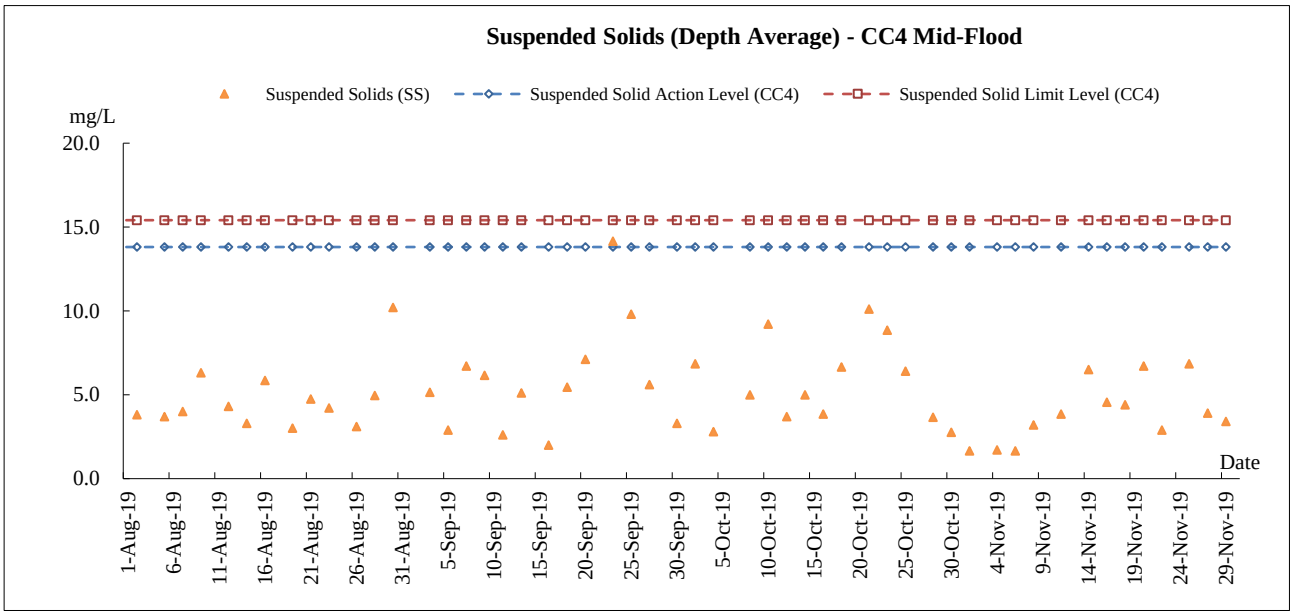

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