Contract No. HK/2015/01 Wanchai Development Phase II and Central-Wanchai Bypass Sampling, Field Measurement and testing Works (Stage 3) Monthly EM&A Report (July 2018)

#### **CONTRACT NO: HK/2015/01**

WANCHAI DEVELOPMENT PHASE II AND CENTRAL
WANCHAI BYPASS
SAMPLING, FIELD MEASUREMENT AND TESTING WORKS
(STAGE 3)

ENVIRONMENTAL PERMIT NO. EP-356/2009, FURTHER EVIRONMENTAL PERMIT NOS. FEP-03/356/2009, FEP-04/356/2009 , FEP-06/356/2009, FEP-07/356/2009 AND FEP-08/356/2009

#### **MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT**

JULY 2018 -

**CLIENTS:** 

**Civil Engineering and Development Department** 

and

**Highways Department** 

PREPARED BY:

Lam Geotechnics Limited

11/F Centre Point 181-185 Gloucester Road, Wanchai, H.K.

Telephone: (852) 2882-3939
Facsimile: (852) 2882-3331
E-mail: info@lamenviro.com
Website: http://www.lamenviro.com

**CERTIFIED BY:** 

Raymond Dai

Environmental Team Leader

DATE:

10 August 2018



Ref.: AACWBIECEM00\_0\_10627L.18

10 August 2018

By Post and Fax (3912 3010)

AECOM Asia Company Limited Engineer's Representative's Office 25 Hung Hing Road, Causeway Bay, Hong Kong

Attention: Mr. Peter Poon

Dear Mr. Poon,

Re: Contract No. HK/2015/01
Wan Chai Development Phase II - Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage 3)

Monthly Environmental Monitoring and Audit Report (July 2018) for EP-356/2009, FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009, FEP-06/356/2009, FEP-07/356/2009 and FEP-08/356/2009

Reference is made to the Environmental Team's submission of the captioned Monthly Environmental Monitoring and Audit (EM&A) Report for July 2018 received by e-mail on 10 August 2018 for our review and comment.

Please be informed that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 3.4 in the captioned Environmental Permits.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

David Yeung
Independent Environmental Checker

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Encl.

c.c.

HyD Attn: Mr. Tony Cheung by fax: 2714 5289 CEDD Attn: Mr. L K Tsang by fax: 2577 5040 AECOM Attn: Mr. Frankie Fan by fax: 2691 2649 AECOM Attn: Mr. Conrad Ng by fax: 2691 2649 Lam Attn: Mr. Raymond Dai by fax: 2882 3331



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#### **EXECUTIVE SUMMARY**

- This is the Environmental Monitoring and Audit (EM&A) Monthly Report July 2018 for the Project of Wan Chai Development Phase II and Central-Wanchai Bypass under Environmental Permit no. EP-356/2009 and Further Environmental permit nos. FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009, FEP-06/356/2009, FEP-07/356/2009 and FEP-08/356/2009. This report presents the environmental monitoring findings and information recorded during the period of 27 June 2018 to 26 July 2018. The cut-off date of reporting is at 26th of each reporting month.
- ii. In the reporting month, the principal work activities of individual contracts conducted are as follow:

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East

Removal of TWCR4

Contract no. HY/2009/19- Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

Nil

<u>Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West</u>

• Nil

Contract no. HY/2010/08 - Central - Wan Chai Bypass (CWB) - Tunnel (Slip Road 8)

Seawall reinstatement

#### **Noise Monitoring**

- iii. With respect to the shift in major construction site portions at Wan Chai North, the noise monitoring station M1a – Harbour Sports Centre was finely adjusted from East of Harbour Road Sports Centre to West of Harbour Road Sports Centre on 21 June 2016.
- iv. With respect to the demolition of Ex-Harbour Road Sports Centre, the respective noise monitoring station M1a Harbour Road Sports Centre were finely adjusted on 16 and 25 May 2017 and thereafter to the Footbridge for Harbour Road Sports for noise monitoring.
- v. No action or limit level exceedance was recorded in the reporting period.
- vi. Noise monitoring during daytime and restricted hour were conducted at the stations M1a, M2b, M3a, M4b, M5b and M6 on a weekly basis in the reporting month.

## Air Quality Monitoring

vii. No action or limit level exceedance was recorded in the reporting period.



Contract No. HK/2015/01 Wanchai Development Phase II and Central-Wanchai Bypass Sampling, Field Measurement and testing Works (Stage 3) Monthly EM&A Report (July 2018)

- viii. With respect to the proposed demolition of the Oil Street Site Office, the respective air quality monitoring station CMA1b Oil Street Site Office was finely adjusted from the Oil Street Site Office to Harbour Grand Hotel Boundary Wall from 05 June 2017 onwards.
- ix. With respect to the proposed demolition of eastern podium of Oil Street Site Office, the respective air quality monitoring station CMA1b Oil Street Site Office was finely adjusted from East podium of the Oil Street Site Office to the West podium of the Oil Street Site Office on 21 December 2016.
- x. 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted at CMA1b Oil Street Site Office; CMA2a Causeway Bay Community Center; CMA3a CWB PRE Site Office Area; CMA4a Society for the Prevention of Cruelty to Animals; CMA5b Pedestrian Plaza; CMA6a WDII PRE Site Office in the reporting month.

#### Water Quality Monitoring

- xi. Action and Limit level of water quality monitoring was transited from dry season to wet season from 01 April 2018.
- xii. Water quality monitoring station C7 and Enhance DO monitoring station C6 shall be associated with Contract HY/2010/08, upon confirmation of marine construction works completion under Contract HY/2009/15 at CBTS area and Ex-PCWA area since 19 June 2017.
- xiii. Referring to CWB RSS confirmation on the completion of marine construction activities within the Ex-PCWA area and the completion of the post construction water quality monitoring, the respective Enhance DO Monitoring within Ex-PCWA for monitoring station Ex-PCWA SE and Ex-PCWA SW was temporarily suspended since 07 March 2017 ebb tide onwards.
- xiv. With respect to the reinstatement of the silt screen system for Cooling Water Intakes P7, P8, P9 and WSD Water Intake RW21, the respective water quality monitoring was reverted to the previous monitoring location for Water Quality Monitoring Station RW21-P789 from water quality stations RW21-P789 East (RW21-P789E) and RW21-P789 West (RW21-P789W) from 25 January 2017 onwards.
- xv. With respect to the removal of silt screen at WQM station RW21-P789 on 26 November 2016, the respective water quality monitoring at RW21-P789 was adjusted to RW21-P789E and RW21-P789W since 28 November 2016 ebb-tide.
- xvi. With respect to the temporarily suspension of marine construction works at WCR3 Area by Contract HK/2009/02, the installed silt screen for intake group (P7, P8, P9 and WSD21) was removed on 26 November 2016.
- xvii. As advised by the Contractor of HK/2009/01, all silt screen remains removal works at P1, P3, P4, P5 and C1 water quality monitoring stations were completed on 8 May 2016.

- xviii. With respect to the marine works undertaken at WCR3 by Contract HK/2009/02, the respective water quality monitoring station C1 associated with Contract HK/2009/01 was updated as in association with Contract HK/2009/01 and Contract HK/2009/02.
- xix. With respect to the marine works undertaken at CBTS by Contract HY/2010/08, the respective water quality monitoring station C7 associated with Contract HY/2009/15 was updated as in association with Contract HY/2009/15 and Contract HY/2010/08.
- xx. With respect to the marine works undertaken at HKCEC2 by Contract HK/2012/08, the respective water quality monitoring station WSD19, P1, P3, P4, and P5 were associated with Contract HK/2012/08.
- xxi. As confirmed by WDII RSS, the marine construction works under Contract HK/2009/01 have been completed since 24 July 2017, the monitoring association with Contract HK/2009/01 and relevant reporting has been ceased in the reporting month.
- xxii. As confirmed by CWB RSS, the marine construction works under Contract HY/2009/15 and relevant reporting have been completed by 19 June 2017, the monitoring association with Contract HY/2009/15 and relevant reporting has been ceased in the reporting month.
- xxiii. With respect to the completion of the removal of the temporary reclamation at TS3 area confirmed by the CWB RSS and the completion of the 4-weeks post construction water quality monitoring at the associated Enhanced DO monitoring stations, the respective Enhance DO monitoring at Monitoring Station C6 and C7 were temporarily suspended from 5 March 2017 ebb tide onwards.

Table I Summary of Water Quality Monitoring Exceedances in Reporting Month

	Water quality		Mid-flood				Mid-ebb						
Contract no.	monitoring	D	0	Turb	idity	S	S	D	0	Turb	idity	S	S
	Station	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
HK/2009/02	C1	0	0	0	0	0	0	0	0	0	0	0	0
	WSD19	0	0	0	1	1	1	1	0	0	1	0	0
	P1	0	0	0	0	0	0	0	0	0	0	0	0
HK/2012/08	P3	0	0	0	0	0	0	0	0	0	0	0	0
	P4	0	0	0	0	0	0	0	0	0	0	0	0
	P5	0	0	0	0	0	0	0	0	0	0	0	0
HK/2009/02	RW21-P789	0	0	0	0	0	0	1	0	0	0	0	0
HY/2010/08	C7	0	0	0	0	0	0	0	0	0	0	0	0
То	tal	0	0	0	1	1	1	2	0	0	1	0	0

#### Remarks:

- 1. The cessation of seawater intake operation for C6 was confirmed on 17 May 2011 and the water quality monitoring at C6 was then terminated since 17 May 2011.
- 4-week post construction water quality monitoring at WSD9, WSD10, WSD15 and WSD17 were completed on 6 Feb 2012 and the water quality monitoring at WSD 10 and WSD15 were temporary suspended since 8 Feb 2012, and WSD9 and WSD17 was implemented with respect to HK/2009/02 from 8 Feb 2012 onwards.
- 3. C8 and C9 were implemented with respect to HY/2009/19 from 28 Jan 2012.
- 4. C8 & C9 were temporary suspended since 4 March 2013.
- 5. WSD7 and WSD20 water quality monitoring were temporarily suspended from 27 Apr 2012.
- 6. C2, C3 C4e and C4w water quality monitoring station was temporarily suspended since 22 Apr 2013
- 7. P1, P3, P4 and P5 were commenced since 24 Apr 2013
- 8. C5e and C5w water quality monitoring station was temporarily suspended since 29 Jul 2013.
- 9. WSD21 water quality monitoring station was temporarily suspended since 12 Mar 2014
- 10. WSD9 and WSD17 water quality monitoring station was temporarily suspended since 8 Sep 2014 flood tide.
- 11. The water quality monitoring station C1 shall be associated with Contract No. HK/2009/02 upon commencement of marine works under DP3 at WCR3 area.
- 12. The water quality monitoring station RW21-P789 was adjusted to RW21-P789E and RW21-P789W since 28 November 2016 ebb-tide.
- 13. The water quality monitoring was reverted to previous monitoring station RW21-P789 from PW21-P789E and RW21-P789W from 25 January 2017 onwards.
- xxiv. Due to the hoisting of Tropical Cyclone Warning Signal No. 3, the water quality monitoring event on 18 July 2018 during flood tide was cancelled.
- xxv. Two action level exceedances of dissolved oxygen, two limit level exceedances of turbidity, one action level exceedance of suspended solids and one limit level exceedance of suspended solids were recorded in the reporting period. After the investigation, the exceedances recorded were considered as non-project related. The details of the recorded exceedances can be referred to Section 6.4.

#### Complaints, Notifications of Summons and Successful Prosecutions

xxvi. No environmental complaint was received in the reporting period.

#### Site Inspections and Audit

xxvii. The Environmental Team (ET) conducted weekly site inspections for Contract nos. HK/2009/02, HY/2009/19, HK/2012/08 and HY/2010/08 under EP no. EP-356/2009 in the reporting month. Major observations and recommendations made during the audit sessions were rectified by the Contractors. No non-conformance was identified during the site inspections.

## Future Key Issues

xxviii. In coming reporting month, the principal work activities of individual contracts are anticipated as follows:

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East

Removal of TWCR4

<u>Contract no. HY/2009/19- Wan Chai Bypass Tunnel (North Point Section) and Island Eastern</u> <u>Corridor Link</u>

Nil

<u>Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West</u>

• Nil

Contract no. HY/2010/08 - Central - Wan Chai Bypass (CWB) - Tunnel (Slip Road 8)

Seawall reinstatement

#### 1 Introduction

## 1.1 Scope of the Report

- 1.1.1. Lam Geotechnics Limited (LGL) has been appointed to work as the Environmental Team (ET) under Environmental Permit no. EP-356/2009 and Further Environmental permit nos. FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009, FEP-06/356/2009, FEP-07/356/2009 and FEP-08/356/2009 to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Wan Chai Development phase II and Central-Wan Chai Bypass (Register No.: AEIAR-125/2008) and in the EM&A Manual of the approved EIA Report for Central-Wan Chai Bypass and Island Eastern Corridor Link (Register No. AEIAR-041/2001).
- 1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 10.3 of EM&A Manual and "Environmental Monitoring and Audit Requirements" under Particular Specification Section 27.
- 1.1.3. This report documents the finding of EM&A works for Environmental Permit no. EP-356/2009, Further Environmental Permit no. FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009, FEP-06/356/2009, FEP-07/356/2009 and FEP-08/356/2009 during the period of 27 June 2018 to 26 July 2018. The cut-off date of reporting is at 26<sup>th</sup> of each reporting month.

### 1.2 Structure of the Report

- **Section 1** *Introduction* details the scope and structure of the report.
- **Section 2 Project Background** summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.
- Section 3 Status of Regulatory Compliance summarizes the status of valid Environmental Permits / Licenses during the reporting period.
- **Section 4** *Monitoring Requirements* summarizes all monitoring parameters, monitoring methodology and equipment, monitoring locations, monitoring frequency, criteria and respective event and action plan and monitoring programmes.
- **Section 5** *Monitoring Results* summarizes the monitoring results obtained in the reporting period.
- **Section 6 Compliance Audit** summarizes the auditing of monitoring results, all exceedances environmental parameters.
- Section 7 Cumulative Construction Impact due to the Concurrent Projects summarizes the relevant cumulative construction impact due to the concurrent activities of the concurrent Projects.
- Section 8 Environmental Site Audit summarizes the findings of weekly site inspections undertaken within the reporting period, with a review of any relevant follow-up actions within the reporting period.
- Section 9 Complaints, Notification of summons and Prosecution summarizes the cumulative statistics on complaints, notification of summons and prosecution
- Section 10 Conclusion



### 2 Project Background

### 2.1 Background

- 2.1.1. "Wan Chai Development phase II and Central-Wan Chai Bypass" and "Central-Wan Chai Bypass and Island Eastern Corridor Link" (hereafter called "the Project") are Designed Project (DP) under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). The Environmental Impact Assessment (EIA) Reports for Central-Wan Chai Bypass and Island Eastern Corridor Link (Register No. AEIAR-041/2001) and Wan Chai Development phase II and Central-Wan Chai Bypass (Register No.: AEIAR-125/2008) have been approved on 31 August 2001 and 11 December 2008 respectively.
- 2.1.2. The key purpose of Wan Chai Development Phase II (WDII) is to provide land at Wan Chai North and North Point for construction of the Central-Wan Chai Bypass and Island Eastern Corridor Link (CWB). Land formed under the project will be developed as a world-class waterfront promenade joining that at the new Central waterfront for public enjoyment.
- 2.1.3. There is a compelling and present need for the CWB to provide relief to the very congested east-west Connaught Road Central/Harcourt Road / Gloucester Road Corridor (the Corridor) which is currently operating beyond its capacity. The CWB will provide relief to the existing congestion along the Corridor and cater for the anticipated growth of traffic on Hong Kong Island. Without the CWB and its access roads, there will not be sufficient capacity to serve the heavy traffic demands at both strategic and local levels.

#### 2.2 Scope of the Project and Site Description

- 2.2.1. The Project is located mainly in Wan Chai North, Causeway Bay and North Point, and is demarcated by Gloucester Road and Victoria Park Road to the south, Fenwick Pier Street to the west and Tong Shui Road Interchange to the east, as shown in <u>Figure 2.1.</u>
- 2.2.2. The study area encompasses existing developments along the Wan Chai, Causeway Bay and North Point shorelines. Major land uses include the Hong Kong Convention & Exhibition Centre (HKCEC) Extension, the Wan Chai Ferry Pier, the ex-Wan Chai Public Cargo Working Area (ex-PCWA), the Royal Hong Kong Yacht Club (RHKYC), the Police Officers' Club, the Causeway Bay Typhoon Shelter (CBTS) and commercial and residential developments.

## 2.2.3. The scope of the Project comprises:

Land formation for key transport infrastructure and facilities, including the Trunk Road
 (i.e. CWB) and the associated slip roads for connection to the Trunk Road and for
 through traffic from Central to Wan Chai and Causeway Bay. The land formed for the
 above transport infrastructure will provide opportunities for the development of an
 attractive waterfront promenade for the enjoyment of the public

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- Reprovisioning / protection of the existing facilities and structures affected by the land formation works mentioned above
- Extension, modification, reprovisioning or protection of existing storm water drainage outfalls, sewerage outfalls and watermains affected by the revised land use and land formation works mentioned above
- Upgrading of hinterland storm water drainage system and sewerage system, which would be rendered insufficient by the land formation works mentioned above
- Provision of the ground level roads, flyovers, footbridges, necessary transport facilities and the associated utility services
- Construction of the new waterfront promenade, landscape works and the associated utility services
- The Trunk Road (i.e. CWB) within the study area and the associated slip roads for connection to the Trunk Road.
- 2.2.4. The project also contains various Schedule 2 DPs that, under the EIAO, require Environmental Permits (Eps) to be granted by the DEP before they may be either constructed or operated. *Table 2.1* summarises the five individual DPs under this Project. *Figure 2.1* shows the locations of these Schedule 2 DPs.

Table 2.1 Schedule 2 Designated Projects under this Project

Item	Designated Project	EIAO Reference	Reason for inclusion
DP1	Central-Wanchai Bypass (CWB) including its road tunnel and slip roads	Schedule 2, Part I, A.1 and A.7	Trunk road and road tunnel more than 800 m in length
DP2	Road P2 and other roads which are classified as primary/district distributor roads	Schedule 2, Part I, A.1	Primary / district distributor roads
DP3	Reclamation works including associated dredging works	Schedule 2, Part I, C.1 and C.12	Reclamation more than 5 ha in size and a dredging operation less than 100 m from a seawater intake point
DP5	Wan Chai East Sewage Outfall	Schedule 2, Part I, F.5 and F.6	Submarine sewage pipelines with a total diameter more than 1,200 mm and include a submarine sewage outfall
DP6	Dredging for the Cross-harbour Water Mains from Wan Chai to Tsim Sha Tsui	Schedule 2, Part I, C.12	A dredging operation less than 100 m from a seawater intake point



## 2.3 Division of the Project Responsibility

- 2.3.1. Due to the multi-contract nature of the Project, there are a number of contracts sub-dividing the whole works area into different work areas to be commenced. Contractors of individual contracts will be required by the EP holder to apply Further Environmental Permits (FEP) such that the impact monitoring stations are sub-divided accordingly to facilitate the implementation of EM&A programme and to streamline the EM&A reporting for individual FEP holders correspondingly.
- 2.3.2. The details of individual contracts are summarized in Table 2.2.

Table 2.2 Details of Individual Contracts under the Project

Contract No.	Contract Title	Associated DP(s)	Construction Commencement Date
HK/2009/01	Wan Chai Development Phase II – Central –Wanchai Bypass at Hong Kong Convention and Exhibition Centre	DP3, DP6	23 July 2010 (Completed)
	Convention and Exhibition Centre	DP1, DP2	25 August 2011 (Completed)
HK/2009/02	Wan Chai Development Phase II - Central -	DP3, DP5	5 July 2010
	Wan Chai Bypass at WanChai East	DP1	26 April 2011
HY/2009/11	Wan Chai Development Phase II and Central – Wan Chai Bypass – North Point Reclamation	DP3	17 March 2010 (Completed)
HY/2009/15	Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)	DP3	10 November 2010 (Completed)
		DP1	13 July 2011 (Completed)
HK/2010/06	Wan Chai Development Phase II-Central-Wan Chai Bypass over MTR Tsuen Wan Line	DP3	22 March 2011 (Completed)
04/HY/2006	Reconstruction of Bus Terminus near Man Yiu Street and Man Kwong Street	DP1	September 2010 (Completed)
HY/2009/17	Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works.	DP1	5 October 2010 (Completed)
HY/2009/18	Central – Wan Chai Bypass (CWB) – Central Interchange	DP1	21 April 2011 (Completed)
HY/2009/19	Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link	DP1	24 March 2011

# **Lam Geotechnics Limited**

Contract No. HK/2015/01 Wanchai Development Phase II and Central-Wanchai Bypass Sampling, Field Measurement and testing Works (Stage 3) Monthly EM&A Report (July 2018)

Contract No.	Contract Title	Associated DP(s)	Construction Commencement Date
HK/2012/08	Wan Chai Development Phase II Central- Wan Chai Bypass at Wan Chai West	DP1,DP2, DP3	10 March 2014
HY/2010/08	Central- Wanchai Bypass Tunnel – Tunnel (Slip Road 8)	DP1, DP2, DP3	21 March 2013
HY/2011/08	Central-Wan Chai Bypass (CWB) – Tunnel Buildings, Systems and Fittings, and Works Associated with Tunnel Commissioning	DP1	8 October 2014



## 2.4 Project Organization and Contact Personnel

- 2.4.1. Civil Engineering and Development Department and Highways Department are the overall project controllers for the Wan Chai Development Phase II and Central-Wan Chai Bypass respectively. For the construction phase of the Project, Project Engineer, Contractor(s), Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.
- 2.4.2. The proposed project organization and lines of communication with respect to environmental protection works are shown in *Figure 2.2*. Key personnel and contact particulars are summarized in *Table 2.3*:

Table 2.3 Contact Details of Key Personnel

Party	Role	Post	Name	Contact No.	Contact Fax
AECOM	Engineer's Representative for WDII	Chief Resident Engineer	Ms. Gloria Tang	2587 1778	2587 1877
	Engineer's Representative for CWB	Principal Resident Engineer	Mr. Peter Poon	3912 3388	3912 3328
Chun Wo –	Contractor under	Project Manager	Mr. Paul Yu	3658 3085	2827 9996
CRGL Joint Venture	Contract no. HK/2009/02	Quality & Environmental Manager	Mr. C.P. Ho	9191 8856	
China State	Contractor under	Project Director	Mr. Chris Leung	3557 6393	2566 2192
Construction Engineering	Contract no. HY/2009/15	Site Agent	Mr. Patrick Ho	3557 6405	
(HK) Ltd.		Construction Manager	Mr. Tom Tong	3557 6415	
		Environmental Officer	Mr. Desmond Ho	3557 6347	
		Environmental Supervisor	Mr. Gordon Lai	6145 6365	
Chun Wo –	Contractor under	Project Manager	Mr. David Lau	3758 8879	3757 8901
CRGL – MBEC_Joint	Contract no. HY/2009/19	Site Agent	Mr. William Luk	3758 6868	
Venture	111/2003/13	Deputy Site Agent	Mr. Andy Chan	9879 4325	



Party	Role	Post	Name	Contact No.	Contact Fax
		Environmental Manager / Environmental Officer	Mr. M.H. Isa	9884 0810	
		Assist Environmental Officer	Mr. James Chan	9602 2911	
		Construction Manager (Marine)	Mr. Wingo Wong	9300 2625	
		Construction Manager (Land)	Mr. Ray Ho	9608 6366	
		Construction Manager (Land)	Mr. Yung Kwok Wah	9834 1010	
		Construction Manager (Ext. Works)	Mr. Paul Wan	6629 4652	
China State-	Contractor under	Project Director	Mr. C. N. Lai	9106 5806	2877 1522
Build King Joint Venture	Contract no. HK/2012/08	Site Agent	Mr. George Cheung	9268 1918	
		Environmental Officer	Mr. James Ma	9130 9549	
		Environmental Supervisor	Mr. Y. L. Ho	9856 5669	
China State	Contractor under	Project Director	Mr. Chris Leung	3467 4299	2566 8061
	Contract no. HY/2010/08	Project Manager	Mr. Chan Ying Lun	3418 3001	
		Site Agent	Mr. Thomas Lui	3557 6452	
		Marine Manager	Mr. Nickael Chan	3557 6333	
		Construction Manager	Mr. Tom Tong	3557 6367	
		Environmental Officer	Mr. Gabriel Wong	3557 6466	

# **Lam Geotechnics Limited**

Contract No. HK/2015/01 Wanchai Development Phase II and Central-Wanchai Bypass Sampling, Field Measurement and testing Works (Stage 3) Monthly EM&A Report (July 2018)

Party	Role	Post	Name	Contact No.	Contact Fax
Ramboll Hong	Independent	Independent	Mr. David Yeung	3465 2888	3465 2899
Kong Limited	Environmental	Environmental			
	Checker (IEC)	Checker (IEC)			
Lam	Environmental	Environmental	Mr. Raymond Dai	2882 3939	2882 3331
Geotechnics	Team (ET)	Team Leader			
Limited		(ETL)			

2.4.3. In the reporting month, the principal work activities of individual contracts conducted are as follow:

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East

Removal of TWCR4

Contract no. HY/2009/19- Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

Nil

<u>Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West</u>

• Nil

Contract no. HY/2010/08 - Central - Wan Chai Bypass (CWB) - Tunnel (Slip Road 8)

- Seawall reinstatement
- 2.4.4. In coming reporting month, the principal work activities of individual contracts are anticipated as follows:

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East

Removal of TWCR4

Contract no. HY/2009/19- Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

Nil

Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West

Nil

Contract no. HY/2010/08 - Central - Wan Chai Bypass (CWB) - Tunnel (Slip Road 8)

Seawall reinstatement



# 3 Status of Regulatory Compliance

# 3.1 Status of Environmental Licensing and Permitting under the Project

3.1.1. A summary of the current status on licences and/or permits on environmental protection pertinent to the Project is shown in *Table 3.1*.

Table 3.1 Summary of the current status on licences and/or permits on environmental protection pertinent to the Project

Permits and/or Licences	Reference No.	Issued Date	Status
Environmental Permit	EP-356/2009	30 Jul 2009	Valid
Environmental Permit	EP-364/2009/E	22 Dec 2016	Valid
Environmental Permit	EP-376/2009	13 Nov 2010	Valid
Further Environmental Permit	FEP-01/356/2009	18 Feb 2010	Surrendered
Further Environmental Permit	FEP-02/356/2009	24 Mar 2010	Surrendered
Further Environmental Permit	FEP-03/356/2009	24 Mar 2010	Valid
Further Environmental Permit	FEP-04/356/2009	22 Nov 2010	Valid
Further Environmental Permit	FEP-05/356/2009	24 Mar 2011	Surrendered
Further Environmental Permit	FEP-01/364/2009	24 Mar 2010	Valid
Further Environmental Permit	FEP-02/364/2009	21 Apr 2010	Valid
Further Environmental Permit	FEP-03/364/2009	12 Jul 2010	Surrendered
Further Environmental Permit	FEP-04/364/2009/A	14 Oct 2010	Surrendered
Further Environmental Permit	FEP-05/364/2009/A	15 Nov 2010	Valid
Further Environmental Permit	FEP-06/364/2009/A	22 Nov 2010	Valid
Further Environmental Permit	FEP-07/364/2009/B	20 Sep 2012	Surrendered
Further Environmental Permit	FEP-07/364/2009/D	24 Nov 2015	Valid
Further Environmental Permit	FEP-08/364/2009/A	15 Jun 2012	Surrendered
Further Environmental Permit	FEP-06/356/2009	5 Mar 2013	Valid



Permits and/or Licences	Reference No.	Issued Date	Status
Further Environmental Permit	FEP-07/356/2009	26 July 2013	Valid
Further Environmental Permit	FEP-09/364/2009/B	5 March 2013	Valid
Further Environmental Permit	FEP-10/364/2009/B	26 July 2013	Valid
Further Environmental Permit	FEP-08/356/2009	1 Aug 2016	Valid
Further Environmental Permit	FEP-11/364/2009/E	22 Dec 2016	Valid



- 3.1.2. Due to the multi-contract nature of the Project, the status of permits and/or licences under the individual contract(s) are presented as below:
  - <u>Contract no. HK/2009/02 Wan Chai Development Phase II Central Wan Chai Bypass at WanChai East</u>
- 3.1.3. Summary of the current status on licences and/or permits on environmental protection pertinent and submission for contract no. HK/2009/02 under FEP-03/356/2009 are shown in *Table 3.4* and *Table 3.5*.

Table 3.4 Cumulative Summary of Valid Licences and Permits under Contract no. HK/2009/02

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental	FEP-03/356/2009	24 Mar 2010	N/A	Valid
Permit	FEP-01/364/2009	24 Mar 2010	N/A	Valid
Notification of Works Under APCO	313962	2 Feb 2010	N/A	Valid
Construction Noise Permit	GW-RS0296-18	10 Apr 2018	23 Apr 2018 to 22 Oct 2018	Valid
(CNP) for non-piling equipment	GW-RS0333-18	25 Apr 2018	27 April 2018 to 25 Oct 2018	Valid
	GW-RS0334-18	25 Apr 2018	27 April 2018 to 25 Oct 2018	Valid
Discharge Licence	WT00022295-2015	12 Aug 2015	31 July 2020	Valid
District Little	WT00025276-2016	19 Sep 2016	31 July 2021	Valid
Billing Account under Waste Disposal Ordinance (Land)	7010255	10 Feb 2010	N/A	Valid
Billing Account under Waste Disposal Ordinance (Marine)	7011496	6 Oct 2010	N/A	Valid
Registration as Chemical Waste Producer (Wan Chai)	WPN5213-135-C3593-01	10 Mar 2010	N/A	Valid
Registration as Chemical Waste Producer (TKO 137)	WPN5213-839-C3593-02	22 Sep 2010	N/A	Valid

# Table 3.5 Summary of submission status under FEP-03/356/2009 Condition

EP Condition	Submission	Date of Submission
Condition 1.12	Commencement Date of Construction of Marine Works	8 April 2010
Condition 2.6	Management Organization of Main Construction Companies	10 April 2010
Condition 2.7	Works Schedule and Location Plans	8 April 2010
Condition 2.8	Silt Curtain Deployment Plan (Revision O)	24 May 2018
	Silt Screen Deployment Plan	21 April 2010
Condition 2.9	Supplementary Information for Existing WSD Salt Water Intakes at Quarry Bay and Sai Wan Ho	5 Oct 2010
	Silt Screen Deployment Plan (Revision F)	23 Nov 2016
Condition 2.17	Noise Management Plan	6 May 2010
	Landscape Plan (Decorative Screen Hoarding)	11 May 2010
Condition 2.18	Landscape Plan (Control of Night Time Lighting)	2 June 2010
	Landscape Plan (Combined Version)	20 July 2011
	Landscape Plan (Combined Version)	5 Aug 2011
	Acknowledge of Submission	22 Aug 2011



# <u>Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter</u> Section)

3.1.4. Summary of the current status on licences and/or permits on environmental protection pertinent and submission for contract no. HY/2009/15 under FEP-04/356/2009 are shown in *Table 3.6* and *Table 3.7*.

Table 3.6 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/15

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-04/356/2009	22 Nov 2010	N/A	Valid
Notification of Works Under APCO	321822	24 Sep 2010	N/A	Valid
Registration as a Chemical Waste Producer	WPN5213-147-C1169-35	15 Nov 2010	N/A	Valid
Billing Account under Waste Disposal Ordinance	7011553	30 Sep 2010	N/A	Valid

Table 3.7 Summary of submission status under FEP-04/356/2009 Condition

FEP Condition	Submission	Date of
		Submission
Condition 2.6	Management Organization of Main Construction Companies	30 Sep 2010
	Amendment for Management Organization of Main Construction Companies	16 May 2011
Condition 2.7	Works Schedule and Location Plans	27 Oct 2010
	Amendment for Works Schedule and Location Plans	12 Nov 2010
Condition 2.8	Silt Curtain Deployment Plan	30 Nov 2010
	Amendment for Silt Curtain Deployment Plan	24 Feb 2011
	Amendment for Silt Curtain Deployment Plan	11 May 2011
	Amendment for Silt Curtain Deployment Plan	11 Sep 2012
	Amendment for Silt Curtain Deployment Plan	30 Oct 2012
Condition 2.9	Silt Screen Deployment Plan	19 Oct 2010
	Amendment for Silt Screen Deployment Plan	18 Feb 2011
	Amendment for Silt Screen Deployment Plan	15 Jun 2011
Condition 2.18	Proposal for the Removal of Odorous Sediment and Slime	13 Jan 2011
	Amendment for Proposal for the Removal of Odorous Sediment and Slime	8 Mar 2011
	Amendment for Proposal for the Removal of Odorous Sediment and Slime	2 Aug 2011
Condition 2.21	Landscape Plan	18 Feb 2011
Condition 2.23	Noise Management Plan	20 Oct 2010
CONTUNION 2.23	Amendment for Noise Management Plan	27 Jan 2011



# <u>Contract no. HY/2009/19 – Central- Wan Chai Bypass Tunnel (North Point Section) and Island</u> <u>Eastern Corridor Link</u>

3.1.5. Summary of the current status on licences and/or permits on environmental protection pertinent for contract no. HY/2009/19 is shown in *Table 3.8* 

Table 3.8 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/19

Permit / Licence / Notification / Approval	Reference No.	Issued Date	Valid Period / Expiry date	Status
Further Environmental Permit	FEP-07/364/2009/D	24 Nov 2015	N/A	Valid
Notification of Works Under APCO	326160	24 Jan 2011	N/A	Valid
Notification of Works (further proposed change to the particulars) Under APCO	415587	11 Apr 2017	N/A	Valid
Construction Noise Permit (CNP) for piling equipment	-	-	-	-
Construction Noise Permit (CNP) (IEC Road Modification for Middle Section)	GW-RS0457-18	1 Jun 2018	5 Jun 2018 to 31 Aug 2018	Valid
Construction Noise Permit (CNP) (IEC Road Modification for Middle Section)	GW-RS0559-18	3 Jul 2018	6 Jul 2018 to 31 Aug 2018	Valid
Construction Noise Permit (CNP) (For IEC Westbound)	GW-RS0368-18	4 May 2018	1 Jun 2018 to 31 Aug 2018	Valid
Construction Noise Permit (CNP) (For IEC Westbound)	GW-RS0558-18	3 Jul 2018	6 Jul 2018 to 30 Sep 2018	Valid
C&D Waste Disposal	7012306	10 Feb 2011	N/A	-

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Permit / Licence / Notification / Approval	Reference No.	Issued Date	Valid Period / Expiry date	Status
Vessel Disposal	7013285	21 July 2011	N/A	-
Registration as Chemical Waste Producer	5213-151-C3654-01	24 Mar 2011	N/A	-

# <u>Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West</u>

3.1.6. Summary of the current status on licences and/or permits on environmental protection pertinent and submission for contract no. HK/2012/08 under FEP-08/356/2009 are shown in *Table 3.9* and *Table 3.10*.

Table 3.9 Cumulative Summary of Valid Licences and Permits under Contract no. HK/2012/08

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental	FEP-06/356/2009	5 Mar 2013	N/A	Valid
Permit	FEP-08/356/2009	1 Aug 2016	N/A	Valid
Notification of Works Under APCO	355439	4 Feb 2013	N/A	Valid
Registration as a Chemical Waste Producer	5213-134-C3790-01	30 Jun 2016	N/A	Valid
Billing Account under Waste Disposal Ordinance	7016883	18 Feb 2013	N/A	Valid
Water Discharge Licence	WT00020594-2014	22 Dec 2014	31 Jan 2019	Valid
	GW-RS0181-18	23 Feb 2018	26 Feb 2018 to 25 Aug 2018	Valid
	GW-RS1165-17	28 Dec 2017	13 Jan 2018 to 12 Jul 2018	Expired
Construction Noise Permit	GW-RS1163-17	28 Dec 2017	13 Jan 2018 to 12 Jul 2018	Expired
	GW-RS1177-17	28 Dec 2017	12 Jan 2018 to 11 Jul 2018	Expired
	GW-RS0243-18	27 Mar 2018	5 Apr 2018 to 4 Oct 2018	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
	GW-RS0597-18	10 Jul 2018	13 Jul 2018 to 12 Jan 2019	Valid
	GW-RS0600-18	10 Jul 2018	12 Jul 2018 to 11 Jan 2019	Valid

Table 3.10 Summary of submission status under EP-356/2009 and FEP-06/356/2009 Condition

FEP Condition	Submission	Date of Submission
Condition 2.8	Silt Curtain Deployment Plan (Rev. 3)	Submitted on 25 Nov 2013 was returned to CSLJV by EPD.
Condition 2.9	Silt Screen Deployment Plan (Rev. 3)	Generally in order as commented by EPD on 19 Sep 2013
Condition 2.23	Noise Management Plan (Rev. 2)	Generally in order as commented by EPD on 15 Aug 2013
Condition 2.24	Landscape Plan (Rev. 3)	Generally in order as commented by EPD on 31 Oct 2013

## Contract no. HY/2010/08 - Central - Wan Chai Bypass (CWB) - Tunnel (Slip Road 8)

3.1.7. Summary of the current status on licences and/or permits on environmental protection pertinent and submission for contract no. HY/2010/08 under FEP-07/356/2009 are shown in Table 3.11 and Table 3.12.

Table 3.11 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2010/08

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-07/356/2009	26 Jul 2013	NA	Valid
	FEP-10/364/2009/B	26 Jul 2013	NA	Valid



Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Notification of Works Under APCO	357176	2 Apr 2013	N/A	Valid
Registration as a Chemical Waste Producer	WPN5213-147-C1169-44	27 Mar 2013	N/A	Valid
Billing Account under Waste Disposal Ordinance	7017170	27 Mar 2013	N/A	Valid
Billing Account under Waste Disposal Ordinance (Dumping by Vessel)	7020947	22 Dec 2014	N/A	Valid.
Water Discharge Licence	WT00020468-2014	3 Dec 2014	9 Jul 2013 to 31 Jul 2018	Valid
Water Bleenarge Electrics	WT00028744-2017	4 Aug 2017	4 Aug 2017 to 31 Aug 2019	Valid
Construction Noise Permit	GW-RS0194-18	14 Mar 2018	14 Mar 2018 to 11 Sep 2018	Valid

Table 3.12 Summary of submission status under EP-356/2009 and FEP-07/356/2009 Condition

FEP Condition	Submission	Date of Submission
Condition 2.8	Silt Curtain Deployment Plan (Rev 3)	24 Dec 2014
Condition 2.9	Silt Screen Deployment Plan (Rev 3)	21 Nov 2017
Condition 2.23	Noise Management Plan (Rev 2)	25 Mar 2014
Condition 2.24	Landscape Plant (Rev 2)	23 Sep 2014



## 4 Monitoring Requirements

### 4.1 Noise Monitoring

#### **NOISE MONITORING STATIONS**

4.1.1. The noise monitoring stations for the Project are listed and shown in *Table 4.1* and *Figure 4.1*.

\*\*Appendix 4.1 shows the established Action/Limit Levels for the monitoring works.

Table 4.1 Noise Monitoring Station

Station	Description	
M1a	Footbridge for Ex-Harbour Road Sports Centre*	
M2b	Noon Gun Area	
М3а	Tung Lo Wan Fire Station	
M4b	Victoria Centre	
M5b	City Garden	
M6	HK Baptist Church Henrietta Secondary School	

Remarks\*: With respect to the demolition of Ex-Harbour Road Sports Centre, the respective noise monitoring station M1a – Harbour Road Sports Centre were finely adjusted on 16 and 25 May 2017 and thereafter to the Footbridge for Harbour Road Sports for noise monitoring

## NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

- 4.1.2. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L<sub>eq</sub>). L<sub>eq (30 minutes)</sub> shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, L<sub>eq (5 minutes)</sub> shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as L10 and L90 shall also be obtained for reference.
- 4.1.3. Noise monitoring shall be carried out at all the designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:
  - One set of measurements between 0700 and 1900 hours on normal weekdays.
- 4.1.4. If construction works are extended to include works during the hours of 1900 0700 as well as public holidays and Sundays, additional weekly impact monitoring shall be carried out during



respective restricted hours periods. Applicable permits under NCO shall be obtained by the Contractor.

#### **MONITORING EQUIPMENT**

- 4.1.5. As referred to in the Technical Memorandum ™ issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.
- 4.1.6. Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

#### 4.2 Air Monitoring

#### **AIR QUALITY MONITORING STATIONS**

4.2.1. The air monitoring stations for the Project are listed and shown in *Table 4.2* and *Figure 4.1*. *Appendix 4.1* shows the established Action/Limit Levels for the monitoring works.

Table 4.2 Air Monitoring Station

Station ID	Monitoring Location	Description
CMA1b	Harbour Grand Hotel Boundary Wall**	North Point
CMA2a	Causeway Bay Community Centre	Causeway Bay
СМАЗа	CWB PRE Site Office *	Causeway Bay
CMA4a	Society for the Prevention of Cruelty to Animals	Wan Chai
CMA5b	Pedestrian Plaza***	Wan Chai
CMA6a	WDII PRE Site Office *	Wan Chai

Remarks\*: As per the ENPC meeting in March 2011, the monitoring stations CMA3a – Future CWB site office at Wanchai Waterfront Promenade was renamed as remark.

Remarks\*\*: The location ID of monitoring station CMA1b was updated as "Harbour Grand Hotel Boundary Wall" from 05 June 2017 onwards.



Remarks\*\*\*: The station ID and monitoring location was updated in December 2014 with respect to monitoring station relocation.

## AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

- 4.2.2. One-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.
- 4.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.
- For regular impact monitoring, the sampling frequency of at least once in every six-days, shall 4.2.4. be strictly observed at all the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs.

#### SAMPLING PROCEDURE AND MONITORING EQUIPMENT

- 4.2.5. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:
  - 0.6 1.7 m3 per minute adjustable flow range;
  - equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
  - installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
  - capable of providing a minimum exposed area of 406 cm2;
  - flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
  - equipped with a shelter to protect the filter and sampler;
  - incorporated with an electronic mass flow rate controller or other equivalent devices;
  - equipped with a flow recorder for continuous monitoring;
  - provided with a peaked roof inlet;
  - incorporated with a manometer;
  - able to hold and seal the filter paper to the sampler housing at horizontal position;
  - easily changeable filter; and
  - capable of operating continuously for a 24-hour period.
- 4.2.6. Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The concern parties such as IEC



shall properly document the calibration data for future reference. All the data should be converted into standard temperature and pressure condition.

#### LABORATORY MEASUREMENT / ANALYSIS

- 4.2.7. A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory should be HOKLAS accredited.
- 4.2.8. An alternative non-HOKLAS accredited laboratory was set-up for carrying out the laboratory analysis, the laboratory equipment was approved by the ER on 8 February 2011 and the measurement procedures were witnessed by the IEC. Any measurement performed by the laboratory was be demonstrated to the satisfaction of the ER and IEC. IEC shall regularly audit to the measurement performed by the laboratory to ensure the accuracy of measurement results.
- 4.2.9. Filter paper of size 8" x 10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hours and be pre-weighed before use for the sampling.
- 4.2.10. After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.
- 4.2.11. All the collected samples shall be kept in a good condition for 6 months before disposal.

### IMPACT MONITORING FOR ODOUR PATROL

- 4.2.12. Odour patrols along the shorelines of Causeway Bay Typhoon Shelter and ex-Wan Chai Public Cargo Working Area when there is temporary reclamation in Causeway Bay Typhoon Shelter and/or in the ex-Wan Chai Public Cargo Working Area, or when there is dredging of the odorous sediment and slime at the south-western corner of the Causeway Bay Typhoon Shelter. Odour patrols will be carried out at bi-weekly intervals during July, August and September by a qualified person of the ET who shall:
  - be at least 16 years of age;
  - be free from any respiratory illnesses; and
  - not be allowed to smoke, eat, drink (except water) or use chewing gum or sweets 30 min
  - before and during odour patrol



- 4.2.13. Odour patrol shall be conducted by independent trained personnel / competent persons patrolling and sniffing around the shore as shown in *Figure 4.1* to detect any odour at the concerned hours (afternoon is preferred for higher daily temperature).
- 4.2.14. The qualified person will use the nose (olfactory sensor) to sniff odours at different locations. The main odour emission sources and the areas to be affected by the odour nuisance will be identified.
- 4.2.15. The perceived odour intensity is to be divided into 5 levels which are ranked in the descending order as follows:
  - 0 Not detected. No odour perceived or an odour so weak that it cannot be easily characterized or described:
  - 1 Slight Identifiable odour, and slight chance to have odour nuisance;
  - 2 Moderate Identifiable odour, and moderate chance to have odour nuisance;
  - 3 Strong Identifiable, likely to have odour nuisance;
  - 4 Extreme Severe odour, and unacceptable odour level.
- 4.2.16. The findings including odour intensity, odour nature and possible odour sources, and also the local wind speed and direction at each location will be recorded. In addition, some relevant meteorological and tidal data such as daily average temperature, and daily average humidity, on that surveyed day will be obtained from the Hong Kong Observatory Station for reference. The Action and Limit levels for odour patrol are shown in <u>Appendix 4.1.</u>
- 4.2.17. The qualified odour patrol member has individual n-butanol thresholds complied with the requirement of European Standard Method of Air Quality Determination of Odour Concentration by Dynamic Olfactometry (EN13725) in the range of 20 to 80 ppb.

# 4.3 Water Quality Monitoring

- 4.3.1. The EIA Report has identified that the key water quality impact would be associated with the dredging works during the construction phase. Marine water quality monitoring for dissolved oxygen (DO), suspended solid (SS) and turbidity is therefore recommended to be carried out at selected WSD flushing water intakes. The impact monitoring should be carried out during the proposed dredging works to ensure the compliance with the water quality standards.
- 4.3.2. The updated EM&A Manual for EP-356/2009 (Version in March 2011) is approval by EPD on 29 April 2011. As such, the Action Level and Limit Level for the wet season (April September) will be effected and applied to the water quality monitoring data from 30 April 2011.

# Water Quality Monitoring Stations

4.3.3. Water quality monitoring was undertaken at 8 monitoring stations for WSD salt water intakes and cooling water intakes along the seafront of the Victoria Harbour in the reporting month.



The proposed water quality monitoring stations of the Project are shown in *Table 4.3* and *Figure 4.1*. Appendix 4.1 shows the established Action/Limit Levels for the monitoring works.

Table 4.3 Marine Water Quality Stations for Water Quality Monitoring

Station Ref.	Location	Easting	Northing
WSD Salt Water	Intake		
WSD19	Sheung Wan	833415.0	816771.0
Cooling Water Ir	ntake		l .
C1	HKCEC Extension	835885.6	816223.0
C7	Windsor House	837193.7	816150.0
P1	HKCEC Phase I	835774.7	816179.4
P3	The Academy of performing Arts	835824.6	816212.0
P4	Shui on Centre	835865.6	816220.0
P5	Government Buildings	835895.2	816215.2
	(Wanchai Tower / Revenue		
	Tower / Immigration Tower)		
Cooling Water In	ntake / WSD Salt Water Intake	1	l
RW21-P789	Great Eagle Centre/ Sun Hung Kai	836268.0	816020.0
	Centre/ WSD Wanchai salt water		
	intake / China Resources Building		

- Remarks: The cessation of seawater intake operation for C6 was confirmed on 17 May 2011 and the water quality monitoring at C6 was then terminated since 17 May 2011.
  - 4-week post construction water quality monitoring at WSD9, WSD10, WSD15 and WSD17 were completed on 6 Feb 2012 and the water quality monitoring at WSD 10 and WSD15 were temporary suspended since 8 Feb 2012, and WSD9 and WSD17 was implemented with respect to HK/2009/02 from 8 Feb 2012 onwards.
  - C8 and C9 were implemented with respect to HY/2009/19 from 28 Jan 2012.
  - C8 & C9 were temporary suspended since 4 March 2013.
  - WSD7 and WSD20 water quality monitoring were temporarily suspended from 27 Apr 2012.
  - C2, C3 C4e and C4w water quality monitoring station was temporarily suspended since
     22 Apr 2013
  - P1, P3, P4 and P5 were commenced since 24 Apr 2013
  - C5e and C5w water quality monitoring station was temporarily suspended since 29 Jul 2013.
  - WSD21 water quality monitoring station was temporarily suspended since 12 Mar 2014
  - WSD9 and WSD17 water quality monitoring station was temporarily suspended since 8
     Sep 2014 flood tide.



- The water quality monitoring station C1 shall be associated with Contract No.
   HK/2009/02 upon commencement of marine works under DP3 at WCR3 area.
- The water quality monitoring station RW21-P789 was adjusted to RW21-P789E and RW21-P789W since 28 November 2016 ebb-tide.
- The water quality monitoring was reverted to previous monitoring station RW21-P789 from PW21-P789E and RW21-P789W from 25 January 2017 onwards.

#### WATER QUALITY PARAMETERS

- 4.3.4. Monitoring of dissolved oxygen (DO), turbidity and suspended solids (SS) shall be carried out at WSD flushing water intakes and cooling water intakes. DO and Turbidity are measured in-situ while SS is determined in laboratory.
- 4.3.5. In association with the water quality parameters, other relevant data shall also be measured, such as monitoring location/position, time, sampling depth, water temperature, pH, salinity, dissolved oxygen (DO) saturation, weather conditions, sea conditions, tidal stage, and any special phenomena and work underway at the construction site etc.

# SAMPLING PROCEDURES AND MONITORING EQUIPMENT

4.3.6. The interval between two sets of monitoring should not be less than 36 hours except where there are exceedances of Action and/or Limit Levels, in which case the monitoring frequency will be increased. *Table 4.4* shows the proposed monitoring frequency and water quality parameters. Duplicate in-situ measurements and water sampling should be carried out in each sampling event. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5m.

Table 4.4 Marine Water Quality Monitoring Frequency and Parameters

Activities	Monitoring Frequency <sup>1</sup>	Parameters <sup>2</sup>
During the 4-week baseline monitoring period	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity
During marine construction works	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity
After completion of marine construction works	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity

# Notes:

- 1. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5m.
- 2. Turbidity should be measured in situ whereas SS should be determined by laboratory.

### DISSOLVED OXYGEN AND TEMPERATURE MEASURING EQUIPMENT

- 4.3.7. The instrument should be a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and use a DC power source. It should be capable of measuring:
  - a dissolved oxygen level in the range of 0-20 mg/l and 0-200% saturation
  - a temperature of 0-45 degree Celsius
- 4.3.8. It should have a membrane electrode with automatic temperature compensation complete with a cable. Sufficient stocks of spare electrodes and cables should be available for replacement where necessary. (e.g. YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).
- 4.3.9. Should salinity compensation not be build-in in the DO equipment, in-situ salinity shall be measured to calibrate the DO equipment prior to each DO measurement.

### **TURBIDITY MEASUREMENT INSTRUMENT**

4.3.10. The instrument should be a portable, weatherproof turbidity-measuring instrument complete with comprehensive operation manual. The equipment should use a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. Hach model 2100P or an approved similar instrument).

#### **SAMPLER**

4.3.11. A water sampler comprises a transparent PVC cylinder, with a capacity of not less than 2 litres, and can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (e.g. Kahlsico Water Sampler or an approved similar instrument).

#### SAMPLE CONTAINER AND STORAGE

4.3.12. Water samples for suspended solids measurement should be collected in high-density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to ALS Technichem (HK) Pty Ltd. as soon as possible after collection for analysis.

#### WATER DEPTH DETECTOR

4.3.13. A portable, battery-operated echo sounder shall be used for the determination of water depth at each designated monitoring station. This unit can either be handheld or affixed to the bottom of the workboat, if the same vessel is to be used throughout the monitoring programme.

### <u>SALINITY</u>

4.3.14. A portable salinometer capable of measuring salinity in the range of 0-40 ppt shall be provided for measuring salinity of the water at each of monitoring location.



# MONITORING POSITION EQUIPMENT

4.3.15. A hand-held or boat-fixed type digital Global Positioning System (GPS) with waypoint bearing indication or other equivalent instrument of similar accuracy shall be provided and used during monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

# CALIBRATION OF IN-SITU INSTRUMENTS

- 4.3.16. All in-situ monitoring instrument shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or equivalent before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.
- 4.3.17. For the on site calibration of field equipment by the ET, the BS 127:1993, "Guide to Field and on-site test methods for the analysis of waters" should be observed.
- 4.3.18. Sufficient stocks of spare parts should be maintained for replacements when necessary.

  Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.
- 4.3.19. Current calibration certificates of equipments are presented in **Appendix 4.2**.

# LABORATORY MEASUREMENT / ANALYSIS

4.3.20. Analysis of suspended solids has been carried out in a HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd. Water samples of about 1L shall be collected at the monitoring stations for carrying out the laboratory SS determination. The SS determination work shall start within 24 hours after collection of the water samples. The SS determination shall follow APHA 19ed or equivalent methods subject to the approval of IEC and EPD.

# ENHANCED WATER QUALITY MONITORING IN THE EX-WAN CHAI PUBLIC CARGO WORKING AREA AND THE CAUSEWAY BAY TYPHOON SHELTER

- 4.3.21. The enhanced water quality monitoring and audit programme is to avoid aggravation of odour nuisance from seawater arising from temporary reclamation in the ex-Wan Chai Public Cargo Working Area and the Causeway Bay Typhoon Shelter.
- 4.3.22. Dissolved oxygen monitoring at the intakes C6 and C7 in Causeway Bay Typhoon Shelter when there is temporary reclamation in Causeway Bay Typhoon Shelter and at the south-western and south-eastern corners of the ex-Wan Chai Public Cargo Working Area. The proposed water quality monitoring stations of the Project are shown in *Table 4.5* and *Figure* 4.1.



# Table 4.5 Marine Water Quality Stations for Enhanced Water Quality Monitoring

Station	Location
C6	Excelsior Hotel
C7	Windsor House
Ex-WPCWA-SW	South-western of the ex-Wan Chai Public Cargo Working Area
Ex-WPCWA-SE	South-eastern of the ex-Wan Chai Public Cargo Working Area

#### Remarks:

- Enhanced DO monitoring at Windsor House Cooling (Station Ref: C7) was temporarily suspended since 22 October 2014 with respect to the formation of temporary reclamation zone TS3 and was resumed from 1 February 2018 onwards with respect to the completion of removal of temporary reclamation zone.
- Enhanced DO monitoring at Monitoring station Ex-WPCWA SE was temporarily suspended from 31 August 2015 with respect to seawall reinstatement works and formation of active works area. The Enhance DO monitoring at Ex-WPCWA SE was resumed on 11 May 2016 due to completed section of seawall reinstatement works at Ex-PCWA.
- 4.3.23. The monitoring of dissolved oxygen are to be carried out 3 days per week, at mid-flood and mid-ebb tides for 3 water depths (1m below water surface, mid-depth and 1m above sea bed, except where the water depth less than 6m, the mid-depth may be omitted. If the water depth be equal to or less than 3m, only the mid-depth will be monitored).

### DAILY SS MONITORING AND 24 HOURS TURBIDITY MONITORING SYSTEM

- 4.3.24. During dredging of the sediment at the south-western corner of the Causeway Bay Typhoon Shelter, daily monitoring of suspended solids and 24 hour monitoring of turbidity at the cooling water intakes (C6 and C7) shall be conducted.
- 4.3.25. The 24 hours monitoring of turbidty at the cooling water intakes (C6 and C7) shall be established by setting up a continuous water quality monitoring station in front of the intakes during the dredging activities. The monitoring system include the turbidity sensor and data logger which is capable of data capturing at every 5 minutes. The data sahll be downloaded daily and compared with the Action and Limit level determined during the baseline water quality monitoring at the cooling water intake locations.

# ADDITIONAL DISSOVLED OXYGEN MONITORING FOR CULVERT L WATER DISCHARGE FLOW

4.3.26. In response to the Condition 2.18 of the Environmental Permit no. EP-356/2009 requiring that a silt curtain / impermeable barrier system be installed to channel water discharge flow from Culvert L to locations outside the embayment area, a proposed replacement of the

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requirement with additional dissolved oxygen monitoring has been conducted at three monitoring stations, namely A, B and C between the eastern seawall of Central Reclamation Phase III and the HKCEC Extension since November 2011 under EP-356/2009 so that DO level between the eastern seawall of Central Reclamation Phase II and the HKCEC extension could be continuously monitored.

- 4.3.27. With respect to the commencement of dredging works under HK/2012/08 and the installation of MTR precast protection unit, the enhanced water quality monitoring for Culvert L was temporarily suspended since 24 July 2013
- 4.3.28. The monitoring of dissolved oxygen are to be carried out once per week, at mid-flood and mid-ebb tides for 3 water depths (1m below water surface, mid-depth and 1m above sea bed, except where the water depth less than 6m, the mid-depth may be omitted. If the water depth be equal to or less than 3m, only the mid-depth will be monitored).



# 5. Monitoring Results

- 5.0.1. The environmental monitoring will be implemented based on the division of works areas of each designed project managed under different contracts with separate FEP applied by individual contractors. Overall layout showing work areas of various contracts, latest status of work commencement and monitoring stations is shown in <u>Figure 2.1</u> and <u>Figure 4.1</u>. The monitoring results are presented in according to the Individual Contract(s).
- 5.0.2. In the reporting month, the concurrent contracts are as follows:
  - Contract no. HK/2009/02 Wan Chai Development Phase II Central-Wan Chai Bypass at Wan Chai East
  - Contract no. HY/2009/19- Central- Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link
  - Contract no. HK/2012/08 Wan Chai Development Phase II Central- Wan Chai Bypass at Wan Chai West
  - Contract no. HY/2010/08 Central- Wanchai Bypass Tunnel (Slip Road 8 Section)
- 5.0.3. As confirmed by WDII RSS, the marine construction works under Contract HK/2009/01 have been completed since 24 July 2017, the monitoring association with Contract HK/2009/01 and relevant reporting has been ceased in the reporting month.
- 5.0.4. As confirmed by CWB RSS, the marine construction works under Contract HY/2009/15 and relevant reporting have been completed by 19 June 2017, the monitoring association with Contract HY/2009/15 and relevant reporting has been ceased in the reporting month.
- 5.0.5. The environment monitoring schedules for reporting month and coming month are presented in *Appendix 5.1*.

#### 5.1 Noise Monitoring Results

<u>Contract no. HK/2009/02 - Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East</u>

5.1.1. The proposed division of noise monitoring stations are summarized in *Table 5.1* below.

Table 5.1 Noise Monitoring Station for Contract nos. HK/2009/02

Station	Description
M1a	Footbridge for Ex-Harbour Road Sports Centre

5.1.2. No action or limit level exceedance was recorded in the reporting period

5.0.1. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in <u>Appendix</u> <u>5.2.</u>

Contract no. HY/2009/19- Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

5.0.2. The proposed division of noise monitoring stations are summarized in *Table 5.3* below.

Table 5.3 Noise Monitoring Station for Contract no. HY/2009/19

Station	Description
M4b	Victoria Centre
M5b	City Garden
M6	HK Baptist Church Henrietta Secondary School

- 5.0.3. No action or limit level exceedance was recorded in the reporting period.
- 5.0.4. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in <u>Appendix</u> <u>5.2.</u>

Contract no. HY/2010/08-Central-Wanchi Bypass Tunnel (Slip Road 8 Section)

5.0.5. The proposed division of noise monitoring stations are summarized in **Table 5.4** below.

Table 5.4 Noise Monitoring Station for Contract no. HY/2010/08

Station	Description
M2b	Noon Gun Area
М3а	Tung Lo Wan Fire Station

- 5.0.6. No action or limit level exceedance was recorded in the reporting period.
- 5.0.7. Noise monitoring results measured in this reporting period are reviewed and summarized.
  Details of noise monitoring results and graphical presentation can be referred in <u>Appendix</u>
  5.2.



# 5.2 Air Monitoring Results

Contract no. HK/2009/02 - Wan Chai Development Phase II - Central - Wan Chai Bypass at WanChai East

5.2.1 Air monitoring was commenced in mid-January 2011 for the land-filling work for Contract no. HK/2009/02. The proposed division of air monitoring stations are summarized in *Table 5.6* below.

Table 5.6 Air Monitoring Station for Contract no. HK/2009/02

Station	Description
CMA3a	CWB PRE Site Office
CMA4a	Society for the Prevention of Cruelty to Animals

- 5.2.2 No action or limit level exceedance was recorded in the reporting period.
- 5.2.3 Air quality monitoring results measured in this reporting period are reviewed and summarized.

  Details of air monitoring results and graphical presentation can be referred in *Appendix 5.3*.

Contract no. HY/2009/19- Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

5.2.4 The proposed division of air monitoring stations are summarized in *Table 5.8* below.

Table 5.8 Air Monitoring Stations for Contract no. HY/2009/19

Station	Description
CMA1b	Harbour Grand Hotel Boundary Wall
CMA2a	Causeway Bay Community Centre

- 5.2.5 No action or limit level exceedance was recorded in the reporting period.
- 5.2.6 Air quality monitoring results measured in this reporting period are reviewed and summarized.

  Details of air monitoring results and graphical presentation can be referred in *Appendix 5.3*.



# Contract no. HK/2012/08- Wan Chai Development Phase II – Central-Wan Chai Bypass at Wan Chai West

5.2.7 The proposed division of air monitoring stations are summarized in *Table 5.9* below.

Table 5.9 Air Monitoring Stations for Contract no. HK/2012/08

Station	Description
CMA5b	Pedestrian Plaza
CMA6a	WDII PRE Site Office

- 5.2.8 No action or limit level exceedance was recorded in the reporting period.
- 5.2.9 Air quality monitoring results measured in this reporting period are reviewed and summarized.

  Details of air monitoring results and graphical presentation can be referred in *Appendix 5.3*.

## Contract no. HY/2010/08- Central-Wanchai Bypass Tunnel (Slip Road 8 Section)

The proposed division of air monitoring stations are summarized in *Table 5.10* below.

Table 5.10 Air Monitoring Stations for Contract no. HY/2010/08

Station	Description
CMA3a	CWB PRE Site Office

- 5.2.10 No action or limit level exceedance was recorded in the reporting period.
- 5.2.11 Air quality monitoring results measured in this reporting period are reviewed and summarized.

  Details of air monitoring results and graphical presentation can be referred in *Appendix 5.3*.



# 5.3 Water quality monitoring Results

- 5.3.1 Action and Limit level of water quality monitoring was transited from dry season to wet season from 01 April 2018.
- 5.3.2 Water quality monitoring station C7 and Enhance DO monitoring station C6 shall be associated with Contract HY/2010/08, upon confirmation of marine construction works completion under Contract HY/2009/15 at CBTS area and Ex-PCWA area since 19 June 2017.
- 5.3.3 Referring to CWB RSS confirmation on the completion of marine construction activities within the Ex-PCWA area and the completion of the post construction water quality monitoring, the respective Enhance DO Monitoring within Ex-PCWA for monitoring station Ex-PCWA SE and Ex-PCWA SW was temporarily suspended since 07 March 2017 ebb tide onwards.
- 5.3.4 With respect to the reinstatement of the silt screen system for Cooling Water Intakes P7, P8, P9 and WSD Water Intake RW21, the respective water quality monitoring was reverted to the previous monitoring location for Water Quality Monitoring Station RW21-P789 from water quality stations RW21-P789 East (RW21-P789E) and RW21-P789 West (RW21-P789W) from 25 January 2017 onwards.
- 5.3.5 With respect to the temporarily suspension of marine construction works at WCR3 Area by Contract HK/2009/02, the installed silt screen for intake group (P7, P8, P9 and WSD21) was removed on 26 November 2016.
- 5.3.6 As advised by the Contractor of HK/2009/01, all silt screen remains removal works at P1, P3, P4, P5 and C1 water quality monitoring stations were completed on 8 May 2016.
- 5.3.7 With respect to the marine works undertaken at WCR3 by Contract HK/2009/02, the respective water quality monitoring station C1 associated with Contract HK/2009/01 was updated as in association with Contract HK/2009/01 and Contract HK/2009/02.
- 5.3.8 With respect to the marine works undertaken at CBTS by Contract HY/2010/08, the respective water quality monitoring station C7 associated with Contract HY/2009/15 was updated as in association with Contract HY/2009/15 and Contract HY/2010/08.
- 5.3.9 With respect to the marine works undertaken at HKCEC2 by Contract HK/2012/08, the respective water quality monitoring station WSD19, P1, P3, P4, and P5 were associated with Contract HK/2012/08.
- 5.3.10 As confirmed by WDII RSS, the marine construction works under Contract HK/2009/01 have been completed since 24 July 2017, the monitoring association with Contract HK/2009/01 and relevant reporting has been ceased in the reporting month.
- 5.3.11 As confirmed by CWB RSS, the marine construction works under Contract HY/2009/15 and relevant reporting have been completed by 19 June 2017, the monitoring association with Contract HY/2009/15 and relevant reporting has been ceased in the reporting month.

# Table 5.11 Water quality Monitoring Stations for contracts with respect to remaining DP3 work areas after the completion of DP5 & DP6 in 2012 and intake diversion in 2013

Contract No.	Remaining DP3 and work area(s)	Relevant Water quality monitoring Stations,	Division of WQM w.r.t tentative works commenced / to be commenced
HK/2009/02	WCR3, WCR4, TWCR4	RW21-P789 <sup>2</sup> , C1 <sup>1</sup>	Apr 2013
HK/2012/08	HKCEC2W, HKCEC2E	WSD19, P1 <sup>3</sup> , P3 <sup>3</sup> , P4 <sup>3</sup> , P5 <sup>3</sup>	Aug 2013
HY/2010/08	TCBR3, TCBR4	C6 <sup>4</sup> , C7 (plus enhanced DO monitoring)	Mar 2014

#### Remarks:

- 1. The water quality monitoring station C1 shall be associated with Contract No. HK/2009/02 upon commencement of marine works under DP3 at WCR3 area.
- 2. 4 intakes (re-provisioned Wanchai WSD intake, Great Eagle Centre, China Resources Centre & Sun Hung Kai Centre constructed adjacent to each other) taken as a single group for silt screen protection and monitoring. Re-provisioned intake reference: P1: HKCEC Phase 1; P3: APA, P4: Shui On; P5: Government Buildings (Wanchai Tower / Revenue Tower / Immigration Tower)
- 3. The water quality monitoring stations for WSD19, P1, P3, P4, P5 shall be associated with Contract No. HK/2009/01 prior to their transition to Contract HK/2012/08.
- 4. Enhance DO monitoring station C6 and water quality monitoring station C7 shall be associated with Contract HY/2010/08, upon confirmation of marine construction works completion under Contract HY/2009/15 at CBTS area and Ex-PCWA area since 19 June 2017.
- 5. With respect to WDII RSS confirmation on the completion of marine works under Contract HK/2009/01 since 24 July 2017, the association of WQM station C1 under Contract HK/2009/01 has been ceased in the November 2017 reporting month.



# Contract no. HK/2009/02 - Wan Chai Development Wan Chai Development Phase II - Central - Wan Chai Bypass at WanChai East

5.3.12 Water quality monitoring for Contract no. HK/2009/02 was commenced on 8 July 2010. The proposed division of water quality monitoring stations are summarized in *Table 5.13* below.

