



中國香港工程有限責任公司

香港代表： 振華工程有限公司

CHINA HARBOUR ENGINEERING COMPANY LIMITED  
HONG KONG REPRESENTATIVE: ZHEN HUA ENGINEERING CO., LTD.

Date : 18 May 2018

Our Ref. : CHEC300/OUT/2018/05/04.05/038668

By Hand

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

**Attn: Mr. Ng Wang Shek**  
The Engineer's Representative

Dear Sir,

**Contract No. HY/2013/03**  
**Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –**  
**Vehicle Clearance Plazas and Ancillary Buildings and Facilities**  
**EP Condition 5.4 – Monthly EM&A Report (February 2018)**

Pursuant to the Condition 5.4 of the EP-353/2009/K, we are pleased to submit one soft copy and three hard copies of the certified Monthly EM&A Report (Rev.3) for February 2018 for your on-ward submission.

Thank you for your kind attention.

Yours faithfully,  
For and on behalf of  
**China Harbour Engineering Co. Ltd.**



---

Paul PUI  
Site Agent

PP/FH/MC/mt



Encl.



18 May 2018

By Fax (3468 2076) and By Post

AECOM Asia Co. Ltd.  
The PRE's Office  
5 Ying Hei Road, Tung Chung, Lantau  
Hong Kong

Attention: Mr. W.S. Ng

Dear Sir,

**Re: Agreement No. CE 48/2011 (EP)  
Environmental Project Office for the  
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities,  
and Tuen Mun-Chek Lap Kok Link – Investigation**

**Contract No. HY/2013/03 – HZMB HKBCF – Vehicle Clearance Plazas and  
Ancillary Buildings and Facilities  
Monthly Environmental Monitoring & Audit Report for February 2018**

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for February 2018 (Rev. 3) certified by the ET Leader (ET's ref.: "MCL/ED/0243/2018/C" dated 18 May 2018) and provided to us via e-mail on 18 May 2018.

We are pleased to inform you that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 5.4 of the Environmental Permit No. EP-353/2009/K.

The ET Leader is reminded that it is the ET's responsibility to implement the EM&A programme in accordance with the procedures and requirements as set out in the EM&A Manual of the approved EIA Report, and to ensure the report be timely submitted to the Director of Environmental Protection and the reported information be true, valid and correct as per Conditions 5.4 and 5.5 of EP-353/2009/K respectively.

With respect to the landscape works observed, please be reminded that the ET shall regularly check with the Landscape Resident Site Staff on the latest status of landscape construction and/or establishment and implement the bi-weekly landscape monitoring accordingly as required by the approved EM&A Manual.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,  
For and on behalf of  
Ramboll Hong Kong Limited



Raymond Dai  
Independent Environmental Checker

Q:\Projects\HYDZHMBEEM00\02\_Proj\_Mgt\02\_Corr\HYDZHMBEEM00\_0\_6511L.18.doc

c.c.	HyD	Mr. Vico Cheung	(By Fax: 3188 6614)
	HyD	Mr. Ken Woo	(By Fax: 3188 6614)
	MCL	Mr. Arthur Cheng	(By Fax: 2450 8032)
	CHEC	Mr. Johnason Ko	(By Fax: 2887 3014)

Internal: DY, YH, TM, HW, ENPO Site

Q:\Projects\HYDZHMBEEM00\02\_Proj\_Mgt\02\_Corr\HYDZHMBEEM00\_0\_6511L.18.doc

Ramboll Hong Kong Limited 英環香港有限公司

21/F, BEA Harbour View Centre, 56 Gloucester Road, Wan Chai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899

[www.Ramboll.com](http://www.Ramboll.com)

**MATERIALAB CONSULTANTS LIMITED**

**MaterialLab**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong  
Tel : +852-2450 8238  
Fax : +852-2450 8032  
E-mail : mcl@fugro.com.hk  
Website : www.materialab-consultant.com

Date : 18 May 2018

Our Ref. : MCL/ED/0243/2018/C

Ramboll Hong Kong Limited  
(formerly Ramboll Environ Hong Kong Limited)  
21/F, BEA Harbour View Centre  
56 Gloucester Road, Wan Chai  
Hong Kong

BY HAND

Attn.: Mr. Raymond Dai, IEC

Dear Sir,

**EP Condition 5.4 – Monthly EM&A Report for  
Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
Vehicle Clearance Plazas and Ancillary Buildings and Facilities (Contract No. HY/2013/03)**

Pursuant to Condition 5.4 of the Environmental Permit (EP-353/2009/K) for the captioned project, we are pleased to submit the certified Monthly EM&A Report for February 2018 (Rev.3) for your verification.

Should you require further information, please do not hesitate to contact our Mr. Vincent Lu at 3565 4371 or the undersigned at 3565 4115.

Yours faithfully,  
for and on behalf of  
MATERIALAB CONSULTANTS LIMITED



Arthur Cheng  
Environmental Team Leader

AC/vl

c.c. AECOM – Mr. P.K. Lee, Mr. W.S. Ng, Mr. Dominic Mow  
RAMBOLL – Mr. Ray Yan, Mr. Harris Wong  
CHEC – Mr. Marko Chan



**MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

**Materialab**

Report No.: 0165/15/ED/1002

**MONTHLY ENVIRONMENTAL MONITORING & AUDIT  
REPORT**

**February 2018**

**Client:** China Harbour Engineering Co., Ltd.

**Project:** Contract No. HY/2013/03  
Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing Facilities -  
Vehicle Clearance Plazas and  
Ancillary Buildings and Facilities

**Report No.:** 0165/15/ED/1002

Prepared by: Vincent Lu

Certified by:



Arthur Cheng  
Environmental Team Leader

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

## **CONTENTS**

### **EXECUTIVE SUMMARY**

#### **1. INTRODUCTION**

- 1.1 Background
- 1.2 Project Description
- 1.3 Project Organisation
- 1.4 Construction Programme
- 1.5 Construction Works undertaken during the Reporting Period

#### **2. AIR QUALITY MONITORING**

- 2.1 Monitoring Locations
- 2.2 Monitoring Requirements
- 2.3 Monitoring Results

#### **3. NOISE MONITORING**

- 3.1 Monitoring Locations
- 3.2 Monitoring Requirements
- 3.3 Monitoring Results

#### **4. WATER QUALITY MONITORING**

- 4.1 Monitoring Locations
- 4.2 Monitoring Requirements
- 4.3 Monitoring Results

#### **5. ECOLOGY MONITORING**

- 5.1 Monitoring Locations
- 5.2 Monitoring Requirements
- 5.3 Monitoring Results

#### **6. DISPOSAL OF MARINE SEDIMENT EXTRACTED FROM BORED PILING WORKS**

- 6.1 Background
- 6.2 Dumping Arrangements
- 6.3 Quantity Disposed

#### **7. ENVIRONMENTAL SITE INSPECTION AND AUDIT**

- 7.1 Site Inspection
- 7.2 Advice on the Solid and Liquid Waste Management Status
- 7.3 Environmental Licenses and Permits
- 7.4 Implementation Status of Environmental Mitigation Measures
- 7.5 Summary of Exceedance of the Environmental Quality Performance Limit



## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a black rectangular background with horizontal lines above and below the text.

Report No.: 0165/15/ED/1002

7.6 Summary of Complaints, Notification of Summons and Successful Prosecution

### 8. FUTURE KEY ISSUES

8.1 Construction Programme for the Coming Months

8.2 Environmental Site Inspection Schedule for the Coming Month

### 9. CONCLUSIONS

## **APPENDICES**

A Location of Works Areas

B Project Organization for Environmental Works

C Construction Program

D Event / Action Plan

E Waste Flow Table

F Environmental Licenses and Permits

G Implementation Schedule for Environmental Mitigation Measures (EMIS)

H Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions

I Environmental Site Inspection Schedule

J Investigation Reports on Action Level or Limit Level Non-compliance

## **FIGURES**

Figure 1 Air Quality Monitoring Stations

Figure 2 Noise Monitoring Stations

Figure 3 Water Quality Monitoring Stations

Figure 4 Ecological Monitoring Transect Line and Layout Map

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### EXECUTIVE SUMMARY

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2013/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities" (includes the construction works of Contract No. HY/2013/06 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System" within Contract No. HY/2013/03 works area) (hereafter referred to as "the Contract") for the Highways Department of Hong Kong Special Administrative Region (HKSAR). Contract No. HY/2013/03 was awarded to China Harbour Engineering Co. Limited (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited within Contract No. HY/2013/03 works area) (hereafter referred to as "the Contractor") and MaterialLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by the Contractor.

Contract No. HY/2013/03 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) is part of the "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities" (HZMB HKBCF) Project which is a "Designated Project" under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP-353/2009/K, was issued on 11 April 2016. These documents are available through the EIA Ordinance Register.

Commencement of Contract No. HY/2013/03 took place on 10 April 2015 while the construction works and the EM&A programme of Contract No. HY/2013/03 commenced on 29 August 2015 (commencement of Contract No. HY/2013/06 took place on 14 August 2015 while the construction works and the EM&A programme of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area commenced on 13 September 2016).

MaterialLab Consultants Limited (MCL) has been appointed by the Contractor to implement the Environmental Monitoring & Audit (EM&A) programme for the Contract in accordance with the Updated EM&A Manual for HKBCF (Version 1.0) and will be providing environmental team services for the Contract.

This is the 30<sup>th</sup> Monthly EM&A Report for the Contract which summaries findings of the EM&A programme during the reporting period from 1 February 2018 to 28 February 2018 (includes the findings of the EM&A programme of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area during the reporting period from 1 February 2018 to 28 February 2018) (the "reporting period"). The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao Bridge HKBCF – Passenger Clearance Building" and Contract No. HY/2011/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF". The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS2, AMS3B, AMS6 and AMS7B, noise monitoring at NMS2 and NMS3B, water quality monitoring at the locations shown in **Figure 3** and ecological monitoring as shown in **Figure 4** as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2013/01 and HY/2011/03. However, this is subject to ENPO's final decision on which ET should carry out the monitoring work at these stations.

The dates of site inspection for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) during the reporting period are listed below:

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

Environmental Site Inspection: 1, 9, 15 and 22 February 2018.

### Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

There was no Action and Limit Level exceedance recorded on other monitoring dates at station AMS2, AMS3B and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

There were Action and Limit Level exceedances of suspended solids recorded on one day by the Environmental Team of Contract No. HY/2013/01 during reporting period. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03. There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at **Table 4.1** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

Ecological monitoring results at all transects are reported in the EM&A report prepared by Contract No. HY/2013/01.

### Complaint Log

There was no complaint received in relation to the environmental impact during the reporting period.

### Notifications of Summons and Successful Prosecutions

There was no notifications of summons or prosecutions received during this reporting period.

### Reporting Changes

According to the revised Contract Specific EM&A Manual (Rev. 9), the monitoring results for AMS2 and AMS3B will be reported in the monthly EM&A Reports prepared for Contract Nos. HY/2013/03 star from February 2018. The locations of AMS2 and AMS3B are shown as below:

Air Monitoring Station	Location
AMS2	Tung Chung Development Pier
AMS3B	Site Boundary of Site Office Area at Work Area WA2

The implementation of environmental monitoring for air quality, noise, water quality and marine ecology (dolphin monitoring) have been conducting by the ET for Contract No. HY/2013/01 of which the air quality monitoring stations (AMS7) have been re-located since 6 February 2018 as shown below:

Air Monitoring Station	Location
AMS7	Hong Kong SkyCity Marriott Hotel
AMS7B	3RS Site Offices

Remarks: AMS7B is the alternative AQM Station.

Figure for Current and Alternative AQM Stations:

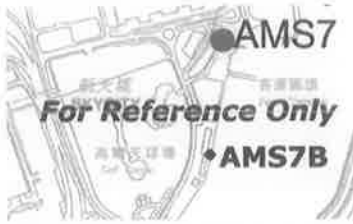
## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

**MaterialLab**

Report No.: 0165/15/ED/1002



### Future Key Issues

The future key issues to be undertaken in the upcoming month are:

#### For Contract No. HY/2013/03

1. Building at Portion A1, B, G, N, J, STP & Pumping Stations;
2. CUE Construction at Portion B, C & J;
3. Drainage & Sewerage Work, Water Main & Cable Duct at Portion A1, B, H1, H2, J, P & G;
4. Fencing work at All site Area;
5. Sewerage Pumping Station at Portion A1 & G;
6. Slope Works at Portion K;
7. Cover Walkway at Portion B, C, J & K;
8. Box Culvert B at Portion N;
9. Shuttle kiosk & Subway at Portion E;
10. Road Work at All site area;
11. Landscape work at All site area.

#### For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

1. CUE, Kiosk & Building 037

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### 1. INTRODUCTION

#### 1.1 Background

1.1.1 MaterialLab Consultants Limited was commissioned by China Harbour Engineering Co. Limited (also referred to as “the Contractor”) to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for Contract No. HY/2013/03 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities” (includes the construction works of Contract No. HY/2013/06 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System” within Contract No. HY/2013/03 works area) (“the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR).

1.1.2 Contract No. HY/2013/03 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) is part of Hong Kong–Zhuhai–Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) which is “Designated Projects”, under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and for which an EIA Report (Register No. AEIAR-145-2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP- 353/2009/K, was issued on 11 April 2016. These documents are available through the EIA Ordinance. The general layout of the Project area is shown in **Appendix A**.

1.1.3 This is the thirtieth EM&A report to document the findings of site inspection activities and EM&A programme carried out by the Contractor of Contract No. HY/2013/03 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) from 1 February 2018 to 28 February 2018 (reporting period) under Contract No. HY/2013/03 (from 1 February 2018 to 28 February 2018 for the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) and is submitted to fulfil Condition 5.4 of the EP.

#### 1.2 Project Description

1.2.1 The works to be executed under Contract No. HY/2013/03 include the following major items:

- a. Cargo clearance facilities including kiosks for clearance of good vehicles, customs inspection platforms, X-ray building, etc.;
- b. Passenger related facilities including processing kiosks and examination facilities for private cars and coaches, annexure for examination of accompanying passengers of private cars, etc.;
- c. Accommodation/offices for the facilities (like fire station, police station, buildings for Immigration Department [ImmD], Hong Kong Customs and Excise Department [C&ED], Agriculture, Fisheries and Conservation Department [AFCD], Food and Environmental Hygiene Department [FEHD], Department of Health [DofH] etc.) of the Government departments providing services in connection with the HKBCF;
- d. Provision of transport and miscellaneous facilities inside the HKBCF including public transport interchange (PTI), transport drop-off and pick-up areas, vehicle holding areas, passenger queuing areas, road networks, footbridges, fencing, sewerage and drainage systems, sewage treatment plant and treated effluent disposal facilities, water supply

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

system, building services works, electronic system, and traffic control and information system including traffic control and surveillance system (TCSS), etc.;

- e. Provision of roads connecting the BCF to the Hong Kong Link Road (HKLR), the Tuen Mun – Chek Lap Kok Link (TM-CLKL) and the Hong Kong International Airport (HKIA), expect the part of road works in HKIA entrusted to the HKLR project; and
- f. Reprovisioning of the affected HKIA's facilities, expect those affected by the Automated People Mover (APM) system such as the existing east rescue berth.

1.2.2 The works to be executed under Contract No. HY/2013/06 within Contract No. HY/2013/03 works area include the following major items:

- a. The Automatic Vehicle Clearance Support System amid to increasing traffic flow for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities;
- b. Responsible for designs and develops a set of tailor-made computer monitoring and control systems to for daily security operation; and
- c. The Clearance Workstations at 72 vehicle clearance kiosks, Customs and Excise's inbound and outbound traffic control centers as well as a Vehicle Tracking System.

### 1.3 Project Organisation

1.3.1 The Project Organisation for Environmental Works of Contract No. HY/2013/03 is shown in **Appendix B**. The contact person and telephone numbers of key personnel for the captioned project are shown in **Table 1.1**:

Table 1.1 Contact Persons and Telephone Numbers of Key Personnel (for Contract No. HY/2013/03)

Party	Position	Contact Person	Telephone No.	Fax No.
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. W. S. Ng	3958 7400	3902 8800
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3547 2133	3465 2899
	Independent Environmental Checker (IEC)	Mr. Raymond Dai	3465 2888	3465 2899
	Environmental Site Supervisor	Mr. Ray Yan	5181 8165	3465 2899
Contractor (China Harbour Engineering Co. Ltd)	Site Agent	Mr. Paul Pui	9125 0700	2512 0427
	Environmental Officer	Mr. Marko Chan	9427 2879	2512 0427
Environmental Team (Materialab Consultants Limited)	Environmental Team Leader (ETL)	Mr. Arthur Cheng	3565 4115	2450 8032
24-hr Complaint Hotline	--	--	5236 7111	--

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

1.3.2 The Project Organisation for Environmental Works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area is shown in **Appendix B**. The contact person and telephone numbers of key personnel for the captioned project are shown in **Table 1.2**:

Table 1.2 Contact Persons and Telephone Numbers of Key Personnel (for Contract No. HY/2013/06 within Contract No. HY/2013/03 works area)

Party	Position	Contact Person	Telephone No.	Fax No.
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. W. S. Ng	3958 7400	3902 8800
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3547 2133	3465 2899
	Independent Environmental Checker (IEC)	Mr. Raymond Dai	3465 2888	3465 2899
	Environmental Site Supervisor	Mr. Ray Yan	5181 8165	3465 2899
Contractor (ATAL Technologies Limited)	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (Materialab Consultants Limited)	Environmental Team Leader (ETL)	Mr. Arthur Cheng	3565 4115	2450 8032
24-hr Complaint Hotline	--	--	6509 0375	--

1.3.3 The Contract HY/2013/03 has commenced on 10 April 2015. The commencement of construction works and the EM&A programme have commenced on 29 August 2015.

1.3.4 The Contract HY/2013/06 has commenced on 14 August 2015. The commencement of construction works and the EM&A programme have commenced on 13 September 2016 within Contract No. HY/2013/03 works area.

### 1.4 Construction Programme

1.4.1 The construction programme for Contract No. HY/2013/03 (includes the construction works of HY/2013/06 within Contract No. HY/2013/03 works area) are provided in **Appendix C**.

