

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

(JUNE TO AUGUST 2019)

PREPARED FOR CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)

Date	Reference No.	Prepared By	Certified By
25 September 2019	TCS00975/18/600/R0257v1	Http	Am

Martin Li (Environmental Consultant) Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	25 September 2019	First Submission



Acuity Sustainability Consulting Limited – Nature & Technologies (HK) Limited Joint Venture



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

29 November 2019

Dear Sir,

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

I refer to the email of ET concerning the Quarterly EM&A Report for March to May 2019 (Version 3) with Ref. No. TCS00975/18/600/R0201v3. 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 **3rd** Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from *1st* June 2019 to 31st August 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.

Issues	Enviro	Sessions	
Air Quality	1-Hour TSF	51	
Air Quality	24-Hr TSP		16
Construction Noise	Leq (30min) Daytime	13
Construction Noise	Leq (15min		10
Water Quality	Marine Water Sampling ^(Note 1)		38
Inspection / Audit	Contract 1	ET Regular Environmental Site Inspection	13
		Joint site audit with Project Consultant and IEC	3
		ET Regular Environmental Site Inspection	13
	Contract 2	Joint site audit with Project Consultant and IEC	3

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

Note 1 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 ten (10) evening additional construction noise monitoring exceedances were recorded in this Reporting Period. For water quality monitoring, six (6) Action Level and nineteen (19) 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	Monitoring	Action Limit		Event & Action	
Issues	Parameters	Level	Level	Investigation Results	Corrective Actions
Air Quality	1-Hour TSP	0	0		
Air Quality	24-Hr TSP	0	0		
Construction	Leq _{30min} Daytime	0	0		
Noise	Leq _{15min} Evening	0	10	Not project related	NA
Water Onality	DO	3	17	Not project related	NA
Water Quality (Marine Water)	Turbidity	0	0		
	SS	3	2	Not project related	NA

Note: NOE – *Notification of Exceedance*

ES06 For evening construction noise monitoring and marine quality monitoring exceedance recorded in the reporting period, investigations were conducted and it is concluded that the exceedances were 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

Departing		Environn	Related with		
Reporting Period	Contract	Frequency	Cumulative	Complaint Nature	the Works Contract(s)
1 June 2019 –	1	0	1	NA	NA
31 August 2019	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

Departing		Environn	Related with		
Reporting Period	Contract	Frequency	Cumulative	Complaint Nature	the Works Contract(s)
1 June 2019 – 31 August 2019	1	0	0	NA	NA
	2	0	0	NA	NA

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

Departing		Environm	Related with		
Reporting Period	Contract	Frequency	Cumulative	Complaint Nature	the Works Contract(s)
1 June 2019 – 31 August 2019	1	0	0	NA	NA
	2	0	0	NA	NA

SITE INSPECTION BY EXTERNAL PARTIES

ES09 No site inspection was undertaken by EPD and AFCD within the Reporting Period.

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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 **21**st 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 **3**rd Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1**st **June 2019** to **31**st **August 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:-
 - Pre-drilling and piling works at Portion II
 - Welding of steel bracket for precast shell installation at Portion II
 - Preparation of precast shell fabrication at Portion II
 - Precast shell fabrication at Portion II
 - Concrete Work at Portion V & Portion II
 - Piling works at Portion II

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

- 2.2.3 The major construction activities of Contract 2 undertaken in this Reporting Period are:-
 - Pre-drill Work at Portion III & VI
 - Bored Pile Work at Portion III, VI & VII
 - Wheel Washing Bay & Weight Bridge Construction at Portion VI
 - Trial Pit Work at Portion III and VI
 - UU Detection Work at Portion III
 - Excavation Work at Portion III and VI
 - Pre-bored socket H pile at 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*.

Environmental Issue	Parameters
Air Quality	1-hour TSP by Real-Time Portable Dust Meter; and24-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 L₁₀ and L₉₀ shall also be obtained for reference.
Water Quality	 In-situ measurement – Dissolved Oxygen (DO) concentration (mg/L) & saturation (%), pH, Salinity (mg/L), Temperature (°C) and Turbidity (NTU); and Laboratory analysis – SS (mg/L)

Table 3-1 Summary of EM&A Requirements

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)	Under Construction
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 agreed alternative monitoring location for impact air quality and noise monitoring are summarized in Table 3-4 and illustrated in *Appendix D*.

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-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*.

Station	Coord	linates	Description	
Station	Easting	Northing	Description	
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 3-6Action & Limit Levels of Air Quality (1-Hour & 24-Hr TSP)

Monitoring Station	Action Lev	vel (µg /m ³)	Limit Level (µg/m ³)			
Monitoring Station	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 $\times 1.3 + \text{Limit level})/2$						

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

Action Level Limit Level (Leq30min)				
Time Period: 0700-1900 hours on normal weekdays				
When one or more documented complaints are received	75 dB(A)			
	Time Period: 0700-1900 h When one or more documented			

Remarks:

1. Construction noise monitoring will be resumed at the designated locations CNMS-1, 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	Depth Average of SS (mg/L)				
Station	Actie	n Level L		imit Level	
CC1	7.8	OR 120% of upstream control	9.3	OR 130% of upstream control	
CC2	9.0	station at the same tide of the same day	9.2	station at the same tide of the same day	
CC3	8.2	(Control Station C3 at Ebb tide and	9.0	(Control Station C3 at Ebb tide and	
CC4	13.8	Control Station C4 at	15.4	Control Station C4 at	
CC13	8.9	Flood tide), whichever is higher	10.3	Flood tide) , whichever is higher	
SWI1	8	mg/L	10 mg/L		
		Dissolved Oxy	gen (mg/L)		
Monitoring Location	Depth Average of S	Surface and Mid-depth	Bottom		
Location	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	
CC4	5.7	5.7	5.5	5.4	
CC13	5.6	5.5	5.3	5.2	

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Monitoring		Depth Average of SS (mg/L)			
Station	Actio	on Level	Limit Level		
SWI1	5.4	4.8	5.1	5.0	
Monitoring		Turbidity (NTU)			
Location	Actio	on Level	Limit Level		
CC1	5.8	OR 120% of	6.0	OR 130% of	
CC2	4.6	upstream control station at the same	5.5	upstream control station at the same	
CC3	4.8	tide of the same day (Control Station C3	5.4	tide of the same day (Control Station C3	
CC4	6.1	at Ebb tide and	7.1	at Ebb tide and	
CC13	6.0	Control Station C4 at Flood tide),	6.3	Control Station C4 at Flood tide),	
SWI1	6.1	whichever is higher	7.1	whichever is higher	

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, *51* 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*.

Monitoring	1-hour TSP (µg/m ³)			24-hour TSP (µg/m ³)		
Location	Min	Max	Average	Min	Max	Average
AMS-1	49	106	72			
Record Date	24-Jun-19	11-Jul-19	51 events			
AMS-5				60	172	111
Record Date				13-Aug-19	15-Jul-19	16 events

Table 4-1Summary of Air Quality Impact Monitoring Results

- 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 *13* sessions of daytime construction noise monitoring and *10* 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*.

Monitoring	Leq, 30min (dB((A))			
Location	Min	Max	Average	
CNMS-5	62.3	69.4	65.1	
Record Date	12-Jun-19	23-Jul-19	13 events	

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

4.2.2

4.2.3 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		Leq, 15min (dB((A))	
Location	Min	Max	Average
CNMS-5	60.7.0	63.6	61.3
Record Date	7-Aug-19	25-Jun-19	10 events

4.2.4 A total of ten (10) 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 *38* 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*.

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Tid	al	CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
	Average	6.7	6.5	6.7	6.6	6.7	6.9	6.4	6.3	6.7
Mid-Ebb	Min	5.1	5.2	5.4	5.3	5.2	5.4	4.6	4.8	5.3
	Max	10.2	9.2	11.3	9.6	9.6	10.4	8.2	8.4	10.3
	Average	6.8	6.5	6.5	6.6	6.7	7.0	6.4	6.4	6.5
Mid-Flood	Min	5.4	5.1	5.3	5.3	5.5	5.4	5.0	5.2	5.3
	Max	9.5	9.3	8.8	9.6	10.3	10.6	8.6	7.8	9.0

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

Tid	al	CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
	Average	5.6	5.4	5.4	NA	5.6	6.4	5.4	5.4	5.3
Mid-Ebb	Min	4.4	4.5	4.6	NA	4.5	5.0	4.3	4.3	4.6
	Max	7.0	6.1	6.8	NA	6.9	9.4	6.0	6.0	6.2
	Average	5.6	5.4	5.3	NA	5.5	6.3	5.4	5.4	5.4
Mid-Flood	Min	4.8	4.5	4.6	NA	4.8	4.8	4.4	4.3	4.4
	Max	7.5	6.0	6.6	NA	7.1	8.9	6.1	6.3	6.9

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)

Tid	al	CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
	Average	1.3	1.8	1.8	1.4	1.3	1.1	1.9	1.9	1.9
Mid-Ebb	Min	0.4	0.9	0.8	0.6	0.6	0.4	0.7	0.9	0.8
	Max	3.7	3.4	3.2	3.6	4.2	3.8	3.8	3.2	5.0
	Average	1.5	1.9	2.0	1.5	1.5	1.2	1.8	1.7	1.9
Mid-Flood	Min	0.8	0.7	0.7	0.6	0.7	0.4	0.9	0.5	0.6
	Max	3.3	4.4	4.1	4.8	3.4	3.3	3.3	3.6	4.1

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

Tid	al	CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
	Average	4.0	4.2	4.5	4.1	4.2	4.0	4.1	4.3	4.7
Mid-Ebb	Min	1.3	1.5	2.4	1.0	1.6	1.3	1.5	1.5	2.1
	Max	9.0	7.6	9.5	9.3	8.2	8.5	9.7	7.9	7.5
	Average	4.2	4.3	4.6	4.5	4.4	3.9	4.1	4.2	4.8
Mid-Flood	Min	1.8	1.5	1.3	1.6	1.6	1.7	1.5	1.3	1.0
	Max	8.3	10.0	8.9	10.2	8.8	10.8	9.6	10.0	10.6

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 7 mid-de		f Top &	(Bo	Deptn)		Turbidity (Depth Ave)		SS (Depth Ave)		Total Exceedance for the Station	
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	
CC1	0	2	0	2	0	0	0	0	0	4	
CC2	0	2	0	2	0	0	1	0	1	4	
CC3	1	1	0	2	0	0	1	1	2	4	
CC4	0	2	NA	NA	0	0	0	0	0	2	
CC13	1	1	0	2	0	0	0	0	1	3	
SWI1	0	0	1	1	0	0	1	1	2	2	
No of Exceedance	2	8	1	9	0	0	3	2	6	19	



- 4.3.3 In this Reporting Period, a total of six (6) Action Level and nineteen (19) 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*.

Contract Quantity Disposal **Type of Waste** Aug 2019 No Jun 2019 Jul 2019 Location 1 0.354 1.122 1.290 Total Generated C&D TKO 137 Materials (Inert) (in '000m³) 2 1.127 2.468 4.401 1 0 0 0 _ Reused in this Project (Inert) $(in '000m^3)$ 2 0 0 0 -Reused in other Projects 1 0 0 0 -(Inert) 2 0 0 0 _ (in '000m³) Disposal as Public Fill 1 0.354 1.122 1.290 (Inert) **TKO 137** 2 1.127 1.879 4.262 (in '000m³) 0 0 0 1 -Imported Fill ('000m³) 2 0 0.589 0.140 -

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

Table 5-2	Summary of Quantities of C&D Wastes
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Type of Weste	Contract		Quantity		Disposal
Type of Waste	No	Jun 2019	Jul 2019	Aug 2019	Location
Pagualad Matal ('000kg)	1	0	0	0	
Recycled Metal ('000kg)	2	0	0	0	-
Recycled Paper /	1	0.087	0.060	0.075	Licensed
Cardboard Packing ('000kg)	2	0	0	0	collector
Described Plastic ('0001rg)	1	0	0	0	
Recycled Plastic ('000kg)	2	0	0	0	-
Chamical Wastes ('0001cs)	1	0	0	0	
Chemical Wastes ('000kg)	2	0	0	0	-
Canaral Dafusas ('000m ³)	1	0.050	0.095	0.058	NENT
General Refuses ('000m ³)	2	0.019	0.031	0.004	INEINI

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, *14* 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.

Reporting Period	Date of site inspection	Nos. of Findings/ Deficiencies	Follow-Up Status
June 2019	5, 12, 19 & 26 June 2019	8	Completed
July 2019	4, 10, 18 & 25 July 2019	5	Completed
August 2019	1, 7, 14, 22 & 28 August 2019	6	Completed

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

6.2.2 In the Reporting Period, no non-compliance was recorded for Contract 1; however, *19* 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, *14* 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.

Reporting Period	Date of site inspection	Nos. of Findings/ Deficiencies	Follow-Up Status
June 2019	5, 12, 19 & 26 June 2019	4	Completed
July 2019	4, 10, 18 & 25 July 2019	3	Completed
August 2019	1, 7, 14, 22 & 28 August 2019	3	Completed

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

6.2.4 In the Reporting Period, no non-compliance was recorded for Contract 2; however, *10* 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 9-1*.

Table 7-1 Actions in the Event of Landini Gas Deling Detected in Excavations					
Parameter	Limit Level	Actions			
	>10% LEL (i.e.	Post "No Smoking" signs			
	>0.5% by volume)	Prohibit hot works			
Methane		• Ventilate to restore methane to <10% LEL			
Methane	>20% LEL (i.e.	Stop excavation works			
	>1% by volume)	 Evacuate personnel/prohibit entry 			
		• Increase ventilation to restore methane to <10% LEL			
	>0.5%	• Ventilate to restore carbon dioxide to <0.5%			
Carbon	>1.5%	Stop excavation works			
dioxide		• Evacuate personnel/prohibit entry			
		• Increase ventilation to restore carbon dioxide to <0.5%			
	<19%	Ventilation to restore oxygen >19%			
Ovugan	<18%	Stop excavation works			
Oxygen		Evacuate personnel/prohibit entry			
		 Increase ventilation to restore oxygen to >19% 			

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

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 Since the major construction activities under the Project were not yet commenced within the 250m Consultation Zone of Tseung Kwan O Stage II & III Landfill, no landfill gas monitoring was undertaken by the Contractors in the Reporting Period.



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 Environmenta	Complaints
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Departing Davied	Contract	Environmental Complaint Statistics						
Reporting Period	Contract	Frequency	Cumulative	Complaint Nature				
1 – 30 June 2019		0	1	NA				
1 – 31 July 2019	1	0	1	NA				
1 – 30 August 2019		0	1	NA				
1 – 30 June 2019		0	0	NA				
1 – 31 July 2019	2	0	0	NA				
1 – 30 August 2019		0	0	NA				

Table 8-2 Statistical Summary of Environmental Summons

Donorting Doriod	Contract	Environmental Complaint Statistics						
Reporting Period	Contract	Frequency	Frequency Cumulative					
1 – 30 June 2019		0	0	NA				
1 – 31 July 2019	1	0	0	NA				
1 – 30 August 2019		0	0	NA				
1 – 30 June 2019		0	0	NA				
1 – 31 July 2019	2	0	0	NA				
1 – 30 August 2019		0	0	NA				

Reporting Period	Contract	Environmental Complaint Statistics						
	Contract	Frequency	Cumulative	Complaint Nature				
1 – 30 June 2019		0	0	NA				
1 – 31 July 2019	1	0	0	NA				
1 – 30 August 2019		0	0	NA				
1 – 30 June 2019		0	0	NA				
1 – 31 July 2019	2	0	0	NA				
1 – 30 August 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*.

Issues	Environmental Mitigation Measures
Construction	• Regularly to maintain all plants, so only the good condition plants were used
Noise	 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;
There is a second se	 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	• Excavated material reused on site as far as possible to minimize off-site disposal.
Chemical	• Scrap metals or abandoned equipment should be recycled if possible;
Management	• 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.
	· mosquito control is performed to prevent mosquito breeding of site.

 Table 9-1
 Environmental Mitigation Measures in the Reporting Period



10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

- 10.1.1 This is the 3rd Quarterly EM&A report as presented the monitoring results and inspection findings for the reporting period from 1st June 2019 to 31st August 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, ten (10) 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, six (6) Action Level and nineteen (19) 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.

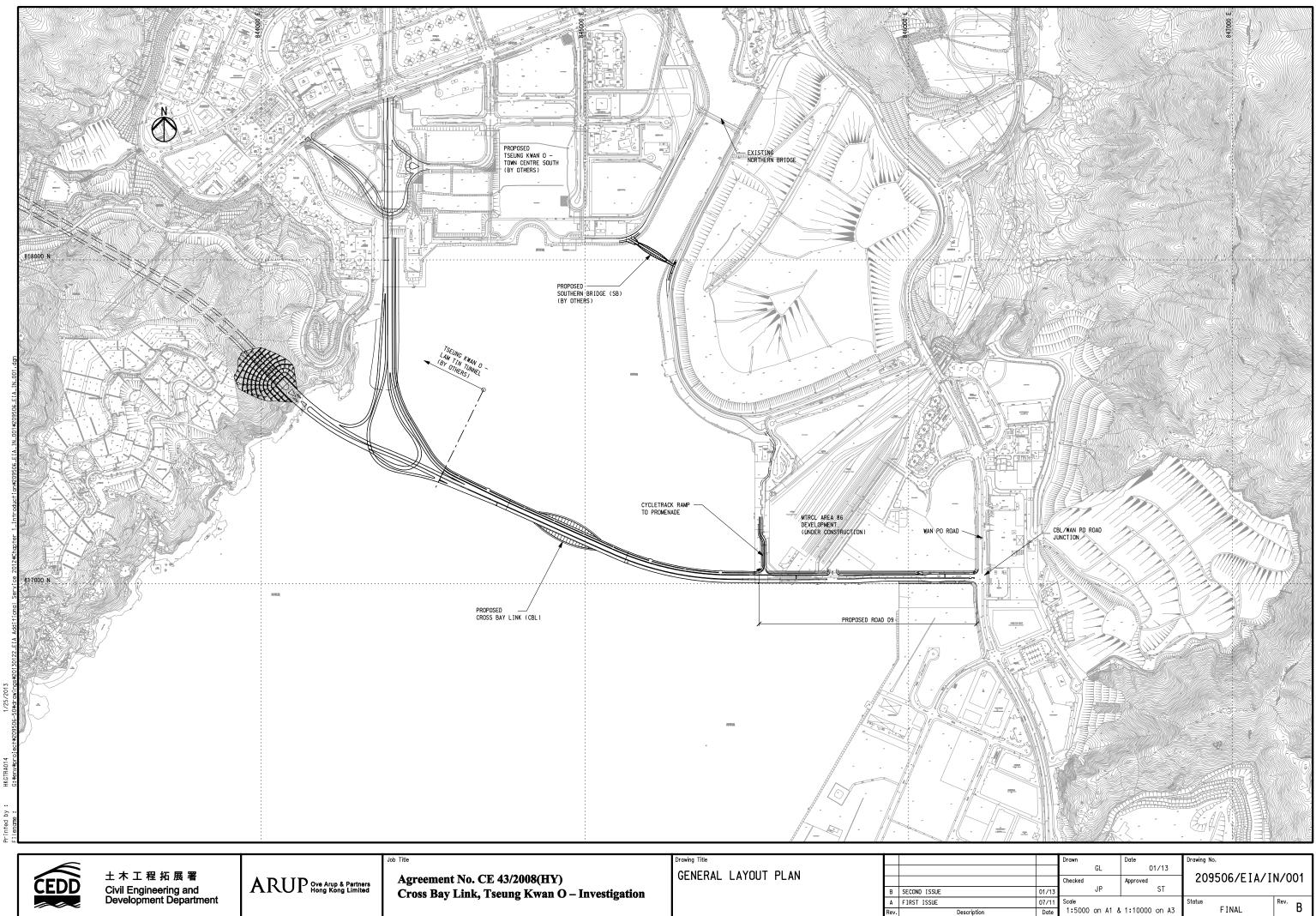
10.2 RECOMMENDATIONS

- 10.2.1 Due to wet season has approached, the Contractor was reminded that all the works to undertaking must be fulfill environmental statutory requirement, especially water quality mitigation measures to prevent surface runoff into nearby water bodies or public areas.
- 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.