Table 5.13 Water quality Monitoring Stations for Contract no. HK/2009/02

Station Ref.	Location	Easting	Northing
Cooling Water Intake			
C1	HKCEC Extension	835885.6	816223.0
Cooling Water Intake / WSD Salt Water Intake			
RW21-P789	Great Eagle Centre/ Sun Hung Kai Centre/ WSD Wanchai salt water intake / China Resources Building	836268.0	816020.0

5.3.13 One action level exceedance of dissolved oxygen was recorded at RW21-P789 on 20 July 2018 during flood tide in the reporting period.

Removal of temporary seawall block at Portion 3 & 4 under Contract HK/2009/02 was conducted on the monitoring date. Location of the construction area was at downstream of monitoring station RW21-P789 during the monitoring period and contractor mitigation measure including the use of silt curtain and installation of silt screen was general in order. In view of the above, it is considered the exceedance was not related to Project work. No exceedance was recorded on the subsequent monitoring on 21 July 2018 Flood tide.

5.3.14 Water quality monitoring results measured in this reporting period are reviewed and summarized. Details of water quality monitoring results and graphical presentation can be referred in *Appendix 5.4.* 



#### **Lam Geotechnics Limited**

Contract no. HK/2012/08 - Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West

5.3.15 Water quality monitoring for Contract no. HK/2012/08 was commenced on 5 March 2013. The proposed division of water quality monitoring stations are summarized in *Table 5.14* below.

Table 5.14 Water quality Monitoring Stations for Contract no. HK/2012/08

Station Ref.	Location	Easting	Northing
WSD Salt Wa	ter Intake		
WSD19	Sheung Wan	833415.0	816771.0
Cooling Water	r Intake	<b>,</b>	1
P1	HKCEC Phase I	835774.7	816179.4
P3	The Academy of performing Arts	835824.6	816212.0
P4	Shui on Centre	835865.6	816220.0
P5	Government Buildings (Wanchai Tower / Revenue Tower / Immigration Tower)	835895.2	816215.2

5.3.16 One action level of dissolved oxygen was recorded at WSD19 on 3 July 2018 during ebb tide in the reporting period.

No marine construction activity under Contract HK/2012/08 was conducted on the monitoring date. In view of above, it is considered the exceedance was not related to Project work. No exceedance was recorded in the subsequent monitoring on 5 July 2018 Flood tide.

5.3.17 One action level of suspended solids was recorded at WSD19 on 14 July 2018 during flood tide in the reporting period.

No marine construction activity under Contract HK/2012/08 was conducted on the monitoring date. In view of above, it is considered the exceedance was not related to Project work.

5.3.18 One limit level of suspended solids and one limit level of turbidity was recorded at WSD19 on 16 July 2018 during flood tide in the reporting period.

No marine construction activity under Contract HK/2012/08 was conducted on the monitoring date. In view of above, it is considered the exceedance was not related to Project work.

5.3.19 One limit level of turbidity was recorded at WSD19 on 20 July 2018 during flood tide in the reporting period.

No marine construction activity under Contract HK/2012/08 was conducted on the monitoring date. In view of above, it is considered the exceedance was not related to Project work.



5.3.20 Water quality monitoring results measured in this reporting period are reviewed and summarized. Details of water quality monitoring results and graphical presentation can be referred in Appendix 5.4.

# Contract no. HY/2010/08- Central-Wanchai Bypass Tunnel (Slip Road 8 Section)

5.3.21 The proposed division of water quality monitoring stations are summarized in *Table 5.15* and Table 5.16 below:

Table 5.15 Water quality monitoring Stations for Contract no. HY/2010/08

Station Ref.	Location	Easting	Northing
Cooling Water Intake			
C7	Windsor House	837193.7	816150.0

5.3.22 No action or limit level exceedance was recorded in the reporting period

Table 5.16 Enhance Dissolved Oxygen Monitoring Stations for Contract no. HY/2010/08

Station Ref.	Location
C6	Excelsior Hotel
C7	Windsor House Cooling

## Remarks:

Enhanced DO monitoring at Windsor House Cooling (Station Ref: C7) was temporarily suspended since 22 October 2014 with respect to the formation of temporary reclamation zone TS3 and was resumed from 1 February 2018 onwards with respect to the completion of removal of temporary reclamation zone.

With respect to the completion of the removal of the temporary reclamation at TS3 area confirmed by the CWB RSS and the completion of the 4-weeks post construction water quality monitoring at the associated Enhanced DO monitoring stations, the respective Enhance DO monitoring at Monitoring Station C6 and C7 were temporarily suspended from 5 March 2018 ebb tide onwards

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# 5.4 Waste Monitoring Results

<u>Contract no. HK/2009/02 - Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East</u>

5.3.23 Details of the waste disposal in the reporting period are summarized in *Table 5.18*.

Table 5.18 Details of Waste Disposal for Contract no. HK/2009/02

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m <sup>3</sup>	2918.6	291855.7	TKO137 / TM 38
Inert C&D materials recycled, m <sup>3</sup>	NIL	18161	N/A
Non-inert C&D materials disposed, m <sup>3</sup>	NIL	1515.103	SENT Landfill
Non-inert C&D materials recycled, m <sup>3</sup>	N/A	N/A	N/A
Chemical waste disposed, kg	NIL	13860	SENT Landfill
Marine Sediment (Type 1 – Open Sea Disposal), m³	NIL	240222 (Bulk volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m <sup>3</sup>	NIL	146445 (Bulk volume)	East of Sha Chau

# <u>Contract no. HY/2009/15 - Central-Wanchai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)</u>

5.3.24 Details of the waste disposal in the reporting period are summarized in Table 5.19

Table 5.19 Details of Waste Disposal for Contract no. HY/2009/15

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds	Remarks
Inert C&D materials	NIL	141579.2	Tuen Mun Area 38	NIL
disposed, m <sup>3</sup>	NIL	65216	TKO137 FB	NIL
Inert C&D materials	NIL	8127.21	HY/2010/08	NIL
recycled, m <sup>3</sup>	NIL	304	Ex-PCWA	NIL
	NIL	111.9	TS4	NIL
Non-inert C&D materials disposed, m <sup>3</sup>	NIL	252.2	SENT Landfill	NIL
Non-inert C&D materials recycled, kg	NIL	299361.5	N/A	NIL
Chemical waste disposed, kg	NIL	8,200	N/A	NIL
Marine Sediment (Type 1 – Open Sea Disposal), m³	NIL (Bulk Volume)	156909 (Bulk Volume)	Cheung Chau South	Dredging from TCBR1E / TCBR1W / TCBR2/ TCBR3 / TCBR4 / Maintenance dredging
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m <sup>3</sup>	NIL (Bulk Volume)	327746 (Bulk Volume)	East of Sha Chau / South of the Brothers	Dredging from TCBR1E / TCBR1W / TCBR2/ TCBR3 / TCBR4 / Maintenance dredging
Marine Sediment (Type 3 – Special Treatment / Disposal contained in Geosynthetic Containers) m³	NIL (Bulk Volume)	12640 (Bulk Volume)	East of Sha Chau / South of the Brothers	Dredging from TCBR1W / Maintenance dredging
Marine Sediment (Type 2 – Confined Marine Disposal), m <sup>3</sup>	NIL	9350 (Bulk Volume)	East of Sha Chau	Dredging from Eastern Breakwater of CBTS

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Contract No. HK/2015/01 Wanchai Development Phase II and Central-Wanchai Bypass Sampling, Field Measurement and testing Works (Stage 3) Monthly EM&A Report (July 2018)

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds	Remarks
Marine Sediment (Type 1 – Open Sea Disposal) , m3	NIL (Bulk Volume)	600 (Bulk Volume)	East Sha Chau / South of The Brothers	Dredging from Phase 3 Mooring Re-arrangement
Marine Sediment (Type 2- Confined Marine Disposal), m3	NIL (Bulk Volume)	14,780 (Bulk Volume)	South of The Brothers	Dredging from Phase 3  Mooring  Re-arrangement
Marine Sediment (Type 3 – Special Treatment / Disposal contained in Geosynehetic Containers), m3	NIL (Bulk Volume)	2,760 (Bulk Volume)	South of The Brothers	Dredging from Phase 3  Mooring  Re-arrangement

# Contract no. HY/2009/19 –Central- WanChai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

5.3.25 Details of the waste disposal in the reporting period are summarized in *Table 5.20*.

Table 5.20 Details of Waste Disposal for Contract no. HY/2009/19

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m <sup>3</sup>	NIL	355921.04	TM38
Inert C&D materials recycled, m <sup>3</sup>	NIL	59367	N/A
Non-inert C&D materials disposed, m <sup>3</sup>	NIL	1068.6	N/A
Non-inert C&D materials recycled, kg	NIL	333.14	N/A
Chemical waste disposed, L	NIL	2.12	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m³	NIL	162	South Cheung Chau
Marine Sediment (Type 2 – Confined Marine Disposal) , m³	NIL	681	East Sha Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m3	NIL	4976.00	East Sha Chau



# <u>Contract no. HK/2012/08 –Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West</u>

5.3.26 Details of the waste disposal in the reporting period are summarized in *Table 5.21*.

Table 5.21 Details of Waste Disposal for Contract no. HK/2012/08

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m <sup>3</sup> *	NIL	4131	TM38
	NIL	273	TKO137
Inert C&D materials recycled, m <sup>3</sup>	NIL	NIL	N/A
Non-inert C&D materials disposed, m <sup>3</sup>	NIL	400	SENT
Non-inert C&D materials recycled, kg	NIL	NIL	N/A
Chemical waste disposed, L	NIL	NIL	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m³	NIL (Bulk volume)	31759 (Bulk volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m3	NIL (Bulk volume)	108542 (Bulk volume)	South of The Brothers (from 27 Aug 2013 onwards)

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# Contract no. HY/2010/08 - Central - Wan Chai Bypass (CWB) - Tunnel (Slip Road 8)

5.3.27 Details of the waste disposal in the reporting period are summarized in *Table 5.22* 

Table 5.22 Details of Waste Disposal for Contract no. HY/2010/08

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials	NIL	95094.759	TM38
disposed, m <sup>3</sup>	NIL	19739.4	TKO137
Inert C&D materials recycled, m <sup>3</sup>	NIL	NIL	N/A
Non-inert C&D materials disposed, m <sup>3</sup>	NIL	NIL	N/A
Non-inert C&D materials recycled, kg	NIL	NIL	N/A
Chemical waste disposed, L	NIL	NIL	N/A
Marine Sediment (Type 1 – Open Sea Disposal)	NIL	62559.4	South Cheung Chau / Brothers Island *
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine disposal)	NIL	28309.2	Brothers Island
Marine Sediment (Type 3 – Special Treatment)	NIL	7780	Brothers Island



# 6. Compliance Audit

6.0.1. The Event Action Plan for construction noise, air quality and water quality are presented in **Appendix 6.1**.

### 6.1 Noise Monitoring

Contract no. HK/2009/02 - Wan Chai Development Phase II - Central - Wan Chai Bypass at WanChai East

6.1.1 No action or limit level exceedance was recorded in the reporting period.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

6.1.2 No action or limit level exceedance was recorded in the reporting period.

Contract no. HY/2010/08 - Central-Wanchai Bypass - Tunnel (Slip Road 8 Section)

6.1.3 No action or limit level exceedance was recorded in the reporting period.

## 6.2 Air Monitoring

<u>Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel)</u>

6.2.1 No action or limit level exceedance was recorded in the reporting period.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

6.2.2 No action or limit level exceedance was recorded in the reporting period.

<u>Contract no. HK/2012/08 Wan Chai Development Phase II - Central-Wan Chai Bypass at Wan Chai West</u>

6.2.3 No action or limit level exceedance was recorded in the reporting period.

Contract no. HY/2010/08 - Central-Wanchai Bypass - Tunnel (Slip Raod 8 Section)

6.2.4 No action or limit level exceedance was recorded in the reporting period.



# 6.3 Water Quality Monitoring

- 6.3.1 Due to the hoisting of Tropical Cyclone Warning Signal No. 3, the water quality monitoring event on 18 July 2018 during flood tide was cancelled.
  - Contract no. HK/2009/02 Wan Chai Development Phase II Central Wan Chai Bypass at Wan Chai East
- 6.3.2 One action level exceedance of dissolved oxygen was recorded at RW21-P789 in the reporting period. After the investigation, the exceedance was considered as non-project related.
  - Contract no. HK/2012/08- Wan Chai Development Phase II Central- Wan Chai Bypass at Wan Chai West
- 6.3.3 One action level exceedance of dissolved oxygen, one action level exceedance of suspended solids, one limit level exceedance of suspended solids and two limit level exceedances of turbidity were recorded at WSD19 in the reporting period. After the investigation, the exceedance were considered as non-project related.
  - Contract no. HY/2010/08 Central Wan Chai Bypass (CWB) Tunnel (Slip Road 8)
- 6.3.4 No action or limit level exceedance was recorded in the reporting period.
- 6.4 Review of the Reasons for and the Implications of Non-compliance
- 6.4.1 There was no non-compliance from the site audits in the reporting period. The observations and recommendations made in each individual site audit session were presented in Section 8.
- 6.5 Summary of action taken in the event of and follow-up on non-compliance
- 6.5.1 There was no particular action taken since no non-compliance was recorded from the site audits in the reporting period.

# 7. Cumulative Construction Impact due to the Concurrent Projects

- 7.0.1. According to Condition 3.4 of the EP-356/2009, this section addresses the relevant cumulative construction impact due to the concurrent activities of the current projects including the Central Reclamation Phase III, Central-Wanchai Bypass and Island Eastern Corridor Link projects.
- 7.0.2. According to the Final EM&A Report of Central Reclamation Phase III (CRIII) for Contract HK 12/02, the major construction activities were completed by end of January 2014 and no construction activities were undertaken thereafter and the water quality monitoring was completed in October 2011 and no Project-related exceedance was recorded for air and noise monitoring. It can be concluded that cumulative construction impact due to the concurrent activities of the current projects with the Central Reclamation Phase III (CRIII) was insignificant.
- 7.0.3. According to the construction programme of Central-Wanchai Bypass at Wanchai West at the Central Reclamation Phase III area include roadworks, drainage and seawall coping were performed in July 2018 reporting period. As no project related exceedance were recorded during the reporting period, cumulative construction impact due to the concurrent activities of the current projects with the Central Reclamation Phase III (CRIII) was considered as insignificant.
- 7.0.4. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, the major construction activities under Wan Chai Development Phase II were road and drains construction and removal of temporary reclamation at Wan Chai. The major construction activities under Central-Wan Chai Bypass and Island Eastern Corridor Link Projects were ventilation building construction junction modification at Central; reinstatement works along Causeway Bay Typhoon Shelter, road works and landscape works at Victoria Park; bridge construction, approach ramp construction, landscape deck construction, drainage construction and ventilation building construction at North Point area in the reporting period. In addition, other non-Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects were observed undertaken at Wan Chai North and North Point area.
- 7.0.5. No significant air impact from construction activities was anticipated in the reporting month. Besides, no project related exceedance was recorded during the air and noise environmental monitoring events in the reporting month. Thus, it is evaluated that the cumulative construction impact from the concurrent projects including Central Reclamation Phase III (CRIII), Wan Chai Development Phase II (WDII), Central-WanChai Bypass (CWB), Island Eastern Corridor Link projects (IECL) was insignificant.

### 8. Environmental Site Audit

- 8.0.1. During this reporting month, weekly environmental site audits were conducted for Contracts no. HK/2009/02, HY/2009/19, HK/2012/08 and HY/2010/08. No non-conformance was identified during the site audits.
- 8.0.1. Site inspections for Contract no. HK/2009/02 were conducted in the reporting period. The results of these inspections and outcomes are summarized in *Table 8.2*.

Table 8.2 Summary of Environmental Inspections for Contract no. HK/2009/02

Item	Date	Observations	Action taken by Contractor	Completion date
180711_01	11 July 2018		First layer silt curtain	Completed as observed on 26 July 2018

8.0.2. Site inspections for Contract no. HY/2009/19 were carried out in the reporting period. The results of these inspections and outcomes are summarized in *Table 8.3*.

Table 8.3 Summary of Environmental Inspections for Contract no. HY/2009/19

Item	Date	Observations	Action taken by Contractor	Completion date
180718_1	18 July 2018	Condition of embankment along seawall shall be enhanced to avoid surface runoff into nearby water (Portion 3)	empankment was	Completion as observed on 25 July 2018

8.0.3. Site inspections for Contract no. HK/2012/08 were carried out in the reporting period. The results of these inspections and outcomes are summarized in **Table 8.5**.

Table 8.5 Summary of Environmental Inspections for Contract no. HK/2012/08

Item	Date	Observations	Action taken by Contractor	Outcome
180703_01	3-Jul-18	Labelling of chemical containers shall be provided for clearer identification of chemicals on site.	Chemical containers were removed	Completion as observed on 10 July 2018
180703_02	3-Jul-18	Drip tray shall be provided for chemical containers.	Entrance of site was observed clean	Completion as observed on 10 July 2018

Item	Date	Observations	Action taken by Contractor	Outcome
180710_01	10-Jul-18	Contractor shall provide cleaning to the entrance of site. (Expo Drive)	Chemical containers were removed	Completion as observed on 17 July 2018
180710_02	10-Jul-18	Oil stain should be cleared as chemical waste and shall be properly handle and disposal (Zone C, Expo Drive)	Idle stockpile was observed covered	Completion as observed on 17 July 2018
180710_03	10-Jul-18	Covering should be provided to idle stockpile on site. (Zone C)	Embankment was observed maintained and the mud sitting along the seawall was cleaned. Exposed surface was covered by tarpaulin and no surface runoff was observed.	Completion as observed on 24 July 2018
180710_04	10-Jul-18	Contractor shall enhance the mitigation measure including maintenance of embankment and cleaning the mud sitting along the seawall and covering the exposed surface to prevent surface runoff. (Seawall along P2 road)	Entrance of site was observed clean	Completion as observed on 17 July 2018
180717_01	17-Jul-18	Contractor shall provide cleaning to the entrance of site. (Lung King Street)	Public road was cleaned	Completion as observed on 31 July 2018

8.0.4. Site inspections for Contract no. HY/2010/08 were conducted in the reporting month. No observation was found in the reporting month.

Table 8.6 Summary of Environmental Inspections for Contract no. HY/2010/08

Item	Date	Observations	Action taken by Contractor	Outcome
180627_1	27-Jun-18	Noise and dust mitigation measure	No further breaking works was observed at the concerned location	Completion as observed on 4 July 2018

# 9. Complaints, Notification of Summons and Prosecution

- 9.0.1. No environmental complaint was received in the reporting period.
- 9.0.2. The details of cumulative complaint log and updated summary of complaints are presented in <u>Appendix 9.1</u>
- 9.0.3. Cumulative statistic on complaints and successful prosecutions are summarized in *Table 9.1* and *Table 9.2* respectively.

**Table 9.1 Cumulative Statistics on Complaints** 

Reporting Period	No. of Complaints
Commencement works (Mar 2010) to last reporting month	49
July 2018	0
Total	49

Table 9.2 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this month (Offence Date)	Cumulative No. Project-to-Date
Air	-	0	0
Noise	-	0	0
Water	-	0	0
Waste	-	0	0
Total	-	0	0



# 10. Conclusion

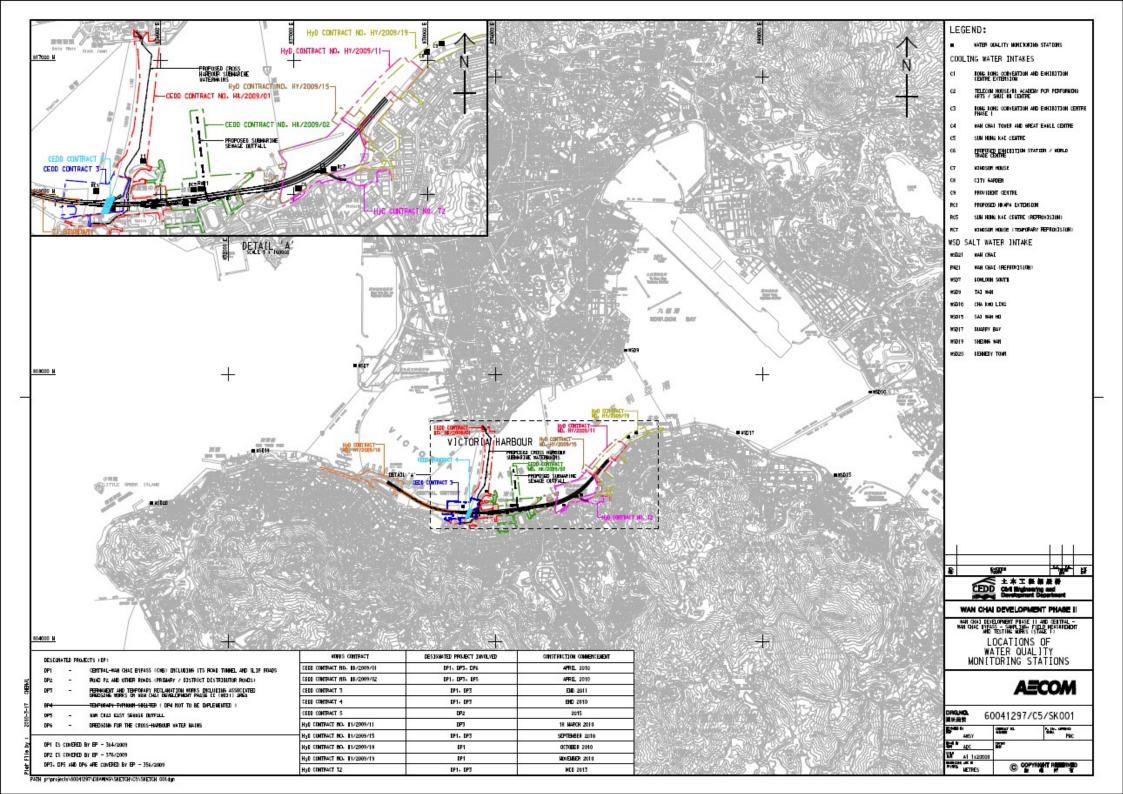
- 10.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.
- 10.0.2. The scheduled construction activities and the recommended mitigation measures for the coming month are listed in *Table 10.1*.

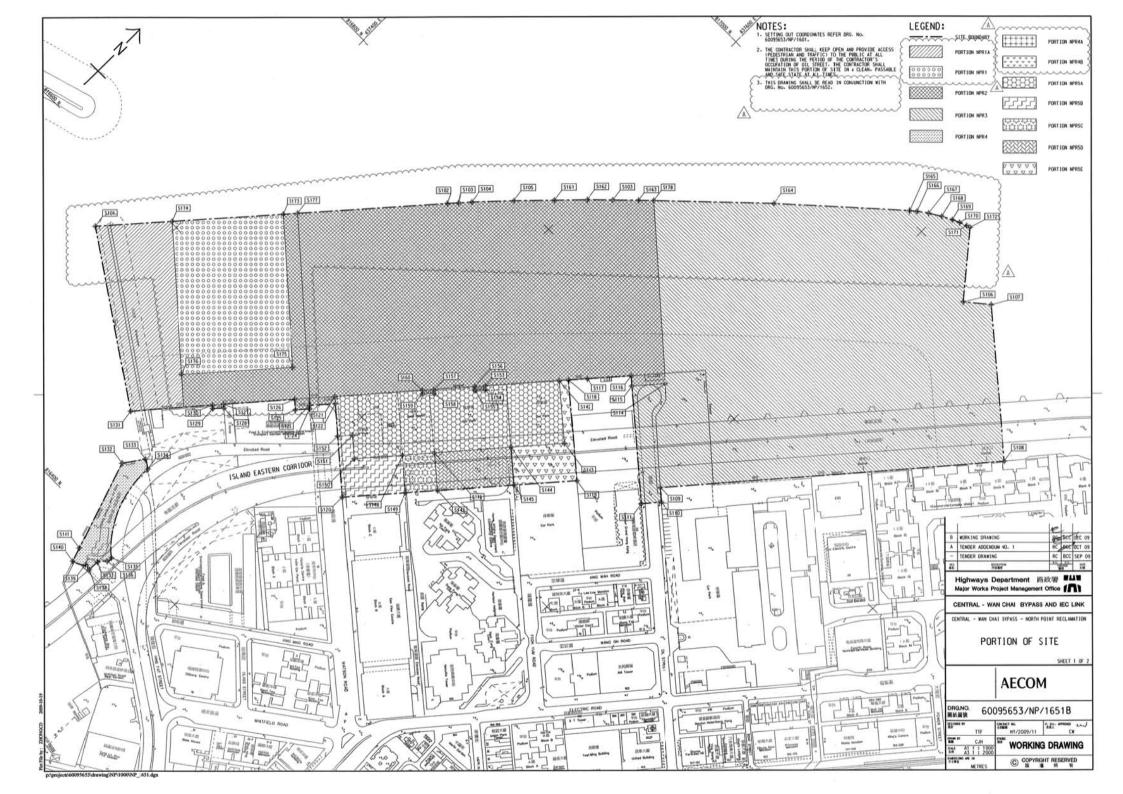
Table 10.1 Construction Activities and Recommended Mitigation Measures in Coming Reporting Month

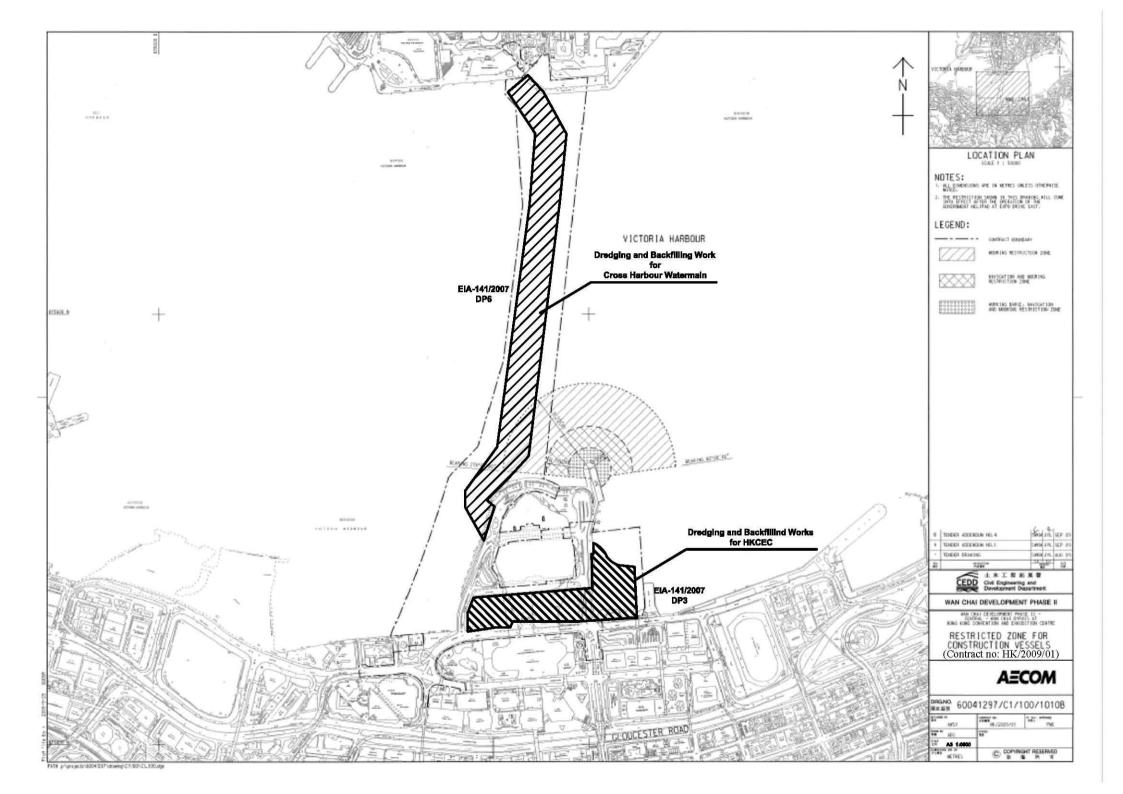
Contract No.	Key Construction Works	Recommended Mitigation Measures
HK/2009/02	Removal of TWCR4	Daily visual inspection of silt screen to ensure the integrity and condition of silt screen.
		Implement silt screen in accordance with the associated plans submitted to EPD.
		Ensure proper deployment of silt curtain around marine construction works area.
HY/2009/19	• Nil	• Nil
HK/2012/08	• Nil	• Nil
HY/2010/08	Seawall reinstatement	Daily visual inspection of silt screen to ensure the integrity and condition of silt screen.
		Implement silt screen in accordance with the associated plans submitted to EPD. Ensure proper deployment of silt curtain around marine construction works area.

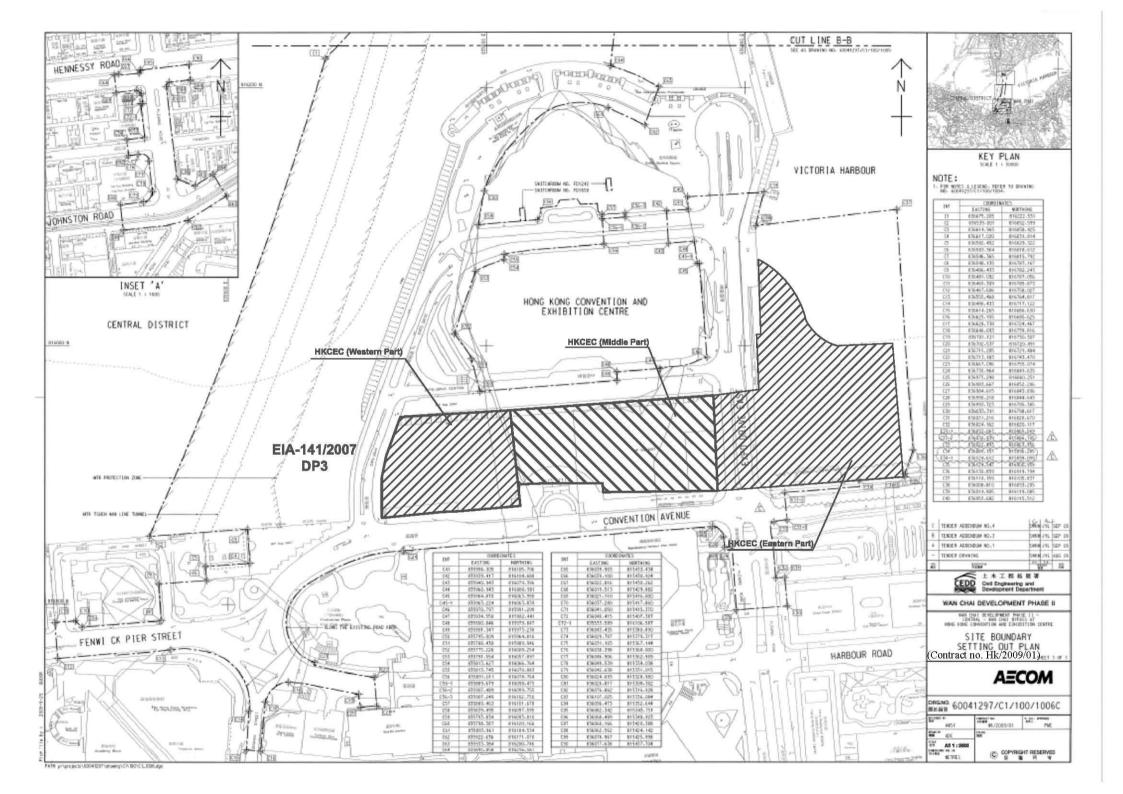
Figure 2.1

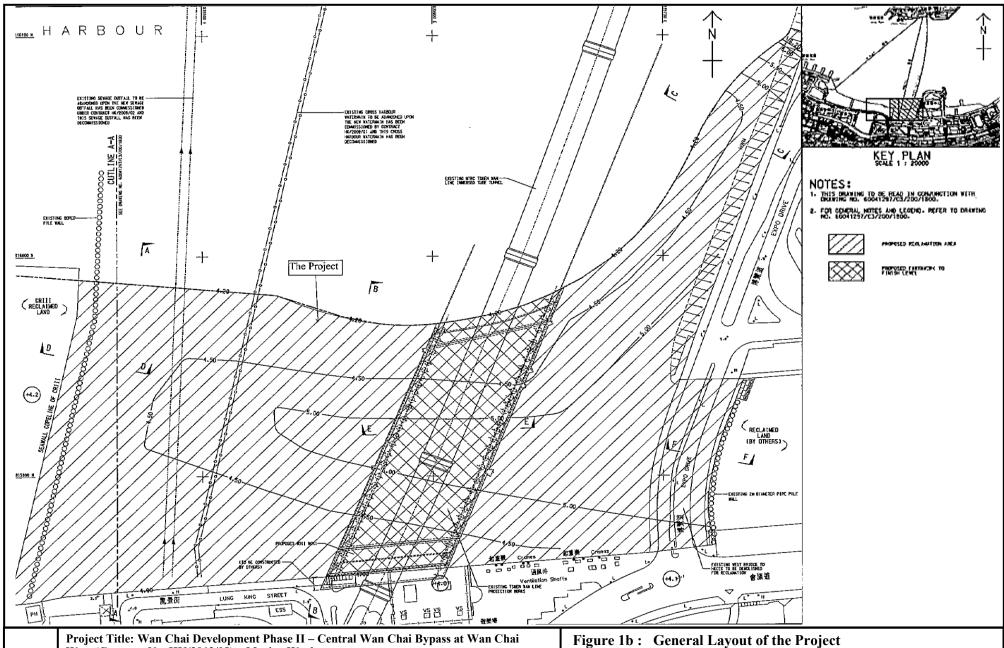
Project Layout











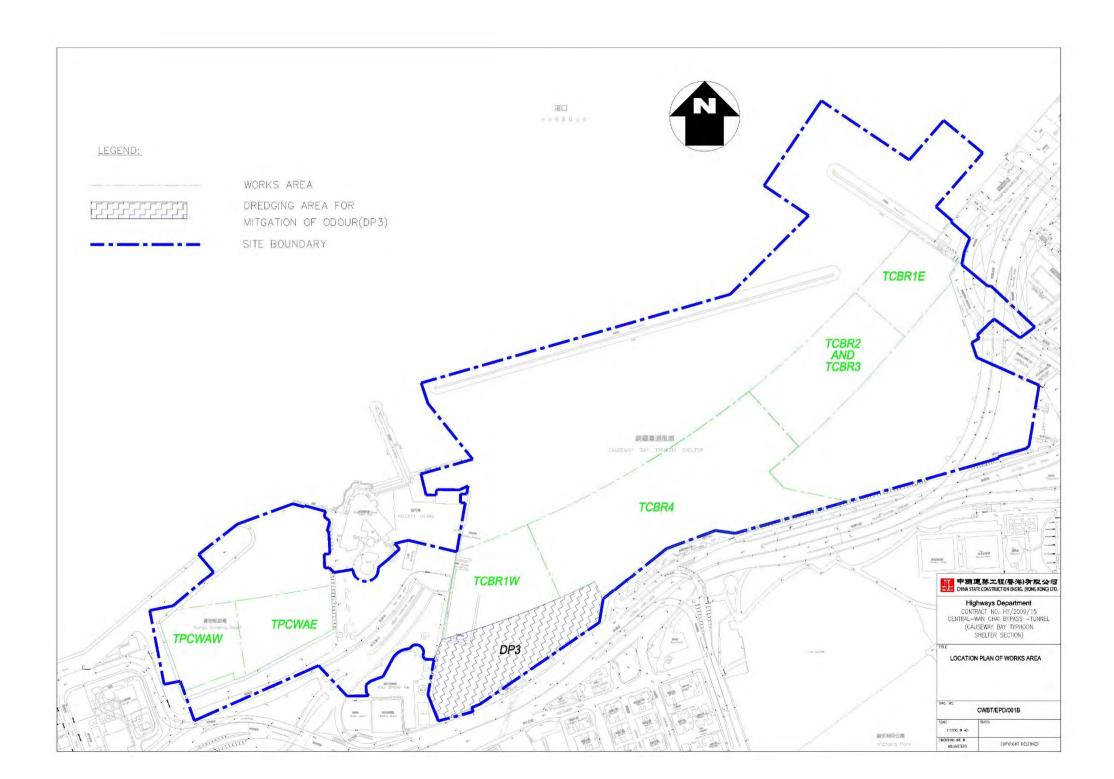


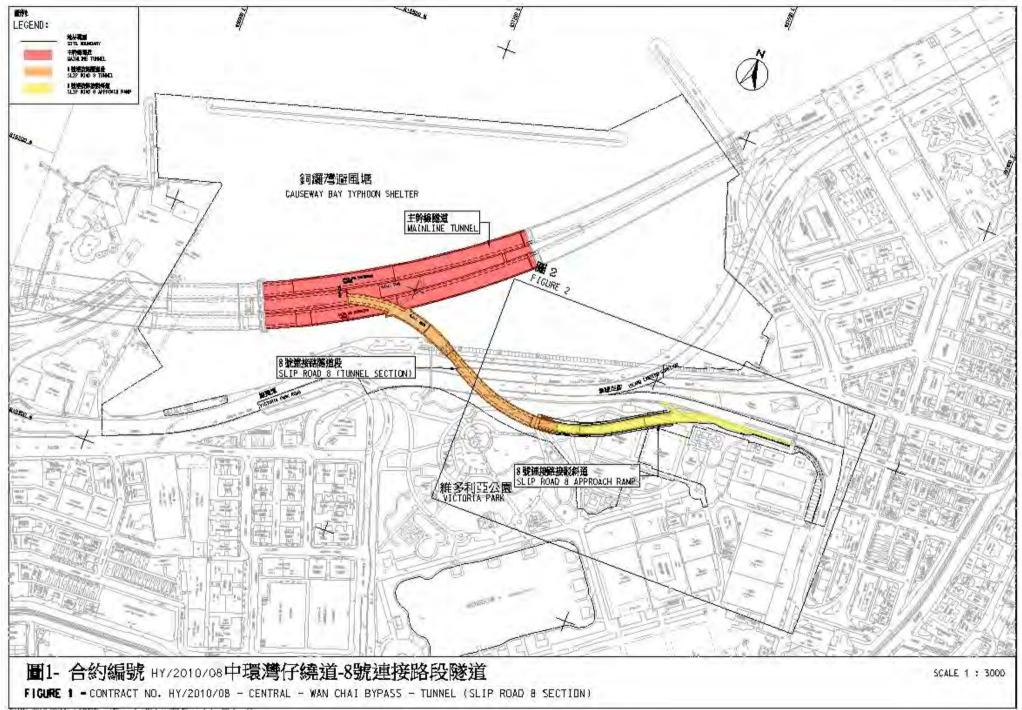
West (Contract No. HK/2012/08) – Marine Works

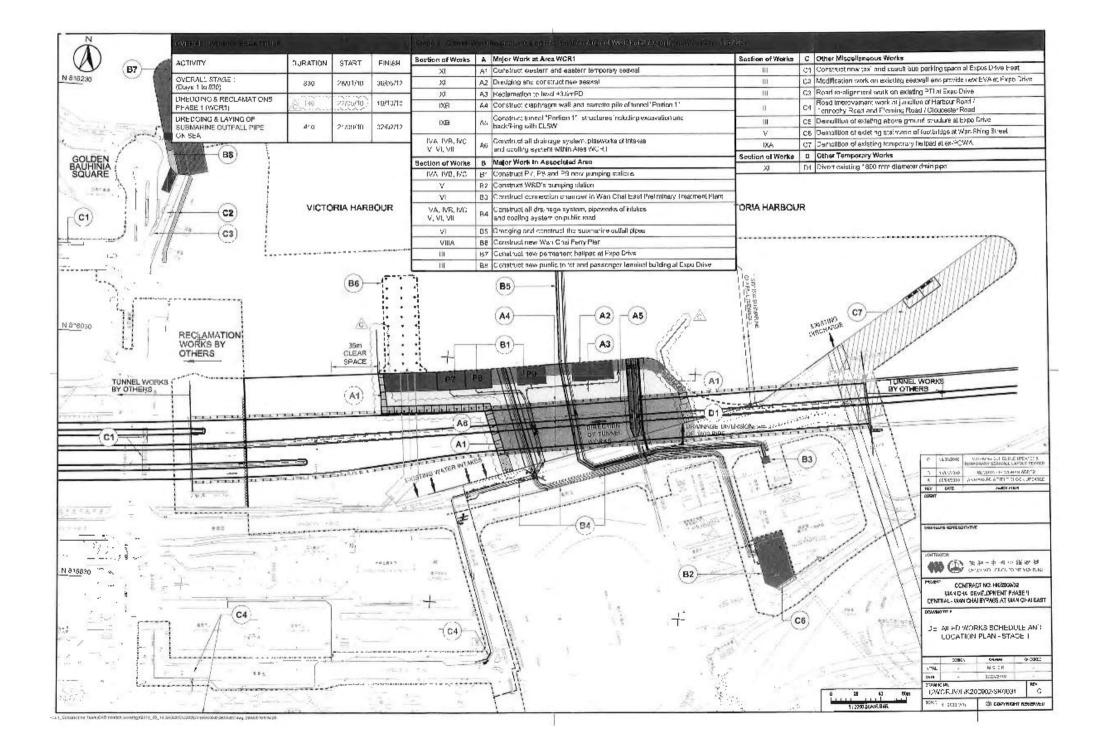
工程項目名稱: 灣仔發展計劃第二期 - 中環灣仔繞道-灣仔西段(合約編號:HK/2012/08)-海事工

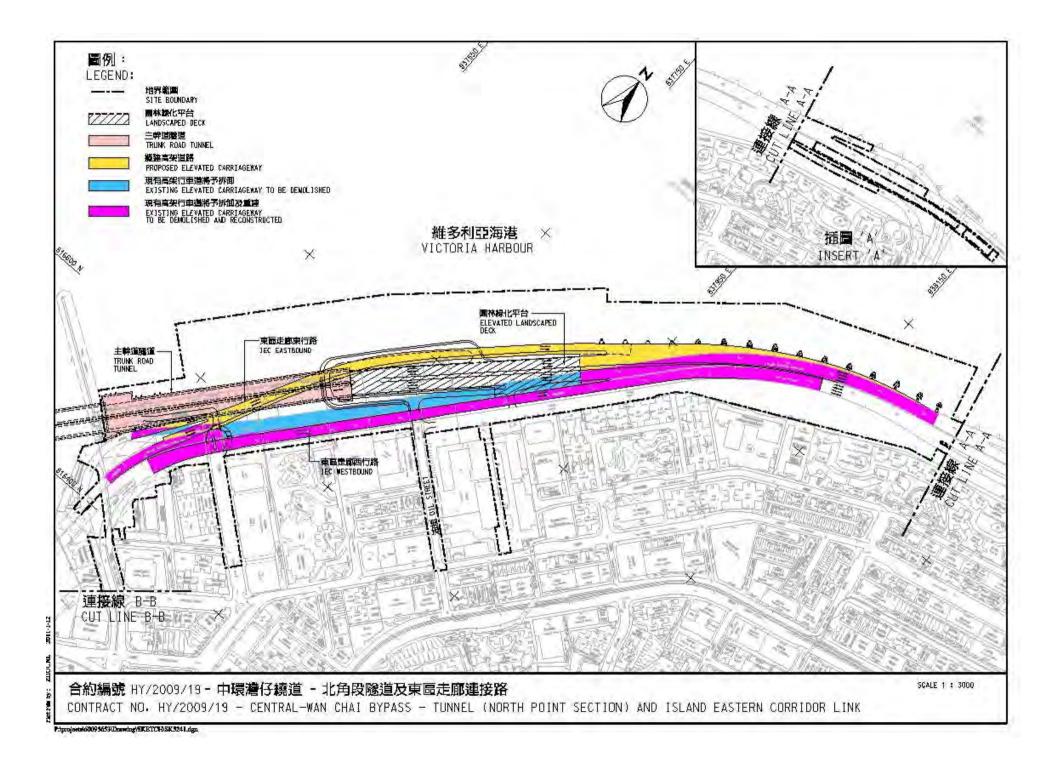
Environmental Permit No.: FEP-08/356/2009 環境許可證編號 : FEP-08/356/2009 1b: 工程項目佈局圖

(This figure was prepared based on Figure 1b of Application for Further Environmental Permit (Application No.: FEP 172/2016)) (本圖是根據申請新的環境許可證 (申請書編號 FEP-172/2016) 圖 1b 編製)





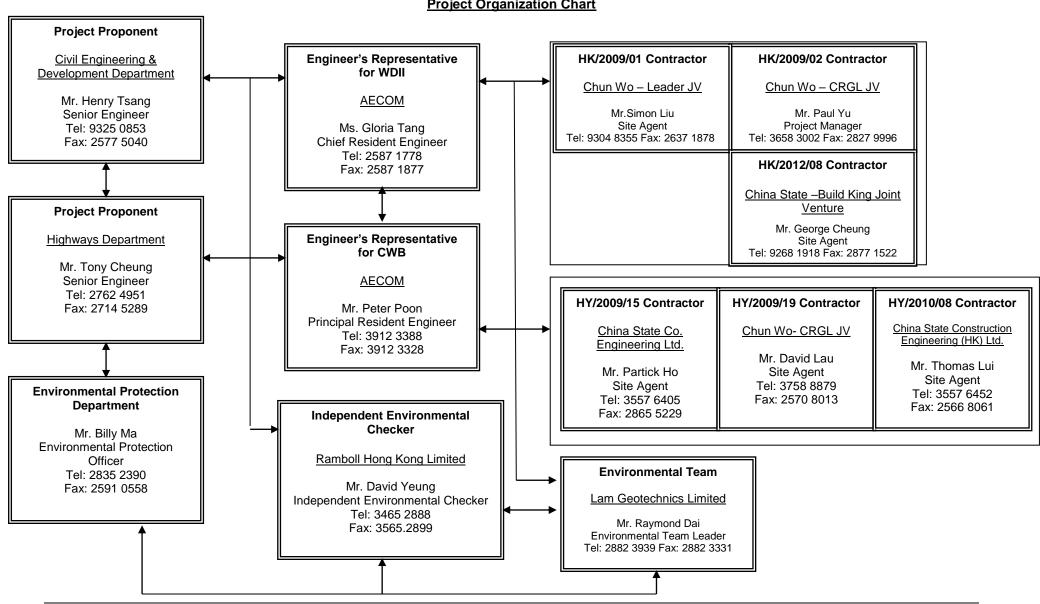




# Figure 2.2

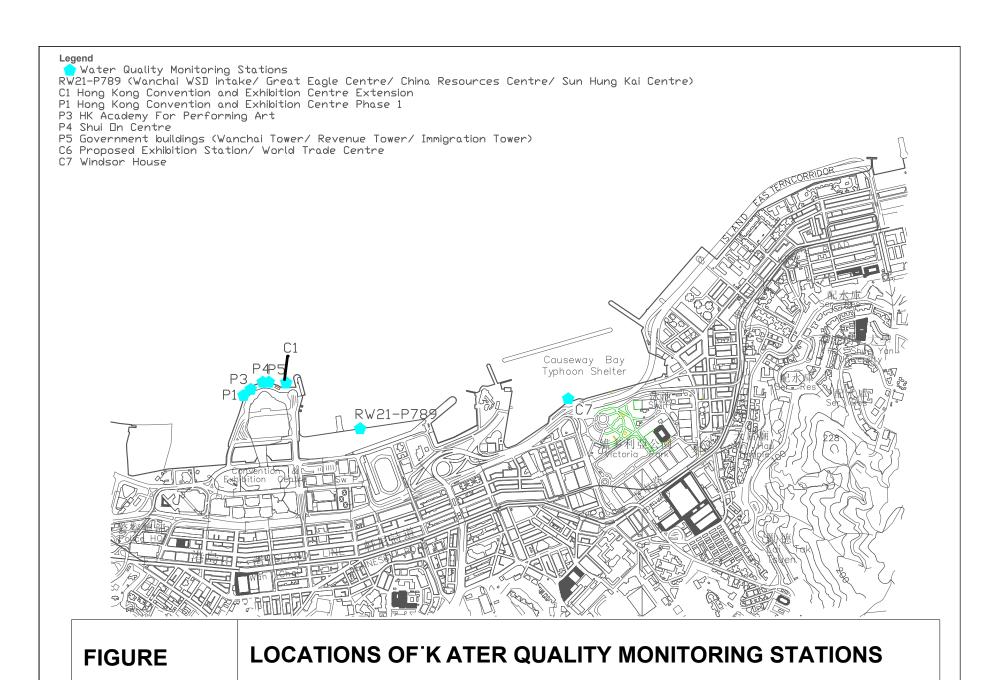
**Project Organization Chart** 

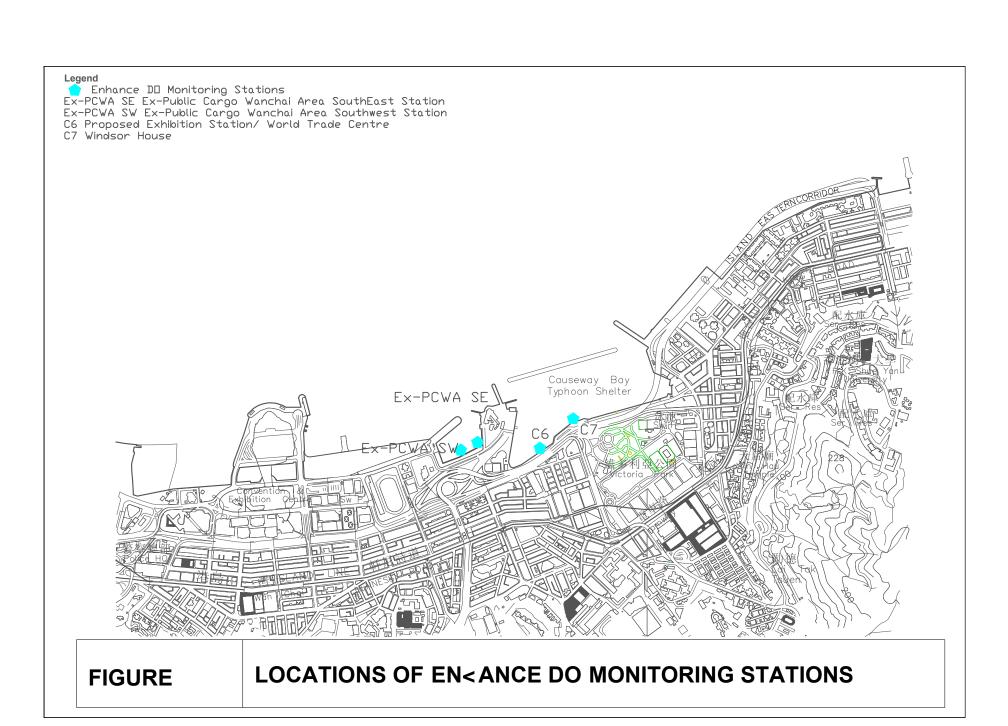
#### **Project Organization Chart**

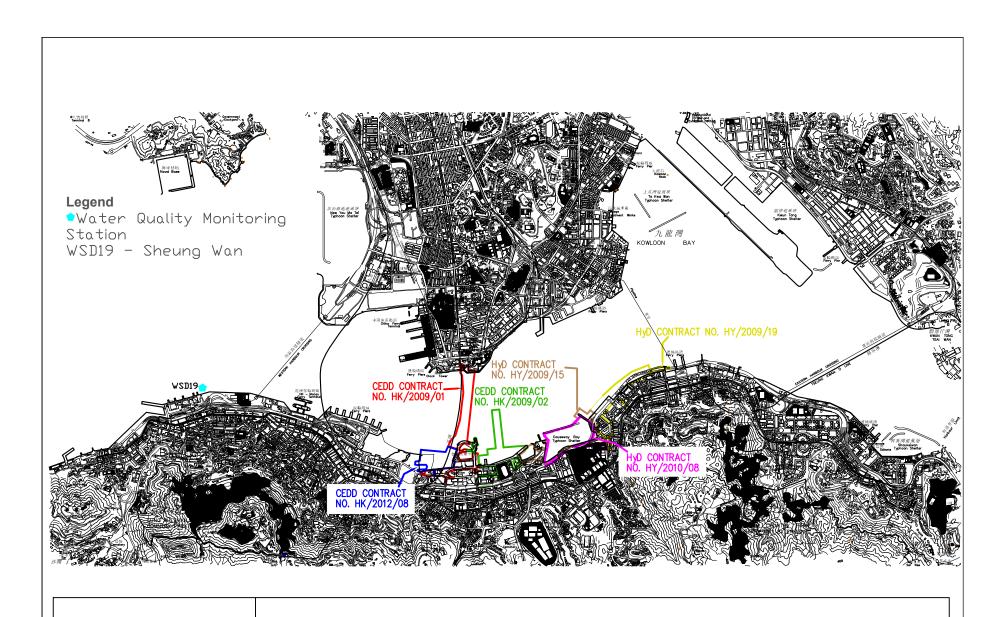


# Figure 4.1

Locations of Monitoring Stations







**FIGURE** 

LOCATIONS OF K ATER QUALITY MONITORING STATIONS

# Legend Noise Monitoring Station Air Monitoring Station M6-HK Baptist Church Henrietta Secondary School M5b-City Garden CMA1b-Harbour Grad Hotel Boundary Wall CMA2a-Causeway Bay Community Centre M4b-Victoria Centre M3a-Tung Lo Wan Fire Station CMA6a-WDII PRE Office CMA3a- CWB PRE Site office CMA5b-Pedestrian Plaza Causeway Bay Typhoon Shelter CMA4a-Society for the Prevention M2b-Noon Gun Area LOCATIONS OF AIR QUALITY AND NOISE MONITORING STATIONS

## Appendix 3.1

**Environmental Mitigation Implementation Schedule** 

Environmental Mitigation Implementation Schedule

#### Implementation Schedule for Air Quality Control

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In		entati ges*	on	Relevant Legislation
			Agent	Des	C	0	Dec	and Guidelines
Construction								
For the Who	9							·
S3.6.5	Four times a day watering of the work site with active operations.	Work site / during construction	Contractor		√			EIAO-TM
S3.8.1	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimise cumulative dust impacts.  • Strictly limit the truck speed on site to below 10 km per hour and water spraying to keep the haul roads in wet condition;  • Watering during excavation and material handling;  • Provision of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary; and  • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	Work site / during construction	Contractor		٧			

Appendix 3.1

Contract no. HK/2015/01

Wan Chai Development Phase II and Central-Wanchai Bypass

- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In		entati ges*	on	Relevant Legislation
ZIII Kei	Division in the state of the st	Docution / Thinning	Agent	Des	С	0	Dec	and Guidelines
		ı	1		,			
S3.5.6	For the dredging activities carried out in the vicinity of Police Officers' Club, the dredging operation will be restricted to only 1 small close grab dredger to minimise the odour impact during the dredging activity. The dredging rate should be reduced as much as practicable for the area in close proximity to the Police Officers' Club. The sediments contain highly contaminated mud which may be disposed with the use of geosynthetic containers (details shall refer to Section 6), grab dredger has to be used for filling up the geosynthetic containers on barges. the dredging rate for the removal of the sediments at the south-west corner of the typhoon shelter shall be slowed down or restricted to specific non-popular hours in weekdays when it is necessary during construction.	Corner of CBTS/implementation of harbour-front enhancement	CEDD <u>'</u>		V			EIAO-TM
S3.8.8	Carry out dredging at the corner of CBTS to remove the sediment and clean the slime attached on the CBTS shoreline seawall	Corner of CBTS & CBTS shoreline seawall/implementation of harbour-front enhancement	CEDD <sup>2</sup>		V			EIAO-TM
Operation I	Phase							
For the Who	ole Project		·					

 $<sup>^{\</sup>rm 1}$  CEDD will identify an implementation agent.

 $<sup>^{2}</sup>$  CEDD will identify an implementation agent.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	Stages			on	Relevant Legislation
			Agent	Des	C	О	Dec	and Guidelines
S3.10.2	Monthly (from July to September) monitoring of odour impacts, for a period of 5 years, is proposed during the operational phase of the Project to ascertain the effectiveness of the Enhancement Package over time, and to monitor any ongoing odour impacts at the ASRs.	Planned ASRs (CBTS Breakwater)/First 5-year period of operation phase	CEDD <sup>1</sup>			√		EIAO-TM
	CWB (Within the Project Boundary)	T	1	r			T	T
S3.6.53 – S3.6.54	The design parameters of the East and Central Ventilation Buildings as set in Tables 3.10 and 3.11	East and Central Ventilation Buildings / During operation of the Trunk Road	HyD			V		
S3.10.2	Air quality monitoring for the operation performance of the East Ventilation Building and associated East Vent Shaft will be conducted.	East Vent Shaft / During operation of the East Ventilation Building and associated East Vent Shaft	HyD			1		EIAO-TM

• Des - Design, C - Construction, O - Operation, and Dec - Decommissioning

Appendix 3.1

Contract no. HK/2015/01

Wan Chai Development Phase II and Central-Wanchai Bypass

- Sampling, Field Measurement and Testing Works (Stage 3)

Monthly EM&A Report

#### Table A13.2 Implementation Schedule for Noise Control

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	tion / Timing	Implementation Stages*				Relevant Legislation
	Ü	_		Des	C	О	Dec	and Guidelines	
Construction	n Phase								
For the Who	ole Project								

Wan Chai Development Phase II and Central-Wanchai Bypass

- Sampling	Field Measurement and	Teeting Worke	(Stane 3)
- Sampling,	rielu ivieasurement anu	TESTING WORKS	(Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In		entati ges*	on	Relevant Legislation				
			Agent	Des	C	o	Dec	and Guidelines				
S4.9.4	Good Site Practice:	Work Sites / During	Contractor		<b>√</b>			EIAO-TM, NCO				
	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.	Construction										
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.											
	Mobile plant, if any, shall be sited as far away from NSRs as possible.											
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.											
	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.											
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on- site construction activities.											
For DP1 -	CWB (Within the Project Boundary)											

Appendix 3.1

Contract no. HK/2015/01

Wan Chai Development Phase II and Central-Wanchai Bypass

- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In	nplem Sta	entati ges*	on	Relevant Legislation
EIA Kei	Environmental Protection Measures / Mitigation Measures	Location / Tilling	Agent	Des	С	0	Dec	and Guidelines
S4.8.5 S4.8.5	Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks:  Slip road 8 tunnel  Construction of diaphragm wall and substructures of the tunnel approach ramp  Excavation  Construction of slabs  Backfill  Demolition and construction of substructures for the IEC  Demolition works of existing piers and crossheads of the marine section of the existing IEC  Use of PME grouping for the following tasks:  At-grade road construction  Substructure for IECL connection	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
For DP2 -	WDII Major Roads (Road P2)							
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks:  Temporary road diversion Resurfacing At-grade roadwork	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
For DP3 - I	Reclamation Works							
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment for the following task:  Filling behind seawall Seawall construction	Work Sites / During Construction	Contractor		V			EIAO-TM, NCO

Monthly EM&A Report

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	Ir	nplem Sta	entati ges*	on	Relevant Legislation
		<b>_</b>	Agent	Des	C	O	Dec	and Guidelines
For DP5 –	Wan Chai East Sewage Outfall							
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment for the following tasks:  • Submarine pipelines (marine section)  Use of quiet powered mechanical equipment and movable noise	Work Sites / During Construction	Contractor		1			EIAO-TM, NCO
	barrier for the following tasks:  Installation of a new pipeline (land section)							
For DP6 -	Cross-Harbour Water Mains from Wan Chai to Tsim Sha Tsui							
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment for the following tasks:  • Submarine pipelines (marine section) •	Work Sites / During Construction	Contractor					EIAO-TM, NCO

Appendix 3.1

Contract no. HK/2015/01

Wan Chai Development Phase II and Central-Wanchai Bypass

- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation				on	Relevant Legislation
	Ü	0	Agent	Des	C	O	Dec	and Guidelines
0 " "								
Operation I								
For DP1 - 0	CWB (Within the Project Boundary)							

Wan Chai Development Phase II and Central-Wanchai Bypass

- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In	nplem Sta	entati ges*	ion	Relevant Legislation
	Ziviromatika 11000000 integration integration integration	Zocaron, Timing	Agent	Des	C	0	Dec	and Guidelines
S4.8.14 – S4.8.18	<ul> <li>For Existing NSRs</li> <li>about 235m length of noise semi-enclosure with transparent panel covering the westbound slip road from the IEC</li> <li>about 230m length of noise semi-enclosure with transparent panel covering the main carriageways (eastbound and westbound) of the CWB and IEC</li> <li>about 135m length of 5.5m high cantilevered noise barrier with 3m cantilever inclined at 45° with transparent panel on the eastbound slip road to the IEC</li> <li>about 95m length of 5.5m high cantilevered noise barrier with 1m cantilever inclined at 45° with transparent panel on the eastbound slip road to the IEC</li> <li>about 350m length of 3.5m high vertical noise barrier with transparent panel on the eastbound slip road to the IEC</li> <li>low noise road surfacing for the trunk road (except tunnel section and beneath the landscaped deck at the eastern portal area) with speed limit of 70 km/hour</li> <li>For Future/Planned NSRs</li> <li>about 265m length of noise semi-enclosure with transparent panel covering the westbound slip road from the IEC</li> </ul>	Near North Point / Before commencement of operation of road project  In between the Electric Centre (next to City Garden) and CDA(1) site / Before occupation of Planned NSRs in CDA and CDA(1) sites.	HyD	Des	V #		Dec	EIAO-TM

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EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	Implementation Stages*			on	Relevant Legislation
			Agent	Des	C	0	Dec	and Guidelines
	• The openable windows of the temple, if any, should be	Near Causeway Bay Fire	Project	1				
	orientated so as to avoid direct line of sight to the existing	Station / During detailed	Proponent for					
	Victoria Park Road as far as practicable.	design of the re-	the					
		provisioned Tin Hau	re-provisioned					
		Temple	Tin Hau Temple					

<sup>\*</sup> Des - Design, C - Construction, O - Operation, and Dec - Decommissioning

<sup>#</sup> Only the steel frame for this section of noise semi-enclosure would be erected in advance during the construction of the westbound slip road.