### 1.5 Construction Works Undertaken during the Reporting Period

1.5.1 The construction works of Contract No. HY/2013/03 commenced on 29 August 2015 (includes the construction works of Contract No. HY/2013/06 commenced on 13 September 2016 within Contract No. HY/2013/03 works area). During this reporting period, the following major site activities were commenced:

#### For Contract No. HY/2013/03

1. Building at Portion A1, B, G, N, J, STP & Pumping Stations;
2. CUE Construction at Portion B, C & J;
3. Drainage & Sewerage Work, Water Main & Cable Duct at Portion A1, B, H1, H2, J, P & G;

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and is set against a dark, rectangular background that has a slight gradient and a thin white border.

Report No.: 0165/15/ED/1002

4. Fencing work at All site Area;
5. Sewerage Pumping Station at Portion A1 & G;
6. Slope Works at Portion K;
7. Cover Walkway at Portion B, C, J & K;
8. Box Culvert B at Portion N;
9. Shuttle kiosk & Subway at Portion E;
10. Road Work at All site area;
11. Landscape work at All site area.

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

1. CUE, Kiosk & Building 037



## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

## 2. AIR QUALITY MONITORING

### 2.1 Monitoring Locations

- 2.1.1 The air quality monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao-Bridge HKBCF – Passenger Clearance Building" and Contract No. HY/2011/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF". The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7 as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract No. HY/2013/01 and HY/2011/03. **Figure 1** shows the locations of air monitoring stations.

Table 2.1 Air Quality Monitoring Location

Air Monitoring Station	Location
AMS2	Thung Chung Development Pier
AMS3B	Site Boundary of Site Office Area at Works Area WA2
AMS6	Dragonair/CNAC (Group) Building (A80)
AMS7	Hong Kong SkyCity Marriott Hotel
AMS7B	3RS Site Offices

Remarks:

AMS7B is alternative Air Quality Monitoring Station.

### 2.2 Monitoring Requirements

- 2.2.1 The monitoring requirements, equipment, parameters, frequency and duration, methodology, schedule, and meteorological information are described in the monthly EM&A Reports prepared for Contract No. HY/2013/01 and HY/2011/03.
- 2.2.2 The Action and Limit levels for 1-hr TSP and 24-hr TSP are summarized in **Table 2.2**.

Table 2.2 Action and Limit Levels for Air Quality

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
<b>1 hour TSP</b>		
AMS2	374	500
AMS3B	368	
AMS6	360	
AMS7B	370	
<b>24 hours TSP</b>		
AMS2	176	260
AMS3B	167	
AMS6	173	
AMS7B	183	

- 2.2.3 The event and action plan is provided in **Appendix D**.
- 2.2.4 If exceedance(s) at these stations is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

### 2.3 Monitoring Results

- 2.3.1 The monitoring results for AMS6 and AMS2, AMS3B, AMS7B are reported in the monthly EM&A Reports prepared for Contract No. HY/2011/03 and HY/2013/01 respectively.

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

- 2.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 2.3.3 There was no Action and Limit Level exceedances of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### 3. NOISE MONITORING

#### 3.1 Monitoring Locations

3.1.1 The noise monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao Bridge HKBCF – Passenger Clearance Building". The ET of the Contract or another ET of the HZMB project is required to conduct noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2013/01. **Figure 2** shows the locations of noise monitoring stations.

Table 3.1 Construction Noise Monitoring Location

ID No.	Description
NMS2	Seaview Crescent
NMS3B	Site Boundary of Site Office Area at WA2

#### 3.2 Monitoring Requirements

3.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract No. HY/2013/01.

3.2.2 The Action and Limit Levels for construction noise are defined in **Table 3.2**.

Table 3.2 Action and Limit Level for Construction Noise

Monitoring Station	Action Level	Limit Level
For the Time Period 0700-1900 hrs. on Normal Weekdays		
NMS2	When one documented complaint is received	75.0 dB (A) Leq (30 min.)
NMS3B		70.0 dB (A) Leq (30 min.)*

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

\* Reduce to 70 dB(A) for schools and 65 dB(A) during school examination period

#### 3.3 Monitoring Results

3.3.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports prepared for Contract No. HY/2013/01. No noise exceedance was recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2013/01 during the reporting period.

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

**Materialab**

Report No.: 0165/15/ED/1002

### 4. WATER QUALITY MONITORING

#### 4.1 Monitoring Locations

- 4.1.1 The water monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao-Bridge HKBCF – Passenger Clearance Building". The ET of the Contract or another ET of the HZMB project is required to conduct impact water quality monitoring at the stations shown in **Table 4.1** and **Figure 3**.

Table 4.1 Water Quality Monitoring Stations

Station	Description	Easting	Northing
IS5	Impact Station (Close to HKBCF construction site)	811579	817106
IS(Mf)6	Impact Station (Close to HKBCF construction site)	812101	817873
IS7	Impact Station (Close to HKBCF construction site)	812244	818777
IS8	Impact Station (Close to HKBCF construction site)	814251	818412
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850
IS10(N)	Impact Station (Close to HKBCF construction site)	812942	820881
IS(Mf)11	Impact Station (Close to HKBCF construction site)	813562	820716
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497
IS17	Impact Station (Close to HKBCF construction site)	814539	820391
SR3(N)	Sensitive receivers (San Tau SSSI)	810689	816591
SR4(N)	Sensitive receivers (Tai Ho)	814705	817859
SR5(N)	Control Station	812569	821475
SR6	Sensitive receivers (Sha Chau and Lung Kwu Chau Marine Park)	805837	821818
SR7	Sensitive receivers (Tai Mo Do)	814293	821431
SR10A(N) <sup>(1)</sup>	Sensitive receivers (Ma Wan FCZ) 1	823644	823484
SR10B(N2) <sup>(1)</sup>	Sensitive receivers (Ma Wan FCZ) 2	823689	823159
CS(Mf)3(N)	Control Station	808814	822355
CS(Mf)5	Control Station	817990	821129
CS4	Control Station	810025	824004
CS6	Control Station	817028	823992
CSA <sup>(2)</sup>	Control Station	818103	823064

Note:

<sup>(1)</sup> Additional monitoring station for Ma Wan FCZ

<sup>(2)</sup> Additional control monitoring station for Ma Wan FCZ

Remarks:

The ET of the Contract should conduct impact water quality monitoring at the WQMs listed in the table as part of EM&A programme according to latest notification from ENPO if water quality monitoring is no longer covered by another ET of the HZMB project. The ET of the Contract shall communicate and share the monitoring data to the ET(s) of the other contracts if the water quality monitoring station(s) is/are as part of EM&A programme.

#### 4.2 Monitoring Requirements

- 4.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/01.
- 4.2.2 The event and action plan is provided in **Appendix D**.

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

4.2.3 The Action and Limit Levels for Water Quality are provided in **Table 4.2**.

Table 4.2 Action and Limit Levels for Water Quality

Parameters	Action	Limit
DO in mg/L (Surface, Middle & Bottom)	Surface and Middle 5.0 Bottom 4.7	Surface and Middle = 4.2 (except 5 mg/L for FCZ) Bottom = 3.6
SS in mg/L (depth-averaged) at all monitoring stations and control stations	23.5 and 120% of upstream control station's SS at the same tide of the same day*	34.4 and 130% of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes*
Turbidity in NTU (depth-averaged)	27.5 and 120% of upstream control station's turbidity at the same tide of the same day*	47.0 and 130% of upstream control station's turbidity at the same tide of the same day*

\* Remarks: Reference is made to EPD approval of adjustment of water quality assessment criteria issued and became effective on 18 February 2013.

Notes:

1. "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.
5. The 1%-ile of baseline data for dissolved oxygen (surface and middle) and dissolved oxygen (bottom) are 4.2mg/L and 3.6mg/L respectively.

4.2.4 If exceedance(s) at these stations is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

### 4.3 Monitoring Results

The monitoring results for the monitoring stations showed in **Table 4.1** are reported in the monthly EM&A Report prepared for Contract No. HY/2013/01. There were Action and Limit Level exceedances recorded at different WQM stations during mid-flood on one day.

**5. ECOLOGY MONITORING**

**5.1 Monitoring Locations**

5.1.1 The ecological monitoring works for the Contract are covered by Contract No. HY/2013/01 “Hong Kong-Zhuhai-Macao-Bridge HKBCF – Passenger Clearance Building”. The ET of the Contract or another ET of the HZMB project is required to conduct dolphin monitoring at 24 transects as part of EM&A programme if these transects are no longer covered under Contract No. HY/2013/01. The ecological monitoring should adopt line-transect vessel survey method. The survey follows pre-set and fixed transect lines in the two areas defined by AFCD as: Northeast Lantau survey area; and Northwest Lantau survey area. **Figure 4** shows the co-ordinates for the transect lines and layout map.

Remarks:

The ET of this Contract should conduct impact ecological monitoring as part of EM&A programme according to latest notification from ENPO when the monitoring transect(s) is/are no longer covered by another ET of the HZMB project.

**5.2 Monitoring Requirements**

5.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/01.

5.2.2 The event and action plan is provided in **Appendix D**.

5.2.3 The Action and Limit Levels for Chinese White Dolphin Monitoring are provided in **Table 5.1(a) & Table 5.1(b)**.

**Table 5.1(a)** Action and Limit Levels for Chinese White Dolphin Monitoring - Approach to Define Action Level (AL) and Limit Level (LL)

	North Lantau Social Cluster	
	NEL	NWL
Action Level	(STG < 70% of baseline) & (ANI < 70% of baseline)	(STG < 70% of baseline) & (ANI < 70% of baseline)
Limit Level	[(STG < 40% of baseline) & (ANI < 40% of baseline)] AND [(STG < 40% of baseline) & (ANI < 40% of baseline)]	

For North Lantau Social Cluster, action level will be triggered if either NEL or NWL fall below the criteria; limit level will be triggered if both NEL and NWL fall below the criteria.

**Table 5.2(b)** Derived Value of Action Level (AL) and Limit Level (LL) for Chinese White Dolphin Monitoring

	North Lantau Social Cluster	
	NEL	NWL
Action Level	(STG < 4.2) & (ANI < 15.5)	(STG < 6.9) & (ANI < 31.3)
Limit Level	[(STG < 2.4) & (ANI < 8.9)] AND [(STG < 3.9) & (ANI < 17.9)]	

5.2.4 If exceedance(s) at these transects is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

**5.3 Monitoring Result**

5.3.1 The dolphin survey results for all transects are reported in the monthly EM&A Reports prepared by Contract No. HY/2013/01.

Report No.: 0165/15/ED/1002

## **6. DISPOSAL OF MARINE SEDIMENT EXTRACTED FROM BORED PILING WORKS**

### **6.1 Background**

- 6.1.1 After the acceptance of the review of the approved Sediment Quality Report (SQR) for this Project under EPD letter dated 19 August 2015, an approval to dispose the marine sediment extracted from bored piling for this Project was then approved under memo from Secretary, Marine Fill Committee of CEDD dated 20 August 2015 for the disposal of marine sediment extracted from bored piling works. The disposal site allocated to this Project is the Mud Pit CMP Vd of the Confined Marine Sediment Disposal Facility to the East of Sha Chau (ESC) during this reporting period.
- 6.1.2 No extracted marine sediment was treated using cement solidification/stabilisation (Cement S/S) techniques under Contract No. HY/2013/03 during this reporting period. The marine sediment extracted from this Contract was disposed to the MFC allocated disposal sites directly without treatment during this reporting period. As a practical means, the disposal operation is managed by one contractor who is also responsible for applying dumping permit and its subsequent extension applications from EPD. Contract No. HY/2013/03 has been assigned to coordinate and arrange for disposal of extracted marine sediment from all three Contracts (Contract Nos. HY/2013/02, HY/2013/03 and HY/2013/04).

### **6.2 Dumping Arrangements**

- 6.2.1 The barge for disposal of marine sediment was morn at the temporary loading and unloading at the east shore of the HKBCF Island, which has been being used by reclamation contractor (Contract No. HY/2010/02) for reclamation activities. In terms of safety consideration and to avoid mixing of sediment between contracts, each dumping date was allocated to one Contract. The quantity of marine sediment disposed on each date was from one Contract.
- 6.2.2 During dumping, Contractor of Contract No. HY/2013/03 is responsible for transporting the marine sediment from the site area of Contract No. HY/2013/03 to the barge. The estimated quantity of marine sediment in each truck is confirmed by Resident Site Staff of Contract Nos. HY/2013/02, HY/2013/03 and HY/2013/04. The trip tickets for transportation and disposal of marine sediment are collected and checked. Contract No. HY/2013/03 as the dumping permit holder is responsible for reporting to EPD the quantity disposed of as the condition stipulated in the dumping permit. The disposal site allocated to this Project is the Mud Pit CMP Vd of the Confined Marine Sediment Disposal Facility to the East of Sha Chau (ESC) during this reporting period.

### **6.3 Quantity Disposed**

- 6.3.1 No marine sediment extracted from bored piling from this Contract was disposed to allocated dumping site in September 2017. As confirmed by RSS, all marine sediments extracted from HY/2013/02, HY/2013/03 and HY/2013/04 have been completed with the last batch disposal on 30 August 2017. The total disposed quantity up to the last batch is 114.088 (in'000m<sup>3</sup>). The summary of marine sediment disposed up to end August 2017 is shown in the following table:

**MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

Table 6.1 Summary of Marine Sediment Disposed to Dumping Site

Month/Year	Quantity disposed (in'000m <sup>3</sup> )			Total
	HY/2013/02	HY/2013/03	HY/2013/04	
Jan 2016	1.272	1.950	0.800	4.022
Feb 2016	2.816	2.328	0.704	5.848
Mar 2016	0.600	2.464	3.942	7.006
Apr 2016	5.128	5.602	5.028	15.758
May 2016	0.000	0.000	0.000	0.000
Jun 2016	1.200	4.584	1.578	7.362
<b>Sub-Total</b>	<b>11.016</b>	<b>16.928</b>	<b>12.052</b>	<b>39.996</b>
Jul 2016	0.728	10.728	3.690	15.146
Aug 2016	1.784	1.544	4.428	7.756
Sep 2016	2.328	6.816	3.888	13.032
Oct 2016	1.096	2.376	5.286	8.758
Nov 2016	0.000	0.000	0.000	0.000
Dec 2016	1.568	4.960	2.538	9.066
Cat L in Dec 2016	0.000	2.792	3.570	6.362
<b>Sub-Total</b>	<b>18.520</b>	<b>46.144</b>	<b>35.452</b>	<b>100.116</b>
Jan 2017	0.000	0.656	6.552	7.208
Feb 2017	0.088	0.264	1.380	1.732
Mar 2017	0.000	0.000	0.000	0.000
Apr 2017	0.624	1.288	0.000	1.912
May 2017	0.000	1.440	0.000	1.440
June 2017	1.432	0.000	0.000	1.432
July 2017	0.000	0.000	0.000	0.000
August 2017	0.000	0.248	0.000	0.248
<b>Total</b>	<b>20.664</b>	<b>50.040</b>	<b>43.384</b>	<b>114.088</b>

Note: All sediments are in Type II disposal method except Cat L (in Type I)



Report No.: 0165/15/ED/1002

**7. ENVIRONMENTAL SITE INSPECTION AND AUDIT****7.1 Site Inspection**

7.1.1 Site audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.

7.1.2 The landscape work of green roof for Contract No. HY/2013/03 was commenced on 7 November 2017. Detail commencement date of each building were shown in **Table 7.1**. The implementation of mitigation measures for landscape and visual resources recommended in the EIA Report were monitored during the reporting period. Landscape and visual mitigation measures in accordance with the EP, EIA and EM&A Manual were implemented by the Contractor.

Table 7.1 Commencement date of green roof for each building

Building No. of Green Roof	Commencement dates of <u>planting</u> for roof greening
037	7 Nov 2017
043	20 Dec 2017
041	27 Dec 2017
026	22 Jan 2018
039	22 Jan 2018

7.1.3 The joint site audits for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) were conducted on 1, 9, 15 and 22 February 2018 by the representatives of Engineer, Contractor, ET and IEC (IEC for 9 February 2018).

7.1.4 Particular observations during the site inspection and corrective actions undertaken by the Contractor are described below:

For Contract No. HY/2013/0325 January 2018

1. The Contractor was reminded to remove the stagnant water accumulated near Building 049. The observation was closed on 1 February 2018.

1 February 2018

1. The Contractor was reminded to provide drip tray for the chemical in Portion G. The observation was closed on 9 February 2018.
2. The Contractor was reminded to remove the stagnant water accumulated near Building 040. The observation was closed on 9 February 2018.

9 February 2018

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

1. The Contractor was reminded to remove the general and construction waste accumulated in Building 049. The observation was closed on 15 February 2018.
2. The Contractor was reminded to provide a clear NRMM label for the generator near Building 049. The observation was closed on 15 February 2018.
3. The Contractor was reminded to move the chemical waste near Building 049 to chemical waste store. The observation was closed on 15 February 2018.

### 15 February 2018

1. The Contractor was reminded to improve the emission quality of the generator in Portion K. The observation was closed on 22 February 2018.

### 22 February 2018

1. The Contractor was reminded to remove the stagnant water accumulated in Building 049. Follow-up actions for outstanding observation will be checked in the upcoming site inspections and reported in the coming reporting period.
2. The Contractor was reminded to remove the construction waste accumulated in Building 049. Follow-up actions for outstanding observation will be checked in the upcoming site inspections and reported in the coming reporting period.

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

### 1 February 2018

1. Nil findings.

### 9 February 2018

1. Nil findings.

### 15 February 2018

1. Nil findings.

### 22 February 2018

1. Nil findings.

## **7.2 Advice on the Solid and Liquid Waste Management Status**

- 7.2.1 The Contractor of Contract No. HY/2013/03 registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 7.2.2 The monthly summary of waste flow table for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) are detailed in **Appendix E**.
- 7.2.3 Contract No. HY/2013/03 has been assigned to arrange for delivery of surplus filling materials from Contract No. HY/2013/03 to other projects, including Tuen Mun - Chek Lap Kok Link (TM-

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

CLKL) project of HZMB, the Airport Authority Hong Kong's Three Runway (3RS) Project, Wan Chai Development Phase II project, Contract No. HY/2013/02 of HKBCF and Hong Kong Link Road (HKLR) project of HZMB. The estimated quantity of surplus filling materials is confirmed by Resident Site Staff of Contract No. HY/2013/03. The summary of surplus filling materials delivered to other projects up to the end of January 2018 is shown in **Table 7.2**.