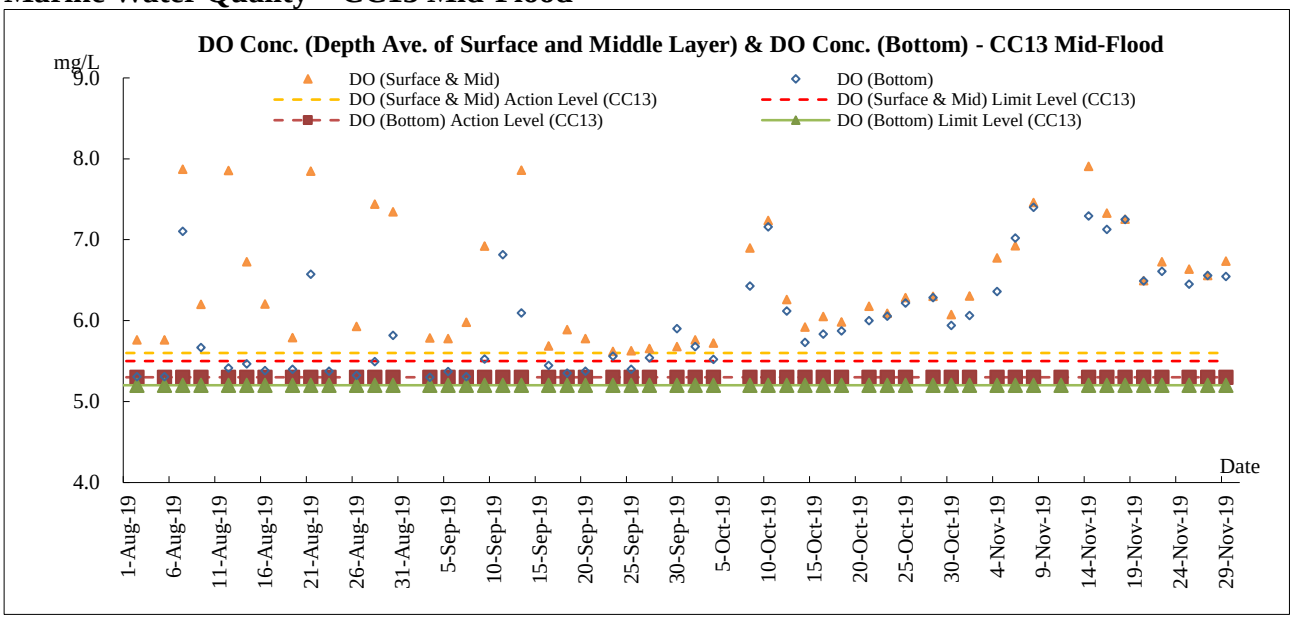
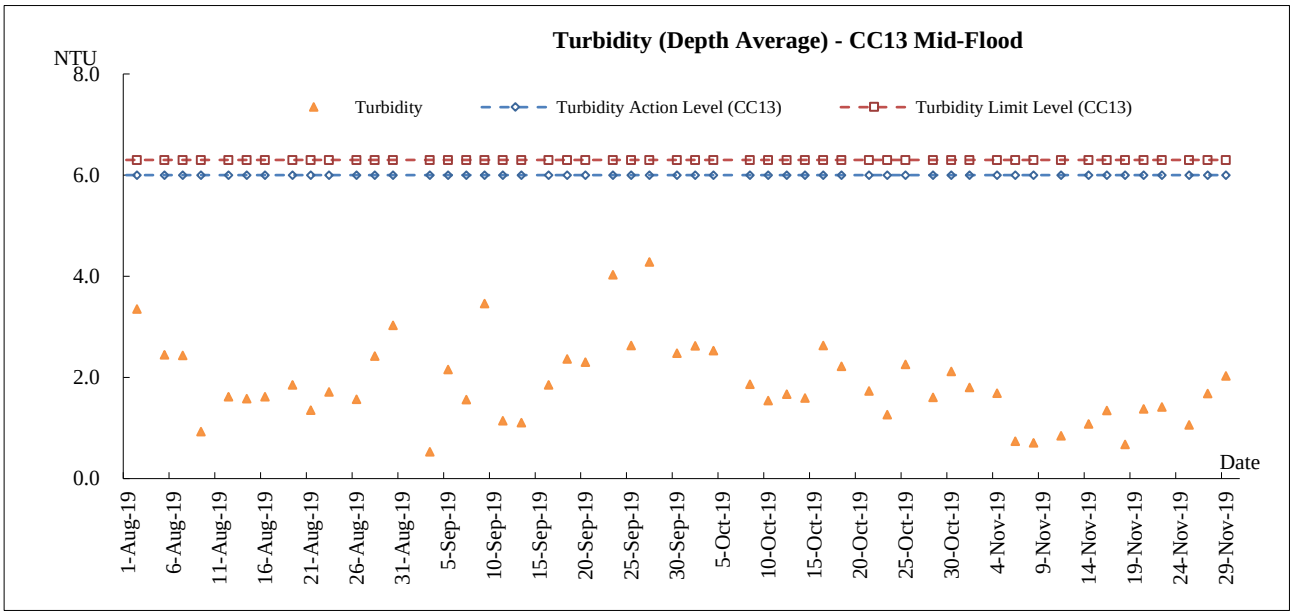
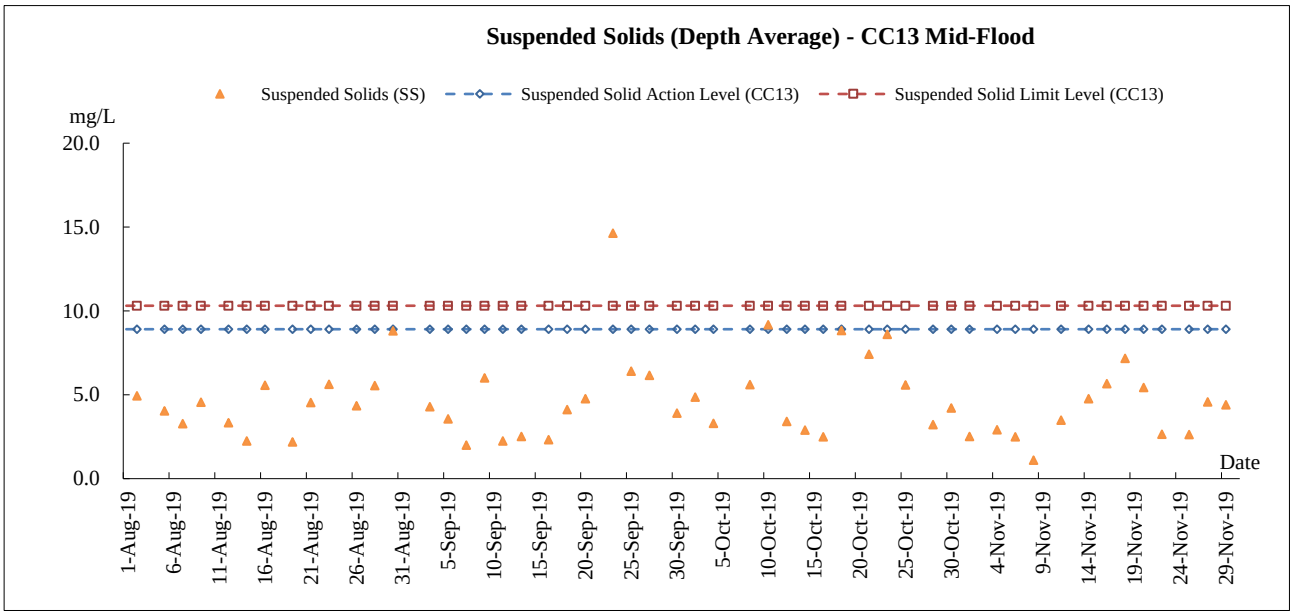