Table A13.3 Implementation Schedule for Water Quality Control

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location /	Implementation	In		entati ges*	on	Relevant Legislation
		Timing	Agent	Des	C	О	Dec	and Guidelines
Construction	on Phase							
For DP3 Boundary)	Reclamation Works, DP5 (Wan Chai East Sewage Outfall), DP6 (Cross-Harbo	our Water Mains	from Wan Chai to T	sim Sh	a Tsu	i), DP	1 – CW	B (within the Project
\$5.8	A phased reclamation approach is planned for the WDII. Containment of fill within each of the reclamation phases by seawalls is proposed, with the seawall constructed first (above high water mark) with filling carried out behind the completed seawalls. Any gaps that may need to be provided for marine access will be shielded by silt curtains to control sediment plume dispersion away from the site. Filling for seawall construction should be carried out behind the silt curtain	Work site / During the construction period	Contractor		V			EIAO-TM, WPCO
S5.8	Dredging shall be carried out by closed grab dredger for the following works:  Seawall construction in all the reclamation areas;  Construction of the CWB Tunnel  Construction of the proposed WSD water mains; and  Construction of the proposed Wan Chai East sewage outfall pipelines.	Work site / During the construction period	Contractor		1			EIAO-TM, WPCO
S5.8, Figure 5.3	Dredging for the Wan Chai East sewage outfall pipelines shall not be carried out concurrently with the following activities:  Dredging along the proposed cross-harbour water mains;  Dredging along the seawall in the Wan Chai Reclamation (WCR) zone (area between HKCEC Extension and PCWA).	Work site / During the construction period	Contractor		V			EIAO-TM, WPCO

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Pro	tection Measures / I	Mitigatio	n Measures		Location /	Implementation	In	nplem Sta	entati ges*	on	Relevant Legislation	
			_			Timing	Agent	Des	C	О	Dec	and Guidelines	
\$5.8		ind the temporary red I not be fully enclosed		s within the	Causeway Bay	Work site / During the construction period	Contractor		٧			EIAO-TM, WPCO	
S5.8	As a mitigation measure, to avoid the accumulation of water borne pollutants within the temporary embayment between CRIII and HKCEC1, an impermeable barrier, suspended from a floating boom on the water surface and extending down to the seabed, will be erected by the contractor before the HKCEC1 commences. The barrier will channel the stormwater discharge flows from Culvert L to the outside of the embayment. The contractor will maintain this barrier until the reclamation works in HKCEC2W are carried out and the new Culvert L extension is constructed.			Work site / During the construction period	Contractor		1			EIAO-TM, WPCO			
S5.8, Figure 5.3	than the maximum	ates in each of the m production rates state hout considering the	ed in the	table below.		Work site / During the construction period	Contractor		√			EIAO-TM, WPCO	
	Reclama	ation Area		m Dredging Rate  m³ per hour (for 16 hrs per day)	Maximum Dredging Rate (m³ per week)	redging Rate m³ per							
		Dredging along seawall or breakwater											
	North Point Shoreline Z Causeway Bay Shoreline Zone	one (NPR) TBW TCBR	6,000 1,500 6,000	375 94 375	42,000 10,500 42,000								
	PCWA Zone	•	5,000	313	35,000								

EIA Ref	Environmental Protection Measures / M	litigation Measures		Location /	Implementation	In	nplem Sta	entati ges*	on	Relevant Legislation
22.7.40.				Timing	Agent	Des	C	0	Dec	and Guidelines
	Wan Chai Shoreline Zone (WCR)  HKCEC Shoreline Zone HKCEC Stage 1 & 3 (HKCEC) HKCEC Stage 2  Cross Harbour Water Mains  Wan Chai East Submarine Sewage Pipeline  Note: 1,500 m³ per day shall be applied	6,000 375 1,500 94 6,000 375 1,500 94 1,500 94 ed for construction o	42,000 10,500 42,000 10,500 10,500 f the western							
S5.8, Figure 5.3	seawall of WCR1.  Dredging along the seawall at WCR1 1,500m <sup>3</sup> per day for construction of the proximity of the WSD intake), followed b western seawall (above high water mark much as possible from further dredging at	western seawall (which y partial seawall const ) to protect the adjace	ch is in close truction at the	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO
S5.8, Figure 5.3	For dredging within the Causeway Bay partially constructed to protect the nea dredging activities. For example, at To seawalls shall be constructed first (abo seawater intakes at the inner water would the remaining dredging activities along the	rby seawater intakes CBR1W, the southern we high water mark be protected from the	from further and eastern ) so that the	Work site / During the construction period	Contractor		<b>V</b>			EIAO-TM, WPCO
S5.8, Figure 5.3	Silt curtains shall be deployed around seawall dredging and seawall trench filli TCBR and NP.			Work site / During the construction period	Contractor		V			EIAO-TM, WPCO
S5.8, Figure 5.3	2009 with concurrent dredging activities at Cooling water		n Ho, Quarry South	Work site / During the construction period	Contractor		V			EIAO-TM, WPCO

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection	Measures / Mitigation Measures	Location /	Implementation	In		entati ges*	on	Relevant Legislation
			Timing	Agent	Des	C	o	Dec	and Guidelines
	TBW, NP and Water Mains Zone  Scenario 2B in late 2009/2010 with concurrent dredging activities at Sewage Pipelines Zone and TCBR.	Convention and Exhibition Centre Phase I, Telecom House / HK Academy for Performing Arts / Shun On Centre, Wan Chai Tower / Revenue Tower / Immigration Tower and Sun Hung Kai Centre WSD saltwater intakes at Sheung Wan, Wan Chai Cooling water intakes for Queensway Government Offices, Excelsior Hotel, World Trade Centre and Windsor House.							
	Scenario 2C in 2011 with concurrent dredging activities at HKCEC and TCBR.	WSD saltwater intakes at Sheung Wan and Reprovisioned WSD Wan Chai saltwater intake. Cooling water intakes for MTR South, Excelsior Hotel & World Trade Centre and reprovisioned Windsor House.							
\$5.8	Other mitigation measures include:  • mechanical grabs, if used, shall be designed and maintained to avoid spillage and sealed tightly while being lifted. For dredging of any contaminated mud, closed watertight grabs must be used;  • all vessels shall be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue	Work site / During the construction period	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)	
	propeller wash;  • all hopper barges and their bottom openings to	rated by turbulence from vessel movement or dredgers shall be fitted with tight fitting seals to o prevent leakage of material;							
		shall not cause foam, oil, grease, scum, litter or tter to be present on the water within the site or							
ı	dredged material into the	oppers shall be controlled to prevent splashing of ne surrounding water. Barges or hoppers shall not will cause the overflow of materials or polluted transportation; and							

Wan Chai Development Phase II and Central-Wanchai Bypass

- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	In		entati ges*	Relevant Legislation	
		Timing	Agent	Des	C	0	Dec	and Guidelines
	before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain.							
\$5.8	Silt screens are recommended to be deployed at the seawater intakes during the reclamation works period. Installation of silt screens at the seawater intake points may cause a potential for accumulation and trapping of pollutants, floating debris and refuse behind the silt screens and may lead to potential water quality deterioration at the seawater intake points. Major sources of pollutants and floating refuse include the runoff and storm water discharges from the nearby coastal areas. As a mitigation measure to avoid the pollutant and refuse entrapment problems and to ensure that the impact monitoring results are representative, regular maintenance of the silt screens and refuse collection shall be performed at the monitoring stations at regular intervals on a daily basis. The Contractor shall be responsible for keeping the water behind the silt screen free from floating rubbish and debris during the impact monitoring period.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location /	Implementation	Implementation Stages*				Relevant Legislation
		Timing	Agent	Des	C	О	Dec	and Guidelines
\$5.8	Dredging of contaminated mud is recommended as a mitigation measures for control of operational odour impact from the Causeway Bay typhoon shelter. In recognition of the potential impacts caused by dredging activities close to the seawater intakes, only I small close grab dredger shall be operated within the typhoon shelter (for the dredging to mitigate odour impact) at any time to minimize the potential impact. Double silt curtains shall be deployed to fully enclose the closed grab dredger during the dredging operation. In addition, an impermeable barrier, suspended from a floating boom on the water surface and extended down to the seabed, shall be erected to isolate the adjacent intakes as much as possible from dredging activities. For example, if dredging is to be carried out at the southwest corner of the typhoon shelter, physical barriers shall be erected to west of the cooling water intake for Excelsior Hotel so that the intake would be shielded from most of the SS generated from the dredging operation to the west of the intake. For area in close proximity of the cooling water intake point, the dredging rate shall be reduced as much as practicable. Site audit and water quality monitoring shall be carried out at the seawater intakes during the dredging operations. Daily monitoring of SS at the cooling water intake shall be carried out, and 24 hour monitoring of turbidity at the intakes shall be implemented during the dredging activities. If the monitoring results indicate that the dredging operation has caused significant changes in water quality conditions at the seawater intakes, appropriate actions shall be taken to stop the dredging and mitigation measures such as slowing down the dredging rate shall be implemented.	Causeway Bay typhoon shelter/Imple mentation of harbour-front enhancement.	CEDD <u>3</u>		1			WPCO

EIA Ref	Er	Environmental Protection Measures / Mitigation Measures	Location /	Implementation	In		entati ges*	on	Relevant Legislation
			Timing	Agent	Des	C	0	Dec	and Guidelines
For the Wh	ole l	Project							
S5.8	•	Construction Runoff and Drainage	Work site	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)
	•	use of sediment traps, wheel washing facilities for vehicles leaving the site, and adequate maintenance of drainage systems to prevent flooding and overflow;	/ During the constructi on period						wico (im-bss)
	•	Permanent drainage channels shall incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94;	•						
	•	a sediment tank constructed from pre-formed individual cells of approximately 6 - 8 m3 capacity can be used for settling ground water prior to disposal;							
	•	oil interceptors shall be provided in the drainage system for the tunnels and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor shall have a bypass to prevent flushing during periods of heavy rain;							
	•	precautions and actions to be taken when a rainstorm is imminent or forecast, and during or after rainstorms. Particular attention shall be paid to the control of any silty surface runoff during storm events;							
	•	on-site drainage system shall be installed prior to the commencement of other construction activities. Sediment traps shall be installed in order to minimise the sediment loading of the effluent prior to discharge;							
	•	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge shall be adequately designed for the controlled release of storm flows. All sediment control measures shall be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage shall be reinstated to its original condition when the construction work is finished or the temporary diversion is no longer							

 $<sup>^3</sup>$  CEDD will identify an implementation agent.

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location /	Implementation	In	ıplem Staş	entati ges*	on	Relevant Legislation
		Timing	Agent	Des	C	o	Dec	and Guidelines
	required.							
	All fuel tanks and store areas shall be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity.							
	Minimum distances of 100 m shall be maintained between the storm water discharges and the existing or planned WSD flushing water intakes during construction phase.							
S5.8	Sewage from Construction Work Force  Construction work force sewage discharges on site shall be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage shall be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Work site / During the construction period	Contractor		V			ProPECC PN 1/94; WPCO (TM-DSS)
S5.8	Floating Debris and Refuse  Collection and removal of floating refuse shall be performed at regular intervals on a daily basis. The contractor shall be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Work site and adjacent water / During the construction period.	Contractor		V			WPCO

Monthly EM&A Report

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location /	Implementation	In		entati ges*	on	Relevant Legislation
		Timing	Agent	Des	C	o	Dec	and Guidelines
\$5.8	Storm Water Discharges  Minimum distances of 100 m shall be maintained between the existing or planned stormwater discharges and the existing or planned WSD flushing water intakes.	Work site and adjacent water / During the design and construction period.	Contractor	1	√			WPCO
Operation 1	Phase							1
	(within the Project Boundary)							
S5.8	For the operation of CWB, a surface water drainage system would be provided to collect road runoff. The following operation stage mitigation measures are recommended to ensure road runoff would comply with the TM under the WPCO:  The drainage from tunnel sections shall be directed through petrol interceptors to remove oil and grease before being discharged to the nearby foul water manholes.	CWB/During design and operational period	HyD/TD <sup>3</sup>	V		√		WPCO
	Petrol interceptors shall be regularly cleaned and maintained in good working condition.							
	Oily contents of the petrol interceptors shall be properly handled and disposed of, in compliance with the requirements of the Waste Disposal Ordinance.							
	Sewage arising from ancillary facilities of CWB (for examples, car park,							

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EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	In		entatio	on	Relevant Legislation and Guidelines
				Des	C	0	Dec	
	control room, ventilation and administration buildings and tunnel portals) shall be connected to public sewerage system. Sufficient capacity in public sewerage shall be made available to the proposed facilities.  • Road drainage shall also be provided with adequately designed silt trap to minimize discharge of silty runoff.  • The design of the operational stage mitigation measures for CWB shall take into account the guidelines published in ProPECC PN 5/93 "Drainage Plans subject to Comment by the EPD." All operational discharges from the CWB into drainage or sewerage systems are required to be licensed by EPD under the WPCO.							

<sup>\*</sup> Des - Design, C - Construction, O - Operation, and Dec - Decommissioning

 $<sup>^{3}\,\</sup>mathrm{if}$  employ Management, Operation and Maintenance (MOM) Contract

Table A13.4 Implementation Schedule for Waste Management

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	Stages				Relevant Legislation and Guidelines
			Agent	Des	C	О	Dec	and Guidelines
Construction	on Phase							
For DP3 -	Reclamation Works							
	Marine Sediments	Work site / During the construction period	Contractor		<b>V</b>			ETWB TCW No. 34/2002
S6.7.2	The dredged marine sediments would be loaded onto barges, transported to and disposed of at the designated disposal sites at South of Cheung Chau, East of Ninepin, East of Tung Lung Chau, South of Tsing Yi or East of Sha Chau to be allocated by the MFC depending on their level of contamination or at other disposal sites after consultation with the MFC and EPD. In accordance with the ETWB TCW No. 34/2002, the contaminated material must be dredged and transported with great care. The mitigation measures recommended in Section 5 of the EIA Report shall be incorporated. The dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the Type 2 confined marine disposal contaminated mud pit.							
S6.7.3	Based on the biological screening results, the Category H (>10xLCEL) sediment which failed the biological testing would require Type 3 special disposal. The volume of Category H sediment from the Causeway Bay typhoon shelter which would require special disposal arrangements is estimated to be approximately 0.05 Mm³. A feasible containment method is proposed whereby the dredged sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal.							

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation
			Agent	Des	C	o	Dec	and Guidelines
S6.7.5	It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, at least 3 months prior to the dredging contract being tendered							
S6.7.6	During transportation and disposal of the dredged marine sediments requiring Type 1 and Type 2 disposal, the following measures shall be taken to minimise potential impacts on water quality:  Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.							

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EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In	nplem Sta	entati ges*	on	Relevant Legislation and Guidelines
		g	Agent	Des	C	o	Dec	
	Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.      Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.							
S6.6.12	Floating Refuse During the construction phase, the project proponent's contractor will be responsible for the collection of any refuse within their works area. Floating booms will be provided on the water surface to confine the refuse from the working barges as well as to avoid the accumulation of pollutants within temporary embayment as mentioned in Table 13.3.	Work site / During the construction period	Contractor		√			

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EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In		entati ges*	on	Relevant Legislation
	8		Agent	Des	Des C O Dec	and Guidelines		
86.7.7	Recommendations for good site practices during the construction activities include:  nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in proper waste management and chemical waste handling procedures; provision of sufficient waste disposal points and regular collection for disposal; appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Work site / During the construction period	Contractor		1			Waste Disposal Ordinance (Cap.354)

Monthly EM&A Report

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In		entati ges*	on	Relevant Legislation
		g	Agent	Des	C	О	Dec	and Guidelines
S6.7.8	Waste Reduction Measures  Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:  • segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;  • to encourage collection of aluminium cans, PET bottles and paper, separate labelled bins shall be provided to segregate these wastes from other general refuse generated by the work force;  • any unused chemicals or those with remaining functional capacity shall be recycled;  • use of reusable non-timber formwork, such as in casting the tunnel box sections, to reduce the amount of C&D material.  • prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;  • proper storage and site practices to minimise the potential for damage or contamination of construction materials; and  • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	Work site / During planning and design stage, and construction stage	Contractor	Jes V			Dec	
İ	generation of waste.							

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EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	Ir		entati ges*	on	Relevant Legislation and Guidelines
			Agent	Des	C	О	Dec	and Guidelines
S6.7.10	General Refuse  General refuse shall be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D material.  A collection area shall be provided where wastes can be stored and loaded prior to removal from site. An enclosed and covered area is recommended to reduce the occurrence of 'wind blow' light material.	Work site / During the construction period	Contractor		V			Public Health and Municipal Services Ordinance (Cap. 132)
\$6.7.11	Chemical Wastes  After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) shall be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals shall be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During the construction period	Contractor		V			Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
\$6.7.12	Construction and Demolition Material  C&D material shall be sorted on-site into inert C&D material (that is, public fill) and C&D waste. All the suitable inert C&D material shall be broken down to 250 mm in size for reuse as public fill in the WDII reclamation. C&D waste, such as wood, glass, plastic, steel and other metals shall be reused or recycled and, as a last resort, disposed of to landfill. A suitable area shall be designated to facilitate the sorting process and a temporary stockpiling area will be required for the separated materials.	Work site / During the construction period	Contractor		1			ETWB TCW No. 33/2002, 31/2004, 19/2005

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In		entati ges*	on	Relevant Legislation
22.7 110.7	23. To office and 12 constants of 12 constants	200mion, 1mmg	Agent	Des	C	О	Dec	and Guidelines
S6.7.13	In order to monitor the disposal of public fill and C&D waste at public filling facilities and landfills, respectively, and to control fly tipping, a trip-ticket system shall be included as one of the contractual requirements and implemented by the Environmental Team undertaking the environmental monitoring and audit work. An Independent Environment Checker shall be responsible for auditing the results of the system.	Work site / During the construction period	Contractor and Independent Environmental Checker		V			ETWB TCW No. 31/2004
S6.7.14	Bentonite Slurry  The disposal of residual used bentonite slurry shall follow the good practice guidelines stated in ProPECC PN 1/94  "Construction Site Drainage" and listed as follows:  If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.  If the used bentonite slurry is intended to be disposed of through the public drainage system, it shall be treated to the respective effluent standards applicable to foul sewers,	Work site / During the construction period	Contractor		<b>V</b>			ProPECC PN 1/94
	storm drains or the receiving waters as set out in the Technical Memorandum of Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.  • If the used bentonite slurry is intended to be disposed to public fill reception facilities, it will be mixed with dry soil on site before disposal.							

<sup>\*</sup> Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

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Table A13.5 Implementation Schedule for Land Contamination

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In		entati ges*	on	Relevant Legislation
22.7 2.07	23. To office and 12 consulted 7 to the grander of	Document Timing	Agent	Des	C	0	Dec	and Guidelines
Construction	v== =							
For the Wh	ole Project							
S.12.6	The contaminated site shall be cleaned up before commencement of site clearance and construction work at the concerned area which may disturb the ground.	A King Marine / Before commencement of construction activities at A King Marine.	Project proponent for the re- provisioned Tin Hau Temple	<b>V</b>				"Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops" published by EPD, HKSAR  EPD ProPECC Note No. 3/94
S7.10	During soil remediation works, the Contractor for the excavation works shall take note of the following points for excavation:  • Excavation profiles must be properly designed and executed;  • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means;  • Quantities of soil to be excavated must be estimated;  • It maybe necessary to split quantities of soil according to soil type, degree and nature of contamination.  • Temporary storage of soil at intermediate depot or on-site	A King Marine / During soil remediation works	Contractor	<b>V</b>				Air Pollution Control Ordinance Noise Control Ordinance Waste Disposal Ordinance Waste Disposal (Chemical Waste) (General) Regulation

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EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	In	nplem Sta	entati ges*	on	Relevant Legislation and Guidelines
				Des	C	o	Dec	
	maybe required. The storage site shall include protection facilities for leaching into the ground. eg. Liner maybe required.							
	Supply of suitable clean backfill materials is needed after excavation.     Care must be taken of existing buildings and utilities.     Precautions must be taken to control of ground settlement     Speed controls for vehicles shall be imposed on dusty site areas.     Vehicle wheel and body washing facilities at the site's exit points shall be established and used.  The following environmental mitigation measures shall be strictly followed during the operation and/or maintenance of the CS/S facilities:							Water Pollution Control Ordinance

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In		entati ges*	on	Relevant Legislation
		g	Agent	Des	C	O	Dec	and Guidelines
	<ul> <li>Air Quality Mitigation Measures</li> <li>The loading, unloading, handling, transfer or storage of cement shall be carried out in an enclosed system.</li> <li>The loading, unloading, handling, transfer or storage of other materials which may generate airborne dust emissions such as untreated soil and oversize materials sorted out from the screening plant and stabilized soil stockpiled in the designated handling area, shall be carried out in such a manner to prevent or minimise dust emissions. These materials shall be adequately wetted prior to and during the loading, unloading and handling operations.</li> <li>All practicable measures, including speed controls for vehicles, shall be taken to prevent or minimize the dust emission caused by vehicle movement.</li> <li>Tarpaulin or low permeable sheet shall be put on dusty vehicle loads transported between site locations.</li> </ul>							
	Noise Mitigation Measures     The mixing facilities shall be sited as far as practicable to the nearby noise sensitive receivers.     Simultaneous operation of mixing facilities and other equipment shall be avoided.     Mixing process and other associated material handling activities shall be properly scheduled to minimise potential cumulative noise impact on the nearby noise sensitive receivers.     Construction Noise Permit shall be applied for the operation of powered mechanical equipment during restricted hours (if any).							

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	Ir	nplem Sta	entati ges*	on	Relevant Legislation and Guidelines
	8		Agent	Des	C	0	Dec	
	Water Quality Mitigation Measures     Stockpile of untreated soil shall be covered as far as practicable to prevent the contaminated material from leaching out. The leachate shall be discharged following the requirements of WPCO.      Waste Mitigation Measures     Treated oversize materials will be used as filling material for backfilling within the site. Sorted materials of size smaller than 5 cm will be collected and transferred to the mixing plant for further decontamination treatment.     Stabilized soils shall be broken into suitable size for backfilling or reuse on site.     A high standard of housekeeping shall be maintained							
	within the mixing plant area.  If necessary, there shall be clear and separated areas for stockpiling of untreated and treated materials.							

<sup>\*</sup> Des - Design, C - Construction, O - Operation, and Dec - Decommissioning

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#### Table A13.6 Implementation Schedule for Marine Ecology

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	In	nplem Sta	entati ges*	ion	Relevant Legislation
22.7.40.		Document, Timing		Des	C	0	Dec	and Guidelines
Construction	on Phase							
For the Wh	ole Project - Schedule 3 DP							
S.9.7.2	Alternative design of the Trunk Road constructed in tunnel shall be adopted to avoid permanent reclamation in CBTS and ex-PWCA Basin.	-	CEDD/HyD	1				EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.
For DP3 -	Reclamation Works							
S.9.7.3	Translocation of those potentially affected coral colonies to the nearby suitable habitats such as Junk Bay is recommended. A detailed translocation plan (including translocation methodology, monitoring of transplanted corals, etc.) should be drafted and approval by AFCD during the detailed design stage of the Project.	Ex-PCWA Basin and along seawall next to a public pier which is about 250 m away from the CBTS	CEDD/HyD	√				EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	In	nplem Sta	entatio ges*	on	Relevant Legislation and Guidelines
	Zininginia Troccioi Measures / Mangaron Measures	Document, 1mmig	Agent	Des	C	0	Dec	
S.9.7.4	During dredging and filling operations, a number of mitigation measures to control water quality shall be adopted to confine sediment plume within reclamation area and protect marine fauna in proximity to the reclamation. The mitigation measures include the following:  • Installation of silt curtains during dredging activities  • Use of tightly-closed grab dredger  • Reduction of dredging rate  • Control of grab descending speed  • Construction of leading edges of seawall in the early stages of the reclamation works	Work site / during construction phase	Contractor		√ ·			EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.
	Adoption of multiple-phase construction schedule							

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EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation	Ir	nplem Sta	entati ges*	on	Relevant Legislation
22.7.10.7	Zarra omnerana a rottomon racustato y ranaganton racustato	20cavion, 1mmg	Agent	Des	C	О	Dec	and Guidelines
S.9.7.6	To minimize potential disturbance impacts on the foraging ardeid population in the CBTS, particularly in the area near the A King Shipyard, appropriate mitigation measures shall be adopted particularly during the construction phase. The following measures are recommended:  • Use of Quiet Mechanical Plant during the construction phase shall be adopted wherever possible.  • Adoption of multiple-phase construction schedule.  • General measures to reduce noise generated during the construction phase (see noise impact assessment) shall be	Work site / during construction phase	Contractor		√			EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.
S.9.7.7	effectively implemented.  Seawalls shall be constructed in advance around the reclamation areas within the area of the CBTS to screen adjacent feeding ground from construction phase activities, reduce noise disturbance to the associated seabirds and also to restrict access to this habitat adjacent to works areas by ship traffic.	Work site / during construction phase	Contractor		<b>√</b>			EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.
S.9.7.8	Loss of artificial seawall habitats shall be reinstated by the construction of about 1 km vertical wave absorbing seawall along the coastlines of the new reclamation around the HKCEC and at North Point. The new seawalls are expected to provide large area of hard substrata for settlement and recruitment of intertidal fauna similar to those previously recorded from existing intertidal habitats.	Work site / during construction phase	Contractor		V			EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.

<sup>\*</sup>Des - Design, C - Construction, O - Operation, and Dec - Decommissioning

Table A13.7 Implementation Schedule for Landscape and Visual

EIA Ref	Envir	onmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Ir	nplem Sta	entati ges*	ion	Relevant Legislation and Guidelines
					Des	C	O	Dec	
Construction	Phase								
For the Whole	Project								
Table 10.5	CM1	Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Work site / During Construction Phase	Contractor	√	1			EIAO TM
Table 10.5	CM2	Existing trees to be retained on site shall be carefully protected during construction.	Work site / During Construction Phase	Contractor	<b>V</b>	<b>√</b>			EIAO TM
Table 10.5	СМЗ	Trees unavoidably affected by the works shall be transplanted where practical.	Work site / During Construction Phase	Contractor	<b>V</b>	<b>√</b>			EIAO TM
Table 10.5	CM4	Compensatory tree planting shall be provided to compensate for felled trees.	Work site / During Construction Phase	Contractor	<b>V</b>	<b>√</b>			EIAO TM
Table 10.5	CM5	Control of night-time lighting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Table 10.5	CM6	Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		√			EIAO TM
For DP1 - CV	B (With	in the Project Boundary)	•						
Table 10.5	CM1	Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Work site / During Construction Phase	Contractor		V			EIAO TM
Table 10.5	CM2	Existing trees to be retained on site shall be carefully protected during construction.	Work site / During Construction Phase	Contractor	<b>V</b>	<b>V</b>			EIAO TM
Table 10.5	CM3	Trees unavoidably affected by the works shall be transplanted where practical.	Work site / During Construction Phase	Contractor	<b>V</b>	1			EIAO TM
Table 10.5	CM4	Compensatory tree planting shall be provided to compensate for felled trees.	Work site / During Construction Phase	Contractor	<b>V</b>	1			EIAO TM
Table 10.5	CM5	Control of night-time lighting.	Work site / During Construction Phase	Contractor		1			EIAO TM

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EIA Ref	Envir	onmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	In	nplem Sta	entati ges*	ion	Relevant Legislation and Guidelines
					Des	C	О	Dec	
Table 10.5	CM6	Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		V			EIAO TM
For DP2 - WD	II Majo	r Roads (Road P2)							
Table 10.5	CM1	Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Work site / During Construction Phase	Contractor	1	1			EIAO TM
Table 10.5	CM2	Existing trees to be retained on site shall be carefully protected during construction.	Work site / During Construction Phase	Contractor	√	V			EIAO TM
Table 10.5	CM3	Trees unavoidably affected by the works shall be transplanted where practical.	Work site / During Construction Phase	Contractor	1	V			EIAO TM
Table 10.5	CM4	Compensatory tree planting shall be provided to compensate for felled trees.	Work site / During Construction Phase	Contractor	1	<b>√</b>			EIAO TM
Table 10.5	CM5	Control of night-time lighting.	Work site / During Construction Phase	Contractor		V			EIAO TM
Table 10.5	CM6	Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		V			EIAO TM
For DP3 - Rec	lamatio	n Works							
Table 10.5	CM5	Control of night-time lighting.	Work site / During Construction Phase	Contractor		V			EIAO TM
Table 10.5	CM6	Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		V			EIAO TM
For DP5 - Wa	n Chai I	East Sewage Outfall							
Refer to EIA- 058/2001 Table 10.13	CM2	Minimisation of works areas.	Work site / During Construction Phase	Contractor		1			EIAO TM
Refer to EIA- 058/2001 Table 10.13	CM3	Erection of decorative hoardings.	Work site / During Construction Phase	Contractor		1			EIAO TM

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref	Envir	onmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	In	nplem Sta	entati ges*	on	Relevant Legislation and Guidelines
					Des	C	О	Dec	
Refer to EIA- 058/2001 Table 10.13	CM4	Control night-time lighting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Refer to EIA- 058/2001	CM5	Minimisation of disruption to public by effective programming of the works.	Work site / During Construction Phase	Contractor		√			EIAO TM
Table 10.13		programming of the works.	Construction I hase						
For DP6 - Cro	ss-Harb	our Water Mains from Wan Chai to Tsim Sha Tsui					•		
Refer to EIA- 058/2001 Table 10.13	CM2	Minimisation of works areas.	Work site / During Construction Phase	Contractor		V			EIAO TM
Refer to EIA- 058/2001 Table 10.13	CM3	Erection of decorative hoardings.	Work site / During Construction Phase	Contractor		1			EIAO TM
Refer to EIA- 058/2001 Table 10.13	CM4	Control night-time lighting.	Work site / During Construction Phase	Contractor		V			EIAO TM
Refer to EIA- 058/2001 Table 10.13	CM5	Minimisation of disruption to public by effective programming of the works.	Work site / During Construction Phase	Contractor		V			EIAO TM
Operation Pha	se								
	Project	- Schedule 3 DP							
Table 10.6, Figure 10.5.1- 10.5.5	OM1	Aesthetic design of buildings and road-related structures, including viaducts, vent buildings, subways, footbridges and noise barriers and enclosure.	Work site / During Design Stage and Operation Phases	CEDD/HyD	1	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1- 10.5.5	OM2	Shrub and Climbing Plants to soften proposed structures.	Work site / During Design Stage and Operation Phases	CEDD/HyD	<b>V</b>	V	V		ETWB TCW 2/2004

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- Sampling, Field Measurement and Testing Works (Stage 3)

EIA Ref Env	Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Stages*				Relevant Legislation and Guidelines
					Des	C	0	Dec	
Table 10.6,	OM3	Buffer Tree and Shrub Planting to screen proposed roads	Work site / During	CEDD/HyD/	√	√	<b>√</b>		ETWB TCW 2/2004
Figure 10.5.1-		and associated structures.	Design Stage and						
10.5.5			Operation Phases						
Table 10.6,	OM4	Aesthetic design of proposed waterfront promenade.	Work site / During	$CEDD_{\underline{}}^{4}$	√	√			ETWB TCW 2/2004
Figure 10.5.1-			Design Stage and						
10.5.5			Operation Phases						
Table 10.6,	OM5	Aesthetic streetscape design.	Work site / During	CEDD/HyD	√	√	√		ETWB TCW 2/2004
Figure 10.5.1-		. 0	Design Stage and						
10.5.5			Operation Phases						
Table 10.6,	OM6	Aesthetic design of roadside amenity areas.	Work site / During	CEDD/HyD	√	√	√		ETWB TCW 2/2004
Figure 10.5.1-			Design Stage and	-					
10.5.5			Operation Phases						
For DP1 - CWI	B (Withi	n the Project Boundary)							
Table 10.6,	OM1	Aesthetic design of buildings and road-related structures,	Work site / During	HyD	√	√	<b>√</b>		ETWB TCW 2/2004
Figure 10.5.1-		including viaducts, vent buildings, subways, footbridges	Design Stage and						
10.5.5		and noise barriers and enclosure.	Operation Phases						
Table 10.6,	OM2	Shrub and Climbing Plants to soften proposed structures	Work site / During	HyD		√			ETWB TCW 2/2004
Figure 10.5.1-			Design Stage and						
10.5.5			Operation Phases						
Table 10.6,	OM3	Buffer Tree and Shrub Planting to screen proposed roads	Work site / During	HyD	<b>√</b>	√	<b>√</b>		ETWB TCW 2/2004
Figure 10.5.1-		and associated structures.	Design Stage and						
10.5.5			Operation Phases						
Table 10.6,	OM5	Aesthetic streetscape design.	Work site / During	HyD	√	√	<b>√</b>		ETWB TCW 2/2004
Figure 10.5.1-			Design Stage and						
10.5.5			Operation Phases						
Table 10.6,	OM6	Aesthetic design of roadside amenity areas.	Work site / During	HyD	<b>√</b>	√	<b>√</b>		ETWB TCW 2/2004
Figure 10.5.1-			Design Stage and						
10.5.5			Operation Phases						

<sup>&</sup>lt;sup>4</sup> CEDD will identify an implementation agent

EIA Ref	Envir	onmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				_	Des	С	0	Dec	
Table 10.6, Figure 10.5.1- 10.5.5	OM1	Aesthetic design of buildings and road-related structures, including viaducts, vent buildings, subways, footbridges and noise barriers and enclosure.	Work site / During Design Stage and Operation Phases	CEDD/HyD		V	V		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1- 10.5.5	OM3	Buffer Tree and Shrub Planting to screen proposed roads and associated structures.	Work site / During Design Stage and Operation Phases	CEDD/HyD		V	V		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1- 10.5.5	OM5	Aesthetic streetscape design.	Work site / During Design Stage and Operation Phases	CEDD/HyD		√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1- 10.5.5	OM6	Aesthetic design of roadside amenity areas	Work site / During Design Stage and Operation Phases	CEDD/HyD		V	V		ETWB TCW 2/2004
For DP3 - Reci	lamatio	n Works							
Table 10.6, Figure 10.5.1- 10.5.5	OM4	Aesthetic design of proposed waterfront promenade.	Work site / During Design Stage and Operation Phases	CEDD <sup>5</sup>	√	1	1		ETWB TCW 2/2004

<sup>\*</sup>Des - Design, C - Construction, O - Operation, and Dec - Decommissioning

 $<sup>^{\</sup>rm 5}$  CEDD will identify an implementation agent

# Appendix 4.1

Action and Limit Level



#### **Lam Geotechnics Limited**

#### **Action and Limit Level**

Action and Limit Level for Noise Monitoring

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received.	75 dB(A) <sup>Note 1</sup>

#### Note 1:

- 70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.
- If works are to be carried out during the restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

Action and Limit Level for Air Quality Monitoring

The state of the s						
Monitoring Location	1-hour TSP Level	in $\mu$ g/m $^3$	24-hour TSP Level in $\mu$ g/m <sup>3</sup>			
	Action Level	Limit Level	Action Level	Limit Level		
CMA1b	320.1	500	176.7	260		
CMA2a	323.4	500	169.5	260		
CMA3a	311.3	500	171.0	260		
CMA4a	312.5	500	171.2	260		
CMA5b	332.0	500	181.0	260		
CMA6a	300.1	500	187.3	260		

#### Action and Limit Level for Water Quality Monitoring

Parameters	Dry S	eason	Wet S	Season
Parameters	Action	Action Limit		Limit
WSD Salt Water Int	ake			
SS in mg L <sup>-1</sup>	13.00	14.43	16.26	19.74
Turbidity in NTU	8.04	9.49	10.01	11.54
DO in mg/L	3.66	3.28	3.17	2.63
Cooling Water Inta	ke			
SS in mg L <sup>-1</sup>	15.00	22.13	18.42	27.54
Turbidity in NTU	9.10	10.25	11.35	12.71
DO in mg/L	3.36	2.73	3.02	2.44

#### Remarks:

#### Action and Limit Level for Enhance DO Monitoring

Parameters	Depth	Dry S	Season	Wet S	Season
Parameters		Action	Limit	Action	Limit
C6	Surface and Middle	3.13	2.00	2.60	2.00
Co	Bottom	4.14	3.33	2.91	2.34
C7	Surface and Middle	3.87	3.09	3.31	2.57
C/	Bottom	3.91	3.53	2.75	2.48
Ex-WPCWA SW	Surface and Middle	3.84	3.73	3.19	3.10
EX-VVPCVVA SVV	Bottom	4.71	4.63	3.31	3.25
EV MDOMA CE	Surface and Middle	4.26	3.61	3.55	3.55 3.00
Ex-WPCWA SE	Bottom	5.36	5.35	3.76	3.76

#### Action and Limit Levels for Odour Patrol

Parameters	Action	Limit
Odour Nuisance (from odour intensity analysis or odour patrol)	<ul> <li>When two documented complaint are received; or</li> <li>Odour Intensity of 2 is measured from odour intensity analysis.</li> </ul>	<ul> <li>Five or more consecutive genuine documented complaints within a week; or</li> <li>Odour Intensity of 3 or above is measured from odour intensity analysis.</li> </ul>

<sup>-</sup> Action and Limit Level for the wet season are applied after the EPD approval of Updated EM&A Manual on 29 April 2011.

#### Appendix 4.2

Copies of Calibration Certificates



RECALIBRATION DUE DATE:

January 24, 2019

# Certificate of Calibration

Calibration Certification Information

Cal. Date: January 24, 2018

Rootsmeter S/N: 438320

Ta: 293 Pa: 756.9 °K

Operator: Jim Tisch

Calibration Model #: TE-5025A

Calibrator S/N: 3166

mm Hg

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4430	3.2	2.00
2	3	4	1	1.0270	6.4	4.00
3	5	6	1	0.9220	7.9	5.00
4	7	8	1	0.8780	8.7	5.50
5	9	10	1	0.7270	12.6	8.00

		Data Tabulat	ion		
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	√∆H(Ta/Pa)
1.0087	0.6990	1.4233	0.9958	0.6901	0.8799
1.0044	0.9780	2.0129	0.9915	0.9655	1.2443
1.0024	1.0872	2.2505	0.9896	1.0733	1.3912
1.0013	1.1404	2.3603	0.9885	1.1259	1.4591
0.9961	1.3701	2.8467	0.9834	1.3526	1.7598
	m=	2.12231		m=	1.32895
QSTD	b=	-0.06016	QA	b=	-0.03719
	r=	0.99999	~.	r=	0.99999

	Calculation	ıs	
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)
Qstd= Vstd/∆Time			Va/ΔTime
	For subsequent flow rat	e calculatio	ns:
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\left(\frac{Tstd}{Ta}\right)\right)-b}\right)$	Qa=	1/m (( √ΔH(Ta/Pa))-b

	Standard Conditions
Tstd:	298.15 °K
Pstd:	760 mm Hg
	Key
ΔH: calibrator	manometer reading (in H2O)
ΔP: rootsmete	er manometer reading (mm Hg)
Ta: actual abs	olute temperature (°K)
	ometric pressure (mm Hg)
b: intercept	
m: slope	

#### RECALIBRATION

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



## **Calibration Data for High Volume Sampler (TSP Sampler)**

Location :	CMA1b		Calibration Date				: 03-May-18			
Equipment no.		HVS001 Calibration Due Date		:	03-Jul-18					
CALIBRATION OF CONTIN	NUOUS FL	OW RECO	RDER_							
				Ambient C	ondition					
Temperature, T <sub>a</sub>		300		Kelvin Pressure, Pa			10	014	mmHg	
			Orifice	Transfer Sta	ndard Inform	ation				
Equipment No.		Ori002		Slope, m <sub>c</sub>	2.12231		Intercept, bc		-0.06016	
Last Calibration Date		19-Jan-18		(HxP <sub>a</sub> /1013.3 x 298/T <sub>a</sub> ) <sup>1/2</sup>						
Next Calibration Date		19-Jan-19		$m_c \times Q_{std} + b_c$						
					TOD					
				Calibration	n of 15P					
Calibration	Mai	nometer Re	ading		std	Conti	nuous Flow		IC	
Calibration Point		nometer Re		Q			nuous Flow corder, W	(W(P <sub>a</sub> /101	IC 3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)	
				<b>Q</b> (m <sup>3</sup> /	std			(W(P <sub>a</sub> /101		
	Н (	inches of v	water)	Q (m <sup>3</sup> / <b>X</b> -a	std ' min.)		corder, W	(W(P <sub>a</sub> /101	3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)	
Point	<b>H (</b> (up)	(inches of v	water) (difference)	Q (m <sup>3</sup> / X-a	std min.)		corder, W	(W(P <sub>a</sub> /101	3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) <b>Y-axis</b>	
Point 1	H (up)	(down)	(difference)	Q (m³ / X-a 0.8 1.0	std / min.) axis		(CFM)	(W(P <sub>3</sub> /101	3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) <b>Y-axis</b> 23.9281	
Point  1 2	H (up) 1.5 2.4	(down) 1.5 2.4	(difference) 3.0 4.8	Q (m³ / X-a 0.8 1.0 1.3	std / min.) axis		(CFM) 24 32	(W(P <sub>3</sub> /101	3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) <b>Y-axis</b> 23.9281  31.9042	
Point  1  2  3	H ( (up) 1.5 2.4 3.8	(down) 1.5 2.4 3.8	(difference) 3.0 4.8 7.6	Q (m³ / X-a 0.8 1.0 1.3	std (min.) axis 420 576		(CFM)  24  32  40	(W(P <sub>3</sub> /101	3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) <b>Y-axis</b> 23.9281  31.9042  39.8802	
Point  1 2 3 4	H ((up)) 1.5 2.4 3.8 4.9 6.1	(down) 1.5 2.4 3.8 4.9	(difference) 3.0 4.8 7.6 9.8	Q (m³ / X-a 0.8 1.0 1.3	std / min.) axis 420 576 234		(CFM)  24  32  40  46	(W(P <sub>a</sub> /101	3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) <b>Y-axis</b> 23.9281  31.9042  39.8802  45.8622	
Point  1 2 3 4 5	H ((up)) 1.5 2.4 3.8 4.9 6.1	(down) 1.5 2.4 3.8 4.9 6.1	(difference) 3.0 4.8 7.6 9.8 12.2	Q (m³ / X-a 0.8 1.0 1.3	std / min.) axis 420 9576 234 990		(CFM)  24  32  40  46  52	(W(P <sub>2</sub> /101	3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) <b>Y-axis</b> 23.9281  31.9042  39.8802  45.8622	

Calibration Accepted

\*\* Delete as appropriate.

Remarks :	As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been
	re-assigned from EL452 to HVS001 with respect to the update in quality management system.

Yes/No\*\*

Calibrated by : Jackey MA Checked by : Pauline Wong

Date Date Date Checked by : O3-May-18

Date 03-May-18

<sup>\*</sup> if Correlation Coefficient < 0.990, check and recalibration again.



Location :		CIMATE				Calibration Date	3	28-Jun-18
Equipment no.		HVS001			(	Calibration Due Date	-	28-Aug-18
CALIBRATION OF CONT	INUOUS FL	OW RECO	RDER					
			Ind.	Ambient C	ondition	ENEWS !		
Temperature, T <sub>a</sub>		302.	2	Kelvin	Pressure, Pa		1010	mmHg
			Orifice	Transfer Sta	ndard Information	n		District of the same of the sa
Equipment No.		Ori002	H 9	Slope, m <sub>c</sub>	2.12231	Intercept, b	С	-0.06016
Last Calibration Date		19-Jan-1	8		(HxF	a / 1013.3 x 298	/T <sub>a</sub> ) 1	/2
Next Calibration Date		19-Jan-1	9			$m_c \times Q_{std} + b_c$	E	
		-		Calibration	n of TSP			
Calibration	Ma	nometer Re	eading	Q	std	Continuous Flow		IC
Point	н	inches of v	vater)	(m³ /	min.)	Recorder, W	(W(F	P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)
	(up)	(down)	(difference)	X-a	ixis	(CFM)		Y-axis
1	1.5	1.5	3.0	0.8	375	24		23.7938
2	2.2	2.2	4.4	1.0	082	31		30.7337
3	3.5	3.5	7.0	1.2	643	42		41.6392
4	4.7	4.7	9.4	1.4	606	47	$\perp$	46.5962
5	5.8	5.8	11.6	1.6	194	54		53.5361
By Linear Regression of Y	on X							
	Slope, m	=	37.4	025	Interce	pt, b =	-7.0435	
Correlation (	Coefficient*	=	0.99	972				
Calibration	Accepted	=	Yes/	Ne**				
if Correlation Coefficient <	0.990, che	ck and reca	libration agai	n.				
** Delete as appropriate.								
10 01 01:	s provided i	nformation,	the equipmer	nt reference n	o. of the calibrated	d High Volume Sample	r has bee	on.
2 10	rom EL452	to HVS001	with respect t	o the update	in quality manager	nent system.		
Calibrated by	1000	talie Lau			W-237-163	hecked by	-	Pauline Wong
Date :	28	3-Jun-18			D	ate		28-Jun-18



TESTING	Calibi	ation L	ala ioi r	iigii voit	illie Salli	ipiei (13	r Sampler)	)	
Location :		CMA2a				Calibration	on Date	: (	03-May-18
Equipment no.		HVS002				Calibration	on Due Date	:	03-Jul-18
CALIBRATION OF CONTIN	NUOUS FL	OW RECO	<u>RDER</u>						
				Ambient Co	ondition				
Temperature, T <sub>a</sub>		300		Kelvin	Pressure, P <sub>a</sub>	ı	10	014	mmHg
			Orifice <sup>-</sup>	Transfer Star	dard Inform	ation			
Equipment No.		Ori002		Slope, m <sub>c</sub>	2.122	31	Intercept, bc		-0.06016
Last Calibration Date		19-Jan-1	8		( H	x P <sub>a</sub> / 10	13.3 x 298 / T	$\Gamma_{\rm a}$ ) 1/2	
Next Calibration Date		19-Jan-1	9			m <sub>c</sub> >	$(Q_{std} + b_c)$		
				Calibration	of TSP				
Calibration	Mai	nometer R	eading	Q	std	Contin	uous Flow		IC
Point	Н (	inches of	water)	$(m^3 /$	min.)	Rec	order, W	(W(P <sub>a</sub> /1013.	3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)
	(up)	(down)	(difference)	X-a	xis	(	CFM)	,	Y-axis
1	1.6	1.6	3.2	0.86	687		25	2	4.9251
2	2.5	2.5	5.0	1.07	788		32	3	1.9042
3	4.0	4.0	8.0	1.35	571		43	4	2.8712
4	5.1	5.1	10.2	1.52	287		50	4	9.8503
5	6.5	6.5	13.0	1.72	221		56	5	5.8323
By Linear Regression of Y o	on X Slope, m	=	37.0	)288	Int	tercept, b =	-7.4	<b>4710</b>	
Correlation C	Coefficient*	=	0.9	991					
Calibration	Accepted	=	Yes	′ <del>No</del> **					
* if Correlation Coefficient <	: 0.990, che	eck and rec	alibration aga	in.					
** Delete as appropriate.									
Remarks : As per client's	s provided i	nformation,	the equipme	nt reference n	o. of the calil	brated High V	olume Sampler h	as been	
re-assigned fr	rom EL449	to HVS002	with respect	to the update	in quality mar	nagement sys	item.		
Calibrated by	J:	ackey MA				Checked	by	: _ Pu	aline Wong
Date	0	3-May-18				Date		: 0	03-May-18



Location	1	CMA2a				Calibration Date	:	28-Jun-18	
Equipment no.	1	HVS002				Calibration Due Date	:	28-Aug-18	
CALIBRATION OF CON	ITINUOUS FL	OW RECO	RDER						
			THE	Ambient C	ondition			7	
Temperature, T <sub>a</sub>		302.	2	Kelvin	Pressure, Pa		1010	mmHg	
			Orifice	Transfer Sta	ndard Informatio	n	- 10		
Equipment No.		Ori002	8	Slope, m <sub>c</sub>	2.12231	Intercept, b	c	-0.06016	
Last Calibration Date	9	19-Jan-1	В		(Hxi	P <sub>a</sub> / 1013.3 x 298	/T <sub>a</sub> ) 1/	2	
Next Calibration Date	0	19-Jan-1	9			$m_c \times Q_{std} + b_c$			
			17-6	Calibration	n of TSP			The state of	
Calibration	Ma	nometer Re	eading	Q	std	Continuous Flow	T	IC	
Point	н	inches of v	water)	(m³ /	/ min.)	Recorder, W	(W(Pa	/1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)	
	(up)	(down)	(difference)	X-4	axis	(CFM)		Y-axis	
1	1.3	1.3	2.6	0.7	816	25		24.7852	
2	2.3	2.3	4.6	1.0	302	32		31.7251	
3	3.5	3.5	7.0	1.2	643	43		42.6306	
4	4.8	4.8	9.6	1.4	757	50		49.5704	
5	6.1	6.1	12.2	1.6	600	56		55.5189	
By Linear Regression of	Y on X								
	Slope, m	=	36.0	376	Interce	ept, b =	3.9257		
Correlation	Coefficient*	=	0.9	971	10				
Calibrat	ion Accepted	=	Yes/	No**					
	200								
* if Correlation Coefficien	t < 0.990, che	ck and reca	libration agai	n.					
** Delete as appropriate.									
Remarks : As per clier	nt's provided in	nformation,	the equipmer	nt reference n	no. of the calibrate	ed High Volume Sampler	has beer	Î.	
re-assigned	from EL449	to HVS002	with respect t	o the update	in quality manage	ment system.			
Calibrated by	: Na	atalie Lau				Checked by	:	Pualine Wong	
Date	2	8-Jun-18			ı	Date	:	28-Jun-18	



Location	:	CMA3a	Calibration Date	:	04-May-18
Equipment no.	:	HVS012	Calibration Due Date	:	04-Jul-18

### **CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition						
Temperature, T <sub>a</sub>	297	Kelvin	Pressure, P <sub>a</sub>	1016	mmHg	
Office Transfer Organization Constitution						

Orifice Transfer Standard Information							
Equipment No.	Ori002	Slope, m <sub>c</sub>	2.12231	Intercept, bc	-0.06016		
Last Calibration Date	19-Jan-18		(HxP <sub>a</sub> /1013.3 x 298/T <sub>a</sub> ) 1/2				
Next Calibration Date	19-Jan-19	$m_c \times Q_{std} + b_c$					

	Calibration of TSP								
Calibration	Mai	nometer Re	eading	Q <sub>std</sub>	Continuous Flow	ıc			
Point	Н (	inches of v	water)	(m <sup>3</sup> / min.)	Recorder, W	(W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)			
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis			
1	1.3	1.3	2.6	0.7904	32	32.0965			
2	2.2	2.2	4.4	1.0197	38	38.1146			
3	3.5	3.5	7.0	1.2787	46	46.1387			
4	4.6	4.6	9.2	1.4618	50	50.1508			
5	5.7	5.7	11.4	1.6240	56	56.1689			
By Linear Regression of Y	on X								
	Slope, m	=	28.4	850 In	tercept, b =	9.3566			
Correlation C	oefficient*	=	0.99	982					
Calibration	Accepted	=	Yes/l	<del>\0</del> **					

<sup>\*</sup> if Correlation Coefficient < 0.990, check and recalibration again.

As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been Remarks :

re-assigned from EL333 to HVS012 with respect to the update in quality management system.

Calibrated by : Jackey MA Checked by : Pauline Wong

Date Date Checked by : O4-May-18

Date 04-May-18

<sup>\*\*</sup> Delete as appropriate.



Location	2	CMA3a	Calibration Date :	27-Jun-18
Equipment no.	2	HVS012	Calibration Due Date :	27-Aug-18

#### CALIBRATION OF CONTINUOUS FLOW RECORDER

		Ambient C	ondition			
remperature, T <sub>a</sub>	302.2	Kelvin	Pressure, Pa		1010 mm	ıHg
	Orifice	Transfer Star	ndard Information		4-1-6	
Equipment No.	Ori002	Slope, m <sub>c</sub>	2.12231	Intercept, be	-0.06016	
Last Calibration Date	19-Jan-18	$(H \times P_B / 1013.3 \times 298 / T_B)^{1/2}$				
Next Calibration Date	19-Jan-19	$m_c \times Q_{std} + b_c$				
	THE CONTRACTOR OF THE PARTY OF	Calibration	of TSP			
Calibration	Manometer Reading	C	t std Co	entinuous Flow	IC	
Point	H (inches of water)	(m³	/ min.)	Recorder, W	(W(P,/1013.3x298/T,)1/2	/35.31

Point	(W(P <sub>a</sub> /1013.3x29	98/T <sub>a</sub> ) <sup>1/2</sup> /35.31)
	Y-ax	tis
1	29.74	123
2	36.68	321
3	43.62	220
4	48.57	'90
5	53.53	161
Regression of Y on 2		
Slo	6.5410	
Correlation Coeffi		75
Calibration Acc		

<sup>\*</sup> If Correlation Coefficient < 0.990, check and recalibration again.

" Delete as	appropriate.				
Remarks :	As per client's p	provided information, the equipment ref	ference no. of the calibrated High Volume	Sampler	has been
Calibrated b		m EL333 to HVS012 with respect to the Natalie Lau	e update in quality management system.  Checked by	:	Pauline Wong
Dato	. —	27-Jun-18	Date		27-Jun-18

24.0724



### **Calibration Data for High Volume Sampler (TSP Sampler)**

Location	:	CMA4a	Calibration Date	:	04-May-18
Equipment no.	:	HVS004	Calibration Due Date	: ]	04-Jul-18

#### **CALIBRATION OF CONTINUOUS FLOW RECORDER**

CALIBRATION OF CONTINUOUS FLOW RECORDER								
Ambient Condition								
Temperature, T <sub>a</sub>	2	97	Kelvin	Pressure, P	a	10	16 mmHg	
Orifice Transfer Standard Information								
Equipment No.	Ori0	02	Slope, m <sub>c</sub>	2.122	31	Intercept, bc	-0.06016	
Last Calibration Date	19-Jai	n-18	(HxP <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup>					
Next Calibration Date	19-Jai	า-19	$m_c \times Q_{std} + b_c$					
			Calibratio	n of TSP				
Calibration	Manometer	Reading	Q	std	Cont	inuous Flow	IC	
Point	H (inches of water)		(m <sup>3</sup> /	min.)	Re	ecorder, W	$(W(P_a/1013.3x298/T_a)^{1/2}/35.31)$	
	(up) (dowr	) (difference)	X-a	xis		(CFM)	Y-axis	

0.8469

24

2	2.3	2.3	4.6	1.0420	34	34.1025			
3	3.7	3.7	7.4	1.3140	44	44.1327			
4	4.9	4.9	9.8	1.5078	50	50.1508			
5	6.2	6.2	12.4	1.6926	56	56.1689			
By Linear Regression of Y on X									
	Slope, m	=	37.	2631 In	tercept, b = -5.5	9956			
Correlation C	oefficient*	=	0.9	9954					
Calibration Accepted =		Yes	./ <del>No</del> **						

<sup>\*</sup> if Correlation Coefficient < 0.990, check and recalibration again.

1.5

3.0

Remarks : 

As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been re-assigned from EL390 to HVS004 with respect to the update in quality management system.

 Calibrated by
 Jackey MA
 Checked by
 : Pauline Wong

 Date
 04-May-18
 Date
 : 04-May-18

<sup>\*\*</sup> Delete as appropriate.



Location		CMA4a	Calibration Date		27-Jun-18
Equipment no.		HVS004	Calibration Due Date	1	27-Aug-18
	100	100000000000000000000000000000000000000			

#### CALIBRATION OF CONTINUOUS FLOW RECORDER

Temperature, T <sub>a</sub>	302.2	Kelvin	Pressure, Pa	1010	mmHg	
	0	rifice Transfer Sta	andard Information			
Equipment No.	Ori002	Slope, m <sub>c</sub>	2.12231	Intercept, bc	-0.06016	
Last Calibration Date	19-Jan-18		(HxPa)	(1013.3 x 298 / T <sub>a</sub> )	1/2	
Next Calibration Date	19-Jan-19	$m_c \times Q_{std} + b_c$				

				Calibration of TS	P		
Calibration Point		nometer R inches of (down)	1000	Q <sub>std</sub> (m³ / min.) X-axis	Continuo Record (CF	ler, W	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31 <b>Y-axis</b>
1	1.3	1.3	2.6	0.7816	20	)	19.8282
2	2.2	2.2	4.4	1.0082	30	)	29.7423
3	3.6	3.6	7.2	1.2818	40	)	39.6563
4	4.8	4.8	9.6	1.4757	46	3	45.6048
5	6.0	6.0	12.0	1.6466	56	3	55.5189
Correlation Coefficient* =		39.528 0.9962 Yes/No	2	Intercept, b =	-1	0.8967	

<ul> <li>if Correlation Coefficient &lt; 0.990, che</li> </ul>	ck and recalibration again
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** Delete as approp	oriate.
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As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been Remarks: re-assigned from EL390 to HVS004 with respect to the update in quality management system. Checked by Pauline Wong Natalie Lau Calibrated by Date 27-Jun-18 27-Jun-18 Date



Location	:	CMA5b	Calibration Date	:	04-May-18
Equipment no.	: '	HVS010	Calibration Due Date	: '	04-Jul-18

#### CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition							
Temperature, T <sub>a</sub>	297	Kelvin <b>Pressure</b> , P <sub>a</sub>	1016	mmHg			

Orifice Transfer Standard Information								
Equipment No.	Ori002	Slope, m <sub>c</sub>	2.12231	Intercept, bc	-0.06016			
Last Calibration Date	19-Jan-18	(HxP <sub>a</sub> /1013.3 x 298/T <sub>a</sub> ) <sup>1/2</sup>						
Next Calibration Date	19-Jan-19		= m	$a_c \times Q_{std} + b_c$				

Calibration of TSP								
Calibration	Ма	nometer Re	eading	Q <sub>std</sub>	Continuous Flow	IC		
Point	H (inches of water)		(m <sup>3</sup> / min.)	Recorder, W	(W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)			
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis		
1	1.5	1.5	3.0	0.8469	30	30.0905		
2	2.3	2.3	4.6	1.0420	38	38.1146		
3	3.9	3.9	7.8	1.3483	46	46.1387		
4	5.0	5.0	10.0	1.5229	52	52.1568		
5	6.4	6.4	12.8	1.7192	56	56.1689		

Slope, m = 29.7383 Intercept, b = 5.9977

Correlation Coefficient\* = 0.9953

Calibration Accepted = Yes/<del>No</del>\*\*

**	Delete	as	appro	priate.

Remarks: As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-assigned from EL222 to HVS010 with respect to the update in quality management system.

 Calibrated by Date
 :
 Jackey MA
 Checked by Date
 :
 Pauline Wong

 Date
 04-May-18
 04-May-18
 :
 04-May-18

 $<sup>\</sup>ensuremath{^*}$  if Correlation Coefficient < 0.990, check and recalibration again.



Location	;	CMA5b	Calibration Date		27-Jun-18
Equipment no.		HVS010	Calibration Due Date	t	27-Aug-18

#### CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition							
302.2	Kelvin	Pressure, P.	1010	mmHg			
,	302.2	302.2 Kelvin	302.2 Kelvin Pressure, Pa	302.2 Kelvin Pressure, P. 1010			

Orifice Transfer Standard Information							
Equipment No.	Ori002	Slope, m <sub>c</sub>	2.12231	Intercept, bc	-0.06016		
Last Calibration Date	19-Jan-18	3,000	(HxPa	/1013.3 x 298/T <sub>a</sub> )	1/2		
Next Calibration Date	19-Jan-19		= /	$m_c \times Q_{std} + b_c$			

Point Point	1550	(inches of (down)	KD-000857/	Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>12</sup> /35.31 Y-axis
1	1.5	1.5	3.0	0.8375	28	27.7594
2	2.3	2.3	4.6	1.0302	36	35.6907
3	3.5	3.5	7.0	1.2643	43	42,6306
4	4.3	4.3	8.6	1.3983	47	46.5962
5	5.5	5.5	11.0	1.5777	52	51.5532

Slope, m

Correlation Coefficient\*

0.9968

Yes/Ne\*\* Calibration Accepted

** Delei	le as	appropriate.
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Remarks:

As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-assigned from EL222 to HVS010 with respect to the update in quality management system.

Calibrated by Date

Natalie Lau 27-Jun-18

Checked by Date

Pauline Wong 27-Jun-18

<sup>\*</sup> if Correlation Coefficient < 0.990, check and recalibration again.



Location	:	CMA6a	Calibration Date	:	04-May-18
Equipment no.	:	HVS013	Calibration Due Date	:	04-Jul-18

#### **CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition								
Temperature, T <sub>a</sub>	297	Kelvin <b>Pressure</b> , <b>P</b> <sub>a</sub>	1016	mmHg				

Orifice Transfer Standard Information								
Equipment No.	Ori002	Slope, m <sub>c</sub>	2.12231	Intercept, bc	-0.06016			
Last Calibration Date	19-Jan-18	(HxP <sub>a</sub> /1013.3 x 298/T <sub>a</sub> ) <sup>1/2</sup>						
Next Calibration Date	19-Jan-19		= <b>m</b>	$_{\rm c}$ x Q $_{\rm std}$ + $_{\rm c}$				

Calibration of TSP								
Calibration	Ма	nometer Re	eading	Q <sub>std</sub>	Continuous Flow	IC		
Point	H (inches of water)		(m <sup>3</sup> / min.)	Recorder, W	(W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)			
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis		
1	1.5	1.5	3.0	0.8469	30	30.0905		
2	2.4	2.4	4.8	1.0638	36	36.1086		
3	3.8	3.8	7.6	1.3312	44	44.1327		
4	4.8	4.8	9.6	1.4927	50	50.1508		
5	5.8	5.8	11.6	1.6380	56	56.1689		
By Linear Regression of Y or	n X	•				•		

z,a					
	Slope, m	=	32.6286	Intercept, b =	1.7447

Calibration Accepted = 0.9968

Yes/No\*\*

Remarks: As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-assigned from EL551 to HVS013 with respect to the update in quality management system.

 Calibrated by Date
 : Jackey MA
 Checked by Date
 : Pauline Wong

 Date
 04-May-18
 Date
 : 04-May-18

<sup>\*</sup> if Correlation Coefficient < 0.990, check and recalibration again.

<sup>\*\*</sup> Delete as appropriate.



Location	\$8	CMA6a	Calibration Date	:	27-Jun-18
Equipment no.		HVS013	Calibration Due Date	4	27-Aug-18

#### CALIBRATION OF CONTINUOUS FLOW RECORDER

	302.2	Kelvin Pre	essure, P <sub>a</sub>	1010	mmHg
	Ort	fice Transfer Standa	ard Information		
Equipment No.	Ori002	Slope, m <sub>c</sub>	2.12231	Intercept, bc	-0.06016
Last Calibration Date	19-Jan-18		(HxPa	/1013.3 x 298 / T <sub>a</sub> )	1/2
Next Calibration Date	19-Jan-19		= n	$n_c \times Q_{std} + b_c$	

**Ambient Condition** 

Calibration		nometer R		Q <sub>std</sub> (m <sup>3</sup> / min.)		rder, W	IC (W(P <sub>2</sub> /1013.3x298/T <sub>2</sub> ) <sup>1/2</sup> /35.31)
	(up)	(down)	(difference)	X-axis	(0)/(0)	FM)	Y-axis
1	1.6	1.6	3.2	0.8640		30	29.7423
2	2.6	2.6	5.2	1.0936	S	38	37.6735
3	3.4	3.4	6.8	1.2465		44	43.6220
4	4.9	4.9	9.8	1.4907		50	49.5704
5	5.8	5.8	11.6	1.6194		57	56.5103
y Linear Regression of Y	on X						
	Slope, m		34.0385	i	Intercept, b =	0	0.4390
Correlation	Coefficient*	-	0.9952		-		
Calibration	on Accepted	-	Yes/No*	•			

<ul> <li>if Correlation</li> </ul>	Coefficient	< 0.990.	check and	recalibration	again.

Remarks: As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been re-assigned from EL551 to HVS013 with respect to the update in quality management system.

Calibrated by	- 4	Natalie Lau	Checked by		Pauline Wong
Date	: =	27-Jun-18	Date	8_	27-Jun-18

<sup>\*\*</sup> Delete as appropriate.



港黄竹坑道37號利達中心12樓 12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



### CERTIFICATE OF CALIBRATION

Certificate No.:

18CA0322 01

Page

of

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Item tested

Description:

Sound Level Meter (Type 1)

Microphone

Manufacturer: Type/Model No.: Larson Davis

PCB

Serial/Equipment No.:

LxT1 0003737 377B02 171529

Adaptors used:

Item submitted by

Customer Name:

Lam Geotechnics Ltd.

Address of Customer:

Request No.

Date of receipt:

22-Mar-2018

Date of test:

28-Mar-2018

Reference equipment used in the calibration

Description:

Model:

Serial No.

Expiry Date:

Traceable to:

Multi function sound calibrator Signal generator

B&K 4226 DS 360

2288444 61227

08-Sep-2018 01-Apr-2018

CIGISMEC CEPREL

Ambient conditions

Temperature:

21 ± 1 °C

Relative humidity: Air pressure:

50 ± 10 % 1005 ± 5 hPa

Test specifications

The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152

2. The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of +20%

3. The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

### Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Feng Jun Qi

Actual Measurement data are documented on worksheets

Approved Signatory:

Date:

06-Apr-2018

Company Chop:

The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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Form No CARP157-1/Issue 1/Rev C/01/02/2007



香港黄竹坑道37號利達中心12樓 12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. E-mall: smec@cigismec.com Website; www.cigismec.com Tel: (852) 2873 6860 Fax: (852) 2555 7533



### CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.:

18CA0322 01

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#### 1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertanity (dB)	Coverage Factor
Self-generated noise	A C	Pass	0.3	
	C	Pass	0.8	2.1
	Lin	Pass	1.6	2.2
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	N/A	N/A	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/103 at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/104 at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

#### 2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertanity (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz Weighting A at 8000 Hz	Pass Pass	0.3 0.5	

#### 3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

End

by:

Date:

Fung Chi Yip

Checked by:

Lam Tze Wai

28-Mar-2018

Date:

06-Apr-2018

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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Form No CARP 152-2/Issue 1/Rev C/01/02/2007



香港黄竹坑道37號利達中心12樓 12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



# CERTIFICATE OF CALIBRATION

Certificate No.:

17CA1110 02

Item tested

Description: Manufacturer: Acoustical Calibrator (Class 1)

Type/Model No.: Serial/Equipment No.: Rion Co., Ltd. NC-73

Adaptors used:

10707358

Item submitted by

Curstomer.

Lam Geotechnics Ltd.

Address of Customer Request No.

Date of receipt:

10-Nov-2017

Date of test:

14-Nov-2017

### Reference equipment used in the calibration

Description: Lab standard microphone Preamplifier Measuring amplifier Signal generator Digital multi-meter Audio analyzer Universal counter	Model:	Serial No.	Expiry Date:	Traceable to:
	B&K 4180	2341427	11-Apr-2018	SCL
	B&K 2673	2239857	05-May-2018	CEPREI
	B&K 2610	2346941	03-May-2018	CEPREI
	DS 360	61227	01-Apr-2018	CEPREI
	34401A	US36087050	25-Apr-2018	CEPREI
	8903B	GB41300350	21-Apr-2018	CEPREI
	53132A	MY40003662	22-Apr-2018	CEPREI

#### Ambient conditions

Temperature:

21 ± 1 °C

Relative humidity:

50 ± 10 %

Air pressure:

1010 ± 5 hPa

### Test specifications

- 1. The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique. 2.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes

#### Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

-Min/Feng Jun Qi

Huang Jia

Approved Signatory:

Date:

15-Nov-2017

Company Chop:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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Form No CARP156-1/Issue 1/Rev D/01/03/2007



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Tel: (852) 2873 6860 Fax: (852) 2555 7533



### CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.:

17CA1110 02

Page:

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1, Measured Sound Pressure Level

> The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties

Hz dB	30	16
1000 94.00	93.93	0.10

#### 2. Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be

At 1000 Hz

STF = 0.008 dB

Estimated expanded uncertainty

0.005 dB

#### 3, **Actual Output Frequency**

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz

Actual Frequency = 991.5 Hz

Estimated expanded uncertainty

0.1 Hz

Coverage factor k = 2.2

#### Total Noise and Distortion 4.

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz

TND = 0.3 %

Estimated expanded uncertainty

0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

End

Calibrated by:

Checked by:

Date:

14-Nov-2017

Date:

Fung Chi Yip 5-Nov-2017

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

Form No CARP156-2/Issue 1/Rev-C/01/05/2000



香港黃竹坑道37號利達中心12樓 12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. E-mail; smec@cigismec.com Website: www.cigismec.com Tel: (852) 2873 6860 Fax: (852) 2555 7533



### CERTIFICATE OF CALIBRATION

Certificate No.:

18CA0309 02

Page:

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Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer: Type/Model No.: Larson Davis CAL 200

Serial/Equipment No.: Adaptors used: 13098

Item submitted by

Curstomer:

Lam Environmental Service Ltd.

Address of Customer:

- 6

Request No.: Date of receipt:

09-Mar-2018

Date of test:

12-Mar-2018

#### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	11-Apr-2018	SCL
Preamplifier	B&K 2673	2239857	05-May-2018	CEPREI
Measuring amplifier	B&K 2610	2346941	03-May-2018	CEPREI
Signal generator	DS 360	61227	01-Apr-2018	CEPREI
Digital multi-meter	34401A	US36087050	25-Apr-2018	CEPREI
Audio analyzer	8903B	GB41300350	21-Apr-2018	CEPREI
Universal counter	53132A	MY40003662	22-Apr-2018	CEPREI

#### Ambient conditions

Temperature:

21 ± 1 °C

Relative humidity:

50 ± 10 %

Air pressure:

1000 ± 5 hPa

#### Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B
  and the lab calibration procedure SMTP004-CA-156.
- 2. The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference
  pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure
  changes.

#### Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Feng Jun Qi

Approved Signatory:

Date: 12

12-Mar-2018

Company Chop:

SENGINESS SENGI

Comments: The results reported in this conficate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long term stability of the instrument.