Table 7.2 Summary of Surplus Filling Materials Delivered from Contract No. HY/2013/03 to other projects

Month/Year	Density (in tonnes/m <sup>3</sup> )	Quantity disposed (in '000m <sup>3</sup> )					Total
		To HY/2013/02	To TM-CLKL Project	To 3RS Project	To WDII Project	To HKLR Project	
May 2017	2.3	0	12.637	0	0	0	12.637
June 2017	2.63925	0	14.769	11.238	0	0	26.007
July 2017	1.9	0	4.406	34.875	10.048	0.760	50.089
August 2017	1.9	0.480	0	67.942	2.761	7.455	78.638
September 2017	1.9	5.544	0	62.770	0	4.648	72.962
October 2017	/	3.384	0	45.92809	0	0	49.31209
November 2017	/	5.412	0	5.507	0	0	10.919
December 2017	/	12.57173	0	0	0	0	12.57173
January 2018	/	10.228	0	0	0	0	10.228
February 2018	/	0	0	0	0	0	0
<b>Total</b>	/	<b>37.61973</b>	<b>31.812</b>	<b>228.26009</b>	<b>12.809</b>	<b>12.863</b>	<b>323.36382</b>

Remarks:

- The variation in density is due to different compositions of surplus filling materials
- There may be discrepancies in the total quantities with the quantities of inert C&D materials stated in Appendix E and section 7.2.4, due to rounding errors
- No density was given from October 2017 to January 2018 due to the direct volume figures as provided and confirmed by the RSS

7.2.4 0.000 (in'000m<sup>3</sup>) of excavated marine sediment (from Contract No. HY/2013/03), 2.092 (in'000m<sup>3</sup>) of Inert C & D Wastes and 2.062 (in'000m<sup>3</sup>) of Non-inert C & D Wastes were generated (from Contract No. HY/2013/03) in this reporting period. 0.000 (in'000m<sup>3</sup>) of Inert C & D Wastes were reused in other projects and 2.092 (in'000m<sup>3</sup>) of Inert C & D Wastes was disposed as public fill. 0.000 (in tonnes) of Inert C & D Wastes and 0.050 (in tonnes) of Non-inert C & D Wastes were generated (from Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) in this reporting period. 0.010 (in tonnes) metals were generated and recycled (from Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) in this reporting period.

7.2.5 The excavated marine mud from the land-based works was disposed of at the designated disposal sites within Hong Kong as allocated by the Marine Fill Committee. The Contractor of Contract No. HY/2013/03 shall ensure no spilling and overflowing of materials during loading / unloading / transportation is allowed.

7.2.6 The Contractor was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packing, Labelling and Storage of Chemical Waste.

7.2.7 Contractor of Contract No. HY/2013/03's site arrangement for disposal of bentonite slurry to Tseung Kwan O Area 137 Fill Bank was checked by ET and formal consent has been obtained from Tseung Kwan O Area 137 Fill Bank for receiving used bentonite slurry generated from Contract No. HY/2013/03.

### 7.3 Environmental Licenses and Permits

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

7.3.1 The valid environmental licenses and permits for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) during the reporting period are summarized in **Appendix F**. The Contractor of Contract No. HY/2013/06 was advised to register as a chemical waste producer when chemical waste is expected to generate for the foreseeable future from the operations (For Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation).

### 7.4 Implementation Status of Environmental Mitigation Measures

7.4.1 In response to the site audit findings, the Contractor carried out corrective actions.

7.4.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix G**. All necessary mitigation measures at this stage of works were implemented properly.

7.4.3 Implementation status of Regular Marine Travel Route Plan (RMTRP) was checked by ET. Training of marine travel route for marine vessels operator was given to relevant staff and relevant records were kept properly. The marine traffic records and geographical plots of all the vessels tracks to demonstrate the conformance of the vessel to the proposed route in February 2018 would be provided to ER, ETL, IEC/ENPO for checking within the month of March 2018.

7.4.4 With respect to condition 3.26A of EP-353/2009/K approved by EPD on 11 April 2016, the numbers and operating periods of floating grout production facilities and floating concrete batching plants on-site to review on the compliance to this EP condition were checked. Under Contract No. HY/2013/03, no floating concrete batching plant was operated on-site during the reporting period.

7.4.5 As silt curtain was installed since May 2017, Dolphin Watching Plan (DWP) should be implemented. The status of silt curtain was reviewed by ET and there was no change on the status of silt curtain during the reporting period. Implementation status of DWP was checked by ET. The records of dolphin watching training, regular inspection of the silt curtains and visual inspection of waters surrounded by the silt curtain in February 2018 would be provided to ER, ETL, IEC/ENPO for checking within the month of March 2018.

### 7.5 Summary of Exceedance of the Environmental Quality Performance Limit

7.5.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

7.5.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

7.5.3 There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

7.5.4 There were Action Level exceedances of suspended solids recorded on one day by the Environmental Team of Contract No. HY/2013/01 during reporting period. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03. There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at Table 4.1 by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a black rectangular background. The background has a horizontal bar above and below the text, creating a framed effect.

Report No.: 0165/15/ED/1002

7.5.5 Ecological monitoring results at all transects are reported in the EM&A report prepared by Contract No. HY/2013/01.

### 7.6 Summary of Complaints, Notification of Summons and Successful Prosecution

7.6.1 There was no complaint received in relation to the environmental impact during the reporting period. The details of cumulative statistics of Environmental Complaints are provided in **Appendix H**.

7.6.2 There was no notification for summons or prosecutions received in relation to the environmental impact during this reporting period.

7.6.3 Statistics on environmental complaints, notifications of summons and successful prosecutions are provided in **Appendix H**.

## MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### 8. FUTURE KEY ISSUES

#### 8.1 Construction Programme for the Coming Months

8.1.1 As informed by the Contractor, the following are the major construction activities anticipated in March 2018:

For Contract No. HY/2013/03

1. Building at Portion A1, B, G, N, J, STP & Pumping Stations;
2. CUE Construction at Portion B, C & J;
3. Drainage & Sewerage Work, Water Main & Cable Duct at Portion A1, B, H1, H2, J, P & G;
4. Fencing work at All site Area;
5. Sewerage Pumping Station at Portion A1 & G;
6. Slope Works at Portion K;
7. Cover Walkway at Portion B, C, J & K;
8. Box Culvert B at Portion N;
9. Shuttle kiosk & Subway at Portion E;
10. Road Work at All site area;
11. Landscape work at All site area.

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

1. CUE, Kiosk & Building 037.

#### 8.2 Environmental Site Inspection Schedule for the Coming Month

8.2.1 The tentative schedule for weekly site inspections for March 2018 is provided in **Appendix I**.

## 9. CONCLUSIONS

- 9.1 Commencement of Contract No. HY/2013/03 took place on 10 April 2015. The commencement date for construction works and the EM&A programme of Contract No. HY/2013/03 commenced on 29 August 2015 (commencement of Contract No. HY/2013/06 took place on 14 August 2015. The commencement date for construction works and the EM&A programme of Contract No. HY/2013/06 commenced on 13 September 2016 within Contract No. HY/2013/03 works area).
- 9.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 9.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 9.4 There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 9.5 There were Action Level exceedances of suspended solids recorded on one day by the Environmental Team of Contract No. HY/2013/01 during reporting period. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03. There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at **Table 4.1** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 9.6 Ecological monitoring results at all transects are reported in the EM&A report prepared by Contract No. HY/2013/01.
- 9.7 Environmental site inspections were carried out on 1, 9, 15 and 22 February 2018. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.
- 9.8 There was no complaint received in relation to the environmental impact during the report period.
- 9.9 There were no notifications of summons or prosecutions received during the reporting period.

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

---

### **Figure 1**

### **Air Quality Monitoring Stations**





## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Figure 2**

#### **Noise Monitoring Stations**



## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

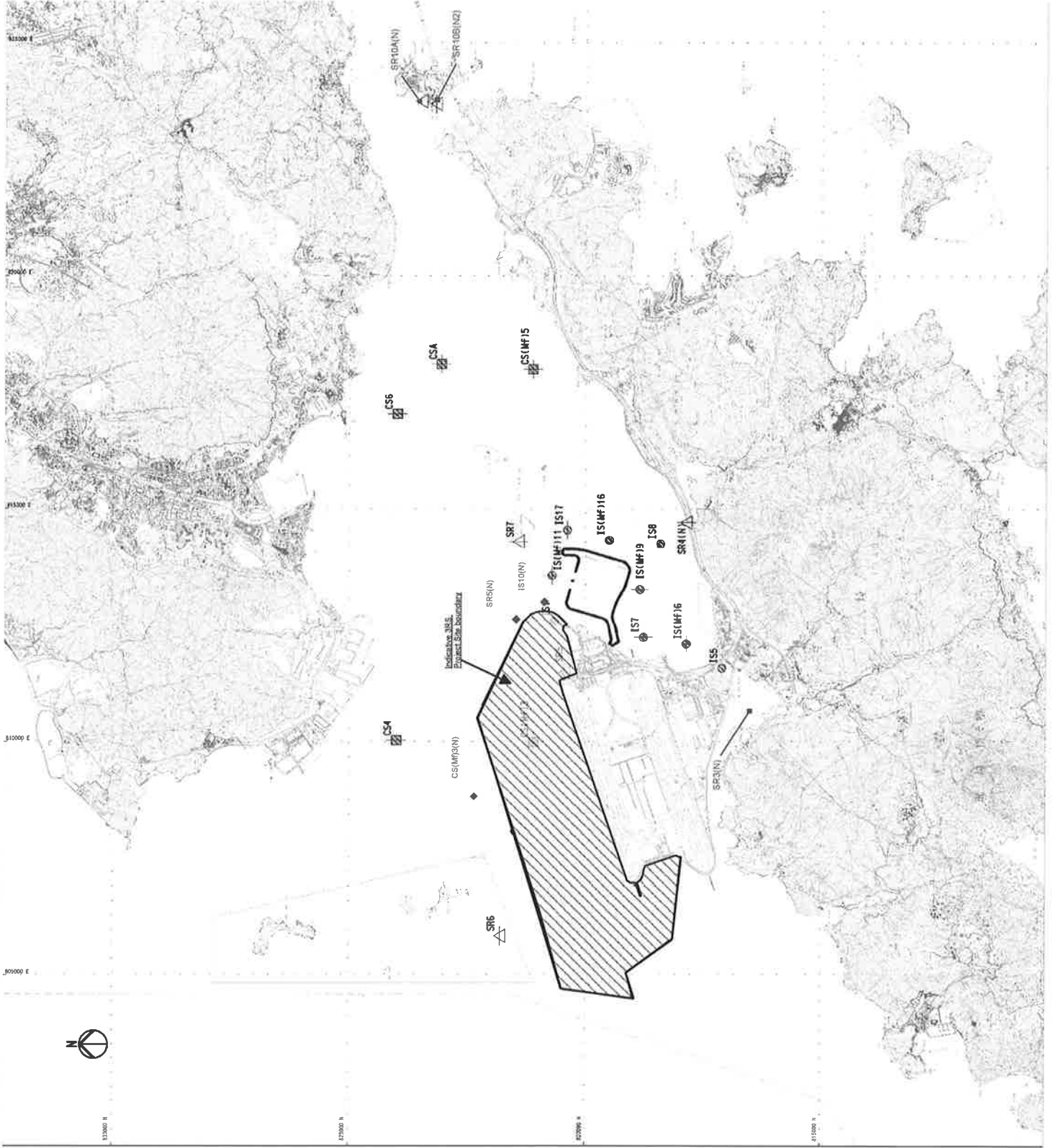
Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Figure 3**

#### **Water Quality Monitoring Stations**



**LEGEND**

IS  
IMPACT STATIONS

CS  
CONTROL / FAR FIELD STATIONS

SR  
SENSITIVE RECEIVERS STATIONS

FIGURE 4.1 – LOCATION OF WATER QUALITY MONITORING STATIONS

SETTING OUT SCHEDULE

MONITORING STATIONS	CO-ORDINATES	
	EASTING	NORTHING
IS5	811579	817106
IS(MF)16	812101	817873
IS7	812244	818177
IS8	814251	818412
IS(MF)19	813273	818950
IS10	812577	820670
IS10(N)	812942	820455
IS(MF)11	813562	820716
IS(MF)16	814328	819497
IS17	814539	820391
SRS(N)	810689	816591
SR4(N)	814705	817859
SRS	811489	820455
SRS(N)	812569	821475
SR6	805937	821815
SR7	814293	821431
SR10A(N)	823644	823484
SR10B(N2)	823689	823159
CS(MF)13	809989	821117
CS(MF)13(N)	808814	822355
CS(MF)5	817990	821129
CS4	810025	824004
CS6	817028	823992
CSA	818103	823064

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Figure 4**

#### **Ecological Monitoring Transect Line and Layout Map**



## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Appendix A**

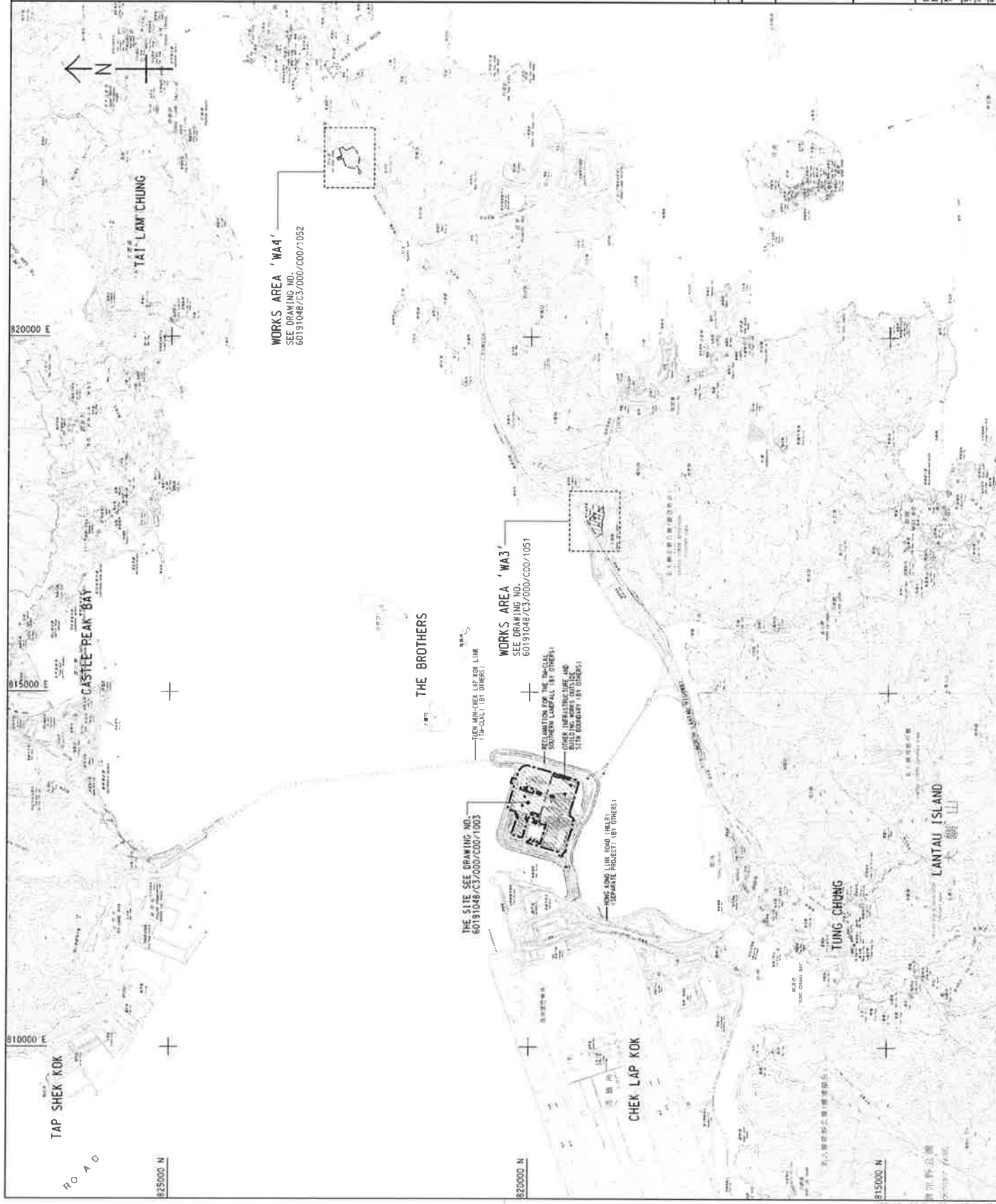
#### **Location of Works Areas**



**NOTES:**

1. COORDINATES ARE RELATED TO HONG KONG METRIC GRID 1980.
2. DIMENSIONS ARE IN MILLIMETER AND CHANGE ARE IN METRES UNLESS OTHERWISE SHOWN.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C3/000/COO/1051 TO 1053.

**LEGEND:**



DATE	12/11/2014
BY	WONG YU-KAI
CHECKED BY	WONG YU-KAI
SCALE	AS SHOWN
PROJECT NO.	60191048/C3/000/COO/1000
PROJECT NAME	REGENT'S SKY HARBOUR

**WILLIS TOWERS WATSON**  
 HONG KONG  
 HONG KONG DEPARTMENT  
 PROJECT NO. 60191048/C3/000/COO/1000  
 PROJECT NAME: REGENT'S SKY HARBOUR  
 WORKS AREA: WORKS AREA 'WA1'  
 WORKS AREA: WORKS AREA 'WA1'  
 WORKS AREA: WORKS AREA 'WA1'

**SITE LOCATION PLAN**

**AECOM** Aedas  
 Regent Sky Harbour + Partners  
 BUREAU OF ARCHITECTURE  
 ARCHT. ADI

PROJECT NO. 60191048/C3/000/COO/1000  
 PROJECT NAME: REGENT'S SKY HARBOUR  
 WORKS AREA: WORKS AREA 'WA1'

DATE: 12/11/2014  
 BY: WONG YU-KAI  
 CHECKED BY: WONG YU-KAI

SCALE: AS SHOWN

© COPYRIGHT RESERVED



POINT	EASTING	NORTHING
301	817467.465	818242.683
302	817474.741	818269.628
303	817481.528	818296.549
304	817488.465	818323.411
305	817495.452	818350.210
306	817502.489	818377.043
307	817509.576	818403.818
308	817516.713	818430.534
309	817523.900	818457.191
310	817531.137	818483.790
311	817538.424	818510.331
312	817545.761	818536.814
313	817553.148	818563.240
314	817560.585	818589.608
315	817568.072	818615.918
316	817575.609	818642.170
317	817583.196	818668.364
318	817590.833	818694.501
319	817598.520	818720.580
320	817606.257	818746.601
321	817614.044	818772.563
322	817621.881	818798.466

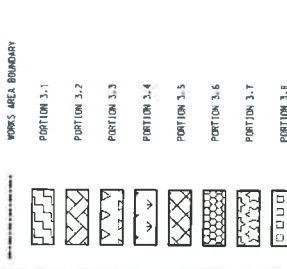


**LOCATION PLAN**  
SCALE 1:1:25000

**NOTES:**  
1. COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).  
2. DIMENSIONS ARE IN METERS AND CHAINAGE ARE IN METERS UNLESS OTHERWISE SHOWN.