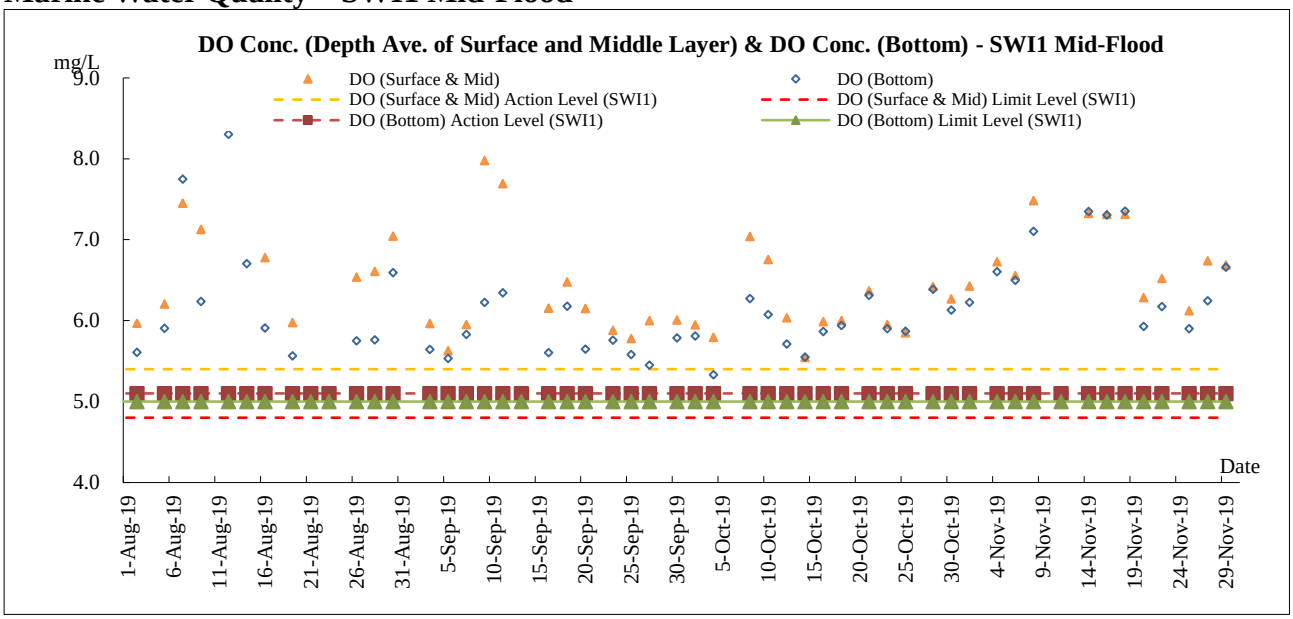
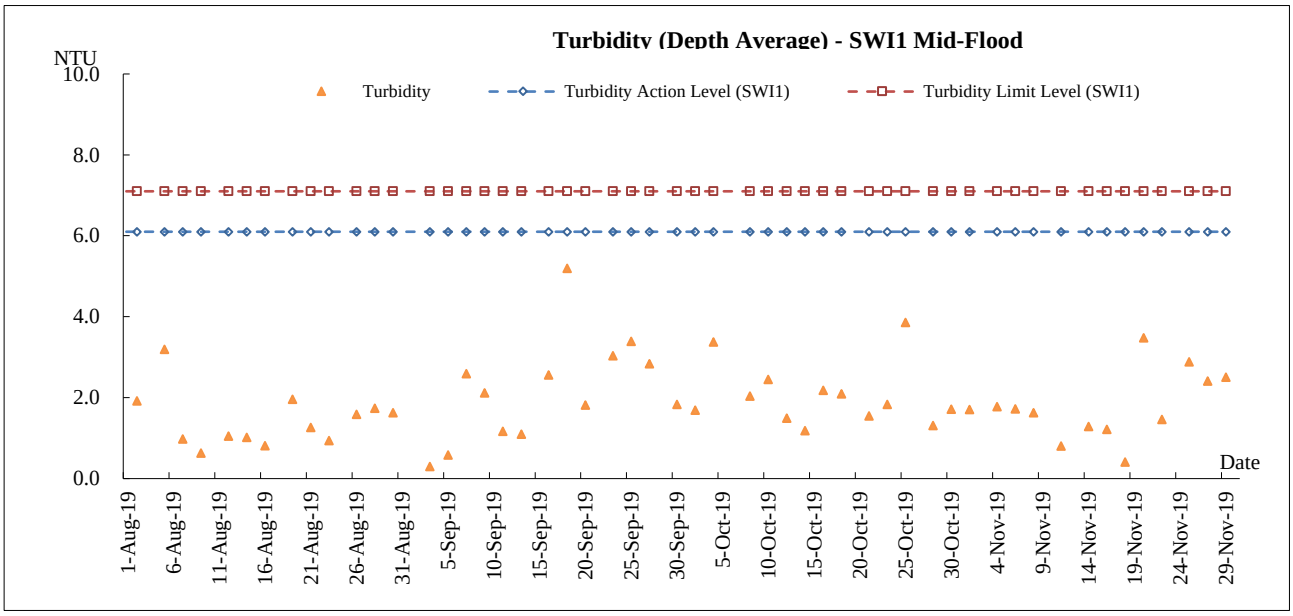