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Form No CARP156 1/Issue 1/Rev D/01/03/2007



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Tel: (852) 2873 6860 Fax: (852) 2555 7533



### CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No :

18CA0309 02

Page:

#### Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	(Output level in dB re 20 µPa) Estimated Expanded Uncertainty dB
1000	94.0	93.81	0.10

#### 2. Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz

STF = 0.011 dB

Estimated expanded uncertainty

0.005 dB

#### 3. **Actual Output Frequency**

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz

Actual Frequency = 1000.0 Hz

Estimated expanded uncertainty

0.1 Hz

Coverage factor k = 2.2

#### 4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz

TND = 0.6 %

Estimated expanded uncertainty

0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

End

Fund Chi Yio

Checked by:

Lam Tze Wai

Date:

12-Mar-2018

Date:

12-Mar-2018

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level

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Form No CARP156-2/Issue 1/Rev C/01/05/2005



Information supplied by customer:

CONTACT:

MR. SAM LAM

WORK ORDER: HK1810527

CLIENT:

LAM GEOTECHNICS LIMITED

DATE RECEIVED 31/05/2018 DATE OF ISSUE: 04/06/2018

ADDRESS:

11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD,

WANCHAI, HONG KONG

PROJECT:

#### METHOD OF PERFORMANCE CHECK/ CALIBRATION:

Ref: APHA22nd ed 2130B

#### COMMENTS

It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

Scope of Test:	Turbidity	
Equipment Type:	Turbidimeter	
Brand Name:	Xin Rui	
Model No.:	WGZ-3B	
Serial No.:	1403009	
Equipment No.:		
Date of Calibration:	1/6/2018	

Remarks

This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Approved Signatory:

Ms. Wong Po Yan, Pauline Assistant Laboratory Manager Issue Date:

04/06/2018



WORK ORDER: HK1810527 DATE OF ISSUE: 04/06/2018

CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidimeter	
Brand Name:	Xin Rui	
Model No.:	WGZ-3B	
Serial No.:	1403009	
Equipment No.:		
Date of Calibration:	1/6/2018	
Date of next Calibation:	1/9/2018	

#### Parameters:

Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance
0	0.00	
4	3.82	-4.5%
10	9.99	-0.1%
40	37.7	-5.7%
100	100	0.0%
400	414	3.5%
1000	926	-7.4%
	Tolerance Limit (±)	10%

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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Information supplied by customer:

CONTACT:

MR. SAM LAM

WORK ORDER: HK1810386

CLIENT:

LAM GEOTECHNICS LIMITED

DATE OF ISSUE: 20/04/2018

DATE RECEIVED: 19/04/2018

ADDRESS:

11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD,

WANCHAI, HONG KONG

PROJECT:

### METHOD OF PERFORMANCE CHECK/ CALIBRATION:

Ref: APHA22nd ed 2130B

#### COMMENTS

It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

Scope of Test:	Turbidity	
Equipment Type:	Turbidity Meter	
Brand Name:	PCE Instruments	
Model No.:	PCE-TUM 20	
Serial No.:	Q942542	
Equipment No.:		
Date of Calibration:	20/04/2018	

Remarks:

This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Approved Signatory:

Ms. Wong Po Yan, Pauline Assistant Laboratory Manager Issue Date:

20/04/2018

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WORK ORDER: HK1810386 DATE OF ISSUE: 20/04/2018

CLIENT:

LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidity Meter	
Brand Name:	PCE Instruments	
Model No.:	PCE-TUM 20	
Serial No.:	Q942542	
Equipment No.:		
Date of Calibration:	20/04/2018	
Date of next Calibation:	20/07/2018	

### Parameters:

Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance	
0	0.00		
4	4.38	9.5%	
20	21.91	9.6%	
40	40.45	1.1%	
100	98	-2.0%	
400	393	-1.8%	
800	738	-7.8%	
	Tolerance Limit (±)	10%	

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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Information supplied by customer:

CONTACT: MR. SAM LAM WORK ORDER: HK1810676

CLIENT: LAM GEOTECHNICS LIMITED

DATE RECEIVED: 10/07/2018 DATE OF ISSUE: 12/07/2018

ADDRESS: 11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD,

WANCHAI, HONG KONG

PROJECT: -

### METHOD OF PERFORMANCE CHECK/ CALIBRATION:

Ref: APHA22nd ed 2130B

#### COMMENTS

It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

Scope of Test:	Turbidity	
Equipment Type:	Turbidity Meter	
Brand Name:	PCE Instruments	
Model No.:	PCE-TUM 20	
Serial No.:	Q942542	
Equipment No.:		
Date of Calibration:	11/07/2018	

Remarks

This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Approved Signatory:

Ms. Wong Po Yan, Pauline Assistant Laboratory Manager Issue Date:

12/07/2018



WORK ORDER: HK1810676 DATE OF ISSUE: 12/07/2018

CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidity Meter	
Brand Name:	PCE Instruments	
Model No.:	PCE-TUM 20	
Serial No.:	Q942542	
Equipment No.:		
Date of Calibration:	11/07/2018	
Date of next Calibation:	11/10/2018	

### Parameters:

Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance
0	0.00	
4	4.20	5.0%
20	19.92	-0.4%
40	36.00	-10.0%
100	98	-2.0%
400	383	-4.3%
800	726	-9.3%
F-7-7	Tolerance Limit (±)	10%

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.



#### **EQUIPMENT PERFORMANCE CHECK / CALIBRATION REPORT**

Report No. : HK1810333

Project Name : EQUIPMENT PERFORMANCE CHECK/CALIBRATION REPORT

Date of Issue : 9/4/2018

Customer : LAM ENVIRONMENTAL SERVICES LIMITED

Address : 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI, HONG KONG

 Calibration Job No.
 : HK1810333

 Test Item No.
 : HK1810333-01

Test Item Details Test Item Description

Test Item Description : Sonde
Manufacturer : YSI
Model No. : Professional Plus

Serial No. : 14M100277

Performance Method : Checked according to in-house method CAL005

(References: Temperature (Section 6 of Intermational Accreditation New Zealand Technical Gi No. 3 Second edition March 2008: Working Thermometer Calibration Procedure), pH value

(APHA 21e 4500H:B), Salinity (Refer to Conductivity APHA 19e 2510B)

, Dissolved oxygen (APHA 19e 4500-O,C))

Test Item Receipt Date : 6/4/2018 Test Item Calibration Date : 6/4/2018

Notes: 1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.

2. Results relate to item(s) as received.

3. ± indicates the tolerance limit

4. N/A = Not applicable

 APHA - American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF. USA

6. DO, pH, salinity and temperature performance check was conducted by Pilot Testing Limited.

 Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

Approved Signatory

Ms. Wong Po Yan, Pauline (Assistant Laboratory Manager) Issue Date:

9/4/2018



WORK ORDER: HK1810333 DATE OF ISSUE: 9/4/2018

CLIENT: LAM ENVIRONMENTAL SERVICES LIMITED

Equipment Type	Sonde	
Manufacturer	YSI	
Model No.	Professional Plus	
Serial No.	14M100277	
Date of Calibration	06-Apr-18	
Date of next Calibation	06-Jul-18	

#### Parameters:

Temperature (Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No.3 Second edition March 2008: Working Thermometer Calibration Procedure)

Reference Reading (°C)	Display Reading (°C)	Deviation (°C)
4.6	4.6	0.0
15.0	14.8	-0.1
25.1	25.1	0.0
T	olerance Limit	±2.0

pH Value (Method Ref: APHA21e, 4500H:B)

Expected Reading (pH unit)	Reference Reading (pH unit)	Display Reading (pH unit)	Deviation (pH unit)
4.0	4.06	4.08	0.02
7.0	7.02	7.09	0.07
10.0	9.97	10.00	0.03
	Tolerance Limit		±0,20

Conductivity (Method Ref: APHA 19e, 2510)

KCI concentration (mol/L)	Reference Reading (ms/cm)	Display Reading (ms/cm)	Deviation (%)
0.0000	0.00	0.00	. <del></del> )
0.1000	12.2	12.1	-0.98
0.2000	24.8	24.6	-0.65
0.5000	54.5	54.1	-0.73
	Tolerance Limit		±2.0

Dissolved Oxygen (DO) (Method Ref: APHA 19e, 4500-O, C)

Reference DO reading (mg/L)	DO reading od DO probe (mg/L)	Deviation (mg/L)
8.18	8.22	0.04
6.66	6.52	-0.14
4.75	4.81	0.06
	Tolerance Limit	±0.20

Remarks:

- (1) Maxium tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.
- (2) Displayed reading presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.
- (3) Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

- End of Report -



### EQUIPMENT PERFORMANCE CHECK / CALIBRATION REPORT

Report No.

HK1810679

**Project Name** 

EQUIPMENT PERFORMANCE CHECK/CALIBRATION REPORT

Date of Issue

11/7/2018

Customer

: LAM ENVIRONMENTAL SERVICES LIMITED

Address

: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI, HONG KONG

Calibration Job No. Test Item No. : HK1810679 : HK1810679-01

Test Item Details Test Item Description

: Sonde : YSI

Manufacturer Model No. Serial No.

Professional Plus 14M100277

Performance Method

Checked according to in-house method CAL005

(References: Temperature (Section 6 of Intermational Accreditation New Zealand Technical Gi No. 3 Second edition March 2008: Working Thermometer Calibration Procedure), pH value

(APHA 21e 4500H:B), Salinity (Refer to Conductivity APHA 19e 2510B)

Test Item Receipt Date Test Item Calibration Date Dissolved oxygen (APHA 19e 4500-O,C)) 10/7/2018 11/7/2018

Notes: 1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.

2. Results relate to item(s) as received.

3. ± indicates the tolerance limit

N/A = Not applicable

 APHA - American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF, USA

6. DO, pH, salinity and temperature performance check was conducted by Pilot Testing Limited.

 Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

Approved Signatory

Ms. Wong Po Yan, Pauline

(Assistant Laboratory Manager)

Issue Date:

11/7/2018



WORK ORDER: **DATE OF ISSUE: 11/7/2018** 

HK1810679

CLIENT:

LAM ENVIRONMENTAL SERVICES LIMITED

Equipment Type	Sonde	
Manufacturer	YSI	
Model No.	Professional Plus	
Serial No.	14M100277	
Date of Calibration	11-Jul-18	
Date of next Calibation	11-Oct-18	

Temperature (Method Ref: Section 6 of Intermational Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure)

Reference Reading (°C)	Display Reading (°C)	Deviation (*C)
6.4	6.4	0.0
13.5	13.4	-0.1
26.9	26.7	-0.2
	olerance Limit	±2.0

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Expected Reading (pH unit)	Reference Reading (pH unit)	Display Reading (pH unit)	Deviation (pH unit)
4.0	4.08	4.06	-0.02
7.0	7.02	7.13	0.11
10.0	10.00	9.97	-0.03
10.0	Tolerance Limit		±0.20

Conductivity (Method Ref: APHA 19e, 2510)

KCI concentration (mol/L)	Reference Reading (ms/cm)	Display Reading (ms/cm)	Deviation (%)
0.0000	0.00	0.00	-
0.1000	12.8	12.6	-1.87
0.2000	23.7	23.6	-0.34
0.5000	57.3	56.8	-0.87
0.000	Tolerance Limit		±2.0

Dissolved Ovegen (DO) (Method Ref: APHA 19e, 4500-O, C)

Reference DO reading (mg/L)	DO reading od DO probe (mg/L)	Deviation (mg/L)
7.37	7.49	0.12
6.41	6.49	0.08
5.55	5.68	0.13
0.00	Tolerance Limit	±0.20

- (1) Maxium tolerance and calibration frequency stated in the report, unless otherewise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.
- (2) Displayed reading presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.
- (3) Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.



#### EQUIPMENT PERFORMANCE CHECK / CALIBRATION REPORT

Report No. : HK1810373

Project Name EQUIPMENT PERFORMANCE CHECK/CALIBRATION REPORT

Date of Issue 19/04/2018

Customer : LAM ENVIRONMENTAL SERVICES LIMITED

Address : 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI, HONG KONG

Calibration Job No. HK1810373 Test Item No. HK1810373-01 Test Item Details Sonde

**Test Item Description** Manufacturer

YSI Professional Plus Model No. Serial No. 14E100105

Performance Method Checked according to in-house method CAL005

(References: Temperature (Section 6 of Intermational Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure), pH value

(APHA 21e 4500H:B), Salinity (Refer to Conductivity APHA 19e 2510B)

Dissolved oxygen (APHA 19e 4500-O,C))

**Test Item Receipt Date** 18/04/2018 Test Item Calibration Date 18/04/2018

Notes: 1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.

2. Results relate to item(s) as received.

3. ± indicates the tolerance limit

4. N/A = Not applicable

5. APHA - American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF, USA

6. DO, pH, salinity and temperature performance check was conducted by Pilot Testing Limited.

7. Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

Approved Signatory

Ms. Wong Po Yan, Pauline (Assistant Laboratory Manager)

Issue Date:

19/04/2018



**WORK ORDER:** HK1810373 **DATE OF ISSUE:** 19/04/2018

CLIENT: LAM ENVIRONMENTAL SERVICES LIMITED

Equipment Type	Sonde
Manufacturer	YSI
Model No.	Professional Plus
Serial No.	14E100105
Date of Calibration	18-Apr-18
Date of next Calibation	18-Jul-18

#### Parameters:

Temperature (Method Ref: Section 6 of Intermational Accreditation New Zealand Technical Guide No.3 Second edition March 2008: Working Thermometer Calibration Procedure)

Reference Reading (°C)	Display Reading (°C)	Deviation (°C)
7.2	7.2	0.0
14.7	14.6	-0.1
26.0	25.9	-0.1
	Tolerance Limit	±2.0

pH Value (Method Ref: APHA21e, 4500H:B)

	-, ,		
Expected Reading (pH unit)	Reference Reading (pH unit)	Display Reading (pH unit)	Deviation (pH unit)
4.0	4.12	4.15	0.03
7.0	7.06	7.08	0.02
10.0	10.05	9.92	-0.13
	Tolerance Limit		±0.20

Conductivity (Method Ref: APHA 19e, 2510)

KCI concentration (mol/L)	Reference Reading (ms/cm)	Display Reading (ms/cm)	Deviation (%)
0.0000	0.00	0.00	
0.1000	11.8	11.6	-1.69
0.2000	22.7	22.7	0.00
0.5000	58.6	57.9	-1.19
	Tolerance Limit		±2.0

Dissolved Oxygen (DO) (Method Ref: APHA 19e, 4500-O, C)

Reference DO reading (mg/L)	DO reading od DO probe (mg/L)	Deviation (mg/L)
8.44	8.60	0.16
7.37	7.42	0.05
5.45	5.52	0.07
	Tolerance Limit	±0.20

Remarks:

- (1) Maxium tolerance and calibration frequency stated in the report, unless otherewise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.
- (2) Displayed reading presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.
- (3) Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.



### **EQUIPMENT PERFORMANCE CHECK / CALIBRATION REPORT**

Report No. : HK1810678

Project Name : EQUIPMENT PERFORMANCE CHECK/CALIBRATION REPORT

Date of Issue : 12/7/2018

Customer : LAM ENVIRONMENTAL SERVICES LIMITED

Address : 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI, HONG KONG

Calibration Job No. : HK1810678 Test Item No. : HK1810678-01

Test Item Details

Test Item Description : Sonde Manufacturer : YSI

Model No. : Professional Plus Serial No. : 14K100322

Performance Method : Checked according to in-house method CAL005

(References: Temperature (Section 6 of Intermational Accreditation New Zealand Technical Gi No. 3 Second edition March 2008: Working Thermometer Calibration Procedure), pH value

(APHA 21e 4500H:B), Salinity (Refer to Conductivity APHA 19e 2510B)

Dissolved oxygen (APHA 19e 4500-O,C))

Test Item Receipt Date : 10/7/2018 Test Item Calibration Date : 11/7/2018

Notes: 1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.

2. Results relate to item(s) as received.

3. ± indicates the tolerance limit

4. N/A = Not applicable

 APHA - American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF, USA

DO, pH, salinity and temperature performance check was conducted by Pilot Testing Limited.

 Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

Approved Signatory

Ms. Wong Po Yan, Pauline (Assistant Laboratory Manager) Issue Date:

12/7/2018



WORK ORDER: HK1810678 DATE OF ISSUE: 12/7/2018

CLIENT: LAM ENVIRONMENTAL SERVICES LIMITED

Equipment Type	Sonde	
Manufacturer	YSI	
Model No.	Professional Plus	
Serial No.	14K100322	
Date of Calibration	11-Jul-18	
Date of next Calibation	11-Oct-18	

#### Parameters:

Temperature (Method Ref: Section 6 of Intermational Accreditation New Zealand Technical Guide No.3 Second edition March 2008: Working Thermometer Calibration Procedure)

Reference Reading (°C)	Display Reading (°C)	Deviation (°C)
7.1	7.0	-0.1
13.8	13.9	0.1
27.0	26.8	-0.2
	olerance Limit	±2.0

pH Value (Method Ref: APHA21e, 4500H:B)

Expected Reading (pH unit)	Reference Reading (pH unit)	Display Reading (pH unit)	Deviation (pH unit)	
4.0	4.08	4.04	-0.04	
7.0	7.02	7.16	0.14	
10.0	10.00	10.01	0.01	
10.0	Tolerance Limit		±0.20	

Conductivity (Method Ref: APHA 19e, 2510)

KCI concentration (mol/L)	Reference Reading (ms/cm)	Display Reading (ms/cm)	Deviation (%)
0.0000	0.00	0.00	
0.1000	12.8	12.8	-0.62
0.2000	23.7	23.7	0.17
0.5000	57.3	56.9	-0.70
0.0000	Tolerance Limit	100000	±2.0

Dissolved Oxygen (DO) (Method Ref: APHA 19e, 4500-O, C)

Reference DO reading (mg/L)	DO reading od DO probe (mg/L)	Deviation (mg/L)
7.22	7.14	-0.08
6.69	6.75	0.06
5.80	5.93	0.13
0.00	Tolerance Limit	±0.20

Remarks:

- (1) Maxium tolerance and calibration frequency stated in the report, unless otherewise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.
- (2) Displayed reading presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.
- (3) Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

- End of Report -

### Appendix 5.1

Monitoring Schedules for Reporting Month and Coming Reporting Month

#### Contract No. HK/2015/01

# Wan Chai Development Phase II and Central-Wan Chai Bypass Sampling, Field Measurement and Testing Works (Stage 3) Environmental Monitoring Schedule July 2018

Constant	July 2018							Polyton	Cotondon		
Sunday	333333	Monday	Tuesday		Wednesday	7-Jun	Thursday 28-	lun	Friday 29-Ju	Saturday	30-Jun
					21	/-Jun	20-	-Jun	29-Jul	1	30-Jun
									24hr TSP	1hr TSP	
							Impact WQM			Impact WQM	
								2:33		Mid-ebb	13:40
								9:43		Mid-flood	20:57
1	I-Jul	2-Jul	3	-Jul		4-Jul	5	5-Jul	6-Ju		7-Jul
							24hr TSP (CMA1b, CMA3a,		24hr TSP (CMA2a, CMA6a)		
							CMA4a, CMA5b)		1hr TSP		
							Noise (daytime)				
			Impact WQM				Impact WQM			Impact WQM	
				8:27				0:04			
		0.1.		5:21 I-Jul		I 1-Jul		6:42 2-Jul	40.1	Mid-ebb	18:53 14-Jul
a	3-Jul	9-Jul	10-	i-Jui	1	11-Jul	12	2-Jul	13-Ju	1	14-Jul
					24hr TSP (CMA1b, CMA2a,		24hr TSP (CMA6a)				
					CMA3a, CMA4a, CMA5b)		1hr TSP				
		Noise (daytime) (M4b, M5b, M6)			Noise (daytime) (M1a, M2b, M	M3a)					
Impact WQM			Impact WQM				Impact WQM			Impact WQM	
anpact wom				0:04				1:38		Mid-ebb	13:18
Mid-flood	1:42		Mid-flood 16	6:43			Mid-flood 18	8:36		Mid-flood	20:18
15	5-Jul	16-Jul		'-Jul	1	8-Jul		-Jul	20-Ju	ı	21-Jul
			24hr TSP (CMA2a, CMA3a,		24hr TSP (CMA1b)						
			CMA4a, CMA5b, CMA6a)		1hr TSP						
	ŀ	Noise (daytime) (M1a)	Noise (daytime) (M2b, M3a, M4								
			M5b, M6)								
		mpact WQM			Impact WQM				Impact WQM	Impact WQM	
		Mid-flood 8:04									
		Mid-ebb 14:56				16:36			Mid-ebb 18:3	Mid-flood	1:00
22	2-Jul	23-Jul	24	-Jul	2	25-Jul	26	3-Jul			
		24hr TSP	1hr TSP								
	P	Noise (daytime) (M1a, M2b)	Noise (daytime) (M3a, M4b)		Noise (daytime) (M5b, M6)						
			Impact WQM Mid-ebb 10	0:35			Impact WQM Mid-ebb 11	1:42			
				0:35 7:40				1:42 8:57			
L			MIU-IIU00 17	4.40			IVIIU-IIU00 18	0.57			

Remark:

Due to the hoisting of Tropical Cyclone Warning Signal No. 3, the water quality monitoring event on 18 July 2018 during flood tide was cancelled.

Due to interruption of electricity, the 24hr TSP monitoring at CMA1b was rescheduled from 17 July 2018 to 18 July 2018.

Due to interruption of electricity, the 24hr TSP monitoring at CMA2a was rescheduled from 5 July 2018 to 6 July 2018.

Due to interruption of electricity, the 24hr TSP monitoring at CMA6a were rescheduled from 5 and 11 July 2018 to 6 and 12 July 2018 respectively.

# Contract No. HK/2015/01 Wan Chai Development Phase II and Central-Wan Chai Bypass Sampling, Field Measurement and Testing Works (Stage 3) Tentative Environmental Monitoring Schedule

August 2018

Sunday	Monday	Tuesday	August 201 Wednesday	Thursday	Friday	Saturday
Sunday	wonday	Tuesday	wednesday	Inursday	Priday 27-Jul	Saturday 28-Ju
					27-301	20-30
						24hr TSP
						Impact WQM
						Mid-ebb 12:4
						Mid-flood 20:0
29-Ju	30-Jul	31-Jul	1-Aug	2-Aug	3-Aug	4-Au
25-30	30-341	31-041	1-Aug	2-7409	3-Aug	4-740
	1hr TSP				24hr TSP	1hr TSP
	Noise (daytime)	Noise (daytime)				
	Impact WQM		Impact WQM		Impact WQM	
	Mid-flood 7:05		Mid-flood 8:26		Mid-flood 9:58	
	Mid-ebb 13:52		Mid-ebb 14:59		Mid-ebb 16:15	
5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug	11-Au
				24hr TSP	1hr TSP	
	Noise (daytime)	Noise (daytime)		<del></del>		
	(Julyanio)	(Julyanno)				
		Impact WQM		Impact WQM		Impact WQM
		Mid-ebb 8:46		Mid-ebb 10:34		Mid-ebb 12:1:
						Miles Based
40.4	40.0	Mid-flood 15:33	45.1	Mid-flood 17:42		Mid-flood 19:1:
12-Aug	13-Aug		15-Aug	Mid-flood 17:42 16-Aug		Mid-flood 19:13
12-Au <u>c</u>	13-Aug		15-Aug			
12-Aug	13-Aug		15-Aug			
12-Aug	13-Aug		15-Aug			
12-Aug	13-Aug		15-Aug			
12-Aug	13-Aug		15-Aug			
12-Аид	13-Aug			16-Aug		
12-Aug		14-Aug	15-Aug 24hr TSP			
12-Aug	13-Aug Noise (daytime)			16-Aug		
12-Aug	Noise (daytime)	14-Aug	24hr TSP	16-Aug	17-Aug	
12-Aug	Noise (daytime)	14-Aug Noise (daytime)	24hr TSP Impact WGM	16-Aug	17-Aug	18-Au
12-Aug	Noise (daytime) Impact WOM Mid-flood 7:07	14-Aug Noise (daytime)	24hr TSP Impact WGM Mid-Rood 8:47	16-Aug	17-Aug Impact WQM Mid-lifood 10-40	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	14-Aug Noise (daytime)	24hr TSP  Impact WOM Mid-flood 8:47 Mid-debb 15:17	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
12-Aug	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	14-Aug Noise (daytime)	24hr TSP Impact WGM Mid-Rood 8:47	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	14-Aug Noise (daytime)	24hr TSP  Impact WOM Mid-flood 8:47 Mid-debb 15:17	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	14-Aug Noise (daytime)	24hr TSP  Impact WOM Mid-flood 8:47 Mid-debb 15:17	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	14-Aug Noise (daytime)	24hr TSP  Impact WOM Mid-flood 8:47 Mid-debb 15:17	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	14-Aug Noise (daytime)	24hr TSP  Impact WOM Mid-flood 8:47 Mid-debb 15:17	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	14-Aug Noise (daytime)	24hr TSP  Impact WOM Mid-flood 8:47 Mid-debb 15:17	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	Noise (daytime)	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	14-Aug Noise (daytime)	24hr TSP  Impact WOM Mid-flood 8:47 Mid-debb 15:17	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug	Noise (daytime)  21-Aug	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime)  Impact WOM Mid-flood 7:07 Mid-bbb 13:49	Noise (daytime)	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug	Noise (daytime)  21-Aug  24hr TSP Noise (daytime)	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug 1hrTSP 23-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug	Noise (daytime)  21-Aug  24hr TSP Noise (daytime)  Impact WOM	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug 1hr TSP 23-Aug	17-Aug Impact WQM Mid-flood 10-40 Mid-flood 16-52	18-Au
	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WOM Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime)  Impact WOM	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug 1hr TSP 23-Aug	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au
	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5
19-Aug	Noise (daytime) Impact WOM Mid-flood 7:07 Mid-ebb 13:49 20-Aug Noise (daytime)	Noise (daytime)  21-Aug  24hr TSP Noise (daytime) Impact WDM Mid-ebb 9-27	24hr TSP Impact WQM Mid-lood 8:47 Mid-ebb 15:17 22-Aug	16-Aug  1hrTSP  23-Aug  Impact WQM  Mid-debb 10-41	17-Aug  Impact WOM  Mid-lood 10:40  Mid-lobb 16:52  24-Aug	18-Au 25-Au Impact WOM Mid-ebb 11:5

### Appendix 5.2

Noise Monitoring Results and Graphical Presentations



### Noise Monitoring Result

#### Day Time (0700 - 1900hrs on normal weekdays)

Location: M1a - Footbridge at EX-Wanchai Harbour Road Sports Centre

		e Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level	
Date	Time		Leq	L10	L90	Leq	Leq	Leq	
			Unit: dB(A), (30-min)						
5/7/18	11:15	Fine	73.1	73.3 69.3		72	66	75	
11/7/18	09:45	Fine	73.3	75.1	70.2	72	67	75	
16/7/18	14:45	Fine	75.3	77.6	72.5	72	72	75	
23/7/18	09:59	Fine	74.4	76.4	71.3	72	70	75	



### Noise Monitoring Result

### Day Time (0700 - 1900hrs on normal weekdays)

Location: M2b - Noon-day gun area

			Measure	ement Noi	se Level	Baseline Level	Construction Noise Level	Limit Level
Date	Time	Weather	Leq	L10	L90	Leq	Leq	Leq
						Unit: dB	(A), (30-min)	
5/7/18	13:00	Fine	68.3 70.6 66.5		68	60	75	
11/7/18	08:56	Fine	67.2 68.6 65.3		68	67	75	
17/7/18	13:25	Fine			68	67	75	
23/7/18	10:40	Fine	67.4 69.0 64.7		68	67	75	

Location: M3a - Tung Lo Wan Fire Station

			Measure	ement Noi	se Level	Baseline Level	Construction Noise Level	Limit Level
Date	Time	Weather	Leq	L10	L90	Leq	Leq	Leq
						Unit: dB	(A), (30-min)	
5/7/18	13:40	Fine	65.7 66.8 64.1		69	66	75	
11/7/18	08:05	Fine	68.4 70.3 66.7		69	68	75	
17/7/18	10:37	Fine	66.7 68.7 65.1		69	67	75	
24/7/18	14:35	Fine	65.6 67.2 63.7		69	66	75	



## Noise Monitoring Result

#### Day Time (0700 - 1900hrs on normal weekdays)

Location: M4b - Victoria Centre

		Measure	ement Noi	se Level		Baseline Noise Level	Construction Noise Level	Limit Level
Date	Time	Weather	Leq	L10	L90	Leq	Leq	Leq
						Unit: dB	(A), (30min)	
5/7/18	14:20	Fine	67.5	69.3	65.2	67	54	75
9/7/18	15:10	Fine	67.9	68.3	64.5	67	59	75
17/7/18	10:00	Fine	66.5 67.8		64.3	67	67	75
24/7/18	15:15	Fine	65.9 67.3		64.0	67	66	75

Location: M5b - City Garden

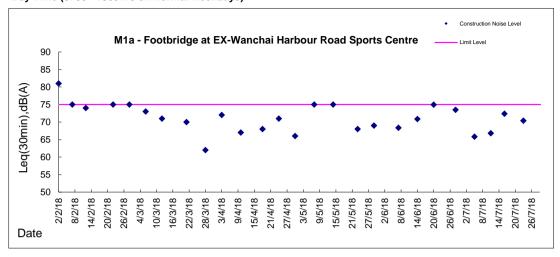
ſ				Measure	ement Noi	se Level	Baseline Level	Construction Noise Level	Limit Level
	Date	Time	Weather	Leq	L10	L90	Leq	Leq	Leq
L							Unit: dB	(A), (30min)	
ı	5/7/18	15:10	Fine	71.0 72.2 69.7		68	68	75	
ſ	9/7/18	15:55	Fine	70.4 71.7 68.9		68	67	75	
	17/7/18	08:30	Fine	e 71.8 73.9 69.2		68	69	75	
ſ	25/7/18	09:35	Fine	70.2 71.7 68.6		68	66	75	

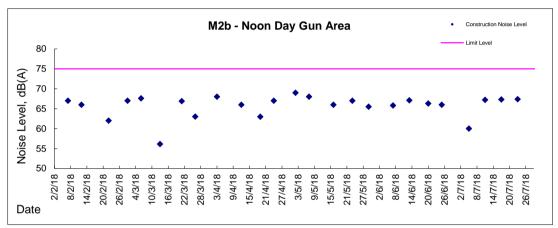
Location: M6 - HK Baptist Church Henrietta Secondary School

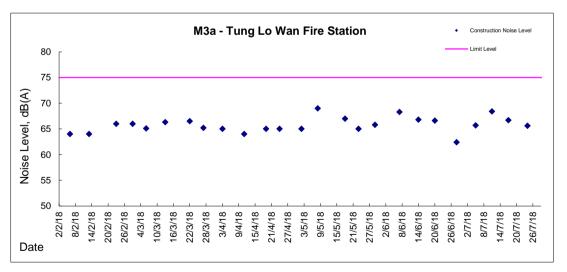
				Measure	ement Noi	se Level	Baseline Level	Construction Noise Level	Limit Level
	Date	Time	Weather	Leq	L10	L90	Leq	Leq	Leq
L				Unit: dB(A), (30-mi		A), (30-min)			
	5/7/18	15:50	Fine	68.5 70.3 66.4		71	69	70	
	9/7/18	16:35	Fine	68.9 73.0 66.5		71	69	70	
	17/7/18	09:05	Fine	65.1	66.8	63.2	71	65	65
Π	25/7/18	10:10	Fine	66.7 68.9 63.6		63.6	71	67	70



Graphic Presentation of Noise Monitoring Result Day Time (0700 - 1900hrs on normal weekdays)

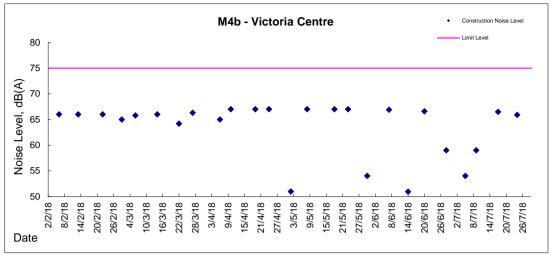


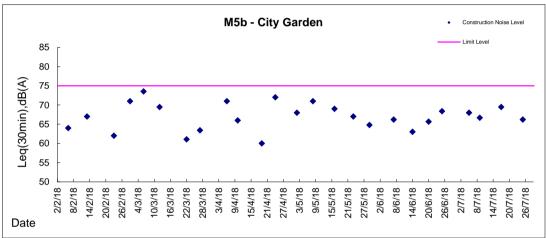


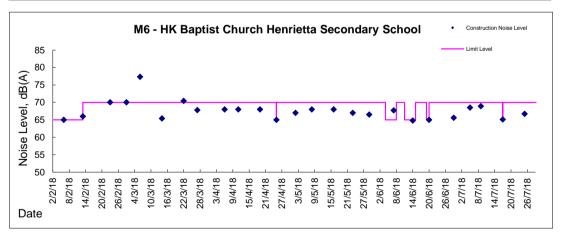




Graphic Presentation of Noise Monitoring Result Day Time (0700 - 1900hrs on normal weekdays)







## Appendix 5.3

Air Quality Monitoring Results and Graphical Presentations



Location: CMA1b - Harbour Grand Hotel Boundary Wall

Report on 24-hour TSP monitoring Action Level (  $\mu$  g/m3) - 176.7

Limit Level (  $\mu$  g/m3) - 260

	Date	Sampling	Weather	Filter paper	Filter Weigh	nt, g	Elapse Time, hr		Sampling	Flo	w Rate, m <sup>3</sup> /r	min	Total	TSP Level,
		Time	Condition	no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m³
ı	29-Jun-18	8:00	Rainy	26255	2.6667	2.7251	12053.78	12077.78	24.00	1.20	1.20	1.20	1727	33.8
	5-Jul-18	8:00	Cloudy	26276	2.6551	2.7024	12080.78	12104.78	24.00	1.15	1.15	1.15	1658	28.5
	11-Jul-18	8:00	Fine	25829	2.6415	2.6746	12107.78	12131.78	24.00	1.15	1.15	1.15	1658	20.0
	18-Jul-18	14:05	Rainy	26559	2.6804	2.7287	12137.78	12161.78	24.00	1.16	1.16	1.16	1664	29.0
	23-Jul-18	8:00	Rainy	23562	2.6107	2.6618	12162.78	12186.78	24.00	1.15	1.15	1.15	1661	30.8

Remarks: Due to interruption of electricity, the 24hr TSP monitoring was rescheduled from 17 July 2018 to 18 July 2018.

Report on 1-hour TSP monitoring Action Level ( $\mu$  g/m3) - 320.1 Limit Level ( $\mu$  g/m3) - 500

Date	Sampling	Weather	Filter paper	Filter Weigh	nt, g	Elapse Time	e, hr	Sampling	Flo	w Rate, m <sup>3</sup> /r	min	Total	TSP Level,
	Time	Condition	no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m³
30-Jun-18	9:20	Rainy	26304	2.6773	2.6808	12077.78	12078.78	1.00	1.20	1.20	1.20	72	48.6
30-Jun-18	13:00	Rainy	26265	2.6555	2.6586	12078.78	12079.78	1.00	1.20	1.20	1.20	72	43.1
30-Jun-18	14:20	Rainy	26272	2.6723	2.6770	12079.78	12080.78	1.00	1.20	1.20	1.20	72	65.3
6-Jul-18	8:37	Cloudy	26456	2.6796	2.6813	12104.78	12105.78	1.00	1.15	1.15	1.15	69	24.6
6-Jul-18	10:15	Cloudy	24317	2.6648	2.6683	12105.78	12106.78	1.00	1.15	1.15	1.15	69	50.6
6-Jul-18	13:00	Cloudy	25825	2.6485	2.6550	12106.78	12107.78	1.00	1.15	0.19	0.67	40	161.7
12-Jul-18	8:55	Cloudy	26441	2.6585	2.6631	12131.78	12132.78	1.00	1.15	1.15	1.15	69	66.6
12-Jul-18	10:45	Cloudy	25863	2.6282	2.6332	12132.78	12133.78	1.00	1.15	1.15	1.15	69	72.4
12-Jul-18	13:00	Cloudy	26008	2.6555	2.6592	12133.78	12134.78	1.00	1.15	1.15	1.15	69	53.5
18-Jul-18	8:35	Rainy	26576	2.6680	2.6722	12134.78	12135.78	1.00	1.26	1.26	1.26	75	55.7
18-Jul-18	10:30	Rainy	26572	2.6797	2.6839	12135.78	12136.78	1.00	1.26	1.26	1.26	75	55.7
18-Jul-18	13:00	Rainy	26557	2.6791	2.6814	12136.78	12137.78	1.00	1.26	1.26	1.26	75	30.5
24-Jul-18	8:35	Cloudy	26534	2.6833	2.6845	12186.78	12187.78	1.00	1.15	1.15	1.15	69	17.4
24-Jul-18	10:45	Cloudy	26539	2.6706	2.6717	12187.78	12188.78	1.00	1.15	1.15	1.15	69	15.9
24-Jul-18	13:00	Cloudy	26606	2.6749	2.6787	12188.78	12189.78	1.00	1.15	1.15	1.15	69	55.0



Location: CMA2a - Causeway Bay Community Centre

Report on 24-hour TSP monitoring Action Level (µg/m3) - 169.5 Limit Level (µg/m3) - 260

Date	Sampling	Weather	Filter	Filter Weigh	Filter Weight, g		r	Sampling	Flo	w Rate, m³/r	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m³
29-Jun-18	8:00	Rainy	26254	2.6588	2.7677	21604.46	21628.46	24.00	1.28	1.28	1.28	1840	59.2
6-Jul-18	13:10	Cloudy	25826	2.6412	2.7158	21658.48	21682.48	24.00	1.21	1.22	1.21	1750	42.6
11-Jul-18	8:00	Fine	25869	2.6564	2.7537	21682.48	21706.48	24.00	1.21	1.21	1.21	1748	55.7
17-Jul-18	8:00	Rainy	26418	2.7011	2.8316	21709.48	21733.48	24.00	1.21	1.22	1.22	1751	74.5
23-Jul-18	8:00	Rainy	26556	2.6815	2.7599	21736.48	21760.48	24.00	1.22	1.21	1.22	1751	44.8

Remarks: Due to interruption of electricity, the 24hr TSP monitoring was rescheduled from 5 July 2018 to 6 July 2018.

Report on 1-hour TSP monitoring Action Level (µg/m3) - 323.4 Limit Level (µg/m3) - 500

Date	Sampling	Weather	Filter	Filter Weigh	nt, g	Elapse Time, h	nr	Sampling	Flo	w Rate, m <sup>3</sup> /r	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m <sup>3</sup>
30-Jun-18	9:30	Rainy	26303	2.6682	2.6738	21628.46	21629.46	1.00	1.28	1.28	1.28	77	73.0
30-Jun-18	13:00	Rainy	26264	2.6590	2.6641	21629.46	21630.46	1.00	1.28	1.28	1.28	77	66.5
30-Jun-18	14:25	Rainy	26271	2.6756	2.6818	21630.46	21631.46	1.00	1.28	1.28	1.28	77	80.9
6-Jul-18	8:00	Cloudy	26292	2.6653	2.6716	21655.48	21656.48	1.00	1.21	1.21	1.21	73	86.5
6-Jul-18	9:03	Cloudy	26455	2.6689	2.6734	21656.48	21657.48	1.00	1.21	1.21	1.21	73	61.8
6-Jul-18	10:10	Cloudy	24316	2.6638	2.6703	21657.48	21658.48	1.00	1.21	1.21	1.21	73	89.2
12-Jul-18	8:50	Cloudy	26443	2.6672	2.6732	21706.48	21707.48	1.00	1.21	1.21	1.21	73	82.4
12-Jul-18	10:40	Cloudy	25864	2.6426	2.6484	21707.48	21708.48	1.00	1.21	1.21	1.21	73	79.6
12-Jul-18	13:00	Cloudy	25858	2.6548	2.6600	21708.48	21709.48	1.00	1.21	1.21	1.21	73	71.4
18-Jul-18	8:34	Rainy	26577	2.6761	2.6806	21733.48	21734.48	1.00	1.22	1.22	1.22	73	61.6
18-Jul-18	10:25	Rainy	26573	2.6930	2.6977	21734.48	21735.48	1.00	1.22	1.22	1.22	73	64.3
18-Jul-18	13:00	Rainy	26564	2.6608	2.6641	21735.48	21736.48	1.00	1.22	1.22	1.22	73	45.2
24-Jul-18	8:45	Cloudy	26535	2.6760	2.6787	21760.48	21761.48	1.00	1.21	1.21	1.21	73	37.0
24-Jul-18	10:50	Cloudy	26538	2.6902	2.6942	21761.48	21762.48	1.00	1.21	1.21	1.21	73	54.9
24-Jul-18	13:00	Cloudy	26605	2.6641	2.6682	21762.48	21763.48	1.00	1.21	1.21	1.21	73	56.3



Location: CMA3a - CWB PRE Site Office Area

Report on 24-hour TSP monitoring Action Level ( $\mu g/m3$ ) - 171 Limit Level ( $\mu g/m3$ ) - 260

Date	Sampling	Weather	Filter	Filter Weight, g		Elapse Time	Elapse Time, hr		Flo	w Rate, m <sup>3</sup> /i	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m³
29-Jun-18	8:00	Rainy	20878	2.8505	2.9279	9050.49	9074.49	24.00	1.07	1.07	1.07	1541	50.2
5-Jul-18	8:00	Cloudy	26293	2.6711	2.7106	9077.49	9101.49	24.00	1.05	1.05	1.05	1518	26.0
11-Jul-18	8:00	Fine	26450	2.6723	2.7460	9104.49	9128.49	24.00	1.12	1.12	1.12	1610	45.8
17-Jul-18	8:00	Rainy	25867	2.6415	2.7219	9131.49	9155.49	24.00	1.12	1.12	1.12	1613	49.8
23-Jul-18	8:00	Cloudy	26558	2.6781	2.7459	9158.49	9182.49	24.00	1.12	1.12	1.12	1613	42.0

Report on 1-hour TSP monitoring Action Level (µg/m3) - 311.3 Limit Level (µg/m3) - 500

Date	Sampling	Weather	Filter	Filter Weigh	nt, g	Elapse Time	e, hr	Sampling	Flo	w Rate, m <sup>3</sup> /i	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m <sup>3</sup>
30-Jun-18	8:00	Rainy	26305	2.6607	2.6657	9074.49	9075.49	1.00	1.07	1.07	1.07	64	77.8
30-Jun-18	11:00	Rainy	26263	2.6552	2.6591	9075.49	9076.49	1.00	1.07	1.07	1.07	64	60.7
30-Jun-18	13:00	Rainy	26270	2.6526	2.6583	9076.49	9077.49	1.00	1.07	1.07	1.07	64	88.7
6-Jul-18	8:15	Cloudy	26457	2.6720	2.6730	9101.49	9102.49	1.00	1.05	1.05	1.05	63	15.8
6-Jul-18	9:45	Cloudy	26452	2.6798	2.6837	9102.49	9103.49	1.00	1.05	1.05	1.05	63	61.6
6-Jul-18	13:00	Cloudy	25824	2.6537	2.6575	9103.49	9104.49	1.00	1.12	1.12	1.12	67	56.6
12-Jul-18	8:45	Cloudy	26415	2.6771	2.6786	9128.49	9129.49	1.00	1.12	1.12	1.12	67	22.4
12-Jul-18	10:15	Cloudy	26416	2.6979	2.6992	9129.49	9130.49	1.00	1.12	1.12	1.12	67	19.4
12-Jul-18	13:00	Cloudy	25860	2.6522	2.6556	9130.49	9131.49	1.00	1.12	1.12	1.12	67	50.7
18-Jul-18	8:25	Rainy	26578	2.6744	2.6767	9155.49	9156.49	1.00	1.12	1.12	1.12	67	34.1
18-Jul-18	10:10	Rainy	26574	2.6877	2.6916	9156.49	9157.49	1.00	1.12	1.12	1.12	67	57.9
18-Jul-18	13:00	Rainy	26438	2.6751	2.6781	9157.49	9158.49	1.00	1.12	1.12	1.12	67	44.5
24-Jul-18	8:30	Cloudy	26532	2.6886	2.6915	9182.49	9183.49	1.00	1.12	1.12	1.12	67	43.2
24-Jul-18	10:30	Cloudy	26530	2.6780	2.6809	9183.49	9184.49	1.00	1.12	1.12	1.12	67	43.2
24-Jul-18	13:00	Cloudy	26604	2.6662	2.6699	9184.49	9185.49	1.00	1.12	1.12	1.12	67	55.1



Location: CMA4a - SPCA

Report on 24-hour TSP monitoring Action Level (µg/m3) - 171.2 Limit Level (µg/m3) - 260

Date	Sampling	Weather	Filter	Filter Weigh	ilter Weight, g		Elapse Time, hr		Flo	w Rate, m <sup>3</sup> /i	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m³
29-Jun-18	8:00	Rainy	262696	2.6679	2.7224	25876.64	25900.64	24.00	1.15	1.15	1.15	1662	32.8
5-Jul-18	8:00	Cloudy	26289	2.6569	2.7198	25903.64	25927.64	24.00	1.28	1.28	1.28	1848	34.0
11-Jul-18	8:00	Fine	25828	2.6596	2.7183	25930.64	25954.64	24.00	1.19	1.19	1.19	1709	34.3
17-Jul-18	8:00	Rainy	26419	2.6748	2.7522	25957.64	25981.64	24.00	1.23	1.24	1.24	1781	43.5
23-Jul-18	8:00	Rainy	26524	2.6861	2.7539	25984.64	26008.64	24.00	1.24	1.24	1.24	1781	38.1

Report on 1-hour TSP monitoring
Action Level (µg/m3) - 312.5
Limit Level (µg/m3) - 500

Date	Sampling	Weather	Filter	Filter Weigh	nt, g	Elapse Time	e, hr	Sampling	Flo	w Rate, m³/ı	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m <sup>3</sup>
30-Jun-18	9:00	Rainy	26306	2.6628	2.6674	25900.64	25901.64	1.00	1.13	1.13	1.13	68	67.9
30-Jun-18	13:00	Rainy	26262	2.6683	2.6729	25901.64	25902.64	1.00	1.13	1.13	1.13	68	67.9
30-Jun-18	14:07	Rainy	26269	2.6677	2.6735	25902.64	25903.64	1.00	1.13	1.13	1.13	68	85.7
6-Jul-18	8:10	Cloudy	26458	2.6662	2.6692	25927.64	25928.64	1.00	1.28	1.28	1.28	77	39.0
6-Jul-18	9:50	Cloudy	26453	2.6758	2.6795	25928.64	25929.64	1.00	1.28	1.28	1.28	77	48.1
6-Jul-18	13:00	Cloudy	26451	2.6729	2.6753	25929.64	25930.64	1.00	1.19	1.19	1.19	71	33.7
12-Jul-18	8:15	Cloudy	25832	2.6384	2.6404	25954.64	25955.64	1.00	1.19	1.19	1.19	71	28.1
12-Jul-18	10:10	Cloudy	25865	2.6376	2.6405	25955.64	25956.64	1.00	1.21	1.21	1.21	73	39.9
12-Jul-18	13:00	Cloudy	26009	2.6518	2.6541	25956.64	25957.64	1.00	1.21	1.21	1.21	73	31.6
18-Jul-18	8:20	Rainy	26579	2.6746	2.6775	25981.64	25982.64	1.00	1.19	1.19	1.19	71	40.6
18-Jul-18	10:05	Rainy	26575	2.6761	2.6789	25982.64	25983.64	1.00	1.24	1.24	1.24	74	37.7
18-Jul-18	13:00	Rainy	26591	2.6591	2.6607	25983.64	25984.64	1.00	1.29	1.29	1.29	77	20.7
23-Jul-18	8:22	Cloudy	26542	2.6768	2.6800	26008.64	26009.64	1.00	1.24	1.24	1.24	74	43.2
24-Jul-18	10:30	Cloudy	26529	2.6771	2.6799	26009.64	26010.64	1.00	1.24	1.24	1.24	74	37.8
24-Jul-18	13:00	Cloudy	26638	2.6707	2.6731	26010.64	26011.64	1.00	1.24	1.24	1.24	74	32.4



Location: CMA5b - Pedestrian Plaza

Report on 24-hour TSP monitoring Action Level (µg/m3) - 181 Limit Level (µg/m3) - 260

Date	Sampling	Weather	Filter paper	Filter Weigh	t, g	Elapse Time	e, hr	Sampling	Flo	w Rate, m <sup>3</sup> /ı	min	Total	TSP Level,
	Time	Condition	no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m³
29-Jun-18	8:00	Rainy	26310	2.6701	2.7336	10471.44	10495.44	24.00	1.01	1.01	1.01	1455	43.6
5-Jul-18	8:00	Cloudy	26273	2.6661	2.7276	10498.44	10522.44	24.00	1.07	1.07	1.07	1540	39.9
11-Jul-18	8:00	Fine	25827	2.6373	2.7159	10525.44	10549.44	24.00	1.07	1.07	1.07	1540	51.0
17-Jul-18	8:00	Rainy	26417	2.6839	2.7680	10552.44	10576.44	24.00	1.07	1.07	1.07	1543	54.5
23-Jul-18	8:00	Rainy	26562	2.6779	2.7432	10579.44	10603.44	24.00	1.13	1.13	1.13	1630	40.1

Report on 1-hour TSP monitoring Action Level (µg/m3) - 332 Limit Level (µg/m3) - 500

Date	Sampling	Weather	Filter paper	Filter Weigh	nt, g	Elapse Time	e, hr	Sampling	Flo	w Rate, m <sup>3</sup> /	min	Total	TSP Level,
	Time	Condition	no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m³
30-Jun-18	8:06	Rainy	26256	2.6578	2.6620	10495.44	10496.44	1.00	1.01	1.01	1.01	61	69.3
30-Jun-18	10:05	Rainy	26259	2.6655	2.6674	10496.44	10497.44	1.00	1.01	1.01	1.01	61	31.3
30-Jun-18	13:00	Rainy	26266	2.6652	2.6670	10497.44	10498.44	1.00	1.01	1.01	1.01	61	29.7
6-Jul-18	8:04	Cloudy	26461	2.6699	2.6727	10522.44	10523.44	1.00	1.07	1.07	1.07	64	43.6
6-Jul-18	9:39	Cloudy	26454	2.6651	2.6713	10523.44	10524.44	1.00	1.07	1.07	1.07	64	96.6
6-Jul-18	13:00	Cloudy	24320	2.6681	2.6710	10524.44	10525.44	1.00	1.07	1.07	1.07	64	45.2
12-Jul-18	8:03	Cloudy	25831	2.6444	2.6481	10549.44	10550.44	1.00	1.07	1.07	1.07	64	57.6
12-Jul-18	9:20	Cloudy	26442	2.6606	2.6659	10550.44	10551.44	1.00	1.07	1.07	1.07	64	82.6
12-Jul-18	13:00	Cloudy	25862	2.6408	2.6455	10551.44	10552.44	1.00	1.07	1.07	1.07	64	73.2
18-Jul-18	8:04	Rainy	26429	2.6688	2.6724	10576.44	10577.44	1.00	1.07	1.07	1.07	64	55.9
18-Jul-18	9:08	Rainy	26432	2.6677	2.6722	10577.44	10578.44	1.00	1.07	1.07	1.07	64	69.8
18-Jul-18	13:00	Rainy	26565	2.6681	2.6702	10578.44	10579.44	1.00	1.07	1.07	1.07	64	32.6
24-Jul-18	8:04	Cloudy	26545	2.6603	2.6615	10603.44	10604.44	1.00	1.07	1.07	1.07	64	18.7
24-Jul-18	9:10	Cloudy	26536	2.6778	2.6814	10604.44	10605.44	1.00	1.07	1.07	1.07	64	56.0
24-Jul-18	10:20	Cloudy	26537	2.6910	2.6949	10605.44	10606.44	1.00	1.07	1.07	1.07	64	60.7



Location: CMA6a - WD2 PRE Office

 $\begin{array}{ccc} \text{Report on 24-hour TSP monitoring} \\ \text{Action Level -} & 187.3 & \mu\text{g/m3} \\ \text{Limit Level -} & 260 & \mu\text{g/m3} \end{array}$ 

Date	Sampling	Weather	Filter	Filter Weigh	nt, g	Elapse Time	e, hr	Sampling	Flo	w Rate, m <sup>3</sup> /	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μ <b>g</b> /m³
29-Jun-18	8:00	Rainy	26315	2.6714	2.7280	4174.43	4198.43	24.00	1.17	1.17	1.17	1682	33.7
6-Jul-18	11:54	Cloudy	24319	2.6432	2.6945	4204.44	4228.44	24.00	1.10	1.10	1.10	1587	32.3
12-Jul-18	14:10	Cloudy	25841	2.6754	2.7041	4231.44	4255.44	24.00	1.05	1.05	1.05	1510	19.0
17-Jul-18	8:00	Rainy	25840	2.6439	2.7062	4255.44	4279.44	24.00	1.10	1.11	1.10	1589	39.2
23-Jul-18	8:00	Rainy	26561	2.6658	2.7305	4282.44	4306.44	24.00	1.10	1.10	1.10	1589	40.7

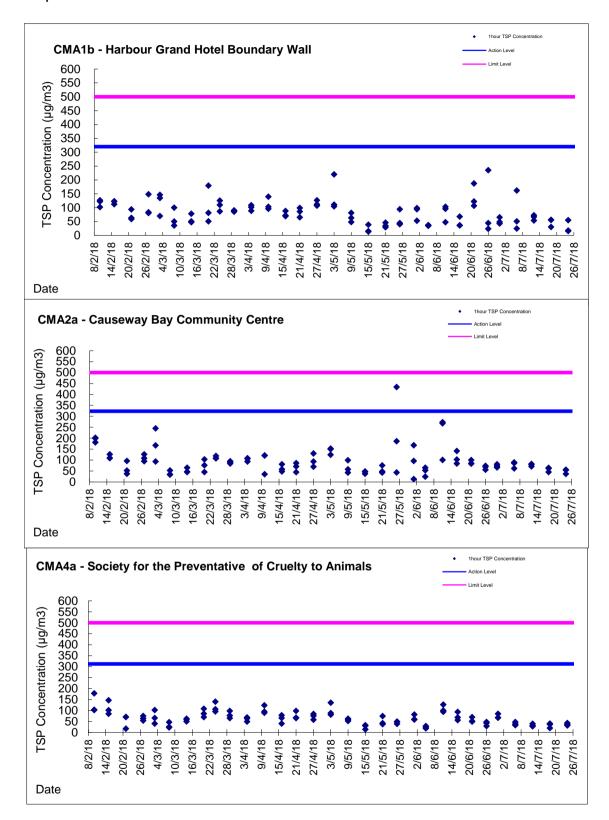
Remarks: Due to interruption of electricity, the 24hr TSP monitoring were rescheduled from 5 and 11 July 2018 to 6 and 12 July 2018 respectively.

Report on 1-hour TSP monitoring Action Level - 300.1  $\mu$  g/m³ Limit Level - 500  $\mu$  g/m3

Date	Sampling	Weather	Filter	Filter Weigh	nt, g	Elapse Time	e, hr	Sampling	Flo	w Rate, m <sup>3</sup> /r	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μ <b>g</b> /m³
30-Jun-18	8:05	Rainy	26258	2.6749	2.6781	4198.43	4199.43	1.00	1.11	1.11	1.11	67	48.1
30-Jun-18	10:13	Rainy	26260	2.6690	2.6714	4199.43	4200.43	1.00	1.11	1.11	1.11	67	36.0
30-Jun-18	13:00	Rainy	26278	2.6667	2.6726	4200.43	4201.43	1.00	1.11	1.11	1.11	67	88.6
6-Jul-18	8:10	Cloudy	26016	2.6523	2.6550	4201.44	4202.44	1.00	1.10	1.10	1.10	66	40.9
6-Jul-18	9:12	Cloudy	26460	2.6676	2.6703	4202.44	4203.44	1.00	1.10	1.10	1.10	66	40.9
6-Jul-18	10:15	Cloudy	26015	2.6487	2.6514	4203.44	4204.44	1.00	1.10	1.10	1.10	66	40.9
12-Jul-18	8:02	Cloudy	26319	2.6764	2.6787	4228.44	4229.44	1.00	1.16	1.16	1.16	69	33.1
12-Jul-18	9:30	Cloudy	26439	2.6766	2.6784	4229.44	4230.44	1.00	1.16	1.16	1.16	69	25.9
12-Jul-18	13:00	Cloudy	25859	2.6584	2.6599	4230.44	4231.44	1.00	1.16	1.16	1.16	69	21.6
18-Jul-18	8:05	Rainy	26430	2.6790	2.6821	4279.44	4280.44	1.00	1.11	1.11	1.11	66	46.7
18-Jul-18	9:20	Rainy	26434	2.6643	2.6679	4280.44	4281.44	1.00	1.11	1.11	1.11	66	54.3
18-Jul-18	10:50	Rainy	26570	2.6580	2.6596	4281.44	4282.44	1.00	1.11	1.11	1.11	66	24.1
24-Jul-18	8:05	Cloudy	26544	2.6678	2.6710	4306.44	4307.44	1.00	1.10	1.10	1.10	66	48.4
24-Jul-18	10:10	Cloudy	26528	2.6647	2.6665	4307.44	4308.44	1.00	1.10	1.10	1.10	66	27.2
24-Jul-18	13:00	Cloudy	26608	2.6702	2.6748	4308.44	4309.44	1.00	1.10	1.10	1.10	66	69.6

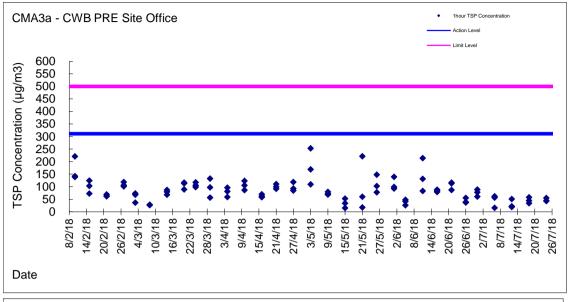


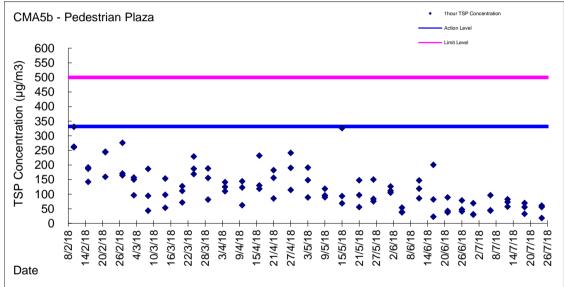
**Graphic Presentation of 1 hour TSP Result** 

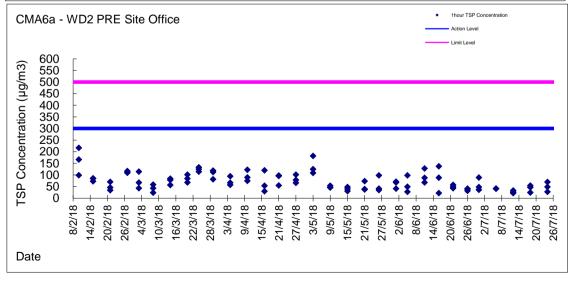




**Graphic Presentation of 1 hour TSP Result** 

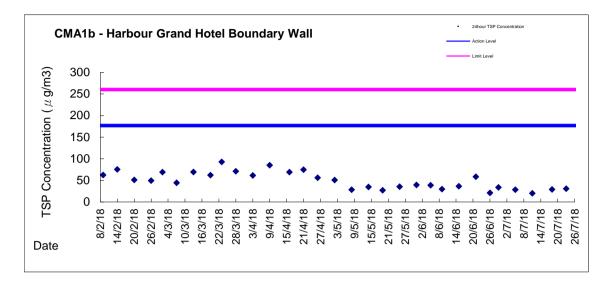


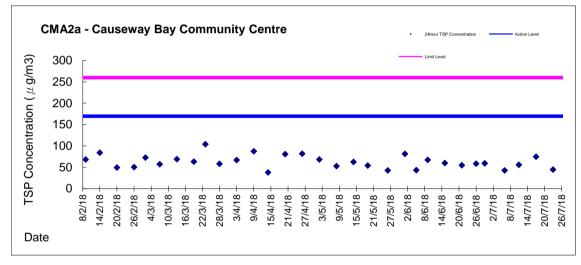


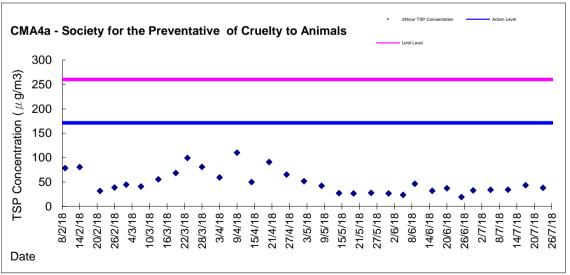




**Graphic Presentation of 24 hour TSP Result** 

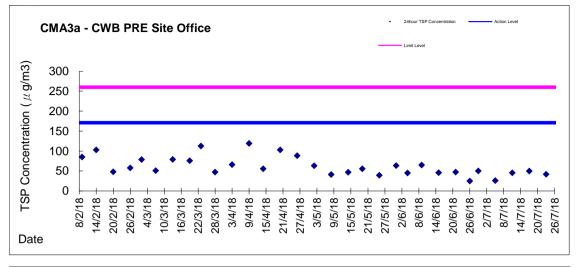


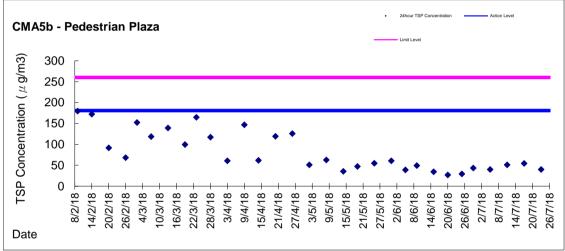


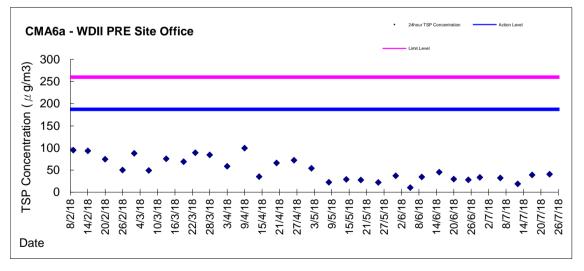




**Graphic Presentation of 24 hour TSP Result** 







## Appendix 5.4

Water Quality Monitoring Results and Graphical Presentations



### Water Monitoring Result at C7 - Windsor House Mid-Flood Tide

Date	Time	Weater Condition	· ·	g Depth	Wat	ter Temp	erature		pH			Salini	ty	D	O Satur	ation		DO mg/L			Turbid	ity	Suspend	ded Solids
		Corramon	r	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va		Average	Va	alue	Average	Value	Average
28/6/18	19:15	Fine	Middle	1.5	29.70	29.70	29.70	8.13	8.13	8.13	26.26	26.26	26.26	69.8	71.3	70.6	4.52	4.62	4.57	1.09	1.13	1.10	7	5.50
25/5/10	19:16	1 1110	Middle	1.5	29.70	29.70	20.70	8.13	8.13	0.10	26.26	26.26	20.20	70.1	71.0	70.0	4.54	4.60	4.07	1.11	1.07	1.10	4	0.00
30/6/18	19:08	Cloudy	Middle	1.5	28.80	28.80	28.80	7.90	7.90	7.90	25.00	25.00	25.00	73.7	75.0	74.2	4.97	5.04	5.01	1.13	1.19	1.19	5	4.00
	19:09	,	Middle	1.5	28.80	28.80		7.90	7.90		25.00	25.00		74.7	73.3		5.02	5.01		1.21	1.23		3	
3/7/18	9:55	Cloudy	Middle	1.5	28.10	28.10	28.15	7.95	7.95	7.95	25.33	25.33	25.34	66.4	66.4	66.5	4.50	4.50	4.51	2.12	2.11	2.12	4	4.50
	9:57	•	Middle	1.5	28.20	28.20		7.95	7.95		25.34	25.34		66.5	66.7		4.50	4.52		2.11	2.12		5	
5/7/18	11:25	Fine	Middle	1.5	28.50	28.50	28.55	7.90	7.90	7.90	26.46	26.46	26.47	69.7	69.9	70.2	4.67	4.68	4.70	0.87	0.87	0.90	4	3.50
	11:27		Middle	1.5	28.60	28.60		7.89	7.89		26.47	26.47		70.5	70.8		4.72	4.74		0.90	0.94		3	<u> </u>
8/7/18	2:15	Cloudy	Middle	1.5	31.80	31.80	31.80	8.11	8.11	8.11	26.57	26.57	26.57	71.5	73.8	74.4	4.47	4.64	4.66	1.08	1.11	1.13	4	4.50
	2:16		Middle	1.5	31.80	31.80		8.11	8.11		26.57	26.57		75.8	76.3		4.74	4.77		1.14	1.17		5	
10/7/18	14:35	Fine	Middle	1.5	29.40	29.40	29.55	8.29	8.29	8.30	27.23	27.23	27.24	83.0	83.0	82.3	5.40	5.43	5.37	4.08	4.07	4.08	10	10.50
	14:37		Middle	1.5	29.70	29.70		8.30	8.30		27.24	27.24		81.6	81.5		5.33	5.32		4.07	4.08		11	<u> </u>
12/7/18	19:15	Cloudy	Middle	1.5	27.20	27.20	27.20	7.91	7.91	7.91	26.60	26.60	28.10	72.5	75.0	74.5	4.90	4.98	4.97	1.21	1.30	1.26	<2	<2
	19:16		Middle	1.5	27.20	27.20		7.91	7.91		29.60	29.60		75.1	75.5		4.99	5.01		1.28	1.24		<2	
14/7/18	21:00	Cloudy	Middle	1.5	26.10	26.10	26.10	7.98	7.98	7.98	23.73	23.74	23.74	72.0	72.4	73.4	5.09	5.12	5.19	1.09	1.11	1.13	<2	<2
	21:01		Middle	1.5	26.10	26.10		7.98	7.98		23.74	23.74		74.1	75.0		5.24	5.30		1.14	1.16		<2	<u> </u>
16/7/18	10:39	Rainy	Middle	2.5	27.20	27.20	27.30	8.00	8.00	8.00	28.96	28.96	28.94	45.8	47.1	47.3	3.09	3.18	3.19	2.06	2.06	2.07	2	2.50
	10:41	Tropical	Middle	2.5	27.40	27.40		8.00	8.00		28.92	28.92		48.2	47.9		3.25	3.23		2.06	2.08		3	1
18/7/18	-	Cyclone Warning	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	_
	-	Signal No.3	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	1
21/7/18	0:30	Fine	Middle	1.5	28.80	28/.8	28.80	7.79	7.79	7.80	28.76	28.76	28.76	66.3	62.2	63.3	4.38	4.09	4.17	1.37	1.40	1.36	3	3.00
	0:31		Middle	1.5	28.80	28.80		7.80	7.80		28.76	28.76		61.6	63.2		4.05	4.16		1.35	1.31		<2	<u> </u>
24/7/18	14:55	Cloudy	Middle	1.5	29.80	29.80	29.85	8.05	8.05	8.05	29.74	29.74	29.74	81.5	81.6	81.8	5.23	5.24	5.25	3.57	3.61	3.56	4	4.50
	14:57		Middle	1.5	29.90	29.90		8.04	8.04		29.74	29.74		81.8	82.3		5.25	5.29		3.53	3.53		5	
26/7/18	19:20	Cloudy	Middle	1.5	29.40	29.40	29.40	7.84	7.84	7.84	28.27	28.27	28.27	74.2	75.1	74.6	4.78	4.84	4.80	1.19	1.24	1.26	2	2.00
	19:21		Middle	1.5	29.40	29.40		7.84	7.84		28.27	28.27		74.0	74.9		4.77	4.82		1.29	1.33		<2	