**LEGEND:**

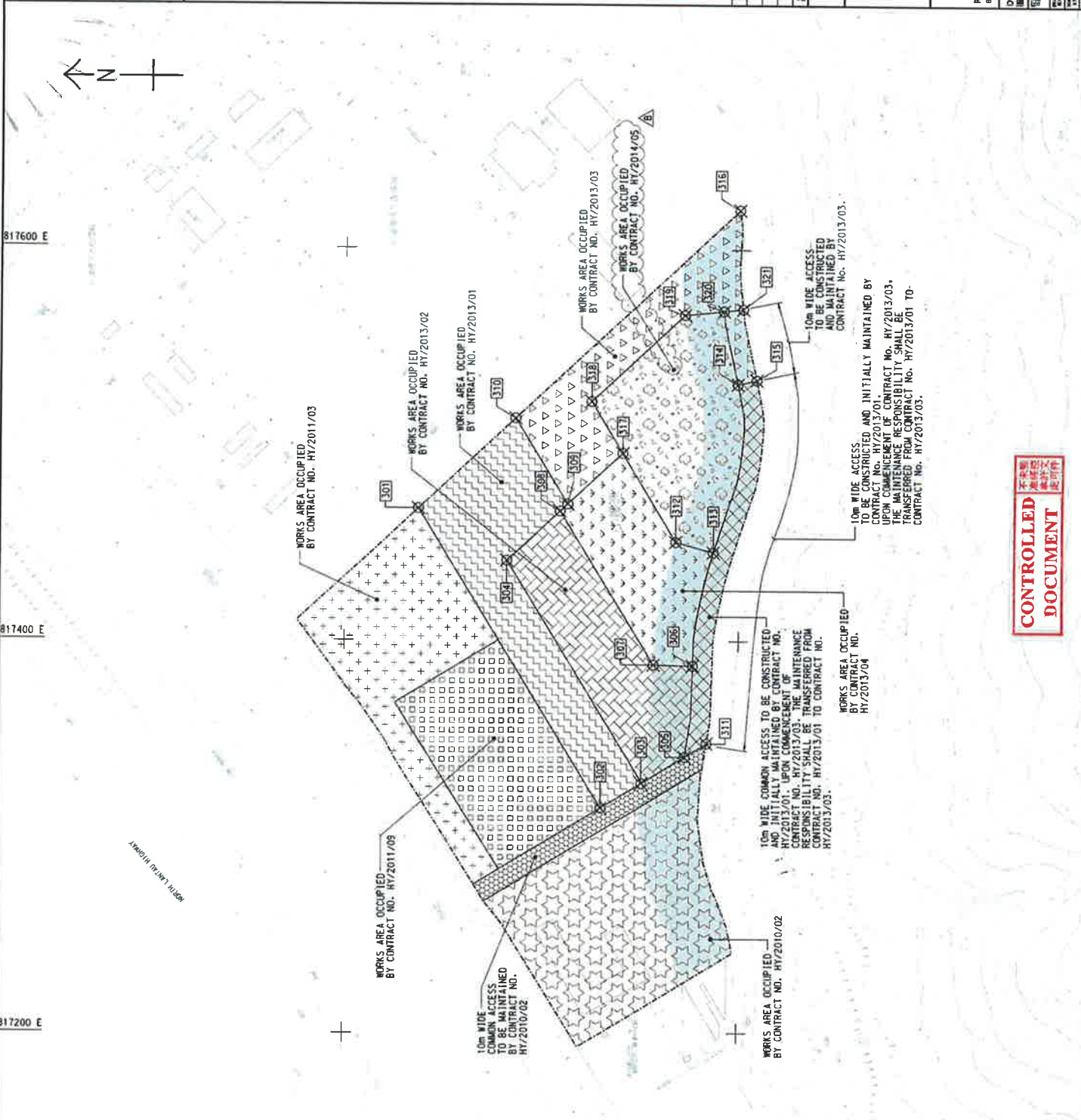
- WORKS AREA BOUNDARY
- PORTION 3.1
- PORTION 3.2
- PORTION 3.3
- PORTION 3.4
- PORTION 3.5
- PORTION 3.6
- PORTION 3.7
- PORTION 3.8
- PORTION 3.9
- PORTION 3.10
- NON-BUILDING AREA (220m x 1 MILE)



**AECOM**  
Rogers Stirk Harbour + Partners  
BIRD HMPOLD ATKINS ADI

**WORKING DRAWING**

PROJECT NO. 60191048/C3/000/C00/1051C  
DRAWING NO. HY/2013/03  
DATE: 10/11/15  
SCALE: A1:1:1000  
STATUS: FOR CONSTRUCTION



**CONTROLLED DOCUMENT**

10m WIDE COMMON ACCESS TO BE CONSTRUCTED AND INITIALLY MAINTAINED BY CONTRACT NO. HY/2013/01. UPON COMMENCEMENT OF CONTRACT NO. HY/2013/03, THE MAINTENANCE RESPONSIBILITY SHALL BE TRANSFERRED FROM CONTRACT NO. HY/2013/01 TO CONTRACT NO. HY/2013/03.

10m WIDE COMMON ACCESS TO BE CONSTRUCTED AND INITIALLY MAINTAINED BY CONTRACT NO. HY/2013/01. UPON COMMENCEMENT OF CONTRACT NO. HY/2013/03, THE MAINTENANCE RESPONSIBILITY SHALL BE TRANSFERRED FROM CONTRACT NO. HY/2013/01 TO CONTRACT NO. HY/2013/03.

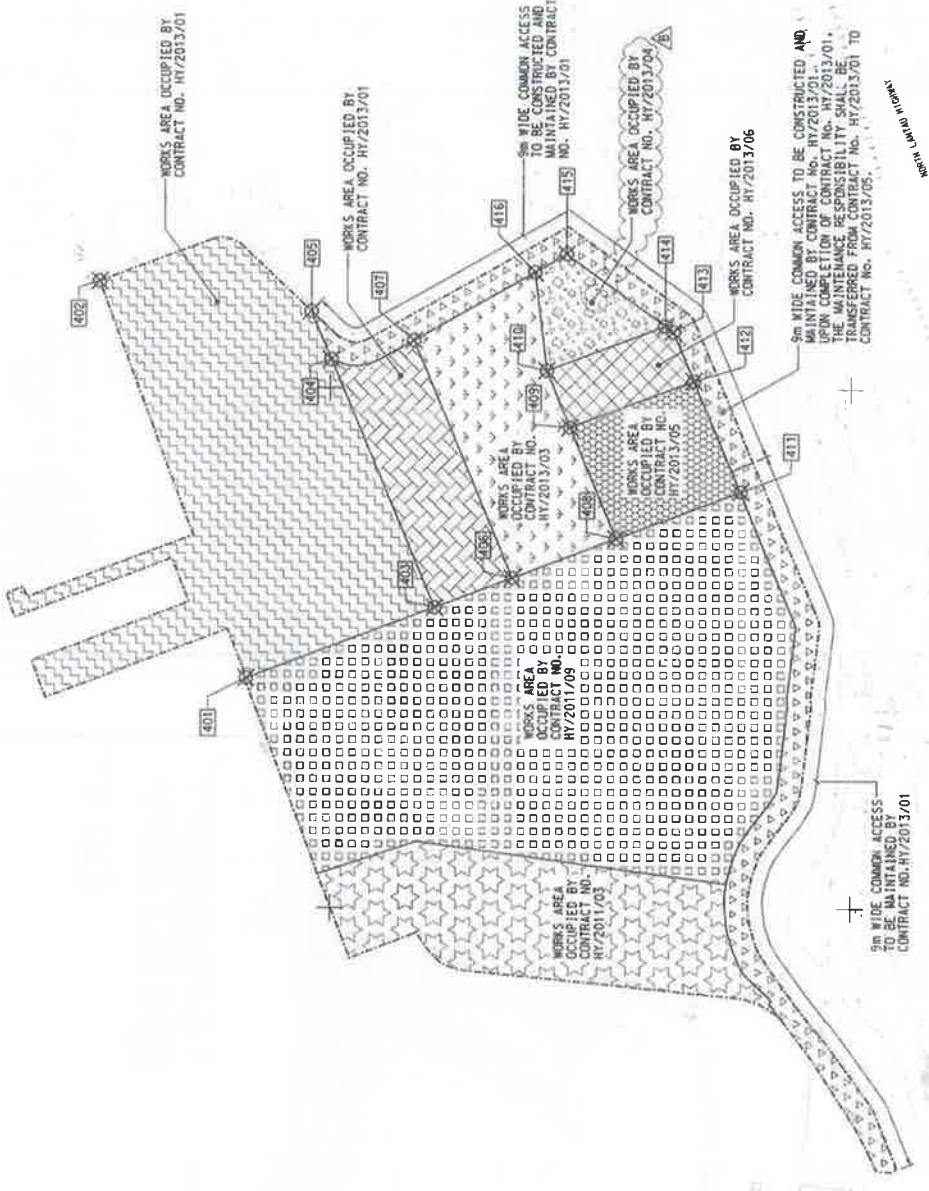
10m WIDE ACCESS TO BE CONSTRUCTED AND MAINTAINED BY CONTRACT NO. HY/2013/03.

10m WIDE ACCESS TO BE CONSTRUCTED AND INITIALLY MAINTAINED BY CONTRACT NO. HY/2013/03. UPON COMMENCEMENT OF CONTRACT NO. HY/2013/03, THE MAINTENANCE RESPONSIBILITY SHALL BE TRANSFERRED FROM CONTRACT NO. HY/2013/01 TO CONTRACT NO. HY/2013/03.



SETTING OUT POINT		
POINT	EASTING	NORTHING
405	822408.151	822532.235
402	822400.555	822589.415
403	822515.508	822559.848
404	822510.265	822579.842
405	822829.428	822507.359
406	822526.388	822529.813
407	822531.343	822581.950
408	822542.223	822489.581
409	822594.983	822507.425
410	822598.865	822516.561
411	822600.278	822481.958
412	822602.949	822460.018
413	822621.914	822467.959
414	822624.150	822470.998
415	822651.725	822508.855
416	822644.758	822521.197

822600 E  
822400 E



**LOCATION PLAN**  
SCALE 1 : 5000

WORKS AREA WA4

KAP SHUI MAIN

TSO MAIN

SUNNY BAY

**NOTES:**  
1. COORDINATES ARE RELATED TO HONG KONG METRIC GRID 1980.  
2. DIMENSIONS IN MILLIMETERS AND CENTIMETERS ARE IN METERS UNLESS OTHERWISE STATED.

**LEGEND:**

WORKS AREA BOUNDARY

PORTION 4.1  
PORTION 4.2  
PORTION 4.3  
PORTION 4.4  
PORTION 4.5  
PORTION 4.6  
PORTION 4.7  
PORTION 4.8  
PORTION 4.9

**CONTROLLED DOCUMENT**

**FOR CONSTRUCTION**

C	WORKING DRAWING	REV. 01	18/01/13
B	TOURER APPROVAL NO. 2	REV. 01	18/01/14
A	TOURER APPROVAL NO. 1	REV. 01	18/01/14
-	TOURER DRAWING	REV. 01	18/01/14
REV.	REVISION	NO.	DATE

HSR  
HONG KONG RAILWAY CORPORATION  
RAILWAY DEPARTMENT  
HONG KONG RAILWAY HEAD OFFICE  
HONG KONG RAILWAY HEADQUARTERS  
SUNNY BAY STATION  
SUNNY BAY STATION BUILDINGS AND FACILITIES

**WORKS AREA WA4**

**AECOM**  
Rogers Silk Harbour + Partners  
BOND HAPPOLO ATONG AHI

**Aedas**

PROJECT NO. 60191048/C3/000/C00/1052C  
PROJECT NAME: SUNNY BAY STATION BUILDINGS AND FACILITIES

DATE: 18/01/2013  
SCALE: 1:1000  
DRAWING NO. 1052C/000/C00/1052C/001

WORKING DRAWING  
© COPYRIGHT RESERVED

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a black rectangular background that has a thin white border.

---

Report No.: 0165/15/ED/1002

### **Appendix B**

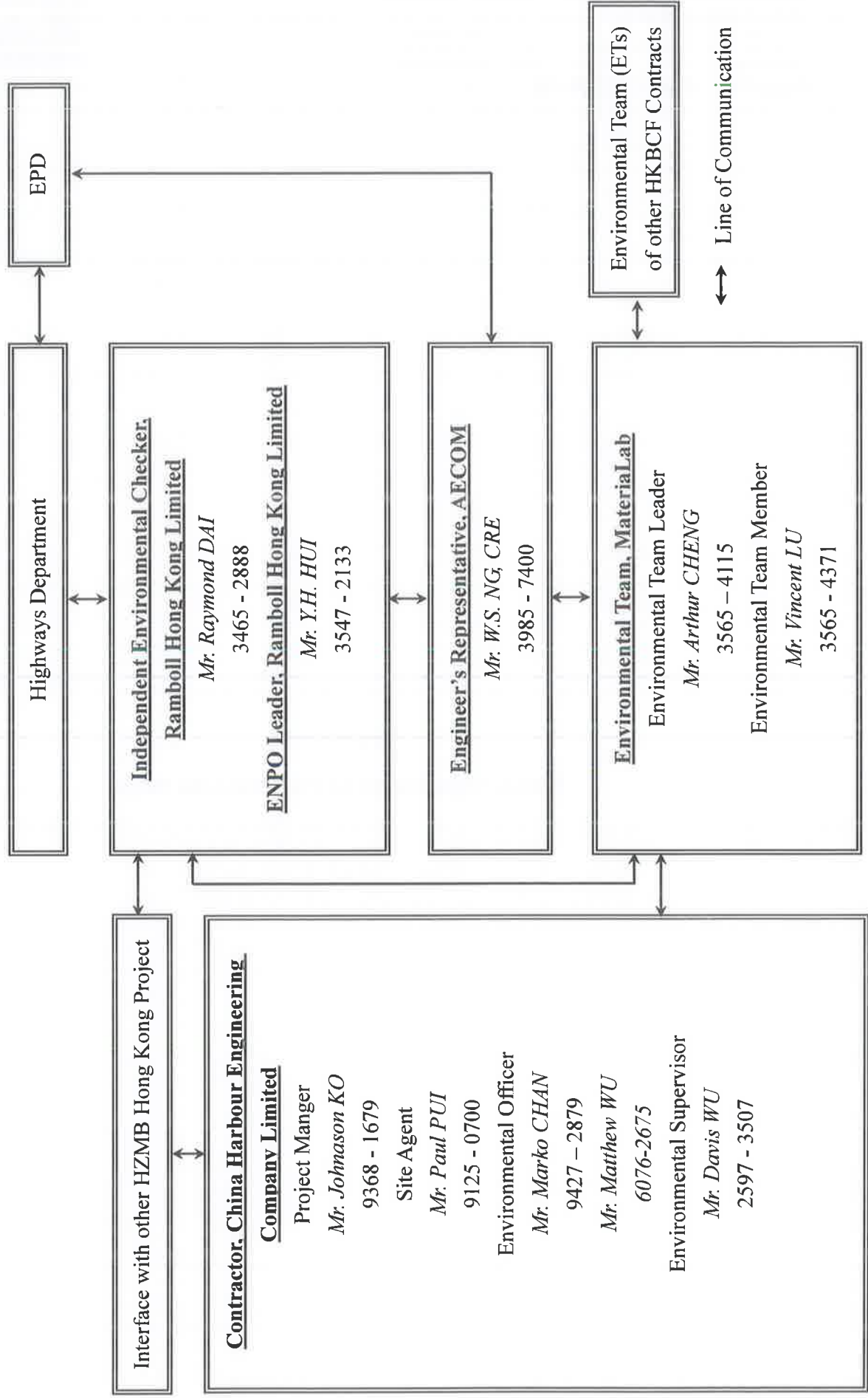
#### **Project Organization for Environmental Works**



# CHINA HARBOUR ENGINEERING COMPANY LIMITED

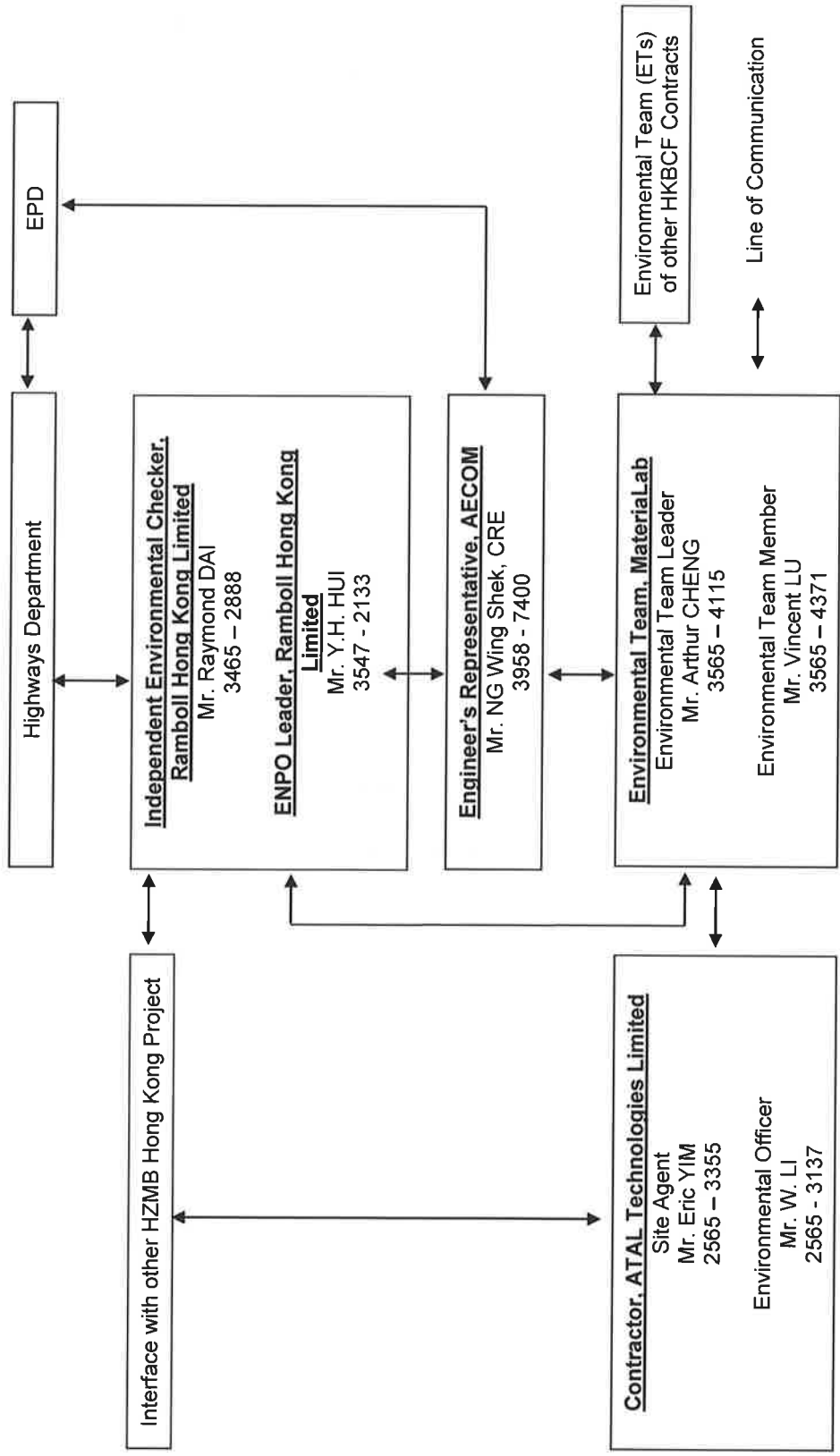
Contract No. HY/2013/03 Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities