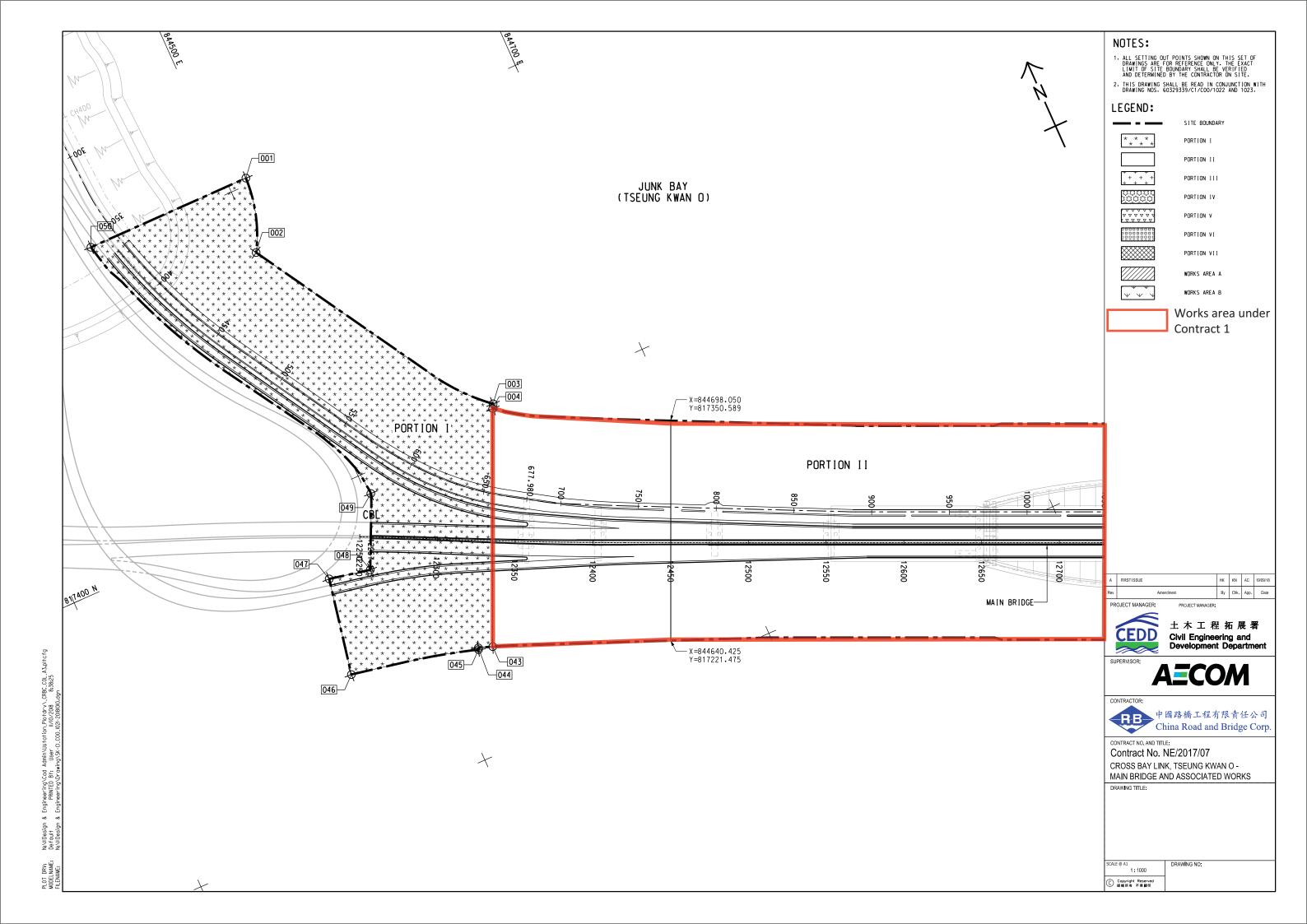


Appendix A

Project Layout Plan

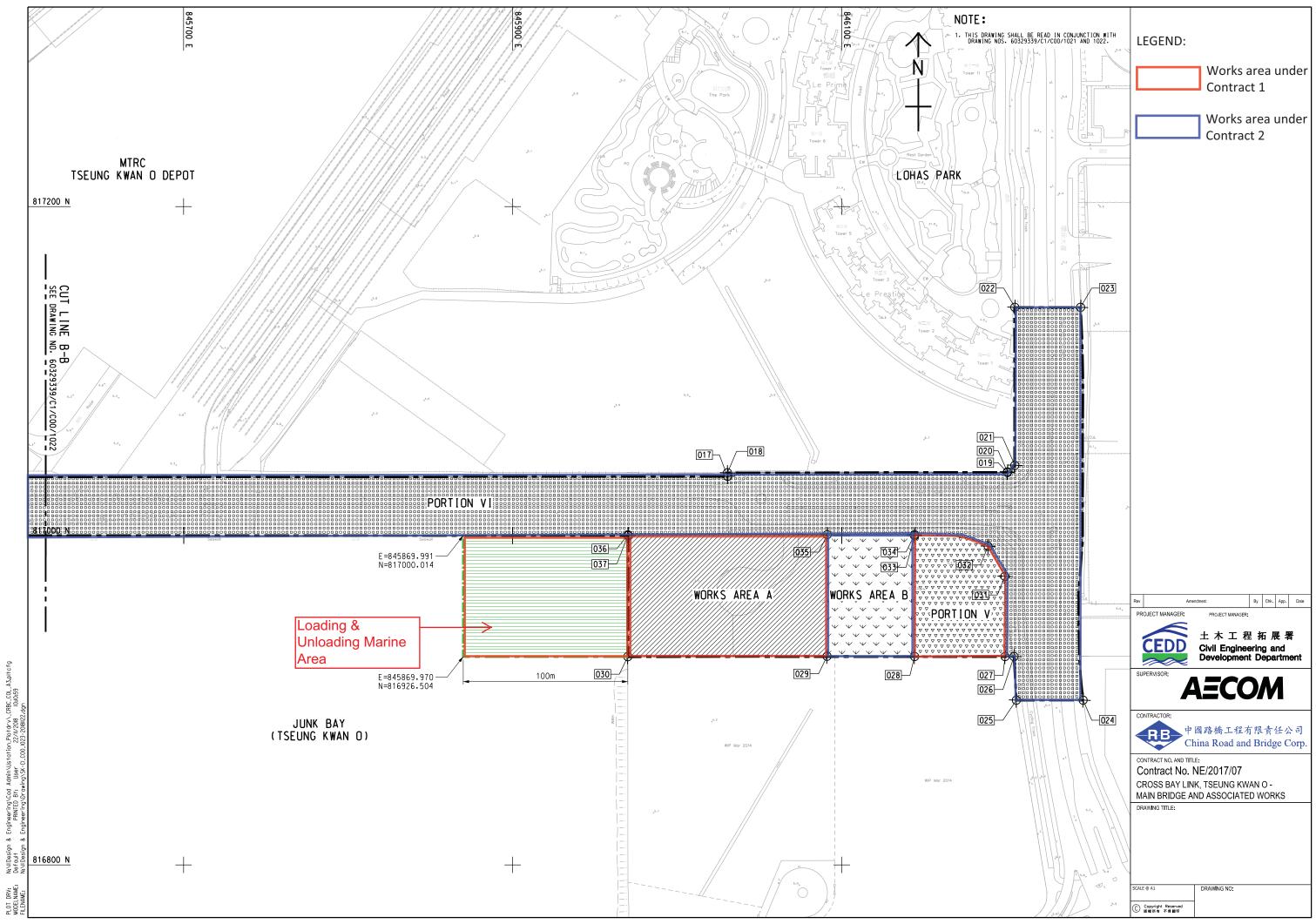


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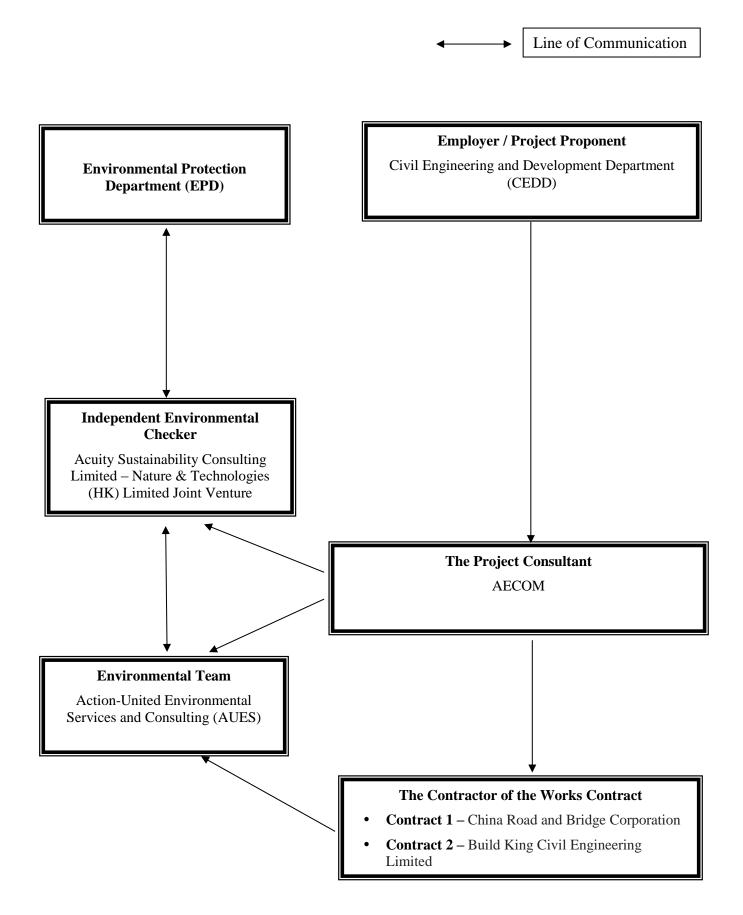


Appendix B

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



Project Organization Structure





Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Project Proponent	C.K. Lam	2301 1398	2714 5174
CEDD	Project Proponent	Galen Tse	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	6026 5971	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	Chris Cheng	9487 8108	TBA
Build King	Environmental Supervisor	Anthony Chan	6704 4800	TBA

Contact Details of Key Personnel for the Project

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

Page: 1

	ActivityName	Original Duration	Remaining Duration Start	Planned Start	Finish	Planned Finish	Total Float /	Activity% Complete TRA Variance -	Finish Date	August2019 September 2019 04 11 18 25 01 08 15
ross <u>Bay Lin</u>	k,Tseung Kwan O Main Bridge and Associated Works Aug -19 Piling Sequen	1484	1011 29-Jun-18 A	29-Jun-18	14-May-22	21-Jul-22	274		68	
	mmary Programme	1484	1011 29-Jun-18 A	29-Jun-18	14-May-22	21-Jul-22	-91		68	
	2 of Works-All Works within Portion II.III.IV and VI	1240	1011 17-Sep-18 A	28-Feb-19	14-May-22	21-Jul-22	-91		68	
ESP10920	CBL Main Bridge and Marine Viaduct	1240	1011 17-Sep-18 A	28-Feb-19	14-May-22	21-Jul-22	-91	18.47% 0	68	
ESP10960	Piling Works	671	208 17-Nov-18 A	18-Apr-19	02-Mar-20	16-Feb-21	85	69% 0	351	
ESP10980 ESP11160	Pile Cap E&M Works for CBL Main Bridge and Marine Viaduct	321 962	311 23-Jul-19 A 962 26-Sep-19	08-Jul-19 30-Sep-19	13-Jun-20 14-May-22	02-Jun-20 14-May-22	-91	3.12% 0 0% 0	-11	
	5 of the Works-All Works within Portion V (CBL E&M Plantroom)	264	150 01-Apr-19 A	16-Apr-19	04-Jan-20	16-Dec-19	32	070	-19	
ESP11260	Structural Works	232	94 01-Apr-19 A	16-Apr-19	09-Nov-19	03-Dec-19	28	59.48% 0	24	
ESP11280	Architectural & External Works	55	55 11-Nov-19	25-Oct-19	04-Jan-20	16-Dec-19	32	0% 0	-19	
	s, Contractor's Design & Method Statement Submission & Approval	1105 695	700 29-Jun-18 A	29-Jun-18	07-Jul-21	04-Jun-21	19	20.78% 0	-33	
ESP10400 ESP10420	Temporary Works Design Method Statement Submission for Major Construction Works	736	488 13-Aug-18 A 532 27-Aug-18 A	13-Aug-18 27-Aug-18	07-Dec-20 20-Jan-21	07-Jul-20 31-Aug-20	29	29.78% 0 27.72% 0	-153 -142	
ESP10440	Contractor's Design Submission and Approval	869	629 06-Aug-18 A	06-Aug-18	27-Apr-21	21-Dec-20	90	27.62% 0	-127	
ESP10460 ESP10480	Alternative Design Submission and Approval General Submission	397 843	7 07-Aug-18 A 438 29-Jun-18 A	07-Aug-18 29-Jun-18	14-Aug-19 18-Oct-20	07-Sep-19 18-Oct-20	146 58	98.24% 0 48.04% 0	24	Alternative Design Submission and Approval
ESP10500	Project Manager's Acceptance of Subcontractors	556	208 14-Aug-18 A	21-Feb-19	02-Mar-20	29-Aug-20	346	62.59% 0	180	
ESP10560	Procurement, Factory Acceptance Test, Delivery and Temporary Storage of Major E&M Equipment	637 745	637 10-Oct-19	10-Oct-19	07-Jul-21	04-Jun-21	-17	0% 0 29.66% 0	-33 119	
ESP10600 ESP10620	Precasting of Precast Shell Fabrication of Precast Box Girder	713	524 08-Nov-18 A 528 10-Nov-18 A	28-Apr-19 13-May-19	12-Jan-21 16-Jan-21	11-May-21 24-Apr-21	155	29.66% 0 25.95% 0	98	
ESP10640	Fabrication of Steel Arch Bridge and Side Spans	623	483 28-Mar-19 A	08-Apr-19	02-Dec-20	20-Dec-20	-34	22.47% 0	18	
W, NCE, CE	and PMI	0	0 18-Jan-19 A		08-Aug-19		1285			EW, NCE, CE and PMI
Early Warnin	ig EW	0	0 18-Jan-19 A		15-Jul-19 A				ng EW	
EW0341	EW014 - No Early access to Contract Road P2 and Contract 6	0	0 18-Jan-19 A					100%		
EW0361 EW0381	EW015 - Delay due to design and Production of the Mastic Asphalt and the 11mm Stone Mastic Asphalt EW016 - Delay due to Late Subcontracting Work for Main Arch Bridge and Steel Side Span	0	0 18-Jan-19 A 0 15-Feb-19 A					100%		
EW0401	EW017 - Late Issuance of Operating License of 1000t Crane Bridge for Precast Shell Installation	0	0 14-Jun-19 A					100%		for Precast Shell Installation
EW0421	EW018 - Cable Hanger Connection Details	0	0 28-Jun-19 A					100%	on Details	l Erection of Steel Bridge in Typhoon Season
EW0441 Notification	EW019 -Transportation and Erection of Steel Bridge in Typhoon Season of Compensation Event NCE	0	0 15-Jul-19 A 0 11-Jun-19 A		08-Aug-19		1285	100%	ansportation and	Notification of Compensation Event NCE
NCE0441	NCE023 - Testing of Prestressing Strands, Bolts and Nuts - Duration Required by the Public Works Laboratori	0	0 11-Jun-19 A					100%	s - Duration Rec	quired by the Public Works Laboratories
NCE0461	NCE024 - Change in Works Information arisen from Project Manager's Response to Request for Information	0	0 12-Jun-19 A					100%		s Response to Request for Information (RFI-00128)
NCE0501 NCE0521	NCE026 - Inconsistency in strength requirement of grout used to fill core holes (RFI-00207) NCE027 - Change in Works Information arisen from Project Manager's Responses to Requests for Informatio	0	0 14-Jun-19 A 0 19-Jun-19 A					100%		core holes (RFI-00207) Manager's Responses to Requests for Information (RFI-001
NCE0521 NCE0541	NCE027 - Change in works information arisen non rolect wanager's responses to reduces for minimato NCE028 - Inconsistency among Works Information with respect to civil works provisions for TCSS (RFI-000)		0 17-Jul-19 A					100%	- Inconsistency	among Works Information with respect to civil works prov
NCE0561	NCE029 - Change in Works Information arisen from Project Manager's Responses to Requests for Informatio		0 04-Jul-19 A				1005	100%	ks Information a	 arisen from Project Manager's Responses to Requests for I NCE030 - Weather Conditions (Rainstorm Warnings)
NCE0581 NCE0601	NCE030 - Weather Conditions (Rainstorm Warnings) affecting the Site in June 2019 NCE031 - Increased Premium of Employees' Compensation Insurance	0	0 08-Aug-19 0 15-Jul-19 A				1285	0%	ncreased Premi	um of Employees' Compensation Insurance
NCE0621	NCE032 - Addition of B283 mesh to all exposed face of draw pit (RFI-00068A)	0	0 17-Jul-19 A					100%	- Addition of B	283 mesh to all exposed face of draw pit (RFI-00068A)
NCE0641	NCE033 - Revised Setting - out of Box Girder W5-W4 (Response to RFI-00079A)	0	0 01-Aug-19 A		05 4 10 4			100%		033 - Revised Setting - out of Box Girder W5-W4 (Respo Compensation Event (CE)
Ceonpensation CE0161	on Event (CE) CE010 - Electronic Site Inspection System (ESIS)	0	0 11-Jul-19 A 0 16-Jul-19 A		05-Aug-19 A			100%		Ispection System (ESIS)
CE0181	CE010 - Electronic Site hispection System (ESIS) CE011 - Deeper Rockhead Level as Revealed by Marine GI (PD-E1-P8)	0	0 10-Jul-19 A 0 11-Jul-19 A					100%		as Revealed by Marine GI (PD-E1-P8)
CE0201	CE012 - Provision of Additional Office Equipment and Computer Facilities for Additional Resident Site Staff	0	0 16-Jul-19 A					100%		itional Office Equipment and Computer Facilities for Addi
CE0221 CE0241	CE013 - Determination of Bond Property of Steel Reinforcing Bars by Surface Geometry Duration	0	0 27-Jul-19 A					100%		etermination of Bond Property of Steel Reinforcing Bars by of Stainless Steel Reinforcing Bars Duration Required at the
CE0241 CE0261	CE014 - Testing of Stainless Steel Reinforcing Bars Duration Required at the Public Works Laboratories CE015 - Change in Works Information arisen form Project Manager's Response to Request for Information (R		0 23-Jul-19 A 0 05-Aug-19 A					100%		CE015 - Change in Works Information arisen form Projec
CE0281	CE016 - Testing of Couplers to AC133 Duration Required at the Public Works Laboratories	0	0 05-Aug-19 A					100%		CE016 - Testing of Couplers to AC133 Duration Required
CE0301	CE017 - Testing of Prestressing Strands, Bolts and Nuts - Duration Required by the Public Works Laboratories	0 45	0 05-Aug-19 A 45 10-Oct-19	10-Oct-19	30-Nov-19	30-Nov-19	15	100%	0	CE017 - Testing of Prestressing Strands, Bolts and Nuts -
	Factory Acceptance Test, Delivery and Temporary Storage of Major E&M Equip	45	45 10-Oct-19	10-Oct-19	30-Nov-19	30-Nov-19	15			
Procuremen P-PC10120	Procurement of LV Switch Board	45	45 10-Oct-19 45 10-Oct-19	10-Oct-19	30-Nov-19	30-Nov-19 30-Nov-19	15	0% Procu	0	
P-PC10120 P-PC10160	Procurement of Lv Switch Board Procurement of Genset	30	30 10-Oct-19	10-Oct-19	13-Nov-19	13-Nov-19	15	0% Procu	0	
reliminaries,	Contractor's Design & Method Statement Submission & Approval	353	231 28-Mar-19 A	08-Apr-19	25-Mar-20	25-Mar-20	83		0	
	Vorks Design	239	198 06-Jun-19 A	21-Jun-19	25-Mar-20	25-Mar-20	71		0	
TDS2010	Formwork design for V-shaped pier and crossbeam construction (incl. 21 days TRA)	63	11 06-Jun-19 A	21-Jun-19	20-Aug-19	02-Sep-19	21	82.54% Design	11	Formwork design fo
TDS2020	Temporary falsework design for V-shaped pier and crossbeam construction (incl. 21 days TRA)	36 63	36 27-Aug-19	03-Aug-19	07-Oct-19	07-Oct-19	21	0% Design	0	
TDS2080 TDS2140	Design of lifting frame for full-span lifting of precast box girder (incl. 35 days TRA) Design of temporary works for superstructure of steel bridge (incl. 35 days TRA)	141	63 10-Sep-19 141 14-Oct-19	10-Sep-19 14-Oct-19	21-Nov-19 25-Mar-20	21-Nov-19 25-Mar-20	178 70	0%	0	
TDS2160	Steel mould design for precast segments of TKOI viaducts (incl. 21 days TRA)	63	63 08-Aug-19	08-Jul-19	19-Oct-19	18-Sep-19	-14	0% Design	-27	
TDS2180	Design of Pier bracket for erection of pier-head segments (incl. 21 days TRA) ement Submission for Major Construction Works	56 185	56 21-Oct-19 96 28-Mar-19 A	19-Sep-19 26-Apr-19	24-Dec-19 27-Nov-19	22-Nov-19 26-Oct-19	-14 172	0%	-27	
MDS1135	Method statement submission for geometry control (incl. 21 days TRA)	67	15 28-Mar-19 A	26-Apr-19	24-Aug-19	12-Jul-19	-8	77.61% struction	-37	Method statement submission fo
MDS1140	Method statement submission for geometry control (net. 21 days TRA) Method statement submission for assembly of steel arch bridge (incl. 35 days TRA)	96	96 08-Aug-19	08-Jul-19	27-Nov-19	26-Oct-19	172	0% struction	-27	
Contractor's	Design Submission and Approval	241	169 15-Apr-19 A	28-May-19	23-Jan-20	23-Jan-20	4		0	
CDS1040	Design of arch rib inspection cradle + Under bridge gantry	86	86 08-Aug-19	30-Sep-19	15-Nov-19	07-Jan-20	-35	0% 0	45	
CDS1060 CDS1080	Design of access facilities (incl. 14 days TRA) Design of Tuned Mass Damper(TMD) (incl. 7 days TRA)	125 150	42 05-May-19 A 83 15-Apr-19 A	28-May-19 08-Jul-19	25-Sep-19 12-Nov-19	19-Oct-19 28-Dec-19	21	66.4% Design 44.67% Design	21	:
CDS1080	Design of de-humidification system	83	83 10-Oct-19 A	10-Oct-19	14-Jan-20	14-Jan-20	-33	0% 0	0	
CDS1160	Design of Electrical system for the E&M plant room	100	100 30-Sep-19	30-Sep-19	07-Jan-20	07-Jan-20	-38	0% 0	0	
CDS1180 CDS1200	Design of Building Services system for the E&M plant room Design of Structural health monitoring system (incl. 14 days TRA)	100 172	100 10-Sep-19 145 12-Jun-19 A	10-Sep-19 08-Jul-19	18-Dec-19 23-Jan-20	18-Dec-19 23-Jan-20	-38	0% 0 15.7% Design	0	
	Design Submission and Approval	111	6 30-Mar-19 A	08-Apr-19	14-Aug-19	14-Aug-19	125	15.776 Design	0	Alternative Design Submission and Approval
ADS1030	DDA submission for bridge deck of entrusted works of TKOI Viaduct (incl. 35 days TRA)	111	6 30-Mar-19 A	08-Apr-19	14-Aug-19	14-Aug-19	125	94.59% Design	0	DDA submission for bridge deck of entrusted
	s,Submission, Subcontracting and Procurement	205	83 28-Mar-19 A	08-Apr-19	29-Oct-19	29-Oct-19	231		0	
General Sub	mission	140	38 28-Mar-19 A	08-Apr-19	14-Sep-19	25-Aug-19	-30		-20	Gen
P-GS1480		140	38 28-Mar-19 A	08-Apr-19	14-Sep-19	25-Aug-19	-30	72.86% Design	-20	Stee
	ager's Acceptance of Subcontractors	102	83 19-Jul-19 A	15-Jul-19	29-Oct-19	29-Oct-19	231	001 77 11 -	0	Transportation and installation of a state is a
P-SP1400 P-SP1440	Transportation and installation of precast box girder Transportation and installation of steel side spans and steel arch bridge	0	0		08-Aug-19 06-Aug-19 A	30-Jul-19 31-Jul-19	99	0% PMAS 100% PMAS	-8 0	 Transportation and installation of precast box girder Transportation and installation of steel side spans and steel
P-SP1440 P-SP1500	R.C. structure for pilecap,pier and in-situ deck	0	0		01-Aug-19 A	15-Jul-19		100% PMAS		structure for pilecap,pier and in-situ deck
					~				1	Data
Dom	naining Level of Effort 🛛 🔜 Remaining Work 🔶 🔶 Mi	lestone				CRBC				Date Re
Ren	ъ така стана и на								100	Aug 10 Manthhundatad an 0 Au
		mmary		-	Three Mont		D		00	-Aug-19 Monthly updated on 8 Au

October 2019			November 2019
22 29 06 13	20 27	03	10 17 24
			C 111/1
			Structural Works
ns for TCSS (RFI-00068)			
nation (RFI-00133)			
ting the Site in June 2019			
o RFI-00079A)			
l Resident Site Staff			
face Geometry Duration			
Iblic Works Laboratories			
nager's Response to Request for Infor	mation (RFI-0	0128)	
ne Public Works Laboratories ation Required by the Public Works La	borntorios		
iuon Required by the Fubic Works La	iooraiories		
			Procurement of Gens
haped pier and crossbeam constructio	n (incl. 21 day	s TRA)	
			pier and crossbeam construe
1 ,	6	1 -	Design of
			-
	Steel mould de	sign for pre	ecast segments of TKOI viad
			M
ometry control (incl. 21 days TRA)			
			Me
	Design of acce	ss facilities	(incl. 14 days TRA)
ks of TKOI Viaduct (incl. 35 days TR	A)		
		reliminaries	Submission, Subcontracting
Submission			,, <u></u> contacting
Submission	1	1 - 1	
n bridge shop drawings submission a			
		ioject Mana	iger's Acceptance of Subcont
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h bridge			
ion	Chec	ked	Approved
		u	Appioved
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	1		