# Water Monitoring Result at C1 - HKCEC Extension Mid-Flood Tide

Date	Time	Weater	Samplin	g Depth	Wat	ter Temp	erature		рН			Salini	ty	D	O Satur	ation		DO			Turbid	,		ded Solids
		Condition	r	n	Va	lue	Average	Va	lue -	Average	Va	ppt lue	Average	Va	ılue	Average	Va	mg/L lue	Average	Va	NTL ilue	Average	Value	g/L Average
	21:23		Middle	3.0	28.80	28.80		7.99	7.99		27.89	27.89		74.5	75.0		4.85	4.92		1.32	1.93		8	
28/6/18	21:24	Fine	Middle	3.0	28.80	28.80	28.80	7.99	7.99	7.99	27.89	27.89	27.89	74.3	74.9	74.7	4.84	4.87	4.87	1.18	1.09	1.38	5	6.50
20/0/40	21:31	Claudu	Middle	3.0	28.80	28.80	28.80	8.10	8.10	8.10	27.12	27.12	27.42	71.4	70.7	70.8	4.74	4.69	4.70	1.86	1.64	1.56	9	9.00
30/6/18	21:32	Cloudy	Middle	3.0	28.80	28.80	28.80	8.10	8.10	8.10	27.12	27.12	27.12	70.7	70.4	70.8	4.69	4.67	4.70	1.31	1.44	1.00	9	9.00
3/7/18	9:10	Cloudy	Middle	3.0	27.40	27.40	27.40	8.09	8.09	8.10	27.85	27.85	27.85	82.5	82.9	82.8	5.59	5.62	5.61	2.33	2.33	2.34	<2	<2
3/1/10	9:12	Cloudy	Middle	3.0	27.40	27.40	27.40	8.10	8.10	0.10	27.85	27.85	27.00	83.0	82.9	02.0	5.62	5.61	0.01	2.35	2.33	2.04	<2	1
5/7/18	10:50	Fine	Middle	3.0	28.30	28.30	28.30	8.07	8.07	8.07	26.54	26.54	26.54	81.6	82.1	82.2	5.50	5.54	5.54	2.09	2.08	2.09	4	3.50
5/1/16	10:52	rine	Middle	3.0	28.30	28.30	28.30	8.07	8.07	8.07	26.53	26.53	20.54	82.5	82.7	62.2	5.55	5.56	5.54	2.08	2.09	2.09	3	3.50
8/7/18	22:51	Cloudy	Middle	2.5	30.00	30.00	29.90	8.18	8.18	8.18	26.62	26.62	26.62	73.5	77.0	74.9	4.75	4.98	4.83	4.10	4.01	4.08	6	5.50
0/1/10	22:52	Cloudy	Middle	2.5	29.80	29.80	29.90	8.18	8.18	0.10	26.62	26.62	20.02	74.9	74.1	74.5	4.80	4.79	4.03	4.14	4.07	4.00	5	3.30
10/7/18	16:40	Fine	Middle	3.0	27.20	27.20	27.25	8.28	8.28	8.28	28.54	28.54	28.54	79.9	79.5	79.7	5.40	5.38	5.39	4.66	4.66	4.69	11	11.00
10/7/10	16:42	Tille	Middle	3.0	27.30	27.30	21.23	8.28	8.28	0.20	28.54	28.54	20.54	79.7	79.8	19.1	5.39	5.39	5.55	4.71	4.72	4.03	11	11.00
12/7/18	18:35	Cloudy	Middle	2.5	27.70	27.70	27.70	8.00	8.00	8.00	30.32	30.32	30.32	77.0	77.4	77.2	5.11	5.14	5.13	1.92	1.86	1.79	9	9.00
12/1/10	18:36	Oloudy	Middle	2.5	27.70	27.70	21.10	8.00	8.00	0.00	30.32	30.32	30.32	76.7	77.8	11.2	5.10	5.17	0.10	1.77	1.62	1.75	9	3.00
14/7/18	22:44	Cloudy	Middle	3.0	25.90	25.90	25.90	7.86	7.87	7.87	30.40	30.40	30.41	64.8	65.8	64.9	4.43	4.51	4.45	1.83	1.45	1.53	5	7.00
14///10	22:45	Cloudy	Middle	3.0	25.90	25.90	20.00	7.87	7.87	7.07	30.41	30.41	00.41	65.1	63.9	04.0	4.46	4.38	4.40	1.49	1.36	1.00	9	7.00
16/7/18	9:51	Rainy	Middle	3.5	27.00	27.00	27.05	8.00	8.00	8.03	30.22	30.22	30.20	61.3	61.7	62.1	4.12	4.15	4.17	9.61	9.65	9.64	12	12.50
10,1,10	9:53	rtanny	Middle	3.5	27.10	27.10	21100	8.06	8.06	0.00	30.18	30.18	00.20	61.1	64.1	02: .	4.11	4.31		9.68	9.62	0.0 .	13	12.00
18/7/18	-	Tropical Cyclone	Middle	1	-	-	_	-	-	_	-	-	_	1	-	_	1	-	_	-	-	_	·	
10///10	-	Warning Signal No.3	Middle	-	-	-		-	-			-		•	-		•	-		-	-		-	
21/7/18	3:46	Fine	Middle	3.0	29.10	29.10	29.10	7.93	7.93	7.93	30.68	30.68	30.68	77.1	78.0	77.1	5.00	5.06	5.00	1.88	2.00	1.76	4	4.00
21,7,10	3:47		Middle	3.0	29.10	29.10	20110	7.93	7.93	7.00	30.68	30.68	00.00	76.9	76.4		4.99	4.94	0.00	1.60	1.57	0	4	
24/7/18	17:25	Cloudy	Middle	2.5	28.90	28.90	28.90	8.16	8.16	8.16	29.62	29.62	29.63	86.7	86.7	86.7	5.67	5.67	5.67	9.67	9.66	9.67	9	9.00
	17:27	,	Middle	2.5	28.90	28.90		8.16	8.16		29.64	29.64		87.0	86.3		5.69	5.64		9.68	9.67		9	
26/7/18	22:00	Cloudy	Middle	3.0	28.30	28.30	28.30	8.01	8.01	8.01	29.09	29.09	29.09	75.3	74.6	74.9	4.91	4.87	4.89	1.03	1.12	1.13	5	3.50
	22:01	,	Middle	3.0	28.30	28.30		8.01	8.01		29.09	29.09		74.0	75.5		4.83	4.93		1.20	1.15		2	



### Water Monitoring Result at P1 - HKCEC Phase I Mid-Flood Tide

Date	Time	Weater Condition		g Depth	Wat	ter Temp	erature		pH			Salini	ty	D	OO Satur	ation		DO mg/L			Turbid	ity	Suspend	ded Solids
		Corramon	r	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	alue	Average	Va		Average	Va	alue	Average	Value	Average
28/6/18	20:53	Fine	Middle	3.0	28.70	28.70	28.70	8.15	8.50	8.25	27.75	27.75	27.84	72.5	72.8	74.9	4.73	4.75	4.88	1.09	1.02	1.18	9	9.50
	20:54		Middle	3.0	28.70	28.70		8.18	8.18		27.93	27.93		77.4	76.8		5.04	4.99		1.38	1.23		10	
30/6/18	20:30	Cloudy	Middle	3.0	28.70	28.70	28.70	8.12	8.12	8.12	27.20	27.20	27.20	76.5	76.4	76.7	5.09	5.08	5.10	1.57	1.33	1.50	5	5.00
	20:31		Middle	3.0	28.70	28.70		8.12	8.12		27.20	27.20		76.4	77.4		5.08	5.14		1.46	1.63		5	
3/7/18	8:50	Cloudy	Middle	3.0	27.70	27.70	27.75	8.07	8.07	8.07	28.21	28.21	28.21	79.4	79.7	79.2	5.34	5.34	5.32	2.70	2.64	2.65	<2	2.00
	8:52		Middle	3.0	27.80	27.80		8.07	8.07		28.21	28.21		78.7	78.8		5.29	5.29		2.62	2.62		2	<u> </u>
5/7/18	10:30	Fine	Middle	3.0	28.60	28.60	28.65	8.11	8.11	8.11	26.37	26.37	26.38	83.5	83.9	83.9	5.58	5.60	5.61	2.30	2.32	2.32	5	4.00
	10:32		Middle	3.0	28.70	28.70		8.11	8.11		26.38	26.38		84.2	84.1		5.62	5.62		2.32	2.32		3	
8/7/18	22:20	Cloudy	Middle	2.5	30.20	30.20	30.20	8.18	8.18	8.18	26.80	26.80	26.80	74.8	76.7	75.2	4.79	4.91	4.82	4.75	4.70	4.73	5	5.50
	22:21		Middle	2.5	30.20	30.20		8.18	8.18		26.80	26.80		75.1	74.3		4.81	4.76		4.79	4.68		6	<u> </u>
10/7/18	16:20	Fine	Middle	3.0	29.20	29.20	29.25	8.27	8.27	8.28	28.14	28.14	28.14	67.1	67.1	67.3	4.40	4.40	4.41	3.01	3.03	3.02	9	9.50
	16:22		Middle	3.0	29.30	29.30		8.28	8.28		28.14	28.14		67.4	67.5		4.41	4.42		3.01	3.04		10	<u> </u>
12/7/18	18:10	Cloudy	Middle	2.5	27.90	27.90	27.90	7.94	7.94	7.94	30.13	30.13	30.12	77.7	77.5	75.7	5.17	5.15	5.03	2.69	2.80	2.48	6	6.50
	18:11		Middle Middle	2.5 3.0	27.90	27.90		7.94 8.03	7.94 8.03		30.13	30.10		75.0 72.2	72.4 72.3		4.98	4.81		2.12 5.11	2.31 5.13		9	
14/7/18	22:12	Cloudy	Middle	3.0	26.00	26.00	26.00	8.03	8.03	8.03	30.61	30.61	30.61	72.4	71.7	72.2	4.94	4.89	4.92	4.98	4.94	5.04	8	8.50
	9:35		Middle	3.5	26.80	26.80		8.05	8.05		29.82	29.82		57.4	57.3		3.89	3.88		9.00	9.00		11	
16/7/18	9:37	Rainy	Middle	3.5	26.80	26.80	26.80	8.04	8.04	8.05	29.82	29.82	29.82	56.4	56.1	56.8	3.82	3.80	3.85	8.98	8.87	8.96	10	10.50
	-	Tropical	Middle	-	-	-		-	_		-	-		-	_		_	-		-	-		-	
18/7/18	-	Cyclone Warning Signal No.3	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3:15		Middle	3.0	28.90	28.90		7.92	7.92		30.48	30.48		66.9	69.4		4.35	4.51		1.20	1.24		3	
21/7/18	3:16	Fine	Middle	3.0	28.90	28.90	28.90	7.92	7.92	7.92	30.48	30.48	30.48	71.6	72.0	70.0	4.66	4.67	4.55	1.18	1.14	1.19	3	3.00
24/7/40	17:05	Claudi	Middle	2.5	29.20	29.20	20.25	8.07	8.07	0.00	29.45	29.45	20.45	96.4	96.6	05.4	6.27	6.28	6.20	5.93	5.99	F 07	8	7.50
24/7/18	17:07	Cloudy	Middle	2.5	29.30	29.30	29.25	8.11	8.11	8.09	29.45	29.45	29.45	94.3	94.4	95.4	6.13	6.13	6.20	5.98	5.99	5.97	7	7.50
26/7/18	21:34	Cloudy	Middle	3.0	28.10	28.10	28.10	8.00	8.00	8.00	29.06	29.06	29.06	74.5	73.9	74.1	4.84	4.83	4.84	4.68	4.60	4.60	8	7.50
20/1/10	21:35	Cioudy	Middle	3.0	28.10	28.10	20.10	8.00	8.00	0.00	29.06	29.06	29.00	73.1	74.9	74.1	4.78	4.90	4.04	4.53	4.58	4.00	7	7.30



# Water Monitoring Result at P3 - APA Mid-Flood Tide

Date	Time	Weater Condition		ng Depth	Wat	ter Temp	perature		pH -			Salinit	ty	D	O Satur	ation		DO mg/L			Turbio			ded Solids a/L
		Cortaillori	r	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	ılue	Average	Va	lue	Average	Va	alue	Average	Value	Average
28/6/18	21:02	Fine	Middle	3.0	29.00	29.00	29.00	8.18	8.18	8.18	27.93	27.93	27.93	72.1	75.3	75.4	4.68	4.89	4.85	1.21	1.18	1.25	7	7.00
20/0/10	21:03	Tille	Middle	3.0	29.00	29.00	23.00	8.18	8.18	0.10	27.93	27.93	21.55	77.4	76.8	75.4	504	4.99	4.00	1.38	1.23	1.25	7	7.00
30/6/18	20:37	Cloudy	Middle	3.0	28.80	28.80	28.80	8.08	8.08	8.08	27.18	27.18	27.18	75.5	76.1	75.5	5.01	5.05	5.01	1.93	1.30	1.70	6	6.00
00,0,10	20:38	Oloudy	Middle	3.0	28.80	28.80	20.00	8.08	8.08	0.00	27.18	27.18	27110	75.4	75.0	7 0.0	5.01	4.98	0.01	1.81	1.74		6	0.00
3/7/18	8:55	Cloudy	Middle	3.0	27.50	27.50	27.50	8.08	8.08	8.08	28.24	28.24	28.25	79.0	79.3	79.4	5.33	5.35	5.35	2.71	2.69	2.67	3	2.50
	8:57	·	Middle	3.0	27.50	27.50		8.08	8.08		28.25	28.25		79.6	79.5		5.36	5.36		2.65	2.62		2	
5/7/18	10:35	Fine	Middle	3.0	28.20	28.20	28.25	8.12	8.12	8.12	26.32	26.32	26.33	83.8	85.0	84.5	5.64	5.72	5.72	2.36	2.38	2.39	5	5.50
	10:37		Middle	3.0	28.30	28.30		8.12	8.12		26.33	26.33		83.7	85.5		5.76	5.75		2.41	2.40		6	<u> </u>
8/7/18	22:30	Cloudy	Middle	2.5	30.00	30.00	30.00	8.20	8.20	8.20	26.49	26.49	26.49	75.8	76.4	75.7	4.88	4.92	4.87	1.30	1.13	1.26	8	7.50
	22:31		Middle	2.5	30.00	30.00		8.20	8.20		26.49	26.49		74.7	75.9		4.80	4.89		1.52	1.10		7	<u> </u>
10/7/18	16:25	Fine	Middle	3.0	28.00	28.00	28.05	8.31	8.31	8.31	28.31	28.31	28.23	69.9	70.3	70.4	4.68	4.70	4.71	4.60	4.56	4.55	10	10.00
	16:27		Middle	3.0	28.10	28.10		8.31	8.31		28.14	28.14		70.6	70.7		4.72	4.73		4.51	4.54		10	<u> </u>
12/7/18	18:17	Cloudy	Middle	2.5	27.80	27.80	27.80	7.98	7.98	7.98	30.37	30.37	30.37	77.7	76.8	77.2	5.16	5.10	5.12	4.74	4.53	4.53	10	9.50
	18:18		Middle	2.5	27.80	27.80		7.98	7.98		30.37	30.37		76.7	77.5		5.09	5.14		4.47	4.38		9	<u> </u>
14/7/18	22:19	Cloudy	Middle	3.0	26.10	26.10	26.10	8.03	8.03	8.03	30.92	30.92	30.92	67.2	67.4	67.2	4.57	4.59	4.58	2.98	2.53	2.72	8	7.50
	22:20		Middle	3.0	26.10	26.10		8.03	8.03		30.92	30.92		67.6	66.7		4.60	4.54		2.94	2.42		7	<u> </u>
16/7/18	9:39	Rainy	Middle	3.5	26.70	26.70	26.75	8.04	8.04	8.04	29.80	29.80	29.80	60.4	59.3	58.5	4.09	4.01	3.96	9.36	9.38	9.48	8	8.50
	9:41	Tropical	Middle	3.5	26.80	26.80		8.04	8.04		29.80	29.80		57.8	56.5		3.92	3.83		9.57	9.61		9	<u> </u>
18/7/18	-	Cyclone Warning	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Signal No.3	Middle	-	-	-		-	- I		-	-		-	-		-	-		-	<u> </u>		-	<u> </u> 
21/7/18	3:21	Fine	Middle	3.0	29.10	29.10	29.10	7.75	7.75	7.75	30.52	30.52	30.52	76.8	77.5	76.9	4.99	5.04	5.00	2.23	2.00	2.16	3	3.00
	3:22		Middle	3.0	29.10	29.10		7.75	7.75		30.52	30.52		76.2	76.9		4.95	5.00		2.21	2.20		3	<u> </u>
24/7/18	17:10	Cloudy	Middle	2.5	28.80	28.80	28.85	8.14	8.14	8.15	29.46	29.46	29.46	91.4	91.9	91.5	5.99	6.02	5.99	5.14	5.12	5.14	8	9.00
	17:12		Middle	2.5	28.90	28.90		8.15	8.15		29.46	29.46		91.0	91.6		5.96	6.00		5.13	5.16		10	
26/7/18	21:37	Cloudy	Middle	3.0	28.10	28.10	28.10	8.01	8.01	8.01	29.10	29.10	29.10	78.0	78.5	77.6	5.11	5.14	5.08	1.78	1.23	1.35	5	5.00
	21:38		Middle	3.0	28.10	28.10		8.01	8.01		29.10	29.10		77.7	76.2		5.09	4.99		1.19	1.21		5	



# Water Monitoring Result at P4 - SOC Mid-Flood Tide

Date	Time	Weater Condition		ng Depth	Wat	ter Temp	erature		pH -			Salini	ty	С	O Satur	ation		DO ma/L			Turbid NTU		Suspend	ded Solids
			r	n	Va	lue	Average	Va	llue	Average	Va	lue	Average	Va	lue	Average	Va		Average	Va	alue	Average	Value	Average
28/6/18	21:11	Fine	Middle	3.0	29.30	29.30	29.30	8.19	8.19	8.19	27.90	27.90	27.91	76.8	77.0	77.2	4.96	4.98	4.99	1.80	1.50	1.66	7	7.50
25/5/15	21:12		Middle	3.0	29.30	29.30	20.00	8.19	8.19	0.10	27.91	27.91	27.01	77.4	77.5		5.01	5.01		1.84	1.48		8	1.00
30/6/18	20:41	Cloudy	Middle	3.0	28.80	28.80	28.80	8.05	8.05	8.05	27.15	27.15	27.15	73.4	75.1	74.8	4.88	4.99	4.97	1.86	1.63	1.70	9	9.00
	20:42	·	Middle	3.0	28.80	28.80		8.05	8.05		27.15	27.15		75.2	75.3		5.00	5.01		1.49	1.80		9	
3/7/18	9:00	Cloudy	Middle	3.0	27.50	27.50	27.50	8.08	8.08	8.08	27.89	27.89	27.89	76.2	75.9	76.3	5.15	5.13	5.16	2.38	2.34	2.35	5	4.50
	9:02		Middle	3.0	27.50	27.50		8.08	8.08		27.89	27.89		76.6	76.6		5.18	5.18		2.33	2.33		4	<u> </u>
5/7/18	10:40	Fine	Middle	3.0	28.20	28.20	28.20	8.11	8.11	8.11	26.35	26.35	26.35	85.5	85.7	86.1	5.76	5.78	5.80	2.04	2.06	2.06	6	6.50
	10:42		Middle	3.0	28.20	28.20		8.11	8.11		26.35	26.35		86.6	86.7		5.83	5.84		2.07	2.07		7	<u> </u>
8/7/18	22:37	Cloudy	Middle	2.5	30.00	30.00	30.00	8.21	8.21	8.21	26.50	26.50	26.50	74.2	76.8	76.2	4.78	4.92	4.90	1.86	1.79	1.77	6	6.00
	22:38		Middle	2.5	30.00	30.00		8.21	8.21		26.50	26.50		77.2	76.4		4.97	4.91		1.74	1.70		6	<u> </u>
10/7/18	16:30	Fine	Middle	3.0	27.40	27.40	27.45	8.29	8.29	8.29	28.53	28.53	28.54	74.0	74.3	74.9	4.99	5.01	5.05	4.86	4.92	4.90	10	10.00
	16:32		Middle	3.0	27.50	27.50		8.28	8.28		28.54	28.54		75.5	75.8		5.09	5.10		4.91	4.91		10	<u> </u>
12/7/18	18:23	Cloudy	Middle	2.5	27.70	27.70	27.70	8.00	8.00	8.00	30.27	30.27	30.27	76.5	77.0	77.0	5.09	5.12	5.12	5.15	5.19	5.16	10	9.50
	18:24		Middle	2.5	27.70	27.70		8.00	8.00		30.27	30.27		77.5	77.1		5.15	5.13		5.20	5.10		9	
14/7/18	22:27	Cloudy	Middle	3.0	26.10	26.10	26.10	8.04	8.04	8.04	30.89	30.89	30.89	66.3	67.2 69.0	67.5	4.51	4.57 4.69	4.59	3.53	3.69	3.63	10	9.00
	9:43		Middle Middle	3.5	26.10	26.70		8.04	8.04		29.96	29.96		62.6	61.5		4.24	4.09		8.55	8.29		9	1
16/7/18	9:45	Rainy	Middle	3.5	26.80	26.80	26.75	8.05	8.05	8.05	29.95	29.95	29.96	57.8	56.9	59.7	3.91	3.85	4.04	8.42	8.44	8.43	8	8.50
	3.43	Tropical	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
18/7/18	-	Cyclone Warning Signal No.3	Middle	-	_	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	_	-	-	-
	3:30	Oigilal NO.3	Middle	3.0	29.10	29.10		7.84	7.84		30.69	30.69		73.5	74.8		4.92	5.01		1.61	1.58		4	
21/7/18	3:31	Fine	Middle	3.0	29.10	29.10	29.10	7.84	7.84	7.84	30.69	30.69	30.69	74.7	75.0	74.5	5.00	5.02	4.99	1.98	1.30	1.62	5	4.50
0.4/7/40	17:15	01 1	Middle	2.5	28.90	28.90	20.00	8.15	8.15	0.45	29.58	29.58	00.50	87.5	87.6	00.4	5.72	5.73	- 0-	7.01	7.01	7.00	8	
24/7/18	17:17	Cloudy	Middle	2.5	28.90	28.90	28.90	8.15	8.15	8.15	29.57	29.57	29.58	85.2	85.3	86.4	5.57	5.59	5.65	7.05	7.02	7.02	10	9.00
26/7/49	21:43	Claudy	Middle	3.0	28.30	28.30	29.20	7.98	7.98	7.00	29.09	29.09	20.00	73.4	76.1	75.0	4.78	4.93	4.00	1.13	1.12	1 1 4	5	4.50
26/7/18	21:44	Cloudy	Middle	3.0	28.30	28.30	28.30	7.98	7.98	7.98	29.09	29.09	29.09	75.5	75.6	75.2	4.93	4.93.	4.88	1.14	1.17	1.14	4	4.50



# Water Monitoring Result at P5 - WCT / RT / IT Mid-Flood Tide

Date	Time	Weater Condition	-	g Depth	Wat	ter Temp	perature		pH -			Salini ppt	ty	D	O Satur	ation		DO mg/L			Turbio		Suspend	ded Solids
		Corrainorr	r	n	Va	lue	Average	Va	llue	Average	Va	lue	Average	Va	lue	Average	Va	ilue	Average	Va	alue	Average	Value	Average
28/6/18	21:17	Fine	Middle	3.0	28.80	28.80	28.80	8.18	8.18	8.18	28.11	28.11	28.11	77.3	78.7	77.4	5.02	5.11	5.03	2.35	2.11	2.25	7	7.00
	21:18		Middle	3.0	28.80	28.80		8.18	8.18		28.11	28.11		75.8	77.9		4.93	5.06		2.31	2.24		7	
30/6/18	20:56	Cloudy	Middle	3.0	28.80	28.80	28.80	7.77	7.77	7.77	26.96	26.96	26.96	75.0	74.7	75.1	4.98	4.96	4.99	2.41	2.07	2.25	6	6.00
	20:57	Í	Middle	3.0	28.80	28.80		7.77	7.77		26.96	26.96		75.5	75.1		5.02	4.98		2.17	2.33		6	
3/7/18	9:05	Cloudy	Middle	3.0	27.30	27.30	27.30	8.09	8.09	8.09	27.91	27.91	27.91	76.6	77.2	77.2	5.19	5.23	5.23	2.32	2.32	2.31	6	6.50
	9:07		Middle	3.0	27.30	27.30		8.09	8.09		27.91	27.91		77.6	77.2		5.26	5.23		2.30	2.31		7	<u> </u>
5/7/18	10:45	Fine	Middle	3.0	28.10	28.10	28.10	8.10	8.10	8.10	26.42	26.42	26.43	85.3	85.6	85.7	5.73	5.78	5.78	1.72	1.71	1.71	5	5.00
	10:47		Middle	3.0	28.10	28.10		8.10	8.10		26.43	26.43		85.8	86.1		5.79	5.80		1.71	1.71		5	<u> </u>
8/7/18	22:45	Cloudy	Middle	2.5	29.60	29.60	29.60	8.20	8.20	8.20	26.61	26.61	26.61	71.2	76.2	74.7	4.66	4.93	4.84	2.28	1.98	2.11	5	6.50
	22:46		Middle	2.5	29.60	29.60		8.20	8.20		26.61	26.61		76.1	75.1		4.92	4.86		2.07	2.11		8	<u> </u>
10/7/18	16:35	Fine	Middle	3.0	27.30	27.30	27.30	8.28	8.28	8.28	28.66	28.66	28.66	77.7	77.8	77.8	5.24	5.25	5.25	4.55	4.53	4.54	10	10.00
	16:37		Middle	3.0	27.30	27.30		8.28	8.28		28.66	28.66		77.8	77.8		5.25	5.25		4.52	4.54		10	<u> </u>
12/7/18	18:31	Cloudy	Middle	2.5	27.80	27.80	27.80	7.98	7.98	7.98	30.11	30.11	30.11	75.4	76.6	75.7	5.21	5.09	5.08	2.80	2.70	2.56	8	8.50
	18:32		Middle	2.5	27.80	27.80		7.98	7.98		30.11	30.11		75.3	75.3		5.00	5.00		2.32	2.41		9	
14/7/18	22:34	Cloudy	Middle	3.0	25.80	25.80	25.80	7.99	7.99	7.99	30.75	30.75	30.75	64.0	64.7	64.2	4.38	4.43	4.39	2.29	2.36	2.25	5	6.00
	22:35		Middle	3.0	25.80	25.80		7.99	7.99		30.75	30.75		64.4	63.7		4.40	4.36		2.22	2.14		7	<u> </u>
16/7/18	9:47	Rainy	Middle	3.5	26.80	26.80	26.80	8.07	8.07	8.08	30.17	30.17	30.18	55.3	54.3	54.0	3.73	3.67	3.65	9.33	9.31	9.33	13	13.50
	9:49	Tropical	Middle Middle	3.5	26.80	26.80		8.08	8.08		30.19	30.19		53.5	53.0		3.61	3.58		9.31	9.35		14	1
18/7/18	-	Cyclone Warning	Middle			_	-		_	-			_			-		_	-		_	-	_	-
	3:36	Signal No.3	Middle	3.0	29.20	29.20		7.94	7.94		30.66	30.66		75.7	78.7		4.97	5.10		2.08	1.97		5	1
21/7/18	3:37	Fine	Middle	3.0	29.20	29.20	29.20	7.94	7.94	7.94	30.41	30.41	30.54	74.0	76.9	76.3	4.80	4.99	4.97	1.10	1.08	1.56	4	4.50
	17:20		Middle	2.5	28.90	28.90		8.15	8.15		29.51	29.51		86.4	87.2		5.65	5.70		7.56	7.53		12	1
24/7/18	17:22	Cloudy	Middle	2.5	28.90	28.90	28.90	8.16	8.16	8.16	29.62	29.62	29.57	86.6	86.5	86.7	5.66	5.66	5.67	7.40	7.40	7.47	14	13.00
	21:51		Middle	3.0	28.40	28.40		7.96	7.96		29.07	29.07		79.7	80.3		5.15	5.22		1.64	1.38		5	
26/7/18	21:52	Cloudy	Middle	3.0	28.40	28.40	28.40	7.96	7.96	7.96	29.07	29.07	29.07	76.7	78.5	78.8	4.99	5.10	5.12	1.12	1.23	1.34	5	5.00



# Water Monitoring Result at RW21-P789 - GEC/CRB/SHK Mid-Flood Tide

Date	Time	Weater	Samplin	g Depth	Wat	ter Temp	erature		рН			Salini	ty	D	O Satur	ation		DO			Turbid	,		led Solids
		Condition	r	n	Va	lue	Average	Va	lue	Average	Va	ppt lue	Average	Va	ılue	Average	Va	mg/L lue	Average	Va	NTL alue	Average	mç Value	g/L Average
	19:43		Middle	3.5	29.00	29.00		8.12	8.12		27.65	27.65		73.1	74.0		4.74	4.81		2.08	2.02		7	
28/6/18	19:44	Fine	Middle	3.5	29.00	29.00	29.00	8.12	8.12	8.12	27.65	27.65	27.65	76.6	76.4	75.0	4.97	4.96	4.87	1.95	1.88	1.98	9	8.00
20/0/40	18:45	Claudu	Middle	3.5	29.10	29.10	20.40	8.09	8.09	8.09	26.57	26.57	26.57	75.0	76.5	70.0	4.97	5.08	5.06	1.76	1.32	1.41	6	6.00
30/6/18	18:46	Cloudy	Middle	3.5	29.10	29.10	29.10	8.09	8.09	8.09	26.57	26.57	20.57	77.1	76.4	76.3	5.12	5.07	5.06	1.24	1.30	1.41	6	6.00
3/7/18	9:45	Cloudy	Middle	4.0	27.60	27.60	27.65	7.99	7.99	8.01	27.98	27.98	27.99	79.2	79.2	79.2	5.34	5.33	5.33	4.04	4.05	4.01	6	5.50
3/1/10	9:47	Cloudy	Middle	4.0	27.70	27.70	27.00	8.02	8.02	0.01	28.00	28.00	27.55	79.2	79.3	73.2	5.33	5.33	3.33	4.00	3.96	4.01	5	3.30
5/7/40	11:00	Fi	Middle	4.0	28.10	28.10	00.40	8.07	8.07	0.07	26.83	26.83	00.00	87.8	88.0	07.0	5.91	5.92	F 04	2.03	2.05	0.04	2	3.00
5/7/18	11:02	Fine	Middle	4.0	28.10	28.10	28.10	8.07	8.07	8.07	26.83	26.83	26.83	87.8	87.8	87.9	5.91	5.91	5.91	2.04	2.03	2.04	4	3.00
8/7/18	0:03	Claudy	Middle	3.5	30.50	30.60	30.58	8.07	8.07	8.07	26.88	26.87	26.87	73.9	74.6	74.4	4.82	4.86	1 OE	1.10	1.08	1.00	8	7.00
6/7/18	0:04	Cloudy	Middle	3.5	30.60	30.60	30.56	8.07	8.07	8.07	26.87	26.87	20.87	74.3	74.8	74.4	4.84	4.87	4.85	1.06	1.12	1.09	6	7.00
10/7/18	17:05	Fine	Middle	4.0	27.70	27.70	27.75	8.24	8.24	8.25	28.19	28.19	28.19	83.5	83.3	82.8	5.60	5.50	5.53	2.46	2.53	2.48	7	7.50
10/7/18	17:07	rine	Middle	4.0	27.80	27.80	21.15	8.25	8.25	8.23	28.19	28.19	28.19	82.2	82.1	02.0	5.52	5.51	5.53	2.47	2.46	2.46	8	7.50
40/7/40	18:47	Olevek	Middle	3.5	27.70	27.70	07.70	7.91	7.91	7.04	30.14	30.14	00.44	78.1	78.7	70.0	5.19	5.23	F 04	2.66	2.18	0.07	5	5.00
12/7/18	18:48	Cloudy	Middle	3.5	27.70	27.70	27.70	7.91	7.91	7.91	30.14	30.14	30.14	77.7	78.7	78.3	5.18	5.23	5.21	2.43	2.21	2.37	5	5.00
14/7/18	19:15	Cloudy	Middle	3.5	26.20	26.20	26.20	7.97	7.97	7.97	30.01	30.01	30.01	74.6	74.6	74.4	5.09	5.09	5.08	5.42	5.06	5.20	12	12.50
14/7/10	19:16	Cloudy	Middle	3.5	26.20	26.20	20.20	7.97	7.97	7.97	30.01	30.01	30.01	74.0	74.5	74.4	5.05	5.08	5.06	5.11	5.19	5.20	13	12.50
16/7/18	10:14	Rainy	Middle	3.5	27.20	27.20	27.20	8.08	8.08	8.09	30.26	30.26	30.26	58.6	57.6	57.4	3.93	3.86	3.85	9.75	9.87	9.80	12	12.50
10/7/18	10:16	Railly	Middle	3.5	27.20	27.20	21.20	8.09	8.09	0.09	30.25	30.25	30.20	56.8	56.5	37.4	3.81	3.78	3.03	9.81	9.76	9.00	13	12.50
18/7/18	-	Tropical Cyclone	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
10/7/10	-	Warning Signal No.3	Middle	1	-	-	,	-	-	-	1	-	-	-	-	-	-	1	,	-	-	-	-	
21/7/18	1:50	Fine	Middle	4.0	29.20	29.20	29.20	7.90	7.90	7.90	30.41	30.44	30.42	71.7	74.9	74.4	4.65	4.85	4.82	1.13	1.14	1.11	4	4.00
21///10	1:51	Fille	Middle	4.0	29.20	29.20	29.20	7.90	7.90	7.90	30.41	30.41	30.42	74.0	76.9	74.4	4.80	4.99	4.02	1.10	1.08	1.11	<2	4.00
24/7/18	19:30	Cloudy	Middle	4.0	28.50	28.50	28.55	8.04	8.04	8.06	29.79	29.79	29.79	94.2	94.5	93.3	6.19	6.21	6.13	3.03	3.03	3.04	13	13.00
24///10	19:32	Oloudy	Middle	4.0	28.60	28.60	20.55	8.07	8.07	0.00	29.79	29.79	20.10	92.2	92.3	35.5	6.06	6.06	0.10	3.04	3.05	3.07	13	13.00
26/7/18	18:30	Cloudy	Middle	3.5	29.10	29.10	29.10	7.77	7.77	7.77	28.46	28.46	28.46	77.2	77.0	76.5	4.99	4.98	4.94	1.31	1.28	1.24	5	5.50
20/1/10	18:31	Oloudy	Middle	3.5	29.10	29.10	20.10	7.77	7.77	1.11	28.46	28.46	20.40	76.3	75.3	70.0	4.90	4.87	7.34	1.20	1.16	1.24	6	5.50



### Water Monitoring Result at WSD19 - Sheung Wan Mid-Flood Tide

Date	Time	Weater Condition	· ·	g Depth	Wat	ter Temp	erature		pН			Salini	ty	С	OO Satur	ration		DO mg/L			Turbid	ity	Suspend	
		Cortaillori	r	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	alue	Average	Va		Average	Va	alue	Average	Value	Average
28/6/18	20:10	Fine	Middle	3.5	29.00	29.00	29.00	8.05	8.05	8.05	27.47	27.47	27.47	77.9	78.0	78.0	5.07	5.08	5.08	2.28	2.19	2.18	5	6.00
20/0/10	20:11	Tille	Middle	3.5	29.00	29.00	25.00	8.05	8.05	0.03	27.47	27.47	21.41	77.9	78.2	70.0	5.07	5.09	5.00	2.13	2.12	2.10	7	0.00
30/6/18	19:47	Cloudy	Middle	3.5	28.80	28.80	28.80	8.02	8.02	8.02	26.61	26.61	26.61	76.5	77.0	76.4	5.09	5.12	5.08	1.20	1.83	1.51	8	7.00
	19:48	,	Middle	3.5	28.80	28.80		8.02	8.02		26.61	26.61		76.1	75.8		5.07	5.03		1.51	1.48		6	
3/7/18	8:00	Cloudy	Middle	3.5	27.80	27.80	27.85	8.07	8.07	8.08	26.39	26.39	26.39	84.0	84.0	84.0	5.69	5.69	5.69	2.63	2.59	2.59	<2	<2
	8:02	•	Middle	3.5	27.90	27.90		8.08	8.08		26.39	26.39		84.0	84.0		5.69	5.68		2.58	2.57		<2	
5/7/18	9:20	Fine	Middle	3.5	28.20	28.20	28.20	8.02	8.02	8.03	26.57	26.57	26.58	84.8	85.1	85.3	5.71	5.73	5.74	2.56	2.57	2.54	5	4.50
	9:22		Middle	3.5	28.20	28.20		8.04	8.04		26.58	26.58		85.6	85.7		5.76	5.76		2.55	2.48		4	
8/7/18	23:20	Cloudy	Middle	3.5	29.90	29.90	29.95	8.00	8.00	8.00	24.98	24.98	24.98	71.8	72.8	72.8	4.66	4.74	4.74	1.37	1.28	1.32	9	9.50
	23:21		Middle	3.5	30.00	30.00		8.00	8.00		24.98	24.98		72.6	73.8		4.73	4.81		1.30	1.31		10	
10/7/18	15:22	Fine	Middle	4.0	28.40	28.40	28.45	8.26	8.26	8.26	27.91	27.91	27.91	76.5	75.3	74.2	5.08	4.97	4.92	3.37	3.38	3.34	7	7.00
	15:24		Middle	4.0	28.50	28.50		8.26	8.26		27.90	27.90		72.8	72.3		4.84	4.80		3.31	3.31		7	
12/7/18	17:15	Cloudy	Middle	3.5	27.70	27.70	27.70	7.91	7.91	7.91	29.73	29.73	29.73	76.6	76.5	76.7	5.06	5.09	5.09	1.62	1.49	1.51	8	8.00
	17:16		Middle	3.5	27.70	27.70		7.91	7.91		29.73	29.73		77.1	76.6		5.11	5.09		1.74	1.19		8	
14/7/18	21:21	Cloudy	Middle	4.0	26.30	26.30	26.30	8.02	8.02	8.02	30.52	30.52	30.52	77.6	75.6	77.0	5.26	5.12	5.21	8.55	8.51	8.35	19	<u>19.50</u>
	21:22		Middle	4.0	26.30	26.30		8.02	8.02		30.52	30.52		76.9	77.9		5.21	5.26		8.12	8.23		20	
16/7/18	7:52	Rainy	Middle	3.5	26.70	26.70	26.75	7.66	7.66	7.66	29.48	29.48	29.48	54.6	54.4	55.8	3.70	3.69	3.78	14.78	14.86	<u>14.85</u>	20	20.50
	7:54	Tropical	Middle	3.5	26.80	26.80		7.66	7.66		29.48	29.48		57.2	56.9		3.88	3.86		14.88	14.89		21	
18/7/18	-	Cyclone Warning	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	Signal No.3	Middle	-	-	-			-		-	-			-			-		-	-		-	
21/7/18	2:23	Fine	Middle	4.0	29.10	29.10	29.10	7.77	7.77	7.77	30.39	30.39	30.39	78.5	79.4	79.2	5.10	5.18	5.15	2.65	2.70	2.68	5	4.00
	2:24		Middle	4.0	29.10	29.10		7.77	7.77		30.39	30.39		79.8	79.0		5.18	5.13		2.75	2.61		7	
24/7/18	16:15	Cloudy	Middle Middle	3.5	29.60	29.60	29.70	8.11	8.11 8.15	8.13	29.37	29.37	29.37	101.6	100.9	101.2	6.57	6.52	6.53	7.71	7.63	7.65	5	6.00
	21:00		Middle	4.0	29.80	29.80		7.74	7.74		28.84	28.84		75.2	73.6		4.84	4.73		1.79	1.94		6	
26/7/18	21:00	Cloudy	Middle	4.0	29.20	29.20	29.20	7.74	7.74	7.74	28.84	28.84	28.84	74.3.	73.6	73.9	4.78	4.73	4.76	1.79	1.94	1.73	7	6.50
	21:01		ivildale	4.0	29.20	29.20		1.14	1.14		20.04	20.04		14.3.	72.9		4.75	4.09		1.54	1.00		1	



#### Water Monitoring Result at C7 - Windsor House Mid-Ebb Tide

Date	Time	Weater Condition		g Depth	Wat	er Temp °C	erature		pH -			Salinit	ty	D	O Satur	ation		DO ma/L			Turbid		Suspend	led Solids
			n	n	Va	lue	Average	Va	lue	Average	Va	alue	Average	Va	lue	Average	Va		Average	Va	alue	Average	Value	Average
28/6/18	14:15	Fine	Middle	2	29.70	29.70	29.80	8.22	8.22	8.22	25.93	25.93	25.94	99.0	99.1	98.3	6.50	6.51	6.45	2.75	2.72	2.72	4	5.00
20,0,10	14:17		Middle	2	29.90	29.90	20.00	8.22	8.22	0.22	25.94	25.94	20.01	97.9	97.1	00.0	6.43	6.37	0.10	2.70	2.69	22	6	0.00
30/6/18	15:00	Cloudy	Middle	2	29.20	29.20	29.30	8.17	8.17	8.18	26.00	26.00	26.01	94.5	94.9	94.3	6.25	6.28	6.23	1.87	1.86	1.91	7	6.50
	15:02		Middle	2	29.40	29.40		8.18	8.18		26.01	26.01		93.8	93.9		6.20	6.20		1.95	1.96		6	
3/7/18	14:50	Cloudy	Middle	2	27.80	27.80	27.80	8.06	8.06	8.06	25.64	25.64	25.64	56.0	55.9	55.8	3.80	3.81	3.80	1.67	1.69	1.69	2	2.00
	14:52		Middle	2	27.80	27.80		8.06	8.06		25.64	25.64		55.7	55.7		3.79	3.80		1.69	1.70		2	
5/7/18	17:15	Cloudy	Middle	2	28.20	28.20	28.20	8.13	8.13	8.13	26.21	26.21	26.21	86.0	87.0	87.4	5.80	5.86	5.88	2.32	2.32	2.33	4	3.00
	17:17		Middle	2	28.20	28.20		8.13	8.13		26.21	26.21		88.4	88.1		5.94	5.93		2.33	2.34		2	
7/7/18	18:05	Cloudy	Middle	2	32.10	32.10	32.10	8.08	8.08	8.08	26.58	26.58	26.58	73.6	75.4	73.9	4.59	4.70	4.61	1.18	1.24	1.17	8	7.00
	18:06		Middle	2	32.10	32.10		8.08	8.08		26.58	26.58		74.6	72.1		4.65	4.50		1.13	1.14	1	6	
10/7/18	11:07	Cloudy	Middle	2	27.50	27.50	27.55	8.19	8.19	8.19	28.87	28.87	28.86	72.3	71.1	70.5	4.83	4.78	4.73	1.85	1.85	1.88	6	5.50
	11:09		Middle	2	27.60	27.60		8.19	8.19		28.84	28.84		70.0	68.7		4.70	4.61		1.85	1.95		5	
12/7/18	10:30	Fine	Middle	2	28.50	28.50	28.60	8.10	8.10	8.10	29.32	29.32	29.32	90.1	90.1	89.9	5.20	5.92	5.73	2.33	2.33	2.35	6	6.00
	10:32		Middle	2	28.70	28.70		8.10	8.10		29.32	29.32		90.0	89.5		5.91	5.87		2.35	2.37		6	
14/7/18	14:00	Cloudy	Middle	2	26.90	26.90	26.95	8.08	8.08	8.08	29.02	29.02	29.02	81.0	80.6	79.4	5.49	5.46	5.38	2.63	2.60	2.64	4	4.00
	14:02		Middle	2	27.00	27.00		8.08	8.08		29.02	29.02		78.1	78.0		5.29	5.29		2.67	2.65		4	
16/7/18	15:15	Fine	Middle	2	27.80	27.80	27.85	8.45	8.45	8.46	29.02	29.02	29.02	73.0	73.0	73.2	4.87	4.87	4.88	5.75	5.73	5.76	4	3.50
	15:17 16:55		Middle Middle	2	27.90	27.90		8.47	8.47		29.02	29.02		73.3 81.9	73.3 83.2		4.89 5.65	4.89 5.64		5.78 3.86	5.79 3.83		3 5	
18/7/18	16:57	Cloudy	Middle	2	27.70	27.70	27.70	8.03	8.03	8.04	26.82	26.82	26.82	82.9	82.9	82.7	5.61	5.61	5.63	3.80	3.78	3.82	6	5.50
	20:02		Middle	2	27.90	27.90		8.02	8.02		30.47	30.47		47.3	47.0		3.13	3.11		2.96	2.96		5	<u> </u>
20/7/18	20:04	Fine	Middle	2	27.90	27.90	27.90	8.00	8.00	8.01	30.43	30.43	30.45	49.2	50.0	48.4	3.26	3.31	3.20	3.05	3.05	3.01	3	4.00
	12:05		Middle	2	29.20	29.20		8.03	8.03		29.77	29.77		95.8	94.4		6.21	6.12		1.85	1.87		4	
24/7/18	12:07	Cloudy	Middle	2	29.40	29.40	29.30	8.03	8.03	8.03	29.77	29.77	29.77	94.4	94.5	94.8	6.12	6.13	6.15	1.86	1.86	1.86	2	3.00
	12:05		Middle	2	29.80	29.80		8.03	8.03		28.70	28.70		85.7	84.8		5.51	5.48		1.54	1.54		<2	
26/7/18	12:07	Fine	Middle	2	30.00	30.00	29.90	8.04	8.04	8.04	28.71	28.71	28.71	83.0	83.1	84.2	5.36	5.38	5.43	1.56	1.57	1.55	<2	<2



#### Water Monitoring Result at C1 - HKCEC Mid-Ebb Tide

Date	Time	Weater Condition	Samplin	g Depth	Wat	er Temp	erature		pН			Salini	ty	0	O Satur	ation		DO mg/L			Turbid	ity	Suspend	
		Condition	n	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va		Average	Va	lue	Average	Value	Average
20/6/40	10:30	Fine	Middle	3.0	28.70	28.70	20.70	8.22	8.22	0.00	26.50	26.50	20.50	92.3	92.5	92.1	6.16	6.18	C 4F	3.35	3.45	2.40	4	4.50
28/6/18	10:32	Fine	Middle	3.0	28.70	28.70	28.70	8.22	8.22	8.22	26.50	26.50	26.50	92.1	91.5	92.1	6.15	6.11	6.15	3.41	3.40	3.40	5	4.50
30/6/18	14:20	Cloudy	Middle	2.5	29.00	29.00	29.05	8.19	8.19	8.19	26.41	26.41	26.41	89.0	89.7	89.7	5.91	5.96	5.96	3.59	3.69	3.63	6	6.50
30/6/16	14:22	Cloudy	Middle	2.5	29.10	29.10	29.05	8.19	8.19	0.19	26.41	26.41	20.41	90.2	89.8	09.7	5.99	5.96	5.90	3.62	3.60	3.03	7	0.50
3/7/18	16:35	Cloudy	Middle	2.5	28.10	28.10	28.10	8.15	8.15	8.15	26.44	26.44	26.45	84.8	84.9	84.9	5.72	5.73	5.73	3.02	3.04	3.07	4	4.00
3/1/16	16:37	Cloudy	Middle	2.5	28.10	28.10	20.10	8.15	8.15	0.15	26.45	26.45	20.45	85.0	84.9	04.9	5.73	5.73	5.75	3.15	3.06	3.07	4	4.00
5/7/18	15:10	Cloudy	Middle	2.5	28.00	28.00	28.00	8.18	8.18	8.18	26.37	26.37	26.37	89.0	90.0	89.9	6.07	6.08	6.09	2.47	2.47	2.49	4	4.00
3/1/10	15:12	Cloudy	Middle	2.5	28.00	28.00	28.00	8.18	8.18	0.10	26.36	26.36	20.37	90.3	90.3	09.9	6.11	6.10	0.09	2.50	2.53	2.49	4	4.00
7/7/18	21:15	Cloudy	Middle	2.5	30.00	30.00	30.00	8.11	8.11	8.11	26.60	26.60	26.60	75.8	76.9	75.7	4.85	4.93	4.85	2.92	2.64	2.79	7	7.50
111110	21:16	Cloudy	Middle	2.5	30.00	30.00	30.00	8.11	8.11	0.11	26.60	26.60	20.00	75.1	75.0	75.7	4.81	4.80	4.00	2.88	2.70	2.75	8	7.50
10/7/18	10:15	Cloudy	Middle	3.5	27.90	27.90	27.90	8.37	8.37	8.38	26.98	26.98	26.98	65.1	65.2	65.1	4.39	4.39	4.40	2.04	2.05	2.06	5	5.00
10/1/10	10:17	Cloudy	Middle	3.5	27.90	27.90	27.30	8.38	8.38	0.50	26.98	26.98	20.30	65.1	65.1	03.1	4.40	4.40	4.40	2.06	2.07	2.00	5	5.00
12/7/18	14:20	Fine	Middle	2.5	27.70	27.70	27.75	8.15	8.15	8.15	29.31	29.31	29.31	66.2	66.0	65.4	4.42	4.40	4.37	4.55	4.52	4.49	6	5.50
12/1/10	14:22	Tillo	Middle	2.5	27.80	27.80	27.70	8.15	8.15	0.10	29.31	29.31	20.01	64.8	64.7	00.4	4.32	4.32	4.01	4.43	4.44	4.40	5	0.00
14/7/18	12:50	Cloudy	Middle	3.0	26.60	26.60	26.60	8.13	8.13	8.13	30.43	30.43	30.43	82.9	82.9	83.1	5.61	5.61	5.62	4.66	4.66	4.67	8	9.00
. ,,,,,,	12:52	Cioudy	Middle	3.0	26.60	26.60	20.00	8.13	8.13	0.10	30.43	30.43	00.10	83.2	83.4	00.1	5.63	5.63	0.02	4.67	4.67		10	0.00
16/7/18	14:40	Fine	Middle	3.0	27.30	27.30	27.30	8.12	8.12	8.12	29.93	29.93	29.93	84.7	84.2	84.7	5.67	5.64	5.67	7.53	7.53	7.54	8	7.00
10/1/10	14:42	Tillo	Middle	3.0	27.30	27.30	27.00	8.12	8.12	0.12	29.92	29.92	20.00	84.9	85.0	04.7	5.69	5.69	0.01	7.53	7.55	7.04	6	7.00
18/7/18	16:20	Cloudy	Middle	3.0	27.80	27.80	27.80	8.04	8.04	8.04	31.04	31.04	31.04	83.1	82.9	83.1	5.50	5.46	5.49	7.76	7.77	7.75	8	8.00
16/1/10	16:22	Oloudy	Middle	3.0	27.80	27.80	27.00	8.04	8.04	0.0 .	31.04	31.04	01.01	82.9	83.4	00.1	5.48	5.51	0.10	7.74	7.73	0	8	0.00
20/7/18	17:01	Fine	Middle	3.0	28.40	28.40	28.45	7.77	7.77	7.81	31.25	31.25	31.24	66.4	64.5	66.8	4.34	4.21	4.36	8.76	8.09	8.19	7	7.50
23,1710	17:03		Middle	3.0	28.50	28.50	20.40	7.85	7.85		31.22	31.22	J.,24	68.0	68.3	55.0	4.44	4.46	50	8.01	7.90	0.10	8	
24/7/18	11:35	Cloudy	Middle	2.5	28.50	28.50	28.50	8.20	8.20	8.20	29.48	29.48	29.45	93.5	93.2	93.0	6.17	6.15	6.14	5.42	5.40	5.40	5	5.00
,	11:37		Middle	2.5	28.50	28.50		8.20	8.20		29.42	29.42		92.6	92.6		6.11	6.11	±	5.39	5.39	2.10	5	2.00
26/7/18	11:20	Fine	Middle	2.5	29.20	29.20	29.20	8.12	8.12	8.13	28.63	28.63	28.63	88.5	88.9	89.1	5.79	5.82	5.83	3.46	3.45	3.50	3	3.00
	11:22		Middle	2.5	29.20	29.20		8.13	8.13	50	28.63	28.63		89.5	89.5		5.86	5.85	2.30	3.52	3.56	2.30	<2	2.00



#### Water Monitoring Result at P1 - HKCEC Phase I Mid-Ebb Tide

Date	Time	Weater Condition	·	g Depth	Wat	er Temp °C	erature		pH -			Salinit	ty	С	O Satur	ation		DO mg/L			Turbid NTU		Suspend	ded Solids
			r	n	Va	lue	Average	Va	llue	Average	Va	lue	Average	Va	ılue	Average	Va	lue	Average	Va	ılue	Average	Value	Average
28/6/18	10:10	Fine	Middle	3.0	29.10	29.10	29.15	8.16	8.16	8.18	26.52	26.52	26.52	94.3	94.2	93.3	6.24	6.24	6.17	3.29	3.28	3.28	5	4.50
20/0/10	10:12		Middle	3.0	29.20	29.20	20.10	8.20	8.20	0.10	26.52	26.52	20.02	92.5	92.0	00.0	6.12	6.09	0	3.29	3.27	0.20	4	
30/6/18	14:00	Cloudy	Middle	2.5	29.80	29.80	29.85	8.17	8.17	8.18	26.56	26.56	26.57	91.8	92.6	92.3	6.00	6.05	6.02	3.57	3.51	3.52	6	6.50
	14:02		Middle	2.5	29.90	29.90		8.18	8.18		26.57	26.57		92.4	92.2		6.03	6.01		3.50	3.50		7	
3/7/18	16:15	Cloudy	Middle	2.5	28.00	28.00	28.05	8.15	8.15	8.16	26.39	26.39	26.39	76.1	76.7	77.4	5.14	5.18	5.23	2.57	2.56	2.57	3	4.00
	16:17	,	Middle	2.5	28.10	28.10		8.16	8.16		26.39	26.39		78.4	78.5		5.29	5.30		2.56	2.57	_	5	
5/7/18	14:50	Cloudy	Middle	2.5	28.10	28.10	28.15	8.17	8.17	8.17	26.30	26.30	26.30	85.2	85.4	85.8	5.74	5.75	5.80	3.13	3.16	3.15	5	5.00
	14:52		Middle	2.5	28.20	28.20		8.17	8.17		26.30	26.30		86.3	86.3		5.81	5.88		3.16	3.15		5	
7/7/18	20:35	Cloudy	Middle	2.5	30.20	30.20	30.20	8.18	8.18	8.18	26.79	26.79	26.79	71.9	73.5	73.6	4.62	4.71	4.72	4.52	4.83	4.52	7	6.50
	20:36	,	Middle	2.5	30.20	30.20		8.18	8.18		26.79	26.79		73.7	75.1		4.72	4.81		4.69	4.04		6	<u> </u>
10/7/18	10:19	Cloudy	Middle	3.5	28.00	28.00	28.00	8.35	8.35	8.35	27.43	27.43	27.43	75.0	74.4	73.9	5.04	5.40	5.08	1.65	1.63	1.63	5	5.00
	10:21		Middle	3.5	28.00	28.00		8.34	8.34		27.43	27.43		73.5	72.7		4.94	4.94		1.62	1.63		5	
12/7/18	14:00	Fine	Middle	2.5	28.00	28.00	28.25	8.13	8.13	8.13	29.68	29.68	29.68	72.7	72.2	71.8	4.79	4.75	4.72	5.06	5.06	5.09	6	6.00
	14:02		Middle	2.5	28.50	28.50		8.13	8.13		29.67	29.67		71.3	70.9		4.68	4.65		5.10	5.12		6	
14/7/18	12:30	Cloudy	Middle	3.0	27.10	27.10	27.15	8.12	8.12	8.12	30.41	30.41	30.41	84.4	85.0	84.5	5.66	5.66	5.65	5.11	5.17	5.13	11	10.00
	12:32		Middle	3.0	27.20	27.20		8.12	8.12		30.41	30.41		84.2	84.2		5.64	5.64		5.14	5.10		9	
16/7/18	14:20	Fine	Middle	3.0	27.80	27.80	27.85	8.12	8.12	8.12	29.93	29.93	29.93	86.5	86.7	86.8	5.76	5.76	5.76	6.99	6.90	6.69	6	6.00
	14:22		Middle	3.0	27.90	27.90		8.12	8.12		29.93	29.93		87.0	86.8		5.76	5.76		5.98	6.89		6	
18/7/18	16:00	Cloudy	Middle	3.0	27.50	27.50	27.50	7.93	7.93	7.95	30.86	30.86	30.86	89.6	89.6	89.6	5.96	5.96	5.96	7.40	7.40	7.40	7	7.50
	16:02		Middle	3.0	27.50	27.50		7.96	7.96		30.85	30.85		89.5	89.5		5.95	5.95		7.40	7.40		8	
20/7/18	16:45	Fine	Middle	3.0	28.80	28.80	28.80	7.90	7.90	7.92	31.14	31.14	31.15	63.2	62.8	62.5	4.10	4.08	4.05	7.77	7.59	7.62	9	9.00
	16:47		Middle	3.0	28.80	28.80		7.93	7.93		31.15	31.15		62.2	61.8		4.04	3.96		7.56	7.54		9	
24/7/18	11:15	Cloudy	Middle	2.5	29.00	29.00	29.00	8.06	8.06	8.07	29.60	29.60	29.60	96.8	97.6	97.4	6.30	6.35	6.34	5.50	5.46	5.46	6	5.50
	11:17		Middle	2.5	29.00	29.00		8.08	8.08		29.60	29.60		97.4	97.7		6.33	6.36		5.44	5.44		5	
26/7/18	11:00	Fine	Middle	2.5	29.90	29.90	29.95	8.00	8.00	8.02	28.85	28.85	28.85	98.1	97.8	97.0	6.33	6.31	6.26	3.29	3.19	3.23	3	3.00
	11:02		Middle	2.5	30.00	30.00		8.03	8.03		28.85	28.85		96.0	96.1		6.19	6.19		3.22	3.23		<2	



#### Water Monitoring Result at P3 - APA Mid-Ebb Tide

Date	Time	Weater Condition	Samplin	g Depth	Wat	er Temp	erature		pН			Salini	ty	0	O Satur	ation		DO mg/L			Turbid	ity	Suspend	led Solids
		Condition	n	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va		Average	Va	alue	Average	Value	Average
28/6/18	10:15	Fina	Middle	3.0	28.70	28.70	28.75	8.21	8.21	8.21	26.38	26.38	26.38	90.9	91.8	91.3	6.06	6.13	6.09	3.05	2.98	3.02	5	4.50
26/6/18	10:17	Fine	Middle	3.0	28.80	28.80	26.75	8.21	8.21	0.21	26.37	26.37	20.36	91.2	91.3	91.3	6.08	6.09	6.09	3.01	3.02	3.02	4	4.50
30/6/18	14:05	Cloudy	Middle	2.5	29.30	29.30	29.35	8.18	8.18	8.18	26.52	26.52	26.52	89.6	90.0	90.0	5.94	6.00	6.00	3.46	3.40	3.53	7	6.50
30/6/16	14:07	Cloudy	Middle	2.5	29.40	29.40	29.33	8.18	8.18	0.10	26.52	26.52	20.52	90.2	90.2	90.0	6.02	6.02	6.00	3.62	3.62	3.33	6	0.50
3/7/18	16:20	Cloudy	Middle	2.5	28.00	28.00	28.05	8.15	8.15	8.15	26.55	26.55	26.55	79.0	79.2	79.5	5.33	5.34	5.36	3.05	3.04	3.04	4	3.50
3/1/16	16:22	Cloudy	Middle	2.5	28.10	28.10	26.05	8.15	8.15	0.15	26.55	26.55	20.55	79.7	79.9	79.5	5.38	5.39	5.50	2.97	3.10	3.04	3	3.30
5/7/18	14:55	Cloudy	Middle	2.5	27.90	27.90	27.95	8.18	8.18	8.18	26.31	26.31	26.31	85.9	86.8	86.7	5.82	5.87	5.86	2.70	2.70	2.70	5	5.50
3/1/10	14:57	Cloudy	Middle	2.5	28.00	28.00	27.93	8.18	8.18	0.10	26.31	26.31	20.51	87.0	87.0	00.7	5.88	5.88	5.60	2.71	2.70	2.70	6	5.50
7/7/18	20:43	Cloudy	Middle	2.5	29.90	29.90	29.90	8.21	8.21	8.21	26.48	26.48	26.48	78.6	78.5	76.5	5.06	5.06	4.94	4.94	4.78	4.84	6	5.00
111110	20:44	Cloudy	Middle	2.5	29.90	29.90	23.30	8.21	8.20	0.21	26.48	26.48	20.40	75.4	73.3	70.5	4.86	4.78	4.54	4.77	4.86	4.04	4	3.00
10/7/18	10:23	Cloudy	Middle	3.5	27.90	27.90	27.90	8.35	8.35	8.35	27.37	27.37	27.37	72.2	71.9	71.8	4.86	4.84	4.83	1.92	1.88	1.88	9	9.50
10/1/10	10:25	Cloudy	Middle	3.5	27.90	27.90	27.30	8.35	8.35	0.55	27.36	27.36	21.51	71.6	71.5	71.0	4.82	4.81	4.05	1.86	1.86	1.00	10	3.30
12/7/18	14:05	Fine	Middle	2.5	27.60	27.60	27.70	8.13	8.13	8.12	29.56	29.56	29.56	70.8	71.2	71.1	4.73	4.75	4.74	4.92	4.93	4.79	6	7.00
12/1/10	14:07	Tille	Middle	2.5	27.80	27.80	27.70	8.10	8.10	0.12	29.56	29.56	20.00	71.2	71.3	71.1	4.74	4.75	4.74	4.69	4.61	4.73	8	7.00
14/7/18	12:35	Cloudy	Middle	3.0	26.80	26.80	26.85	8.12	8.12	8.12	30.35	30.35	30.35	84.7	84.5	84.5	5.71	5.70	5.70	5.16	5.16	5.14	7	7.00
. ,,,,,,	12:37	o.ouu,	Middle	3.0	26.90	26.90	20.00	8.12	8.12	02	30.35	30.35	00.00	84.1	84.7	0 1.0	5.68	5.71	0.70	5.13	5.12	0	7	7.00
16/7/18	14:25	Fine	Middle	3.0	27.30	27.30	27.35	8.13	8.13	8.13	29.92	29.92	29.92	84.7	84.9	84.8	5.69	5.69	5.69	6.15	6.14	6.14	4	5.00
10/1/10	14:27	Tille	Middle	3.0	27.40	27.40	27.55	8.13	8.13	0.13	29.92	29.92	20.02	84.8	84.8	04.0	5.68	5.68	5.05	6.14	6.13	0.14	6	3.00
18/7/18	16:05	Cloudy	Middle	3.0	27.30	27.30	27.35	8.00	8.00	8.01	30.91	30.91	30.91	85.6	86.4	86.4	5.70	5.75	5.75	7.09	7.11	7.11	8	8.50
10/1/10	16:07	Cloudy	Middle	3.0	27.40	27.40	27.00	8.01	8.01	0.01	30.91	30.91	00.01	86.6	86.8	00.4	5.77	5.78	0.70	7.12	7.13	7.11	9	0.00
20/7/18	16:49	Fine	Middle	3.0	28.30	28.30	28.35	7.95	7.95	7.96	31.21	31.21	31.20	68.6	68.0	67.4	4.49	4.44	4.41	7.79	7.78	7.83	8	8.50
20/1/10	16:51	1 1116	Middle	3.0	28.40	28.40	20.00	7.97	7.97	7.30	31.18	31.18	01.20	66.3	66.8	07.4	4.34	4.37	7.71	7.87	7.88	7.55	9	0.50
24/7/18	11:20	Cloudy	Middle	2.5	28.70	28.70	28.75	8.14	8.14	8.15	29.42	29.42	29.42	97.5	97.1	97.1	6.39	6.37	6.37	5.16	5.17	5.19	6	6.00
,	11:22	2.300,	Middle	2.5	28.80	28.80		8.15	8.15	20	29.42	29.42		96.9	96.7	÷:!!	6.36	6.35		5.20	5.22	50	6	
26/7/18	11:05	Fine	Middle	2.5	29.30	29.30	29.30	8.06	8.06	8.07	28.76	28.76	28.76	91.7	90.3	90.5	5.98	5.86	5.91	3.10	3.18	3.15	4	3.50
23,1710	11:07		Middle	2.5	29.30	29.30	20.00	8.07	8.07	5.57	28.76	28.76	20.70	89.5	90.6		5.84	5.96	5.51	3.15	3.17	0.10	3	0.00



#### Water Monitoring Result at P4 - SOC Mid-Ebb Tide

Date	Time	Weater Condition	Samplin	g Depth	Wat	er Temp	erature		pН			Salinit	ty	D	O Satur	ation		DO mg/L			Turbid NTU	ity	Suspende	
		Condition	n	n	Va	lue	Average	Va	lue	Average	Va	llue	Average	Va	lue	Average	Va		Average	Va	lue	Average	Value	Average
00/0/40	10:20	Fig	Middle	3.0	28.60	28.60	00.05	8.21	8.21	0.04	26.38	26.38	00.00	90.9	91.7	04.5	6.07	6.13	0.44	2.73	2.74	0.77	6	5.50
28/6/18	10:22	Fine	Middle	3.0	28.70	28.70	28.65	8.21	8.21	8.21	26.38	26.38	26.38	91.3	91.9	91.5	6.10	6.14	6.11	2.78	2.81	2.77	5	5.50
30/6/18	14:10	Cloudy	Middle	2.5	29.00	29.00	29.05	8.18	8.18	8.18	26.52	26.52	26.52	89.4	89.4	89.3	5.92	5.93	5.92	3.40	3.37	3.36	5	5.50
30/0/16	14:12	Cloudy	Middle	2.5	29.10	29.10	29.05	8.18	8.18	0.10	26.52	26.52	20.52	89.3	89.2	09.3	5.92	5.91	5.92	3.35	3.32	3.30	6	5.50
3/7/18	16:25	Cloudy	Middle	2.5	27.90	27.90	27.95	8.18	8.18	8.18	26.36	26.36	26.36	80.9	81.3	81.8	5.47	5.50	5.53	2.64	2.59	2.59	2	2.00
3/1/10	16:27	Cloudy	Middle	2.5	28.00	28.00	27.93	8.17	8.17	0.10	26.35	26.35	20.30	82.3	82.5	01.0	5.56	5.58	5.55	2.56	2.57	2.59	2	2.00
5/7/18	15:00	Cloudy	Middle	2.5	27.90	27.90	27.90	8.19	8.19	8.19	26.36	26.36	26.36	89.0	89.3	89.1	6.02	6.04	6.03	2.64	2.65	2.66	6	5.50
3/1/10	15:02	Cloudy	Middle	2.5	27.90	27.90	27.30	8.19	8.19	0.13	26.36	26.36	20.50	89.1	89.0	03.1	6.03	6.03	0.00	2.67	2.68	2.00	5	3.50
7/7/18	20:52	Cloudy	Middle	2.5	29.80	29.80	29.80	8.21	8.21	8.21	26.50	26.50	26.50	74.0	76.4	75.2	4.78	4.95	4.86	4.58	4.71	4.57	7	8.00
	20:53	Ciouay	Middle	2.5	29.80	29.80	20.00	8.21	8.21	0.21	26.50	26.50	20.00	75.6	74.8	. 0.2	4.88	4.83		4.47	4.51		9	0.00
10/7/18	10:27	Cloudy	Middle	3.5	27.90	27.90	27.90	8.37	8.37	8.37	27.12	27.12	27.10	77.3	77.5	77.3	5.21	5.22	5.18	1.61	1.66	1.68	5	5.50
10/1/10	10:29	Cloudy	Middle	3.5	27.90	27.90	27.00	8.37	8.37	0.01	27.07	27.07	27.10	77.3	77.0	77.0	5.10	5.19	0.10	1.68	1.78	1.00	6	0.00
12/7/18	14:10	Fine	Middle	2.5	27.50	27.50	27.55	8.13	8.13	8.13	29.41	29.41	29.43	72.2	72.2	72.0	4.84	4.84	4.82	4.20	4.12	4.15	7	6.50
	14:12		Middle	2.5	27.60	27.60		8.13	8.13	0.10	29.44	29.44		71.8	71.8	. =	4.80	4.80		4.12	4.17		6	
14/7/18	12:40	Cloudy	Middle	3.0	26.60	26.60	26.60	8.13	8.13	8.13	30.31	30.31	30.31	87.5	87.7	87.3	5.92	5.94	5.91	5.04	5.00	5.01	7	6.50
	12:42		Middle	3.0	26.60	26.60		8.13	8.13		30.31	30.31		87.8	86.0		5.94	5.82		5.00	5.00		6	
16/7/18	14:30	Fine	Middle	3.0	27.30	27.30	27.30	8.12	8.12	8.12	29.92	29.92	29.93	82.2	82.6	82.4	5.54	5.54	5.53	6.68	6.59	6.63	7	7.50
	14:32		Middle	3.0	27.30	27.30		8.12	8.12		29.93	29.93		82.4	82.4		5.52	5.52		6.62	6.63		8	
18/7/18	16:10	Cloudy	Middle	3.0	27.40	27.40	27.40	8.02	8.02	8.02	30.92	30.92	30.92	84.7	85.2	84.9	5.64	5.68	5.65	7.58	7.61	7.59	9	9.00
	16:12	,	Middle	3.0	27.40	27.40		8.02	8.02		30.92	30.92		84.6	84.9		5.63	5.66		7.59	7.58		9	
20/7/18	16:53	Fine	Middle	3.0	28.20	28.20	28.20	7.97	7.97	7.98	31.19	31.19	31.19	58.1	56.2	55.8	3.83	3.69	3.66	7.13	7.16	7.15	8	8.50
	16:55	-	Middle	3.0	28.20	28.20		7.98	7.98		31.18	31.18		55.0	53.8		3.60	3.53		7.15	7.14		9	
24/7/18	11:25	Cloudy	Middle	2.5	28.60	28.60	28.60	8.17	8.17	8.18	29.35	29.35	29.36	96.3	96.3	95.7	6.34	6.34	6.31	4.91	4.99	4.97	6	6.00
	11:27	,	Middle	2.5	28.60	28.60		8.18	8.18		29.37	29.37		94.6	95.6		6.26	6.30		4.98	4.98		6	
26/7/18	11:10	Fine	Middle	2.5	29.20	29.20	29.20	8.10	8.10	8.10	28.61	28.61	28.61	90.1	90.5	90.3	5.90	5.92	5.91	3.26	3.28	3.28	3	3.00
	11:12	-	Middle	2.5	29.20	29.20		8.10	8.10		28.60	28.60		90.4	90.0		5.91	5.89		3.29	3.30		3	