## Projects Organization for Environmental Works



Contract No. HY/2013/06 (within Contract No. HY/2013/03 works area)  
 Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System

**Projects Organization for Environmental Works**



## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Appendix C**

#### **Construction Programme**



Activity ID	Activity Name	2018	Apr	May
<b>HKBCF - VCP &amp; Ancillary Buildings and Facilities, DWP5 (+ DRM 2)</b>				
<b>Kiosks of 005, 009, 010, 027, 028, 029 &amp; 030</b>				
K034	027 Remaining 12-Kiosks: Finishing, Glass Window & Door, D3			
K120	028 Remaining 5-Kiosks: Finishing, Glass Window & Door, D3			
K124	029 Remaining 5-Kiosks: Finishing, Glass Window & Door, D3			
K220	030 Remaining 12-Kiosks: Finishing, Glass Window & Door, D3			
K260	006 4 Kiosk: Finishing, Glass Window & Door, D3			
K360	010 4 Kiosk: Finishing, Glass Window & Door, D3			
<b>Plazas: Traffic Lanes through Kiosks</b>				
<b>Inbound: Through Kiosk of 027 &amp; 028</b>				
R010	Kerb/Edges, U-channel & Bitumen Pavement			
R030	Street lighting & Road Marking			
<b>Outbound: Through Kiosk of 029 &amp; 030</b>				
R210	Kerb/Edges, U-channel & Bitumen Pavement			
R230	Street lighting & Road Marking			
<b>North Coast Road</b>				
R2030	Kerb/Edges, U-channel & Bitumen Pavement			
R3040	Street lighting & Road Marking			
<b>Through Kiosks of 005, 009</b>				
R420	Kerb/Edges, U-Channel & Concrete Pavement			
R430	Street lighting			
<b>Through Kiosks of 010, include Portion D</b>				
R1430	Kerb/Edges, U-channel & Pavement			
R1440	Street lighting			
<b>Internal Road around Buildings and Boundary Road</b>				
<b>Internal Road - South of CUE, West Side (026-033)</b>				
R510	Kerb/Edges, U-channel & Bitumen Pavement			
R540	Street lighting & Road Marking			
<b>Internal Road - South of CUE, East Side (037-054)</b>				
R470	Kerb/Edges, U-channel & Bitumen Pavement			
R980	Street lighting & Road Marking			
<b>Internal Road - South of CUE, SW Corner (049)</b>				
D460	Laying of Drainage/Sewerage, Watertight/Flush & UU Ducts			
R1990	Kerb/Edges, U-channel & Bitumen Pavement			
R2990	Street lighting & Road Marking			
<b>Internal Road - North of CUE, West Side (023-057)</b>				
D410	Laying of Drainage & UU Ducts			
R1110	Kerb/Edges, U-channel & Bitumen Pavement			
R1160	Street lighting & Road Marking			
<b>Internal Road - North of CUE, East Side (024-031)</b>				
D500	Laying of Drainage & UU Ducts			
R1500	Kerb/Edges, U-channel & Bitumen Pavement			
R3000	Street lighting & Road Marking			
<b>Bridges (All), include W7-W</b>				
R1330	Remaining Pavement on Bridges & Retaining Walls			
R1340	Lighting, Signages, Gantry & Marking			
<b>Boundary Road</b>				
<b>North Boundary Road</b>				
R770	Kerb/Edges U-channel & Bitumen Pavement			
R920	Street lighting & Road Marking			
<b>East Boundary Road</b>				

3MRP, AS OF 28 FEBRUARY 2018

VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES

3MRP, updated as of 31 Jan, 2018

3MRP, updated as of 28 Feb, 2018

31-Jan-18

28-Feb-18

Date

Revision

Checked

Approved

ZJ

ZJ

Actual Work

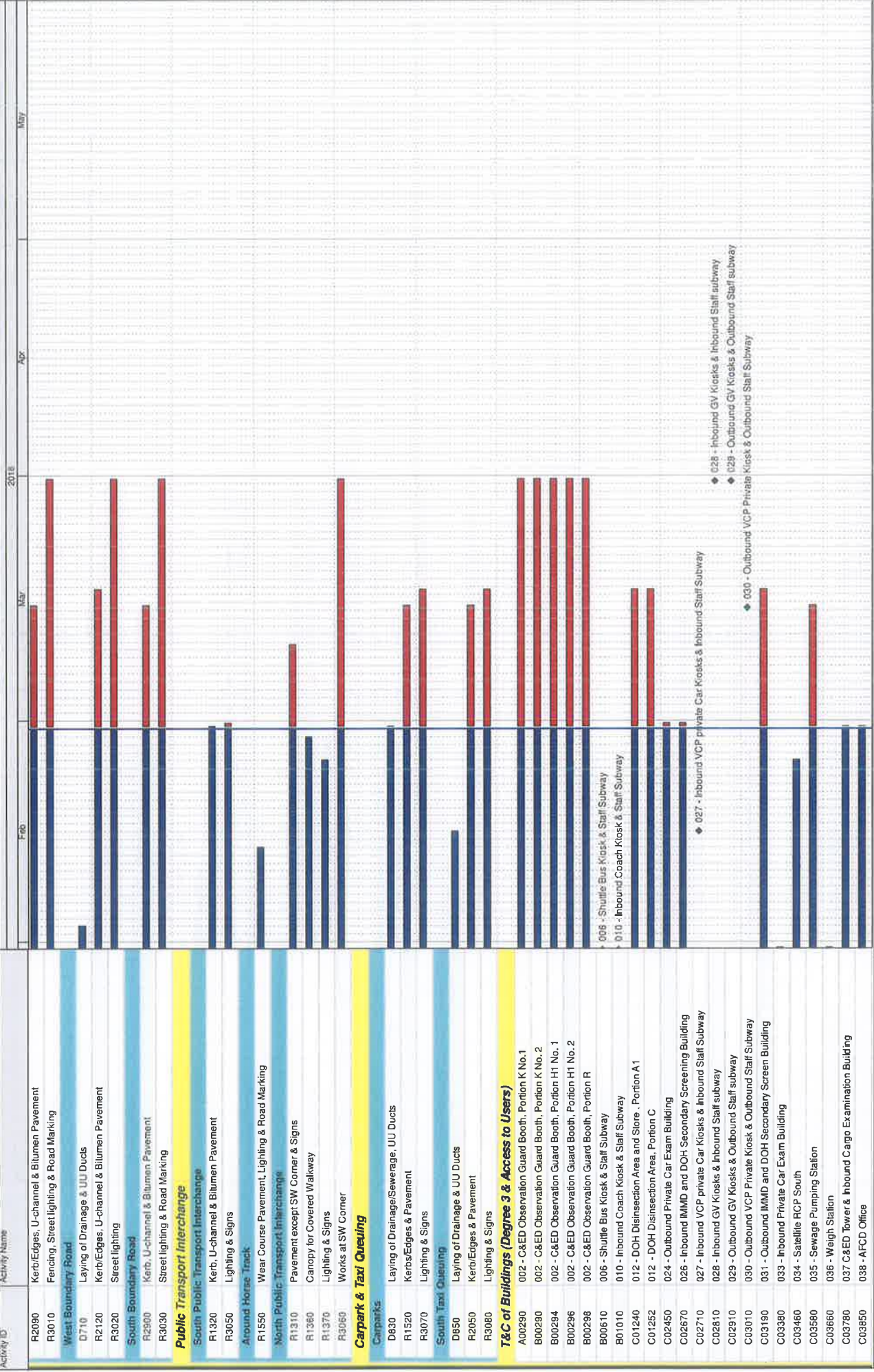
Remaining Work

Critical

◆ Milestone

Page 1 of 3





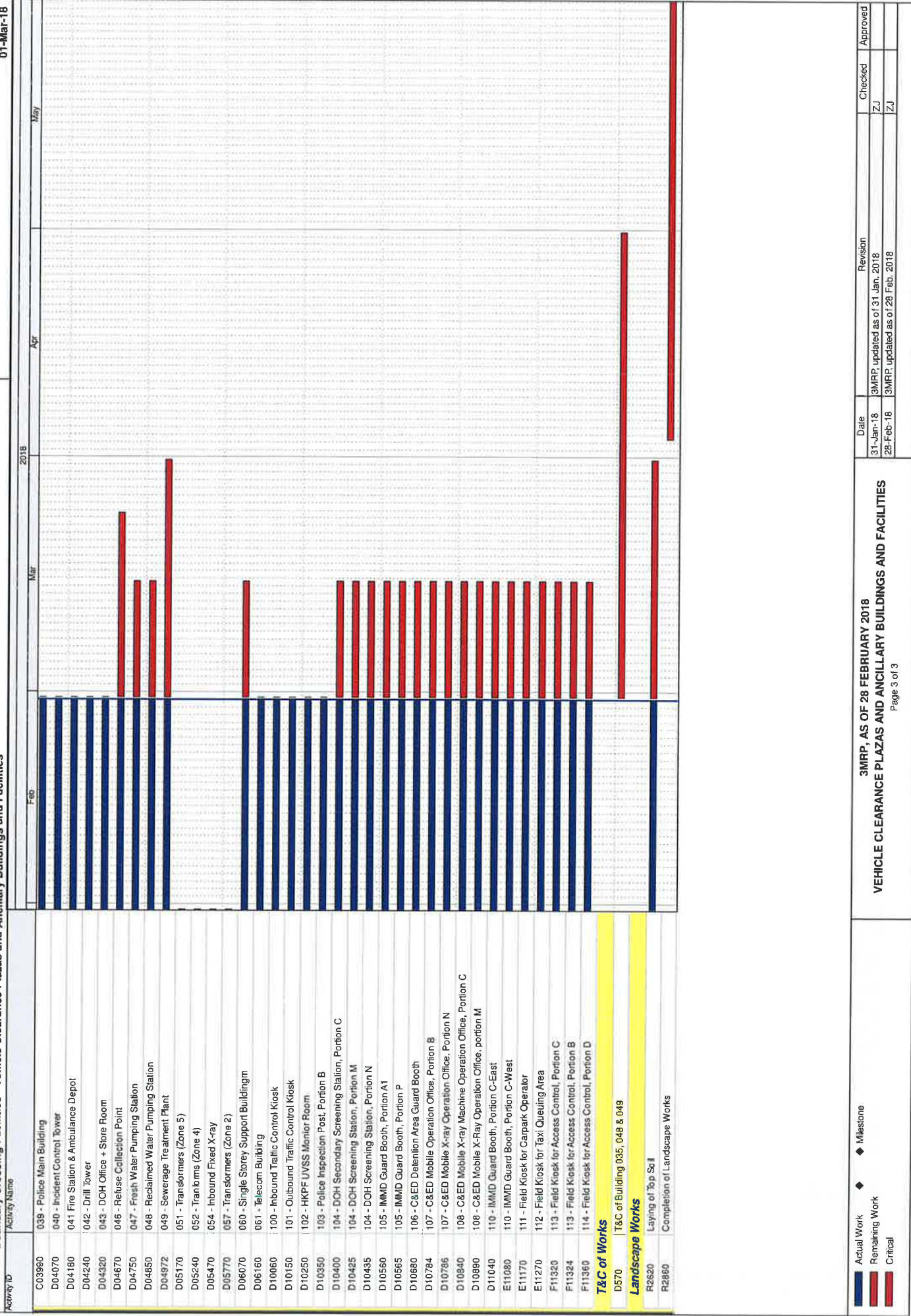
Activity ID	Activity Name	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
R2090	Kerb/Edges, U-channel & Bitumen Pavement	█												
R3010	Fencing, Street lighting & Road Marking	█												
<b>West Boundary Road</b>														
D710	Laying of Drainage & UU Ducts	█												
R2120	Kerb/Edges, U-channel & Bitumen Pavement	█												
R3020	Street lighting	█												
<b>South Boundary Road</b>														
R2300	Kerb, U-channel & Bitumen Pavement	█												
R3030	Street lighting & Road Marking	█												
<b>Public Transport Interchange</b>														
<b>South Public Transport Interchange</b>														
R1320	Kerb, U-channel & Bitumen Pavement	█												
R3050	Lighting & Signs	█												
<b>Around Horse Track</b>														
R1550	Wear Course Pavement, Lighting & Road Marking	█												
<b>North Public Transport Interchange</b>														
R1310	Pavement except SW Corner & Signs	█												
R1360	Canopy for Covered Walkway	█												
R1370	Lighting & Signs	█												
R3060	Works at SW Corner	█												
<b>Carpark &amp; Taxi Queuing</b>														
<b>Carparks</b>														
D630	Laying of Drainage/Sewerage, UU Ducts	█												
R1520	Kerbs/Edges & Pavement	█												
R3070	Lighting & Signs	█												
<b>South Taxi Queuing</b>														
D650	Laying of Drainage & UU Ducts	█												
R2050	Kerb/Edges & Pavement	█												
R3080	Lighting & Signs	█												
<b>T&amp;C of Buildings (Degree 3 &amp; Access to Users)</b>														
A00290	002 - C&ED Observation Guard Booth, Portion K No. 1	█												
B00290	002 - C&ED Observation Guard Booth, Portion K No. 2	█												
B00294	002 - C&ED Observation Guard Booth, Portion H1 No. 1	█												
B00296	002 - C&ED Observation Guard Booth, Portion H1 No. 2	█												
B00298	002 - C&ED Observation Guard Booth, Portion R	█												
B00610	006 - Shuttle Bus Kiosk & Staff Subway	█												
B01010	010 - Inbound Coach Kiosk & Staff Subway	█												
C01240	012 - DOH Disinsection Area and Store, Portion A1	█												
C01252	012 - DOH Disinsection Area, Portion C	█												
C02450	024 - Outbound Private Car Exam Building	█												
C02670	026 - Inbound IMMMD and DOH Secondary Screening Building	█												
C02710	027 - Inbound VCP private Car Kiosks & Inbound Staff Subway	█												
C02810	028 - Inbound GV Kiosks & Inbound Staff subway	█												
C02910	029 - Outbound GV Kiosks & Outbound Staff subway	█												
C03010	030 - Outbound VCP Private Kiosk & Outbound Staff Subway	█												
C03380	033 - Inbound Private Car Exam Building	█												
C03460	034 - Satellite RCP South	█												
C03560	035 - Sewage Pumping Station	█												
C03660	036 - Weigh Station	█												
C03780	037 C&ED tower & Inbound Cargo Examination Building	█												
C03850	038 - AFCD Office	█												

Date	Revision	Checked	Approved
31-Jan-18	3MRP updated as of 31 Jan. 2018	ZJ	
28-Feb-18	3MRP updated as of 28 Feb. 2018	ZJ	

Actual Work	Milestone	Remaining Work	Critical
█	◆	█	█

**HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities**

01-Mar-18



Actual Work	Milestone	Remaining Work	Critical
Blue bar	Diamond	Red bar	Red bar with diamond

Date	Revision	Checked	Approved
31-Jan-18	3MRP, updated as of 31 Jan. 2018	ZJ	
28-Feb-18	3MRP, updated as of 28 Feb. 2018	ZJ	



Activity ID	Activity Name
<b>Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing F</b>	
<b>Key Dates</b>	
<b>Interface Activities</b>	
<b>Site and Facility Inspection</b>	
JS1200	Pre Site and Facility Inspection by Contractor at Location 4 - Deg2
JS1210	Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg2
JS1620	Pre Site and Facility Inspection by Contractor at Location 14 - Deg2
JS1630	Joint Site and Facility Inspection with Interface Contractor at Location 14 - Deg2
JS1760	Pre Site and Facility Inspection by Contractor at Location 18 - Deg1
JS1770	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg1
JS1780	Pre Site and Facility Inspection by Contractor at Location 18 - Deg2
JS1790	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg2
<b>Access Dates</b>	
AD1000	Location 1(PCB (001) Basement)-Deg1 (270d)
AD1010	Location 1(PCB (001) Basement)-Deg2 (380d)
AD1020	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d)
AD1030	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg2 (380d)
AD1040	Location 2(PCB (001) First Floor Main Server Room)-Deg1 (330d)
AD1050	Location 2(PCB (001) First Floor Main Server Room)-Deg2 (380d)
AD1060	Location 2(PCB (001) First Floor Main Server Room) - For Server Installation - Deg2 (330d)
AD1080	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5))
AD1090	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) -
AD1130	Location 3(Inbd Cargo Exam Bldg (037) Platform Central Room)-Deg2 (500d)
AD1150	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,131,128,129,14
AD1170	Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)-Deg2 (480d)
AD1190	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)-Deg2 (480d)
AD1200	Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (680d)
AD1240	Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d)
AD1270	Location 6(Common Utility Enclosure & Staff Subway)-Deg1 (400d)
AD1290	Location 7(Common Utility Enclosure & Staff Subway)-Deg1 (270d)
AD1300	Location 8(Inbd Private Car Annex (025))-Deg1 (430d)
AD1310	Location 8(Inbd Private Car Annex (025))-Deg2 (560d)
AD1320	Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d)
AD1330	Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (560d)
AD1340	Location 9(Outbd Private Car Annex (032))-Deg1 (520d)
AD1350	Location 9(Outbd Private Car Annex (032))-Deg2 (660d)
AD1360	Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d)
AD1370	Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d)
AD1501	Location 12(Inbd Private Car Kiosks(027))-Deg1 (400d) Phase 2
AD1510	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 1
AD1511	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 2
AD1521	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d) Phase 2