Page: 2

	ActivityName	Original Rem Duration	aining Duration Start	Planned Start	Finish	Planned Finish	Total Float	ctivity%Complete TRA Varia	ance - Finish Date	28 04 11	just2019 18 25	September 2019 01 08 15
P-SP1540	Waterproofing Works	0	0		30-Sep-19	30-Aug-19	260	0% PMAS	-31	20 04 11	18 25	ci ou io
P-SP1560-0	Supply and installation of steel parapet and sign gantry	0	0		29-Oct-19	29-Oct-19	-75	0% PMAS	0		Ť	
	Supply and installation of under bridge mobile gantry	0	0		19-Jul-19 A	29-Sep-19		100% PMAS	72 72			
	Design, supply and installation of arch inspection cradle Design, supply and installation of SCADA (SP-021)	0	0		19-Jul-19 A 29-Sep-19	29-Sep-19 29-Sep-19	-45	100% PMAS 0% PMAS	0			
SP1700	Electrical installation works for CBL Main bridge and Marine Viaduct (SP-021)	0	0		29-Sep-19	29-Sep-19	-45	0% PMAS	0			
	Building services for E&M plantroom(SP-021)	0	0	00 1 10	29-Sep-19	29-Sep-19	-38	0% PMAS	0			
	abrication Works	297	167 08-Dec-18 A	08-Apr-19	21-Jan-20	24-Jan-20	77		3			
	Precast Shell and Precast Segments	175	140 25-Jul-19 A	08-Jul-19	25-Dec-19	29-Dec-19	97		4			
cast Shell		175	140 25-Jul-19 A	08-Jul-19	25-Dec-19	29-Dec-19	97		4		-	_
BL - Batch		75	75 08-Aug-19	08-Jul-19	21-Oct-19	20-Sep-19	11		-31			
	Fabrication of Shell E1 (1/2) + Modification of Casting Bed (2 weeks) Fabrication of Shell E1 (2/2) + Modification of Casting Bed (2 weeks)	55 55	55 08-Aug-19 55 28-Aug-19	08-Jul-19 28-Jul-19	01-Oct-19 21-Oct-19	31-Aug-19 20-Sep-19	11	0% struction 0% struction	-31			
BL - Batch		69	69 04-Aug-19 A	16-Sep-19	24-Dec-19	23-Nov-19	84	070 silucuon	-31	-		
P-PS3068	Fabrication of Shell W1 (1/2)	28	28 17-Oct-19	16-Sep-19	13-Nov-19	13-Oct-19	51	0%	-31			
	Fabrication of Shell W1 (2/2)	28	28 09-Nov-19	09-Oct-19	06-Dec-19	05-Nov-19	51	0%	-31			
P-PS3138 BL - Batch	Fabrication of Shell E2	28 28	28 04-Aug-19 A 0 25-Jul-19 A	27-Oct-19 02-Dec-19	24-Dec-19 08-Aug-19 A	23-Nov-19 29-Dec-19	84	0%	-31	CBL-I	Batch 4 (2nos.)	
	Fabrication of Shell W4	28	0 25-Jul-19 A	02-Dec-19	08-Aug-19 A	29-Dec-19		100%	143			
	W1 Side Shells (4nos.)	140	140 08-Aug-19	15-Jul-19	25-Dec-19	01-Dec-19	104		-24			
	Casting Bed Preparation for Side Shells (small) - Additional Casting Beds	60	60 08-Aug-19	15-Jul-19	06-Oct-19	12-Sep-19	70	0% struction	-24			
	Fabrication of Side Shells (small) x2 Sides E1 Fabrication of Side Shells (small) x2 Sides W1	40 40	40 07-Oct-19 40 16-Nov-19	13-Sep-19 23-Oct-19	15-Nov-19 25-Dec-19	22-Oct-19 01-Dec-19	70	0%	-24			
	Precast Box Girder	225	40 10-N0V-19 153 08-Dec-18 A	23-Oct-19 28-May-19	07-Jan-20	01-Dec-19 01-Jan-20	46		-24			
	Setting Up Precasting Yard for Box Girder - Stage 2 (Storage)	120	48 08-Dec-18 A	28-May-19	24-Sep-19	24-Sep-19	151	60% struction	0			
G1435	Design, Procurement and Delivery of Structure Health Monitoring Sensors for Box Griders	80	30 12-Jun-19 A	08-Jul-19	06-Sep-19	25-Sep-19	21	62.5% imercial	19			
	brication - 1st Batch (8 Pieces)	218	153 28-May-19 A	04-Jun-19	07-Jan-20	01-Jan-20	21		-6			
	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span W4-W5(North)	75 75	31 28-May-19 A 46 05-Jun-19 A	04-Jun-19 08-Jul-19	07-Sep-19	17-Aug-19 20 Sep 10	47 28	58.67% struction 38.67% struction	-21			Fabrication of Precast
	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span E4-E5(North) Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span W3-W4(South)	75	46 05-Jun-19 A 75 11-Aug-19	08-Jul-19 05-Aug-19	22-Sep-19 24-Oct-19	20-Sep-19 18-Oct-19	28	0% struction	-2 -6			
-BG1384	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span E5-E6 (North)	75	75 05-Sep-19	30-Aug-19	18-Nov-19	12-Nov-19	21	0% 0	-6		_	
	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span W4-W5(South) Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span E6-E7(South)	75 75	75 30-Sep-19 75 25-Oct-19	24-Sep-19 19-Oct-19	13-Dec-19 07-Jan-20	07-Dec-19 01-Jan-20	21 21	0% 0 0% 0	-6			-
	Process Pier	167	167 08-Aug-19	16-Jul-19	21-Jan-20	29-Dec-19	21	0% 0	-0	· · · · · ·		
	Setting up precasting yard for precast pier (incl. 18 days TRA)	87	87 08-Aug-19	16-Jul-19	02-Nov-19	10-Oct-19	1	0% struction	-23			
	Fabrication of Precast pier (1st batch 4 nos) - E4, E5, E6, E7	99	99 15-Oct-19	22-Sep-19	21-Jan-20	29-Dec-19	1	0% 0	-23			_
cation of	Steel Arch Bridge and Side Spans	292	133 28-Mar-19 A	08-Apr-19	18-Dec-19	24-Jan-20	8		37			
rication of	Steel Arch Bridge	292	133 28-Mar-19 A	08-Apr-19	18-Dec-19	24-Jan-20	8		37			
	1st batch of shop drawing submission & approval (NCE 014)(EW014)	50	2 28-Mar-19 A	08-Apr-19	09-Aug-19	27-May-19	-90	96% struction	-74	1st ba	tch of shop drawing st	submission & approval (NCE 014
	Setting up steel work fabrication yard	60 65	60 20-Sep-19 65 29-Jun-19 A	20-Sep-19 21-Nov-19	18-Nov-19 03-Dec-19	18-Nov-19 24-Jan-20	-95 23	0% 0 0% struction	0			
	Remaining shop drawing submission & approval (NCE 014) Procurement and delivrey of welding materials	90	29 06-Jun-19 A	08-Jun-19	05-Sep-19	05-Sep-19	-95	67.78% struction	0	-		Procurement and delivre
PF1050	Procurement and delivery of steel material (incl. 35 days TRA)	125	61 19-Apr-19 A	12-Jun-19	09-Oct-19	14-Oct-19	-90	51.2% struction	5			
	1st batch of on site material sampling & testing	20	15 25-Jun-19 A	10-Oct-19	24-Oct-19	29-Oct-19	-90	25% 0	5			
	Welding Procedure trials Pre-production Trials (e.g. Flame Cutting)	90 10	59 29-Jun-19 A 10 15-Oct-19	06-Aug-19 20-Oct-19	03-Nov-19 24-Oct-19	03-Nov-19 29-Oct-19	-95 -90	34.44% 0 0%	5			
	Material Pre-Treatment	50	50 30-Oct-19	30-Oct-19	18-Dec-19	18-Dec-19	-95	0%	0			
n 2 of Wo	orks-All Works within Portion II,III,IV and VI	427	315 23-Nov-18 A	18-Apr-19	17-Jun-20	08-Aug-20	68		52		-	
. Main Brid	Ige and Marine Viaduct	427	315 23-Nov-18 A	18-Apr-19	17-Jun-20	08-Aug-20	68		52			
ing Works		254	142 23-Nov-18 A	18-Apr-19	27-Dec-19	07-Feb-20	109		42			
	Procurement and delivery of steel casing (CE004)(CE005)(CE006)(CE008)(NCE 018 & 019)	75	1 23-Nov-18 A	18-Apr-19	08-Aug-19	01-Jul-19	31	98.67% struction	-38	⁰ Procure	ment and delivery of	steel casing (CE004)(CE005)(CE
	for Pier W4	56	56 26-Jul-19 A	29-Nov-19	02-Oct-19	07-Feb-20	195		128			
S2-PW50 Pile W4-P1	Piling platform installation -W4	4	0 26-Jul-19 A 7 29-Jul-19 A	29-Nov-19 04-Dec-19	29-Jul-19 A 15-Aug-19	03-Dec-19 14-Dec-19	21	100% 0	107		Pile W4-P1	
	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P1	3	0 29-Jul-19 A	04-Dec-19	29-Jul-19 A	06-Dec-19	21	100% 0	101			
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 08-Aug-19	07-Dec-19	12-Aug-19	11-Dec-19	17	0% 0	101			
S2-PW: Pile W4 -P2	Install steel cage and concreting -W4-P1	3	3 13-Aug-19 7 29-Jul-19 A	12-Dec-19 07-Dec-19	15-Aug-19	14-Dec-19	21	0% 0	101		Pile W4 -P2	
	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P2	3	7 29-Jul-19 A 0 29-Jul-19 A	07-Dec-19 07-Dec-19	20-Aug-19 29-Jul-19 A	19-Dec-19 10-Dec-19	20	100% 0	101		1 10 104 -12	
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 13-Aug-19	12-Dec-19	16-Aug-19	16-Dec-19	17	0% 0	101		•	
	Install steel cage and concreting -W4-P2	3	3 17-Aug-19	17-Dec-19	20-Aug-19	19-Dec-19	20	0% 0	101		Pile W4	L_P3
Pile W4 -P3	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P3	7 3	7 29-Jul-19 A 0 29-Jul-19 A	11-Dec-19 11-Dec-19	24-Aug-19 29-Jul-19 A	24-Dec-19 13-Dec-19	19	100% 0	101 115		· rile w4	1.7
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 17-Aug-19	17-Dec-19	21-Aug-19	20-Dec-19	17	0% 0	101			
S2-PW:	Install steel cage and concreting -W4-P3	3	3 22-Aug-19	21-Dec-19	24-Aug-19	24-Dec-19	19	0% 0	101			21. 3374 D4
Pile W4 -P4	Drive Cooling & Cards to execute the soil (40 Arr Land) WA DA	7	7 30-Jul-19 A	14-Dec-19	29-Aug-19	31-Dec-19	18	1009/ 0	101			Pile W4 -P4
	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P4 Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	3 4	0 30-Jul-19 A 4 22-Aug-19	14-Dec-19 21-Dec-19	30-Jul-19 A 26-Aug-19	17-Dec-19 27-Dec-19	17	100% 0 0% 0	118 101			
	Install KCD and excavate the tock under tockhead lever to founding lever (4m socket) - ing 100.1 & an inting - Install steel cage and concreting -W4-P4	3	3 27-Aug-19	28-Dec-19	29-Aug-19	31-Dec-19	18	0% 0	101			
Pile W4 -P5		8	7 30-Jul-19 A	18-Dec-19	03-Sep-19	06-Jan-20	17		101			Pile W4 -P5
	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P5	3 4	0 30-Jul-19 A	18-Dec-19	30-Jul-19 A	20-Dec-19	17	100% 0	120	•	_	
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting - Install steel cage and concreting -W4-P5	3	4 27-Aug-19 3 31-Aug-19	28-Dec-19 03-Jan-20	30-Aug-19 03-Sep-19	02-Jan-20 06-Jan-20	17	0% 0 0% 0	101			:
Pile W4 -P6		4	4 04-Sep-19	10-Jan-20	07-Sep-19	14-Jan-20	17		104			Pile W4 -P6
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	1	1 04-Sep-19	10-Jan-20	04-Sep-19	10-Jan-20	17	0% 0	104			· •
S2-PW: Testing	Install steel cage and concreting -W4-P6	3 21	3 05-Sep-19 21 09-Sep-19	11-Jan-20 15-Jan-20	07-Sep-19 02-Oct-19	14-Jan-20 07-Feb-20	17 167	0% 0	104			
_ •	Sonic Test, interface core and full core for bored pile -W4	21	21 09-Sep-19 21 09-Sep-19	15-Jan-20 15-Jan-20	02-Oct-19	07-Feb-20 07-Feb-20	167	0% 0	110			
iling Works		74	74 09-Sep-19	26-Aug-19	21-Nov-19	07-Nov-19	20		-14			·
	Piling platform installation -E2 (CE006)	4	4 09-Sep-19	26-Aug-19	12-Sep-19	29-Aug-19	17	0% 0	-12			Piling platform
Pile E2 -P1		10	10 13-Sep-19	30-Aug-19	25-Sep-19	10-Sep-19	21	001 -	-12			Dia C
	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P1 Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3 4	3 13-Sep-19 4 18-Sep-19	30-Aug-19 03-Sep-19	17-Sep-19 21-Sep-19	02-Sep-19 06-Sep-19	17	0% 0 0% 0	-12		-	Drive Ca
52-1 WV(maan reez and even are no rock under rocknead iever to rounding rever (411 Socket) - ing 100.2 & all filling -	T		05-5cp-17	21-0cp=17	00-5cp-17	1/	V/U V	-12	· · ·		•
Rema	ining Level of Effort 📃 Remaining Work 🔶 🔶 Mile	stone				CRBC				Date		Revision
	с с									08-Aug-19	Monthly	updated on 8 Aug 2019
- Drimo	ry Baseline 🛛 🗖 Critical Remaining Work 🔽 🐨 Sum	mani			hree Mont							

October 2019 22 29 06 13	20 27 03	November 2019 10 17 24
 Waterproofing Works Supply and installation of 		installation of steel parapet an
 Design, supply and installation of Design, supply and installa Design, supply and installa 	ation of arch inspection cra	
 Electrical installation work Building services for E&N 	ks for CBL Main bridge a	nd Marine Viaduct (SP-021)
	CBL - Batch 2 (4nos.)	
Fabrication of Shell E1	(1/2) + Modification of C	2
		Fabrication of Shell W
Casting Bed Pre	paration for Side Shells (s	nall) - Additional Casting Bec Fabrication of Side
Setting Up Precasting Yard for E	Box Girder - Stage 2 (Stor	
 Design, Procurement and Deliv 		
cast box girder, Including Cast-in Iter Fabrication of Precast box girder, In		
	Fabrication of Prec	ast box girder, Including Cast Fabrication of I
=		
	Setting	up precasting yard for precas
014)(EW014)		Setting up stee
Ċ		Beaming up sites
ivrey of welding materials		
	1st batch of	el material (incl. 35 days TRA on site material sampling & te
	1st batch of Weld	
	1st batch of Weld	on site material sampling & ta ing Procedure trials
Procu	Ist batch of Weld	on site material sampling & ta ing Procedure trials
Procu	Ist batch of Weld	on site material sampling & ta ing Procedure trials
)(CE006)(CE008)(NCE 018 & 019)	Ist batch of Weld	on site material sampling & ta ing Procedure trials
)(CE006)(CE008)(NCE 018 & 019)	Ist batch of Weld	on site material sampling & ta ing Procedure trials
)(CE006)(CE008)(NCE 018 & 019)	Ist batch of Weld	on site material sampling & ta ing Procedure trials
)(CE006)(CE008)(NCE 018 & 019)	Ist batch of Weld	on site material sampling & ta ing Procedure trials
)(CE006)(CE008)(NCE 018 & 019)	Ist batch of Weld	on site material sampling & ta ing Procedure trials
)(CE006)(CE008)(NCE 018 & 019)	Ist batch of Weld	on site material sampling & ta ing Procedure trials
)(CE006)(CE008)(NCE 018 & 019)	Ist batch of Weld	on site material sampling & ta ing Procedure trials
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)(CE006)(CE008)(NCE 018 & 019)	Ist batch of Weld	on site material sampling & ta ing Procedure trials
)(CE006)(CE008)(NCE 018 & 019) Piling Works for Pier	Ist batch of Weld	on site material sampling & ta ing Procedure trials
(CE006)(CE008)(NCE 018 & 019) Piling Works for Pier Piling Works for Pier Testing Testing Testing Piling E2-P1 e Casing & Grab to excavate the soil	W4 W4 (40.4m length) -E2-P1	on site material sampling & ta ing Procedure trials ion Trials (e.g. Flame Cutting)
V(CE006)(CE008)(NCE 018 & 019) Piling Works for Pier Piling Works for Pier Testing Testing Testing Pile E2-P1 e Casing & Grab to excavate the soil Install RCD and excavate the rock u	W4 W4 (40.4m length)-E2-P1 mder rockhead level to fou	on site material sampling & to ing Procedure trials ion Trials (e.g. Flame Cutting) Piling Worf Piling Worf nding level (4m socket) - rig 1
(CE006)(CE008)(NCE 018 & 019) Piling Works for Pier Piling Works for Pier Testing Testing Testing Piling E2-P1 e Casing & Grab to excavate the soil	W4 W4 (40.4m length) -E2-P1	on site material sampling & ta ing Procedure trials ion Trials (e.g. Flame Cutting)

Page: 3

	ActivityName	Original Duration	Remaining Duration Start	Planned Start	Finish	Planned Finish	Total Float Ac	tivity % Complete	TRA \	/ariance - Finish Date		August2019		September 2019
S2-PW	Install steel cage and concreting -E2-P1	3	3 23-Sep-19	07-Sep-19	25-Sep-19	10-Sep-19	21	0%	0	-12		04 11	18 25	01 08 15
Pile E2 -P	2	11	11 18-Sep-19	03-Sep-19	30-Sep-19	16-Sep-19	20			-12				
	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P2 Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	3 18-Sep-19 4 23-Sep-19	03-Sep-19 07-Sep-19	20-Sep-19 26-Sep-19	05-Sep-19 11-Sep-19	18	0% 0%	0	-12				D
	Install steel cage and concreting -E2-P2	3	3 27-Sep-19	12-Sep-19	30-Sep-19	16-Sep-19	20	0%		-12				
Pile E2 -P		12	12 21-Sep-19	06-Sep-19	05-Oct-19	20-Sep-19	19			-12				
	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P3	3	3 21-Sep-19	06-Sep-19	24-Sep-19	09-Sep-19	19	0%		-12				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting - Install steel cage and concreting -E2-P3	4	4 27-Sep-19 3 03-Oct-19	12-Sep-19 18-Sep-19	02-Oct-19 05-Oct-19	17-Sep-19 20-Sep-19	17		0	-12				
Pile E2 -P		13	13 25-Sep-19	10-Sep-19	11-Oct-19	25-Sep-19	18	070	0	-12				
	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P4	3	3 25-Sep-19	10-Sep-19	27-Sep-19	12-Sep-19	20	0%		-12				_
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4 03-Oct-19	18-Sep-19	08-Oct-19	21-Sep-19	17	0%		-12				-
Pile E2 -P	Install steel cage and concreting -E2-P4	3	3 09-Oct-19 14 28-Sep-19	23-Sep-19 13-Sep-19	11-Oct-19 16-Oct-19	25-Sep-19 30-Sep-19	18	0%	0	-12				
	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P5	3	3 28-Sep-19	13-Sep-19	02-Oct-19	17-Sep-19	21	0%	0	-12				
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4 09-Oct-19	23-Sep-19	12-Oct-19	26-Sep-19	17	0%		-12				
	Install steel cage and concreting -E2-P5	3	3 14-Oct-19	27-Sep-19	16-Oct-19	30-Sep-19	17	0%	0	-12				
Pile E2 -P	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P6	10 3	10 17-Oct-19 3 17-Oct-19	02-Oct-19 02-Oct-19	28-Oct-19 19-Oct-19	14-Oct-19 04-Oct-19	17	0%	0	-12 -12				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4 21-Oct-19	05-Oct-19	24-Oct-19	10-Oct-19	17		0	-12				
	Install steel cage and concreting -E2-P6	3	3 25-Oct-19	11-Oct-19	28-Oct-19	14-Oct-19	17	0%	0	-12				
Testing		21	21 29-Oct-19	15-Oct-19	21-Nov-19	07-Nov-19	17	00/	0	-12				
	Sonic Test, interface core and full core for bored pile -E2 ss for Pier W3	21	21 29-Oct-19 26 29-Oct-19	15-Oct-19 15-Oct-19	21-Nov-19 27-Nov-19	07-Nov-19 13-Nov-19	17 61	0%	0	-12				
	Piling platform installation -W3	4	4 29-Oct-19	15-Oct-19	01-Nov-19	18-Oct-19	61	0%	0	-12				
Pile W3 -F		10	10 02-Nov-19	19-Oct-19	13-Nov-19	30-Oct-19	64			-12				
	Drive Casing & Grab to excavate the soil (42m length) -W3-P1	3	3 02-Nov-19	19-Oct-19	05-Nov-19	22-Oct-19	61		0	-12				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4 3	4 06-Nov-19	23-Oct-19 28-Oct-19	09-Nov-19 13-Nov-19	26-Oct-19 30-Oct-19	61 64	0%		-12				
Pile W3 -F	Install steel cage and concreting -W3-P1 2	11	3 11-Nov-19 11 06-Nov-19	23-Oct-19	13-Nov-19	04-Nov-19	63	076	0	-12 -12				
	Drive Casing & Grab to excavate the soil (42m length) -W3-P2	3	3 06-Nov-19	23-Oct-19	08-Nov-19	25-Oct-19	62	0%	0	-12				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 11-Nov-19	28-Oct-19	14-Nov-19	31-Oct-19	61		0	-12				
Pile W3 -F	Install steel cage and concreting -W3-P2	3	3 15-Nov-19 12 09-Nov-19	01-Nov-19 26-Oct-19	18-Nov-19 22-Nov-19	04-Nov-19 08-Nov-19	63 62	0%	0	-12				
	Drive Casing & Grab to excavate the soil (42m length) -W3-P3	3	3 09-Nov-19	26-Oct-19	12-Nov-19	29-Oct-19	63	0%	0	-12				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 15-Nov-19	01-Nov-19	19-Nov-19	05-Nov-19	61		0	-12				
	Install steel cage and concreting -W3-P3	3	3 20-Nov-19	06-Nov-19	22-Nov-19	08-Nov-19	62	0%	0	-12				
Pile W3 -F		13 3	13 13-Nov-19 3 13-Nov-19	30-Oct-19 30-Oct-19	27-Nov-19 15-Nov-19	13-Nov-19 01-Nov-19	61 64	0%	0	-12 -12				
	Drive Casing & Grab to excavate the soil (42m length) -W3-P4 Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 20-Nov-19	06-Nov-19	23-Nov-19	09-Nov-19	61	0%		-12				
	Install steel cage and concreting -W3-P4	3	3 25-Nov-19	11-Nov-19	27-Nov-19	13-Nov-19	61	0%		-12				
Pile W3 -F		7	7 16-Nov-19	02-Nov-19	23-Nov-19	09-Nov-19	64			-12				
	Drive Casing & Grab to excavate the soil (42m length) -W3-P5 Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	3 4	3 16-Nov-19 4 20-Nov-19	02-Nov-19 06-Nov-19	19-Nov-19 23-Nov-19	05-Nov-19 09-Nov-19	64 64	0%		-12				
	instant KCD and excavate the fock under focknead lever to founding lever (4th socker) - hg 10.1 & an inting - is for Pier W1	115	115 04-Sep-19	02-Aug-19	27-Dec-19	25-Nov-19	3	070	0	-12				•
	Piling platform installation -W1	4	4 04-Sep-19	02-Aug-19	07-Sep-19	06-Aug-19	2	0%	0	-28	_	-		Piling platform inst
Pile W1 -F		11	11 09-Sep-19	07-Aug-19	21-Sep-19	19-Aug-19	17			-28				
	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P1	4	4 09-Sep-19	07-Aug-19	12-Sep-19	10-Aug-19	2		0	-28		+		Drive Casin
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting - Install steel cage and concreting -W1-P1	4 3	4 13-Sep-19 3 19-Sep-19	12-Aug-19 16-Aug-19	18-Sep-19 21-Sep-19	15-Aug-19 19-Aug-19	2 17	0%		-28 -28			_	
Pile W1 -F		11	11 24-Oct-19	19-Sep-19	05-Nov-19	02-Oct-19	8	070	Ŭ	-28				
	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P10	4	4 24-Oct-19	19-Sep-19	28-Oct-19	23-Sep-19	2		0	-28				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting	4	4 29-Oct-19	24-Sep-19	01-Nov-19	27-Sep-19	2	0%		-28				
Pile W1 -F	Install steel cage and concreting -W1-P10	3	3 02-Nov-19 11 29-Oct-19	28-Sep-19 24-Sep-19	05-Nov-19 09-Nov-19	02-Oct-19 08-Oct-19	8	0%	0	-28 -28				
	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P11	4	4 29-Oct-19	24-Sep-19	01-Nov-19	27-Sep-19	2	0%	0	-28				
S2-PW-	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting	4	4 02-Nov-19	28-Sep-19	06-Nov-19	03-Oct-19	2	0%	0	-28				
	Install steel cage and concreting -W1-P11	3	3 07-Nov-19	04-Oct-19	09-Nov-19	08-Oct-19	7	0%	0	-28				
Pile W1 -	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P12	11 4	11 02-Nov-19 4 02-Nov-19	28-Sep-19 28-Sep-19	14-Nov-19 06-Nov-19	12-Oct-19 03-Oct-19	6	0%	0	-28 -28				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting	4	4 02-Nov-19 4 07-Nov-19	04-Oct-19	11-Nov-19	09-Oct-19	2	0%		-28				
S2-PW-	Install steel cage and concreting -W1-P12	3	3 12-Nov-19	10-Oct-19	14-Nov-19	12-Oct-19	6	0%		-28				
	13 (Dia. 1000mm)	11	11 07-Nov-19	04-Oct-19	19-Nov-19	17-Oct-19	5			-28				
	Drive Casing & Grab to excavate the soil (43.4m length) -WI-P13 Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 07-Nov-19 4 12-Nov-19	04-Oct-19 10-Oct-19	11-Nov-19 15-Nov-19	09-Oct-19 14-Oct-19	2	0%		-28 -28				
	Install steel cage and concreting -W1-P13	3	3 16-Nov-19	15-Oct-19	19-Nov-19	17-Oct-19	5	0%		-28				
	14 (Dia. 1000mm)	11	11 12-Nov-19	10-Oct-19	23-Nov-19	22-Oct-19	4			-28				
	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P14	4	4 12-Nov-19	10-Oct-19	15-Nov-19	14-Oct-19	2	0%		-28				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 16-Nov-19 3 21-Nov-19	15-Oct-19	20-Nov-19	18-Oct-19	2 4	0%		-28				
	Install steel cage and concreting -W1-P14 15 (Dia. 1000mm)	11	11 16-Nov-19	19-Oct-19 15-Oct-19	23-Nov-19 28-Nov-19	22-Oct-19 26-Oct-19	3	0%	0	-28 -28				
	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P15	4	4 16-Nov-19	15-Oct-19	20-Nov-19	18-Oct-19	2	0%	0	-28				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 21-Nov-19	19-Oct-19	25-Nov-19	23-Oct-19	2	0%		-28				
	Install steel cage and concreting -W1-P15	3	3 26-Nov-19	24-Oct-19	28-Nov-19	26-Oct-19	3	0%	0	-28				
	16 (Dia. 1000mm) Drive Casing & Grab to excavate the soil (43.4m length) -W1-P16	11 4	11 21-Nov-19 4 21-Nov-19	19-Oct-19 19-Oct-19	03-Dec-19 25-Nov-19	31-Oct-19 23-Oct-19	2	0%	0	-28 -28				
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 26-Nov-19	24-Oct-19	29-Nov-19	23-Oct-19 28-Oct-19	2	0%		-28				
	Install steel cage and concreting -W1-P16	3	3 30-Nov-19	29-Oct-19	03-Dec-19	31-Oct-19	2	0%	0	-28				
Testing	Conic Test interfere care and full care for bound alle Wi	21	21 04-Dec-19	01-Nov-19	27-Dec-19	25-Nov-19	2	00/	0	-28				
Pile W1 -F	Sonic Test, interface core and full core for bored pile -W1 2	21 11	21 04-Dec-19 11 13-Sep-19	01-Nov-19 12-Aug-19	27-Dec-19 26-Sep-19	25-Nov-19 23-Aug-19	2 16	0%	U	-28 -28				
	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P2	4	4 13-Sep-19	12-Aug-19	18-Sep-19	15-Aug-19	2	0%	0	-28		-		Driv
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 19-Sep-19	16-Aug-19	23-Sep-19	20-Aug-19	2	0%	0	-28		-	-	
	Install steel cage and concreting -W1-P2	3	3 24-Sep-19	21-Aug-19	26-Sep-19	23-Aug-19	16	0%	0	-28			-	
Pile W1 -F	3 Drive Casing & Grab to excavate the soil (42.4m length) -W1-P3	11 4	11 19-Sep-19 4 19-Sep-19	16-Aug-19 16-Aug-19	02-Oct-19 23-Sep-19	28-Aug-19 20-Aug-19	15	0%	0	-28 -28		_	_	-
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 19-Sep-19 4 24-Sep-19	21-Aug-19	23-Sep-19 27-Sep-19	20-Aug-19 24-Aug-19	2		0	-28			_	
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		estone	1			CRBC						240		
	aining Level of Effort Remaining Work \blacklozenge \blacklozenge Mile					CNDC					100	Aug 10	Mantheli	undated on 0 Avra 00
Ren		nmary		-	hree Mont		D				0	8-Aug-19	Monthly	updated on 8 Aug 20