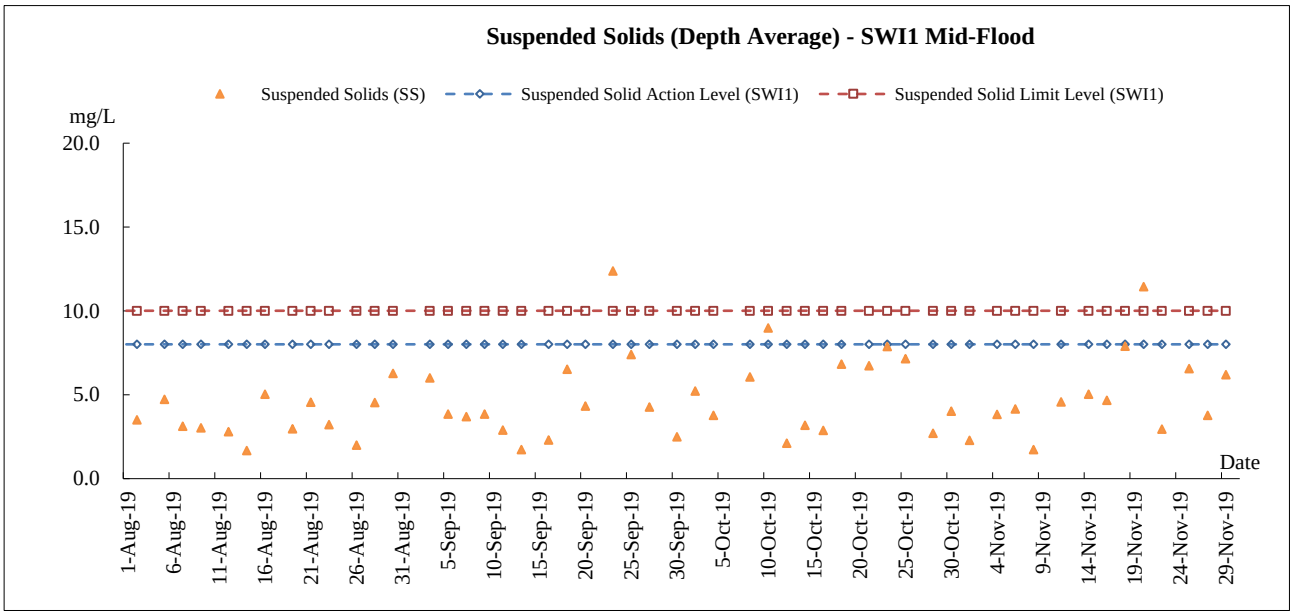




Marine Water Quality – SWI1 Mid-Flood







Appendix F

Meteorological Information

The weather of September 2019

With the dominance of upper-air anticyclone over southern China for most of the time in the month, Hong Kong experienced a hot, sunny and dry September in 2019. The monthly mean temperature was 28.7 degrees, 1.0 degree above the normal figure of 27.7 degrees and the seventh highest on record for September. There were seven consecutive hot nights from 8 to 14 September, the longest on record for September. Moreover, up to September, the annual number of hot nights in 2019 already reached 45, which is 27.2 days above the annual normal and the highest on record since 1884. September 2019 was marked by sunny weather with the monthly total sunshine duration amounting to 216.3 hours, about 26 percent above the normal of 172.3 hours. The month was also drier than usual with a total rainfall of 198.9 millimetres, about 61 percent of the normal figure of 327.6 millimetres. The accumulated rainfall this year up to September was 2233.2 millimetres, on par with the normal figure of 2233.1 millimetres for the same period.

The weather of October 2019

Owing to the stronger than normal upper-air anticyclone over southern China, October 2019 was exceptionally hot and sunny in Hong Kong. The monthly mean maximum temperature of 29.5 degrees, 1.7 degrees above the normal figure of 27.8 degrees, was the highest on record for October. The monthly mean temperature was 26.6 degrees, 1.1 degrees above the normal figure of 25.5 degrees and the second highest on record for October. The month was marked by sunny weather with the monthly total sunshine duration amounting to 230.7 hours, about 19 percent above the normal of 193.9 hours. With two heavy rain episodes respectively on 6 – 7 October and 13 – 14 October, the month was also wetter than normal with a monthly rainfall of 149.5 millimetres, about 48 percent above the normal of 100.9 millimetres. The accumulated rainfall this year up to October was 2382.7 millimetres, about 2 percent higher than the normal figure of 2334.0 millimetres for the same period.

The weather of November 2019

With the dominance of dry northeast monsoon over southern China for most of the time in the month, November 2019 was marked by prolonged dry and sunny weather in Hong Kong. The monthly total sunshine duration amounted to 263.0 hours, 46 percent above the normal of 180.1 hours and the fourth highest on record for November. Only traces of rainfall were recorded in the month, making it one of the driest Novembers since records began in 1884. However, the accumulated rainfall this year up to November was 2382.7 millimetres, slightly more than the normal figure of 2371.7 millimetres for the same period. November 2019 was also much warmer than usual. The monthly mean maximum temperature was 26.1 degrees, 2.0 degrees above the normal figure of 24.1 degrees and one of the second highest on record for November. The monthly mean temperature of 23.0 degrees was 1.2 degrees above the normal figure of 21.8 degrees and one of the sixth highest on record for November. Moreover, the autumn mean temperature in Hong Kong for the period from September to November 2019 reached 26.1 degrees and was 1.1 degrees above the normal of 25.0 degrees, making it one of the warmest autumns on record.

*The detailed meterological data for each successive day can be referred to in the Monthly EM&A Reports (September 2019, October 2019, and November 2019).

Appendix G

Waste Flow Table

Contract 1

Monthly Summary Waste Flow Table for 2018 (year)

Name of Person completing the record: Kanny Cho (EO)

Project : Cross Bay Link, TKO, Main Bridge and Associated Works

Contract No.: NE/2017/07

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 (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m^3)
Jan											
Feb											
Mar											
Apr											
May											
Jun											
Sub-total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.837
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.305
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065	0.000	0.000	0.008
Nov	0.000	0.000	0.000	0.000	0.000	0.320	0.000	0.000	0.000	0.000	0.009
Dec	0.000	0.000	0.000	0.000	0.276	0.000	0.000	0.000	0.000	0.000	0.004
Total	0.000	0.000	0.000	0.000	0.276	0.320	0.000	0.065	0.000	0.000	1.163

Note:

1. For non-inert portion of C&D material, assume the density of 1 m^3 general refuse is equal to 200 kg.
2. For inert portion of C&D material, assume 6 m^3 per each full-filled dump truck.
3. All values are round off to the third decimal places.

Monthly Summary Waste Flow Table for 2019 (year)

Name of Person completing the record: Calvin So (EO)

Project : Cross Bay Link, TKO, Main Bridge and Associated Works Contract No.: NE/2017/07

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 (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m^3)
Jan	0.845	0.000	0.000	0.000	0.845	0.000	0.000	0.023	0.000	0.000	0.077
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.036
Mar	0.042	0.000	0.000	0.000	0.042	0.000	0.000	0.029	0.000	0.000	0.081
Apr	1.760	0.000	0.000	0.000	1.760	0.000	0.000	0.509	0.000	0.000	0.012
May	1.026	0.000	0.000	0.000	1.026	0.000	0.000	0.094	0.000	0.000	0.030
Jun	0.354	0.000	0.000	0.000	0.354	0.000	0.000	0.087	0.000	0.000	0.050
Sub-total	4.027	0.000	0.000	0.000	4.027	0.000	0.000	0.774	0.000	0.000	0.286
Jul	1.122	0.000	0.000	0.000	1.122	0.000	0.000	0.060	0.000	0.000	0.095
Aug	1.290	0.000	0.000	0.000	1.290	0.000	0.000	0.075	0.000	0.000	0.058
Sep	0.762	0.000	0.000	0.000	0.762	0.000	0.000	0.085	0.000	0.000	0.054
Oct	1.002	0.000	0.000	0.000	1.002	0.000	0.000	0.080	0.000	0.000	0.106
Nov	0.744	0.000	0.000	0.000	0.744	0.000	0.000	0.092	0.000	0.000	0.075
Dec											
Total	8.947	0.000	0.000	0.000	8.947	0.000	0.000	1.166	0.000	0.000	0.674