#### Water Monitoring Result at P5 - WCT / RT / IT Mid-Ebb Tide

Date	Time	Weater Condition	Samplin	g Depth	Wat	er Temp	erature		pН			Salinit	ty	0	O Satur	ation		DO mg/L			Turbid	ity	Suspend	
		Condition	n	n	Va	lue	Average	Va	lue	Average	Va	llue	Average	Va	lue	Average	Va		Average	Va	alue	Average	Value	Average
00/0/40	10:25	Fig	Middle	3.0	28.70	28.70	00.70	8.21	8.21	8.21	26.45	26.45	00.45	91.2	91.8	91.7	6.09	6.13	0.40	3.57	3.47	0.54	4	4.50
28/6/18	10:27	Fine	Middle	3.0	28.70	28.70	28.70	8.21	8.21	0.21	26.45	26.45	26.45	92.0	91.7	91.7	6.14	6.12	6.12	3.48	3.52	3.51	5	4.50
30/6/18	14:15	Cloudy	Middle	2.5	29.20	29.20	29.20	8.18	8.18	8.18	26.45	26.45	26.46	90.4	90.7	90.6	5.99	6.00	6.00	3.45	3.36	3.39	5	5.50
30/0/16	14:17	Cloudy	Middle	2.5	29.20	29.20	29.20	8.17	8.17	0.10	26.46	26.46	20.40	90.7	90.6	90.6	6.00	6.00	6.00	3.37	3.37	3.39	6	5.50
3/7/18	16:30	Cloudy	Middle	2.5	28.00	28.00	28.00	8.17	8.17	8.17	26.35	26.35	26.35	84.8	85.1	85.2	5.73	5.75	5.76	3.01	2.90	2.96	3	2.50
3/1/10	16:32	Cloudy	Middle	2.5	28.00	28.00	20.00	8.17	8.17	0.17	26.35	26.35	20.33	85.3	85.4	03.2	5.77	5.77	5.70	2.98	2.94	2.90	2	2.50
5/7/18	15:05	Cloudy	Middle	2.5	27.90	27.90	27.95	8.19	8.19	8.19	26.42	26.42	26.42	89.0	89.1	89.2	6.03	6.02	6.04	2.75	2.69	2.67	6	5.50
3/1/10	15:07	Cloudy	Middle	2.5	28.00	28.00	27.55	8.19	8.19	0.13	26.42	26.42	20.42	89.4	89.4	03.2	6.05	6.05	0.04	2.64	2.61	2.07	5	3.50
7/7/18	21:07	Cloudy	Middle	2.5	29.50	29.50	29.50	8.20	8.20	8.20	26.61	26.61	26.61	76.8	76.2	76.8	4.97	4.94	4.98	6.01	6.06	6.01	6	5.50
.,,,,,	21:08	Ciouay	Middle	2.5	29.50	29.50	20.00	8.20	8.20	0.20	26.61	26.61	20.01	76.9	77.1	7 0.0	4.99	5.01		5.97	5.98	0.01	5	0.00
10/7/18	10:31	Cloudy	Middle	3.5	28.00	28.00	28.00	8.40	8.40	8.40	26.82	26.82	26.82	76.5	76.1	75.8	5.18	5.12	5.11	1.85	1.95	1.95	7	6.50
10/1/10	10:33	Cloudy	Middle	3.5	28.00	28.00	20.00	8.40	8.40	0.40	26.82	26.82	20.02	75.5	74.9	70.0	5.09	5.05	0.11	1.96	2.03	1.00	6	0.00
12/7/18	14:15	Fine	Middle	2.5	27.70	27.70	27.75	8.15	8.15	8.15	29.38	29.38	29.38	69.7	69.4	69.0	4.65	4.63	4.60	5.65	5.66	5.61	6	6.00
	14:17		Middle	2.5	27.80	27.80		8.15	8.15	0.10	29.38	29.38		68.5	68.4		4.57	4.56		5.59	5.54		6	
14/7/18	12:45	Cloudy	Middle	3.0	26.60	26.60	26.65	8.13	8.13	8.13	30.35	30.35	30.36	84.8	85.0	84.9	5.73	5.74	5.74	4.93	4.93	4.96	7	7.50
	12:47		Middle	3.0	26.70	26.70		8.13	8.13		30.36	30.36		84.9	84.9		5.74	5.74	-	4.97	5.00		8	
16/7/18	14:35	Fine	Middle	3.0	27.40	27.40	27.40	8.12	8.12	8.12	29.97	29.97	29.97	83.3	83.3	83.4	5.57	5.57	5.57	6.20	6.24	6.24	7	6.50
	14:37		Middle	3.0	27.40	27.40		8.12	8.12		29.97	29.97		83.8	83.0		5.56	5.56		6.25	6.25		6	
18/7/18	16:15	Cloudy	Middle	3.0	27.40	27.40	27.40	8.03	8.03	8.04	30.94	30.94	30.94	85.3	85.7	85.5	5.67	5.70	5.69	7.96	7.98	7.98	8	7.50
	16:17	,	Middle	3.0	27.40	27.40		8.04	8.04		30.94	30.94		85.7	85.4		5.70	5.68		7.99	7.99		7	
20/7/18	16:57	Fine	Middle	3.0	28.10	28.10	28.10	7.99	7.99	7.99	31.20	31.20	31.20	62.9	61.1	60.1	4.09	4.01	3.93	9.75	9.72	9.72	10	10.50
	16:59		Middle	3.0	28.10	28.10		7.99	7.99		31.20	31.20		59.1	57.1		3.88	3.75		9.72	9.70		11	<u> </u>
24/7/18	11:30	Cloudy	Middle	2.5	28.50	28.50	28.50	8.19	8.19	8.19	29.40	29.40	29.41	93.8	94.0	93.5	6.10	6.19	6.14	6.09	6.04	6.04	6	7.00
	11:32	-	Middle	2.5	28.50	28.50		8.19	8.19		29.42	29.42		93.1	92.9		6.13	6.12		6.00	6.02		8	
26/7/18	11:15	Fine	Middle	2.5	29.20	29.20	29.25	8.12	8.12	8.12	28.59	28.59	28.59	89.7	89.6	89.5	5.87	5.86	5.85	2.96	2.85	2.89	3	3.50
	11:17		Middle	2.5	29.30	29.30		8.12	8.12		28.59	28.59		89.3	89.4		5.84	5.84		2.88	2.88		4	



#### Water Monitoring Result at RW21-P789 - GEC/CRB/SHK Mid-Ebb Tide

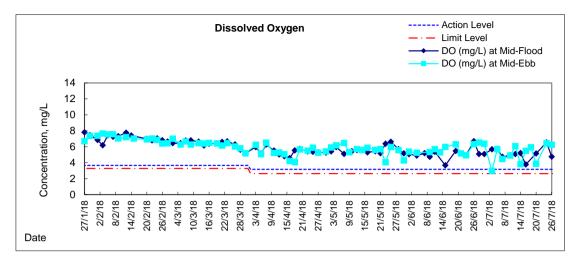
Date	Time	Weater Condition		g Depth	Wat	er Temp	erature		pH -			Salinit	ty	С	O Satur	ation		DO ma/L			Turbid		Suspend	led Solids
		o o . railio i .	n	n	Va	lue	Average	Va	lue	Average	Va	alue	Average	Va	llue	Average	Va		Average	Va	ılue	Average	Value	Average
28/6/18	13:58	Fine	Middle	3.5	29.90	29.90	30.05	8.25	8.25	8.26	26.86	26.86	26.86	103.8	103.7	102.4	6.75	6.74	6.66	3.62	3.57	3.62	6	6.00
20/0/10	14:00	Tille	Middle	3.5	30.20	30.20	30.03	8.26	8.26	0.20	26.86	26.86	20.00	101.1	101.1	102.4	6.57	6.56	0.00	3.64	3.66	3.02	6	0.00
30/6/18	14:50	Cloudy	Middle	3.5	28.90	28.90	28.95	8.23	8.23	8.23	26.30	26.30	26.30	94.5	94.1	94.3	6.29	6.26	6.27	6.41	6.40	6.41	16	16.00
00/0/10	14:52	Cioudy	Middle	3.5	29.00	29.00	20.00	8.23	8.23	0.20	26.30	26.30	20.00	94.6	94.0	00	6.29	6.24	0.2.	6.41	6.41	0	16	10.00
3/7/18	13:50	Cloudy	Middle	4.0	27.70	27.70	27.70	8.11	8.11	8.11	26.92	26.92	26.92	74.0	74.7	74.3	5.01	5.09	5.04	3.14	3.16	3.17	3	3.00
	13:52		Middle	4.0	27.70	27.70		8.11	8.11		26.92	26.92		74.5	74.1		5.06	5.01		3.18	3.19		3	
5/7/18	15:35	Cloudy	Middle	3.5	27.90	27.90	27.95	8.15	8.15	8.15	27.00	27.00	27.00	88.7	89.6	89.4	5.98	6.04	6.03	5.07	5.11	5.11	10	9.50
	15:37	,	Middle	3.5	28.00	28.00		8.15	8.15		26.99	26.99		89.5	89.7		6.04	6.05		5.11	5.13	_	9	
7/7/18	17:30	Cloudy	Middle	4.0	30.30	30.30	30.30	8.12	8.12	8.12	26.87	26.87	26.87	65.0	64.9	64.6	4.23	4.16	4.20	1.34	1.28	1.36	9	8.00
	17:31	r	Middle	4.0	30.30	30.30		8.12	8.12		26.87	26.87		65.2	63.3		4.28	4.14		1.40	1.42		7	<u> </u>
10/7/18	10:50	Cloudy	Middle	3.5	28.10	28.10	28.10	8.33	8.33	8.33	27.77	27.77	27.78	74.2	73.0	72.6	4.97	4.89	4.86	2.13	2.10	2.10	7	7.00
	10:52		Middle	3.5	28.10	28.10		8.33	8.33		27.78	27.78		72.0	71.2		4.81	4.77		2.08	2.08		7	
12/7/18	10:00	Fine	Middle	4.0	28.40	28.40	28.50	8.07	8.07	8.08	30.18	30.18	30.19	91.0	90.8	90.3	5.97	5.95	5.92	3.18	3.12	3.12	4	4.50
	10:02		Middle	4.0	28.60	28.60		8.09	8.09		30.19	30.19		89.6	89.9		5.86	5.88		3.10	3.08		5	
14/7/18	13:25	Cloudy	Middle	3.5	26.80	26.80	26.80	8.15	8.15	8.15	30.84	30.84	30.84	84.3	84.0	83.7	5.67	5.65	5.63	4.67	4.62	4.61	7	6.50
	13:27		Middle	3.5	26.80	26.80		8.15	8.15		30.84	30.84		83.2	83.3		5.59	5.60		4.57	4.56		6	<u> </u>
16/7/18	14:55	Fine	Middle	4.0	27.50	27.50	27.50	8.14	8.14	8.15	30.22	30.22	30.22	79.5	79.2	79.1	5.30	5.28	5.27	5.64	5.65	5.65	5	5.00
	14:57		Middle	4.0	27.50	27.50		8.15	8.15		30.22	30.22		79.0	78.8		5.26	5.25		5.65	5.65		5	
18/7/18	16:30	Cloudy	Middle	4.0	27.70	27.70	27.70	8.05	8.05	8.05	30.90	30.90	30.91	81.5	91.4	84.3	5.39	5.40	5.42	5.55	5.54	5.54	5	5.50
	16:32		Middle	4.0	27.70	27.70		8.05	8.05		30.91	30.91		82.1	82.3		5.44	5.45		5.53	5.52		6	
20/7/18	20:58	Fine	Middle	3.5	28.00	28.00	28.10	8.07	8.07	8.07	31.00	31.10	31.07	47.0	47.6	48.1	3.09	3.13	<u>3.16</u>	4.95	4.97	5.00	6	5.50
	21:00		Middle	3.5	28.20	28.20		8.07	8.07		31.08	31.08		48.9	48.9		3.21	3.21		5.03	5.05		5	
24/7/18	11:45	Cloudy	Middle	3.5	28.80	28.80	28.85	8.11	8.11	8.12	29.74	9.75	24.75	96.2	95.7 96.1	96.1	6.28	6.26	6.28	4.79	4.80	4.75	7	7.50
	11:47		Middle Middle	3.5		 			<u> </u> 															<u> </u>
26/7/18	11:25	Fine	Middle	4.0	29.30	29.30	29.35	8.08	8.08	8.08	29.24	29.24	29.24	84.5	84.8	84.8	5.50	5.52	5.52	7.89	7.89	7.84	5	5.50
	11:27		Middle	4.0	29.40	29.40		8.08	8.08		29.24	29.24		84.3	85.5		5.49	5.55		7.80	7.79		5	

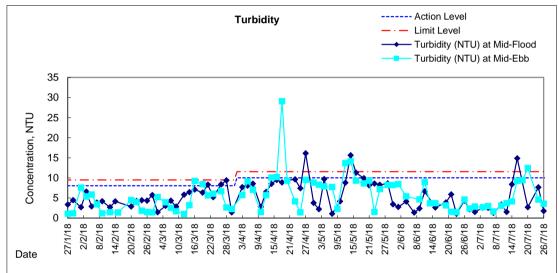


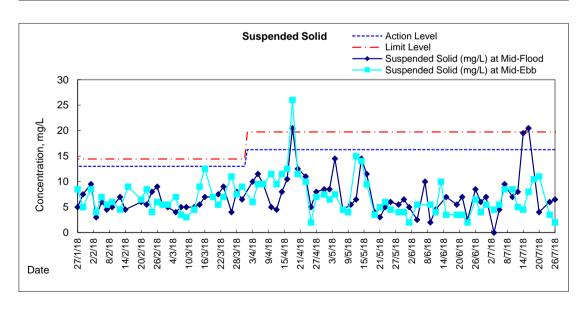
# Water Monitoring Result at WSD19 - Sheung Wan Mid-Ebb Tide

Date	Time	Weater Condition		g Depth	Wat	er Temp	erature		pН			Salinit	у	D	O Satur	ation		DO ma/L			Turbid NTU	ity	Suspend	ded Solids
		Condition	n	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	ilue	Average	Va		Average	Va	lue	Average	Value	Average
00/0/40	10:55	-	Middle	3.5	28.90	28.90	00.00	8.24	8.24		26.14	26.14	00.44	98.0	98.1	07.0	6.53	6.54	0.50	2.43	2.39	2.00	4	4.00
28/6/18	10:57	Fine	Middle	3.5	28.90	28.90	28.90	8.24	8.24	8.24	26.14	26.14	26.14	97.5	97.5	97.8	6.50	6.50	6.52	2.35	2.36	2.38	4	4.00
30/6/18	10:50	Cloudy	Middle	4.0	29.90	29.90	30.00	8.13	8.13	8.14	26.28	26.28	26.28	98.2	98.6	97.7	6.42	6.44	6.38	2.84	2.88	2.86	5	5.50
55/5/15	10:52	Cicaay	Middle	4.0	30.10	30.10	00.00	8.14	8.14	0	26.28	26.28	20.20	96.9	97.1	01	6.32	6.33	0.00	2.85	2.85	2.00	6	0.00
3/7/18	15:20	Cloudy	Middle	4.0	27.90	27.90	27.95	8.11	8.11	8.12	26.24	26.24	26.24	44.2	43.9	43.9	2.99	2.97	2.97	2.69	2.69	2.67	4	4.50
	15:22		Middle	4.0	28.00	28.00		8.13	8.13	_	26.24	26.24		43.7	43.6		2.96	2.95		2.66	2.64		5	
5/7/18	13:55	Cloudy	Middle	4.0	28.80	28.80	28.90	8.12	8.12	8.13	26.47	26.47	26.47	85.4	85.8	85.5	5.69	5.71	5.69	2.99	2.98	2.98	6	5.50
	13:57		Middle	4.0	29.00	29.00		8.13	8.13		26.46	26.46		85.5	85.4		5.68	5.68		2.97	2.97		5	
7/7/18	18:31	Cloudy	Middle	3.5	29.80	29.80	29.80	8.22	8.22	8.22	24.98	24.98	24.98	68.2	68.6	68.6	4.44	4.46	4.46	1.86	1.91	1.61	7	8.50
	18:32		Middle	3.5	29.80	29.80		8.22	8.22		24.98	24.98		68.7	68.7		4.47	4.47		1.36	1.31		10	<u> </u>
10/7/18	9:13	Cloudy	Middle	3.5	27.00	27.00	27.05	8.18	8.18	8.21	27.55	27.55	27.54	71.5	72.4	71.8	4.89	4.94	4.90	3.17	3.07	3.07	9	8.50
	9:15		Middle	3.5	27.10	27.10		8.24	8.24		27.53	27.53		71.9	71.3		4.91	4.87		3.06	2.97		8	<u> </u>
12/7/18	11:15	Fine	Middle	4.0	28.00	28.00	28.20	8.19	8.19	8.20	29.09	29.09	29.09	92.1	92.1	91.7	6.10	6.10	6.07	3.69	3.68	3.68	6	5.00
	11:17		Middle	4.0	28.40	28.40		8.20	8.20		29.09	29.09		91.5	91.2		6.05	6.03		3.68	3.68		4	
14/7/18	11:00	Cloudy	Middle	4.0	26.90	26.90	26.95	8.04	8.04	8.06	30.20	30.20	30.20	56.7	56.4	56.6	3.82	3.79	3.81	4.12	4.15	4.15	5	4.50
	11:02		Middle	4.0	27.00	27.00		8.07	8.07		30.20	30.20		56.6	56.6		3.81	3.81		4.16	4.16		4	<u> </u>
16/7/18	13:40	Fine	Middle	4.0	27.30	27.30	27.30	8.03	8.03	8.05	29.93	29.93	29.93	82.0	81.8	81.8	5.50	5.49	5.48	9.27	9.25	9.25	9	8.00
	13:42		Middle	4.0	27.30	27.30		8.07	8.07		29.93	29.93		81.4	82.0		5.45	5.49		9.24	9.24		7	
18/7/18	15:00 15:02	Cloudy	Middle	4.0	27.20	27.20	27.15	7.38	7.38	7.48	30.53	30.53	30.53	88.6	88.6	88.5	5.94	5.94	5.93	9.39	9.38	9.42	10	10.50
	17:35		Middle Middle	4.0 3.5	27.10	27.10		7.57	7.57		30.52	30.52		88.1	88.7		5.90	5.94		9.44	9.47		11	<u> </u>
20/7/18	17:35	Fine	Middle	3.5	27.90	28.00	27.95	7.99 8.00	8.00	8.00	31.03	31.03	31.03	60.9 57.7	59.4 56.9	58.7	4.01 3.80	3.91	3.87	12.13	13.15	<u>12.42</u>	12	11.00
	9:45		Middle	4.0	29.40	29.40		7.74	7.74		29.55	29.55		99.4	99.5		6.42	6.43		4.61	4.64		4	
24/7/18	9:47	Cloudy	Middle	4.0	29.60	29.60	29.50	7.74	7.74	7.74	29.54	29.54	29.55	99.8	99.8	99.6	6.45	6.45	6.44	4.58	4.56	4.60	3	3.50
	9:50		Middle	4.0	29.70	29.70		7.89	7.89		28.53	28.53		97.5	96.5		6.32	6.25		3.55	3.57		2	
26/7/18	9:52	Fine	Middle	4.0	29.80	29.80	29.75	7.87	7.87	7.88	28.54	28.54	28.54	96.3	96.2	96.6	6.24	6.23	6.26	3.57	3.58	3.57	2	2.00

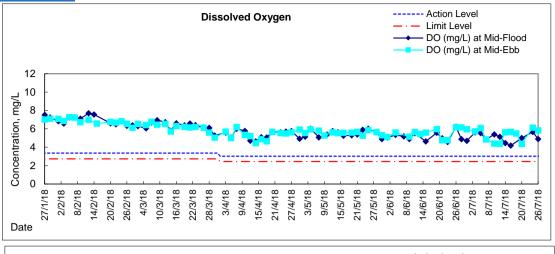
## Graphic Presentation of Water Quality Result of WSD19 - Sheung Wan

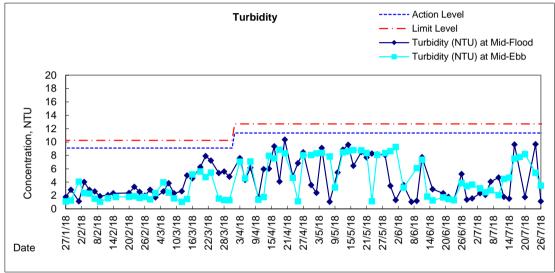


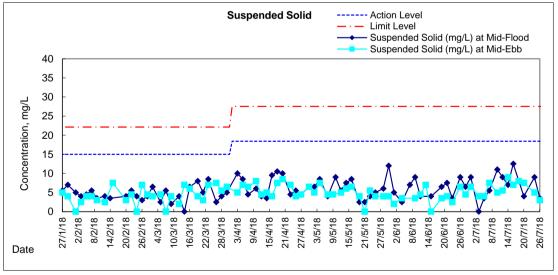




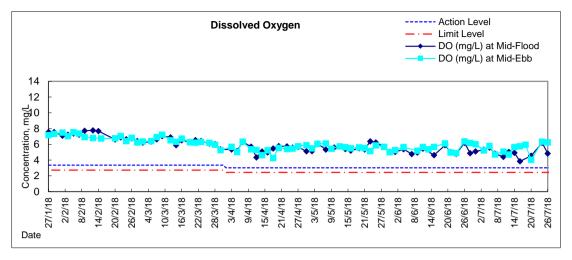
## Graphic Presentation of Water Quality Result of C1 - HKCEC

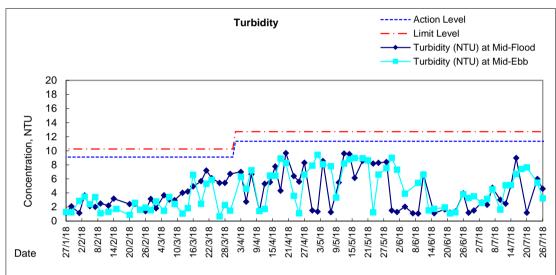


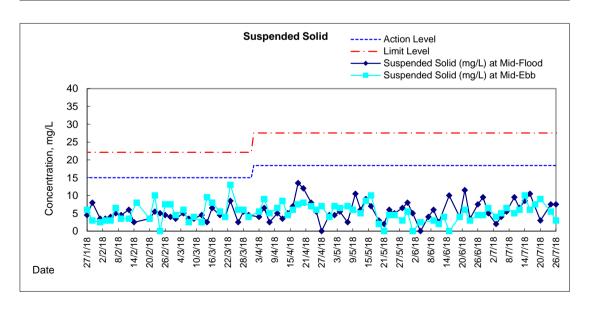




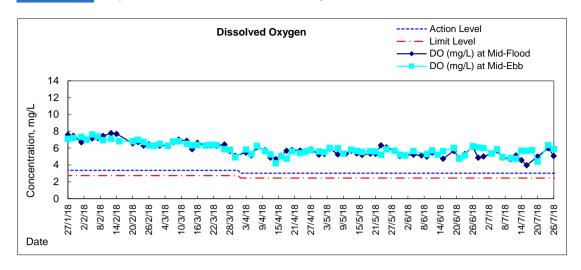
### Graphic Presentation of Water Quality Result of P1 - HKCEC Phase I

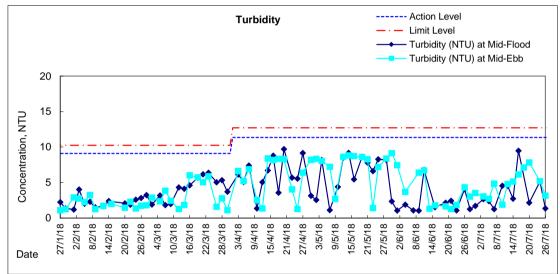


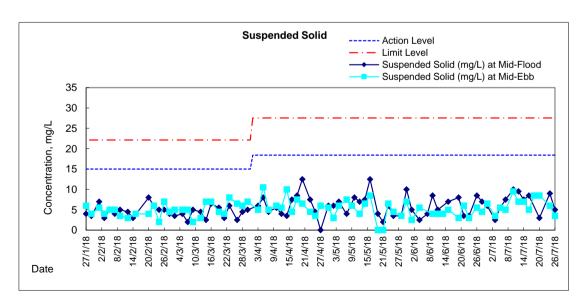




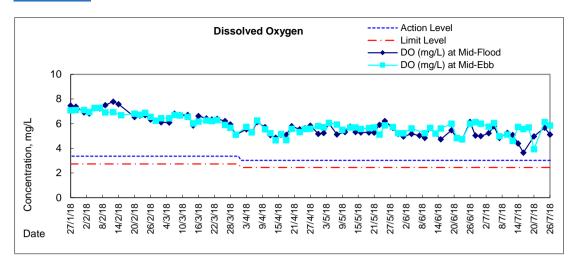
## Graphic Presentation of Water Quality Result of P3 - APA

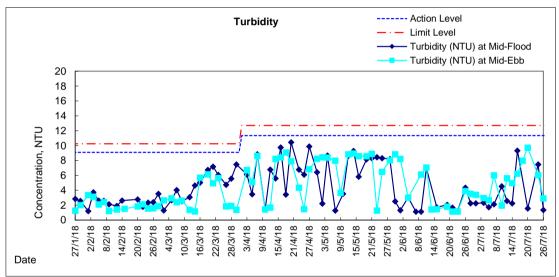


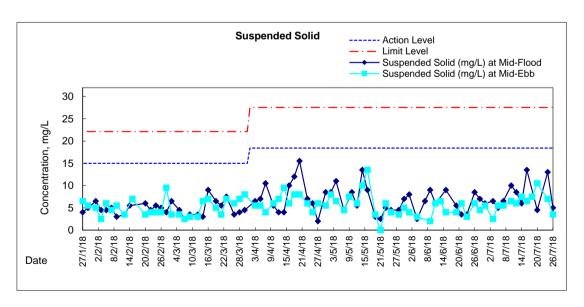




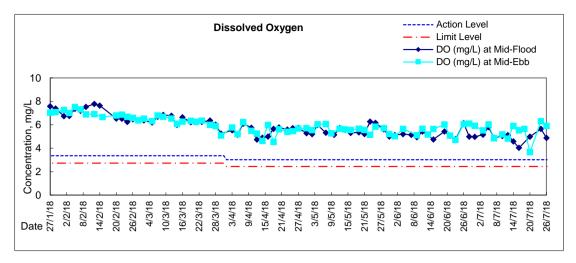
## Graphic Presentation of Water Quality Result of P5 - WCT / RT / IT

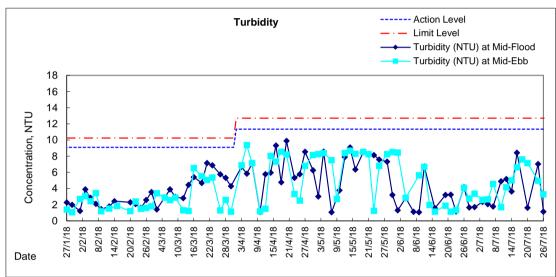


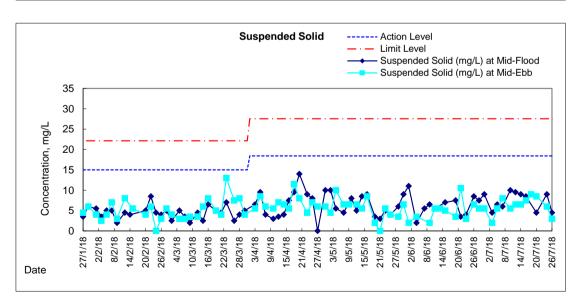




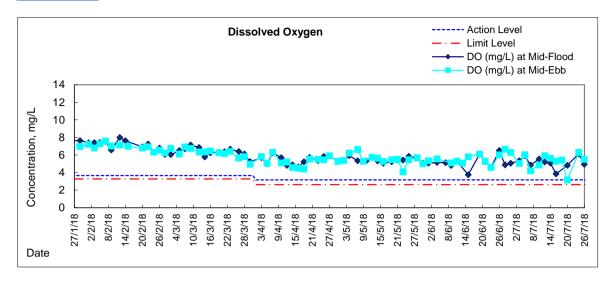
### Graphic Presentation of Water Quality Result of P4 - SOC

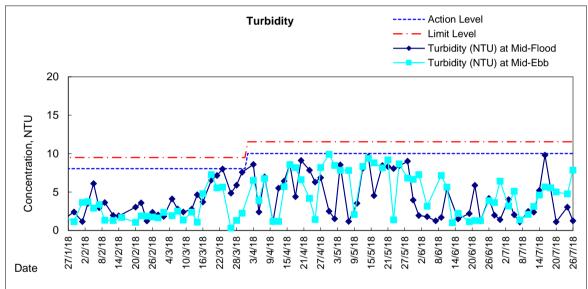


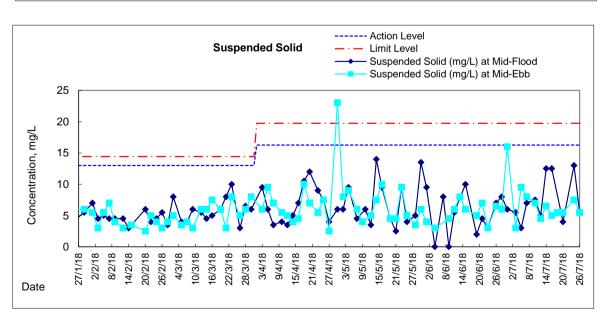




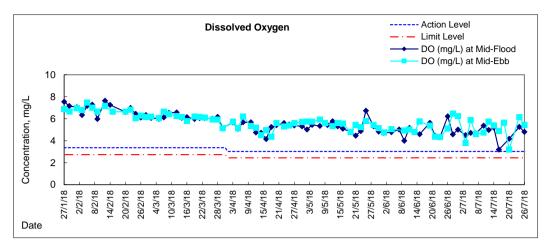
### Graphic Presentation of Water Quality Result of RW21-P789 - GEC/CRC/SHK

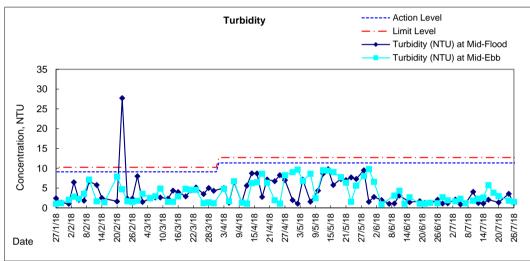


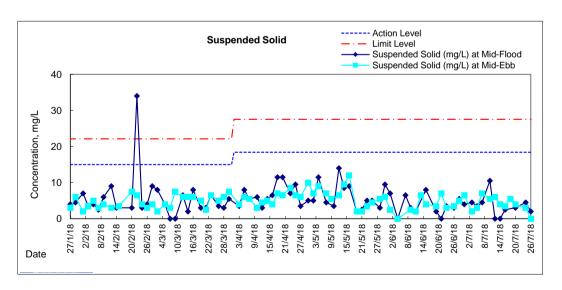




#### Graphic Presentation of Water Quality Result of C7 - Windsor House







## Appendix 6.1

**Event Action Plans** 

### **Event/Action Plan for Construction Noise**

EVENT	ACTION								
	ET	IEC	ER	CONTRACTOR					
Action Level being exceeded	<ol> <li>Notify ER, IEC and Contractor;</li> <li>Carry out investigation;</li> <li>Report the results of investigation to the IEC, ER and Contractor;</li> <li>Discuss with the IEC and Contractor on remedial measures required;</li> <li>Increase monitoring frequency to check mitigation effectiveness.</li> <li>(The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures.  (The above actions should be taken within 2 working days after the exceedance is identified)	<ol> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>Supervise the implementation of remedial measures.</li> <li>(The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>	Submit noise mitigation proposals to IEC and ER;     Implement noise mitigation proposals.     (The above actions should be taken within 2 working days after the exceedance is identified)					



EVENT	ACTION											
	ET	IEC	IEC ER									
Limit Level being exceeded	<ol> <li>Inform IEC, ER, Contractor and EPD;</li> <li>Repeat measurements to confirm findings;</li> <li>Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contractor's working procedures;</li> <li>6. Discuss with the IEC, Contractor and ER on remedial measures required;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>If exceedance stops, cease additional monitoring.</li> <li>(The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>	Discuss amongst ER, ET, and Contractor on the potential remedial actions;     Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.  (The above actions should be taken within 2 working days after the exceedance is identified)	<ol> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>Supervise the implementation of remedial measures;</li> <li>If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</li> <li>The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Submit further proposal if problem still not under control;</li> <li>Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</li> <li>(The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>								

Event / Action Dian for Construction Air Quality

FVENT		ACTION		
EVENT	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
Exceedance for one sample	Identify source, investigate the causes of exceedance and propose remedial measures;     Inform IEC and ER;     Repeat measurement to confirm finding;     Increase monitoring frequency to daily.  (The above actions should be taken within 2 working days after the exceedance is identified)	Check monitoring data submitted by ET;     Check Contractor's working method.  (The above actions should be taken within 2 working days after the exceedance is identified)	Notify Contractor. (The above actions should be taken within 2 working days after the exceedance is identified)	Rectify any unacceptable practice;     Amend working methods if appropriate (The above actions should be taken within 2 working days after the exceedance is identified)
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	Check monitoring data submitted by ET;     Check Contractor's working method;     Discuss with ET and Contractor on possible remedial measures;     Advise the ET on the effectiveness of the proposed remedial measures;     Supervise Implementation of remedial measures.     (The above actions should be taken within 2 working days after the exceedance is identified)	Confirm receipt of notification of failure in writing;     Notify Contractor;     Ensure remedial measures properly implemented.  (The above actions should be taken within 2 working days after the exceedance is identified)	Submit proposals for remedial to ER within 3 working days of notification;     Implement the agreed proposals;     Amend proposal if appropriate.     (The above actions should be taken within 2 working days after the exceedance is identified)
LIMIT LEVEL				
Exceedance for one sample	Identify source, investigate the causes of exceedance and propose remedial measures;     Inform ER, Contractor and EPD;     Repeat measurement to confirm finding;     Increase monitoring frequency to daily;     Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.  (The above actions should be taken within 2 working days after the exceedance is identified)	Check monitoring data submitted by ET;     Check Contractor's working method;     Discuss with ET and Contractor on possible remedial measures;     Advise the ER on the effectiveness of the proposed remedial measures;     Supervise implementation of remedial measures.  (The above actions should be taken within 2 working days after the exceedance is identified)	Confirm receipt of notification of failure in writing;     Notify Contractor;     Ensure remedial measures properly implemented.  (The above actions should be taken within 2 working days after the exceedance is identified)	Take immediate action to avoid further exceedance;     Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals;     Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
Exceedance for two or more consecutive samples	Notify IEC, ER, Contractor and EPD;     Identify source;     Repeat measurement to confirm findings;     Increase monitoring frequency to daily;     Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;     Arrange meeting with IEC and ER to discuss the remedial actions to be taken;     Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;     If exceedance stops, cease additional monitoring, (The above actions should be taken within 2 working days after the exceedance is identified)	Discuss amongst ER, ET, and Contractor on the potential remedial actions;     Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;     Supervise the implementation of remedial measures.	Confirm receipt of notification of failure in writing;     Notify Contractor;     In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;     Ensure remedial measures properly implemented;     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. (The above actions should be taken within 2 working days after the exceedance is identified)	Take immediate action to avoid further exceedance;     Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals;     Resubmit proposals if problem still not under control;     Stop the relevant portion of works as determined by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)



Event and Action Dian for Marine Water Quality

EVENT	ACTION								
	ET	IEC	ER	CONTRACTOR					
Action level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next day of exceedance.	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agree mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)					
Action level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next working day of exceedance.	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)					

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EVENT	ACTION								
	ET	IEC	ER	CONTRACTOR					
Limit level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC, contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)					
Limit level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC, contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures; Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3working days; Implement the agreed mitigation measures; As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities. (The above actions should be taken within 1 working day after the exceedance is identified)					

### **Event and Action Plan for Odour Patrol**

Event	ACTION							
	Person-in-charge of Odour Monitoring	Implementation Agent Identified by CEDD						
Action Level								
Exceedance of Action Level	Identify source/reason of exceedance;     Repeat odour patrol to confirm finding.	<ol> <li>Carry out investigation to identify the source/reason of exceedance;</li> <li>Rectify any unacceptable practice</li> <li>Implement more mitigation measures if necessary;</li> <li>Inform EPD or MD if exceedance is considered to be caused by expedient connections or floating debris.</li> </ol>						
Limit Level	·	· · · · · · · · · · · · · · · · · · ·						
Exceedance of Limit Level	Identify source / reason of exceedance;     Repeat odour patrol to confirm findings;     Increase odour patrol frequency;     If exceedance stops, cease additional odour patrol.	<ol> <li>Carry out investigation to identify the source/reason of exceedance. Investigation shall be completed within 2 weeks;</li> <li>Rectify any unacceptable practice;</li> <li>Formulate remedial actions;</li> <li>Ensure remedial actions properly implemented;</li> <li>If exceedance continues, consider what more/enhanced mitigation measures shall be implemented;</li> <li>Inform EPD or MD if exceedance is considered to be caused by expedient connections or floating debris.</li> </ol>						

# Appendix 6.2

Summary for Notification of Exceedance



Ref no.	Date	Tidal	Location	Parameters	Measured	Action Level	Limit Level	Follow-up action	
X_18W022		Mid-ebb	WSD19	DO(mg/L)	2.97	3.17		Possible reason:	Natural variation or changes of water quality in the vicinity of water quality monitoring station. Transition of action and limit level from wet season.
				Turbidity(NTU)	2.67	10.01	11.54	Action taken/ to be taken:	Immediate repeated in-situ measurement to confirm the exceedances. Checked with Contractor works and reviewed previous monitoring data.
				SS(mg/L)	4.50	16.26	19.74	Remarks/ Other Obs:	No marine construction activity under Contract HK/2012/08 was conducted on the monitoring date. In view of above, it is considered the exceedance was not related to Project work. No exceedance was recorded in the subsequent monitoring on 5 July 2018
X_18W023	14-Jul-18	Mid-flood	WSD19	DO(mg/L)	5.21	3.17	2.63	Possible reason:	Flood tide.  Natural variation or changes of water quality in the vicinity of water quality monitoring station. Transition of action and limit level from wet season.
				Turbidity(NTU)	8.35	10.01	11.54	Action taken/ to be taken:	Immediate repeated in-situ measurement to confirm the exceedances. Checked with Contractor works and reviewed previous monitoring data.
				SS(mg/L)	19.50	16.26	19.74	Remarks/ Other Obs:	No marine construction activity under Contract HK/2012/08 was conducted on the monitoring date. In view of above, it is considered the exceedance was not related to Project work.
X_18W024	16-Jul-18	Mid-flood	WSD19	DO(mg/L)	3.78	3.17	2.63	Possible reason:	Natural variation or changes of water quality in the vicinity of water quality monitoring station. Transition of action and limit level from wet season.
				Turbidity(NTU)	14.85	10.01	11.54	Action taken/ to be taken:	Immediate repeated in-situ measurement to confirm the exceedances. Checked with Contractor works and reviewed previous monitoring data.
				SS(mg/L)	20.50	16.26	19.74	Remarks/ Other Obs:	No marine construction activity under Contract HK/2012/08 was conducted on the monitoring date. In view of above, it is considered the exceedance was not related to Project work.
X_18W025	20-Jul-18	Mid-ebb	WSD19	DO(mg/L)	3.87	3.17	2.63	Possible reason:	Natural variation or changes of water quality in the vicinity of water quality monitoring station. Transition of action and limit level from wet season.
				Turbidity(NTU)	12.42	10.01	11.54	Action taken/ to be taken:	Immediate repeated in-situ measurement to confirm the exceedances. Checked with Contractor works and reviewed previous monitoring data.
				SS(mg/L)	11.00	16.26	19.74	Remarks/ Other Obs:	No marine construction activity under Contract HK/2012/08 was conducted on the monitoring date. In view of above, it is considered the exceedance was not related to Project work.
X_18W026	20-Jul-18	Mid-ebb	RW21-P789	DO(mg/L)	3.15	3.17	2.63	Possible reason:	Natural variation or changes of water quality in the vicinity of water quality monitoring station. Transition of action and limit level from wet season.
				Turbidity(NTU)	5.00	10.01	11.54	Action taken/ to be taken:	Immediate repeated in-situ measurement to confirm the exceedances. Checked with Contractor works and reviewed previous monitoring data.
				SS(mg/L)	5.50	16.26	19.74	Remarks/ Other Obs:	Removal of temporary seawall block at Portion 3 & 4 under Contract HK/2009/02 was conducted on the monitoring date. Location of the construction area was at downstream of monitoring station RW21-P789 during the monitoring period and contractor mitigation measure including the use of silt curtain and installation of silt screen was general in order. In view of the above, it is considered the exceedance was not related to Project work. No exceedance was recorded on the subsequent monitoring on 21 July 2018 Flood lide.

Appendix 9.1

Complaint Log

# **Environmental Complaints Log**

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	tcome	Status
100321a	21/3/2010	ICC Case no. 1-224618029, Ms. Tsang	Location near Tin Hau	Complaint regarding the loud noise and dark smoke in the course of dredging works on 21 March 2010 (Sunday).	1)	A valid Construction Noise Permit no. GW-RS0119-10 was granted from EPD since 18 <sup>th</sup> Feb. 2010 for the dredging works which carry out at area for North Point Reclamation.	Closed
					2)	Officer from Marine Department, Police and EPD's officer attended the scene for inspection and investigation.	
					3)	The Contractor (CHEC-CRBC JV) strictly comply all the conditions in CNP and take all mitigation measures in order to minimize the potential impacts to surrounding sensitive receivers. A formal letter was issued out by CHEC-CRBC JV and to explain the status of the recent construction activities.	
					4)	No limit level exceedance was recorded on the noise measurement during day time and evening time noise measurement on 23 March 2010. Additional restrict hours noise monitoring at Causeway Bay Community and City Garden was conducted on 5 April 2010 (Public Holiday). No limit level exceedance was recorded in the monitoring.	
					5)	No further complaints were received from Mr. Tsang in the reporting month. The complaint is considered closed.	
100321b	21/3/2010	Unknown	breakwater of the	A public complaint and enquiry regarding loud noises emanated from dredging activities on 21/3/2010 (Sunday) until 2220 hours and between 1920-1946 hours in the evening of 22 March	_ ′	A valid Construction Noise Permit no. GW-RS0119-10 was granted from EPD since 18 <sup>th</sup> Feb. 2010 for the dredging works at area for North Point Reclamation during general holidays including Sunday between 0700-2300 hours and any day not being a general holiday between 1900-2300hours. It is complied with the condition of CNP.	Closed
				2010(Monday).	2)	Officer from Marine Department, Police and EPD's officer attended the scene for inspection and investigation.	
					3)	No limit level exceedance was recorded on the noise measurement during day time and evening time noise measurement on 23 March 2010. Additional restrict hours noise monitoring at Causeway Bay Community and City Garden was conducted on 5 April 2010 (Public Holiday). No limit level exceedance was recorded in the monitoring.	
					4)	No further complaints were received in the reporting month. The complaint is considered closed.	

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Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	come	Status	
100504	4/5/2010	Public complainant received by ICC (ICC case: 1-	Watson Road	Complaint on the noise nuisance due to the large scale of dredging machine (face to Island East Corridor) in particular the	,	Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0119-10 for their dredging works. Contractor has implemented mitigation measures to reduce the working hour not later than 2230.	Closed	
233	233384048)		hours 1900 to 0800 and request to reduce the noise level.	2)	According to RSS 's record, no more daytime and night time dredging since the departure of the split hopper barge from the workplace on 29 April 2010 at 1900 hrs to 5 May 2010.			
						No further complaints were received in the reporting month. The complaint is considered closed.		
100731	t	0 Mr. Lee received by ICC (CC Case: 1-250702681)		Road due to the dredging	due to the dredging works.	1)	Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0371-10 for their dredging works.	Closed
				Three construction plants were operated concurrently.	2)	There was only 1 grab dredger operated by Contractor within NPR project site area for dredging works.		
						3)	No noise exceedance was recorded at noise monitoring station at Victoria Centre on 27 July and 3 August 2010 during daytime and evening time period.	
					4)	It is considered as invalid from the EP and CNP point of view. $ \\$		
100812	12/8/2010	Mr. Wong, Harbour Heights (Management) Ltd.	Harbour Heights	Management office received their resident complained on the noise nuisance from the dredging works at the marine	,	Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0371-10 for their dredging works. Contractor has implemented mitigation measures to reduce the working hour not later than 2230.	Closed	
			works area adjacent to the Harbour Height during the period from 0700 to 2200.	2)	No noise exceedance was recorded at noise monitoring station at Victoria Centre on 10 and 17 August 2010 during daytime and evening time period.			
					3)	It is considered as invalid complaint. No further complaints were received in the reporting month. The complaint is considered closed.		



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	come	Status					
101108	8/11/2010	Mr. Nip received by ICC (CC Case)	Sai Wan Ho	Visual concern around the seaside silt screen outside the WSD freshwater intake pump at Sai Wan Ho (Monitoring station ref no WSD15)	1)	Contractor for HY/2009/11has been regular checked of condition and removal of trapped rubbish before the dismantling of the floating silt screen to be replaced by wall mount silt screen.	Closed					
				data in the new web to	2)	Follow-up action had been immediately carried out to check and clear the floating refuse around the seaside silt screen after receipt of the complaint.						
				3)	Removal of seaside silt screen outside the WSD freshwater intake (WSD15) by contractor HY/2009/11 was checked and confirmed dated 9 November 2010. Silt screen has been deployed into the existing steel frame at WSD15 for the protection of WSD salt water intake.							
101110	10/11/2010	Mr. Wong, Harbour Heights (Management) Ltd.	Harbour Heights	Management office received their resident complained on the noise nuisance from the power mechanical equipment during the 0700 to 2200hrs	1)	Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0870-10 for their dredging works during evening time. Contractor has implemented mitigation measures to reduce the working hour not later than 2230.	Closed					
						2)	No noise exceedance was recorded at noise monitoring station at Victoria Centre on 4 and 10 November 2010 during daytime and evening time period.					
												3)
101203	3/12/2010, 01:45a.m.	The resident of Block 11, City Garden by ICC referral from Marine	North Point	Bad odour was generated from the dredging plant off North Point	1)	The first investigation was carried out by Marine Department patrol in the morning on 3 Dec 2010 at around 10:00 and revealed that a few working barges were anchoring in the vicinity without carrying out dredging work.	Closed					
Departme	Department	tment		2)	A further specific investigation inspection on contractor's backhoe barge in the vicinity of City Garden was jointly conducted with Engineer Representatives (AECOM/RSS), and ET on 8 Dec 2010 at 11:30. No bad odour was noted during the investigation.							
					3)	Routine dredging operation of the backhoe barge was performed during the jointed investigation inspection and it was revealed that no bad odour was attributed by the dredged materials inspected.						
101206	6/12/2010	Ms Lui, the resident of 27/F, Block 10, City		Two barges were generating noise at 22:00 on 6 December 2010 in which the noise from	1)	ET confirmed the following information with resident site staff on the complaint:  • It was referred to the filling operation at North Point	Closed					



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
		Garden by ICC (ICC case: 1-266039336)		filling operation was louder than the traffic noise & visual impact was generated due to the spotlight pointing directly to the complainant flat, suspected the filling operation was part of Wanchai Development Phase II;  Complainant also raised the same complaint to District Councillor, Mr. Hui on 7 Dec 2010 regarding the night-time noise and suspected earlier start of work at 06:30. Complaint also requested for limiting the plant operating hours from 09:00-21:00.	Reclamation of Central Wan Chai Bypass site area instead of part of Wanchai Development Phase II;  Two derrick barges were in operation at the time of complaint for placing 400 rockfill onto the excavation trench and for levelling the formation level to receive the pre-cast caisson seawall;  Flood light on the control mast of derrick barge have no lighting shields for the prevention of glare of flood lights;  No starting work on 7 Dec 2010 at 0630hours.  PME used in restricted hours were checked and confirmed compliant with valid CNP no. GW-RS0870-10. The noise level recorded on 6 Dec 2010 was complied with the noise criteria during restricted hour;  It was found that the occasional noise nuisance might be caused by the hitting or scratching onto the rock surface during loading down the grab onto the Grade 400 rockfill;  The absence of the lighting shields at flood light results in visual glare to the complainant at night-time.  Contractor was advised to minimize the finishing time of placing Grade 400 rockfill at 2100hrs and switch off all unnecessary flood lights apart from the light for the safety and security purpose;  No further complaint was received after implementation of proposed measures	
110415	15/04/2011	The resident, Mr Law at Victoria Centre by ICC (ICC#1- 281451236)	North Point	A dust generation and a concern of mosquitoes breeding complaint in which suspected the filling operation was part of North Point Reclamation.	<ol> <li>The concerned stockpile was a working stockpile under Contract HY/209/15 and was covered at night time after work.</li> <li>Water spraying on the haul road and potential dust generating material at least 4 times a day was conducted by contractor that complies with the requirement.</li> <li>It is considered invalid but preventive actions can be taken because the stockpile is relatively large and easily visible by complainant.</li> <li>It was recommended that increasing the frequency of water spraying shall be conducted to all potential dust generating materials and activities. Besides, Contractor should consider to cover the idle part of the stockpile</li> <li>The concern of mosquitoes breeding is out the scope of EM&amp;A, the follow-up action is not reported in this monthly EM&amp;A report.</li> </ol>	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	tcome	Status
110419	19/04/2011	Victoria Centre at Victoria Centre by ICC (ICC# 1-	The episode of night noise on 19/4/11 and 20/4/11 at 2:50 am and the noise lasted for 30 minutes per night.	''	According to the RSS's record, there was no construction works undertaken under the EP-356/2009 during the concern time period.  There was no abnormal real-time noise monitoring data	Closed	
		272874759)			2)	recorded in RTN1 - FEHD Hong Kong Transport Section Whitefield Depot which is next to the Victoria Centre.	
					3)	It is considered as invalid complaint under this Project.	
110617 9/06/2011	9/06/2011	Mr. Law from Victoria Centre Management Office	North Point	no. HY/2009/11	1)	The complaint was received by ET on 13 Jun 2011. During the weekly site inspection on 7 and 17 June 2011, there was no any odour impact detected in the site area.	Closed
					2)	According to the site record, there was muddy water discharged from the unknown source at upstream of Channel T during heavy rainstorm. No any site surface runoff to the Channel T and out of site boundary was observed in the inspection.	
					3)	In order to prevent muddy water washing out to the water body under heavy rainstorm, a silt curtain was installed at the outfall of the channel by Contractor. ET confirmed with the Resident Site Staff that a silt curtain was installed at the outfall of the channel to prevent muddy water washing out to the water body under heavy rainstorm. Besides, regular cleaning of refuse in the channel has been conducted by Contractor.	
					4)	A further site investigation on 28 June 2011 revealed that no odour nuisance was detected at the upstream of the Channel T and no source of odour nuisance was identified at site. As such, it was concluded that the source of odour nuisance was not related to the Project works.	
					5)	Although no source of odour nuisance was identified at site, the muddy water and dirt from the unknown source at upstream of Channel T may cause a potential smell during low tide and low water flow. Contractor was reminded to remove the silt curtain at the channel on non-rainy day so as to avoid the accumulation of the sediment and dirt in the water channel.	



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	tcome	Status
110709	09/07/2011	Mr. Au from City Garden Management Office	North Point	A complaint letter to Contractor HY/2009/11 was raised by Cayley Property Management Limit on 9 July 2011 regarding a series of pump breakdown events at seawater intake of City Garden on 4, 6, 7 and 8 July 2011. A lot of rubbish such as plastic bags, nylon bags, nylonwire mesh was observed sucking from the seawater intake at the seawater front of Block 7 of City Garden affecting the operation of seawater pump plant.	2)	Contractor conducted formation works for installation of caisson seawall at C27, C28, C29 and C30 on 4, 6, 7 and 8 July 2011 and no dredging work was conducted during this time period  Water mitigation measures of an 80m long silt curtain at the site boundary in front of City Garden Relocation of silt curtain and silt curtain at the outfall of the channel were provided and maintained to accommodate the site works. All vessels are equipped with rubbish collection facilities and disposed the rubbish regularly. Also, daily cleaning actions had been taken by contractor to minimize floating refuse within the site boundary.  Moreover, it has been reported several times that discharged from outfall pipeline outside the site boundary near the intake of the pump maybe considered as another source of rubbish generation.	Closed
					4)	Referring to the record provided by Cayley Property Management Limit, the trapped rubbish was unlikely generated from the construction works. It was considered that complaint is invalid and not related to project.	
110710	09/07/2011	Complainant by ICC (ICC no. 1-301520309	North Point	It was received at 00:56 on 10 July 2011. There was complained a derrick barge unloading rockfill material off the shore facing the Harbour Grant HK Hotel causing noise nuisance.	')	ET confirmed with the Resident Site Staff that the complaint was referred to Contract HY/2009/15 for the loading and unloading of fill material at two barges operation in the sea at around 300m adjacent to Island Eastern Corridor (Oil Street Chainage) where is outside the Site of HY/2009/15 in the period of around 19:45 on 9 July to 1:00 on 10 July 2011.	Closed
					2)	The material loading and unloading operation processed in restricted hours was checked without a valid CNP. It was found that the operation was due to an unexpected water leakage of the hopper barge and considered an incident.	
					3)	According to the incident report provided from RSS on 20 July 2011, around 7:30 pm the barge S22 was inclined slightly and slightly water leakage might occur. Due to marine safety concern, the hopper barge would open the hopper to release the contained materials in order to reduce the weight and stabilize the barge. In consider of slight water leakage, the operator decided to use the nearby Derrick Barge ST32 to help for unload the general fill materials first and the unloading operation was started at around 7:45pm, and end at around 1:00 am. Contractor was reminder to provide frequent check of vessel condition	



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	tcome	Status
						so as to prevent recurrent by barge defect	
110723a	23/07/2011	Ms. Law at Victoria Centre by ICC no. 1- 303887687	North Point	She concerned that Highways Department published a notice in their Management Office about construction works will be conducted from 0700 hours to 2300 hours during July to December 2011 including Saturday, Sunday and public holiday.	1) 2) 3) 4)	It was referred by AECOM to ET on 28 July 2011  RSS confirmed that the notice was prepared by Victoria Centre's Management office to their resident and the advice was only given on the extension construction works (for Contract HY/2009/15) to 7am-9pm from Monday to Saturday except Public Holidays and Sundays.  As a mitigation measure to minimize the noise nuisance in the vicinity of the residents, rock breaking activities will be started at 8am and is expected to be completed by mid-August 2011.  No noise exceedance was recorded at construction noise monitoring station at Victoria Centre on 19 and 25 July 2011 during daytime while breaking and excavation works were undertaken during monitoring.  In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was	Closed
110723b	23/07/2011	Ms. Yau at Block 2, Victoria Centre by ICC no. 1- 304013959	North Point	Reclamation work was conducted at Causeway Bay Typhoon Shelter at 7am on 23 July 2011. She complained that the works shall be started later to minimize the noise nuisance to the vicinity of the residents in early morning	1) 2) 3)	provided. The complainant was satisfied with the arrangement and no further complaint was received after proposed measures.  It was referred by AECOM to ET on 8 August 2011  With reference to the construction noise monitoring at Vitoria Centre, no exceedance was recorded on 19 and 25 July 2011 during daytime while breaking and excavation works were undertaken during monitoring  As a mitigation measure to minimize the noise nuisance in the vicinity of the residents, rock breaking activities will be	Closed
				Sany maning	4)	started at 8am and is expected to be completed by mid-August 2011.  In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. The complainant was satisfied with the arrangement and no further complaint was received after proposed measures.	Sissed
110727a	27/07/2011	Mr. Law from Victoria Centre Management Office by ICC no. 1-304616162	North Point	It was complained by Mr. Law from Victoria Centre Management Office on 27 July 2011 regarding construction noise generated by the construction operations of	2)	It was referred by AECOM to ET on 28 July 2011  RSS confirmed to start the rock breaking activities for Contract HY/2009/15 at 8am as a mitigation measure to minimize the noise nuisance in the vicinity of the residents.  No noise exceedance was recorded at construction noise	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	come	Status
				Central-Wanchai Bypass at noon rather than in morning at 7am.		monitoring station at Victoria Centre on 25 July and 4 August 2011 during daytime while breaking and excavation works were undertaken during monitoring.	
					4)	In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. No further complaint from complainant was received after proposed the mitigation measure.	
110727b	27/07/2011	Ms. Chiu by ICC	lavaavattaa vooda fan tha l	1)	It was referred by AECOM to ET on 28 July 2011		
		no.1-304615409	Highways Department adjacent to the Victoria Centre was conducted from 7am	2)	With reference to the construction noise monitoring at Vitoria Centre, no exceedance was recorded on 25 July and 4 and 10 August 2011 during daytime while breaking and excavation works were undertaken during monitoring.		
		1		3)	3)	As a mitigation measure to minimize the noise nuisance in the vicinity of the residents, rock breaking activities will be started at 8am.	
	08/08/2011			2011	4)	However, complainant did not satisfy with the response on the noise nuisance from the rock-breaking during morning in front of Victoria Centre and then further complaint via 1823 on 7 August 2011.	Closed
					5)	Highways contacted the complainant on 15 August 2011 that the noisy rock breaking operation had been completed.	
					Ren	marks: There will be counted as two complaints in this complaint log.	
110810	10/08/2011	Mr. Yip by ICC	North Point	Muddy water was discharged from work site to the seafront	1)	It was referred by AECOM to ET on 17 August 2011.	Closed
		no. 1 – 306740207	near rain. prote good	near Oil Street during heavy	2)	Confirmed with RE, Muddy water was caused by a heap of earth being washed to the sea by heavy rain. The heap of earth was referred as a small stockpile placed close to the seafront in front of Oil Street within the site area under handover transition period from contract HY/2009/11 to contract HY/2009/19. The necessary mitigation measures to protect the small stockpile against rainfall were missing at the time of complaint.	
					3)	Due to the missing of mitigation measures to protect the small stockpile during handover transition period, loose material was washed into the harbour when heavy rain came. Muddy water was formed and dispersed in the sea that caused the water quality and visual concern to the public. The complaint was considered as valid.  Contractors were advised to relocate the loose materials	



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	tcome	Status
						away from the coastline as far as practicable. Any loose material placed which needed to be placed near the coastline shall be properly compacted or covered as appropriate. To avoid any further environmental deficiency, Contractors shall ensure all necessary environmental mitigation measures will not be missing during site area handover.	
110826 26/08/2011	26/08/2011	/08/2011 Grand Hyatt and a complainant by ICC	ant by	nuisance generated from the works at Convention Avenue and inside the HKCEC1 reclamation area.	1)	Confirmed with the Resident Site Staff that the construction works were referred to the Contractor HK/2009/01.  The Excavator mounted breaker at Convention Avenue and Drilling rig at HKCEC1 reclamation area were the	
					3)	dominant construction noise source during this period.  The drilling rig at HKCEC1 reclamation area and excavator mounted breaker at Convention Avenue were then temporary suspended after received the complaint.	
					4)	Investigation revealed that the erected noise barrier (4m cantilevered movable noise barrier for the drilling rig and 1m movable noise barrier for the excavator mounted breaker) were not located close to the plants to provide adequate noise screening.	Closed
					5)	Contractor was advised to avoid concurrent operation of construction plants at site. Further enhancement of movable noise barriers at HKCEC1 and providing noise enclosure for the excavator mounted breaker at Convention Avenue are needed.	
					6)	Further site investigation and checking on 31 August and 7 September 2011 revealed that the implemented noise mitigation measures were in proper and minimize the noise impact.	
110826A	26/08/2011	A complaint letter from Mr. Au of Cayley Property of City Garden	North Point	Harbor front adjacent to their cooling water intake suction which caused 3 times of system breakdown of the sea water pump on 9, 22 and 25 August 2011.	1)	It was referred by AECOM to ET on 29 August 2011. Confirmed with the Resident Site Staff that the	Closed
						<ul> <li>An ad hoc inspection of the effectiveness of garbage defender was conducted with RSS (CWB project</li> </ul>	

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					team), contractor of HY/200911 and HY/2009/19 and IECon 29 August 2011. Inspection report of it was submitted to RSS on 19 September 2011.	
					<ul> <li>Daily cleaning near the water intake was conducted twice a day by contractor HY/2009/19.</li> </ul>	
					<ul> <li>In response to City Garden request, the contractors have set up the temporary garbage defender in function and collect the floating refuses, but cannot eliminate all refuses, in particular the refuse coming from the seabed</li> </ul>	
					<ol> <li>According to the complaint letter from Cayley Property, the outcomes of the preventive measures were not complying wih their expectation.</li> </ol>	
					3) During on-site inspection, floating refuses observed occasionally outside the garbage defender. No conclusion could be made for the source of these floating refuses. Of the other hand, some of the refuses were observed floating behind the garbage defender during investigation	n
					<ol> <li>All daily cleaning actions had been taken by contractor to minimize floating refuse inside the construction site.</li> </ol>	
					5) It was noted that the cooling water intake was accessible to the public. As such, fish breeding and fishing activities were observed even though a notice has already hoisted Also, tripping of rubbish by the passers-by could result in a lot of rubbish accumulated around the intake point.	
					6) Referring to the record provided by CPML, there were a lot of nylon/ plastic bags and nylon wire mesh that matched those rubbishes generated from the public activities.	
					7) Contractors have fulfilled the requirement of site cleanness and no exceedance was recorded during Water Quality Monitoring. It is consider the cause of this complaint is not related to project and environmental issue in this project as well. No more complaint received after ad-hoc inspection	
111014	14/10/2011	The complainant, Ms. Tam complained via hotline 1823	Wan Chai	The polluted fumes and exhaust from the excavation by sub-contractor of CEDD on pedestrian way outside no.25 Harbour Road (in front of the Harbour Centre)	<ol> <li>RSS notified ET to carry out investigation on 17 October 2011.</li> <li>ET confirmed with the Resident Site Staff that the location of the excavator was within site area of Contract no. HK/2009/02 undertaking the water cooling main reprovision works along the Harbour Road. The plants including the excavator have been checked before using</li> </ol>	Closed

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					at the site. However, the polluted fumes and exhausted from the excavator was caused due to insufficient maintenance of the plant after using at site.  3) After receiving the complaint, the excavator was then removal off-site for checking and maintenance works on 17 October 2011.  4) Contractor was reminded to enhance regular checking and maintenance to all plants at site.  5) RSS has replied to the complainant on the arrangement of the measures taken on 17 October 2011. Complainant was satisfied with the response and follow-up action taken by the Contractor.	
111104	04/11/2011	Mr. Liu from LCSD complained via Contractor Complaint Hotline	Wan Chai	Complain about a tree near the site of pipe installation works outside Wan Chai Swimming Pool at Harbour Road, the status is not healthy and roof ball of two trees inside the site near Renaissance Hong Kong Harbour View Hotel at Convention Avenue were half cut.	-	Closed
111106	06/11/2011	Police officer	Wan Chai	Construction noise generated from the site at about 6:30 a.m on 6 November 2011 and require to stop the machine operation	ŭ ŭ	Closed

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					2)	CNP was checked by the police officer.  ET confirmed with the Resident Site Staff that same issue was also raised out by RSS at about 7:00a.m on the same day. Besides, it was confirmed that there is no valid Construction Noise Permit for the conducted construction works in the period between 2300 and 0700.	
					3)	Due to insufficient communication between Contractor HK/2009/01 and their Korean Sub-contractor, Korean Sub-contractor had not notified to Contractor before carrying out the inspection of the BC cutter, hoists and bentonite pipes at about 6:00a.m to ensure no damages and all the pipe joints should be tightened and in good position.	
					4)	Contractor was advised to enhance the communication between Contractor and sub-contractor and provide sufficient environmental training to all foreman and operators on restricted hour operation. Futhermore, Construction Noise Permit should be checked and in place for the construction works during restricted hour	
					5)	This complaint was considered in relation to the conducted construction works during restricted hours without valid Construction Noise Permit. No more construction works were conducted during night time period. The construction works will be conducted in accordance with the time period stated in valid CNP. This complaint will be kept in view of any follow-up action from the relevant government activities.	
120405	05/04/2012	N/A	North Point	A complaint regarding excessive noise from construction sites of CBTS was observed daily before 7:30am except on public holidays, and the noise source was mainly from piling works. The complainant requested that construction works should start after 8:30am to avoid nuisance to nearby residents and a speedy follow-up and reply.	2)	RSS notified ET on 5 April 2012. ET confirmed with the Resident Site Staff that no piling works were performed during the concerned period. After reviewing the results of noise monitoring (M2b and M3a), no exceedance was recorded during daytime period and the noise level was below 75dB(A). Site inspection for HY/2009/15 was conducted on 10 April 2012. The condition of noise mitigation measures around CBTS was found satisfactory. RSS confirmed that no pilings were performed during the concerned period. The major works included drilling, diaphragm wall construction and excavations. HyD made a reply to the complainant on 16 April 2012 via 1823. HyD replied that the current works at CBTS were drilling, diaphragm wall construction and deep excavations. In order to minimize the noise generated	Closed

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					from the above works, the Contractor had erected temporary noise barriers and provided noise blankets on plants. RSS would continue to work with the Contractor on the effectiveness of the environmental mitigation measures implemented on site. No further complaint was received after the response.	
130308	06/03/2013	ICC Case#1- 407181502	Tin Hau	A complaint regarding the dropping of fine rock material into surrounding waterbody was observed during rock breaking operation with two excavators in active operation at the Eastern Breakwater of Causeway Bay Typhoon Shelter near the North Point lighthouse.	1) RSS notified ET on 8 March 2013	Closed
140612	12/06/2014	EPD ref: EP/860/F2/24 Annex IV	Wan Chai	The complaint is regarding to the water quality of the waterfront outside the Hong Kong Academy for Performing Arts Theatre Block, where a large piece of muddy water was found.	letter from EPD (ref: EP/860/F2/24 Annex IV) was received by ET on 13 June 2014.	Closed

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•	•				3)	the dispersion was observed partly extended beyond the outermost layer silt curtain at 1000hrs. Immediate follow up action was requested. It is considered that Contractor's mitigation measures would require further review on the effectiveness to avoid seepage of muddy dispersion such as regular diver inspection check and daily visual checking of silt curtains. Additional silt curtain at marine access zone was installed by Contractor on 12 June 2014 and the double layer silt curtain were generally in order. Follow-up inspection was further conducted on 16 June 2014.	
140723	21/07/2014	ICC Case Ref: 2-341537112	Works area opposite to Ngan Tao Building	The complaint is regarding to construction noise impact to the complainant who could not sleep due to work and machine at the project site opposite to the Ngan Tao Building.	0)	case was submitted to EPA via email on 18 June 2014.  Construction noise impact referred by RSS was received by ET on 25 July 2014  ET confirmed with RSS that horizontal cutting and removal of D-wall at Eastern, Southern and Northern side of TS2 was undertaken by Contractor of HY/2009/15 within Causeway Bay Typhoon Shelter before 23:00hrs on 20 July 2014 that total 3 numbers of derrick lighter and 3 numbers of saw cut machine were in operation, and removal of D-wall at Panel S30A-1 of TS2 was undertaken by Contractor of HY/2009/15 within Causeway Bay Typhoon Shelter around 00:25hrs to 00:56hrs on 21 July 2014 that total 1 number of derrick lighter was in operation.  According to the relevant site records under Contract HY/2009/15, before 23:00hrs on 20 July 2014, horizontal cutting and removal of Diaphragm Wall at Eastern, Southern and Northern side of TS2 was conducted under HY/2009/15 within Causeway Bay Typhoon Shelter. Total 3 nos. of derrick lighter and 3 nos. of saw cut machine were in operation at the above period. From around	Final report (Issue1) issued on 31 July 2014. Further to complainant follow-up, Final report (Issue2) Issued on 12 Aug 2014.
					4)	00:25hrs to 00:56hrs on 21 July 2014, removal of D-wall at Panel S30A-1 of TS2 was undertaken by Contractor of HY/2009/15 within Causeway Bay Typhoon Shelter. Total 1 no. of derrick lighter was found operating at the above period  It was considered the condition of CNP GW-RS0592-14 was not fulfilled by the Contractor of HY/2009/15. "From 00:25hrs to 00:57hrs on 21 July 2014, the PME(s) (1 no. of Derrick Lighter) on-site could not follow with any given PME grouping requirement(s) as stated in condition 3.a. and condition 3.d. in no. GW-RS0592-14."	