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

summary

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

**Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)**

2015	2016				2017				2018				2019				
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
22-Oct-17: Hong Kong-Zhuhai-Macao Bridge																	
23-Jun-17: Site and Facility Inspection																	
Pre Site and Facility Inspection by Contractor at Location 4																	
Joint Site and Facility Inspection with Interface Contractor at Location 4																	
Pre Site and Facility Inspection by Contractor at Location 14																	
Joint Site and Facility Inspection with Interface Contractor at Location 14																	
Pre Site and Facility Inspection by Contractor at Location 18																	
Joint Site and Facility Inspection with Interface Contractor at Location 18																	
Pre Site and Facility Inspection by Contractor at Location 18																	
Joint Site and Facility Inspection with Interface Contractor at Location 18																	
24-Aug-17: Access Dates																	
Location 1(PCB (001) Basement)-Deg1 (270d), 31-May																	
Location 1(PCB (001) Basement)-Deg2 (380d), 15-J																	
Location 1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d)																	
Location 1(PCB (001) ELV Room (Grid Line E3))-Deg2 (380d)																	
Location 2(PCB (001) First Floor Main Server Room)-Deg1 (330d)																	
Location 2(PCB (001) First Floor Main Server Room)-Deg2 (380d)																	
Location 2(PCB (001) First Floor Main Server Room) - For Server Installation - Deg2 (330d)																	
Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5))																	
Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) -																	
Location 3(Inbd Cargo Exam Bldg (037) Platform Central Room)-Deg2 (500d)																	
Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,131,128,129,14																	
Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)-Deg2 (480d)																	
Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)-Deg2 (480d)																	
Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (680d)																	
Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d)																	
Location 6(Common Utility Enclosure & Staff Subway)-Deg1 (400d)																	
Location 7(Common Utility Enclosure & Staff Subway)-Deg1 (270d)																	
Location 8(Inbd Private Car Annex (025))-Deg1 (430d)																	
Location 8(Inbd Private Car Annex (025))-Deg2 (560d)																	
Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d)																	
Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (560d)																	
Location 9(Outbd Private Car Annex (032))-Deg1 (520d)																	
Location 9(Outbd Private Car Annex (032))-Deg2 (660d)																	
Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d)																	
Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d)																	
Location 12(Inbd Private Car Kiosks(027))-Deg1 (400d) Phase 2																	
Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 1																	
Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 2																	
Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d) Phase 2																	

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

Activity ID	Activity Name
AD1530	Location 12(Inbnd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 1
AD1531	Location 12(Inbnd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 2
AD1540	Location 12(Inbnd GV Kiosks (028))-Deg1 (400d) Phase 1
AD1541	Location 12(Inbnd GV Kiosks (028))-Deg1 (400d) Phase 2
AD1550	Location 12(Inbnd GV Kiosks (028))-Deg2 (480d) Phase 1
AD1551	Location 12(Inbnd GV Kiosks (028))-Deg2 (480d) Phase 2
AD1560	Location 12(Inbnd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 1
AD1561	Location 12(Inbnd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 2
AD1570	Location 12(Inbnd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 1
AD1571	Location 12(Inbnd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 2
AD1580	Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 1
AD1581	Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 2
AD1590	Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 1
AD1591	Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 2
AD1600	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 1
AD1601	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 2
AD1610	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 1
AD1611	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 2
AD1620	Location 13(Outbd Private Car Kiosks (030))-Deg1 (480d) Phase 1
AD1630	Location 13(Outbd Private Car Kiosks (030))-Deg2 (550d) Phase 1
AD1640	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg1 (480d) Phase 1
AD1650	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg2 (550d) Phase 1
AD1660	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg1 (610d)
AD1670	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg2 (680d)
AD1700	Location 15(Outbd Traffic Control Kiosk (101))-Deg1 (400d)
AD1710	Location 15(Outbd Traffic Control Kiosk (101))-Deg2 (480d)
AD1740	Location 16(Outbd Private Car Exam Bldg(024))-Deg1 (-)
AD1750	Location 16(Outbd Private Car Exam Bldg(024))-Deg2 (670d)
AD1780	(by C03) Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (0
AD1790	(by C03) (UUD1.2) between Inbd Cargo Exam Bldg South (037(S)) and DOH Cargo C
AD1800	(by C03) (UUD2) between Inbd Cargo Exam Bldg North (037(N)) and Inbd Vehicle Cle
AD1810	(by C03) (UUD9.1) b/w Inbd Cargo Exam Bldg S.(037(S)) & Inbd PC Exam Bldg(033) ;
AD1820	(by C03) (UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear
AD1830	(by C03) (UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear
AD1840	(by C03) (UUD3.2) b/w Outbd Car Exam Bldg (023) and Outbd PC Exam Bldg (024) a
AD1850	(by C03) (UUD4.1) between Outbd Private Car Exam Bldg (023) and Outbd Vehicle Cle
AD1860	(by C03) (UUD5) between Outbd Car Exam Bldg South (023(S)) and Outbd Vehicle Cle
AD1870	(by C03) Inbound Vehicle Clearance Plaza
AD1880	(by C03) Outbound Vehicle Clearance Plaza
AD1910	(by C03) Outbound Vehicle Clearance Plaza
AD1920	(by C03) Outbound Vehicle Clearance Plaza

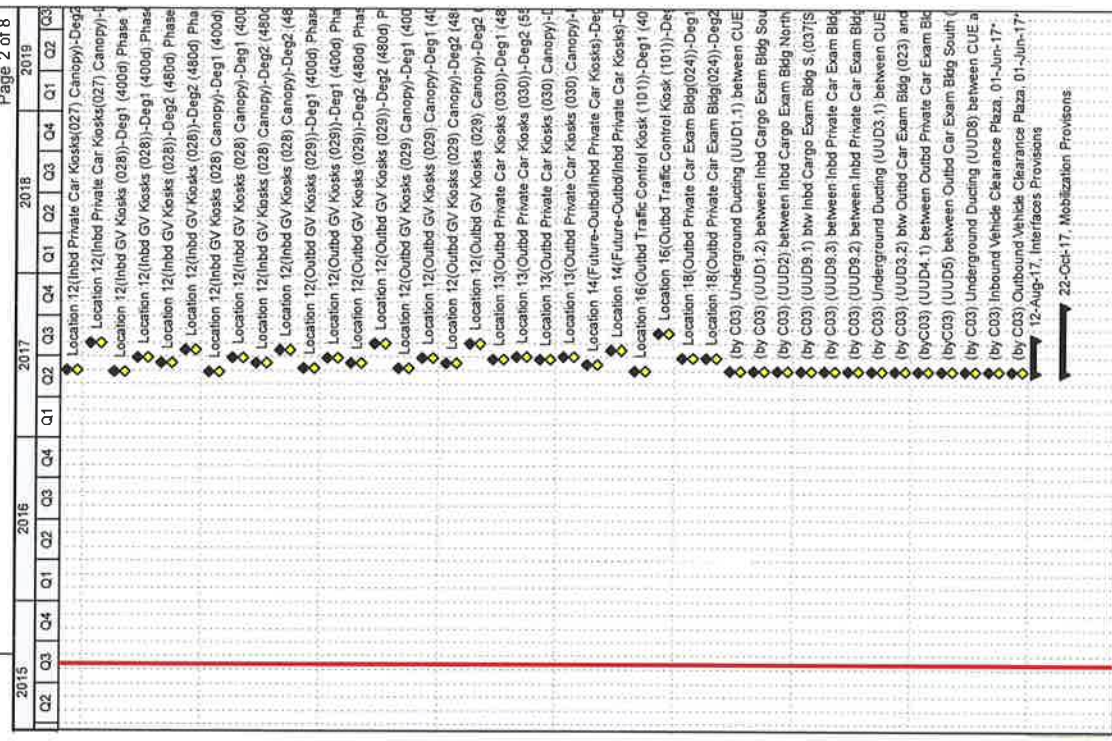
**Interfaces Provisions**  
**Mobilization Provisions**  
**WA4 Site Erection & Servicing**

Programme No.: HZMB-DWP  
 Data Date: 14-Aug-15

Actual Level of Effort summary

- Actual Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

**Hong Kong-Zhuhai-Macao Bridge**  
**Hong Kong Boundary Crossing**  
**Facilities - Automatic Vehicle**  
**Clearance Support System (AVCSS)**



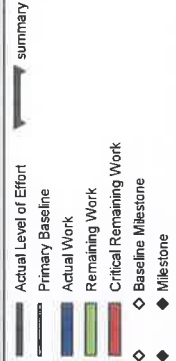
Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

22-Oct-17, Mobilization Provisions



Activity Name	2015				2016				2017				2018				2019			
	Q2	Q3	Q4	Q1	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Detailed Design Specification																				
Construction Design and Management																				
Supply/Manufacture Mock-up Items																				
Software Design, Coding and Testing																				
Coding																				
Software System Integration																				
Prototype & Software Simulation Tests																				
Procurement - Phase 1 / Section I																				
Supply/Manufacture products for FAT																				
Factory Acceptance Test (FAT)																				
Supply/Manufacture Equipment																				
Delivery and Bench Acceptance Test for Phase 1 / Section I																				
Installation - Phase 1 / Section I																				
Location 1(PCB (001) Basement)																				
EM1920 L1(001)B/F - Cable Laying and termination at Location 1 and Location 2																				
Location 1(PCB (001) ELV Room (Grid Line E3))																				
EM1940 L1(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2																				
Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3))																				
EM1960 L2(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2																				
Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD6))																				
EM1080 L2(001)Health Ctr Rm - Cable Laying and termination at Location 1 and Location 2																				
EM1100 L2(001)Health Ctr Rm - Cable Splicing and Testing and Labeling																				
EM1120 L2(001)Health Ctr Rm - Intercom and PA system Installation																				
EM1140 L2(001)Health Ctr Rm - Intercom and PA system tuning																				
Location 2(PCB (001) First Floor Main Server Room)																				
EM1000 L2(001)Main Server Rm - Cable Laying and termination at Location 1 and Location 2																				
EM1020 L2(001)Main Server Rm - Cable Splicing and Testing and Labeling																				
EM1040 L2(001)Main Server Rm - AVCSS Network and Server Installation																				
EM1060 L2(001)Main Server Rm - AVCSS Network and Server Tuning																				
Location 3(Inbd Cargo Exam Bldg (037) MDF Room)																				
EM2040 L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a																				
Location 3(Inbd Cargo Exam Bldg (037) ELV Room)																				
EM2020 L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a																				
EM2040 L3(037)Inspec Offices - Cable Splicing and Testing and Labeling																				
EM2060 L3(037)Inspec Offices - AVCSS SURCON WS and 55" LCD Installation																				
EM2080 L3(037)Inspec Offices - VTS WS Installation																				
EM2100 L3(037)Inspec Offices - SURCON and WS Tuning																				
Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)																				
EM1160 L3(037)PLF Ctr Rm - Cable Laying and termination in Location 3 and Location 3a																				
EM1180 L3(037)PLF Ctr Rm - Cable Splicing and Testing and Labeling																				
EM1200 L3(037)PLF Ctr Rm - AVCSS SYSCON WS and 55" TV Wall Installation																				
EM1220 L3(037)PLF Ctr Rm - AVCSS SYSCON WS Tuning																				

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15



Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1 0a	WC	LC
5-May-17	Rev: 1 0b	WC	LC

Activity ID	Activity Name	2015			2016			2017			2018			2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Location 3a (Inbd Cargo Exam Bldg (037) ROCARS Room)</b>																
EM1240	L3a(037) ROCARS Rm - Cable Laying and termination in Location 3 and Location 3a															
EM1250	L3a(037) ROCARS Rm - Cable Splicing and Testing and Labeling															
EM1280	L3a(037) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation															
EM1300	L3a(037) ROCARS Rm - VTS WS Installation															
EM1320	L3a(037) ROCARS Rm - VID WS Installation															
EM1340	L3a(037) ROCARS Rm - SURCON and SYSCON and WS Tuning															
<b>Location 3a (Inbd Cargo Exam Bldg (037) Main Server Room)</b>																
EM2120	L3a(037) Main Server Rm - Cable Laying and termination in Location 3 and Location 3a															
EM2140	L3a(037) Main Server Rm - Cable Splicing and Testing and Labeling															
EM2160	L3a(037) Main Server Rm - AVCSS Server Installation															
EM2180	L3a(037) Main Server Rm - VTS Server Installation															
EM2200	L3a(037) Main Server Rm - Servers Tuning															
<b>Location 4 (Outbd Cargo Exam Bldg (023) MDF Room)</b>																
<b>Location 4a (Outbd Cargo Exam Bldg (023) ROCARS Room)</b>																
EM2240	L4a(023) ROCARS Rm - Cable Splicing and Testing and Labeling															
EM2260	L4a(023) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation															
EM2280	L4a(023) ROCARS Rm - VTS WS Installation															
EM2300	L4a(023) ROCARS Rm - SYSCON and SURCON and WS Tuning															
<b>Location 5 (Common Utility Enclosure &amp; Staff Subway)</b>																
EM2341	L5(CUE) - Cable Laying between Location 5 and Location 6															
EM2381	L5(CUE) - Cable Laying between Location 5 and Location 7															
EM2380	L5(CUE) - Cable Splicing and Testing and Labeling															
<b>Location 6 (Common Utility Enclosure &amp; Staff Subway)</b>																
EM2400	L6(CUE) - Cable Laying between Location 5 and Location 6															
EM2420	L6(CUE) - Cable Splicing and Testing and Labeling															
<b>Location 7 (Common Utility Enclosure &amp; Staff Subway)</b>																
EM2440	L7(CUE) - Cable Laying between Location 5 and Location 7															
EM2460	L7(CUE) - Cable Splicing and Testing and Labeling															
<b>Location 12 (Inbd Private Car Kiosks, GV Kiosks (027,028,029))</b>																
<b>Inbd Private Car Kiosks(027) - 3 nos (Phase 1)</b>																
EM1500	L12(027)(9nos P1) - Cable Splicing and Testing and Labeling															
EM1520	L12(027)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)															
EM1541	L12(027)(9nos P1) - XDB installation (18 nos)															
EM1542	L12(027)(9nos P1) - ODB installation (5 nos)															
EM1543	L12(027)(9nos P1) - ODB installation (2 nos)															
EM1544	L12(027)(9nos P1) - ODB installation (2 nos)															
EM1560	L12(027)(9nos P1) - Loop installation (45 nos)															
<b>Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1)</b>																
EM1620	L12(028)(5nos P1) - Cable Laying and termination															
EM1640	L12(028)(5nos P1) - Cable Splicing and Testing and Labeling															
EM1660	L12(028)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)															
EM1681	L12(028)(5nos P1) - XDB installation (10 nos)															
EM1682	L12(028)(5nos P1) - ODB installation (3 nos)															
EM1683	L12(028)(5nos P1) - ODB installation (2 nos)															

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

**summary**

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

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC



Activity ID	Activity Name	2015			2016			2017			2018			2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
EM1700	L12(028)(5nos P1) - A/OP Installation (5 nos)															
EM1720	L12(028)(5nos P1) - Loop installation (25 nos)															
<b>Outbd Goods Vehicle Kiosks (029) - 5 nos (Phase 1)</b>																
EM1740	L12(029)(5nos P1) - Cable Containment in Kiosks															
EM1760	L12(029)(5nos P1) - Cable Laying and termination															
EM1780	L12(029)(5nos P1) - Cable Splicing and Testing and Labeling															
EM1800	L12(029)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)															
EM1821	L12(029)(5nos P1) - XDB installation (5 nos)															
EM1822	L12(029)(5nos P1) - ODB installation (4 nos)															
EM1823	L12(029)(5nos P1) - ODB installation (1 nos)															
EM1840	L12(029)(5nos P1) - A/OP Installation (5 nos)															
<b>Location 13(Outbd Private Car Kiosks (030)) - 9 nos (Phase 1)</b>																
EM2520	L13(030)(9nos P1) - Cable Containment in Kiosks															
EM2540	L13(030)(9nos P1) - Cable Laying and termination															
EM2560	L13(030)(9nos P1) - Cable Splicing and Testing and Labeling															
EM2580	L13(030)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)															
EM2601	L13(030)(9nos P1) - XDB installation (9 nos)															
EM2602	L13(030)(9nos P1) - ODB installation (7 nos)															
<b>Location 14(Future-Outbd/Inbd Private Car Kiosks) - 6+6 nos</b>																
EM1440	L14 - Cable Laying and termination at ELV Room in CUE															
<b>Location 15(Inbd Traffic Control Kiosk (100))</b>																
<b>Location 16(Outbd Traffic Control Kiosk (101))</b>																
EM2760	L16(101) - Cable Laying and termination															
EM2780	L16(101) - Cable Splicing and Testing and Labeling															
EM2800	L16(101) - AVCSS SYSSON and SURCON Installation															
EM2820	L16(101) - VTS WS and 55" LCD Installation															
<b>Location 17(Inbd Private Car Exam Bldg(033) Operational Office)</b>																
<b>Location 18(Outbd Private Car Exam Bldg(024) Operational Office)</b>																
EM2940	L18(024) - Cable Laying and termination															
EM2960	L18(024) - Cable Splicing and Testing and Labeling															
EM2980	L18(024) - AVCSS SURCON and 55" LCD Installation															
EM3000	L18(024) - SURCON Tuning															
<b>Location 19 (DOH Cargo Clearance Bldg(043))</b>																
EM1360	L19(043) - Cable Laying and termination															
EM1380	L19(043) - Cable Splicing and Testing and Labeling															
EM1400	L19(043) - PA and Intercom Installation															
EM1420	L19(043) - PA and Intercom Tuning															
<b>Inbd Vehicle Clearance Plaza - 8 nos VTS, 7 nos VTS, 4 nos TLS</b>																
EM3020	Inbound VID cabling from pillar box to VID field equipment															
EM3040	Inbound VTS cabling from pillar box to VTS field equipment															
EM3060	Inbound TLS cabling from pillar box to TLS field equipment															
EM3080	Inbound VID field equipment installation (8 VID)															
EM3100	Inbound VTS field equipment installation (4 RFID + 3 Cameras)															
EM3120	Inbound TLS field equipment installation (4 TLS)															
EM3140	Inbound VID and VTS and TLS field equipment tuning															