	October 2019			November 2019
22 28 Install st		20 27 -E2-P1	03	10 17 24
	ile E2 -P2 & Grab to excavate the s	oil (40.4m len	oth) -E2-P2	
Install	RCD and excavate the r istall steel cage and cond	ock under rock	khead level	to founding level (4m socket
Drive Ca	Pile E2 -P3 sing & Grab to excavate			
	Install RCD and excav Install steel cage ar Pile E2 -P4	nd concreting -		ad level to founding level (4n
💻 Drive	Casing & Grab to exca	vate the soil (4		
	Install steel	l cage and con E2 -P5		rockhead level to founding 1 P4
_ =	Drive Casing & Grab t Install RC			1 length) -E2-P5 under rockhead level to foun
-		all steel cage a		
-				xcavate the soil (40.4m lengt cavate the rock under rockhe
		Ins	tall steel ca	ge and concreting -E2-P6 Testing
				Sonic Test, Pili
	_		Piling pl	Atform installation -W3 Pile W3 -P1
	_	_		ve Casing & Grab to excavat
				Install RCD and excavate t Install steel cage and
				Pile W3 -P2 Drive Casing & Grab to exc
			— .	Install RCD and exc Install steel cag Pile W3 -
		_	l	Drive Casing & Grab to
				Install RCD a
		-	-	💻 Drive Casing & Gi
				Install R
				Pile W3 Drive Casing
				Install R
tallation -W1 Pile W1 -P1				
all RCD and		rockhead leve		g level (4m socket) - rig No.
Install steel c	age and concreting -W1-	•		W1 -P10
		Dr	Install R	& Grab to excavate the soil (CD and excavate the rock un
				all steel cage and concreting Pile W1 -P11
_			Drive Ca	sing & Grab to excavate the
_				stall RCD and excavate the n Install steel cage and concr
	-		— D	Pile W1 -P12 rive Casing & Grab to excave
				Install RCD and excavation Install steel cage and
			_	 Pile W1 -P13 Drive Casing & Grab to
				Install RCD and ex Install steel ca
				Pile W1
		_		Install RCD Install st
		_		Install RCD Install st P Drive Casing
				Install RCD Install st P Drive Casing
	 	- 		Install RCD Install st P Drive Casing Install
		- 		Install RCD
	 	_ 		Install RCD
	Grab to excavate the soil			Install RCD
ve Casing & (Install RCI Install	Grab to excavate the soil D and excavate the rock steel cage and concretin	under rockhea		Install RCD
ve Casing & 0 Install RCI Install Drive Casi	Grab to excavate the soil D and excavate the rock steel cage and concretin ' Pile W1 -P3 ing & Grab to excavate t	under rockhea g -W1-P2 the soil (42.4m	id level to fo length) -W	Drive Casing Drive Casing Install Drive Casing Install Drive Casing Drive Drive Casing Install
ve Casing & C Install RCI Install Drive Casi	Grab to excavate the soil D and excavate the rock steel cage and concretin ' Pile W1 -P3 ing & Grab to excavate t	under rockhea g -W1-P2 the soil (42.4m rock under ro	id level to fo length) -W ckhead leve	Drive Casim Drive Casim Instal Drive Casim Drive Casim Drive Instal Drive Drive Drive
ve Casing & C Install RC Drive Casi Instal Instal	Grab to excavate the soil D and excavate the rock steel cage and concretin ' Pile W1 -P3 ing & Grab to excavate t	under rockhea g -W1-P2 the soil (42.4m	id level to fo length) -W ckhead leve	bunding level (4m socket) - r
ve Casing & 0 Install RCI Install Drive Casi	Grab to excavate the soil D and excavate the rock steel cage and concretin ' Pile W1 -P3 ing & Grab to excavate t	under rockhea g -W1-P2 the soil (42.4m rock under ro	id level to fo length) -W ckhead leve	Drive Casing Drive Casing Install M Drive Casing Install Drive Casing Install Drive Drive Casing Install Drive Drive Casing Install Install Drive Casing Install Drive Drive Casing Install Install Drive Casing Install Drive Casing Drive Casing Install Drive Casing Drive Casing D

Page: 4

ActivityID	AcityName	Original Duration	Remaining Duration Start	PlannedStart	Finish	Planned Finish	Total Float	Activity% Complete TRA	Variance - Finish Date	28 0	August2019 4 11 18 25	September 2019 01 08 15 22
	S2-PW: Install steel cage and concreting -W1-P3	3	3 28-Sep-19	26-Aug-19	02-Oct-19	28-Aug-19	15	0% 0		20 0		01 00 13 22
		11	11 24-Sep-19	21-Aug-19	08-Oct-19	02-Sep-19	14	00/ 0	-28			
	S2-PW: Drive Casing & Grab to excavate the soil (42.4m length) -W1-P4 S2-PW: Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 24-Sep-19 4 28-Sep-19	21-Aug-19 26-Aug-19	27-Sep-19 03-Oct-19	24-Aug-19 29-Aug-19	2	0% 0	-28			
	S2-PW; Install steel cage and concreting -W1-P4	3	3 04-Oct-19	30-Aug-19	08-Oct-19	02-Sep-19	14	0% 0	-28			
	Pile W1 -P5	4	11 28-Sep-19 4 28-Sep-19	26-Aug-19 26-Aug-19	12-Oct-19 03-Oct-19	06-Sep-19 29-Aug-19	13	0% 0	-28 -28		_	
	S2-PW ² Drive Casing & Grab to excavate the soil (42.4m length) -W1-P5 S2-PW ² Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 04-Oct-19	30-Aug-19	09-Oct-19	03-Sep-19	2	0% 0	-28			
	S2-PW ² Install steel cage and concreting -W1-P5	3	3 10-Oct-19	04-Sep-19	12-Oct-19	06-Sep-19	13	0% 0	-28			_
	Pile W1 -P6 S2-PW4 Drive Casing & Grab to excavate the soil (42.4m length) -W1-P6	11 4	11 04-Oct-19 4 04-Oct-19	30-Aug-19 30-Aug-19	17-Oct-19 09-Oct-19	11-Sep-19 03-Sep-19	12	0% 0	-28 -28			
	S2-PW Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 10-Oct-19	04-Sep-19	14-Oct-19	07-Sep-19	2	0% 0	-28			
	S2-PW/ Install steel cage and concreting -W1-P6	3	3 15-Oct-19	09-Sep-19	17-Oct-19	11-Sep-19	12	0% 0	-28			-
	Pile W1 -P7 S2-PW4 Drive Casing & Grab to excavate the soil (42.4m length) -W1-P7	11 4	11 10-Oct-19 4 10-Oct-19	04-Sep-19 04-Sep-19	22-Oct-19 14-Oct-19	17-Sep-19 07-Sep-19	11	0% 0	-28			
	S2-PW ⁴ Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 10-Oct-19	09-Sep-19	14-Oct-19	12-Sep-19	2	0% 0	-28			_
	S2-PW/ Install steel cage and concreting -W1-P7	3	3 19-Oct-19	13-Sep-19	22-Oct-19	17-Sep-19	11	0% 0	-28			_
	Pile W1 -P8 S2-PW4 Drive Casing & Grab to excavate the soil (42.4m length) -W1-P8	11 4	11 15-Oct-19 4 15-Oct-19	09-Sep-19 09-Sep-19	26-Oct-19 18-Oct-19	21-Sep-19 12-Sep-19	10	0% 0	-28			_
	S2-PW ² Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 19-Oct-19	13-Sep-19	23-Oct-19	12-Sep-19	2	0% 0	-28			
	S2-PW ² Install steel cage and concreting -W1-P8	3	3 24-Oct-19	19-Sep-19	26-Oct-19	21-Sep-19	10	0% 0	-28			_
	Pile W1 -P9 S2-PW4 Drive Casing & Grab to excavate the soil (42.4m length) -W1-P9	11 4	11 19-Oct-19 4 19-Oct-19	13-Sep-19 13-Sep-19	31-Oct-19 23-Oct-19	26-Sep-19 18-Sep-19	9	0% 0	-28			
	S2-PW ² Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4 24-Oct-19	19-Sep-19	28-Oct-19	23-Sep-19	2	0% 0	-28			
	S2-PW ² Install steel cage and concreting -W1-P9	3	3 29-Oct-19	24-Sep-19	31-Oct-19	26-Sep-19	9	0% 0				_
	Piling Works for Pier W5 S2-PW53 Piling platform installation -W5	12 4	12 04-Dec-19 4 04-Dec-19	01-Nov-19 01-Nov-19	17-Dec-19 07-Dec-19	14-Nov-19 05-Nov-19	67 67	0% 0	-28 -28			
	S2-rw35 rung platorin installation -w3	8	8 09-Dec-19	06-Nov-19	17-Dec-19	14-Nov-19	67	070 0	-28			
	S2-PW: Drive Casing & Grab to excavate the soil (40.4m length) -W5-P1	4	4 09-Dec-19	06-Nov-19	12-Dec-19	09-Nov-19	67	0% 0	-28			
	S2-PW: Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting - Pile W5 -P2	4	4 13-Dec-19 4 13-Dec-19	11-Nov-19 11-Nov-19	17-Dec-19 17-Dec-19	14-Nov-19 14-Nov-19	67	0% 0	-28			
	S2-PW: Drive Casing & Grab to excavate the soil (40.4m length) -W5-P2	4	4 13-Dec-19 4 13-Dec-19	11-Nov-19 11-Nov-19	17-Dec-19 17-Dec-19	14-Nov-19 14-Nov-19	67	0% 0				
	Piling Works for Pier E7	29	24 06-Jun-19 A	08-Jul-19	31-Aug-19	05-Sep-19	20		5			Piling Works for Pier E7
	Pile E7 -P1	3	0 09-Jul-19 A	08-Jul-19	11-Jul-19 A	10-Jul-19			-1		7.01	
	S2-PW Install steel cage and concreting -E7-P1 Pile E7 -P2	3	0 09-Jul-19 A 0 08-Jul-19 A	08-Jul-19 08-Jul-19	11-Jul-19 A 20-Jul-19 A	10-Jul-19 15-Jul-19		100% 0		nd concreting -I 7 -P2	1/-P1	
	S2-PW/ Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	0 08-Jul-19 A	08-Jul-19	18-Jul-19 A	11-Jul-19		100% 0	-6R	CD and excavat		el to founding level (4m socket) - rig
	S2-PW' Install steel cage and concreting -E7-P2	3	0 19-Jul-19 A	12-Jul-19	20-Jul-19 A	15-Jul-19		100% 0			oncreting -E7-P2	
	Pile E7 -P4 S2-PW Drive Casing & Grab to excavate the soil (40.4m length) -E7-P4	8	0 06-Jun-19 A 0 06-Jun-19 A	17-Jul-19 12-Aug-19	16-Jul-19 A 07-Jun-19 A	15-Aug-19 15-Aug-19		100% 0	26 4 58		Drive Casing & (Grab to excavate the soil (40.4m leng
	S2-PW Install steel cage and concreting -E7-P4	3	0 15-Jul-19 A	17-Jul-19	16-Jul-19 A	19-Jul-19		100% 0	3 s	teel cage and co	ncreting -E7-P4	
	Pile E7 -P5	8	0 06-Jun-19 A	17-Jul-19	24-Jul-19 A	20-Aug-19			23 F	Pile E7 -P5		
	S2-PW Drive Casing & Grab to excavate the soil (40.4m length) -E7-P5 S2-PW Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting	4	0 06-Jun-19 A 0 15-Jul-19 A	16-Aug-19 17-Jul-19	07-Jun-19 A 22-Jul-19 A	20-Aug-19 20-Jul-19		100% 0 100% 0	62	all RCD and ex		ing & Grab to excavate the soil (40.4 id level to founding level (4m socket
	S2-PW Install steel cage and concreting -E7-P5	3	0 23-Jul-19 A	22-Jul-19	24-Jul-19 A	24-Jul-19		100% 0			and concreting -E7-P5	
	Pile E7 -P6	10	0 06-Jun-19 A	25-Jul-19	13-Jul-19 A	05-Sep-19			46			
	S2-PW Drive Casing & Grab to excavate the soil (40.4m length) -E7-P6 S2-PW Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting	4	0 06-Jun-19 A 0 05-Jul-19 A	02-Sep-19 25-Jul-19	07-Jun-19 A 11-Jul-19 A	05-Sep-19 29-Jul-19		100% 0 100% 0	76	Install RC	D and excavate the rock unde	 Drive Casing & Grab to e r rockhead level to founding level (4)
	S2-PW Install steel cage and concreting -E7-P6	3	0 03-Jul-19 A 0 12-Jul-19 A	30-Jul-19	13-Jul-19 A	01-Aug-19		100% 0	15		steel cage and concreting -E	
	Testing	21	21 08-Aug-19	02-Aug-19	31-Aug-19	26-Aug-19	17		-5			Testing
	S2-PW: Sonic Test, interface core and full core for bored pile -E7 Piling Works for Pier E1	21	21 08-Aug-19 51 08-May-19 A	02-Aug-19 30-May-19	31-Aug-19 27-Sep-19	26-Aug-19 30-Sep-19	17	0% 0	-5			Sonic Test, interface core and fu
	S2-PW75 Piling platform installation -E1	4	1 17-May-19 A	30-May-19	08-Aug-19	03-Jun-19	2	75% 0	-55		 Piling platform installation 	-E1
	Pile E1 -P1	5	0 18-Jul-19 A	11-Jul-19	10-Aug-19 A	18-Jul-19			-20		Pile E1 -P1	
	S2-PW' Install RCD and excavate the rock under rockhead level to founding level (4m socket) & air lifting -E1-P1 (Nt	4	0 18-Jul-19 A	11-Jul-19	08-Aug-19 A	15-Jul-19		100% 0	-21		 Install RCD and excavate t Install steel cage and control 	the rock under rockhead level to fou nereting -F1-P1
	S2-PW Install steel cage and concreting -E1-P1 Pile E1 -P10	3	0 09-Aug-19 A 0 07-Jun-19 A	16-Jul-19 20-Aug-19	10-Aug-19 A 21-Jun-19 A	18-Jul-19 10-Sep-19		100% 0	-20		- mstan steer eage and co	inclouing -1.21-1 1
	S2-PW{ Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	0 07-Jun-19 A	20-Aug-19	13-Jun-19 A	22-Aug-19		100% 0	59		🗕 Install R	CD and excavate the rock under roc
	S2-PW Install steel cage and concreting -E1-P10 Pile E1 -P11	7	0 14-Jun-19 A 0 09-Jul-19 A	03-Sep-19 30-Jul-19	21-Jun-19 A	10-Sep-19		100% 0	68	Pile E1 -P11		Install steel cage at
	S2-PW Install RCD and excavate the rock under rockhead level to founding level (4m socket) air lifting -E1-P11 (NC)	4	0 09-Jul-19 A	30-Jul-19	25-Jul-19 A 23-Jul-19 A	06-Aug-19 02-Aug-19		100% 0	9		RCD and excavate the rock	under rockhead level to founding le
	S2-PW Install steel cage and concreting -E1-P11	3	0 24-Jul-19 A	03-Aug-19	25-Jul-19 A	06-Aug-19		100% 0	10	_	Install steel cage and concreti	
	Pile E1 -P12	31	0 09-Jul-19 A	22-Jul-19	06-Aug-19 A	10-Aug-19		1000/ 0	4	mirro Coninco Po	Pile E1 -P12 Grab to excavate the soil (42.4	In Isnoth) E1 D12
	S2-PW{ S2-PW{ Drive Casing & Grab to excavate the soil (42.4m length) -E1-P12 Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	0 09-Jul-19 A 0 18-Jul-19 A	22-Jul-19 03-Aug-19	10-Jul-19 A 02-Aug-19 A	24-Jul-19 07-Aug-19		100% 0 100% 0				he rock under rockhead level to foun
	S2-PW Install steel cage and concreting -E1-P12	3	0 03-Aug-19 A	08-Aug-19	06-Aug-19 A	10-Aug-19		100% 0		_	 Install steel cage and con 	
	Pile E1 -P13 (Dia. 1000mm)	10	10 09-Aug-19	25-Jul-19	20-Aug-19	15-Aug-19	5		4			13 (Dia. 1000mm) to excavate the soil (43.4m length)
	S2-PWi Drive Casing & Grab to excavate the soil (43.4m length) -E1-P13 S2-PWi Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	3 09-Aug-19 4 13-Aug-19	25-Jul-19 08-Aug-19	12-Aug-19 16-Aug-19	27-Jul-19 12-Aug-19	2	0% 0 0% 0	-13	-		excavate the rock under rockhead 1
	S2-PW{ Install steel cage and concreting -E1-P13	3	3 17-Aug-19	13-Aug-19	20-Aug-19	15-Aug-19	5	0% 0	-4			l cage and concreting -E1-P13
	Pile E1 -P14 (Dia. 1000mm)	11	11 13-Aug-19	29-Jul-19	24-Aug-19	20-Aug-19	4		-4			E1 -P14 (Dia. 1000mm) Grab to excavate the soil (43.4m leng
	S2-PW Drive Casing & Grab to excavate the soil (43.4m length) -E1-P14 S2-PW Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	3 13-Aug-19 4 17-Aug-19	29-Jul-19 13-Aug-19	15-Aug-19 21-Aug-19	31-Jul-19 16-Aug-19	3	0% 0	-13	-		D and excavate the rock under rock
	S2-PW Install steel cage and concreting -E1-P14	3	3 22-Aug-19	17-Aug-19	24-Aug-19	20-Aug-19	4	0% 0	-4		👝 💻 Instal	l steel cage and concreting -E1-P14
	Pile E1 -P15 (Dia. 1000mm)	12	12 16-Aug-19	01-Aug-19	29-Aug-19	24-Aug-19	3		-4			Pile E1 -P15 (Dia. 1000mm)
	S2-PWi Drive Casing & Grab to excavate the soil (43.4m length) -E1-P15 S2-PWi Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	3 16-Aug-19 4 22-Aug-19	01-Aug-19 17-Aug-19	19-Aug-19 26-Aug-19	03-Aug-19 21-Aug-19	4	0% 0	-13	-		g & Grab to excavate the soil (43.4r stall RCD and excavate the rock und
	S2-PWi Install steel cage and concreting -E1-P15	3	3 27-Aug-19	22-Aug-19	29-Aug-19	24-Aug-19	3	0% 0	-4			Install steel cage and concreting -E
	Pile E1 -P16 (Dia. 1000mm)	13	13 20-Aug-19	05-Aug-19	03-Sep-19	29-Aug-19	2	001 -	-4		Duine O	Pile E1 -P16 (Dia. 1000mm
	S2-PWi Drive Casing & Grab to excavate the soil (43.4m length) -E1-P16 S2-PWi Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	3 20-Aug-19 4 27-Aug-19	05-Aug-19 22-Aug-19	22-Aug-19 30-Aug-19	07-Aug-19 26-Aug-19	5	0% 0 0% 0	-13	-		 asing & Grab to excavate the soil (4 Install RCD and excavate the rock
	S2-PWi Install steel cage and concreting E1-P16	3	3 31-Aug-19	27-Aug-19	03-Sep-19	29-Aug-19	2	0% 0	-4		_	Install steel cage and concre
		21	21 04-Sep-19	30-Aug-19	27-Sep-19	23-Sep-19	16		-4			
	S2-PW Sonic Test, interface core and full core for bored pile -E1 Pile E1 -P2	21 14	21 04-Sep-19 0 08-May-19 A	30-Aug-19 11-Jul-19	27-Sep-19 02-Aug-19 A	23-Sep-19 23-Jul-19	16	0% 0	-4	• Pile	E1 -P2	•
	S2-PW. Drive Casing & Grab to excavate the soil (42.4m length) -E1-P2	3	0 08-May-19 A	11-Jul-19	10-Jun-19 A	13-Jul-19		100% 0	28 &		te the soil (42.4m length) -E1	-P2
											Data	Revision
			1							1	Date	Revision
	Remaining Level of Effort Remaining Work \blacklozenge \blacklozenge Mile	estone				CRBC						
_		estone mmary				CRBC	D.			08-		ly updated on 8 Aug 2019
_	Primary Baseline Critical Remaining Work V Su			T	hree Mont		Progra	mme		08-		
	5			T	hree Mont		Progra	mme		08-		