Note:

1. For non-inert portion of C&D material, assume the density of 1 m^3 general refuse is equal to 200 kg.
2. For inert portion of C&D material, assume 6 m^3 per each full-filled dump truck.
3. All values are round off to the third decimal places.

Contract 2

Monthly Summary Waste Flow Table for 2019 Year

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	0.358	0.000	0.358	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.357
Feb	0.022	0.000	0.000	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.728
Mar	0.106	0.000	0.000	0.000	0.106	0.000	0.000	0.000	0.000	0.000	0.229
Apr	3.013	0.000	0.000	0.000	3.013	0.000	0.000	0.000	0.000	0.000	0.013
May	3.621	0.000	0.000	0.000	3.621	0.000	0.000	0.000	0.000	0.000	0.022
June	1.127	0.000	0.000	0.000	1.127	0.000	0.000	0.000	0.000	0.000	0.019
SUB-TOTAL	8.247	0.000	0.358	0.000	7.889	0.000	0.000	0.000	0.000	0.000	1.368
Jul	2.468	0.000	0.000	0.000	1.879	0.589	0.000	0.000	0.000	0.000	0.031
Aug	4.401	0.000	0.000	0.000	4.262	0.140	0.000	0.000	0.000	0.000	0.004
Sep	1.912	0.000	0.000	0.046	1.866	0.000	0.000	0.000	0.000	0.000	0.009
Oct	4.384	0.000	0.000	0.000	4.384	0.000	0.000	0.000	0.000	0.000	0.007
Nov	2.351	0.000	0.000	0.000	2.351	0.000	8.870	0.000	0.000	0.000	0.004
Dec											
TOTAL	23.763	0.000	0.358	0.046	22.631	0.728	8.870	0.000	0.000	0.000	1.424

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

Assume the loaded volume of a dump truck for internal inert waste transfer is 17.9 m^3

Appendix H

Complaint Summary

Complaint Summary for Cross Bay Link, Tseung Kwan O

Log ref.	Date of Complaint Received	Complaint Location	Complaint nature	Complaint details	Follow up action
1	14-Mar-19	Junk Bay	Marine Water	The complainant said muddy water and mud was discharged from work barges under CBL between 7:00 - 10pm. The complainant said he observed the act during his recent fishing activities in the nearby area.	According to ET's investigation, Contractor of Contract 1 (CRBC) had provided proper water mitigation measures to minimize the water impact of marine piling work to the nearby waterbody. No abnormal and turbid water discharged from site was observed. Nevertheless, the Contractor of Contract 1 was reminded to strictly implement all the water mitigation measures as stated in EP and EM&A Manual and ET will keep closely inspect the site condition in subsequent weekly site inspection. .

Appendix I

Implementation Schedule for Environmental Mitigation Measures

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
Dust Impact (Contraction Phase)						
S5.5.5.1	Regular watering under good site practice shall be adopted. In accordance with the "Control of Open Fugitive Dust Sources" (USEPA AP-42), watering once per hour on exposed worksites and haul road is recommended to achieve dust removal efficiency of 91.7%.	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	All construction sites	Contractor	Construction stage	• APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation
S5.5.5.3	The following dust suppression measures shall also be incorporated by the Contractor to control the dust nuisance throughout the construction phase: • Any excavated or stockpiled dusty material shall be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed shall be wetted with water and cleared from the surface of roads; • A stockpile of dusty material shall not extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site shall be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet shall be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point shall be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high shall be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading to the construction site that is within 30m of a vehicle entrance or exit shall be kept clear	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	All construction sites	Contractor	Construction stage	• APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	of dusty materials; • Surfaces where any pneumatic or power driven drilling, cutting, polishing or other mechanical breaking operation takes place shall be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities shall be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting shall be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport shall be totally enclosed by impervious sheeting; • Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S5.5.5.4	For the barging facilities at the site compound, the following good site practice is required: • All road surfaces within the barging facilities shall be paved. • Vehicles should pass through designated wheel wash facilities. • Continuous water spray shall be installed at the loading point.	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	Site compound	Contractor	Construction stage	• APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation
S5.5.5.5	An audit and monitoring programme during the construction phase should be implemented by the Contractor to ensure that the construction dust impacts are controlled to within the HKAQO. Detailed requirements for the audit and monitoring programmes are given separately in the EM&A manual.	Monitor the 1-Hour and 24-Hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period	Selected representative dust monitoring station (**Drawing no. 209506/EMA/ AIR/001**)	Contractor	Construction stage	• APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation
Noise Impact (Contraction Phase)						