Programme No. HZMB-DWP  
Data Date: 14-Aug-15

summary

Actual Level of Effort

Primary Baseline

Actual Work

Remaining Work

Critical Remaining Work

Baseline Milestone

Milestone

**Hong Kong-Zhuhai-Macao Bridge**  
**Hong Kong Boundary Crossing**  
**Facilities - Automatic Vehicle**  
**Clearance Support System (AVCSS)**

Date	Revision	Checked	Approved
14-Nov-15	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC





Activity ID	Activity Name	2015				2016				2017				2018				2019			
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
<b>Location 8(Inbd Private Car Annex (026)) (Phase 2)</b>																					
EM3370	L8(025) - Cable Containment in Kiosks																				
EM3380	L8(025) - Cable Laying and termination																				
EM3400	L8(025) - Cable Splicing and Testing and Labeling																				
<b>Location 9(Outbd Private Car Annex (032)) (Phase 2)</b>																					
EM3500	L9(032) - Cable Containment in Kiosks																				
EM3520	L9(032) - Cable Laying and termination																				
<b>Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section II)</b>																					
<b>Site Acceptance Test (Phase 2 / Section II)</b>																					
<b>Operability Period Test (Phase 2 / Section II)</b>																					
<b>Completion (Phase 2 / Section II)</b>																					
<b>Engineering Support for Phase 2 / Section II</b>																					
<b>Procurement for Phase2 / Section III</b>																					
<b>Delivery and Bench Acceptance Test for Phase2 / Section III</b>																					
<b>Installation - Phase 2 / Section III</b>																					
<b>Location 10,11,12,13 (Vehicle Clearance Kiosks)</b>																					
<b>Location 12 Inbd Private Car Kiosks (027) - 12 nos (Phase 2)</b>																					
EM4440	L12(027)(12nos P2) - Cable Laying and termination																				
EM4460	L12(027)(12nos P2) - Cable Splicing and Testing and Labeling																				
EM4480	L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)																				
<b>Location 13 Outbd Private Car Kiosks (030) - 12 nos (Phase 2)</b>																					
EM4500	L13(030)(12nos P2) - Cable Containment in Kiosks																				
<b>Location 12 Outbd Goods Vehicle Kiosks (029) - 3 nos (Phase 2)</b>																					
EM4680	L12(029)(3nos P2) - Cable Laying and termination																				
EM4900	L12(029)(3nos P2) - Cable Splicing and Testing and Labeling																				
EM4920	L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																				
EM4940	L12(029)(3nos P2) - ODB & XDB Installation (3 nos)																				
EM4960	L12(029)(3nos P2) - AIDP Installation (3 nos)																				
EM4980	L12(029)(3nos P2) - Loop Installation (15 nos)																				
<b>Location 11 Outbd Coach Kiosks (009) - 4 nos (Phase 2)</b>																					
<b>Location 12 Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)</b>																					
EM4720	L12(028)(3nos P2) - Cable Laying and termination																				
EM4740	L12(028)(3nos P2) - Cable Splicing and Testing and Labeling																				
EM4760	L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																				
EM4780	L12(028)(3nos P2) - ODB & XDB Installation (3 nos)																				
EM4800	L12(028)(3nos P2) - AIDP Installation (3 nos)																				
EM4820	L12(028)(3nos P2) - Loop Installation (15 nos)																				
EM4840	L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)																				
EM5120	L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete																				
<b>Location 10 Shuttle Bus Kiosks (005) - 4 nos (Phase 2)</b>																					
EM4000	L10(005)(4nos P2) - Cable Containment in Kiosks																				
<b>Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-1</b>																					
<b>Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-2</b>																					
<b>Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section III)</b>																					

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1 0a	WC	LC
5-May-17	Rev: 1 0b	WC	LC

Hong Kong-Zhuhai-Macao Bridge  
 Hong Kong Boundary Crossing  
 Facilities - Automatic Vehicle  
 Clearance Support System (AVCSS)

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

Programme No.: HZMB-DWP  
 Data Date: 14-Aug-15

summary



2015		2016				2017				2018				2019			
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3

- Site Acceptance Test (Phase 2 / Section III)
- Operability Period Test (Phase 2 / Section III)
- Completion (Phase 2 / Section III)
- Operation (Phase 2 / Section III)
- Defect Liability Period (DLP)
- Document Submission (Phase 2 / Section III)

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

summary

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Appendix D**

#### **Event / Action Plan**

**Appendix D –**

**Event / Action Plan for Air Quality and Noise Monitoring and Water Quality Monitoring and Ecological Monitoring**

Event / Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
<b>Action Level</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures;  2. Inform IEC and ER;  3. Repeat measurement to confirm finding;  4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET;  2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice;  2. Amend working methods if appropriate.

Event	Action			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> <li>6. Discuss with IEC and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with IEC and ER;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial to ER within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>

Event	Action			
	ET	IEC	ER	Contractor
<b>Limit Level</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.

Event	Action			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedances abated.</li> </ol>



Event / Action Plan for Construction Noise Monitoring

Event	Action			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify IEC and Contractor;</li> <li>2. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>3. Report the results of investigation to the IEC,ER and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC;</li> <li>2. Implement noise mitigation proposals.</li> </ol>

Event	Action			
	ET	IEC	ER	Contractor
Limit Level	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, EPD and Contractor;</li> <li>2. Identify source;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

### Event / Action Plan for Water Quality

Event	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in situ measurement on next day of exceedance to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, contractor and ER</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Amend working methods if appropriate</li> </ol>
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, Contractor and ER</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Action level</li> <li>8. Repeat measurement on next day of exceedance to confirm findings</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>4. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Discuss with IEC on the proposed mitigation measures</li> <li>3. Make agreement on mitigation measures to be implemented</li> <li>4. Ensure mitigation measures are properly implemented</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the Engineer and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Check all plant and equipment and consider changes of working methods</li> <li>4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER within 3 working days of notification</li> <li>5. Implement the agreed mitigation measures</li> <li>6. Amend working methods if appropriate</li> </ol>

Event	ET Leader	IEC	ER	Contractor
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, Contractor, ER and EPD</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>4. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures</li> <li>3. Request Contractor to critically review the working methods</li> <li>4. Ensure mitigation measures are properly implemented</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Check all plant and equipment and consider changes of working methods</li> <li>4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER</li> <li>5. Implement the agreed mitigation measures</li> <li>6. Amend working methods if appropriate</li> </ol>
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, contractor, ER and EPD</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the ER accordingly</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures</li> <li>3. Request Contractor to critically review the working methods</li> <li>4. Make agreement on the mitigation measures to be implemented</li> <li>5. Ensure mitigation measures are properly implemented</li> <li>6. Assess the effectiveness of the implemented mitigation measures</li> <li>7. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Take immediate action to avoid further exceedance</li> <li>3. Rectify unacceptable practice</li> <li>4. Check all plant and equipment and consider changes of working methods</li> <li>5. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER</li> <li>6. Implement the agreed mitigation measures</li> <li>7. Resubmit proposals of mitigation measures if problem still not under control</li> <li>8. As directed by the engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level</li> </ol>

## Event / Action Plan for Ecological Monitoring

Event	ET Leader	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Repeat statistical data analysis to confirm findings;</li> <li>2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>3. Identify source(s) of impact;</li> <li>4. Inform the IEC, ER/SOR and Contractor;</li> <li>5. Check monitoring data.</li> <li>6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor;</li> <li>2. Discuss monitoring results and finding with the ET and the Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss monitoring with the IEC and any other measures proposed by the ET;</li> <li>2. If ER/SOR is satisfied with the proposal of any other measures, ER/SOR to signify the agreement in writing on the measures to be implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER/SOR and confirm notification of the non-compliance in writing;</li> <li>2. Discuss with the ET and the IEC and propose measures to the IEC and the ER/SOR;</li> <li>3. Implement the agreed measures.</li> </ol>

Event	ET Leader	IEC	ER	Contractor
Limit Level	<ol style="list-style-type: none"> <li>1. Repeat statistical data analysis to confirm findings;</li> <li>2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>3. Identify source(s) of impact;</li> <li>4. Inform the IEC, ER/SOR and Contractor of findings;</li> <li>5. Check monitoring data;</li> <li>6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> <li>7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor;</li> <li>2. Discuss monitoring results and findings with the ET and the Contractor;</li> <li>3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and advise ER/SOR of the results and findings accordingly.</li> <li>5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures.</li> <li>3. Supervise the implementation of additional monitoring and/or any other mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER/SOR and confirm notification of the non-compliance in writing;</li> <li>2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary.</li> <li>4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures.</li> </ol>

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a black rectangular background that has a thin white border.

---

Report No.: 0165/15/ED/1002

### **Appendix E**

### **Waste Flow Table**



**Monthly Summary of Waste Flow Table for 2018 (year)**

Name of Person completing the Record: Marko Chan

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (in '000m <sup>3</sup> )	Broken Concrete (see Note 1) (in '000m <sup>3</sup> )	Reused in the Contract (in '000m <sup>3</sup> )	Reused in other Projects (in '000m <sup>3</sup> )	Disposed as Public Fill (in '000m <sup>3</sup> )	Metals (in '000 Kg)	Paper/ cardboard packaging (in '000 Kg)	Plastics (see Note 2) (in '000 Kg)	Chemical Waste (in '000 Kg)	Others, e.g. general refuse (in '000m <sup>3</sup> )
Jan	18.910	0	0	10.228	8.682	0	0	0	0	1.584
Feb	2.092	0	0	0	2.092	0	0	0	0	2.062
Mar										
Apr										
May										
Jun										
Jul										
Aug										
Sept										
Oct										
Nov										
Dec										
<b>Total</b>	<b>21.002</b>	<b>0.000</b>	<b>0.000</b>	<b>10.228</b>	<b>10.774</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>3.646</b>

Notes:

- (1) Broken concrete for recycling into aggregates.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.





ATAL Technologies Ltd.

Contract: HY/2013/06 HKBCF- Automatic Vehicle Clearance Support System

Location: Artificial Island of HKBCF (C3 Area)

Ver: 1st  
Date: Jan 2017

### Monthly Summary Waste Flow Table for 2018

Month	Inert C&D Waste disposal / 廢性廢物 (in tonnes) (see Note 1)				Non-inert C&D Waste disposal 非廢性廢物 (in tonnes)		Waste to be recycled and returned / 可再循環利用或回收的廢物								Total Quantity Generated 總生產量				
	Reused in the Work Package (e.g. backfilling) 再用於工程 (如回填)		Reused in other Projects 再用於其他工程		Inert Waste (e.g. soil, broken concrete, rubble, fill material etc.) 廢性廢物 (如泥, 石失頭, 石, 填料等)		Others (e.g. general refuse, broken formwork etc) 其他 (如垃圾, 廢板枋等)		Metals 金屬		Plastic 塑膠		Paper/cardboard packaging 廢紙/包裝紙類		Chemical Waste 化學廢物		Est. Qty. 估計數量	Act. Qty. 實際數量	
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量			
January	0.000	0.000	0.000	0.000	0.100	0.100	0.050	0.100	0.030	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100	
February	0.000	0.000	0.000	0.000	0.050	0.050	0.050	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050	0.050	
March																			
April																			
May																			
June																			
July																			
August																			
September																			
October																			
November																			
December																			
<b>Total</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.150</b>	<b>0.150</b>	<b>0.150</b>	<b>0.040</b>	<b>0.040</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.150</b>	<b>0.150</b>	<b>0.150</b>	<b>0.150</b>

Notes: (1) The quantities of C&D Materials, in tonne, was calculated by multiply the estimated volume, in m3, with the density of the soil, which is 1.5 gcm<sup>-3</sup>.

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Appendix F**

#### **Environmental Licenses and Permits**

## Environmental Permit / Licences Summary for Contract No. HY/2013/03

(update: 06/03/2018)

Item	Permit/Licence Registration	Permit No.	Work Area	Application Date	Issue Date	Valid Date		Status	Remark
						From	To		
1	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/H	HKBCF	16-Jan-15	19 Jan 15	19 Jan 15	Nil	Superseded	
2	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387703	Main Site Area	15-Apr-15	15-Apr-15	15-Apr-15	Nil	Valid	
3	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387735	Works Area WA3	15-Apr-15	15-Apr-15	15-Apr-15	Nil	Valid	
4	Billing A/C for Construction Waste Disposal Pursuant to Section 6 & 9 of the Waste Disposal (Charges for Disposal of Construction waste) Regulation	A/C No. 7022228	Main Site Area, WA3 & 4	15-Apr-15	06-May-15	06-May-15	Nil	Valid	
5	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0477-15	Works Area WA3	20-Apr-15	04-May-15	18-May-15	17-Nov-15	Expired	
6	Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-951-C1186-28	Main Site Area	28-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
7	Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-974-C3597-03	Works Area WA4	28-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
8	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022180-2015	Works Area WA3	29-Apr-15	04-Aug-15	03-Aug-15	31-Aug-20	Valid	
9	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022391-2015	Main Site Area	06-May-15	04-Sep-15	04-Sep-15	30-Sep-20	Superseded	
10	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0566-15	Box Culvert D	08-May-15	22-May-15	08-Jun-15	07-Nov-15	Expired	
11	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0674-15	CUE	05-Jun-15	19-Jun-15	19-Jun-15	18-Aug-15	Expired	
12	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/I	HKBCF	30-Jun-15	17-Jul-15	17-Jul-15	Nil	Superseded	
13	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0020-15	Drill Tower	06-Jul-15	20-Jul-15	01-Aug-15	30-Nov-15	Expired	
14	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0999-15	CUE	28-Aug-15	11-Sep-15	14-Sep-15	10-Dec-15	Superseded	
15	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1065-15	Portion A1	15-Sept-15	29-Sep-15	30-Sep-15	31-Dec-15	Superseded	

16	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1203-15	CUE	20-Oct-15	03-Nov-15	02-Nov-15	31-Jan-16	Superseded
17	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-121	South of Brothers (CMP2)	26-Oct-15	17-Dec-15	18-Dec-15	17-Jan-16	Expired
18	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1315-15	Portion G	12-Nov-15	26-Nov-15	28-Nov-15	28-Feb-16	Expired
19	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0029-15	Drill Tower	27-Nov-15	11-Dec-15	14-Dec-15	13-Apr-16	Expired
20	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1388-15	Main Site Area	27-Nov-15	16-Dec-15	21-Dec-15	18-Mar-16	Superseded
21	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0035-16	Main Site Area	31-Dec-15	14-Jan-16	18-Jan-16	17-Mar-16	Superseded
22	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-161	South of Brothers (CMP2)	31-Dec-15	15-Jan-16	20-Jan-16	19-Feb-16	Expired
23	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-177	South of Brothers (CMP2)	26-Jan-16	11-Feb-16	20-Feb-16	19-Mar-16	Expired
24	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/J	HKBCF	18-Feb-16	25-Feb-16	25-Feb-16	Nil	Superseded
25	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0009-16	Portion G	02-Mar-16	16-Mar-16	21-Mar-16	20-Jul-16	Expired
26	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0244-16	Main Site Area	03-Mar-16	17-Mar-16	18-Mar-16	18-Jun-16	Expired
27	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0249-16	Main Site Area	03-Mar-16	17-Mar-16	19-Mar-16	18-Jun-16	Superseded
28	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0269-16	Floating Concrete Batching Plant	03-Mar-16	17-Mar-16	19-Mar-16	18-Jun-16	Superseded
29	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-202	East of Sha Chau (CMP Vd)	09-Mar-16	18-Mar-16	24-Mar-16	23-Apr-16	Expired
30	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/K	HKBCF	24-Mar-16	11-Apr-16	11-Apr-16	Nil	Valid
31	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0348-16	Main Site Area	29-Mar-16	12-Apr-16	15-Apr-16	14-Jul-16	Superseded
32	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-007	East of Sha Chau (CMP Vd)	08-Apr-16	19-Apr-16	24-Apr-16	23-May-16	Expired
33	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-029	East of Sha Chau (CMP Vd)	09-May-16	19-May-16	24-May-16	23-Jun-16	Expired

34	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-040	East of Sha Chau (CMP Vd)	31-May-16	13-Jun-16	14-Jun-16	13-Jul-16	Expired
35	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0607-16	Main Site Area	02-Jun-16	16-Jun-16	19-Jun-16	18-Sep-16	Superseded
36	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0629-16	Floating Concrete Batching Plant	02-Jun-16	16-Jun-16	19-Jun-16	18-Dec-16	Superseded
37	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0639-16	Main Site Area	02-Jun-16	16-Jun-16	15-Jul-16	14-Oct-16	Superseded
38	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-062	East of Sha Chau (CMP Vd)	30-Jun-16	12-Jul-16	14-Jul-16	13-Aug-16	Expired
39	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0020-16	Portion A, G & H	13-Jul-16	27-Jul-16	28-Jul-16	24-Jan-17	Superseded
40	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-075	East of Sha Chau (CMP Vd)	27-Jul-16	05-Aug-16	14-Aug-16	31-Aug-16	Expired
41	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-088	East of Sha Chau (CMP Vd)	16-Aug-16	26-Aug-16	01-Sep-16	30-Sep-16	Expired
42	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0933-16	Main Site Area	18-Aug-16	01-Sep-16	05-Sep-16	31-Dec-16	Expired
43	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0960-16	Main Site Area	06-Sep-16	15-Sep-16	19-Sep-16	18-Dec-16	Expired
44	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-105	East of Sha Chau (CMP Vd)	15-Sep-16	27-Sep-16	01-Oct-16	31-Oct-16	Expired
45	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0028-16	Portion A, G, H & N	15-Sep-16	29-Sep-16	03-Oct-16	02-Apr-17	Expired
46	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap. 358)	WT00025384-2016	Main Site Area	09-Mar-16	10-Nov-16	10-Nov-16	30-Sep-20	Valid
47	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-132	East of Sha Chau (CMP Vd)	03-Nov-16	30-Nov-16	05-Dec-16	04-Jan-17	Expired
48	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-140	East of Sha Chau (CMP Va) or South of Brothers (CMP2)	14-Nov-16	30-Nov-16	30-Nov-16	29-Dec-16	Expired
49	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-146	East of Sha Chau (CMP Va) or South of Brothers (CMP2)	28-Nov-16	16-Dec-16	16-Dec-16	29-Dec-16	Expired
50	Construction Noise Permit	GW-RS1267-16	Main Site Area	02-Dec-16	16-Dec-16	19-Dec-16	18-Mar-17	Expired