October 2019 22 29 06 13	20 27	03	November 2019	24
Install steel cage and co			10 17	24
Pile W1 -P4 Drive Casing & Grab to excav	vate the soil (4	2,4m lenot	n) -W1-P4	
Install RCD and exca	vate the rock u	inder rockh	ead level to founding	level (4
Install steel cag		ng -W1-P4		
Drive Casing & Grab		e soil (42.4	m length) -W1-P5	
			er rockhead level to fo	ounding
	el cage and co W1 -P6	icreung - w	1-1-3	
			oil (42.4m length) -W	
	tall steel cage		ck under rockhead lev ing -W1-P6	el to Io
T	Pile W1 -F			
			e the soil (42.4m leng he rock under rockhea	
	Install stee	l cage and c	concreting -W1-P7	
	Pile			1
D			cavate the soil (42.4m avate the rock under r	
	Instal	l steel cage	and concreting -W1-I	
		' Pile W1 -l sing & Gral	9 to excavate the soil	(42 4m
-	Ins	tall RCD a	nd excavate the rock u	under re
-	-	Install stee	el cage and concreting	-W1-P
			•	
			_	
			_	
- rig No.2 & air lifting -E7-P2				
length) -E7-P4				
(40.4m length) -E7-P5				
cket) - rig No.2 & air lifting -E7-P5				
to excavate the soil (40.4m length) -				
el (4m socket) - rig No.2 & air lifting	-E7-P6			
d full core for bored pile -E7 Piling Works for Pier E1				
· Fining works for Fiel E1				
founding level (4m socket) & air liftin	ng -E1-P1 (NG	CE 006)		
r rockhead level to founding level (4n	n socket) - rig	No.2 & air	lifting -E1-P10	
ge and concreting -E1-P10				
ng level (4m socket) air lifting -E1-P11	I (NCE 011)			
founding level (4m socket) - rig No.2	& air lifting -E	1-P12		
gth) -E1-P13				
ad level to founding level (4m socket) - rig No.2 &	air lifting -l	E1-P13	
length) -E1-P14				
rockhead level to founding level (4m	socket) - rig N	lo.2 & air li	fting -E1-P14	
P14				
3.4m length) -E1-P15	1/4		o · 1:0:	
under rockhead level to founding leve g-E1-P15	eı (4m socket)	- rig No.2	& air lifting -E1-P15	
mm)				
il (43.4m length) -E1-P16 rock under rockhead level to foundin	a level (Am a	cket) - ria 1	No 2 & sir lifting E1	P16
ncreting E1-P16	g 10001 (4111 SC	ekcij - rig l	10.2 & an mung -E1-	1 10
Testing	c 11	1 " -		
Sonic Test, interface core and	tull core for b	ored pile -E	,1	
ion I	Char	kad	A	
on	Chec	keu	Approved	
)19				

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	ActivityName	Original Duration	Remaining Duration Start	Planned Start	Finish	PlannedFinish	Total Float	Activity % Complete	TRA	Variance - Finish Date	August2019 September 2019
\$2 DW/	Install starl same and comparing E1 D2		0 21 51 10 4	20 51 10	02 Aug 10 A	22 1-1 10		1009/	0		04 11 18 25 01 08 15 2 tal steel cage and concreting -E1-P2
Pile E1 -P4	Install steel cage and concreting -E1-P2	3	0 31-Jul-19 A 0 07-Jun-19 A	20-Jul-19 01-Aug-19	02-Aug-19 A 13-Jun-19 A	23-Jul-19 06-Aug-19		100%	0	45	an steel eage and concreating -1.1-1.2
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lift	-	0 07-Jun-19 A	01-Aug-19	13-Jun-19 A	06-Aug-19		100%	0	45	 Install RCD and excavate the rock under rockhead level to found
Pile E1 -P		12	0 05-Jul-19 A	15-Jul-19	22-Jul-19 A	27-Jul-19				5 le E1 -P5	
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -E1-P5	3	0 05-Jul-19 A	15-Jul-19	08-Jul-19 A	17-Jul-19		100%	0		excavate the soil (42.4m length) -E1-P5
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lift		0 09-Jul-19 A	20-Jul-19	19-Jul-19 A	24-Jul-19		100%			d excavate the rock under rockhead level to founding level (4m soc
	Install steel cage and concreting -E1-P5	3	0 20-Jul-19 A	25-Jul-19	22-Jul-19 A	27-Jul-19		100%	0		cage and concreting -E1-P5
Pile E1 -P6		13	0 16-Jul-19 A	18-Jul-19	27-Jul-19 A	01-Aug-19		1000/	0	5 Pile E1 -P6	
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -E1-P6 Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lift	3 ing - 4	0 16-Jul-19 A 0 19-Jul-19 A	18-Jul-19 25-Jul-19	18-Jul-19 A 25-Jul-19 A	20-Jul-19 29-Jul-19		100%			b to excavate the soil (42.4m length) -E1-P6 CD and excavate the rock under rockhead level to founding level (
	Install RCD and excavate the fock under fock head level to founding level (4ff socket) - ing N0.2 & air fift Install steel cage and concreting -E1-P6	ing - 4 3	0 19-Jul-19 A 0 26-Jul-19 A	30-Jul-19	27-Jul-19 A	01-Aug-19		100%			all steel cage and concreting -E1-P6
Pile E1 -P7		30	0 16-Jun-19 A	21-Aug-19	05-Jul-19 A	25-Sep-19		10070	0	69	0 0
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lift		0 16-Jun-19 A	21-Aug-19	02-Jul-19 A	25-Sep-19		100%	0	72	
	Install steel cage and concreting -E1-P7	3	0 03-Jul-19 A	31-Aug-19	05-Jul-19 A	03-Sep-19		100%	0	51	Install steel cage and concre
Pile E1 -P8		22	0 11-Jun-19 A	04-Sep-19	19-Jun-19 A	30-Sep-19				86	
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lift		0 11-Jun-19 A	11-Sep-19	15-Jun-19 A	30-Sep-19		100%		89	
	Install steel cage and concreting -E1-P8	3	0 17-Jun-19 A	04-Sep-19	19-Jun-19 A	06-Sep-19		100%	0	67	 Install steel cage and co
Pile E1 -PS		6	0 14-Jun-19 A	09-Aug-19	26-Jun-19 A	15-Aug-19		1000/	0	42	 Install RCD and excavate the rock under rockhead leve
	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lift Install steel cage and concreting -E1-P9	ing - 3 6	0 14-Jun-19 A 0 25-Jun-19 A	10-Aug-19 09-Aug-19	24-Jun-19 A 26-Jun-19 A	13-Aug-19 15-Aug-19		100%		42	Install steel cage and concreting -E1-P9
Pile Cap		142	136 25-May-19 A	09-Aug-19	20-Jan-20	09-Jan-20	175	10070		-9	
Pile Cap for	r Pier E5	44	44 08-Aug-19	19-Jul-19	28-Sep-19	07-Sep-19	187			-17	-
	Pilehead treatment -E5	14	14 08-Aug-19	19-Jul-19	23-Aug-19	03-Aug-19	187	00/2	0	-17	Pilehead treatment -E5
	Rebar fixing and 1st stage Concreting -E5	14	10 24-Aug-19	05-Aug-19	04-Sep-19	15-Aug-19	187	0%		-17 -17 -	Rebar fixing and 1st stage
	Preparation works for pier installation -E5	10	10 18-Sep-19	28-Aug-19	28-Sep-19	07-Sep-19	187	0%		-17	
Pile Cap for		95	89 18-Jun-19 A	01-Aug-19	22-Nov-19	16-Nov-19	175			-5	
	Welding of Steel Bracket -E6 (6nos.)	14	7 18-Jun-19 A	01-Aug-19	15-Aug-19	16-Aug-19	30	50%		1	Welding of Steel Bracket -E6 (6nos.)
	Installation of precast shell -E6	10	10 19-Sep-19	12-Sep-19	30-Sep-19	24-Sep-19	175	0%		-5	
	Pilehead treatment -E6	14	14 02-Oct-19	25-Sep-19	18-Oct-19	12-Oct-19	175	0%		-5	-
	Rebar fixing and 1st stage Concreting -E6 Preparation works for pier installation -E6	10	10 19-Oct-19 10 12-Nov-19	14-Oct-19 06-Nov-19	30-Oct-19 22-Nov-19	24-Oct-19 16-Nov-19	175	0%	0	-5	
Pile Cap for		68	68 02-Sep-19	27-Aug-19	22-Nov-19	16-Nov-19	210		0	-5	v
	Welding of Steel Bracket -E7 (6nos.)	14	14 02-Sep-19	27-Aug-19	18-Sep-19	11-Sep-19	16	0%		-5	Welding
	Installation of precast shell -E7	10	10 19-Sep-19	12-Sep-19	30-Sep-19	24-Sep-19	32	0%		-5	
	Pilehead treatment -E7	14	14 02-Oct-19	25-Sep-19	18-Oct-19	12-Oct-19	210	0%	0	-5	-
	Rebar fixing and 1st stage Concreting -E7	10	10 19-Oct-19	14-Oct-19	30-Oct-19	24-Oct-19	210	0%		-5	
	Preparation works for pier installation -E7	10	10 12-Nov-19	06-Nov-19	22-Nov-19	16-Nov-19	210		0	-5	
Pile Cap for		54	54 25-May-19 A	12-Sep-19	22-Nov-19	18-Nov-19	180			-4 :	
	Welding of Steel Bracket -W2 (6nos.) Installation of precast shell -W2	14	0 25-May-19 A 10 19-Sep-19	02-Nov-19 12-Sep-19	07-Aug-19 A 30-Sep-19	18-Nov-19 24-Sep-19	180	100%	0	85	
	Pilehead treatment -W2	10	14 02-Oct-19	25-Sep-19	18-Oct-19	12-Oct-19	180	0%		-5	
	Rebar fixing and 1st stage Concreting -W2	10	10 19-Oct-19	14-Oct-19	30-Oct-19	24-Oct-19	180	0%		-5	
	Preparation works for pier installation -W2	10	10 12-Nov-19	06-Nov-19	22-Nov-19	16-Nov-19	180		0	-5	
Pile Cap for		99	99 21-Sep-19	17-Sep-19	20-Jan-20	09-Jan-20	49			-9	
	Welding of Steel Bracket -E1 (16nos.)	28	28 21-Sep-19	17-Sep-19	25-Oct-19	21-Oct-19	14	0%		-4	
	Installation of precast shell -E1	18	18 01-Nov-19	22-Oct-19	21-Nov-19	11-Nov-19	9	0%	0	-9	
	Installation of pre-cast side shell (small) and construction of strucutre gap x2 sides -E1 Pilehead treatment -E1	40	40 26-Nov-19 48 22-Nov-19	12-Nov-19 12-Nov-19	14-Jan-20 20-Jan-20	30-Dec-19 09-Jan-20	54	0%	0	-12	
Pile Cap for		14	14 22-Nov-19	08-Nov-19	07-Dec-19	23-Nov-19	17		0	-12	
	Welding of Steel Bracket -E2 (6nos.)	14	14 22-Nov-19	08-Nov-19	07-Dec-19	23-Nov-19	17			-12	
Pile Cap for		84		10-Aug-19	19-Nov-19	13-Nov-19	225			-5	
	Welding of Steel Bracket -E3 (6nos.)	14	0 24-Jun-19 A	10-Aug-19	09-Jul-19 A	26-Aug-19		100%		41	Welding of Steel Bracket -E3 (6nos.)
	Installation of precast shell -E3	10	10 19-Sep-19	12-Sep-19	30-Sep-19	24-Sep-19	201	0%	0	-5	
	Pilehead treatment -E3	14	14 02-Oct-19	25-Sep-19	18-Oct-19	12-Oct-19	225	0%		-5	-
	Rebar fixing and 1st stage Concreting -E3	10	10 19-Oct-19	14-Oct-19	30-Oct-19	24-Oct-19	225	0%		-5	
	Preparation works for pier installation -E3	10	10 08-Nov-19	02-Nov-19 08-Jul-19	19-Nov-19	13-Nov-19	225	0%	0	-5	
Pile Cap for	Installation of precast shell -E4	44 10	44 23-Jul-19 A	08-Jul-19 08-Jul-19	28-Sep-19 23-Jul-19 A	07-Sep-19 18-Jul-19	181	100%	0	-17 -4 Installation of pr	recast shell -F4
	Installation of precast shell -E4 Pilehead treatment -E4	10	0 23-Jul-19 A 14 08-Aug-19	08-Jul-19 19-Jul-19	23-Jul-19 A 23-Aug-19	18-Jul-19 03-Aug-19	181	100%		-17	Pilehead treatment -E4
	Rebar fixing and 1st stage Concreting -E4	14	10 24-Aug-19	05-Aug-19	04-Sep-19	15-Aug-19	181	0%		-17 -17	Rebar fixing and 1st stage
	Preparation works for pier installation -E4	10	10 247 kig 19 10 18-Sep-19	28-Aug-19	28-Sep-19	07-Sep-19	181		0	-17	
	E&M Works for CBL Main Bridge and Marine Viaduct	214	214 26-Sep-19	30-Sep-19	17-Jun-20	08-Aug-20	-33			43	
Procureme	nt and Delivery of Assocaited, E&M Works	214	214 26-Sep-19	30-Sep-19	17-Jun-20	08-Aug-20	-33			43	
	Procurement and delivery of under bridge mobile gantry	180	180 26-Sep-19	30-Sep-19	08-May-20	12-May-20	1		0	3	
	Procurement and delivery of arch inspection cradle	210	210 02-Oct-19	22-Nov-19	17-Jun-20	08-Aug-20	-34		0	43	
Section E of t	he Works-All Works within Portion V (CBL E&M Plantroom)	174	123 08-May-19 A	08-Jun-19	04-Jan-20	16-Dec-19	24			-14	
Section 5 of t	orks	129	78 08-May-19 A	08-Jun-19	09-Nov-19	24-Oct-19	24			-14	
		28	15 08-May-19 A	08-Jun-19	24-Aug-19	11-Jul-19	24	46.43%	0	-38	Construction of On-grade Slab
Structure Wo	Construction of On-grade Slab			00-Jull-17							Construction of Wall
Structure We S5-PR2045	Construction of On-grade Slab Construction of Wall			12-Jul-19	02-Sen-19	13-Aug-19	24	1.7%	0	-1/	Construction of wall
Structure Wo		28 28 56	7 27-May-19 A 56 03-Sep-19	12-Jul-19 17-Aug-19	02-Sep-19 09-Nov-19	13-Aug-19 24-Oct-19	24 24		0	-17 -14	
Structure We S5-PR2045 S5-PR2046	Construction of Wall Construction of Roof	28	7 27-May-19 A								
Structure We S5-PR2045 S5-PR2046 S5-PR2047	Construction of Wall Construction of Roof	28 56	7 27-May-19 A 56 03-Sep-19	17-Aug-19	09-Nov-19	24-Oct-19	24		0	-14	

Remaining Level of Effort Remaining Work	Milestone	CRBC	Date	Revision
Primary Baseline Critical Remaining Work	• • • • • • • • • • • • • • • • • • • •		08-Aug-19	Monthly updated on 8 Aug 2019
, , , , , , , , , , , , , , , , , , , ,		Three Month Rolling Programme		
Actual Work \diamond \diamond Baseline Milestone				

			Octobe	er 2019							Nover	nber 20	19		
22	29	06	1	13	20		27		03		10		17		24
ounding le	vel (4m	socket) - rig 1	No.2	& air li	fting	-E1	-P4							
i socket) -	rig No.2	& air	lifting	-E1-P	95										
vel (4m so	cket) - ri	g No.2	2 & air		g-E1-I	P6									
Insta		and ex	cavate	the ro	ock un	der ro	ockh	ead	leve	l to f	ound	ing l	evel (4m s	ocket)
d concretii	- Install ng -E1-F		and ex	cavat	e the r	ock u	nder	r roc	khea	nd lev	vel to	four	nding	leve	l (4m s
level to fo	unding l	evel (4	m soci	ket) - 1	rig No	.2 &	air li	iftin	g -El	-P9					
age Conc		5													
	Preparati	on wo	rks for	pier i	nstalla	tion -	E5							▼ Pil	e Cap
	Install	ation c			Pilehea	d trea				ing a	and 1				eting -I
ding of St	eel Brac Install				ell-E7										e Cap
				- F	Pilehea					ing a	and 1		-	Pre	eting -I
	Install	ation c						_							e Cap i of Ste
			-		Pilehea					ing a	and 1	st sta			eting -V paratic
						We	ldin	g of	Stee	el Bra	acket	-E1			allation
													▼ Pi	le Ca	up for F
os.)	Install	ation c	of preca		ell -E3 Pilehea	d trea									
	Pile Cap	for Pie	er E4				_ 1	Reb	ar fix						eting -I ation w
age Conc	reting -E Preparati		rks for	pier i	nstalla	tion -	E4								
-															
	_							_							
										•	Struc	ture '	Work	s	
										— (Cons	ructi	on of	fRoo	ſ
ion					1	Ch	ecl	ker	4	Т		Anı	orov	/ed	
)19					\vdash	01	50		<i>.</i>	+		' 'YI		Ju	



Contract 2

/ ID	Activity Name		Original	Actual Rema	ining	s Bay Link, Tse _{Calendar}	0	Finish	Total TR/	A Activity %		2019		2020	
			Duration [Duration Dur	ation				Float	Complete	4 Q1	Q2 Q3	Q4 Q1		Q4
	8 Programme Update (Ma	y 2019)	199	6	194		02-May-19 A	30-Dec-19	940					>19, NE/2017/08-1 N	
NE/2017/08-1.1 Project K			0	0	0		01-Jul-19	01-Jul-19	0					1 Project Key Dates	1 1 1
	nd Method Statement, Mater	ial Submissions	80	3	77		05-May-19 A	09-Aug-19	326				C 1 1 1 1 1	08-1.2 Design and N	1 1 1
NE/2017/08-1.3 Compension	· · ·		0	0	0	NE/2017/08(7days)	-	08-May-19	56					ompensation Event (1 1 1
	on of Compensation Event (NCE)	5	0	5	NE/2017/08(7days)	-	24-May-19	181				L L L	Notification of Compe	
NE/2017/08-1.6 Request	· · ·		18	0	0	NE/2017/08(7days)	06-May-19 A	26-May-19	0			26-May-19, N		Request for Informat	
NE/2017/08-1.7 Construc	tion Works		199	6	194		02-May-19 A	30-Dec-19	940			•	😽 🗘 30-Dec	-19, NE/2017/08-1.7	' Constru
NE/2017/08-1.7.1 Preliminar			0	0	0				0						
NE/2017/08-1.7.2 Construct			32	0	32		02-Jul-19	07-Aug-19	328					08-1.7.2 Construction	
NE/2017/08-1.7.2.1 Cycle Tra	ack - U-trougn avation to U-tough Level(+5.0mPD to -	+4.4mPD) (700m3)	11	0	11 11		02-Jul-19 02-Jul-19	13-Jul-19 13-Jul-19	349 349		+-+-+-+			1.7 2.1 Cycle Track -	
PORI.UT.EX1010	Excavation to U-trough Founding Lev		5	0	5	NE/2017/08(6days)		06-Jul-19	349 0	0%		Excavatio	n to U-trough F	ounding Level (+5:0m	
PORI.UT.EX1020	Plate Load Test		7	0	7	NE/2017/08(7days)	07-Jul-19	13-Jul-19	428 0	0%		L ⇒ ∎ Plate Lo	ad Test		
	struction of U-trough Structure (9 Bay	ys, 27D/Bay, 1 Team) .4mPD to +5.0mPD) (2 Layers, 5D/layer)	0	0	0				0						
NE/2017/08-1.7.2.1.3 Bac		.4mrD to +5.0mrD) (2 Layers, 5D/layer)	0		0				0		+				
NE/2017/08-1.7.2.2 Elevated			32	0	32		02-Jul-19	07-Aug-19	2					08-1.7.2.2 Elevated (
	struction of ELS and Lowering of Gro		17	0		NE/2017/08(6days)		20-Jul-19	2					1.7.2.2.1 Constructio	
PORI.ED.EX1020	Sheetpiling for Construction of Pile Ca Excavation from +5.0mPD to +4.5mP	•	12	0		NE/2017/08(6days) NE/2017/08(6days)		15-Jul-19 20-Jul-19	2 0	0%				tion of Pile Caps and PD to +4.5mPD (600r	
		MTRC Development Zone (10nos, 10D/pile+5D TRA, 1 to 5rigs)	15			NE/2017/08(6days)		07-Aug-19	2 0	070				08-1.7.2.2.2 Predrillir	1 4 1
NE/2017/08-1.7.2.2.2.1	Rig 1		15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2			🐨 07-AL	g-19, NE/2017/	08-1.7.2.2.2.1 Rig 1	
PORI.ED.PD1010	Predrilling for Alternative PBSH at Po	rtion I (PD01)	15	0		NE/2017/08(6days)		07-Aug-19	2 5	0%				ive PBSH at Portion I	
PORI.ED.PD1020	Rig 2 Predrilling for Alternative PBSH at Po	rtion I (PD02)	15	0		NE/2017/08(6days) NE/2017/08(6days)		07-Aug-19 07-Aug-19	2 2 5	0%				08-1.7.2.2.2.2 Rig 2 ive PBSH at Portion I	
NE/2017/08-1.7.2.2.2.3			15	0	15	NE/2017/08(6days)		07-Aug-19	2 3	078				08-1.7.2.2.2.3 Rig 3	
PORI.ED.PD1050	Predrilling for Alternative PBSH at Po	rtion I (PD04)	15	0		NE/2017/08(6days)		07-Aug-19	2 5	0%				ive PBSH at Portion I	
The NE/2017/08-1.7.2.2.2.4	Rig 7		15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2			👿 D7-AL	ig-19, NE/2017/	08-1.7.2.2.2.4 Rig 7	/
PORI.ED.PD1030	Predrilling for Alternative PBSH at Po	rtion I (NEBH1)	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2 5	0%		► Predr	illing for Alterhat	ive PBSH at Portion I	I (NEBH1)
The NE/2017/08-1.7.2.2.2.5	Pig 8		15	0	15	NE/2017/08(6days)	22- Jul-19	07-Aug-19	2			17- 4	h-19 NE/2017/	08-1.7.2.2.2.5 Rig 8	
PORI.ED.PD1040	Predrilling for Alternative PBSH at Po	rtion I (PD03)	15	0		NE/2017/08(6days)		07-Aug-19	2 5	0%				ive PBSH at Portion I	
NE/2017/08-1.7.2.2.3 Con	struction of Alternative PBSH (24nos,	7D/pile, 5rigs)	0	0	0				0						
	avation to Pile Cap Level (+5.0mPD to		0	0	0				0						
	struction of Pile Caps (10 PC, 14D/Cap struction of Columns and Abutment (0	0	0				0						
·		.8mPD to +4.4mPD) (6 Layers, 5D/layer)	0		0				0						
	struction of Deck Structure (9bays, 45	5D/bay, 3Teams)	0		0				0						
NE/2017/08-1.7.2.2.9 Drai			4		0		22-Jul-19	25-Jul-19	0 28			▼ 25 Iul	10 NE/2017/09	1.7.2.3 Lift and Stair	irpada
	rering of Ground Level (+5.0mPD to +4	l.4mPD)	4	0	4	NE/2017/08(6days)		25-Jul-19	28					1.7.2.3.1 Lowering c	
PORI.LS.EX1020	Excavation from +5.0mPD to +4.4mP	D	4	0	4	NE/2017/08(6days)	22-Jul-19	25-Jul-19	28 0	0%		►I Excava	tion from +5.0m	PD to +4.4mPD	
	Irilling Works for PBSH (5nos, 10D/pile	e+5D TRA, 5rigs)	0	0	0				0						
NE/2017/08-1.7.2.3.2.1			0	0	0				0						
NE/2017/08-1.7.2.3.2.3			0	0	0				0						
NE/2017/08-1.7.2.3.2.4			0	0	0				0						
NE/2017/08-1.7.2.3.2.5	Rig 8 struction of PBSH (14nos, 7D/pile, 5ri	ns)	0	0	0				0						
	avation to Pile Cap Level (+4.4mPD to		0	0	0				0						
	struction of Pile Caps (5 PC, 14D/Cap		0		0				0				·		
	struction of Column (4pcs, 18D/colun	nn, 4teams) .8mPD to +4.4mPD) (6 Layers, 5D/layer)	0	0	0				0						
	struction of Lift and Staircase		0	0	0				0						
ME/2017/08-1.7.3 Construct	ion Works of Portion II		60	1	59		08-May-19 A	19-Jul-19	12			19-Jul-1	9, NE/2017/08-	1.7.3 Construction W	Norks of F
NE/2017/08-1.7.3.1 Abutmer			53		53		09-May-19	12-Jul-19	14		.	12-Jul-1	9, NE/2017/08-1	1.7.3.1 Abutment 2A	
NE/2017/08-1.7.3.1.1 Pre-	drilling of Alternative Bored Piles (8no Rig 2	rs, rodrpie, sings)	53 45	0		NE/2017/08(6days) NE/2017/08(6days)		12-Jul-19 03-Jul-19	14 2			03-Jul-19	9, NE/2017/08-1	1.7.3.1.1 Pre-drilling o 7.3.1.1.2 Rig 2	or Alterna
	 Predrilling of Comforming Bored Piles 	s at Abutment 2A (PD18)	15	0		NE/2017/08(6days)	-	27-May-19	2 5	0%				red Piles at Abutment	t 2A (PD1
PORII.AB.PD.BP104	0 Predrilling of Comforming Bored Piles	s at Abutment 2A (PD13)	15	0	15	NE/2017/08(6days)	15-Jun-19	03-Jul-19	2 5	0%				Bored Piles at Abutm	ment 2A (F
NE/2017/08-1.7.3.1.1.3			45	0		NE/2017/08(6days)		03-Jul-19	2					7.3.1.1.3 Rig 3	
	 Predrilling of Comforming Bored Piles Predrilling of Comforming Bored Piles 		15	0		NE/2017/08(6days)		27-May-19	2 5	0%				red Piles at Abutment	
PORII.AB.PD.BP1060	Predrilling of Comforming Bored Piles	s at Abutifielii ZA (דט וס)	15	0	15 15	NE/2017/08(6days) NE/2017/08(6days)		03-Jul-19 12-Jul-19	2 5 14	0%				Bored Piles at Abutm 1.7.3.1.1.4 Rig 4	nent ZA (
	Predrilling of Comforming Bored piles	s at Abutment 2A (PD 17)	15	0		NE/2017/08(6days)		12-Jul-19	14 5	0%				g Bored piles at Abutr	ment 2A (
Page 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Rig 5		15	0	15	NE/2017/08(6days)	27-May-19	13-Jun-19	9			13-Jun-19,	NE/2017/08-1.7	.3.1.1,5 Rig 5	
	Predrilling of Comforming Bored piles	s at Abutment 2A (PD 14)	15	0		NE/2017/08(6days)		13-Jun-19	9 5	0%				ored piles at Abutmer	nt 2A (PD
PORILAB PD BP107	Rig 6 0 Predrilling of Comforming Bored Pile	at Abutment 2A (PD15)	30 15	0	30 15	NE/2017/08(6days) NE/2017/08(6days)	•	02-Jul-19 13-Jun-19	9 9 5	0%				7.3.1.1.6 Rig 6 ored Pile at Abutmen	nt 24 (PD
	5 Predrilling of Comforming Bored Pile 5 Predrilling of Comforming Bored Pile		15	0		NE/2017/08(6days)		02-Jul-19	9 5	0%		· • • • • • • • • • • • • • • • • • • •		Bored Piles at Abutmen Bored Piles at Abutm	1 1 1
	et Piling and Lowering of Existing Gro		0		0	(ouuys)			0	0,0			,,		
NE/2017/08-1.7.3.1.3 Con	struction of Alternative Bored Pile (8n		0	0	0				0						
	struction of Abutment Structure		0		0				0						
NE/2017/08-1.7.3.1.5 Drai			0 60		0 59		08-May-19A	19-Jul-19	0 12			19- Jul-	9. NE/2017/08-	1.7.3.2 Elevated Dec	eck
							Jo may 1974								<u> </u>
Actual Level of Effor	t			Contrac	t No	.: NE/2017/08	3					_	Date		
Actual Work	summary	CEDD 土木工程拓展署	Cr	oss Bav I		, Tseung Kwa	an O						08-Apr-19 .	Monthly Pro	ogramr
	··· ·· ,	CEDD Civil Engineering and Development Department		-						 :		ing			
Remaining Work		Development Department	K	uau Dy al	ua A	ssociated Wo	JIKS			<111					
Remaining Work Critical Remaining V	M I				D	1 of 4				JUIL					