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
S6.6.4.3	Good site practice and noise management techniques: • Only well-maintained plant shall be operated on-site and the plant shall be serviced regularly during the construction programme; • Machines and plant (such as trucks, cranes) that are in intermittent use shall be shut down between work periods or throttled down to a minimum; • Plant known to emit noise strongly in one direction, where possible, shall be orientated so that the noise is directed away from nearby NSRs; • Silencers or mufflers on construction equipment shall be properly fitted and maintained during the construction works; • Mobile plant shall be sited as far away from NSRs as possible and practicable; and • Material stockpiles, site office and other structures shall be effectively utilised, where practicable, to screen noise from on-site construction activities.	To minimize construction noise impact arising from the Project on the affected NSRs	All construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
S6.6.4.5-6	Use of quiet powered mechanical equipment and working methods	Reduce noise levels of plant items	All construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
S6.6.4.7	Install site hoarding at the site boundaries between noisy construction activities and NSRs	Reduce the construction noise levels at low-level zone of NSRs through partial screening	All construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
S6.6.4.8-11	Use of temporary or movable noise barriers and full enclosure for relatively fixed plant source	Screen the noisy plant items to be used at all construction sites	For plant items listed in Table 6.7 and Appendix 6.1 of the EIA report at all construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
	Implement a noise monitoring programme under the EM&A manual	Monitor the construction noise levels at the selected representative locations	Selected representative noise monitoring stations (**Drawing no. 209506/EMA/NS/001** & **209506/EMA/NS/002**)	Contractor	Construction stage	• Annex 5, TM-EIAO
S6.7.3.1	Partial enclosures along Road D9 and application of low noise surfacing material along CBL and Road D9	To minimize road traffic noise impact arising from the CBL and Road D9 on the affected NSRs	CBL and Road D9 (**Drawing no. 209506/EMA/NS/003**)	CEDD/ Contractor	During operational stage	• Annex 5, TM-EIAO

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
Water Quality Impact (Contraction Phase)						
S8.6.4.3	Marine Piling and Pile Excavation Works Marine piling and pile excavation works shall be undertaken in such a manner as to minimize re-suspension of sediments. Standard good practice measures shall be implemented, including the following requirements: • All marine piling and pile excavation works shall be conducted within a floating single silt curtain. • Mechanical closed grabs (with a size of5m3) shall be designed and maintained to avoid spillage and should seal tightly while being lifted. • Barges shall have tight fitting seals to their bottom openings to prevent leakage of material. • Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes. • Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water. Barges shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation. • 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. • All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash. • The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.	To control potential impacts from marine piling and pile excavation works	During marine piling and pile excavation works	Contractor	Construction stage	• TM-EIAO; and • WPCO
S8.6.4.4	Construction Site Runoff In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, shall include the following: • The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The	Control potential water quality impacts from construction site run-off	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO

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	detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction; • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 shall be covered with tarpaulin or similar fabric during rainstorms. Measures shall be taken to prevent the washing away of construction materials, soil, silt or debris into any marine water bodies; • All vehicles and plant shall 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 sited wheel washing facilities shall be provided at every construction site exit where practicable. Wash-water shall 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 wheel-wash bay to the public road shall be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Construction solid waste, debris and rubbish on site shall be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas shall be provided with locks and sited 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 water sensitive receivers nearby; and • Regular environmental audit on the construction site shall be carried out in order to prevent any malpractices. Notices shall be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds.					
S8.6.4.6	Sewage from workforce • Portable chemical toilets and sewage holding tanks shall be provided for handling the construction sewage generated by the workforce; • A licensed contractor shall be employed to provide	Control potential water quality impacts from sewage	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
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	appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.					
	Monitoring Implement a marine water quality monitoring programme under the EM&A on level of suspended solids (SS) / turbidity and dissolved oxygen (DO) shall be carried out.	Control potential water quality impacts from marine piling and pile excavation works	Selected monitoring stations (**Drawing no. 209506/EMA/WQ/001**)	Contractor	Construction station	• TM-EIAO; and • WPCO
S8.7.3.2	**Operational phase – Runoff from road surface** Proper drainage systems with silt traps and oil interceptors shall be installed, maintained and cleaned at regular intervals.	Control potential water quality impacts from road surface runoff	CBL and Road D9	Contractor	Construction and operational stage	• TM-EIAO; and • WPCO
Waste Management (Contraction Phase)						
S9.5.2	**Good Site Practices** Recommendations for good site practices: • Nomination of an approved personnel to be responsible for the implementation of good site practices, arrangements for collection and effective deposal to an appropriate facility of all wastes generated at the site; • Training of site personnel in proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection for disposal; • Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • Implementation of a recording system for the amount of wastes generated/recycled and disposal sites.	Good site practices which ensure waste generated during construction phase is properly managed	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
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S9.5.4	**Waste Reduction Measures** Recommendations for achieving waste reduction include: • On-site reuse of any material excavated as far as practicable; • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal; • Collection of aluminum cans and waste paper by individual collectors during construction should be encouraged. Separately labelled recycling bins should also be provided to segregate these wastes from other general refuse by the workforce; • Recycling of any unused chemicals and those with remaining functional capacity as far as possible; • Prevention of the potential damage or contamination to the construction materials though proper storage and good site practices; • Planning and stocking of construction materials should be made carefully to minimize amount of waste generated avoid unnecessary generation of waste; and • Training on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling should be provided to workers.	To reduce amount of waste generated during construction phase	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005
S9.5.5-6	**Storage, Collection and Transportation of Waste** Recommendations for proper storage include: • Waste such as soil should be handled and stored well to ensure secure containment; • Stockpiling area should be provided with covers and water spraying system to prevent materials from being washed away and to reduce wind-blown litter; and • Different locations should be designated to stockpile each material to enhance reuse. With respect to the collection and transportation of waste from the construction works, the following is recommended: • Remove waste in a timely manner; • Employ trucks with cover or enclosed containers for waste transportations; • Obtain relevant waste disposal permits from the appropriate	To reduce the environmental implications of improper storage	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

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	authorities; and • Disposal of waste should be done at licensed waste disposal facilities.					
S9.5.8-11	**C&D Materials** The following mitigation measures shall be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; • Disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation; • Standard formwork or pre-fabrication order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage; and • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005 • ETWB TCW No. 06/2010
S9.5.13	**Excavated Marine Sediments** During transportation and disposal of the excavated marine sediments, the following measures shall be taken to minimize potential environmental impacts: • Bottom opening of barges should be fitted with tight fitting	To minimize potential impacts on water quality	All construction sites where applicable	Contractor	Construction stage	• ETWBTC (Works) No. 34/2002