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Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					Notwithstanding the above, according to the site recorded provided by the RSS, the derrick lighter was found malfunction at around 23:00hrs on 20 July 2014 while the diaphragm wall cutting procedure was incomplete. Under safety and navigation consideration, the completion of diaphragm wall removal was necessary and of imminent need.  5) The Contractor of HY/2009/15 was advised to review the	
					construction sequence and emergency response procedure for construction activities during restricted hours and night time period to allow for sufficient buffer time for work completion such that the Construction Noise Permit would be followed. Furthermore, the Contractor of HY/2009/15 was suggested to conduct throughout checking of PME used on site prior to work commencement to minimize the potential malfunctioning of PME during the course of work which affect the duration of works.	
141016	14/10/2014	EPD Ref.: EP860/E2/24 Annex IV	Work site next to new Wan Chai Ferry Pier and opposite to Wan Chai Sports Ground.	Construction noise like piling works was heard on 14 October 2014 night until 23:45 hrs. It was suspected that the noise was emanated from the work site	A public complaint regarding construction noise impact referred by EPD was received by ET on 16 October 2014 (EPD Ref.: EP860/E2/24 Annex IV dated 16 October 2014).  The complainant reported that construction noise like piling works was heard on 14 October 2014 night until 23:45 hrs. It	Interim investigation report submitted to EPD on 23
		ICC complaint received by ET on 10 October 2014		next to new Wan Chai Ferry Pier and opposite to Wan Chai Sports Ground.	was suspected that the noise was emanated from the work site next to new Wan Chai Ferry Pier and opposite to Wan Chai Sports Ground.	October 2014.
					ET confirmed with the Resident Site Staff that From 19:00hrs to 23:00hrs on 14 October 2014, dredging works was conducted under Contractor of HK/2009/02 at WCR3 Area.	Updated interim investigatio n with
					Total one grab dredger was in operation. Mitigation measures including provision of steel sheeting screening to the power generation part of the grab dredger was implemented by the Contractor of HK/2009/02.	supplement ary information submitted
					From 23:00 hrs to 05:00 hrs, dredging works was conducted under Contractor of HK/2009/02 at WCR3 Area.	to EPD on 17
					Total one grab dredger was in operation. Mitigation measures including provision of steel sheeting screening to the power generation part of the grab dredger was implemented by the Contractor of HK/2009/02.	November 2014
						EPD

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					From 23:00 hrs to 06:00hrs, panel replacement works was conducted under Contractor of HK/2009/02 at the Temporary Covered Walkway.	advised no further comment
					Total one scissor platform and two hand held drills (battery) were in operation.	on the updated interim
					From 23:00 hrs to 06:00hrs, trial pit works was conducted under Contractor of HK/2009/02 at Hung Hing Road.Total one crane lorry was in operation.	report and case closed on 27 Nov 2014.
					According to the relevant site records under Contract HK/2009/02, from 19:00hrs to 23:00hrs on 14 October 2014, dredging works was conducted under Contractor of HK/2009/02 at WCR3 Area. Total one grab dredger was in operation. Mitigation measures including provision of steel sheeting screening to the power generation part of the grab dredger was implemented by the Contractor of HK/2009/02.	
					From 23:00 hrs to 05:00 hrs, dredging works was conducted under Contractor of HK/2009/02 at WCR3 Area. Total one grab dredger was in operation. Mitigation measures including provision of steel sheeting screening to the power generation part of the grab dredger was implemented by the Contractor of HK/2009/02.	
					From 23:00 hrs to 06:00hrs, panel replacement works was conducted under Contractor of HK/2009/02 at the Temporary Covered Walkway. Total one scissor platform and two hand held drills (battery) were in operation.  From 23:00 hrs to 06:00hrs, trial pit works was conducted under Contractor of HK/2009/02 at Hung Hing Road. Total one crane lorry was in operation.	
					In view of the above findings, no direct information associated with the noise concern was considered available.	

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
141110 07/-	07/11/2014	EPD Ref.: H05/RS/000278 15-14	Construction site at old Wan Chai Ferry Pier	Malodour of construction plant exhaust from the construction site at old Wan Chai Ferry Pier	A public complaint regarding odour concern referred by EPD was received by ET on 07 November 2014 (EPD Ref.: H05/RS/00027815-14 dated 10 November 2014).	Interim investigation report
		EPD complaint received by ET on 10 November		was scented that affecting the swimmers at Wan Chai Swimming Pool.	The complainant reported that Malodour of construction plant exhaust from the construction site at old Wan Chai Ferry Pier was scented that affecting the swimmers at Wan Chai Swimming Pool.	submitted to EPD on 17 November 2014.
		2014			ET confirmed with the Resident Site Staff that	
					ELS works was conducted on 7 November 2014 during daytime at Portion 2 (Area oppsite to WanChai Swimming Pool).	no comment on the interim
					Total 3 nos. of excavators, 2 nos. of crawler cranes, 2 nos. of generator, 1 no. of crane lorry and 2 no. of dump trucks were operated.	report and case closed on 1 Dec 2014.
					Demolition works was conducted on 7 November 2014 during daytime at West of old Wan Chai Ferry Pier.	
					Total 2 nos. of excavators, 1 no. of derrick barge and 1 no. of tug boat were operated.	
					Dredging works was conducted on 7 November 2014 during daytime at WCR3 (East of old Wan Chai Ferry Pier)	
					Total 1 no .of dredger, 1 no. of hopper and 1 no. of tug boat were operated.	
					According to the relevant site records under Contract HK/2009/02, ELS works was conducted on 7 November 2014 during daytime at Portion 2 (Area oppsite to WanChai Swimming Pool). Total 3 nos. of excavators, 2 nos. of crawler cranes, 2 nos. of generator, 1 no. of crane lorry and 2 no. of dump trucks were operated. Demolition works was conducted on 7 November 2014 during daytime at West of old Wan Chai Ferry Pier. Total 2 nos. of excavators, 1 no. of derrick barge and 1 no. of tug boat were operated.	
			Follow-up inspection was conducted during weekly environmental inspection on 13 November 2014, no dark smoke emission was observed from the PMEs operating onsite. The condition of chemical waste storage was considered satisfactory and no malodour was identified. Despite no information related to malodour was identified, the Contractor was reminded to conduct regular checking on the condition of PMEs to ensure only well maintained PMEs are used on site.			



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					Based on the relevant information provided by RSS, despite no information associated with the malodour concern was identified after investigation, the Contractor was reminded to conduct regular checking on the condition of PME used on site to ensure only well maintained PME are used on site The interim report would be submitted to EPD on 17 November 2014.	
141113	12/11/2014	EPD Ref.: H05/RS/000282 53-14  EPD complaint received by ET on 13 November 2014	Construction site at old Wan Chai Ferry Pier	Malodour and dark smoke emission from an excavator located at the construction site at old Wan Chai Ferry Pier was observed that affecting the pedestrians.	A public complaint regarding odour concern referred by EPD was received by ET on 13 November 2014 (EPD Ref.: H05/RS/00028253-14 dated 13 November 2014). The complainant reported thatMalodour and dark smoke emission from an excavator located at the construction site at old Wan Chai Ferry Pier was observed that affecting the pedestrians. (Contract HK/2009/02)  ET confirmed with the Resident Site Staff that demolition works was conducted under Contract HK/2009/02 on 12 November 2014 during daytime at old Wan Chai Ferry Pier. Total 2 nos. of excavators, 1 no. of derrick barge and 1 no. tug boat were operated.  According to the relevant site records under Contract HK/2009/02, demolition works was conducted on 12 November 2014 during daytime at old Wan Chai Ferry Pier. Total 2 nos. of excavators, 1 no. of derrick barge and 1 no. tug boat were operated.  In addition, investigation found that due to malfunctioning of one of the excavators deployed at old Wan Chai Ferry Pier, dark smoke was emitted from the defective excavator for a short period of approximately 30 seconds at around 15:00 hrs on 12 November 2014. The operation of excavator was immediately suspended and followed by repair works. The normal operation of the excavator was resumed after repair.  Follow-up inspection was conducted during weekly environmental inspection on 13 November 2014, no dark smoke emission was observed from the PMEs operating onsite and the Contractor of HK/2009/02 was reminded to conduct regular checking on the condition of PMEs to ensure only well maintained PMEs are used on site.	Interim investigation report submitted to EPD on 19 November 2014.  EPD advised no comment on the interim report and case closed on 8 Dec 2014.



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141121	Not Specified	EPD Ref: H08/RS/28263-14 EPD complaint information and findings was received by ET via email on 21 Nov 2014	Causeway Bay Typhoon Shelter	Resident in Hing Fat Street complaining about loud noise from dredging work in CBTS up to 10pm at night.	EPD received a construction noise complaint from dredging works at Causeway Bay Typhoon Shelter and a resident in Hing Fat Street complaining about loud noise from dredging work in CBTS up to 10pm at night.  EPD investigation found that the operation of a derrick barge is covered by CNP no. GW-RS0701-14.  EPD reminded the Contractor of HY/2011/08 to ensure the work strictly follow the permit conditions and endeavor to minimize the noise as so not to disturb the nearby residents.	Complaint case handled by EPD and relevant investigation findings was sent to ET on 21 November 2014
150127	21 Jan 2015	EPD complaint (EPD Ref.: H05/RS/00001 725-15) received by ET on 27 January 2015 and further information from EPD regarding the updated location under complaint was received by ET on 30 January 2015	A portion of Hung Hing Road immediately to the east of Marsh Road near SPCA	Construction dust and grit was emitted from the construction site to the carriageway causing nuisance to the public.	A public complaint regarding air quality impact referred by EPD was received by ET on 27 January 2015 (EPD Case Ref.: H05/RS/00001725-15 dated 27 January 2015) and further information from EPD regarding the updated location under complaint was received by ET on 30 January 2015. The complainant reported that construction dust and grit was emitted from the construction site to the carriageway causing nuisance to the public.  ET confirmed with the Resident Site Staff that the major construction activities around the concerned location conducted on 21 January 2015 include breaking of seawall blocks and D-wall at TPCWAW; concreting, grouting and drilling works at TPCWAW Mitigation measures implemented by the Contractor for the above construction works include spraying haul road with water; covering bagged cement with tarpaulin; providing three sided and top covering for grouting stations; providing water spraying to dusty activities such as breaking works  According to the relevant site records, breaking of seawall blocks and D-wall, concreting, grouting and drilling works and reclamation/ backfilling works were	Interim report submitted to EPD on 9 February 2015, EPD advised no comment on 27 February 2016 on the interim report submitted and case closed.

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					conducted at TPCWAW. Dust mitigation measures including spraying haul road with water, covering bagged cement with tarpaulin, providing three sided and top covering for grouting stations and water spraying to dusty activities such as breaking works were implemented by the Contractor of HY/2009/15 near the concerned location on 21 January 2015.	
					Follow-up investigation was conducted on 27 January 2015 during weekly environmental inspection, dust mitigation measures including water spraying for dusty haul road and major dust generation works; and provision of three sides and top covering for grouting station were confirmed in place.	
					In addition, based on the review of the monitoring data of the monitoring station located at the concerned location raised by the complainant, namely monitoring station CMA3a, no action or limit level exceedance was recorded during air quality monitoring conducted on 20 and 21 January 2015. Nevertheless, the Air Quality Health Index (AQHI) recorded by EPD across Western District and Eastern District on the complaint date was ranged from 4 to 10+ indicating a severely high concentration of ambient air pollutants.	
					As such, the site condition under Contract HY/2009/15 at the concerned location was considered to be generally satisfactory and no non-conformity related to cumulative air quality impact was observed.  Nevertheless, in view of the public concern, the contractor was reminded to enhance the dust mitigation measures implemented to minimize potential nuisance to nearby public.	
150622	18 June 2015	EPD Ref.:H05/RS/ 00015054-15 dated 8 June	A mooring location near shore and at location outside Wan Chai Sports	Dark smoke and malodour emission was observed from a hopper barge moored near shore and	A public complaint regarding dark smoke and malodour concern referred by EPD was received by ET on 22 June 2015 (EPD Ref.: H05/RS/00015054-15 dated 22 June 2015). The complainant reported that dark smoke and malodour emission was observed from a hopper barge	Interim report submitted to EPD on 29 June 2015 and EPD

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Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
		2015	Ground	other construction plants under operation from the reclamation construction site	moored near shore and other construction plants under operation from the reclamation construction site with Contract no. HK/2009/02 at location outside Wan Chai Sports Ground caused air pollution. The complainant alleged that the said situation had been observed for a prolonged period.	advised no comment on 20 July 2016 on the interim report submitted and case closed.
					ET confirmed with the Resident Site Staff that reinforced bar fixing and concreting work (on 17 June 2015 only) were conducted at Portion 2 from 15 June 2015 to 19 June 2015. Total 3 nos. of mobile crane were in operation. On 17 June 2015, one no. of concrete pump truck and two nos. of concrete mixer were in operation. Excavation and Lateral Support was conducted at Portions 3 & 4 from 15 June 2015 to 19 June 2015. Total 4 nos. of excavator, 2 nos. of truck and 2 nos. of crawler crane were in operation. In addition, on 15 June 2015, 17 June 2015 and 19 June 2015, 1 no. of derrick barge was moored near Portions 3 & 4 for transportation of the excavated material away from site.	
					According to the relevant site records under Contract HK/2009/02, from 15 June 2015 to 19 June 2015, reinforced bar fixing and concreting work (on 17 June 2015 only) were conducted at Portion 2 and total 3 nos. of mobile crane, one no. of concrete pump truck (on 17 June 2015 only) and two nos. of concrete mixer (on 17 June 2015 only) were in operation; excavation and lateral support was conducted at Portions 3 & 4 and total 4 nos. of excavator, 2 nos. of truck and 2 nos. of crawler crane were in operation. Based on relevant site record, no hopper barge was moored under Contract HK/2009/02 around the concerned location while 1 no. of derrick barge was moored under Contract HK/2009/02 near Portions 3 & 4 for transportation of the excavated material from Portions 3 & 4 away from site on 15 June 2015,17 June 2015 and 19 June 2015 respectively.	
					Follow-up inspection was conducted during weekly	

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					environmental inspection on 25 June 2015, no dark smoke and malodour emission was observed from the PMEs operating on-site. A derrick barge was observed moored near Portions 3 & 4 and excavated material was transferred to the derrick barge by the excavators on land without barge operation and no particular dark smoke and malodour emission was observed. Nevertheless, the Contractor was reminded to conduct regular checking on the condition of the derrick barge and other PMEs deployed on site to ensure only well maintained PMEs are used to avoid potential dark smoke and maldour emission affecting nearby public.	
150723	20 July 2015	EPD Ref.:H05/RS/ 00018040-15 dated 23 July 2015	Ex-Wanchai Ferry Pier near 720 & & 722 Bus stop	Malodour from marine sediment	A public complaint regarding malodour referred by EPD was received by ET on 23 July 2015 (EPD Ref.: H05/RS/00018040-15 dated 23 July 2015).  The complainant reported that malodour from marine sediment was scented at ex-Wanchai ferry pier near route 720 & 722 bus stop. (Contract HK/2009/02).  ET confirmed with the Resident Site Staff that Rockfill placing works was conducted by one derrick barge at the concerned location (WCR3) under Contract HK/2009/02 on 20 July 2015. No marine sediment was stored or placed on site at the concerned location under Contract HK/2009/02 on 20 July 2015.  According to the relevant site records under Contract HK/2009/02, rockfill placing works was conducted by one derrick barge at WCR3 area on 20 July 2015 and no marine sediment was stored or placed on site at the concerned location on the concerned date. Follow-up inspection was conducted during weekly environmental inspection on 29 July 2015. No marine sediment was observed stored or placed at the concerned location while it was noted that a culvert outfall with potential odour concern is located adjacent to the concerned location.	Interim report submitted to EPD on 30 July 2015. EPD advised no comment on 17 August 2015 on the interim report submitted and case closed.



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					Nevertheless, the Contractor was reminded to review the handling procedures in case of any future marine sediment handling at the concerned location and to consider the implementation of mitigation measures as appropriate to minimize potential malodour impact to nearby public.	
150904	01 Sept 2015	EPD Ref.: H05/RS/0002 2241-15 dated 04 September 2015 received by ET on 4 September 2015	East of New WanChai Ferry Pier	Dropping of excavated material from land to sea during laoding of material	A public complaint regarding dropping of excavated material from land to sea referred by EPD was received by ET on 04 September 2015 (EPD Ref.: H05/RS/00022241-15 dated 04 September 2015). The complainant reported that dropping of excavated materials from land to sea during loading of materials by excavator at the construction site to work boat. (Contract HK/2009/02)  ET confirmed with the Resident Site Staff that transferring of C&D materials from land to hopper barge by excavator at seaside along CWB Tunnel Portions 3 and 4 was undertaken by Contract HK/2009/02 on 01 September 2015.  Mitigation measure including providing tarpaulin sheet to cover the gap between seawall and the hopper barge to prevent dropping of material to the sea was implemented by the Contractor.  According to the relevant site records under Contract HK/2009/02, transferring of C&D materials from land to hopper barge by excavator at seaside along CWB Tunnel Portions 3 and 4 was carried out on 01 September 2015 and mitigation measures including provision of tarpaulin sheet between seawall and the hopper barge was implemented by the Contractor of HK/2009/02 on the concerned date. Follow-up inspection was conducted during weekly environmental inspection on 10 September 2015. Transferring of C&D materials from land to barge by excavator was observed at the concerned location and mitigation measures including provision of tarpaulin sheet between seawall and hopper	Interim report submitted to EPD on 14 September 2015. EPD advised no comment on 5 October 2015 on the interim report submitted and case closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					barge and the material transfer works was generally in order. Nevertheless, the Contractor of HK/2009/02 was reminded to maintain the handling procedure for C&D materials transfer from land to hopper barge and regularly inspect the condition of the tarpaulin sheet provided to ensure the nearby water quality are not affected by the loading and unloading of material from land side to hopper barge.  The Contractor was reminded to maintain the handling procedure for C&D materials transfer from land to hopper barge and regularly inspect the condition of the tarpaulin sheet provided to ensure the nearby water quality are not affected by the loading and unloading of material from land side to hopper barge.	
150904	02 Sept 2015	EPD Ref.: H04/RS/0002 2385-15 dated 04 September 2015 received by ET on 04 September 2015	Location outside Fleet Arcade	Construction noise was generated from the construction site of HK/2012/08 at location outside Fleet Arcade during night time on weekdays and daytime during General Holidays. The complainant also concerned construction dust and exhaust emission from derrick barges during transporting C&D material at the site.	A public complaint regarding construction noise and dust and exhaust emission referred by EPD was received by ET on 04 September 2015 (EPD Ref.: H04/RS/00022385-15 dated 04 September 2015). The complainant reported that construction noise was generated from the construction site of HK/2012/08 at location outside Fleet Arcade during night time on weekdays and daytime during General Holidays. The complainant also concerned construction dust and exhaust emission from derrick barges during transporting C&D material at the site. (Contract HK/2012/08) ET confirmed with the Resident Site Staff that from 0800 hrs to 1800 hrs on 30 August 2015, removal of scaffold and timber and installation of bulkhead was undertaken by the Contractor of HK/2012/08 at the concerned location. Total one generator and one circular saw were in operation.  From 1900hrs on 30 August 2015 to 0700 on 31 August 2015, no construction works was undertaken by the Contractor of HK/2012/08 at the concerned location.	Interim report submitted to EPD on 14 September 2015.  2nd interim report submitted to EPD on 17 Dec 2015  3rd interim report submitted to EPD on 31 Dec 2015

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					From 1900hrs on 31 August 2015 to 0700hrs on 01 September 2015, no construction works was undertaken by the Contractor of HK/2012/08 at the concerned location. From 1900hrs to 2115 hrs on 01 September 2015, unloading of soil was undertaken by the Contractor of HK/2012/08 at the concerned location. Total one derrick barge was in operation. From 2300hrs on 01 September 2015 to 0700hrs on 02 September 2015, no construction works was undertaken by the Contractor of HK/2012/08 at the concerned location. One derrick barge was deployed for unloading of soil on 02 September 2015 during daytime under Contract HK/2012/08 at the concerned location.	
					Based on the relevant site records, from 0800 hrs to 1800 hrs on 30 August 2015, removal of scaffold and timber and installation of bulkhead was undertaken by the Contractor of HK/2012/08 at the concerned location. Total one generator and one circular saw were in operation and the relevant Construction Noise Permit GW-RS0296-15 for the concerned operation was confirmed in place.	
					From 1900hrs on 30 August 2015 to 0700 on 31 August 2015, no construction works was undertaken by the Contractor of HK/2012/08 at the concerned location and from 1900hrs on 31 August 2015 to 0700hrs on 01 September 2015, no construction works was undertaken by the Contractor of HK/2012/08 at the concerned location.	
					From 1900hrs to 2115 hrs on 01 September 2015, unloading of soil was undertaken by the Contractor of HK/2012/08 at the concerned location. Total one derrick barge was in operation and the Construction Noise Permit GW-RS0296-15 for the concerned operation was confirmed in place.	

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					From 2300hrs on 01 September 2015 to 0700hrs on 02 September 2015, no construction works was undertaken by the Contractor of HK/2012/08 at the concerned location. In view of the above, the construction activities conducted under Contract HK/2012/08 during the concerned period was in compliance with the statutory requirement.	
					In addition, one derrick barge was deployed for unloading of soil on 02 September 2015 during daytime under Contract HK/2012/08 at the concerned location. Follow-up inspection was conducted during weekly environmental inspection on 08 September 2015 and no dark smoke emission was observed from the derrick barge moored outside the concerned location. Nevertheless, the Contractor of HK/2012/08 was reminded to conduct regular checking on the condition of the all derrick barges deployed on site to ensure only well maintained equipment are used to avoid potential dark smoke emission affecting nearby public and the Contractor of HK/2012/08 was reminded to upkeep the site control system for construction works carrying out at restricted hours and night time for Construction Noise Permit compliance.	
					The Contractor was reminded to conduct regular checking on the condition of derrick barges deployed on site to ensure only well maintained equipments are used on site to avoid potential dark smoke emission affecting nearby public.	
					The Contractor of HK/2012/08 was reminded to upkeep the site control system for construction works carrying out at restricted hours and night time for Construction Noise Permit compliance.	
150917	17 Sep 2015	A public complaint regarding water quality referred by EPD was	Central and Wan Chai Reclamation coastline (between LUNG WUI ROAD to LUNG WO ROAD,	Silt from Central and Wan Chai Reclamation was spotted along the coastline (between LUNG WUI ROAD to LUNG WO ROAD, Central & Wan	Based on the site records confirmed by RSS, removal of seawall blocks by derrick barge was undertaken by Contract HK/2012/08 at Central Reclamation Phase III works area while mitigation measures including provision of silt curtain implemented by the Contractor of HK/2012/08 during the	Interim investigation report submitted to EPD on 25

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Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
		received by ET on 17 September 2015	Central & Wan Chai, Hong Kong)	Chai, Hong Kong)	seawall block removal works. According to relevant record, muddy dispersion at HKCEC2W (area opposite to Lung King Street) was observed by the Environmental Team on 14 September 2015 afternoon. The muddy patch was observed dispersing outside the outer layer silt curtain deployed by the Contractor of HK/2012/08 towards the Central Reclamation Phase III area while the outer layer silt curtain was observed partially opened.	September 2015. EPD advised no comment on 14 October 2015 and case closed.
					In view of the above observations, the Contractor was advised to rectify any environmental deficiencies such that adequate protection such as silt curtain shall be provided for exposed soil slope to mitigate for potential runoff related water quality impact to the surrounding waters; outer layer silt curtain deployed shall be entirely closed during works to safeguard the surrounding water quality. Any opening for marine vessel shall be closed promptly after passage and localized silt curtain deployed on site shall be properly maintained to avoid any gap or opening to effectively safeguard the nearby waters.	
151015	11 Oct 2015	A public complaint regarding direct discharge of muddy effluent referred by RSS was received by ET on 14 October 2015	Seafront opposite to Watson Road adjacent to Eastern Breakwater	Pink fluid was observed discharged into marine waters at seafront opposite to Watson Road adjacent to the Eastern Breakwater on 11 October 2015.	Based on the site records confirmed by RSS, no construction activity near the seaside between Eastern Breakwater and the Dumping Jetty was undertaken by Contract HY/2009/19 while at site area away from the seawall, construction of EVB substructure, EVB and APS structure was undertaken on 11 October 2015. In addition, no works involving the use of paint was carried out at the concerned site area (Site Portion between Eastern Breakwater and the Dumping Jetty) and along the alignment of the Culvert T1 under Contract HY/2009/19 and no temporary storage of paint was located at the concerned site area and along the alignment of the Culvert T1 under HY/2009/19 on 11 October 2015.	HyD will consolidate all input from relevant parties to form a reply to ICC.
					Follow-up inspection was conducted during weekly environmental inspection on 14 October 2015. No construction works involving the use of paint was observed undertaken at the concerned location while a few number of small containers of paint was observed placed around the concerned location and the paint containers were sealed and no sign of leakage was observed. The few containers were further checked and was found not matching the pink fluid observed on the complaint date. On the other hand, a culvert discharge outfall was found located within the concerned area where the pink fluid was observed.  Based on the above, no direct information indicating the pink	



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					fluid was originated from the worksarea under HY/2009/19 was considered available. Nevertheless, the Contractor was reminded that paints stored on site shall be properly labelled and stored in sealed container at weather proof location to avoid potential spillage.	
151028	26 Oct 2015	A public complaint regarding construction noise impact referred by EPD was received by ET on 28 October 2015 (EPD Ref:H05/RS/00 027330-15 Dated 28 October 2015)	Construction Site next to ex-Wan Chai Ferry Pier	Operation of grab dredger at construction site near the ex-Wan Chai Ferry Pier from around 0100 to 0400 hours on 26 October 2015 caused noise nuisance.	According to the relevant site records under Contract HK/2009/02, from 01:00hrs to 04:00hrs on 26 October 2015, rock filling was conducted under Contractor of HK/2009/02 at WCR3 Area. Total one grab dredger was in operation. Mitigation measures including provision of steel sheeting screening to the power generation part of the grab dredger was implemented by the Contractor of HK/2009/02 and the relevant Construction Noise Permit GW-RS1121-15 for the concerned construction works was in place.  The construction activity conducted under Contract HK/2009/02 during the concerned period was in compliance with the statutory requirement. Nevertheless, the Contractor was reminded to upkeep the site control system for construction works carrying out at restricted hours and night time for Construction Noise Permit compliance in view of the nearby public concern.	The interim report would be submitted to EPD on 05 November 2015 and EPD advised no comment on 16 November 2016 and case closed.
151116	13 November 2015	A public complaint regarding water quality referred by EPD was received by ET on 16 November 2015 (EPD Ref: H05/RS/000291 26-15)	Construction Site at HKCEC and seafront outside Lung Wo Road	Muddy water was discharged from the construction site at HKCEC and dispersed to seafront outside Lung Wo Road on 13 November 2015 afternoon. The complainant also alleged that the deployment of the silt curtain did not follow the design requirement under the environmental permit that the curtain should be hanged to seabed level	Based on the site records, rock mound trimming works was conducted under Contract HK/2012/08 at HKECE2 area on 13 November 2015 and mitigation measures including provision of localized silt curtain around the works area was implemented by the Contractor. Follow-up inspection was conducted during weekly environmental inspection on 17 November 2015, both outer layer silt curtain and localized layer of silt curtain around the active works area were observed deployed while the localized silt curtain deployed around the marine works area was observed partially opened for marine access. Despite no muddy dispersion was generated around the localized silt curtain enclosed area, the Contractor was advised to promptly improve the condition of the silt curtain to ensure the effectiveness of the mitigation measure deployed and to ensure the silt curtain is closed after marine vessel movement.  Based on further review on the current construction stage at HKECE2, the dredging works and trench filling works were completed and filling works were conducted behind seawall or temporarily seawall in form of rockbund, the outer layer of silt curtain currently serves as the additional mitigation measure to	The interim investigation report would be submitted to EPD on 1 December 2015 and record of diving inspection conducted on 27 November 2016 was forwarded to EPD on 4 Dec 2016. EPD advised no further comment on 14 Dec 2015 and case closed.



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					the required silt curtain deployment for safeguarding the water quality in the area. To clarify for the current silt curtain arrangement, the Contractor was advised to submit an updated silt curtain deployment plan with respect to the latest silt curtain arrangement for the current construction stage. In addition, contaminated discharge at Culvert L originating from upstream locations was intermittently observed based on previous site records. Nevertheless, in view of the public concern, the Contractor was reminded to conduct regular checking on the condition and maintenance for the silt curtain deployed on site to ensure the effectiveness of the mitigation measure.  A joint meeting for the complaint was held amongst the EPD, WDII RSS team, the ET and the Contractor of HK/2012/08 on 24 November 2015 and a joint silt curtain diver inspection check amongst EPD, ET, IEC, WDII RSS and the Contractor was conducted on 27 November 2015 to confirm the silt curtain condition and the silt curtain deployed at the HKCEC2 water channel was found generally in order.	
160413 (HK20120 8)	13 April 2016	A public complaint referred by EPD was received by ET on 13 April 2016 (EPD Ref.: H05/RS/00008 367-16 dated 13 April 2016)	Outside the Hong Kong Academy for Performing Arts	Muddy water discharge from construction site	A public complaint regarding muddy water discharge referred by EPD was received by ET on 13 April 2016 (EPD Ref.: H05/RS/00008367-16 dated 13 April 2016). The complainant reported that muddy water was discharged from the construction work of Contract HK/2012/08 to the sea outside the Hong Kong Academy for Performing Arts on 13 April 2016 morning. ET confirmed with the Resident Site Staff that internal transport of soil to the hopper barge for storage via landing barge was conducted by Contractor of HK/2012/08 during 0800 hours to 1000 hours on 13 April 2016 at the sea outside the concerned location and 3 nos. of dump trucks were deployed for the operation. Protection measure including provision of sandbag bunding along the side of the landing barge was implemented by the Contractor of HK/2012/08.  According to the relevant site records provided by RSS, internal transport of soil to the hopper barge for storage via landing barge was conducted by Contractor of HK/2012/08 during 0800 hours to 1000 hours on 13	Interim investigation report was submitted to the EPD on 21 April 2016.  EPD advised no further comment on 6 June 2016 on the interim report submitted and case closed.

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					April 2016 at the sea outside the concerned location and 3 nos. of dump trucks were deployed for the operation. Protection measure including provision of sandbag bunding along the side of the landing barge was implemented by the Contractor of HK/2012/08. In addition, amber rainstorm warning signal was hoisted from 0630 hours to 1200 hours on 13 April 2016 and during the above time period, muddy water was observed from the upstream of culvert L outside the HK/2012/08 site.	
					Follow up inspection was conducted on 19 April 2016, protection measures including provision of sandbag bunding along the side of the landing barge was implemented and no mud or soil deposition was observed along the seawall and no discharge point was located within the temporary water channel connecting the Culvert L outfall location to the Victoria Harbour. In addition, piling works was observed at the north side of Zone A1 on 19 April 2016 and construction effluent collection from piling work via sedimentation tank to wastewater treatment facility was implemented and steel barrier was installed around the piling works area to mitigate against potential surface runoff related impact.	
					Nevertheless, in view of the public concern, the Contractor was reminded to maintain adequate perimeter embankment protection along the seawall boundary and maintain proper construction effluent collection system to avoid potential runoff related impact to nearby waters.	
160706	30 June 2016	A public complaint referred by EPD was received by ET on 06 July	Construction area near Royal Hong Kong Yacht Club	Derrick barge moored near Royal Hong Kong Yacht Club emitted dark smoke since mid of June 2016.	A public complaint referred by EPD was received by ET on 06 July 2016 (Case Ref.: H05/RS/0016226-16). The complainant reported that a derrick barge in green colour under Contract HY/2009/15 moored near Royal Hong Kong Yacht Club emitted dark smoke since mid of June 2016.	Interim report was submitted to EPD on 14 July 2016.

 ate of mplaint	Received From and Received By	Nature of Complaint	Outcome	Status
	2016 (Case Ref:. H05/RS/00016 226-16),		ET confirmed with Resident Site Staff that the concerned green derrick barge was identified as Yue Fat 206 (YF 206) and the concerned green derrick barge was operated within the Ex-PCWA area for excavation works intermittently across the period from 15 June 2016 to 30 June 2016. The concerned green derrick barge YF206 within Ex-PCWA area was no longer deployed under Contract HY/2009/15 after 02 July 2016.  Follow-up inspection was conducted on 11 July 2016, the concerned derrick barge YF206 was not deployed at the concerned location and no dark smoke was observed from other derrick barge operating on-site. Nevertheless, in view of the public concern, the Contractor of HY/2009/15 was reminded to conduct regular checking and maintenance of all derrick barges deployed on site to ensure only well maintained equipment is used to avoid potential dark smoke emission affect nearby surroundings.	EPD advised no further comment on 20 September 2016 on the interim report submitted and case closed.



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
160825	25 August 2016	A public complaint referred by EPD was received by ET on 25 August 2016 (Case Ref.: H08/RS/00012 592-16)	East of Temporary Reclamation Zone TS3, Causeway Bay Typhoon Shelter	Muddy water was observed at Causeway Bay Typhoon Shelter	A public complaint referred by EPD was received on 25 August 2016 (Case Ref.: H08/RS/00012592-16). The complainant reported that muddy water was observed at Causeway Bay Typhoon Shelter.  ET confirmed with the Resident Site Staff that no marine construction activities were undertaken at the concerned location at East of Temporary Reclamation Zone TS3 within Causeway Bay Typhoon Shelther from 14:00hrs to 17:00hrs on 25 May 2016. Site control measures including the following were implemented by the Contractor of HY/2010/08 around the concerned location. Site control measures including i) Wastewater treatment facilities (AquaSed) were installed at TS3 for treatment of wastewater generated during construction activities. Sampling of effluent from AquaSed was conducted by the Contractor of HY/2010/08 and all results complied with the requirements in the Discharge Licence. Visual inspection and pH measurement of effluent were conducted daily by Environmental Supervisors and all results passed. ii) Brick/ earth/sandbag bunds were installed alongside the site perimeter of TS3 to prevent muddy runoff into the sea. iii) Piping with idled ends were removed to prevent accidental discharge of untreated wastewater. iv) Diver inspection for silt curtains and/ or impermeable barriers was conducted on an ad-hoc basis. vii) Temporary cut slopes were shotcreted or properly covered with tarpaulin sheets. viii) Regular inspections were conducted by the RSS and Contractor's environmental representatives on regular basis on the conditions of mitigation measures implemented on site.  Based on the complainant photo information, the exposed soil slope at Temporary Reclamation Zone TS3 were observed protected by covering and enclosed by double layer of impermeable barrier/ silt curtain and no contaminated discharge was identified. In addition, based on information from Hong Kong Observatory, the tidal condition on 25 May 2016 afternoon was found to	no further comment on 31 October 2016 on the interim report submitted and case closed.

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					be ebb-tide while non construction works marine vessel movements around the identified muddy plume within Causeway Bay Typhoon Shelter was observed in the complainant photo information.	
					Based on review on relevant records, no contaminated surface runoff and no contaminated discharge was identified at the concerned location during the environmental site inspection conducted on 25 May 2016. Follow up inspection was conducted on 31 August 2016 and seawall construction and filing works at the Temporary Reclamation Zone TS3 was observed completed. No contaminated discharge and no contaminated surface runoff was found.	
					Nevertheless, the contractor of HY/2010/08 was reminded to maintain appropriate bunding at seawall boundary for protection against potential surface runoff related impact. Also, the Contractor of HY/2010/08 was reminded to maintain proper site drainage for effluent collection and treatment system to ensure the compliance with relevant discharge license.	

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
180625	5 June 2018	An EPD complaint was referred to the ET on 25 June 2018 (CASE Ref: H05/RS/00001 5459-18)	Site outside Lung Wo Road	Muddy water discharge was found at the site outside Lung Wo Road on 5 June 2018 afternoon.	An EPD complaint was referred to the ET on 25 June 2018 (CASE Ref: H05/RS/000015459-18). The complainant reported that muddy water discharge was found at the site outside Lung Wo Road on 5 June 2018 afternoon. ET confirmed with the Resident Site Staff that installation of metal formwork at seawall was carried out on 5 June 2018 afternoon and mitigation measure including placing rock fill material on slope surface was implemented at the concerned location to reduce surface runoff.  Follow up site inspection was conducted by the Environmental Team on 26 June 2018, no muddy water discharge or surface runoff related water quality impact was observed at construction area under HK/2012/08 near the concerned area  Nevertheless, in view of the public concern, the Contractor of HK/2012/08 was reminded to provide addition tarpaulin covering to the slope surface along the seawall around the concerned location to reduce the potential surface runoff and maintain regular checking on the embankment condition to ensure no gap / void to avoid potential seepage / surface runoff to nearby water	The interim report will be submitted to EPD on 4 July 2018.



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
180625	11 June 2018	An EPD complaint was referred to the ET on 25 June 2018 (CASE Ref: H05/RS/00015 954-18).	Construction Site near Wan Chai Pier	Construction dust and muddy water discharge was found at the site near Wan Chai Pier on 11 June 2018 afternoon.	ET confirmed with the Resident Site Staff that marine construction activity of removal of TWCR4 and stockpile of fill material at WCR3 Area were conducted under the Contractor of HK/2009/02 on 11 June 2018 afternoon. The Contractor of HK/2009/02 reported that double silt curtain was in place as mitigation measures during the marine activity and regular spraying water was provided as dust mitigation measures at WCR3 Area. Follow-up inspection was conducted on 28 June 2018, excavation works was observed at WCR3 Area and mitigation measures including watering during excavation was generally in place. Other dust mitigation measure includes covering the stockpile material and watering the dusty surface and haul road were generally in place. No particular dust impact was observed. No muddy water discharge or surface runoff related water quality monitoring impact was observed at Contract HK/2009/02 site area. Mitigation measures for marine activity includes providing double layers of silt curtain to enclose the marine activity area was generally in place and additional tarpaulin was provided to cover the temporary cut slope to avoid the potential surface runoff. In view of the public concern, the Contractor of HK/2009/02 was reminded to keep review the performance of dust mitigation measures including watering during excavation and material handling, covering the stockpile material and watering the dusty surface and haul road to avoid potential dust impact and minimize any potential dust impact to the surroundings. The Contractor of HK/2009/02 was also reminded to maintain regular checking on the embankment, silt curtain and tarpaulin condition to ensure no gap / void to avoid potential water quality related impact.	The interim report will be submitted to EPD on 4 July 2018.

### Appendix 10.1

**Construction Programme of Individual Contracts** 

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Current Work	orks	CHUN WO - CRGL JOINT VENTURE			al Wand	chai By	pass		2009/02 hai East (Contract 2) ta date 20-Jun-18)				
Milestone     Critical Miles	stones									Date	Revision	Checked	Approved
S9B-T34-OUT-1045	TB3 & 4 - Carry out CCTV inspection	for the drainage system	27	27	14-May-18 A	16-Jul-18	-250	Calendar Day			TB3 & 4 - Carry out CCTV inspection for	or the drainage system,	TB3 & 4 - Carry out
S9B-T34-OUT-1020	TP3 & 4 - Carry out defects rectification		25		10-Jun-16 A	24-Jun-18	-228	Calendar Day	TP3 & 4 -		ectification works, TP3 & 4 - Carry out de	i i i	
TP3 & 4 Outstanding \										<u>-</u>			ļ
Tunnel Portion 3 & 1 CWB Structural Work	Tunnel Portion 4 (CH3630-CH3	(90) <u> </u>								2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
	TB2 - Carry out CCTV inspection for		27	27	14-May-18 A	16-Jul-18	243	Calendar Day		T	TB2 - Carry out CCTV inspection for th	ie drainage system	
	TB2 - Rectification works against wat	•	25		28-Sep-17 A	24-Jun-18	-228	Calendar Day	TB2 - Rec		nst water leakage for tunnel side walls,		s against water lea
Outstanding Works								3 4	l				
S9B-T2-6035	· •	tres below final formation level and backfill in Tunnel Portion 2	9		19-Oct-17 A	14-Nov-17 A		HK Working Day		1 1			
CWB Structural Work S9B-T2-6025		el top slab inside the access shaft in Tunnel Portion 2	6	0	11-Oct-17 A	14-Nov-17 A		HK Working Day		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Tunnel Portion 2 (Cl	,												
	TB1 - Carry out CCTV inspection for	the drainage system	27	27	14-May-18 A	16-Jul-18	243	Calendar Day		1	TB1 - Carry out CCTV inspection for th	ie drainage system	
	TB1 - Rectification works against wat	•	25		28-Sep-17 A	24-Jun-18	-228	Calendar Day	TB1 - Rec		nst water leakage for tunnel side walls,		s against water lea
Outstanding Works										1 1			
CWB Structural Work										1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Tunnel Portion 1 (C)										1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
	Works - CWB Tunnel Struc	· · · · · · · · · · · · · · · · · · ·	0	U	UJ-Vall-10 A	20-0aii-10 A		THE WORKING Day					 
S8A-OUT-1060 S8A-OUT-1070	Reinstatement works of the flooring in Reinstatement works of the flooring up and the	nside the rooms under staircase ST-01 of the Ferry Pier	12		28-Dec-17 A 05-Jan-18 A	29-Jan-18 A 26-Jan-18 A		HK Working Day HK Working Day		: : : : : : : : : : : : : : : : : : :			
S8A-OUT-1040	Relocation of fire hydrant near Ferry I		8	0	09-Mar-18 A	23-Jun-18 A		HK Working Day	Relocation of	of fire hydrant near Fe	erry Pier		
<b>Outstanding Works</b>										1 1			
Section 8A of the \	Works - Reprovisioning of	Wan Chai Ferry Pier in Area 8											
S5-OUT-1000	Carry out defect rectification works at	the front yard of WSD Pump station	10	0	20-Apr-18 A	30-May-18 A		Calendar Day	Carry out defect rectification works at the fron	t yard of WSD Pump	p station		
Outstanding Works										1 1 1 1 1 1			
WSD Salt Water Pun		.p.i.g eyetein								: :			
	Vorks - WSD Salt Water Pun			- 00	10 04. 10	10 000 10	000	The tronging Day					
S4C-0900C1	Raise Vent Shaft and Water Meter R		60		13-Jul-18	13-Sep-18	-338	HK Working Day		Dubinission for	Traise vent offait and vvater weter to	John, Odbinission for Nak	ise vent chart and
S4C-0900B S4C-0900C1	Outstanding Works - Rectification wo Submission for Raise Vent Shaft and	rks of the features (incorrect levels) on top of P7	45		06-Jul-18* 05-Feb-18 A	20-Aug-18 06-Jul-18	-338	Calendar Day HK Working Day		Submission for	or Raise Vent Shaft and Water Meter Re		: :
S4C-0900A	Outstanding Works - Re-construction		18		15-Sep-17 A	11-Dec-18	-398	Calendar Day			1 1 1	Outofonding W	orks - Rectification
•	k above Tunnel Portion & conn	• .											
		nping System for Great Eagle Centre / Harbour	r Centre (P7)										
S4B-0900C2	Raise Vent Shaft and Water Meter R			60	13-Jul-18	13-Sep-18	-310	HK Working Day					}

TP5 Outstanding Wo S10-T5-OUT-1020 T S10-T5-OUT-1030 T Section 11 of the W Marine Works at WCF S11-S1-1822 V S11-S1-1824 V S11-S1-1827 F Marine Works at WCF S11-R3-2100 M S11-R3-2105 C Marine Works at TWC S11-R4-1710 Formation and Hard I S11-FM-2150 C S11-FM-2150 C S11-FM-2000 S11-	TP5 - Carry out defects identification and rectification works TP5 - Remedial works of the cross road ducts and drainage pipes  /orks - Remainder of Works  R1  WCR1, Remaining Installation of the Corrosion Monitoring System - Construct draw pit and ductings  WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity  Remedial works to caisson seawall  R3  Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit  Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4  WCR4 Mass Concrete Coping for Blockwork Seawall	80 18 7 6 21 18 6	5 0 7 6 21 11 15	17-Jul-17 A 17-Sep-17 A  11-Sep-18 18-Sep-18 31-Aug-18  08-Nov-17 A 25-Dec-17 A	24-Jun-18 30-May-18 A 18-Sep-18 26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-228 -293 -293 -116 -378	Calendar Day Calendar Day HK Working Day HK Working Day HK Working Day Calendar Day HK Working Day	1	27 03 03 TP5 - Remedi	June 10		01 08  Irry out defects it is and drainage	dentification ar	1 1 2 1 2 1 1	Works, TP5 - Car	19 2	6 02	eptember 09 d rectificat
TP5 Outstanding Wo S10-T5-OUT-1020 T S10-T5-OUT-1030 T Section 11 of the W Marine Works at WCF S11-S1-1822 V S11-S1-1824 V S11-S1-1827 F Marine Works at WCF S11-R3-2100 M S11-R3-2105 C Marine Works at TWC S11-R4-1710 Formation and Hard I S11-FM-2150 C S11-FM-2150 C S11-FM-2000 S11-	TP5 - Carry out defects identification and rectification works TP5 - Remedial works of the cross road ducts and drainage pipes  //orks - Remainder of Works R1  WCR1, Remaining Installation of the Corrosion Monitoring System - Construct draw pit and ductings WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity Remedial works to caisson seawall R3  Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit Carry out remedial works for 0.5 tonne Rock Armour CR4 & WCR4 WCR4 Mass Concrete Coping for Blockwork Seawall Landscaping Works Drainage at Tunnel Portion 2 Completion of Tunnel Portion 2 Drainage Construction of surface drain in WCR3  W Reclamation CH 3710 to CH 3790 (East) Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day) Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18  7  6  21  18  6  37  40  0	0 7 6 21 0 11 15 30 0	17-Sep-17 A  11-Sep-18  18-Sep-18  31-Aug-18  08-Nov-17 A  25-Dec-17 A	18-Sep-18 26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-293 -293 116	Calendar Day  HK Working Day  HK Working Day  HK Working Day  Calendar Day		TP5 - Remedi	al works; of	TP5 - Ca	ny out defects i	dentification ar pipes	nd redification	works, TP5 - Car	y out defects ide	ntification and	d rectifica
\$10-T5-OUT-1020 \$10-T5-OUT-1020 \$10-T5-OUT-1030  Section 11 of the W Marine Works at WCF \$11-S1-1822 \$11-S1-1824 \$11-S1-1827  Marine Works at WCF \$11-R3-2100 \$11-R3-2105  Marine Works at TWC \$11-R4-1710  Formation and Hard I \$11-FM-2100 \$11-FM-2150 \$11-FM-2150 \$11-FM-3000C3  Misc. Works  Removal of Temporary \$11-RTC-3090 \$11-RTC-3095 \$11-RTC-3120 \$11-RTC-3122 \$11-RTC-3122A \$11-RTC-3123A	TP5 - Carry out defects identification and rectification works TP5 - Remedial works of the cross road ducts and drainage pipes  //orks - Remainder of Works R1  WCR1, Remaining Installation of the Corrosion Monitoring System - Construct draw pit and ductings WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity Remedial works to caisson seawall R3  Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit Carry out remedial works for 0.5 tonne Rock Armour CR4 & WCR4 WCR4 Mass Concrete Coping for Blockwork Seawall Landscaping Works Drainage at Tunnel Portion 2 Completion of Tunnel Portion 2 Drainage Construction of surface drain in WCR3  W Reclamation CH 3710 to CH 3790 (East) Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day) Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18  7  6  21  18  6  37  40  0	0 7 6 21 0 11 15 30 0	17-Sep-17 A  11-Sep-18  18-Sep-18  31-Aug-18  08-Nov-17 A  25-Dec-17 A	18-Sep-18 26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-293 -293 116	Calendar Day  HK Working Day  HK Working Day  HK Working Day  Calendar Day		TP5 - Remedi	al works of	TP5 - Ca	ny out defects i	dentification ar pipes	nd redification	works, TP5 - Car	y out defects ide	ntification and	d rectifica
\$10-T5-OUT-1030 T  Section 11 of the W  Marine Works at WCF  \$11-S1-1822 V \$11-S1-1824 V \$11-S1-1824 V \$11-S1-1827 F  Marine Works at WCF \$11-R3-2100 M \$11-R3-2105 C  Marine Works at TWC \$11-R4-1710 V  Formation and Hard L \$11-FM-2100 E \$11-FM-2100 E \$11-FM-2150 C \$11	TP5 - Remedial works of the cross road ducts and drainage pipes  Vorks - Remainder of Works  R1  WCR1, Remaining Installation of the Corrosion Monitoring System - Construct draw pit and ductings  WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity  Remedial works to caisson seawall  R3  Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit  Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4  WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  W Reclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18  7  6  21  18  6  37  40  0	0 7 6 21 0 11 15 30 0	17-Sep-17 A  11-Sep-18  18-Sep-18  31-Aug-18  08-Nov-17 A  25-Dec-17 A	18-Sep-18 26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-293 -293 116	Calendar Day  HK Working Day  HK Working Day  HK Working Day  Calendar Day		■ TP5 - Remedi	al works of	TP5 - Ca	my out defects its and drainage	dentification ar	d redification	works, TP5 - Car	y out defects ide	ntification and	d rectifica
Section 11 of the W Marine Works at WCF S11-S1-1822 V S11-S1-1824 V S11-S1-1824 V S11-S1-1827 F Marine Works at WCF S11-R3-2100 M S11-R3-2105 C Marine Works at TWC S11-R4-1710 V Formation and Hard L S11-FM-2100 C S11-FM-2100 C S11-FM-2150 C S11-FM-2150 C S11-FM-2000C3 C Misc. Works Removal of Temporary S11-RTC-3090 V S11-RTC-3095 V S11-RTC-3120 F S11-RTC-3122 F S11-RTC-3122 S11-RTC-3123A II	WCR1, Remaining Installation of the Corrosion Monitoring System - Construct draw pit and ductings WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity Remedial works to caisson seawall R3 Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit Carry out remedial works for 0.5 tonne Rock Armour CR4 & WCR4 WCR4 Mass Concrete Coping for Blockwork Seawall Landscaping Works Drainage at Tunnel Portion 2 Completion of Tunnel Portion 2 Drainage Construction of surface drain in WCR3  W Reclamation CH 3710 to CH 3790 (East) Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day) Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	7 6 21 18 6 37 40	7 6 21 0 11 15	11-Sep-18 18-Sep-18 31-Aug-18 08-Nov-17 A 25-Dec-17 A	18-Sep-18 26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-293 116 -378	HK Working Day HK Working Day HK Working Day Calendar Day		TP5 - Remedi	al works of	he crass road duct	ts and drainage	pipes					
Marine Works at WCF S11-S1-1822 V S11-S1-1824 V S11-S1-1827 F S11-R3-2100 M S11-R3-2105 C S11-R4-1710 V S11-FM-2100 S11-FM-2150 S11-FM-2000 S11-FM-3000C3 Misc. Works Removal of Temporary S11-RTC-3090 V S11-RTC-3095 S11-RTC-3120 F S11-RTC-3122 S11-RTC-3123A II-RTC-3123A	WCR1, Remaining Installation of the Corrosion Monitoring System - Construct draw pit and ductings WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity Remedial works to caisson seawall  R3 Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4 WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works Drainage at Tunnel Portion 2 Completion of Tunnel Portion 2 Drainage Construction of surface drain in WCR3  V Reclamation CH 3710 to CH 3790 (East) Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day) Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18 6 21 18 6 37	0 11 15 30 0	18-Sep-18 31-Aug-18 08-Nov-17 A 25-Dec-17 A	26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-293 116 -378	HK Working Day HK Working Day Calendar Day											
\$11-\$1-1822	WCR1, Remaining Installation of the Corrosion Monitoring System - Construct draw pit and ductings WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity Remedial works to caisson seawall  R3  Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4  WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  Feclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18 6 21 18 6 37	0 11 15 30 0	18-Sep-18 31-Aug-18 08-Nov-17 A 25-Dec-17 A	26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-293 116 -378	HK Working Day HK Working Day Calendar Day	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2										
\$11-\$1-1822	WCR1, Remaining Installation of the Corrosion Monitoring System - Construct draw pit and ductings WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity Remedial works to caisson seawall  R3  Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4  WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  Feclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18 6 21 18 6 37	0 11 15 30 0	18-Sep-18 31-Aug-18 08-Nov-17 A 25-Dec-17 A	26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-293 116 -378	HK Working Day HK Working Day Calendar Day	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2										
\$11-\$1-1824	WCR1, Remaining Installation of the Corrosion Monitoring System - Cable connection and testing the connectivity Remedial works to caisson seawall  R3  Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4  WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  V Reclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18 6 37 40 0	0 11 15 30 0	31-Aug-18 08-Nov-17 A 25-Dec-17 A 28-May-18 A	26-Sep-18 21-Sep-18 17-Nov-17 A 14-Dec-18	-293 116 -378	HK Working Day HK Working Day Calendar Day	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2										
S11-S1-1827 F  Marine Works at WCF S11-R3-2100 M S11-R3-2105 C  Marine Works at TWC S11-R4-1710 V  Formation and Hard I S11-FM-2100 C S11-FM-2150 C S11-FM-3000C3 C  Misc. Works  Removal of Temporary S11-RTC-3090 V S11-RTC-3120 F S11-RTC-3122 F S11-RTC-3122 S S11-RTC-3123A II	Remedial works to caisson seawall  R3  Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit  Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4  WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  Feclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18 6 37 40 0	0 11 15 30 0	08-Nov-17 A 25-Dec-17 A 28-May-18 A	17-Nov-17 A 14-Dec-18	-378	HK Working Day  Calendar Day			2 2 2 2 2 2 2 2 2 2		1 1 2 1 2 1 1 1 1 1 1						
\$11-R3-2100 M \$11-R3-2105 (  Marine Works at TWO \$11-R4-1710 V  Formation and Hard I \$11-FM-2100 E \$11-FM-2150 ( \$11-FM-3000C3 (  Misc. Works  Removal of Temporary \$11-RTC-3090 V \$11-RTC-3095 V \$11-RTC-3120 F \$11-RTC-3122 F \$11-RTC-3122 S \$11-RTC-3123A I	Mass Concrete Coping for Blockwork Seawall next to Type 2X caisson unit  Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4  WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  Feclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	6 37 40 0	11 15 30 0	25-Dec-17 A 28-May-18 A	14-Dec-18	-378	•					1 1 2 1 1 2 1 1		1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
\$11-R3-2105 (  Marine Works at TWO \$11-R4-1710   V  Formation and Hard I \$11-FM-2100   \$11-FM-2150   \$0 \$11-FM-3000C3   \$0  Misc. Works  Removal of Temporary \$11-RTC-3090   \$0 \$11-RTC-3120   F \$11-RTC-3122   F \$11-RTC-3122A   \$1	Carry out remedial works for 0.5 tonne Rock Armour  CR4 & WCR4  WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  Feclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	6 37 40 0	11 15 30 0	25-Dec-17 A 28-May-18 A	14-Dec-18	-378	•		: : : : : :		1 1	! ! !		: : : : : : : : : : : : : : : : : : : :				
Marine Works at TWC S11-R4-1710 V Formation and Hard I S11-FM-2100 S S11-FM-2150 C S11-FM-3000C3 C Misc. Works Removal of Temporary S11-RTC-3090 V S11-RTC-3120 F S11-RTC-3122 F S11-RTC-3122 S S11-RTC-3123A I	WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  **Reclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	37	15 30 0	28-May-18 A			HK Working Day		1 1	i	i i	i	i i	i	i i			
\$11-R4-1710   V   Formation and Hard   S11-FM-2100   C   S11-FM-3000C3   C   S11-FM-3000C3   C   S11-FM-3000C3   C   S11-RTC-3090   C   S11-RTC-3095   C   S11-RTC-3120   F   S11-RTC-3122   F   S11-RTC-3122   S11-RTC-3122A   S11-RTC-3123A   I   S1	WCR4 Mass Concrete Coping for Blockwork Seawall  Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  Reclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	40	30	-	04-Jul-18	-238									ii			
Formation and Hard I S11-FM-2100 [0 S11-FM-2150] (0 S11-FM-3000C3] (0 Misc. Works Removal of Temporary S11-RTC-3090 [0 S11-RTC-3120] F S11-RTC-3120 [0 S11-RTC-3122] F S11-RTC-3122A [0 S11-RTC-3123A] I	Landscaping Works  Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3   Reclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	40	30	-	04-Jul-18	-238									1 1			i
\$11-FM-2100	Drainage at Tunnel Portion 2  Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  Preclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	0	0	02-Mar-18 A			Calendar Day	<u> </u>				WCR4 Ma	ss Concrete Co	oping for Block	work Seawall, W	CR4 Mass Cond	ete Çoping fo	or Blockw
\$11-FM-2150 (\$11-FM-3000C3 (\$11-FM-3000C3 (\$11-FM-3000C3 (\$11-FM-3000C3 (\$11-FM-3090 (\$11-FM-3095 (\$11-FM-3120 (\$11-FM-3122 (\$11-FM-3122A (\$11-FM-3123A )]	Completion of Tunnel Portion 2 Drainage  Construction of surface drain in WCR3  / Reclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	0	0	02-Mar-18 A										:				
\$11-FM-3000C3 (CMisc. Works)  Removal of Temporary \$11-RTC-3090 (VI) \$11-RTC-3095 (VI) \$11-RTC-3120 (FI) \$11-RTC-3122 (FI) \$11-RTC-3122A (FI) \$11-RTC-3123A (FI)	Construction of surface drain in WCR3  Reclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	-	-		19-Jul-18	-654	Calendar Day						Drain	nage at Tunnel	Portion 2, Draina	ge at Tunnel Po	tion 2	
Misc. Works  Removal of Temporary  S11-RTC-3090 V  S11-RTC-3120 F  S11-RTC-3122 F  S11-RTC-3122A 4  S11-RTC-3123A I	Reclamation CH 3710 to CH 3790 (East)  Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill	18	n		19-Jul-18	240	Calendar Day						Çom	pletion of Tunr	nel Portion 2 Drai	nage	i	į
Removal of Temporary S11-RTC-3090 V S11-RTC-3095 V S11-RTC-3120 F S11-RTC-3122 F S11-RTC-3122A 4 S11-RTC-3123A	Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill			14-Dec-17 A	12-Feb-18 A		HK Working Day	T					†		†			
\$11-RTC-3090 V \$11-RTC-3095 V \$11-RTC-3120 F \$11-RTC-3122 F \$11-RTC-3122A 4 \$11-RTC-3123A I	Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill											: : :		:			:	-
\$11-RTC-3090 V \$11-RTC-3095 V \$11-RTC-3120 F \$11-RTC-3122 F \$11-RTC-3122A 4 \$11-RTC-3123A I	Works within Temp D-Wall - Bulk Reclamation to +1.50 mPD (6,800m3 @ 500m3/day)  Works within Temp D-Wall - Replace temporary fill (-3mPD to +1.5mPD) adjacent to the mass concrete with permanent fill																	-
S11-RTC-3120 F S11-RTC-3122 F S11-RTC-3122A 4 S11-RTC-3123A I		14	0	13-Feb-18 A	20-Jun-18	-277	HK Working Day	-			Works within Te	emp D-Wall - Bu	ılk Reclamation	to +1.50 mPE	0 (6,800m3 @ 50	0m3/day), Works	within Temp	D-Wall -
\$11-RTC-3122 F \$11-RTC-3122A 4 \$11-RTC-3123A In	Remove part of temporary reclamation by barge (10.000 out of 32.000 m3 @ 800 m3/day)	6	0	14-Nov-17 A	25-Nov-17 A		HK Working Day	1				:		:				
S11-RTC-3122A 4 S11-RTC-3123A I	, , , , , , , , , , , , , , , , , , , ,	16	0	29-Mar-18 A	25-May-18 A		HK Working Day	Re	emove part of temp	orary reclar	nation by barge (10	0.000 out of 32	,000 m3 @ 800	0 m3/day)	1			
S11-RTC-3123A	Remove part of the temp seawall to form marine entrance to temp reclamation zone (400 out of 886 nos. @ 30 nos./day)	9	0	10-Jun-18 A	16-Jun-18 A		HK Working Day		· -		move part of the t		-,		p reclamation zo	ne (400 out of 88	6 nos. @ 30 r	nos./day)
	400 Hardcore and Blinding at Base	7	7	20-Jun-18	27-Jun-18	-721	HK Working Day			1	400 H	Hardcore and B	linding at Base	, 400 Hardcore	and Blinding at	Base		
S11-RTC-3125	Installation of remaining Breakwater	12	12	26-Jun-18	09-Jul-18	-721	HK Working Day				4	Insta	allation of rema	ining Breakwa	ter, Installation of	remaining Break	water	
	Remove remaining temporary reclamation by barge (22.000 out of 32,000 m3 @ 800 m3/day)	12	12	05-Jul-18	18-Jul-18	-250	HK Working Day		<u> </u>			<u>-</u>	Remov	e remaining te	emporary reclama	tion by barge (22	.000 out of 3	2,000 m
S11-RTC-3126 F	Remove soil behind existing seawall at east of Type 8 (2000m3@500m3/day)	5	5	19-Jul-18	24-Jul-18	216	HK Working Day						-	Remove soil	behind existing	eawall at east of	Type 8 (2000	m3@500
S11-RTC-3127 F	Remove remaining temporary seawall by barge (486 nos. @ 30 nos./day)	18	18	27-Jun-18	17-Jul-18	-640	HK Working Day				4		<del></del>		nporary seawall		- :	
S11-RTC-3131	Complete removal of reclamation on diaphragm wall	10	10	20-Jun-18	29-Jun-18	-643	HK Working Day			•	Co		: 1	:	n wall, Complete	1 1		1 1
S11-RTC-3133	Carry out echo sounding to dredged seabed level	3	3	29-Jun-18	04-Jul-18	-643	HK Working Day				<del>  -    </del>	Carry out e	cho sounding t	to dredged sea	abed level, Carry	out echo soundin	g to dredged	seabed I
S11-RTC-3140 F	Reinstate the permanent seawall at the interface with the Temporary D-Wall (North) (90 nos. @ 5 nos./day)	20	20	13-Sep-18	05-Oct-18	-712	HK Working Day								1			
	Reclamation CH 3630 to CH 3710 (West)																	
	Remove part of temporary reclamation from +4mPD to -6mPD (10,000 m3@1000m3/day)	10	16	12-Mar-18 A	07-Jul-18	211	HK Working Day			- 1		Remov	e part of tempo	- 1	on from +4mPD	i i	-	1
	Remove part of temp seawall blocks as entrance to TWCR4 by barge (400 of 886 nos.@30 nos./day)	15	15	13-Jul-18	28-Jul-18	211	HK Working Day	_			2 2 3 3	<b></b> -		1	e part of temp s	1 1	ntrance to TV	MCR4 by
	Install remaining Breakwater	12	12	26-Jun-18	09-Jul-18	-721	HK Working Day	_				Insta	alli emaining B	i	alll remaining Bre	i i		
	Remove remaining temporary reclamation from +4mPD to -6mPD by barge (22,000 m3@1000m3/day)	22	22	10-Jul-18	01-Aug-18	-256	HK Working Day	4						R	emove remaining			
	Remove soil behind existing seawall (5,000 m3@1000m3/day)	6	6	28-Jul-18	03-Aug-18	-256	HK Working Day	_							Remove soil bel	nind existing seav		
	Remove 2 sections of existing seawall (320 nos.@30nos./day)	12	12	04-Aug-18	16-Aug-18	-256	HK Working Day	_								Remove 2 sed		7
	Remove remaining temporary seawall blocks by barge (486 of 886 nos.@30 nos./day)	17	17	28-Jul-18	15-Aug-18	-256	HK Working Day	-								Remove remain	- 1	
	Clean side of diaphragm wall	6	5	16-Aug-18 13-Feb-18 A	21-Aug-18	-256	HK Working Day HK Working Day			i	Works	within Town D \	Milal Block Tim	oo A Pook fill (	Geotextile and Fil			gili vrali,
	Works within Temp D-Wall - Place Type A Rock fill, Geotextile and Filter -6.0mPD to -3.0mPD	-	6	_	26-Jun-18	242	HK Working Day								-6.0mPD to -3.0r			lorko with
	Works within Temp D-Wall - Place Sorted Public Fill -6.0mPD to -3.0mPD (4,500m3@600m3/d)  Works within Temp D-Wall - Install Permanent Seawall Blocks in wet condition 521nos.@18 nos./d	11	72	13-Feb-18 A	26-Jun-18	-261		-	1 1	- 1	VVOIAS	within temp D-	vyali - Flace 30	i teu Fublic Fili	-0.0111FD to -3.01	11FD (4,5001115@	5001(13/u), vvi	JIKS WILLI
		73 27	73 27	07-Sep-18	26-Nov-18	-383 -594	HK Working Day	- :						į		Morks within	Temp D-Wall	II Cut do
	Works within Temp D-Wall - Cut down temporary D-Wall (East and West) to +1.5mPD  Works within Temp D-Wall - Place Sorted Public Fill from +1.5mPD to +4.20mPD (9,500m3@1,000m3/d)	27	27	21-Jul-18 18-Aug-18	18-Aug-18 15-Sep-18	-594	HK Working Day HK Working Day	- :						:		TVOIRS WILLIII	.op-D-wall	Juliuc
	Place berm blocks (1500m2@50m2/day)	30	30	16-Aug-18	15-Sep-18	-281	HK Working Day	-						:				
	Excavation and dredging between Temp Seawall & D-Wall to Temp Seawall (middle)	17	17	10-Aug-16 10-Jul-18	27-Jul-18	-721	HK Working Day	<del></del>			<del> </del>		4	Excavation	on and dredging	oetween Temp S	awall % ID3W	/all to Te
	Excavation and dredging between Temp Seawall & D-Wall to Temp Seawall (west side)	17	17	10-Jul-18	27-Jul-18	-721	HK Working Day	- :					: :		on and dredging	1 1		1
	Remove western part of the Temp Seawall to form marine entrance to west side (486 nos. @ 40 nos./day)	17	17	10-Jul-18	27-Jul-18	-721	HK Working Day	1					;		western part of t	1 1		1
	Remove remaining Temp Seawall by barges (486 nos. @ 30 nos./day)	17	17	27-Jul-18	14-Aug-18	-721	HK Working Day							<u></u>	-	Remove remaining		1
	Remove all temporary reclamation (CH3630-Ch 3710) and carry out echo sounding to dredged seabed level	17	17	30-Jul-18	16-Aug-18	-721	HK Working Day	1								Remove all ten	11	i 1
	Works outside Temp D-Wall - Place rock mound to -6.0mPD(Grade 400: 8,000m3@750m3/d)	12	12	16-Aug-18	29-Aug-18	-721	HK Working Day	1			t <del> </del> <del> </del>			·			Works outs	
	Works outside Temp D-Wall - Place Levelling Stone (1,200m2)	12	12	29-Aug-18	11-Sep-18	-721	HK Working Day	1								□ □		, w
	Works outside Temp D-Wall - Install Permanent Seawall Blocks outside D-wall (507 nos. @ 15nos./day)	36	36	11-Sep-18	22-Oct-18	-721	HK Working Day										T	F
								-				<u> </u>	<u> </u>	Davida	· · · · ·	Charles		<u> </u>
<ul><li>Milestone</li></ul>												Dat	le	Revisi	IOI1	Checke	u /	Approv
Critical Milest	tones			0===			NO		<b>'</b> 00									
CurrentWork	CHUN WO - CRGI			CEDD	CONTR	RACT	NO. HK/2	2009/	02									
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Critical Works	S JOINT VENTURE WD II	- (	entr	ai vvano	cnai By	pass	at Wan C	nai E	=ast (CC	ontra	Ct 2)							
Remaining L	evel of Effort 2 N		ITL	<b>ROLLIN</b>	NG DDC	)CP	MME (da	ta da	tο 20_ l	un-19	3)							
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# CEDD CONTRACT HK/2009/02