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	Activity Name	Original Actu	al Remaining	Calendar Sta	art	Finish	Total TRA	A Activity %		2019		2020
		Duration Duratio		ouchdu ou		1 Inon	Float	Complete	i Q1	Q2 Q3	Q4 Q1 (Q2 Q3
	illing of Comforming Bored Piles (Elevated Deck)(1 no in Port II, 10D/pile+5D TRA, 1rig)	15		NE/2017/08(6days) 08			9				-19, NE/2017/08-1.7.3.2	
ME/2017/08-1.7.3.2.1.1		15		NE/2017/08(6days) 08			9				19, NE/2017/08-1.7.3.2.	
	Predrilling of Comforming Bored Piles at Elevated Deck (PD36)	15		NE/2017/08(6days) 08-	3-May-19 A	25-May-19	95	6.67%		H Predrillin	ng of Comforming Bored	Piles at Elev
	t Piling and Lowering of Existing Ground Level truction of Bored Pile (1 no. in Port II, 21D/pile, 1 teams in total)		0 0 0 21	NE/2017/08(6days) 27-	7-May-19	20-Jun-19	0			20-10	in-19, NE/2017/08-1.7.3.	23 Constr
PORII.ED.BP1010	Construction of Bored Pile (1no in Portion II,21D/pile,4teams in total)			NE/2017/08(6days) 27		20-Jun-19	36 0	0%			truction of Bored Pile (1h	
NE/2017/08-1.7.3.2.4 Prec	illing of PBSH (Elevated Deck) (2nos in Port II, 10D/pile+5D TRA, 2rigs in total)	15	0 15			19-Jul-19	9		1-1-1-1-1	19	-Jul-19, NE/2017/08-1.7	.3.2.4 Prec
NE/2017/08-1.7.3.2.4.1	Rig 4		0 0				0					
E/2017/08-1.7.3.2.4.2				NE/2017/08(6days) 03-		19-Jul-19	9				Jul-19, NE/2017/08-1.7	
	Predrilling of PBSH at Elevated Deck (PD85)		0 15	NE/2017/08(6days) 03-	3-Jul-19	19-Jul-19	95	0%		Pre	edrilling of PBSH at Eleve	ated Deck
	truction of Alternative PBSH (5nos in Port II, 7D/pile, 1 to 5rigs)		0 0				0					
	vation to Pile Cap Level (+4.4mPD to +2.3mPD) truction of Elevated Deck Pile Cap (Northern Part)(2nos, 14D/cap, 2 teams)		0 0 0 0				0					
	filling to Interim Formation Level (Northern Area)(7 layers, 5D/layer)		0 0				0					
	truction of Column (Northern Area) (2nos, 18D/Column, 2teams)		0 0				0					
E/2017/08-1.7.3.2.11 Co	struction of Pile Cap at Bored Pile Area(Elevated Deck)(cap+ cantilever beam, 21D/pc,1team)	0	0 0				0					
	kfilling to Interim Formation Level (Bored Pile Area) (7 Layers, 5D/layer)		0 0				0					
	struction of Columns (Bored Plle Area) (2nos, 18D/no, 2 teams)		0 0				0					
E/2017/08-1.7.4 Construct			5 94		3-May-19 A		1040				29-Aug-19, NE/2017/0	
_	tion of Elevated Deck and Abutment 2B illing of Comforming Bored Piles (ED+Ab 2B)(12 nos in Por III, 10D/pile+5D TRA, 5rigs in total)	<u>72</u>	0 72 0 15			06-Aug-19 14-Jun-19	103 2				06-Aug-19, NE/2017/08- n-19, NE/2017/08-1.7.4.	1.7.4.1 CO
NE/2017/08-1.7.4.1.1.1			0 0		5-Iviay-13	TH-Jun-13	0		+		1-13, 142/2017/00-1.7.4.	
NE/2017/08-1.7.4.1.1.2				NE/2017/08(6days) 28-	3-May-19	14-Jun-19	2			14-Jur	n-19, NE/2017/08-1.7.4;	1.1.2 Rig 2
	Predrilling of Comforming Bored piles at Elevated Deck (PD44)		0 15		-	14-Jun-19	2 5	0%			illing of Comforming Bore	
Hereit NE/2017/08-1.7.4.1.1.3	Rig 3			NE/2017/08(6days) 28-		14-Jun-19	2				n-19, NE/2017/08-1.7.4.	
PORIII.ED.PD.BP116	Predrilling of Comforming Bored Pile at Elevated Deck (PD45)	15	0 15	NE/2017/08(6days) 28	3-May-19	14-Jun-19	2 5	0%		Predri	illing of Comforming Bore	d Pile at E
HE/2017/08-1.7.4.1.1.4			0 0				0					
Heven Physical Representation Physical Representation Physical Representation and the second			0 0				0					
	Piling and Lowering of Existing Ground Level			NE/2017/08(6days) 11-		04-Jun-19	155				-19, NE/2017/08-1.7.4.1	
PORIII.ED.EX1040	Sheet Piling Works along Northern Footpath (Grid 3 to Grid 6)			NE/2017/08(6days) 11-	-	16-May-19	167 0	0%			ling Works along Norther on of Unexpected Gas Ma	
	Abandon of Unexpected Gas Main (Grid 11 to Grid 24) (by others)			NE/2017/08(6days) 20	-	30-May-19	155 0					
PORIII.ED.EX1060	Sheet Piling Works along Northern Footpath (Grid 10 to Grid 13)			NE/2017/08(6days) 31-	I-May-19	04-Jun-19	155 0	0%		Sheet	Piling Works along North	ern ⊢ootpa
	truction of Bored Pile (12nos in Port III, 21D/pile, 1 to 4 teams in total) illing of PBSH (Elevated Deck) (18nos in Port III, 10D/pile+5D TRA, 8rigs in total)		0 0 0 31	NE/2017/08(6days) 02-	2- 101-19	06-Aug-19	0				06-Aug-19, NE/2017/08-	17414
NE/2017/08-1.7.4.1.4 Free				NE/2017/08(6days) 04		20-Jul-19	2				-Jul-19, NE/2017/08-1.7.	
	Predrilling of PBSH at Elevated Deck (PD86)			NE/2017/08(6days) 04		20-Jul-19	2 5	0%			edrilling of PBSH at Eleve	
NE/2017/08-1.7.4.1.4.2		15		NE/2017/08(6days) 04		20-Jul-19	2				Jul-19, NE/2017/08-1.7	
	Predrilling of PBSH at Elevated Deck (PD22)	15	0 15			20-Jul-19	2 5	0%			edrilling of PBSH at Eleva	
NE/2017/08-1.7.4.1.4.3	Rig 3 Predrilling of PBSH at Elevated Deck (PD23)			NE/2017/08(6days) 04		20-Jul-19	2 2 5	09/)-Jul-19, NE/2017/08-1.7 edtilling of PBSH at Eleva	
PORIII.ED.PD.HP10	Predrilling of PBSH at Elevated Deck (PD23)	15	0 15	NE/2017/08(6days) 04	+-Jul-19	20-Jul-19	2 5	0%		Pre	adrilling of PBSH at Eleva	ated Deck
Hereit NE/2017/08-1.7.4.1.4.4				NE/2017/08(6days) 13		30-Jul-19	14				0-Jul-19, NĘ/2017/08-1.	
PORIII.ED.PD.HP109	D Predrilling of PBSH at Elevated Deck (PD24)	15	0 15	NE/2017/08(6days) 13-	s-Jul-19	30-Jul-19	14 5	0%			redrilling of PBSH at Elev	vated Deck
	Rig 5	15	0 15	NE/2017/08(6days) 20-)-, lul-19	06-Aug-19	9				06-Aug-19, NE/2017/08-	174115
	Predrilling of PBSH at Elevated Deck (PD25)		0 15			06-Aug-19	9 5	0%			Predrilling of PBSH at Ele	
						U -						
H NE/2017/08-1.7.4.1.4.6	Rig 6	30	0 30	NE/2017/08(6days) 03-	3-Jul-19	06-Aug-19	9				06-Aug-19, NE/2017/08-	1.7.4.1.4.6
	Predrilling of PBSH at Elevated Deck (PD19)		0 15			19-Jul-19	9 5	0%			edrilling of PBSH at Eleva	
	Predrilling of PBSH at Elevated Deck (NEBH3)		0 15			06-Aug-19	9 5	0%	†	1	Predrilling of PBSH at Ele	
_						-						
NE/2017/08-1.7.4.1.4.7	Rig 7	15	0 15	NE/2017/08(6days) 02-	2-Jul-19	18-Jul-19	4			18	-Jul-19, NE/2017/08-1.7.	4.1.4 7 R
	Predrilling of PBSH at Elevated Deck (PD20)		0 15			18-Jul-19	4 5	0%		Pre	edrilling of PBSH at Eleva	ated Deck
NE/2017/08-1.7.4.1.4.8				NE/2017/08(6days) 02-		18-Jul-19	4				Jul-19, NE/2017/08-1.7	
PORIII.ED.PD.HP117	Predrilling of PBSH at Elevated Deck (PD21)	15	0 15	NE/2017/08(6days) 02-	2-Jul-19*	18-Jul-19	4 5	0%		Prie	edrilling of PBSH at Eleva	ited Deck
NE/2017/08-1.7.4.1.5 Con	truction of Alternative PBSH (45nos in Port III, 7D/pile, 1 to 5rigs in total)	0	0 0				0					
	vation to Pile Cap Level (+4.4mPD to +2.3mPD)		0 0				0					
	truction of PC42 (16D) + Abutment 2B (28D) + Bearing Installation (14D)		0 0				0					
NE/2017/08-1.7.4.1.8 Con	truction of Elevated Deck Pile Cap (Northern Part) (18nos, 14D/cap, 5 teams)		0 0				0					
	filling to Formation Level (Northern Area)(7 layers, 5D/layer)		0 0				0					
	struction of Column (18nos, 18D/Column, 5teams)		0 0				0					
	struction of Pile Cap at Bored Pile Area(Elevated Deck)(9nos cap+cantilever beam, 21D/pc,5team		0 0 0 0				0					
	kfilling to Formation Level (Bored Pile Area)(7Layers, 5D/layer) struction of Columns (18nos, 18D/no, 4 teams)		0 0				0					
	struction of Beam/Slab (11bays, 30D/bay incl. topping, 6 teams)		0 0				0					
NE/2017/08-1.7.4.1.16 Dra			0 0				0					
NE/2017/08-1.7.4.1.17 Co	struction of Semi Noise Enclosure (CH13360.1 to CH13482.1) (Portion II + III)	0	0 0				0					
	struction of 600mm Wall (11bays, 16D/Bay, 2 Teams)		0 0				0					
NE/2017/08-1.7.4.2 Constru			5 94		3-May-19 A						29-Aug-19, NE/2017/0	
NE/2017/08-1.7.4.2.1 Pre- NE/2017/08-1.7.4.2.1.1	rilling of Comforming Bored Piles (U-trough)(8nos, 10D/pile+5D TRA, 5rigs)		5 44 5 10	03 NE/2017/08(6days) 03-	3-May-19 A		9				Jul-19, NE/2017/08-1.7.4 19, NE/2017/08-1.7.4.2.	
	Predrilling of Comforming Bored Piles at U-trough (PD53) (Current Drill Depth: 14m)		5 10 5 10			21-May-19 21-May-19	1 5	33.33%			g of Comforming Bored	
NE/2017/08-1.7.4.2.1.2			0 0	00\000y3/ 00			0	50.0070			5	
NE/2017/08-1.7.4.2.1.2			0 0				0					
NE/2017/08-1.7.4.2.1.4			0 30	NE/2017/08(6days) 20-)-May-19	24-Jun-19	14			24-Ju	un-19 NE/2017/08-1 7.4	.2.1.4 Rig
PORIII.UT.PD.BP108	Predrilling of Comforming Bored Piles at U-trough (PD51)	15	0 15	NE/2017/08(6days) 20)-May-19	05-Jun-19	14 5	0%		Predrill	ling of Comforming Bore	J Piles at U
Actual Level of Effor	♦ Milestone	Co	ntract N	o.: NE/2017/08							Date	<u> </u>
					0						08-Apr-19	Month
Actual Work	Summary CEDD Civil Engineering and		Bay Lini	k, Tseung Kwan	I U					ing		
Remaining Work	Development Department			Associated Worl				_				

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				Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1		Q	2
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ed	Pil	e (1	n). ir	i Pr	brt	II. 2	210	l/pil	е.	te	am	s i	h to	(tal)													
ea	ms	in	tot	al)				İ.,																				
+ (Ele	va	ed	De	ck)	(2	nos	s in	Po	rt Î	, 1	DD/	pile	+5	D	rr/	۹, 2	2rig	s in	to	al)					-		
1		f Po	i	i	i																							
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	Activity Name	Original Actua	al Remaining	Calenda	r Start	Finish	Total TRA	Activity %		2019			2020
		Duration Duration	n Duration	Calorida			Float	Complete	1 Q1	Q2 Q3	Q4 (Q1 Q2	
PORIII.UT.PD.BP10	087 Predrilling of Comforming Bored Piles at U-trough (PD49)	15 (0 15	NE/2017/08(6days) 06-Jun-19	24-Jun-19	14 5	0%		Predri	illing of Comfor	ming Bored F	Piles at
ME/2017/08-1.7.4.2.1.		45	1 44			02-Jul-19	9	0.070/			ul 19 NE/2017		
	D90 Predrilling of Comforming Bored piles at U-trough (PD52) D95 Deschilling of Comforming Deschilling at U-trough (PD52)			NE/2017/08(6days		25-May-19	9 5	6.67%			g of Comformir rilling of Comfo		
	Predrilling of Comforming Bored piles at U-trough (PD50) eet Piling and Lowering of Existing Ground Level			NE/2017/08(6days NE/2017/08(6days		02-Jul-19 25-May-19	9 5 93	0%		and the second	19, NE/2017/08		
PORIII.UT.EX1030	Lowering of Existing Ground Level (Northern Area) (Grid 13 to Grid 22) (+5.0mPD to +4.4mPD)			NE/2017/08(6days		25-May-19 25-May-19	93 0	0%			of Existing Gro		
	instruction of Bored Pile (8 nos, 21D/pile, 1 to 2 teams)			NE/2017/08(6days		29-Aug-19	1040				29-Aug-19, NI		
PORIII.UT.BP1010	Construction of Bored Piles (8nos,21D/pile,1 to 2teams)	84 (NE/2017/08(6days		29-Aug-19	250 0	0%			Construction p		
PORIII.UT.BP1020	New Activity	21 (0 21	NE/2017/08(6days	i) 22-May-19	15-Jun-19	1095	0%		🕂 🔲 New Ac	tivity		
PORIII.UT.BP1040	New Activity	8	0 8	NE/2017/08(6days	i) 17-Jun-19	25-Jun-19	1095	0%		🕂 🛛 New A	Activity		
	e-drilling of alternative PBSH (U-trough)(16nos, 10D/pile+5D TRA, 8rigs)	0	0 0				0						
NE/2017/08-1.7.4.2.4.	1 Rig 1	0	0 0				0						
NE/2017/08-1.7.4.2.4.2			0 0				0						
NE/2017/08-1.7.4.2.4.3			0 0				0		<u> </u>	+- -		-+-+-+-+-	
NE/2017/08-1.7.4.2.4.			0 0				0						
NE/2017/08-1.7.4.2.4.		0	0 0				0						
E/2017/08-1.7.4.2.4.	•		0 0				0						
NE/2017/08-1.7.4.2.4.8	<u> </u>	-	0 0				0		↓↓↓↓	÷-84444			
· •	Instruction of Alternative PBSH (40nos, 7D/pile, 1 to 5rigs)	Y	0 0 0 0				0						
NE/2017/08-1.7.4.2.7 Dr			0 0				0						
	Instruction of Semi-Noise Enclosure (CH13482.1 to 13580.3)		0 0				0						
NE/2017/08-1.7.5 Modifica	tion of Seawall (Portion II and III)		0 0				0						
	ction of the At-grade Noise Semi Enclosures	26	0 26		03-Jun-19	04-Jul-19	26				ul-19, NE/2017		
NE/2017/08-1.7.6.1 Northe			0 26		03-Jun-19	04-Jul-19	26				ul-19, NE/2017		
PORIII.AG.N1010	Open Cut Excavation for Raft Footing (+5.5mPD to +2.4mPD) (5100m3)		0 21			27-Jun-19	25 0	0%			Cut Excavation	tor Raft For	oting (+
PORIII.AG.N1020	Plate Load Test			NE/2017/08(7days	i) 28-Jun-19	04-Jul-19	31 0	0%		►1 Plate	Load Test		
NE/2017/08-1.7.6.2 Southe	rn Side ling to Interim Formation Level at At-grad e Road Area (3 layers, 5D/layer)		0 0				0			+			
NE/2017/08-1.7.6.4 Constr			0 0				0						
	tection Works (Portion I, II and III)	88	6 82	NE/2017/08(6days) 02-May-19 A	16-Aug-19	137			1	16-Aug-19, NE	/2017/08-1.7	.7 Tre
TP1020	Tree Transplant Works	88	6 82	NE/2017/08(6days) 02-May-19 A	16-Aug-19	137 0	6.82%		7	Tree Transplan	t Works	
NE/2017/08-1.7.8 Wan O R	oad	186 (0 186		20-May-19	30-Dec-19	0				▼ 30	J-Dec-19, NF	=/2017
NE/2017/08-1.7.8.1 Footpa		186 (0 186		20-May-19	30-Dec-19	0				30	0-Dec-19, NE	E/201/7
NE/2017/08-1.7.8.1.3 Fo				NE/2017/08(6days		09-Aug-19	5				9-Aug-19, NE/		
NE/2017/08-1.7.8.1.3.7 WO.FP.NB1.1000	1 TTA Phase 1 (TTA DWG: Q1004/WAOR/002A) Implementation of TTA at FP		0 19 0 1	NE/2017/08(6days NE/2017/08(6days		11-Jun-19 20-May-19	0	0%			19, NE/2017/0 ntation of TTA a		
WO.FP.NB1.1010	UU Detection, Trial Pit, UU Identification, UU Identification		0 14			05-Jun-19	0 0	0%		- 	ection, Trial Pit,		ation
WO.FP.NB1.1020	Setting up of Drill Rig and Construction of Environmental Borehole and Sampling (EBH7) (Rig 6)(10D/pile+5D T			NE/2017/08(6days		10-Jun-19	0 5	0%			up of Drill Rig		
WO.FP.NB1.1040	Reinstatement of Road Surface		0 1	NE/2017/08(6days		11-Jun-19	0 0	0%			tement of Roa		
NE/2017/08-1.7.8.1.3.2		19	0 19	NE/2017/08(6days) 12-Jun-19	04-Jul-19	5				ul-19, NE/2017		2 TT/
WO.FP.NB2.1000	Implementation of TTA at FP	1 (0 1	NE/2017/08(6days		12-Jun-19	0 0	0%			entation of TT/		
🔲 WO.FP.NB2.1010	UU Detection and Trial Pit, UU Identification	14 (0 14	NE/2017/08(6days	i) 13-Jun-19	28-Jun-19	0 0	0%		ອີບບ ອ	etection and Tr	rial Pit, UU ld	lehtifica
WO.FP.NB2.1020	Setting up of Drill Rig and Construction of Environmental Borehole and Sampling (EBH8) (Rig 6)(10D/pile+5D T	TRA) 15 (0 15	NE/2017/08(6days	i) 15-Jun-19	03-Jul-19	0 5	0%		Settir	ng up of Drill Ri	g and Constr	uction
WO.FP.NB2.1040	Reinstatement of Road Surface	1 (0 1	NE/2017/08(6days	i) 04-Jul-19	04-Jul-19	5 0	0%		Reins	statement of Ro	oad Surface	
	3 TTA Phase 3 (TTA DWG: Q1004/WAOR/001A)	16	0 16	NE/2017/08(6days		23-Jul-19	5				Jul-19, NE/201		.3.3 T
WO.FP.NB3.1000	Implementation of TTA at FP		0 1	NE/2017/08(6days		05-Jul-19	5 0	0%		- Imple	ementation of T Detection and	TAatFP	
WO.FP.NB3.1010	UU Detection and Trial Pit, UU Identification		0 14	NE/2017/08(6days		22-Jul-19	5 0	0%	····				
WO.FP.NB3.1030	Tree Transplant and Removal of Rootball Reinstatement of Road Surface		0 7	NE/2017/08(6days		16-Jul-19 23-Jul-19	10 0 5 0	0%			e Transplant ar instatement of		
	4 TTA Phase 4 (TTA DWG: Q1004/WAOR/006A)		-	NE/2017/08(6days NE/2017/08(6days	-	23-Jul-19 09-Aug-19	5 0	0%		· · · · · · · · · · · · · · · · · · ·	9-Aug-19, NE/		
WO.FP.NB4.1000	Implementation of TTA at FP		0 15	NE/2017/08(6days		24-Jul-19	5 0	0%			plementation of		5.1.3.4
WO.FP.NB4.1010	UU Detection and Trial Pit, UU Identification			NE/2017/08(6days		09-Aug-19	5 0	0%			JU Detection ar		U Iden
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	1 TTA Phase 1 (TTA DWG: Q1004/WAOR/011)	16		NE/2017/08(6days	<u> </u>	06-Jun-19	11			🕶 06-Jun-	19, NE/2017/0	8-1.7 8.1.4.1	
WO.FP.SB1.1000	Implementation of TTA at FP			NE/2017/08(6days		20-May-19	11 0	0%			ntation of TTA a		
WO.FP.SB1.1010	UU Detection and Trial Pit, UU Identification		0 14	. ,		05-Jun-19	11 0	0%			ection and Trial		tificatio
WO.FP.SB1.1030	Reinstatement of Road Surface		0 1	. ,		06-Jun-19	11 0	0%			tement of Road		
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WO.FP.SB2.1000	Implementation of TTA at FP UU Detection and Trial Pit, UU Identification		0 1 0 14	NE/2017/08(6days NE/2017/08(6days		08-Jun-19 25-Jun-19	11 0 11 0	0%			entation of TTA etection and Tr		entifica
WO.FP.SB2.1010	Tree Transplant and Removal of Rootball		-	NE/2017/08(6days NE/2017/08(6days		25-Jun-19 19-Jun-19	11 0	0%			ransplant and		
WO.FP.SB2.1030	Reinstatement of Road Surface		0 7	NE/2017/08(6days		26-Jun-19	11 0	0%			tatement of Ro		Joing
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WO.FP.SB4.1010	UU Detection and Trial Pit, UU Identification	14 (0 14	NE/2017/08(6days		15-Jul-19	11 0	0%		►□ ∪⊍	Detection and	Trial Pit, UU	Identifi
WO.FP.SB4.1030	Removal of Rootball (A0001)	2 (0 2	NE/2017/08(6days	i) 02-Jul-19	03-Jul-19	21 0	0%		+I Rem	oval of Rootbal	I (A0001)	
WO.FP.SB4.1040	Reinstatement of Road Surface	1 (0 1	NE/2017/08(6days	i) 16-Jul-19	16-Jul-19	11 0	0%		·	nstatement of F		
	5 TTA Phase 4 (TTA DWG: Q1004/WAOR/005)		0 15			02-Aug-19	11				2-Aug-19, NE/2		.1.4.5
WO.FP.SB5.1000	Implementation of TTA at FP		0 1	NE/2017/08(6days		17-Jul-19	11 0	0%			ementation of		
WO.FP.SB5.1010	UU Detection and Trial Pit, UU Identification		0 14			02-Aug-19	11 0	0%			U Detection an		
NE/2017/08-1.7.8.1.2 Ot WO.FT.EB1030	her Works Chemical/Biological Testing for Environmental Borehole			NE/2017/08(7days NE/2017/08(7days	/	30-Dec-19	0	00/			30	0-Dec-19, NE hemical/Biolo	-/2017
WO.F I.EB1030		20	0 180 0 20	INE/2017/08(70ays) 04-Jul-19 25-Jul-19	30-Dec-19 16-Aug-19	0 0	0%	+	+	16-Aug-19, NE		
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WO.CW.TTA1010	Implementation of TTA at Carriageway	1 0)	1 NE/2	/2017/08(6days) 25	5-Jul-19	25-Jul-19	0 0	0%			l l In	nplementat	tion of T	TA at Carriag	jeway								
WO.CW.TTA1 020	Utility Detection and Trial Pit for Carriageway (including UU Identification)	20 0) :	20 NE/2	/2017/08(6days) 25	5-Jul-19	16-Aug-19	0 0	0%			-	Utility Dete	ection an	id Trial Pit foi	r Carriagew	vay (includ	ding UU lợc	ntifiçation)				
WO.CW.TTA1030	Erection of Chain Link Fence and Vehicular Gate at Entrance	20 0) :	20 NE/2	/2017/08(6days) 25	5-Jul-19	16-Aug-19	0 0	0%			ا	Erection o	of Chain I	Link Fence a	and Vehicula	ar Gate at	Entrahce						
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NE/2017/08-1.7.8.2.6 Structu	ural Works	0 0)	0				0																
ME/2017/08-1.7.8.2.7 Noise E	Barrier	0 0)	0				0																
NE/2017/08-1.7.8.2.8 Remain	ning Works	0 0)	0				0		1-1-1-1	i i i						111							