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	seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved; • Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation; • Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP; and • Barges should not be filled to a level that would cause the overflow of materials or sediment-laden water during loading or transportation.					
S9.5.14-17	For those processes which generate chemical waste, the Contractor shall identify any alternatives that generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste. If chemical waste is produced at the construction site, the Contractor is required to register with EPD as chemical waste producers. Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows. Containers used for storage of chemical wastes shall: • Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; • Have a capacity of less than 450 L unless the specification have been approved by EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. The storage area for chemical wastes shall: • Be clearly labelled and used solely for the storage of chemical wastes; • Be enclosed on at least 3 sides; • Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest;	To ensure proper management of chemical waste	All construction sites	Contractor	Construction stage	• Waste Disposal (Chemical Waste) (General) Regulation; • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste

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	• Have adequate ventilation; • Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and • Be arranged so that incompatible materials are adequately separated. Disposal of chemical waste shall: • Be via a licensed waste collector; and • Be to a facility licensed to receive chemical waste, such as the CWTC which also offers a chemical waste collection service and can supply the necessary storage containers; or • Be to a re-user of the waste, under approval from EPD.					
S9.5.18	**Sewage** An adequate number of portable toilets shall be provided for the on-site construction workers. Any waste shall be transferred to a sewage treatment works by a licensed collector.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54)
S9.5.19	**General Refuse** General refuse generated on-site shall be stored in enclosed bins or compaction units separately from construction and chemical wastes. Recycling bins shall also be provided to encourage recycling. A reputable waste collector shall be employed by the Contractor to remove general refuse from the site on a daily basis separately from the construction and chemical wastes. Burning of refuse on construction sites is prohibited by law.	Minimize production of general refuse and avoid odour, pest and litter impacts	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54)
S10.7.2.4	Good Site Practices – The integrity and effectiveness of all silt curtains shall be regularly inspected. Effluent monitoring should be incorporated to make sure that the discharged effluent from construction sites meets the relevant effluent discharge guidelines.	To minimize potential impacts on water quality and protect marine communities within Junk Bay	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO
S10.7.2.5	Site runoff control – For works on land, standard site runoff control measures will be established and strictly enforced to ensure that discharge of contaminated or silt-laden runoff into marine waters is minimized.	To minimize potential impacts on water quality and protect marine communities within Junk Bay	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO
S10.9.1.1	The marine water quality monitoring programme recommended in Chapter 8 of this EIA report and this EMIS would also serve to protect the marine communities inside Junk Bay.	To minimize potential impacts on water quality and protect marine	Selected monitoring stations (**Drawing no. 209506/EMA/WQ/001**)	Contractor	Construction stage	• TM-EIAO; and • WPCO

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		communities within Junk Bay				
S11.6.2.2	Good Site Practices: – The integrity and effectiveness of all silt curtains should be regularly inspected. Effluent monitoring shall be incorporated to make sure that the discharged effluent from construction sites meets the relevant effluent discharge guidelines.	To minimize potential impacts on water quality and protect fishery resources	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO
S11.6.2.3	Site runoff control - For works on land, standard site runoff control measures will be established and strictly enforced to ensure that discharge of contaminated or silt-laden runoff is minimized.	To minimize potential impacts on water quality and protect fishery resources	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO
S11.8.1.1	The marine water quality monitoring programme recommended in Chapter 8 of this EIA report and this EMIS would also serve to protect the fishery resources.	To minimize potential impacts on water quality and protect fishery resources	Selected monitoring stations (**Drawing no. 209506/EMA/WQ/001**)	Contractor	Construction stage	• TM-EIAO; and • WPCO
Landscape and Visual						
S13.8.1.2	The following mitigation measures should be implemented in the construction stage • CM1 – The construction area and contractor's temporary works areas should be minimized to avoid impacts on adjacent landscape. • CM2 – Reduction of construction period to practical minimum. • CM3 – Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where the soil material meets acceptable criteria and where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate. • CM4 – Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).	Minimize effects of landscape and visual impacts	Work site/during construction	Funded and implemented by CEDD	Construction stage	

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	• CM5 – Trees unavoidably affected by the works shall be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. • CM6 – Advance screen planting to proposed roads and associated structures. • CM7 – hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone). • CM8 – Screening of construction works by hoardings/noise barriers around works area in visually unobtrusive colours, to screen Works. • CM9 – Control night-time lighting and glare by hooding all lights. • CM10 – Ensure no run-off into water body adjacent to the Project Area. • CM11 – Avoidance of excessive height and bulk of buildings and structures					
S13.8.1.2	OM1 – Compensatory tree planting for all felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006.	Minimize effects of landscape and visual impacts	Within the site boundary of the proposed works	Funded and implemented by CEDD. Maintained by CEDD and LCSD.	Design, construction and operational stages	
S13.8.1.2	The following mitigation measures should be implemented in the operational stage: • OM2 – A continuous belt of screen planting along the roads. Planting of the belt of trees shall be carried out as advance works ahead of other site formation and building works. • OM3 – Maximise soft landscape of the site, where space permits, roadside berms /slope treatment works should be created. • OM4 – During detailed design, refine structure layout to create a planting strips along the roads to enhance greenery. • OM5 – Use appropriate (visually unobtrusive and	Minimize effects of landscape and visual impacts	CBL and Road D9/during construction and operation	Funded and implemented by CEDD. Maintained by CEDD and LCSD.	Design, construction and operational stages	