51	Pursuant to Section 8(6) of the Noise Control Ordinance Specified Process Licence for Tar and Bitumen Works Pursuant to Section 14 of the Air Pollution Control Ordinance	L-15-039(1)	Temporary Asphalt Mixing Facility	05-Dec-16	16-Mar-17	16-Mar-17	15-Mar-19	Valid
52	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1329-16	Main Site Area	09-Dec-16	23-Dec-16	01-Jan-17	30-Apr-17	Superseded
53	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-161	East of Sha Chau (CMP Vd)	15-Dec-16	04-Jan-17	05-Jan-17	04-Feb-17	Expired
54	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-170	East of Sha Chau (CMP Vd)	12-Jan-17	24-Jan-17	05-Feb-17	04-Mar-17	Expired
55	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0205-17	Main Site Area	01-Mar-17	15-Mar-17	19-Mar-17	18-Jun-17	Expired
56	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-190	East of Sha Chau (CMP Vd)	01-Mar-17	17-Mar-17	20-Mar-17	19-Apr-17	Expired
57	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0008-17	Box Culvert B	06-Apr-17	20-Apr-17	21-Apr-17	19-Jul-17	Expired
58	Permit issued Under the Dumping at Sea Ordinance	EP/MD/18-005	East of Sha Chau (CMP Vd)	10-Apr-17	24-Apr-17	25-Apr-17	24-May-17	Expired
59	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0382-17	Main Site Area	10-Apr-17	25-Apr-17	27-Apr-17	24-Jul-17	Expired
60	Permit issued Under the Dumping at Sea Ordinance	EP/MD/18-018	East of Sha Chau (CMP Vd)	19-May-17	01-Jun-17	02-Jun-17	01-Jul-17	Expired
61	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0516-17	Main Site Area	31-May-17	14-Jun-17	19-Jun-17	18-Sep-17	Expired
62	Permit issued Under the Dumping at Sea Ordinance	EP/MD/18-037	East of Sha Chau (CMP Vd)	19-Jun-17	06-Jul-17	07-Jul-17	06-Aug-17	Expired
63	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0632-17	Main Site Area	07-Jul-17	21-Jul-17	25-Jul-17	24-Nov-17	Superseded
64	Permit issued Under the Dumping at Sea Ordinance	EP/MD/18-052	East of Sha Chau (CMP Vd)	25-Jul-17	07-Aug-17	09-Aug-17	31-Aug-17	Expired
65	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0771-17	Main Site Area	28-Aug-17	11-Sep-17	19-Sep-17	18-Jan-18	Expired
66	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0778-17	Main Site Area	28-Aug-17	11-Sep-17	14-Sep-17	13-Mar-18	Superseded
67	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0834-17	Main Site Area	12-Sep-17	26-Sep-17	28-Sep-17	27-Mar-18	Superseded
68	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0901-17	Main Site Area	25-Sep-17	11-Oct-17	13-Oct-17	12-Apr-18	Valid



Environmental License/ Permits /Notification Register

LCAL H2642

Contract: HY/2013/06 – Hong Kong Zhuhai and Macao Bridge - HKBCF – Automatic Vehicle Clearance Support System

Item No.	Permit/License or Registration Application		Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark	
	Work Area	Date							Reference
	1	HZMB-HK Boundary Crossing Facilities							31 July 2015
2	HZMB-HK Boundary Crossing Facilities	14 Nov 2017	EP831/N09/R S1037-17	GW-RS1037-17	1 Dec 2017	30 May 2018	EPD		

Date: 28 Feb 2018

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Appendix G**

#### **Implementation Schedule for Environmental Mitigation Measures (EMIS)**

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

## Appendix G – Implementation Schedule of Environmental Mitigation Measures (EMIS)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
<b>Air Quality</b>				
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	All construction sites	V
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> <li>• Any excavated or stockpile of dusty material should 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;</li> <li>• Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>• The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>• Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> </ul>	All construction sites	V
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> <li>• The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials,</li> <li>• Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>• Any area that involves demolition activities should 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;</li> <li>• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should 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;</li> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top</li> </ul>	All construction sites	V
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high</li> </ul>	All construction sites	N/A

The copyright of this document is owned by MaterialLab Consultants Ltd. It may not be reproduced except with prior written approval from the Company.

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>level alarm which is interlocked with the material filling line and no overfilling is allowed;</p> <ul style="list-style-type: none"> <li>• Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and</li> <li>• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site r part of the construction site where the exposed earth lies</li> </ul>		
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	All construction sites	V
S5.5.6.4	A4	4) Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	All construction sites	V
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Selected Representative dust monitoring station	V (Conducted by Contract No. HY/2013/01 and HY/2011/03)
S5.5.7.1	A6	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant;</p> <ul style="list-style-type: none"> <li>• Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</li> <li>• All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;</li> <li>• Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</li> <li>• The materials which may generate airborne dusty emissions should be wetted by water spray system;</li> <li>• All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</li> <li>• All conveyor transfer points should be totally enclosed;</li> <li>• All access and route roads within the premises should be paved and wetted; and</li> <li>• Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body</li> </ul>	Selected Representative dust monitoring station	N/A
S5.5.2.7	A7	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <ul style="list-style-type: none"> <li>• All road surface within the barging facilities will be paved;</li> <li>• Dust enclosures will be provided for the loading ramp;</li> <li>• Vehicles will be required to pass through designated wheels wash facilities; and</li> <li>• Continuous water spray at the loading points</li> </ul>	All construction sites	V
<b>Construction Noise (Air borne)</b>				
S6.4.10	N1	<p>1) Use of good site practices to limit noise emissions by considering the following:</p> <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during</li> </ul>	All construction sites	V

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>the construction programme;</p> <ul style="list-style-type: none"> <li>machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>		
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	All construction sites	V
S6.4.12	N3	3) Install movable noise barriers (typically density@14kg/m acoustic mat or full enclosure close to noisy plants including compressor, generators, saw.	For plant items listed in Appendix 6D of the EIA report at all construction sites	N/A
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	For plant items listed in Appendix 6D of the EIA report at all construction site	V
S6.4.14	N5	5) Sequencing operation of construction plants where practicable	All construction sites where practicable	V
S5.1	N6	6) Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	V (Conducted by Contract No. HY/2013/01)
<b>Sediment</b>				
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	All construction sites	V
<b>Waste Management (Construction Waste)</b>				
S8.3.8	WM1	<p><u>Construction and Demolition Material</u></p> <p>The following mitigation measures should be implemented in handling the waste:</p> <ul style="list-style-type: none"> <li>Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>Carry out on-site sorting;</li> <li>Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified; and</li> <li>Implement an enhanced Waste Management Plan similar to E7WBTC (Works) No. 19/2005 - "Environmental Management on Construction Sites" to encourage on-site sorting of C&amp;D</li> </ul>	All construction sites	V

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>materials and to minimize their generation during the course of construction.</p> <ul style="list-style-type: none"> <li>In addition, disposal of the C&amp;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</li> </ul>		
S8.3.9- S8.3.11	WM2	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. 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.</li> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;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.</li> </ul>	All construction sites	V
S8.2.12- S8.3.15	WM3	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Containers used for the storage of chemical wastes should 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 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.</li> <li>The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.</li> <li>Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.</li> </ul>	All construction sites	V
S8.3.16	WM4	<p><u>Sewage</u></p> <ul style="list-style-type: none"> <li>Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state which will not deter the workers from utilizing these portable</li> </ul>	All construction sites	V



# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		toilets. Night soil should be collected by licensed collectors regularly.		
S8.3.17	WM5	<p>General Refuse</p> <ul style="list-style-type: none"> <li>General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.</li> <li>Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.</li> <li>Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.</li> <li>Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> </ul>	All construction sites	V
<b>Water Quality ( Construction Phase)</b>				
S9.11.1.1- S9.11.1.2	W1	<ul style="list-style-type: none"> <li>Mitigation during the marine works to reduce impacts to within acceptable levels have been recommended and will comprise a series of measures that restrict the method and sequencing of dredging/backfilling, as well as protection measures. Details of the measures are provided below and summarised in the Environmental Mitigation Implementation Schedule in EM&amp;A Manual</li> <li>Construction of seawalls to be advanced by at least 100-200m before the main reclamation dredging and filling can commence. It should be noted that the protection by advanced seawall is a dynamic process depending on the progress of the construction activities and the stage when such protection could be realised is illustrated in Figure 9.2 and detailed in Appendix 9D6 of the EIA Report. The part of the works where such measures can be undertaken for the majority of the time includes the following locations: <ul style="list-style-type: none"> <li>TMCLKL northern reclamation;</li> <li>TMCLKL southern reclamation (after formation of the nips);</li> <li>Reclamation dredging and filling for Portion B of HKBCF;</li> <li>Reclamation filling for Portion C of HKBCF;</li> <li>Reclamation filling for Portion D of HKBCF;</li> <li>Reclamation filling for FSD berth of HKBCF; and</li> <li>Reclamation dredging and filling for Portion 1 of HKLR;</li> </ul> </li> <li>Export for dredged spoils from NWWCZ avoiding exerting high demand on the disposal facilities in the NWWCZ and, hence, minimise potential cumulative impacts;</li> <li>For the marine viaducts of HKLR, the bored piling will be undertaken within a metal casing;</li> <li>A maximum of 30% public fill shall be used for all backfilling below -2.5mPD for the southern reclamation of TMCLKL, HKBCF and HKLR projects;</li> <li>where public fill is proposed for filling below - 2.5mPD, the fine content in the public fill will be</li> </ul>	Marine-based works area	V

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>controlled to 25%;</p> <ul style="list-style-type: none"> <li>• silt curtains (cage type) will be applied round all grab dredgers during the HKBCF, HKLR and TMCLKL southern reclamation works;</li> <li>• single layer silt curtains will be applied around all works;</li> <li>• when constructing Portion D of the HKBCF, one side of the seawall crossing the channel should be constructed first and prior to the other works. This would reduce the maximum flow speed across the channel and enhance the effectiveness of other mitigation measures such as silt curtain system;</li> <li>• during the first two months of dredging work for HKBCF and HKLR, the silt-removal efficiency of the silt-curtains shall be verified by examining the results of water quality monitoring points. The water quality monitoring points to be selected for the above shall be those close to the locations of the initial period of dredging work. Details in this regard shall be determined by the ENPO to be established, taking account of the Contractor's proposed actual locations of his initial period of dredging work.</li> <li>• a sheet piled wall shall be constructed north of the HKBCF island in order to allow the use of silt curtains during Phase 2 works; and</li> <li>• silt curtain shall be fully maintained throughout the works.</li> </ul> <p>In addition, dredging operations should be undertaken in such a manner as to minimise resuspension of sediments. Standard good dredging practice measures should, therefore, be implemented including the following requirements which should be written into the dredging contract.</p> <ul style="list-style-type: none"> <li>• trailer suction hopper dredgers shall not allow mud to overflow;</li> <li>• use of Lean Material Overboard (LMOB) systems shall be prohibited;</li> <li>• mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted;</li> <li>• barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>• any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes;</li> <li>• loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation;</li> <li>• excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved;</li> <li>• adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;</li> <li>• 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; and</li> <li>• 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.</li> </ul>		
S9.11.1.3	W2	<p><u>Land Works</u> General construction activities on land should also be governed by standard good working practice.</p>	Land-based works area	V

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

# MaterialLab

Report No.: 0165/15/ED/1002

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> <li>• wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li>• sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided;</li> <li>• storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks;</li> <li>• silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm;</li> <li>• temporary access roads should be surfaced with crushed stone or gravel;</li> <li>• rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li>• measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li>• open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> <li>• manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers;</li> <li>• discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> </ul>		
S9.11.1.7	W2	<ul style="list-style-type: none"> <li>• all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit;</li> <li>• wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>• the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <li>• wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li>• vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal;</li> <li>• the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up</li> </ul>	Land-based works area	V

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<ul style="list-style-type: none"> <li>immediately;</li> <li>waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance;</li> <li>all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and</li> <li>surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.</li> </ul>		
S9.14	W3	Implement a water quality monitoring programme	Selected representative WQM stations	V (Conducted by Contract No. HY/2013/01)
<b>Ecology (Construction Phase)</b>				
S10.7	E4	<ul style="list-style-type: none"> <li>Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater</li> </ul>	Land-based works areas	V
S10.7	E5	<ul style="list-style-type: none"> <li>Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time</li> </ul>	Land-based works areas	V
S10.7	E6	<ul style="list-style-type: none"> <li>Dolphin Exclusion Zone</li> <li>Dolphin watching plan</li> </ul>	Marine works	V
S10.7	E7	<ul style="list-style-type: none"> <li>Decouple compressors and other equipment on working vessels</li> <li>Proposal on design and implementation of acoustic decoupling measures applied during dredging and reclamation works</li> <li>Avoidance of percussive piling</li> </ul>	Marine works	V
S10.7	E8	<ul style="list-style-type: none"> <li>Control vessel speed</li> <li>Skipper training</li> <li>Predefined and regular routes for working vessels; avoid Brother Islands.</li> </ul>	Marine Traffic	V
S10.10	E9	Vessel based dolphin monitoring	Northeast and Northwest Lantau	V (Conducted by Contract No. HY/2013/01)
<b>Fisheries</b>				
S11.7	F4	<ul style="list-style-type: none"> <li>Maritime Oil Spill Response Plan (MOSRP);</li> <li>Contingency plan.</li> </ul>	HKBCF	V
<b>Landscape &amp; Visual (Detailed Design Phase)</b>				
S14.3.3.1	LV1	<p>General design measures include:</p> <ul style="list-style-type: none"> <li>Roadside planting and planting along the edge of the HKBCF Island is proposed;</li> <li>Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting;</li> <li>Protection measures for the trees to be retained during construction activities;</li> <li>Optimizing the sizes and spacing of the bridge columns;</li> <li>Fine-tuning the location of the bridge columns to avoid visually-sensitive locations;</li> <li>Providing planting area around peripheral of HKBCF for tree planting screening effect;</li> <li>Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline;</li> <li>For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport</li> </ul>	HKBCF	V

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com

# MaterialLab

Report No.: 0165/15/ED/1002

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and</p> <ul style="list-style-type: none"> <li>Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF.</li> </ul>		
<b>Landscape &amp; Visual (Construction Phase)</b>				
S14.3.3.3	LV2	<p>Mitigate both Landscape and Visual Impacts</p> <p>G1. Grass-hydroseed bare soil surface and stock pile areas.</p> <p>G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic.</p> <p>G3. Not applicable as this is for HKLR.</p> <p>G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF</p> <p>G5. Vegetation reinstatement and upgrading to disturbed areas</p> <p>G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed</p> <p>G7. Providing planting area around peripheral of HKBCF for tree planting screening effect;</p> <p>G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall.</p> <p>G9. Reserve of loose natural granite rocks for re-use, Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline.</p>	Building 026, 037, 039, 041, 043 and all area at ground level	V
S14.3.3.3	LV3	<p><u>Mitigate Visual Impacts</u></p> <p>V1. Minimize time for construction activities during construction period.</p> <p>V2. Not applicable for HKBCF.</p>	Building 026, 037, 039, 041, 043 and all area at ground level	V
<b>EM&amp;A</b>				
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual	All construction sites	V
S15.5 – S15.6	EM2	<ol style="list-style-type: none"> <li>An Environmental Team needs to be employed as per the EM&amp;A Manual.</li> <li>Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</li> <li>An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&amp;A Manual are fully complied with.</li> </ol>	All construction sites	V

Legend: V = implemented; x = not implemented; N/A = not applicable

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

### **Appendix H**

#### **Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions**



**MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

## Appendix H –

## Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

For Contract No. HY/2013/03

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
From commencement date of construction to end of reporting month	14	0	0

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
From commencement date of construction to end of reporting month	0	0	0

**MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

**Appendix I**

**Environmental Site Inspection Schedule**

**MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
 Profit Industrial Building,  
 1-15 Kwai Fung Crescent, Kwai Fong,  
 Hong Kong.

Tel : (852)-24508238  
 Fax : (852)-24508032  
 Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

**Contract No. HY/2013/03**  
**HZMB HKBCF – Vehicle Clearance Plazas and Ancillary Buildings and Facilities**  
**Weekly Environmental Site Inspection Schedule**

**Environmental Site Inspection Schedule for February 2018**

February-2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Environmental Site Inspection	2	3
4	5	6	7	8	9 Environmental Site Inspection	10
11	12	13	14	15 Environmental Site Inspection	16	17
18	19	20	21	22 Environmental Site Inspection	23	24
25	26	27	28			

**Tentative Environmental Site Inspection Schedule for March 2018**

March-2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Environmental Site Inspection	2	3
4	5	6	7	8 Environmental Site Inspection	9	10
11	12	13	14	15	16 Environmental Site Inspection	17
18	19	20	21	22 Environmental Site Inspection	23	24
25	26	27	28	29 Environmental Site Inspection	30	31

**MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
 Profit Industrial Building,  
 1-15 Kwai Fung Crescent, Kwai Fong,  
 Hong Kong.

Tel : (852)-24508238  
 Fax : (852)-24508032  
 Email : mcl@fugro.com



Report No.: 0165/15/ED/1002

**Contract No. HY/2013/06 (within Contract No. HY/2013/03 works area)  
 HZMB HKBCF – Automatic Vehicle Clearance Support System  
 Weekly Environmental Site Inspection Schedule**

**Environmental Site Inspection Schedule for February 2018**

February-2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Environmental Site Inspection	2	3
4	5	6	7	8	9 Environmental Site Inspection	10
11	12	13	14	15 Environmental Site Inspection	16	17
18	19	20	21	22 Environmental Site Inspection	23	24
25	26	27	28			

**Tentative Environmental Site Inspection Schedule for March 2018**

March-2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Environmental Site Inspection	2	3
4	5	6	7	8 Environmental Site Inspection	9	10
11	12	13	14	15	16 Environmental Site Inspection	17
18	19	20	21	22 Environmental Site Inspection	23	24
25	26	27	28	29 Environmental Site Inspection	30	31