Remaining Work

 Actual Level of Effort • Actual Work Critical Remaining Work

 Milestone summary



Contract No.: NE/2017/08 Cross Bay Link, Tseung Kwan O Road D9 and Associated Works Page 4 of 4



Date 08-Apr-19 ... Monthly Program

Revision	Checked	Approved
mme Update (Apr 2019)	HY	StL

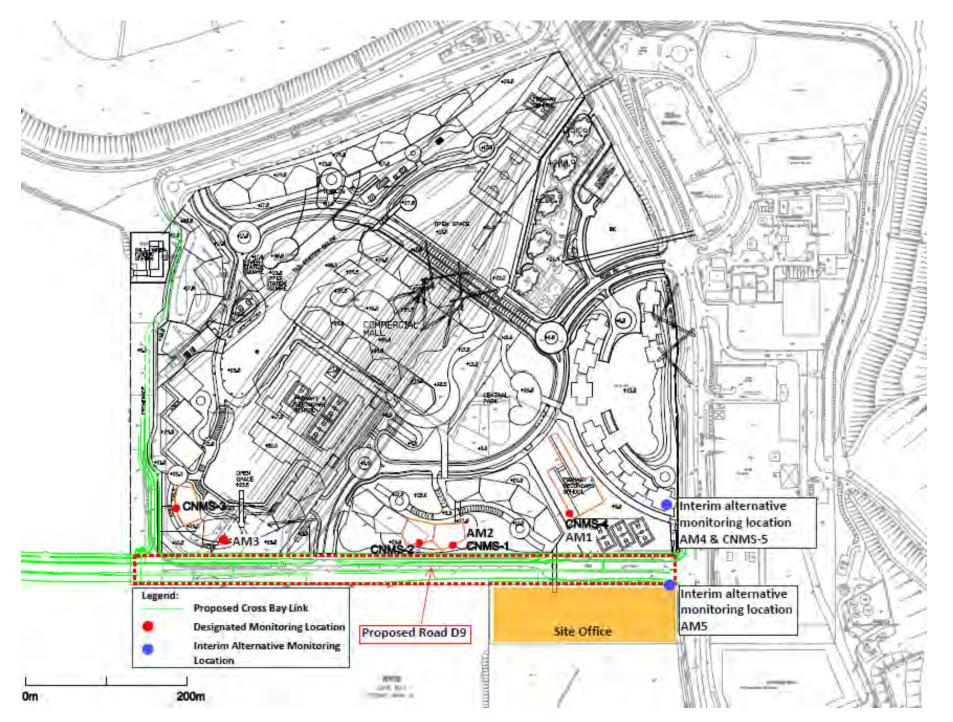


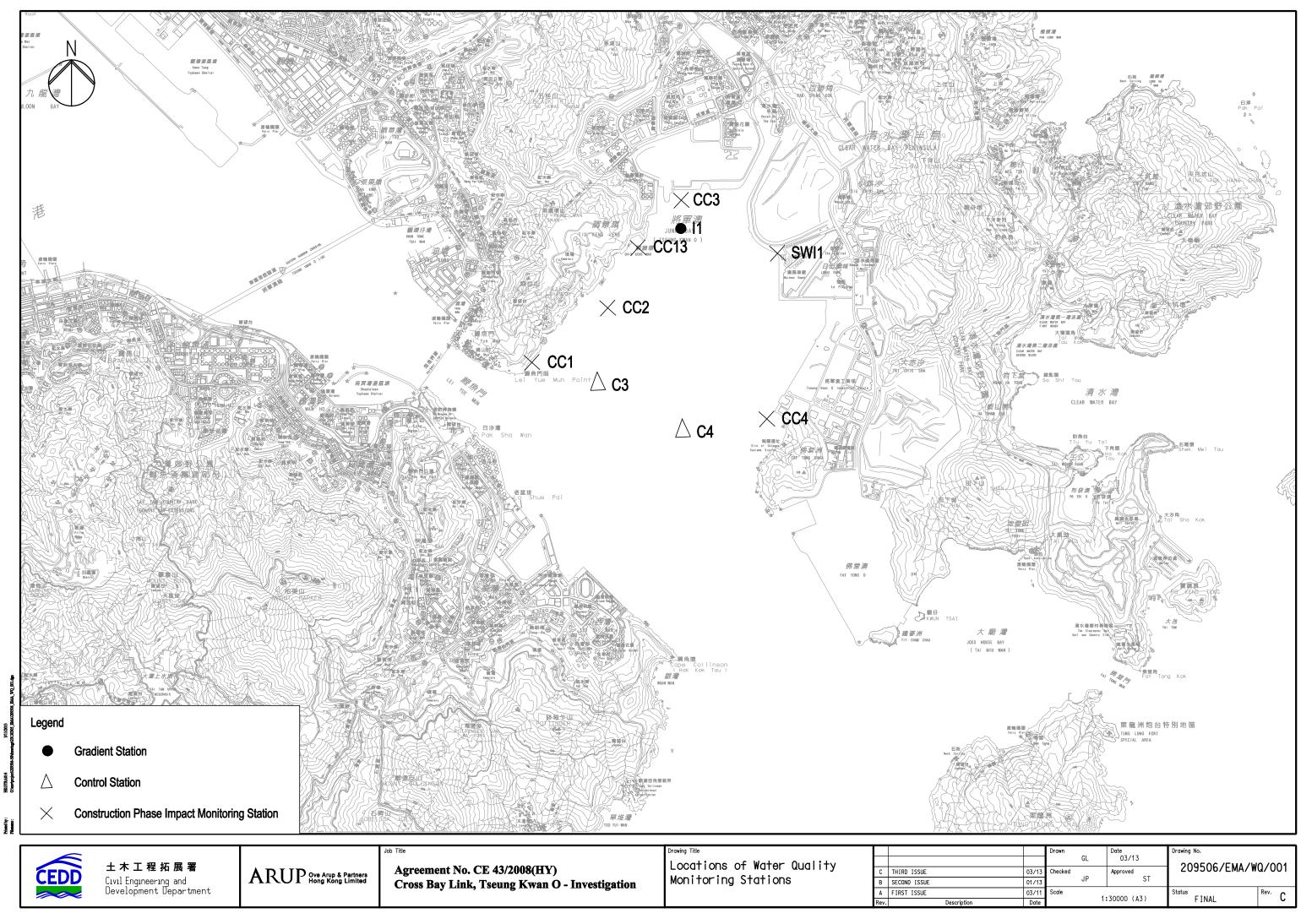
Appendix D

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





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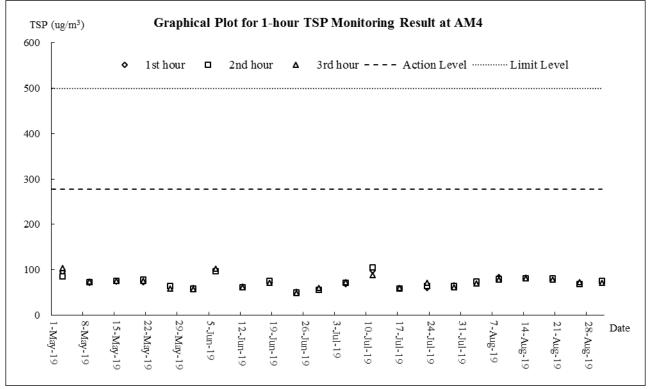