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	non-reflective) building materials and colours, and aesthetic design in built structures. • OM6 – Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimizes potential negative landscape and visual impacts. Lighting units should be directional and minimize unnecessary light spill. • OM7 – Avoidance of excessive height and bulk of buildings and structures					
Landfill Gas						
S14.7.5	Precautionary measures The following guidance has been extracted from the EPD's Landfill Gas Hazard Assessment Guidance Note Guidance to ensure a robust and comprehensive set of measures to protect workers are provided. • During all works, safety procedures shall be implemented to minimize the risks of fires and explosions, asphyxiation of workers (especially in confined space) and toxicity effects resulting from contact with contaminated soils and groundwater. • Safety officers who are specifically trained with regard to LFG and leachate related hazards and the appropriate actions to take in adverse circumstances shall be present on all worksites throughout the works. • All personnel who work on site and all visitors to the site shall be made aware of the possibility of ignition of gas in the vicinity of the works, the possible presence of contaminated water and the need to avoid physical contact with it. • Those staff who work in, or have responsibility for "at risk" areas, including all excavation workers, supervisors and engineers working within the consultation zone, shall receive appropriate training on working in areas susceptible to LFG hazards. • Enhanced personal hygiene practices including washing thoroughly after working and eating only in "clean" areas shall be adopted where contact may have been made with any groundwater which is thought to be contaminated with	Health and safety of the workers	Construction sites within 250m Consultation Zone (**Drawing no. 209506/EMA/LFG/001**)	Contractor	Construction stage	• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)

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	leachate. • Ground level construction plant shall be fitted with vertical exhausts at least 0.6m above ground level and with spark arrestors. • During piping assembly or ducting construction, all valves/seals shall be closed immediately after installation. As construction progresses, all valves/seals should be closed as installed to prevent the migration of gases through the pipeline/conduit. All piping /ducting shall be capped at the end of each working day. • Mobile offices, equipment stores, mess rooms etc. shall be located on an area which has been proven to be gas free (by survey with portable gas detectors) and ongoing monitoring shall be carried out to ensure that these areas remain gas free. Alternatively, such buildings shall be raised clear of the ground. If buildings are raised clear of the ground, the minimum, clear separation distance (as measured from the highest point on the ground surface to the underside of the lowest floor joist) shall be 500mm. However, in this case, it is highly recommended that all the site offices, equipment stores and mess rooms should be located outside the 250m Consultation Zone. • Smoking and naked flames shall be prohibited within confined spaces. "No Smoking" and "No Naked Flame" notices in Chinese and English shall be posted prominently around the construction site. Safety notices shall be posted warning of the potential hazards. • Welding, flame-cutting or other hot works may only be carried out in confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Office. The permit to work procedure shall set down clearly the requirements for continuous monitoring of methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure shall also require the presence of an appropriately qualified person who shall be responsible for reviewing the gas measurements as they are made, and who shall have executive responsibility for suspending the work in the event of					

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	unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise shall be permitted to carry out hot works in confined areas. • During the construction works, adequate fire extinguishers and breathing apparatus sets shall be made available on site and appropriate training given in their use.					
S14.7.6	**Landfill gas monitoring** The following monitoring shall be undertaken when construction works are carried out in confined space within the 250m Consultation Zone: • The works area shall be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring requirements and procedures specified in Paragraphs 8.23 to 8.28 of EPD's Guidance Note shall be followed. The monitoring frequency and areas to be monitored shall be set down prior to commencement of the works. Depending on the results of the measurements, actions required will vary. As a minimum these shall encompass the actions specified in Table 14.6 of the EIA report. • When portable monitoring equipment is used, the frequency and areas to be monitored should be set down prior to commencement of the works either by the Safety Officer or by an appropriately qualified person. • All measurements shall be made with the monitoring tube located not more than 10mm from the surface. • A standard form, detailing the location, time of monitoring and equipment used together with the gas concentrations measured, shall be used when undertaking manual monitoring to ensure that all relevant data are recorded. • If methane (flammable gas) or carbon dioxide concentrations are in excess of the trigger levels or that of oxygen is below the level specified in the Emergency Management in the following section, then evacuation shall be initiated.	Health and safety of the workers	Confined space of construction sites within 250m Consultation Zone	Contractor	Construction stage	• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)
S14.7.8-9	**Emergency management** In the event of the trigger levels specified in Table 14.6 of the EIA report being exceeded, a person, such as the Safety	Health and safety of the workers	Confined space of construction sites within 250m Consultation Zone	Contractor	Construction stage	• Landfill Gas Hazard Assessment

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	Officer, shall be nominated, with deputies, to be responsible for dealing with any emergency which may occur due to LFG. In an emergency situation the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas.					Guidance Note (EPD/TR8/97)
S14.7.16	**Protection measures – Operational phase** • An assumed presence of landfill gas shall be adopted at all times by maintenance workers; • all maintenance workers inspecting any manhole shall be fully trained in the issue of LFG hazard; • any manhole which is large enough to permit to access to personnel shall be subject to entry safety procedure; • Code of Practice on Safety and Health at Work in Confined Spaces shall be followed to ensures compliance with the Factories and Industrial Undertakings (Confined Spaces) Regulations of the Factories and Industrial Undertakings Ordinance; • a strictly regulated "work permit procedure" shall be implemented and the relevant safety procedures must be rigidly followed; and • Adequate communication with maintenance staff shall be maintained with respect to LFG.	Health and safety of the workers	Utility maintenance areas within 250m Consultation Zone/during operational period	Utility companies	Operational stage	• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97); and • Code of Practice on Safety and Health at Work in Confined Space
S14.7.17	**General recommended precautionary & protection measures – Operational phase** LGF surveillance exercise shall be undertaken by the utility companies at the utility manholes/inspection chambers. The surveillance exercise shall be undertaken for the duration of the site occupancy, or until such time that EPD agree that surveillance is no longer required and this shall be based on all the available monitoring data for methane, carbon dioxide and oxygen.	Health and safety of the workers	Utility maintenance areas within 250m Consultation Zone/during operational period	Utility companies	Operational stage	• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97); and • Code of Practice on Safety and Health at Work in Confined Space