Appendix E

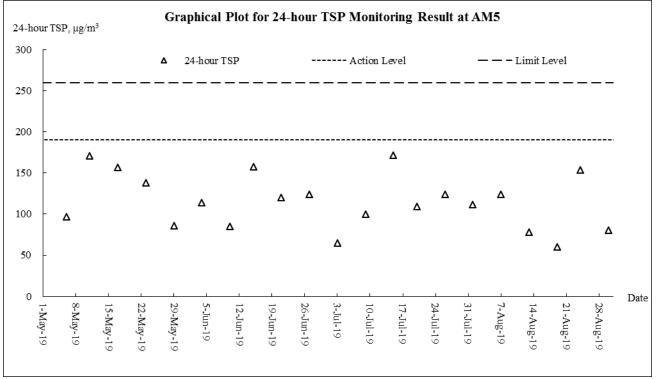
Graphical Plots of Monitoring Results



Air Quality – 1 Hour TSP

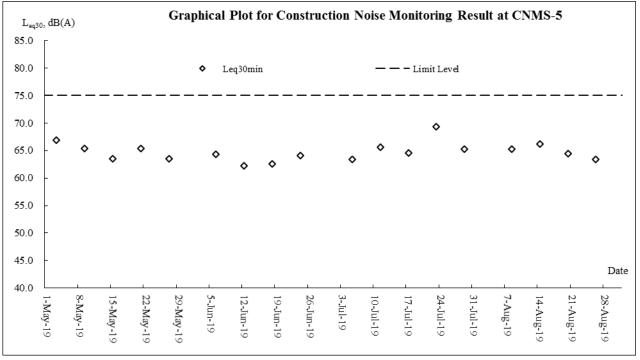


Air Quality - 24-Hour TSP



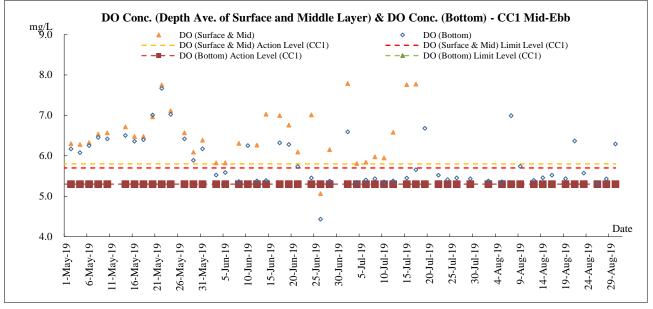


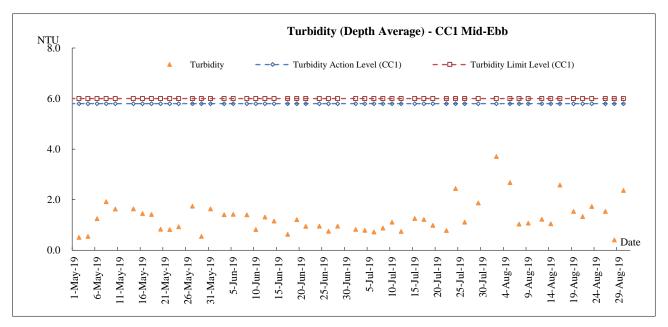
Construction Noise

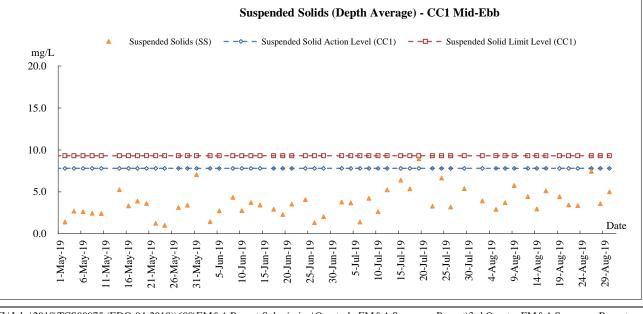




Marine Water Quality – CC1 Mid-ebb

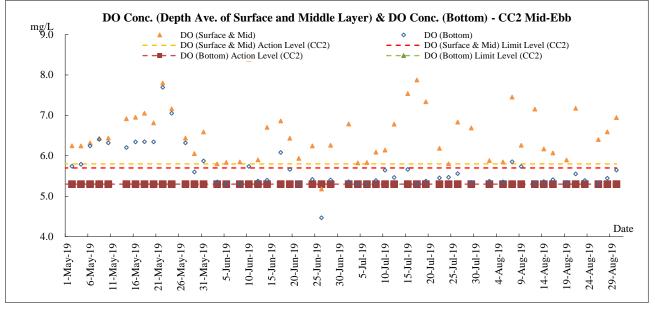


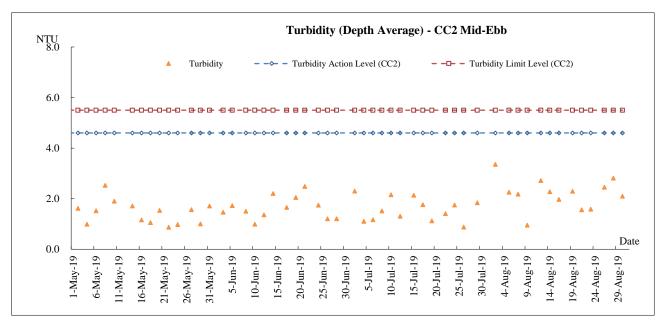


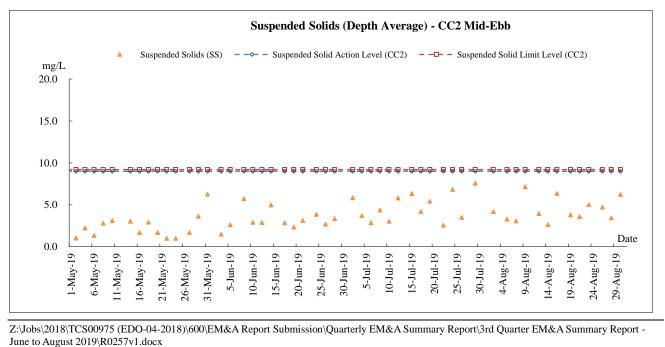




Marine Water Quality – CC2 Mid-ebb

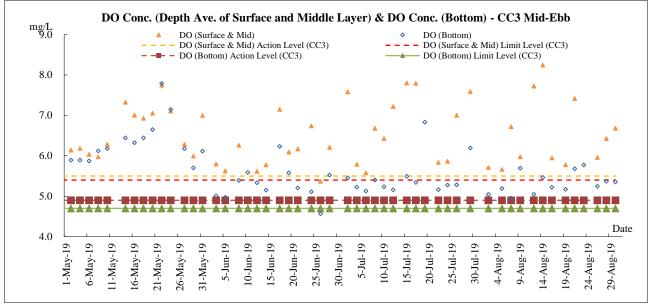


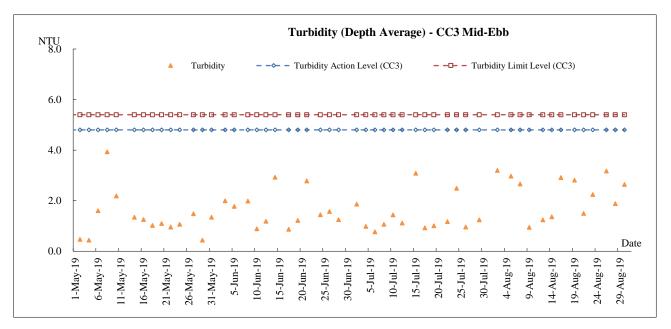


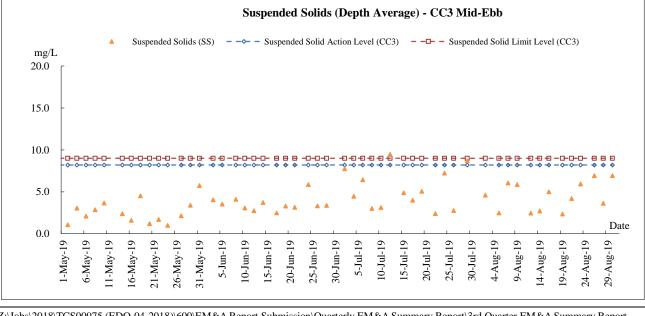




Marine Water Quality – CC3 Mid-ebb

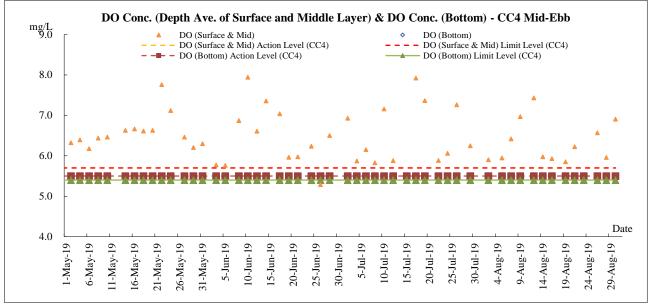


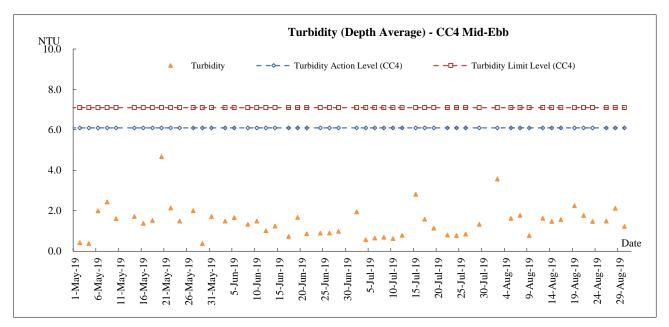


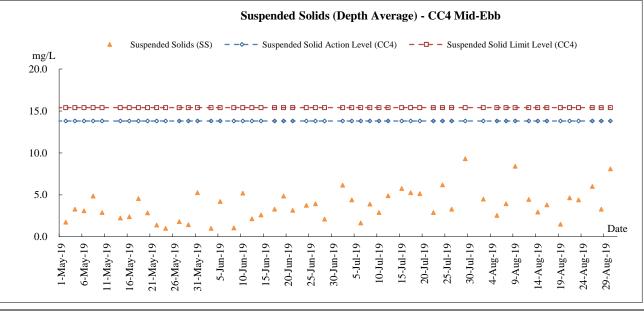




Marine Water Quality – CC4 Mid-ebb

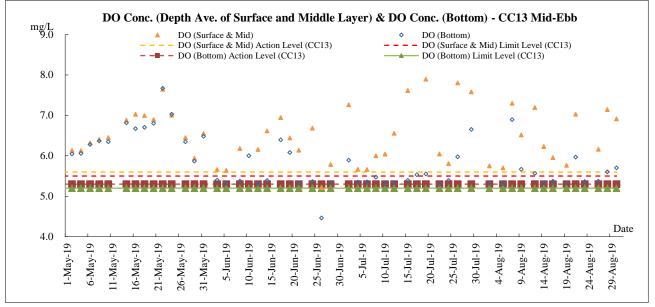


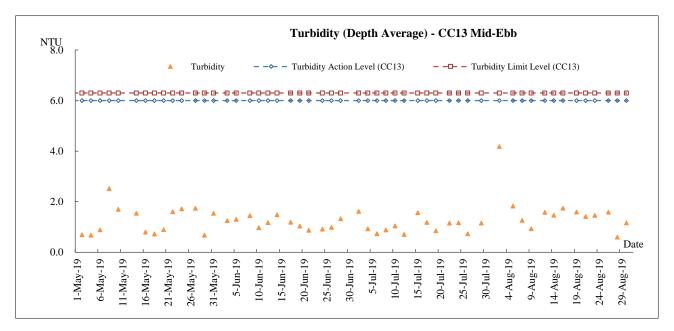


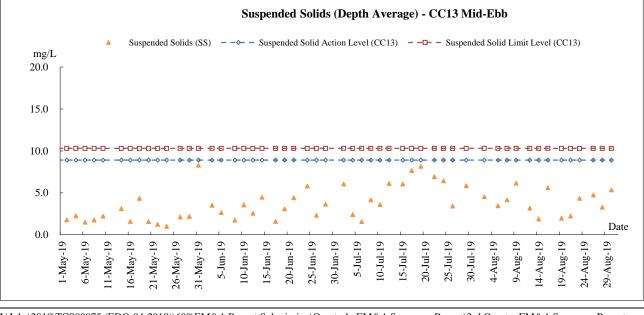




Marine Water Quality – CC13 Mid-ebb

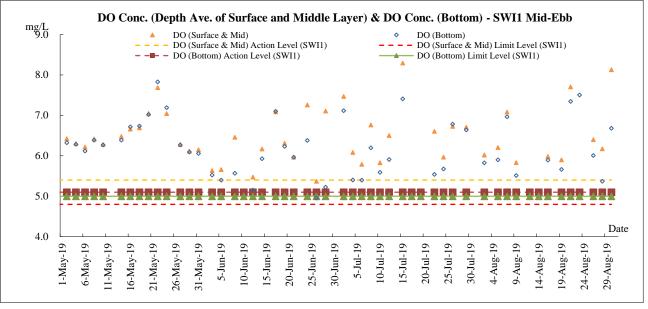


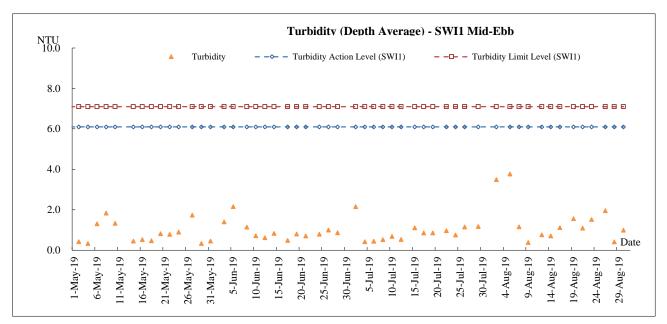


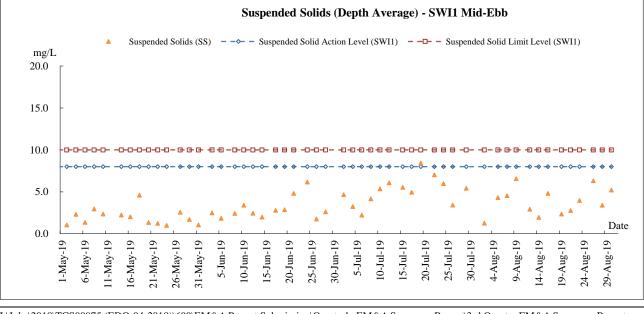




Marine Water Quality – SWI1 Mid-ebb

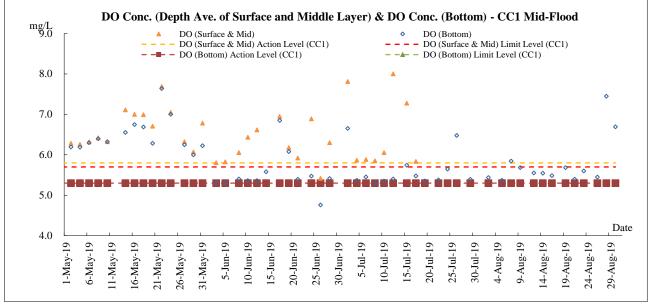


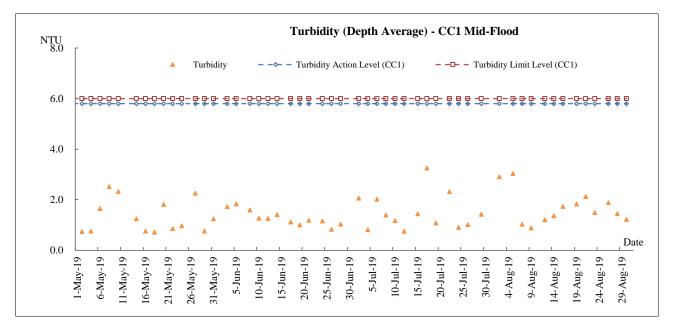


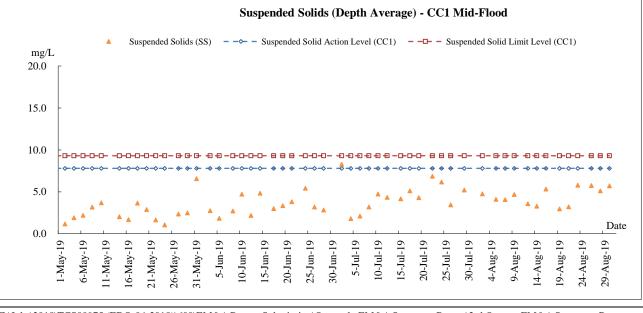




Marine Water Quality – CC1 Mid-Flood

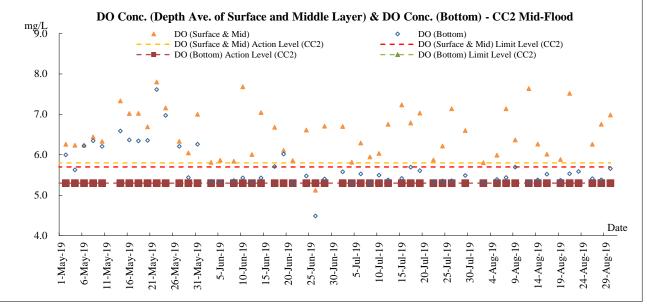


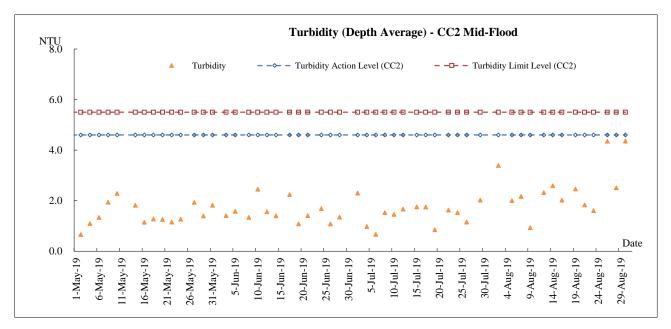


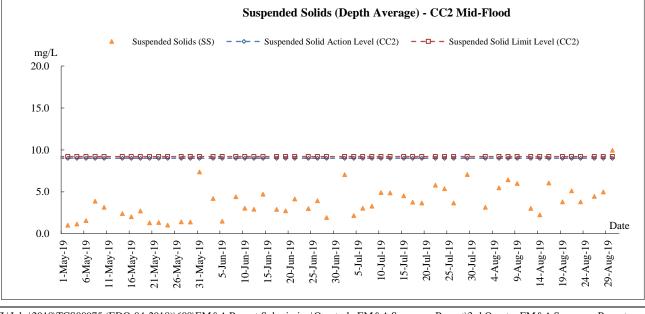




Marine Water Quality – CC2 Mid-Flood

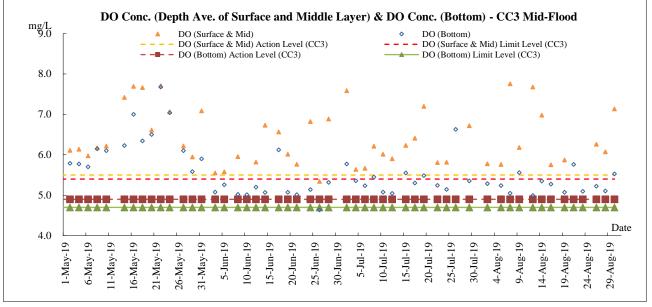


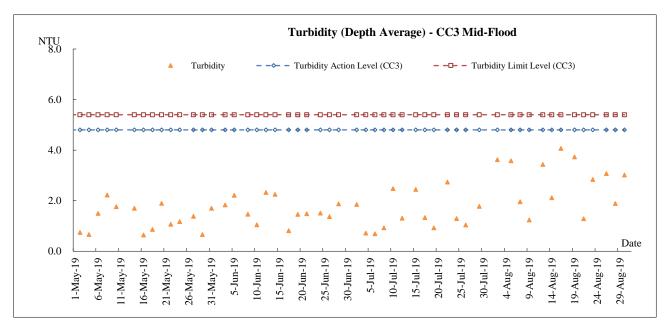


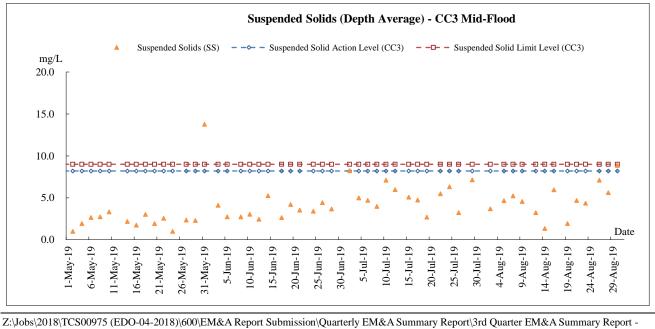




Marine Water Quality – CC3 Mid-Flood



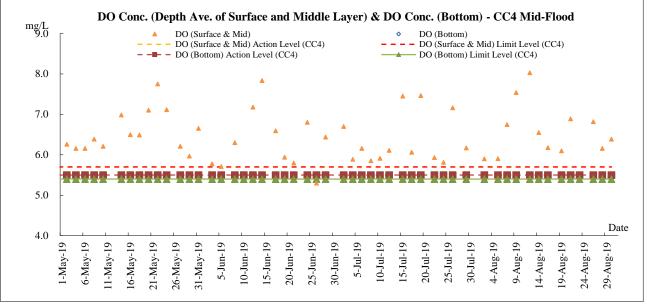


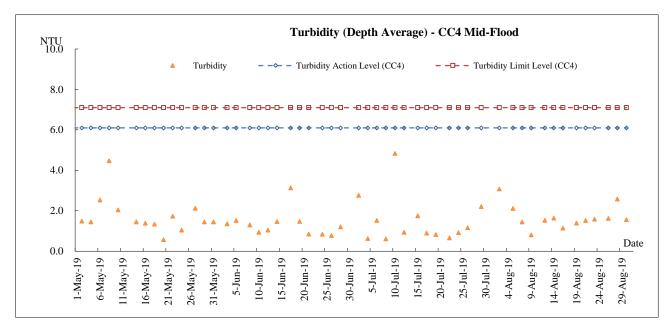


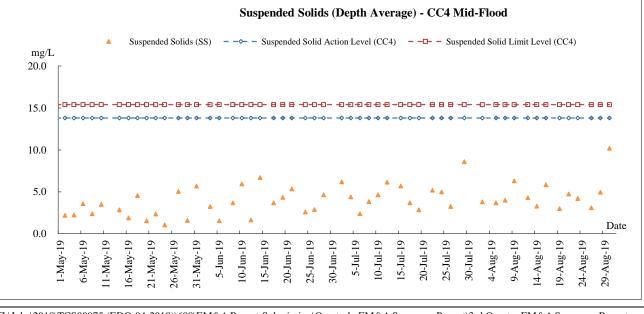
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Marine Water Quality – CC4 Mid-Flood

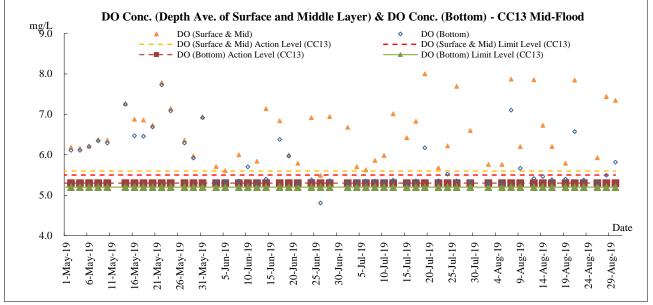


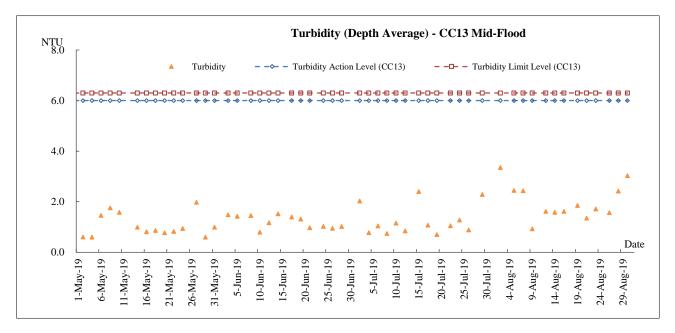


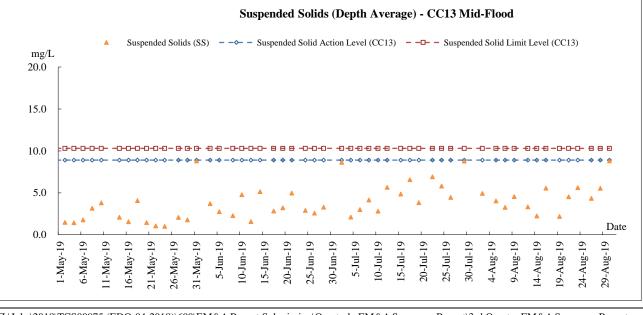




Marine Water Quality – CC13 Mid-Flood

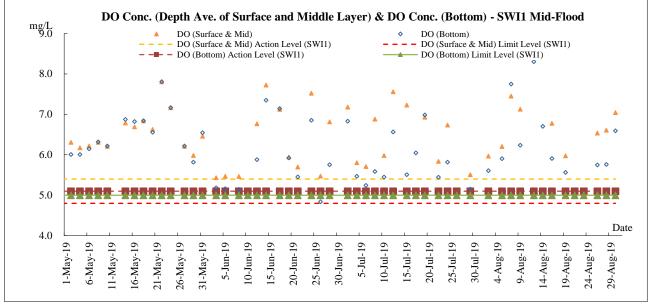


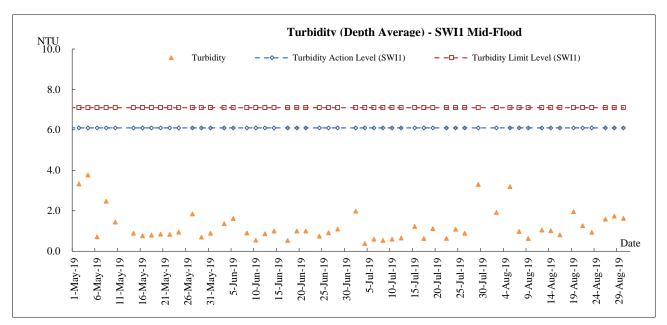


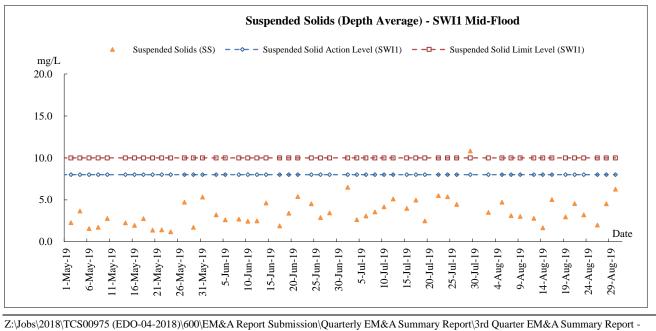




Marine Water Quality – SWI1 Mid-Flood







June to August 2019\R0257v1.docx



Appendix F

Meteorological Information



The weather of June 2019

Mainly attributing to the warmer than normal sea surface temperature and stronger than usual southerly flow in the lower atmosphere over the northern part of the South China Sea, June 2019 was much hotter than usual in Hong Kong. The monthly mean temperature of 29.0 degrees was 1.1 degree above the normal figure of 27.9 degrees, one of the third highest on record for June. Moreover, the first half of this year from January to June 2019 was exceptionally warm. The mean temperature of 23.0 degrees, mean minimum temperature of 21.3 degrees and mean maximum temperature of 25.4 degrees were all the highest on record for the same period. The monthly rainfall of June 2019 was 429.1 millimetres, about 6 percent below the normal of 456.1 millimetres. The accumulated rainfall recorded in the first six months of the year was 1109.4 millimetres, slightly higher than the normal figure of 1096.9 millimetres for the same period.

The weather of July 2019

July 2019 was much hotter than usual in Hong Kong, mainly attributing to the warmer than normal sea surface temperature over the northern part of the South China Sea. The monthly mean minimum temperature of 27.7 degrees was 0.9 degree above the normal figure of 26.8 degrees, the highest on record for July. The monthly mean temperature of 29.5 degrees was 0.7 degree above the normal figure of 28.8 degrees, one of the sixth highest on record for July. The month was also cloudier than usual with the mean amount of cloud of 79%, about 10% above the normal figure of 69% and one of the fifth highest on record for July. The duration of bright sunshine in the month was only 150.5 hours, about 29% below the normal figure of 212.0 hours and the seventh lowest on record for July. The monthly rainfall was 328.5 millimetres, about 13 percent below the normal of 376.5 millimetres. The accumulated rainfall recorded in the first seven months of the year was 1437.9 millimetres, slightly lower than the normal figure of 1473.3 millimetres for the same period.

The weather of August 2019

August 2019 was hotter than usual in Hong Kong, mainly attributing to the warmer than normal sea surface temperature over the northern part of the South China Sea. The monthly mean temperature of 29.0 degrees was 0.4 degree above the normal figure of 28.6 degrees. Moreover, the summer of this year from June to August was exceptionally hot. The mean minimum temperature of 27.2 degrees, mean temperature of 29.2 degrees and mean maximum temperature of 31.8 degrees were respectively the second, third and fourth highest on record for the same period. Due to the heavy rain brought by tropical cyclones Wipha and Bailu, the month was wetter than normal with the monthly total rainfall amounting to 596.4 millimetres, about 38 percent above the normal figure of 432.2 millimetres. The accumulated rainfall recorded in the first eight months of the year was 2034.3 millimetres, a surplus of 7 percent compared to the normal of 1905.5 millimetres for the same period.

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



Appendix G

Waste Flow Table



Contract 1

Monthly Summary Waste Flow Table for <u>2018</u> (year)

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

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

2	A	ctual Quantitie	s of Inert C&I	O Materials G	enerated Month	ly	Actua	al Quantities o	of C&D Waste	s Generated M	lonthly
Month	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

Contract No.: NE/2017/07

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 <u>2019</u> (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

	A	ctual Quantitie	es of Inert C&I	D Materials G	enerated Month	ıly	Actua	al Quantities of	of C&D Waste	es Generated M	Ionthly
Month	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											
Oct											
Nov											
Dec											
Total	6.439	0.000	0.000	0.000	6.439	0.000	0.000	0.909	0.000	0.000	0.439

Note:

For non-inert portion of C&D material, assume the density of 1 m^3 general refuse is equal to 200 kg. For inert portion of C&D material, assume 6 m^3 per each full-filled dump truck. 1.

2.

3. All values are round off to the third decimal places.



Contract 2

Monthly Summary Waste Flow Table for 2019 Year

		Actual Qua	ntities of Inert C&I	Materials Generat	ted Monthly			Actual Quantities	of C&D Wastes G	enerated Monthly	
Month	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											
Oct											
Nov											
Dec											
TOTAL	15.116	0.000	0.358	0.000	14.030	0.728	0.000	0.000	0.000	0.000	1.403

Note: Conversion to 1000m³ for general refuse is weight in 1000kg multiply by 0.002

Conversion to 1000m³ for Inert C&D is weight in 1000kg multiply by 0.0005 Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material 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 m³



Appendix H

Complaint Summary

Complaint Summary for Cross Bay Link, Tseung Kwan O

Log	Date of ref. Complaint Received	Complaint Location	Complaint nature	Complaint details	Follow up action
1	14-Mar-19	Junk Bay	Warme water	I he 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

		Objectives of the		Implementation		Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
	ct (Contraction Phase)					
\$5.5.5.1	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
\$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 facilities and the exit point 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 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

		Objectives of the		Implementation		Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage and/or Standards be Achieved	
	 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
\$5.5.5.5	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

		Objectives of the		Impler	nentation	Requirements	
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved	
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	
\$6.6.4.5-6	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	
\$6.7.3.1	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 D9 (Drawing no. 209506/EMA/NS/003)	CEDD/ Contractor	During operational stage	• Annex 5, TM-EIAO	



		Objectives of the		Implen	nentation	Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
Water Qua	ality Impact (Contraction Phase)					
\$8.6.4.3	 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
\$8.6.4.4	 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; andWPCO

		Objectives of the		Implementation		Requirements	
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved	
	 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; andWPCO	

		Objectives of the		Implen	nentation	Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
	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; andWPCO
\$8.7.3.2	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; andWPCO
Waste Mar	nagement (Contraction Phase)					
\$9.5.2	 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

		Objectives of the		Impler	nentation	Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
\$9.5.4	 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

CEDD Contract Agreement No. EDO/04/2018 -Environmental Team for Cross Bay Link, Tseung Kwan O Quarterly EM&A Summary Report (June to August 2019)

		Objectives of the		Impler	nentation	Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
	 authorities; and Disposal of waste should be done at licensed waste disposal facilities. 					
\$9.5.8-11	 Tachittes. 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
\$9.5.13	 <u>Excavated Marine Sediments</u> 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

		Objectives of the		Implen	nentation	Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
	 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.	To ensure proper management of chemical waste	All construction sites	Contractor	Construction stage	• Waste Disposal (Chemical Waste) (General) Regulation;
	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:					 Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
	 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;					

		Objectives of the		Implen	nentation	Requirements	
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved	
	 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. 					Je Acmeveu	
\$9.5.18	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)	
\$9.5.19	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)	
\$10.7.2.4	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; andWPCO	
\$10.7.2.5	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; andWPCO	
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.		Selected monitoring stations (Drawing no. 209506/EMA/WQ/001)	Contractor	Construction stage	TM-EIAO; andWPCO	

		Objectives of the		Implen	nentation	Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
		communities within Junk Bay				
\$11.6.2.2	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; andWPCO
\$11.6.2.3	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; andWPCO
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; andWPCO
Landscape	and Visual		•		•	
\$13.8.1.2	 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 stage). 	Minimize effects of landscape and visual impacts	Work site/during construction	Funded and implemented by CEDD	Construction stage	

		Objectives of the		Implen	nentation	Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
	 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 					
\$13.8.1.2	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.	construction and operational	
\$13.8.1.2	 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		Funded and implemented by CEDD. Maintained by CEDD and LCSD.	construction and operational	

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		Objectives of the		Implen	nentation	Requirements
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved
	 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 G		Health and safety of the	Construction sites within	Contractor	Construction	• Londfill Cos
\$14.7.5	 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)

		Objectives of the		Implen	nentation	Requirements	
EIA Ref	Environmental Protection Measures/ Mitigation Measures	Recommended Measures & Main Concerns to Address	Location/ Timing	Agent	Stage	and/or Standards to be Achieved	
	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 where 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						

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements
				Agent	Stage	and/or Standards to be Achieved
	 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. 	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)
	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.					
\$14.7.8-9	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

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements
				Agent	Stage	and/or Standards to be Achieved
	Officer, shall be nominated, with deputies, to be responsible for dealing with any emergency which may occur due to LFG.					Guidance Note (EPD/TR8/97)
	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.					
\$14.7.16	 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