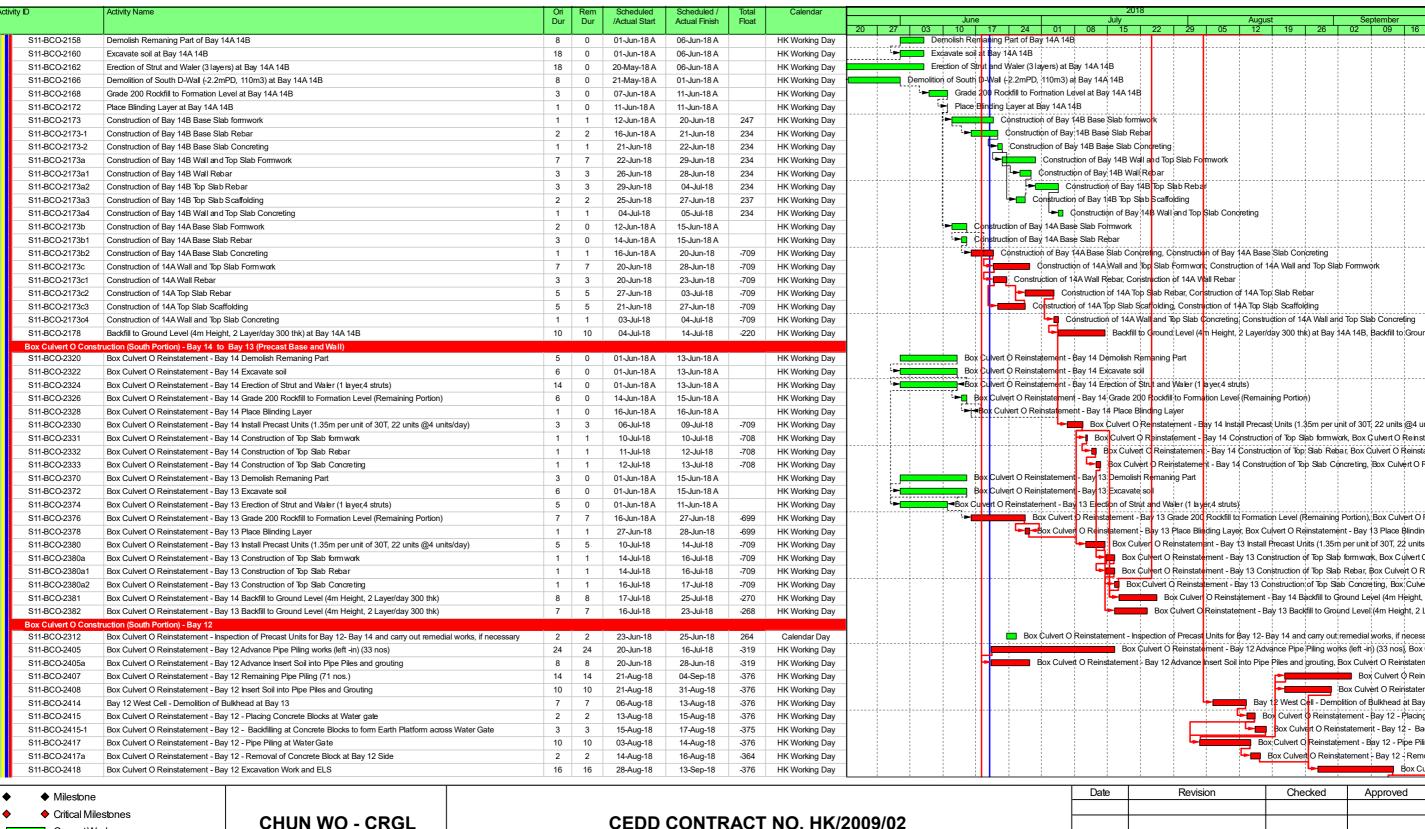
Temp D-Wall - Construct the remaining part of Type 7 seawall e sheet piles adjacent to the Type 7 seawall at the west side mer of Tunnel Portion 3 and 4 all - Install brackets and waling to sheet pile wall (2nos.@4 days/no.) all - Install tie back (4nos. @1no./day) 330 to CH 3710 D-Wall Cutting - Remaining Coing inside D Wall (72 nos.for lifting, 3 machine@1no./machine/day) D-Wall Cutting - Advance Coring within tunnel cofferdam (37 nos., 3 machines@1no./machine/day) ide cofferdam up to -2mPD (2 pumps) ide cofferdam up to +2mPD Wall Coring underwater (37 nos. at 3nos./day) rary D-Wall (18 vertical cuts; 2 machines@ 1cut/machine/day) D-Wall (36 horizontal cuts; 2 machines@ 1cut/machine/day) to original seabed level mp D-Wall blocks nent  Ks and Street Furniture of HHR Flyover - MJ Installation at Bay 3  Reinstatement - Design of Box Culvert 'O' by designer and reviewed by CW-CRGLJV Reinstatement - Precast Units Fabrication and Delivery (Total = 66 units @1.5no/day + 20d delivery) Reinstatement - Carry out inspection and defect rectification to Bay 18-19 at the north Reinstatement - Final inspection of Bay 13-19 Reinstatement - Diversion of flow to reinstated box culvert Reinstatement - Reinstate the opening of box culvert Bay 12 Section) - Bay 15A and Bay 16A	51 13 6 4 24 23 6 1 13 18 25 0	0 0 0 0 6 1 13 18 25 0	19-Sep-18 18-Jul-18 18-May-18 A 08-Jun-18 A 30-Aug-17 A 02-May-18 A 28-Jun-18 04-Aug-18 14-Aug-18 13-Sep-18 10-Oct-17 A 18-Aug-17 A 25-Oct-17 A	Actual Finish  14-Nov-18  31-Jul-18  08-Jun-18 A  14-Jun-18 A  22-May-18 A  22-May-18 A  05-Jul-18  06-Aug-18  18-Aug-18  13-Sep-18  13-Sep-18  13-Sep-18  16-Oct-17 A	Float  -685 -250  -688 -718 -718 -718 -718 -718 -718	HK Working Day	20 27 03  Preparation for D-Wall C	Tie back SP Tie Sutting - Re	Wall - Insta pack SP W maining Co	II brackets a all - Install ti ring inside [ g within tun	08  and waling to see back (4nos.)  D Wall (72 nos.)	heet pile wa @1nc./day) for lifting, 3 (37 nps., 3	all (2nos.@ ) machine@ machines@	Removal of the sh 4 days/no.)  21no./machine/day) 21no./machine/day) 0 -2mPD (2 pumps),	Filling water inside coff Inside cofferdam up to Remaining D-Wa	e Type 7 seawall at ferdam up o 2mPI o +2mPD, Filling w
e sheet piles adjacent to the Type 7 seawall at the west side  mer of Tunnel Portion 3 and 4  all - Install brackets and waling to sheet pile wall (2nos.@4 days/no.)  all - Install tie back (4nos. @1no./day)  30 to CH 3710  D-Wall Cutting - Remaining Coting inside D Wall (72 nos.for lifting, 3 machine@1no./machine/day)  D-Wall Cutting - Advance Coting within tunnel cofferdam (37 nos., 3 machines@1no./machine/day)  ide cofferdam up to -2mPD (2 pumps)  ide cofferdam up to +2mPD  Wall Coting un derwater (37 nos. at 3nos./day)  mary D-Wall (18 vertical cuts; 2 machines@ 1cut/machine/day)  D-Wall (36 horizontal cuts; 2 machines@ 1cut/machine/day) to original seabed level  mp D-Wall blocks  ment  vs. and Street Furniture  of HHR Flyover - MJ Installation at Bay 3  Reinstatement - Design of Box Culvert 'O' by designer and reviewed by CW-CRGLJV  Reinstatement - Precast Units Fabrication and Delivery (Total = 66 units @1.5no/day + 20d delivery)  Reinstatement - Carry out inspection and defect rectification to Bay 18-19 at the north  Reinstatement - Final inspection of Bay 13-19  Reinstatement - Diversion of flow to reinstated box culvert  Reinstatement - Reinstate the opening of box culvert Bay 12  Section) - Bay 15A and Bay 16A	13 6 4 24 23 6 1 13 18 25 0 6 45 35 64 1 2	0 0 0 6 1 13 18 25 0 0 0 12 12 12	18-Jul-18  18-May-18 A  08-Jun-18 A  30-Aug-17 A  02-May-18 A  28-Jun-18  04-Aug-18  14-Aug-18  13-Sep-18  10-Oct-17 A  18-Aug-17 A  25-Oct-17 A	31-Jul-18 08-Jun-18 A 14-Jun-18 A 22-May-18 A 22-May-18 A 05-Jul-18 06-Aug-18 18-Aug-18 01-Sep-18 13-Sep-18 13-Sep-18	-250 -688 -718 -718 -718 -718 -718	HK Working Day	Preparation for D-Wall C	Tie	pack SP W	all - Install ti ving inside [ g within tun	e back (4nos. ( ) Wall (72 nos. ) nel cofferdam	@1no./day) for lifting, 3 (37 nos., 3	machine@ machines@	4 days/no.) 21no./machine/day) 21no./machine/day) o -2mPD (2 pumps),	Filling water inside coff hinside cofferdam up to demaining D-Wa	ferdarn up o 2mPI to +2mPD, Filling w al Coing underwat Curting emporar
mer of Tunnel Portion 3 and 4 all - Install brackets and waling to sheet pile wall (2nos.@4 days/no.) all - Install tie back (4nos. @1no./day) 530 to CH 3710  **D-Wall Cutting - Remaining Coting inside D Wall (72 nos.for lifting, 3 machine@1no./machine/day) **D-Wall Cutting - Advance Coting within tunnel cofferdam (37 nos., 3 machines@1no./machine/day) **side cofferdam up to -2mPD (2 pumps) **side cofferdam up to +2mPD  **Wall Coting un derwater (37 nos. at 3nos./day) **rary D-Wall (18 vertical cuts; 2 machines@ 1cut/machine/day) **D-Wall (36 horizontal cuts; 2 machines@ 1cut/machine/day) **D-Wall (36 horizontal cuts; 2 machines@ 1cut/machine/day) **put original seabed level **mp D-Wall blocks **ment** **sa and Street Furniture** of HHR Flyover - MJ Installation at Bay 3  **Reinstatement - Design of Box Culvert 'O' by designer and reviewed by CW-CRGLJV **Reinstatement - Design Submission of Box Culvert 'O' for comment and approval by AECOM **Reinstatement - Precast Units Fabrication and Delivery (Total = 66 units @1.5no/day + 20d delivery) **Reinstatement - Carry out inspection and defect rectification to Bay 18-19 at the north **Reinstatement - Final inspection of Bay 13-19 **Reinstatement - Diversion of flow to reinstated box culvert **Reinstatement - Reinstate the opening of box culvert Bay 12 **Section** **Section** **Description** **Reinstatement - Reinstate the opening of box culvert Bay 12 **Section** **Section** **Description** **Reinstatement - Reinstate the opening of box culvert Bay 12 **Section** **Section** **Section** **Precipies** **Precipies** **Precipies** **Precipies** **Reinstatement - Reinstate the opening of box culvert Bay 12 **Section** **Section** **Precipies** **Precipie	6 4 24 23 6 1 13 18 25 0 6 45 35 64 1 2	0 0 0 0 6 1 13 18 25 0 0 0 12 12 12	18-May-18 A 08-Jun-18 A 30-Aug-17 A 02-May-18 A 28-Jun-18 04-Aug-18 14-Aug-18 13-Sep-18 10-Oct-17 A	08-Jun-18 A 14-Jun-18 A 22-May-18 A 22-May-18 A 05-Jul-18 06-Aug-18 18-Aug-18 01-Sep-18 13-Sep-18 13-Sep-18	-688 -718 -718 -718 -718 -718	HK Working Day	Preparation for D-Wall C	Tie	pack SP W	all - Install ti ving inside [ g within tun	e back (4nos. ( ) Wall (72 nos. ) nel cofferdam	@1no./day) for lifting, 3 (37 nos., 3	machine@ machines@	4 days/no.) 21no./machine/day) 21no./machine/day) o -2mPD (2 pumps),	Filling water inside coff hinside cofferdam up to demaining D-Wa	ferdarn up o 2mPI to +2mPD, Filling w al Coing underwat Curting emporar
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side cofferdam up to -2mPD (2 pumps) side cofferdam up to +2mPD  Val Coring underwater (37 nos. at 3nos./day) rary D-Wall (18 vertical cuts; 2 machines@ 1cut/machine/day) D-Wall (36 horizontal cuts; 2 machines@ 1cut/machine/day) to original seabed level rmp D-Wall blocks nent  visuand Street Furniture of HHR Flyover - MJ Installation at Bay 3  Reinstatement - Design of Box Culvert 'O' by designer and reviewed by CW-CRGLJV Reinstatement - Design Submission of Box Culvert 'O' for comment and approval by AECOM Reinstatement - Precast Units Fabrication and Delivery (Total = 66 units @1.5no/day + 20d delivery) Reinstatement - Carry out inspection and defect rectification to Bay 18-19 at the north Reinstatement - Final inspection of Bay 13-19 Reinstatement - Diversion of flow to reinstated box culvert Reinstatement - Reinstate the opening of box culvert Bay 12  Section) - Bay 15A and Bay 16A	6 1 13 18 25 0 6 45 35 64 1 2	1 13 18 25 0	28-Jun-18 04-Aug-18 06-Aug-18 14-Aug-18 18-Aug-18 13-Sep-18 10-Oct-17 A 18-Aug-17 A 25-Oct-17 A	05-Jul-18 06-Aug-18 18-Aug-18 01-Sep-18 13-Sep-18 13-Sep-18	-718 -718 -718 -718 -718	HK Working Day	Preparation for D-Wall (	uting -Ad	ance Conr			· <del>-</del>		o -2mPD (2 pumps),	Filling water inside coff Inside cofferdam up to Remaining D-Wa	to +2mPD, Filling wa all Coing underwate Cuiting emporar
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Wall Coring underwater (37 nos. at 3nos./day) rary D-Wall (18 vertical cuts; 2 machines@ 1cut/machine/day) D-Wall (36 horizontal cuts; 2 machines@ 1cut/machine/day) to original seabed level rmp D-Wall blocks nent  Ks and Street Furniture of HHR Flyover - MJ Installation at Bay 3  Reinstatement - Design of Box Culvert 'O' by designer and reviewed by CW-CRGLJV Reinstatement - Design Submission of Box Culvert 'O' for comment and approval by AECOM Reinstatement - Precast Units Fabrication and Delivery (Total = 66 units @1.5no/day + 20d delivery) Reinstatement - Carry out inspection and defect rectification to Bay 18-19 at the north Reinstatement - Final inspection of Bay 13-19 Reinstatement - Diversion of flow to reinstated box culvert Reinstatement - Reinstate the opening of box culvert Bay 12  Section) - Bay 15A and Bay 16A	13 18 25 0	18 25 0 0	06-Aug-18 14-Aug-18 18-Aug-18 13-Sep-18 10-Oct-17 A 18-Aug-17 A 25-Oct-17 A	18-Aug-18 01-Sep-18 13-Sep-18 13-Sep-18 13-Sep-18	-718 -718 -718 -718	HK Working Day HK Working Day HK Working Day HK Working Day						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Filling water	■ Remaining D-Wa	al Coingunderwat Cuiting eniporai
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Reinstatement - Diversion of flow to reinstated box culvert Reinstatement - Reinstate the opening of box culvert Bay 12 Section) - Bay 15A and Bay 16A	1		26-Jul-18	28-Jul-18	-712	HK Working Day	<del>-</del>						Bo	x Culvert O Reinstat	ement - Final inspection	n of Bay 13-19. Bo
Reinstatement - Reinstate the opening of box culvert Bay 12 Section) - Bay 15A and Bay 16A		1	03-Aug-18	04-Aug-18	-718	HK Working Day	1						7	<b>- L</b>	Reinstatement - Diver	
Section) - Bay 15A and Bay 16A		80	04-Aug-18	30-Oct-18	-360	HK Working Day	1 1 1							Box Gainer C	Troinctatoriique Biroi	bioir or most to rount
	00	00	047/dg-10	30-00-10	-500	Tilk Working Day				-			:	1 1		1
Reinstatement - Backfill above Bay 15A and Bay 16A inside tunnel section in dry and break up D-Wall	20	20	15-May-18 A	11-Jul-18	-257	HK Working Day	4				Box	v Culvert O	Painstater	Backfill above	Bay 15A and Bay 16A i	inside tunnel section
	20	20	13-iviay-10 A	11-001-10	-231	TIK Working Day						x ountoit o				
Section) - Bay 17A and 17B (Insitu) Pipe Piles and grouting at Bay 17A 17B (154 no., 6 no. per day)	14	0	02-May-18 A	21-May-18 A		HK Working Day	Insert Soil into Pipe Piles	and aroutin	t at Rav 17	¦ Δ 17R (154	no 6 no ner	day)				
	6	0		-			miscit dominto ripe riles a	and ground	1	- 11	ng Part of Bay					
aning Part of Bay 17A		0	21-May-18 A	20-Jun-18 A		HK Working Day	- : :	: :			- T	1/A				
tt Bay 17A 17B	6	0	16-Apr-18 A	20-Jun-18 A		HK Working Day	- : :	,	:	- 1	ay 17A 17B	-4 D- 147A	470			
ut and Waler (1 layer, 3 Struts) at Bay 17A, 17B	8	0	18-Apr-18 A	11-Jun-18 A		HK Working Day		■Erection			ayet, 3 Struts)		,1/B ;			
Bulkhead Wall at Bay 18	8	0	05-Jun-18 A	20-Jun-18 A		HK Working Day	P			i	head Wall at B	1				
North D-Wall (-2.2mPD, 110m3) at Bay 17A	6	0	19-May-18 A	19-Jun-18 A		HK Working Day	- : :		· :		D-Vall (-2.2m)		1 7	4		
ckfill to Formation Level at Bay 17A, 17B	3	3	20-Jun-18 A	22-Jun-18	-718	HK Working Day								H in the second	kfill to Formation Level	at Bay 17A, 17B
Layer at Bay 17A, 17B	1	1	22-Jun-18	23-Jun-18	-718	HK Working Day			P	ace Blinding	Layer at Bay	17A, 17B, I	Place Blindi	ing Layer at Bay 17 <i>4</i>	, 17B	
f Bay 17A Base Slab formwork	1	1	23-Jun-18	25-Jun-18	-718	HK Working Day			<b>└</b> -	Construction					7A Base Slab formwork	
f Bay 17A Base Slab Rebar	2	2	03-Jul-18	05-Jul-18	-718	HK Working Day				<b>L</b>	Construction	n of Eay 17	A Base Sla	Rebar, Construction	on of Bay 17A Base Sla	p Rebar
f Bay 17A Base Slab Concreting	1	1	06-Jul-18	07-Jul-18	-718	HK Working Day	1 1 1				Construc	tion of Bay	7A Base S	ab Concreting, Co	nstruction of Bay 17A B	ase Slab Concretir
f Bay 17A Wall and Top Slab formwork	8	8	06-Jul-18	14-Jul-18	-718	HK Working Day						Construction	n of Bay 1	Wall and Top Sla	b formwork, Construction	on of Bay 17A Wall
f Bay 17A Wall Rebar	3	3	06-Jul-18	10-Jul-18	-718	HK Working Day				[	Cons	struction of E	Eay 17Å W	/al Rebar, Construct	ion of Bay 17Å Wall Re	ebar
f Bay 17A Slab Rebar	4	4	13-Jul-18	18-Jul-18	-718	HK Working Day	1 1 1 1				▎▎▝╁▄	Cons	ruction of E	Bay 17A Slab Reba	r, Construction of Bay 1	17A Slab Rebar
f Bay 17A Top Slab Scaffolding	2	2	07-Jul-18	10-Jul-18	-714	HK Working Day	ł		+		Cons	struction of I	ay 17A To	Slab Scaffolding (	Construction of Bay 17	A Top Slab Scaffold
f Bay 17A Wall and Top Slab Concreting	1	1	18-Jul-18	19-Jul-18	-718	HK Working Day	1								op Slab Concreting, Co	
•	4	-			-688		-	i i <b>i</b>			Construction	_		<del></del>	: :	1 1
f Bay 17B Base Slab formwork		_	28-Jun-18	03-Jul-18		HK Working Day	1								1 1	1 1
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f Bay 17A Inspection Manhole		5			213		-								1 1	11
· · · · · · · · · · · · · · · · · · ·		5	04-Jul-18	10-Jul-18		HK Working Day		i		ן בי	— :		1		: :	1 1
	3	3	04-Jul-18	07-Jul-18	-685	HK Working Day	1 1 1							i i	1.	
f Bay 17B Wall Rebar	3	3	11-Jul-18	13-Jul-18	-688	HK Working Day						i	i	i i	1 1 1	1 1
f Bay 17B Wall Rebar f Bay 17B Top Slab Rebar	2	2	05-Jul-18	07-Jul-18	-688	HK Working Day		<u> </u>		<b>-</b> _	Construc	tion of Bay	7B Top Sl	ab S <mark>caffolding, Cons</mark>	struction of Bay 17B Top	p Slab Scaffolding
	1	1	13-Jul-18	14-Jul-18	-688	HK Working Day	,		T		4	Construction	n of Bay 1	7B Wall and Top Sla	b Concreting, Construc	tion of Bay 17B W
f Bay 17B Top Slab Rebar		2	14-Jul-18	17-Jul-18	-229	HK Working Day	1				ļ <b>F</b>	Mobilis	ation of Cr	ane at Bay 17A 17B	, Mobilisation of Crane	at Bay 17A 17B
f Bay 17B Top Slab Rebar f Bay 17B Top Slab Scaffolding	2	7	17-Jul-18	24-Jul-18	-229	HK Working Day	1	i i <b>i</b>				<b>-</b>	Backfill t	to Ground Level (4m	Height, 2 Layer/day 30	)0 thk) at Bay 17A,
f Bay 17B Top Slab Rebar f Bay 17B Top Slab Scaffolding f Bay 17B Wall and Top Slab Concreting	2 7					, ,				:	1 1					
f Bay 17B Top Slab Rebar f Bay 17B Top Slab Scaffolding f Bay 17B Wall and Top Slab Concreting Crane at Bay 17A 17B ind Level (4m Height, 2 Layer/day 300 thk) at Bay 17A											: .			Programme 1		
f E f E	Bay 17B Base Slab Rebar Bay 17B Base Slab Concreting Bay 17B Inspection Manhole Bay 17B Wall and Top Slab formwork Bay 17B Wall Rebar Bay 17B Top Slab Rebar Bay 17B Top Slab Scaffolding	Bay 17B Base Slab Rebar       2         Bay 17B Base Slab Concreting       1         Bay 17A Inspection Manhole       5         Bay 17B Wall and Top Slab formwork       5         Bay 17B Wall Rebar       3         Bay 17B Top Slab Rebar       3         Bay 17B Top Slab Scaffolding       2         Bay 17B Wall and Top Slab Concreting       1         I rane at Bay 17A 17B       2         d Level (4m Height, 2 Layer/day 300 thk) at Bay 17A       7	Bay 17B Base Slab Rebar       2       2         Bay 17B Base Slab Concreting       1       1         Bay 17A Inspection Manhole       5       5         Bay 17B Wall and Top Slab formwork       5       5         Bay 17B Wall Rebar       3       3         Bay 17B Top Slab Rebar       3       3         Bay 17B Top Slab Scaffolding       2       2         Bay 17B Wall and Top Slab Concreting       1       1         Trane at Bay 17A 17B       2       2	Bay 17B Base Slab Rebar       2       2       29-Jun-18         Bay 17B Base Slab Concreting       1       1       30-Jun-18         Bay 17A Inspection Manhole       5       5       20-Jul-18         Bay 17B Wall and Top Slab formwork       5       5       04-Jul-18         Bay 17B Wall Rebar       3       3       04-Jul-18         Bay 17B Top Slab Rebar       3       3       11-Jul-18         Bay 17B Top Slab Scaffolding       2       2       05-Jul-18         Bay 17B Wall and Top Slab Concreting       1       1       13-Jul-18         rane at Bay 17A 17B       2       2       14-Jul-18         d Level (4m Height, 2 Layer/day 300 thk) at Bay 17A       7       7       17-Jul-18	Bay 17B Base Slab Rebar       2       2       29-Jun-18       30-Jun-18         Bay 17B Base Slab Concreting       1       1       30-Jun-18       03-Jul-18         Bay 17A Inspection Manhole       5       5       20-Jul-18       26-Jul-18         Bay 17B Wall and Top Slab formwork       5       5       04-Jul-18       10-Jul-18         Bay 17B Wall Rebar       3       3       04-Jul-18       07-Jul-18         Bay 17B Top Slab Rebar       3       3       11-Jul-18       13-Jul-18         Bay 17B Top Slab Scaffolding       2       2       05-Jul-18       07-Jul-18         Bay 17B Wall and Top Slab Concreting       1       1       13-Jul-18       14-Jul-18         Trans at Bay 17A 17B       2       2       14-Jul-18       17-Jul-18       24-Jul-18         d Level (4m Height, 2 Layer/day 300 thk) at Bay 17A       7       7       17-Jul-18       24-Jul-18	3ay 17B Base Slab Rebar       2       2       29-Jun-18       30-Jun-18       -688         3ay 17B Base Slab Concreting       1       1       30-Jun-18       03-Jul-18       -688         3ay 17A Inspection Manhole       5       5       20-Jul-18       26-Jul-18       213         3ay 17B Wall and Top Slab formwork       5       5       04-Jul-18       10-Jul-18       -685         3ay 17B Wall Rebar       3       3       04-Jul-18       07-Jul-18       -685         3ay 17B Top Slab Rebar       3       3       11-Jul-18       13-Jul-18       -688         3ay 17B Top Slab Scaffolding       2       2       05-Jul-18       07-Jul-18       -688         3ay 17B Wall and Top Slab Concreting       1       1       13-Jul-18       14-Jul-18       -688         3ay 17B Wall and Top Slab Concreting       1       1       13-Jul-18       14-Jul-18       -688         3ay 17B Wall and Top Slab Concreting       1       1       13-Jul-18       14-Jul-18       -688         3ay 17B Wall and Top Slab Concreting       1       1       13-Jul-18       14-Jul-18       -629         4d Level (4m Height, 2 Layer/day 300 thk) at Bay 17A       7       7       17-Jul-18       24-Jul-18       -229	30 y 17B Base Slab Rebar       2       2       29-Jun-18       30-Jun-18       -688       HK Working Day         30 y 17B Base Slab Concreting       1       1       30-Jun-18       03-Jul-18       -688       HK Working Day         30 y 17A Inspection Manhole       5       5       20-Jul-18       26-Jul-18       213       HK Working Day         30 y 17B Wall and Top Slab formwork       5       5       04-Jul-18       10-Jul-18       -685       HK Working Day         30 y 17B Wall Rebar       3       3       04-Jul-18       07-Jul-18       -685       HK Working Day         30 y 17B Top Slab Rebar       3       3       11-Jul-18       13-Jul-18       -688       HK Working Day         30 y 17B Top Slab Scaffolding       2       2       05-Jul-18       07-Jul-18       -688       HK Working Day         30 y 17B Wall and Top Slab Concreting       1       1       13-Jul-18       14-Jul-18       -688       HK Working Day         31 y 17B Wall and Top Slab Concreting       1       1       13-Jul-18       14-Jul-18       -688       HK Working Day         32 y 17B Wall and Top Slab Concreting       1       1       13-Jul-18       17-Jul-18       -229       HK Working Day         33 y 17B Wall and Top Slab Co	Say 17B Base Slab Rebar   2   2   29-Jun-18   30-Jun-18   -688   HK Working Day   30-Jun-18   30-Jun-18   688   HK Working Day   30-Jun-18   30-Jun-18   30-Jun-18   688   HK Working Day   30-Jun-18   30-Jun-18   30-Jun-18   30-Jun-18   30-Jun-18   688   HK Working Day   30-Jun-18   30-Jun-18	Say 17B Base Slab Rebar   2   2   29-Jun-18   30-Jun-18   -688   HK Working Day	Say 17B Base Slab Rebar   2   2   29-Jun-18   30-Jun-18   -688   HK Working Day   30-Jun-18   30-Jun	Say 17B Base Slab Rebar 2 2 2 29-Jun-18 30-Jun-18 -688 HK Working Day 30-Jun-18 Base Slab Concreting 30-Jun-18 103-Jun-18 -688 HK Working Day 30-Jun-18 30-Jun-18 30-Jun-18 -688 HK Working Day 30-Jun-18 30-Jun-18 30-Jun-18 30-Jun-18 30-Jun-18 30-Jun-18 30-Jun-18 -688 HK Working Day 30-Jun-18 30-J	Say 17B Base Slab Rebar  2 2 29-Jun-18 30-Jun-18 -688 HK Working Day 3ay 17B Base Slab Concreting  3 1 1 30-Jun-18 03-Jul-18 -688 HK Working Day 3ay 17A Inspection Manhole  5 5 20-Jul-18 26-Jul-18 213 HK Working Day 3ay 17B Wall and Top Slab formwork  5 5 04-Jul-18 10-Jul-18 -685 HK Working Day 3ay 17B Wall Rebar  3 3 04-Jul-18 07-Jul-18 -685 HK Working Day 3ay 17B Top Slab Scaffolding  5 2 2 05-Jul-18 07-Jul-18 -688 HK Working Day 3ay 17B Wall and Top Slab Concreting  5 1 1 1 13-Jul-18 14-Jul-18 -688 HK Working Day 3ay 17B Wall and Top Slab Concreting  5 2 1 14-Jul-18 17-Jul-18 -229 HK Working Day 4 Level (4m Height, 2 Layer/day 300 thk) at Bay 17A  7 7 17-Jul-18 24-Jul-18 -229 HK Working Day	Say 17B Base Slab Rebar  2 2 29-Jun-18 30-Jun-18 -688 HK Working Day 30 17B Base Slab Concreting  1 1 30-Jun-18 03-Jul-18 -688 HK Working Day 30 17A Inspection Manhole 5 5 20-Jul-18 26-Jul-18 213 HK Working Day 30 17B Wall and Top Slab formwork 5 5 04-Jul-18 10-Jul-18 -685 HK Working Day 30 17B Wall Rebar 30 3 04-Jul-18 07-Jul-18 -685 HK Working Day 30 17B Wall Rebar 30 3 04-Jul-18 07-Jul-18 -685 HK Working Day 30 17B Top Slab Scaffolding 30 3 11-Jul-18 13-Jul-18 -688 HK Working Day 30 17B Wall and Top Slab Concreting 30 17B Wall and Top Slab Concreting 31 1 1 13-Jul-18 14-Jul-18 -688 HK Working Day 30 17B Wall and Top Slab Concreting 31 17-Jul-18 17-Jul-18 -229 HK Working Day 31 17-Jul-18 24-Jul-18 -229 HK Working Day 32 17-Jul-18 24-Jul-18 -229 HK Working Day 33 17-Jul-18 24-Jul-18 -229 HK Working Day 34 Level (4m Height, 2 Layer/day 300 thk) at Bay 17A 30 17B Working Day	Say 17B Base Slab Rebar   2   2   29-Jun-18   30-Jun-18   -688   HK Working Day   30-Jun-18   688   HK Working Day   30-Jun-18   688   HK Working Day   30-Jun-18   688   HK Working Day   30-Jun-18   30-Jun-18   30-Jun-18   30-Jun-18   688   HK Working Day   30-Jun-18   30-Jun-18	2 2 29-Jun-18 30-Jun-18 -688 HK Working Day 3ay 17B Base Slab Concreting 5 1 1 30-Jun-18 -688 HK Working Day 3ay 17B Base Slab Concreting 5 5 20-Jul-18 26-Jul-18 213 HK Working Day 3ay 17B Base Slab Concreting 5 5 04-Jul-18 10-Jul-18 -685 HK Working Day 3ay 17B Top Slab Rebar 5 5 04-Jul-18 13-Jul-18 -688 HK Working Day 3ay 17B Top Slab Scaffolding 5 2 2 05-Jul-18 14-Jul-18 -688 HK Working Day 3ay 17B Wall and Top Slab Concreting 5 2 1 14-Jul-18 17-Jul-18 -229 HK Working Day 4 Construction of Bay 17B Base Slab Rebar, Construction of Bay 17B Base Slab Concreting, Construction of Bay 17B Wall and Top Slab form Working Day 5 5 104-Jul-18 10-Jul-18 13-Jul-18 13-Jul-18 13-Jul-18 13-Jul-18 13-Jul-18 14-Jul-18 17-Jul-18 17-Jul	Say 17B Base Slab Rebar   2   2   29-Jun-18   30-Jun-18   -688   HK Working Day   30-Jun-18   -688   HK Working Day   30-Jun-18   -688   HK Working Day   30-Jun-18   -685   HK Working Day   30-Jun-18   -685

Current Works
Critical Works
Remaining Level of Effort

CHUN WO - CRGL JOINT VENTURE CEDD CONTRACT NO. HK/2009/02
WD II - Central Wanchai Bypass at Wan Chai East (Contract 2)
3-MONTH ROLLING PROGRAMME (data date 20-Jun-18)

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Page 4 of 5 CEDD CONTRACT HK/2009/02



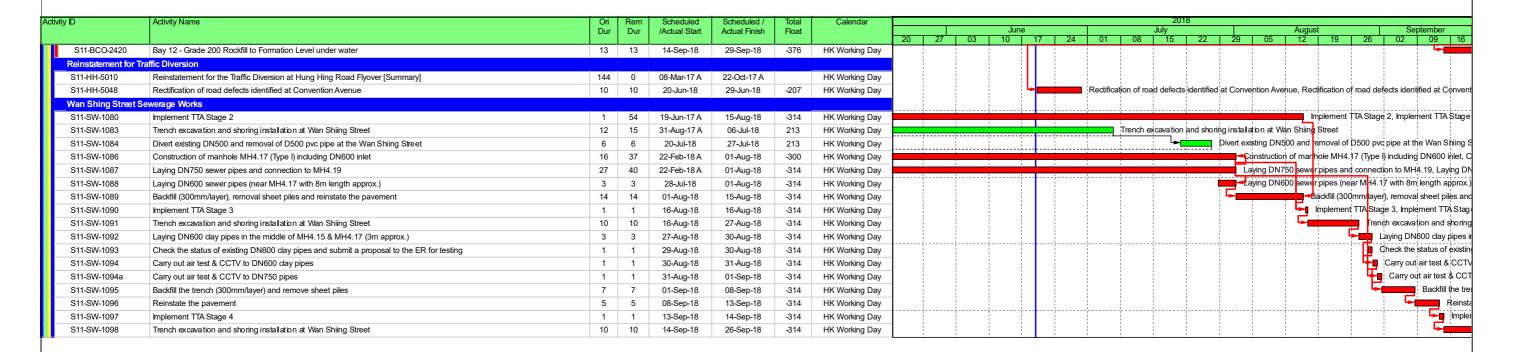
Current Works Critical Works

Remaining Level of Effort

**JOINT VENTURE** 

WD II - Central Wanchai Bypass at Wan Chai East (Contract 2) 3-MONTH ROLLING PROGRAMME (data date 20-Jun-18)

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Milestone
 Critical Milestones
 Current Works
 Critical Works
 Remaining Level of Effort

CHUN WO - CRGL JOINT VENTURE CEDD CONTRACT NO. HK/2009/02
WD II - Central Wanchai Bypass at Wan Chai East (Contract 2)
3-MONTH ROLLING PROGRAMME (data date 20-Jun-18)

Date	Revision	Checked	Approved

by by ID	Activity Name	Remaining Dur	Early Start	Early Finish	Arthurby S.				Centr	Wan	D Con Chai I an Cha	Develo ai Byp	opme	nt Ph	ase II	i Wes	t						20.00	Pa	ge:1/7		
120000	Revised Works Programme Rev.12.0(DD 20 No	CALADA CALADA CALADA	-chioarus	and their	Activity % Complete	Jan	Feb	Mar	Арг	May	Jun 20		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		2019 Jun	Jul	Aug	Sep	Oct
	nd Milestone Dates	vember 20	17)	West of																			10				
	Norks Completion (Included Not Granted EOT Enti	Hement of T	he Contractor)																								
KD10840	Completion of Section IIIA	n	ine contraction	08-Sep-18*	0%																						
KD10860	Complection of Section IV	0		30-Aug-18*	0%			1																			
KD10880	Completion of Section V	0		26-Sep-18*	0%																						
KD11010	Completion of Section VII	0		14-Sep-18*	0%																						
KD11020	Completion of Section VIII	0		21-Sep-18*	0%												9										
KD11040	Completion of Section IX	0		21-Sep-19*	0%																						
KD11060	Completion of Section X	0		21-Sep-18*	0%																					•	
Planned Sec	tions of Works Completion			Here des		+																					
KD10080	Planned Section IIIA Completion - Road A2,A4, A5	0		08-Sep-18	0%																						
KD10100	Planned Section IV Completion - Slip Road 3	0		30-Aug-18	0%														1								
KD10140	Planned Section V Completion - Remaining At-Grade Road	0		26-Sep-18	0%																			1			
KD10280	Planned Section VII Completion - Remainder Works	0		14-Sep-18	0%	1																					
KD10300	Planned Section VIII Completion - Landscape Softwork	0		21-Sep-18	0%	1																					
KD10320	Planned Section IX Completion - Establishment Works	0		21-Sep-19	0%			1																			
KD10340	Planned Section X Completion - Tree Protection & Preservation	0		21-Sep-18	0%									*					İ							•	
	d Reclamation Construction																										
Zone CRIII					100																						
Seawall Cons	struction - Zone CRIII																										
Zone CRIII S	eawall- 2nd Stage																	1	1					1			
Seawort 2 S					aluth)								8						1					3			
MAR21371	Zone CRIII - seawall 2 & 12 - Backfilling remaining portion (type A, geotextile and filter)	0	19-Jan-18 A	27-Jan-18 A	100%	-							į					1			1						
Zone D																		1		i			-1				
	truction - Zone D																				1						
Seawall 10 &																		Ī			1						
MAR20630	Zone D - Seawall 10 & 11: Install remaining seawall block	14	20-Feb-18*	05-Mar-18	0%		F	-																			
MAR20650	Zone D - Seawall 10 & 11: Backfill Type A	7	06-Mar-18	12-Mar-18	0%																						
MAR20670	Zone D - Seawall 10 & 11: Lay geotextile and filter	7	13-Mar-18	19-Mar-18	0%			-					*************	***************************************		***********						***********			WWW.WSZW		
	ection Completion																	i			İ						
Construction		PRESI:											1					Ī									
	Road A2, A4 & A5																		1					1			
Roadwork &	Utilities - Section 1 (L1806 - L1801)																										
ata Date:	Current Milestone				930		0.500	(52)	4.0										Date			Chec	ked		Approv	ed	
)-Feb-18	Actual Work Critical Remaining Work Remaining Work Remaining Level of Effort				Up (Ref	dated to R	d Wo	orks 2 as	Prog of 20	Feb:	e Reurary	v.12 2018	3)						20-Feb-	-18 1	2						

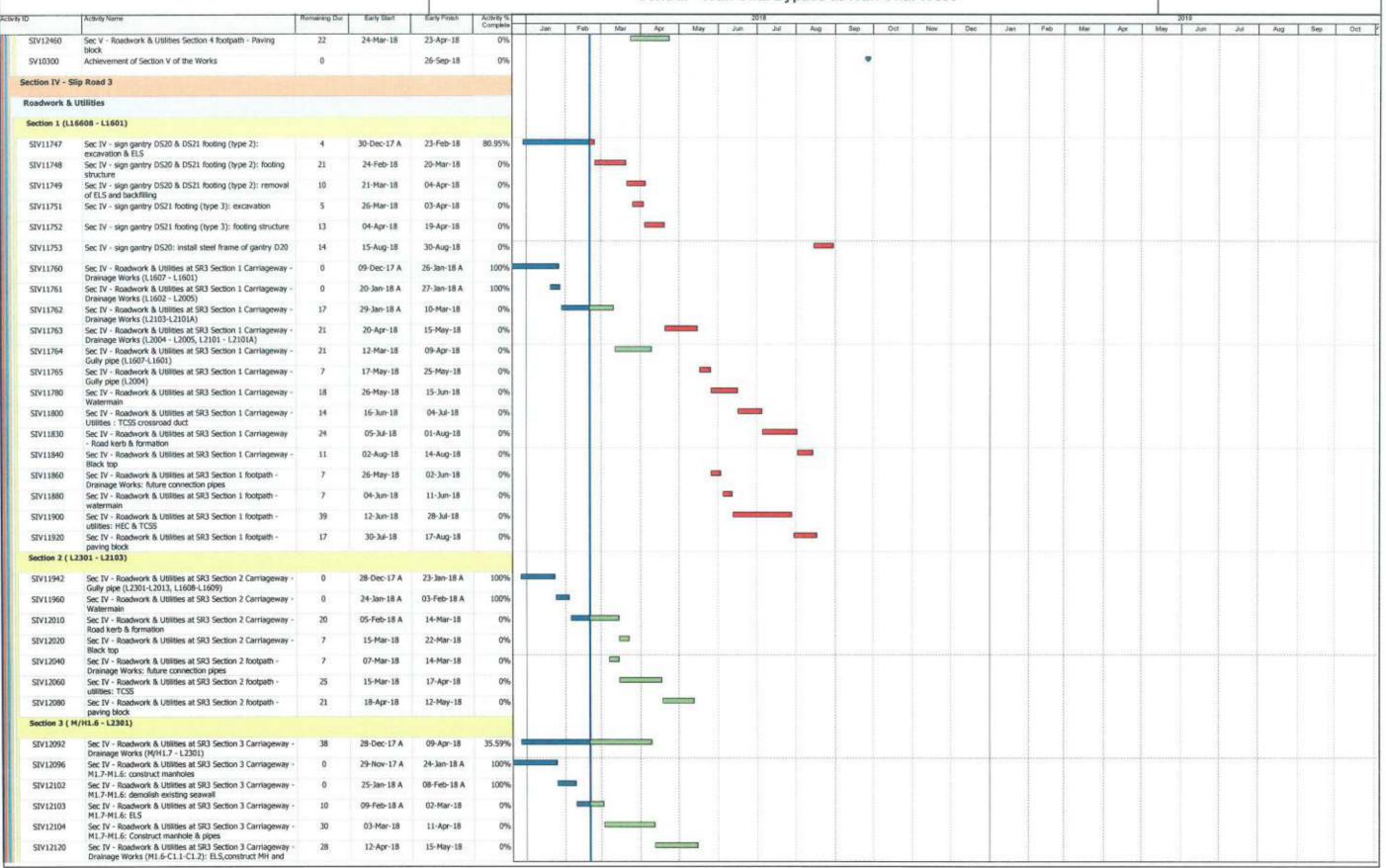
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rity ID	Activity Name	Remaining Dur	Early Start	Early Finish	Activity % Complete			-			018				_							2019				
SIIIA10279c	Sec III A - section 1 carriageway - sewerage pipe from M/H	0	02-Jan-18 A	03-Feb-18 A	100%	Jan F	eb Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
SIIIA10293	8C to F88 (night time): construct sewerage pipe Sec III A - section 1 carriageway - sewerage pipe from M/H F8B - F8A (night time)	6	05-Feb-18 A	26-Feb-18	0%	_	-																			
SIIIA10294	Sec III A - section 1 carriageway - sewerage pipe from M/H F8A - F8	8	17-Jan-18 A	28-Feb-18	27.27%																					
SIIIA10295	Sec III A - carriageway - works prrior TTA stage 5: excavation and duct laying of TCSS and public lighting	7	18-Jan-18 A	27-Feb-18	0%																					
SIIIA10298	Sec III A - section 1 carriageway - works prifor TTA stage 5: road kerb	5	28-Feb-18	05-Mar-18	0%		-																			
SHIA10301	Sec III A - section 1 carriageway - works prrior TTA stage S: road formation	2	06-Mar-18	07-Mar-18	0%		1																			
SIIIA10302	Sec III A - section 1 carriageway - works prrior TTA stage 5: laying asphalt	5	08-Mar-18	13-Mar-18	0%		-																			
SIIIA10303	Sec III A - section 1 carriageway - works prrior TTA stage 5: road marking & preparation works	3	14-Mar-18	16-Mar-18	0%																					
SIIIA10310	Sec III A - section 1 carriageway - TTA stage 5: Implementation of TTA Stage 5	1	17-Mar-18	17-Mar-18	0%		Y																			
SIIIA10310a	Sec III A - section 1 carriageway - TTA stage 5: remaining sewerage pipe for N/H F8A - M/H F8	12	19-Mar-18	04-Apr-18	0%		=	-																		
SIIIA10310b	Sec III A - section 1 carriageway - TTA stage 5: remaining sewerage pipe for N/H F8A - M/H F8B	18	06-Apr-18	26-Apr-18	0%		***************************************	-		in reterented		C11111111111														
SIIIA10310c	Sec III A - section 1 carriageway - TTA stage 5: SR1 at-grade road- remove sheetpile at U-trough west	5	19-Mar-18	23-Mar-18	0%	1 9																				
SIIIA10310d		21	24-Mar-18	21-Apr-18	0%																					
SIIIA10310e	Sec III A - section 1 carriageway - TTA stage 5: SR1 at-grade road -construct upstand wall above Dwall	25	23-Apr-18	23-May-18	0%												1									
SIIIA10310f	Sec III A - section 1 carriageway - TTA stage 5: SR1 at-grade road - roadside barrier	14	24-May-18	08-Jun-18	0%				-																	
SIIIA10310g	Sec III A - section 1 carriageway - TTA stage 5: SR1 at-grade road - road formation	7	09-Jun-18	16-Jun-18	0%																					
SIIIA10310h	Sec III A - section 1 carriageway - TTA stage 5: SR1 at-grade road - laying asphalt with transition slab	14	19-Jun-18	05-Jul-18	0%																					
SIIIA10312	Sec III A - roadwork and utities section 1 carriageway - Drainage works (12202 - 12201)	15	19-Mar-18	09-Apr-18	0%		-																			
SIIIA10312a	Sec III A - roadwork and utilities section 1 carriageway - Drainage works (L1805 - L1801)	15	10-Apr-18	26-Apr-18	0%		į	-	I .																	
SIIIA10312b	Sec III A - roadwork and utilities section 1 carriageway - Drainage works (L1805-1807)	12	27-Apr-18	11-May-18	0%																					
SIIIA10313	Sec III A - roadwork and utilities section 1 carriageway - gully pipe (L1807 - L1801)	14	07-May-18	23-May-18	0%																					
SIIIA10320	Sec III A - roadwork and utilities section 1 carriageway - fresh watermain	7	24-May-18	31-May-18	0%				-																	
SIIIA10340	Sec III A - roadwork and utilities section 1 carriageway - utilities: HEC (80m) along carriageway	14	01-Jun-18	16-Jun-18	0%																					
SIIIA10360	Sec III A - roadwork and utilities section 1 carriageway - road kerb & formation	14	19-Jun-18	05-Jul-18	0%					-													- 1			
SIIIA10400	Sec III A - roadwork and utilities section 1 carriageway - black top	7	06-Jul-18	13-Jul-18	0%		1	1			=															
SIIIA10420	Sec III A - Implementation of TTA Stage 7P (Closure of U-turn at Expo Drive)	1	14-Jul-18	14-Jul-18	0%						1															
SIIIA10440	Sec III A - roadwork and utilities section 1 carriageway : breaking existing asphalt	10	16-Jul-18	26-Jul-18	0%																					
SIIIA10460	Sec III A - roadwork and utilities section 1 carriageway: road kerb and formation	14	27-Jul-18	11-Aug-18	0%												3									
SIIIA10480	Sec III A - roadwork and utilities section 1 carriageway : black top	10	13-Aug-18	23-Aug-18	0%			1				1000														
SIIIA10500	Sec III A - roadwork and utilities section 1 carriageway : roadmarking and road furniture	14	24-Aug-18	08-Sep-18	096			1	1																	
Roadwork &	Utilities - Section 2 (L1810 - L1807)																						i			F. San
SIIIA12590	Sec III A - roadwork and utilities section 2 carriageway - black top	0	20-Jan-18 A	27-Jan-18 A	100%	-																				
Roadwork &	Utilities - Section 3 (L1808 - L1102)																	İ								
SIIIA12770	Sec III A - roadwork and utilities section 3 carriageway - utilities: HEC ducting (60m) & crossroad duct (PCCW & HGC)	0	20-Jan-18 A	07-Feb-18 A	100%			1																		
SIIIA12790	Sec III A - roadwork and utilities section 3 carriageway - road kerb & formation	17	08-Feb-18 A	10-Mar-18	0%	-		1																		
SIIIA12810	Sec III A - roadwork and utilities section 3 carriageway - black top	7	12-Mar-18	19-Mar-18	0%						2001120011200														<del>'''''''''''''''''''''''''''''''''''''</del>	) (min ) (m
Roadwork &	Utilities - Section 6 (L1102 - L1411)																									
SIIIA13399	Sec III A - roadwork and utilities section 6 carriageway - gully pipe (L1101 -L1102)	0	12-Jan-18 A	26-Jan-18 A	100%			1																		
SIIIA13444	Sec III A - roadwork and utities section 6 carriageway - watermain (road crossing)	0	27-Jan-18 A	03-Feb-18 A	100%	-												1					1			
SIIIA13445	Sec III A - roadwork and utities section 6 carriageway - utilities; crossed duct(HEC , HGC, PCCW)	13	05-Feb-18 A	06-Mar-18	0%	-																				

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10	Activity Name	Remaining Dur	Early Start	Early Finish	Activity % Complete	Jan	Feb	Mac	Apr	May	Jun 2	018 Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		2019 Jun	Jul	Aug	Sep	1 00
SIIIA13450	Sec III A - roadwork and utilities section 6 carniageway - road kerb & formation	18	07-Mar-18	27-Mar-18	0%											7000		Jun	700	(ma)	1 74	may.	3411	301	nug	oup	- 0
SIIIA13470	Sec III A - roadwork and utilities section 6 carriageway - black top	7	28-Mar-18	09-Apr-18	0%																						
SIIIA13570	Achievement of Section IIIA of the Works	0		08-Sep-18	0%																						
Section V - Re	maining At-Grade Road & Road P2					1																					
Roadwork &	Utilities																			1							
Section 1 (L1	504 - L1900)													-													
SV12456	Sec V-Roadwork & Utilities Section 1 - implementation of	0	20-Feb-18*	20-Feb-18	0%			Ī																			
SV12460	TTA stage 5E (dosure of slow lane at northbound of Expo Sec V - Roadwork & Utilities Section 1 - drinage works	15	20-Feb-18	08-Mar-18	0%																						
SV12462	(L1902 - L1900) Sec V - Roadwork & Utilities Section I - guilly pipe (L1902 -	6	09-Mar-18	15-Mar-18	0%			0																			
SV12464	L1900) Sec V - Roadwork & Utilities Section 1 - temp. reinstatement	14	16-Mar-18	04-Apr-18	0%																						
SV12466	to match with existing Expo Drive Sec V - Section 1 - Modification to 2nd stage ITA (V.O. 50) :	34.50	14-Jul-18	14-Jul-18	0%	***********			Ī	ļ			i			ļ											1111502
	closure of northbound and maintain one lane at southbound											_															
SV12468	Sec V - Roadwork & Utilities Section 1 Carriageway - breaking existing asphalt		16-Jul-18	23-Jul-18	0%			Ì				-															
SV12490	Sec V - Roadwork & Utilities Section 1 Carriageway - Road kerb & formation	10	24-Jul-18	03-Aug-18	0%							-															
5V12520	Sec V - Roadwork & Utilities Section 1 Carriageway - Black top	7	04-Aug-18	11-Aug-18	0%								-											ŝ			
SV12522	Sec V - Section 1 - Implementation of TTA for road closure of northbound and southbound of Expo Drive	3	13-Aug-18	15-Aug-18	0%			İ																			
SV12524	Sec V - Section 1 - Northbound & Southbound of Expo Drive : breaking asphalt	14	16-Aug-18	31-Aug-18	0%																						
SV12526	Sec V - Section 1 - Northbound & Southbound of Expo Drive : road kerb & formation	14	01-Sep-18	17-Sep-18	0%			-																			
SV12528	Sec V - Section 1 - Northbound & Southbound of Expo Drive : black top	. 7	18-Sep-18	26-Sep-18	0%		Ì																				
SV12570	Sec V - Roadwork & Utilities Section 1 footpath -	12	29-Dec-17 A	05-Mar-18	60%	-		_																			
SV12580	utilities: TCSS Sec V - Roadwork & Utilities Section I footpath - paving	29	06-Mar-18	12-Apr-18	0%				_																		
Section 2 ( L1	block 510 - L1504)					-		-		-								-									
SV12624	Sec V - Roadwork & Utilities Section 1 Carriageway - road	0	04-Jan-18 A	30-Jan-18 A	100%																						
SV12626	kerb & formation Sec V - Roadwork & Utilities Section 1 Carriageway - black	13	31-Jan-18 A	06-Mar-18	0%																						
SV12692	top Sec. V - Roadwork & Utilities Section 2 footpath - U channel	11	17-Jan-18 A	03-Mar-18	21.43%																						
SV12695	Sec V - Roadwork & Utilities Section 2 footpath - Watermain	13	05-Mar-18	19-Mar-18	0%																						
SV12700	Sec V - Roadwork & Utilities Section 2 footpath - utilities: TCSS	16	20-Mar-18	11-Apr-18	0%																						
SV12740	Sec V - Roadwork & Utilities Section 2 footpath - paving block	18	12-Apr-18	03-May-18	0%		1																				
Section 3 ( Ca	ilvert L - L1510)																										
SIV12860	Sec V - Roadwork & Utilities Section 3 footpath - Utilities: TCSS, HGC, PCCW)	30	16-Jan-18 A	26-Mar-18	11.76%																						
SIV12880	Sec V - Roadwork & Utilities Section 3 footpath - Paving block	21	27-Mar-18	24-Apr-18	0%																						
Section 4 (K1	106 - Culvert L)					(*)=+=======										d											-
SIV12282	Sec V - Roadwork & Utilities Section 4 Carriageway -	10	20-Feb-18	02-Mar-18	0%			=																			
SIV12300	Drainage Works (L1311 - Culvert L, L1201 - Culvert L) Sec V - Roadwork & Utilities Section 4 Carriageway - Gully	7	03-Mar-18	10-Mar-18	0%			-																			
SIV12302	pipe (L1301 - Culvert L, L1201 - Culvert L) Sec V - Roadwork & Utilities Section 4 Carriageway -	6	12-Mar-18	17-Mar-18	0%			-																			
SIV12305	watermain Sec V - Roadwork & Utilities Section 4 Carriageway - utilities	5 7	19-Mar-18	26-Mar-18	0%			-																			
SIV12310	: cross road duct Sec V - Roadwork & Utilities Section 4 Carriageway - Road	15	27-Mar-18	17-Apr-18	0%			1								] 9					ļ						
SIV12320	kerb & formation : between culvert K and culvert L Sec V - Roadwork & Utilities Section 4 Carriageway - Black	10	18-Apr-18	28-Apr-18	0%				Τ.																		
	top : between culvert K and culvert L	0.5%			0.000																						
SIV12340	Sec V - Roadwork & Utilities Section 4 Carriageway - Black top : at west of culvert K	7	20-Feb-18	27-Feb-18	0%																						
SIV12422	Sec V - Roadwork & Utilities Section 4 footpath - Utilities : TCSS	20	20-Feb-18	14-Mar-18	096		1																				
SIV12440	Sec V - Roadwork & Utilities Section 4 footpath - Utilities : HGC & PCCW	8	15-Mar-18	23-Mar-18	0%																						

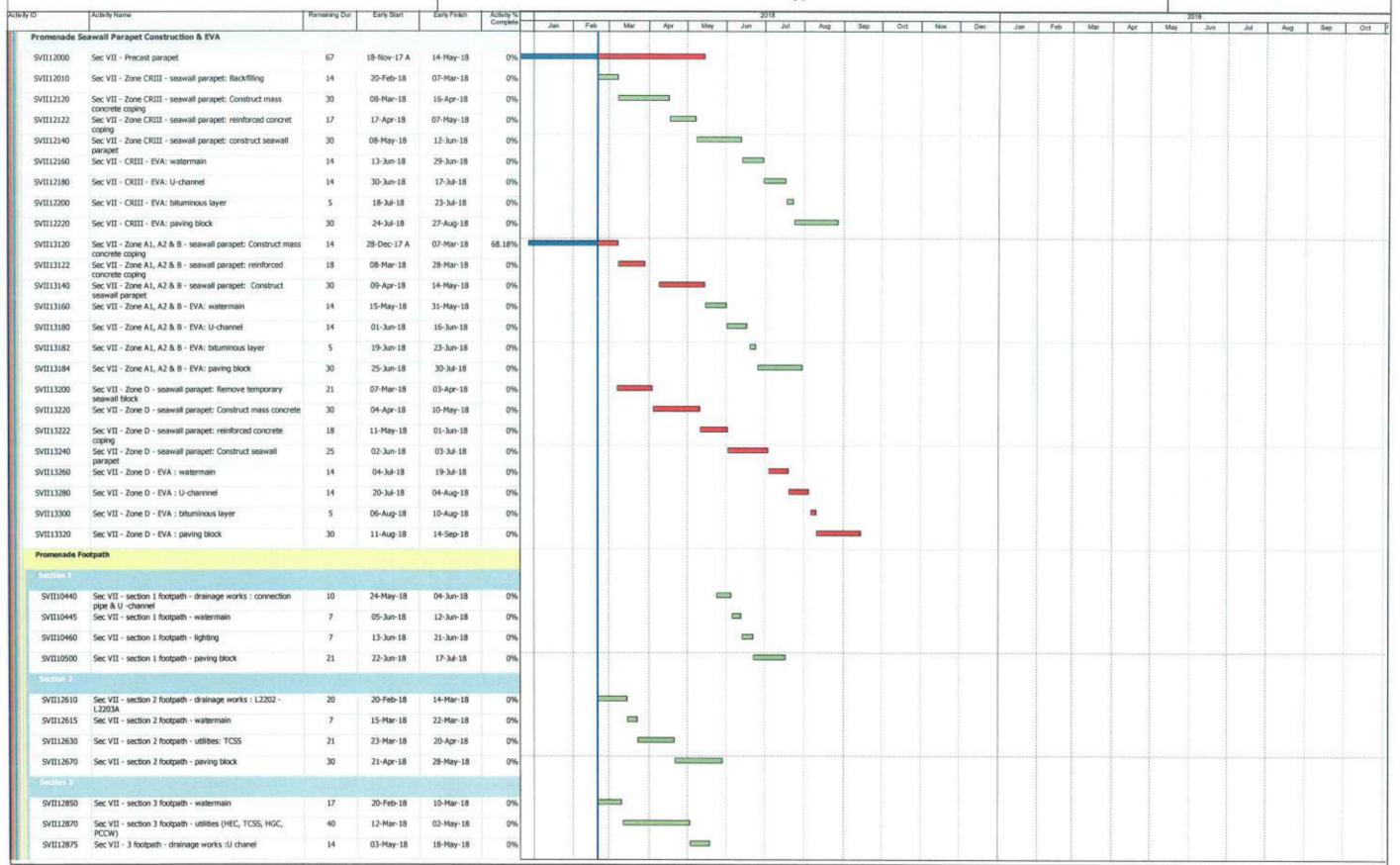
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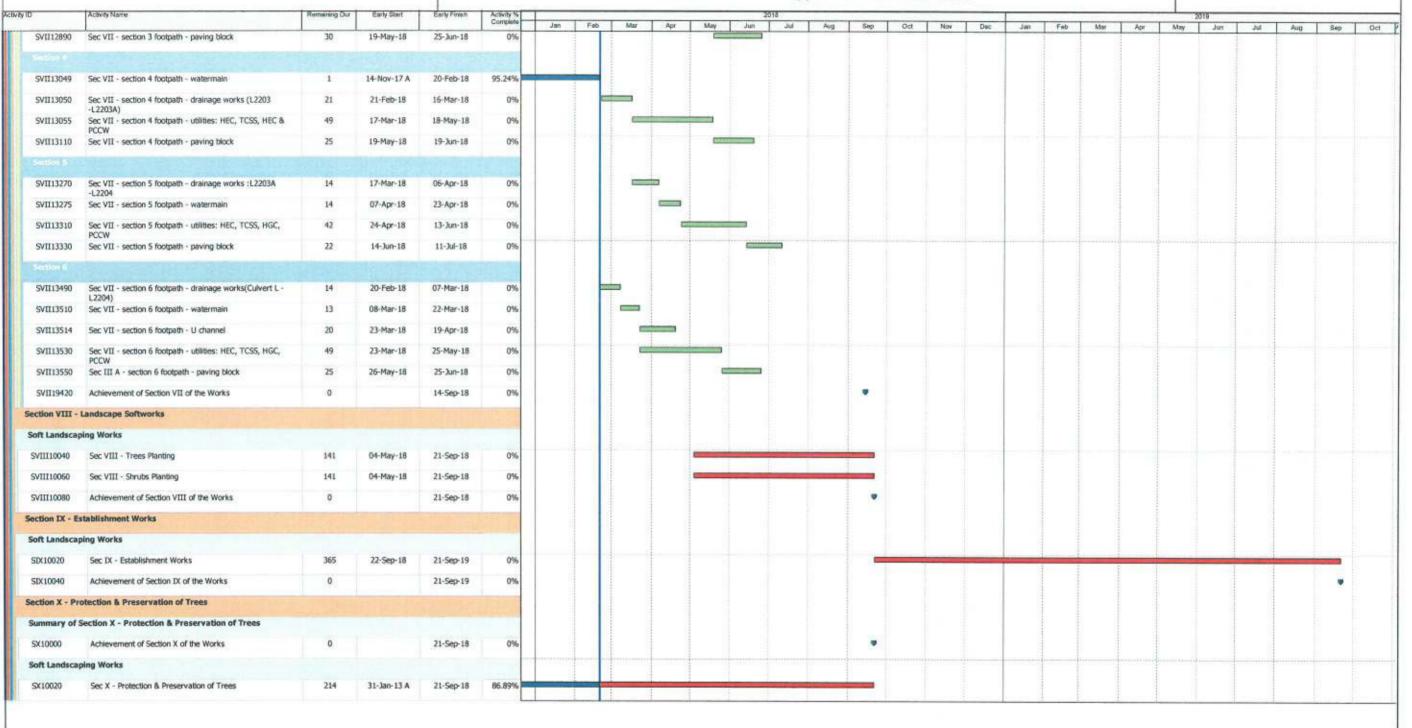
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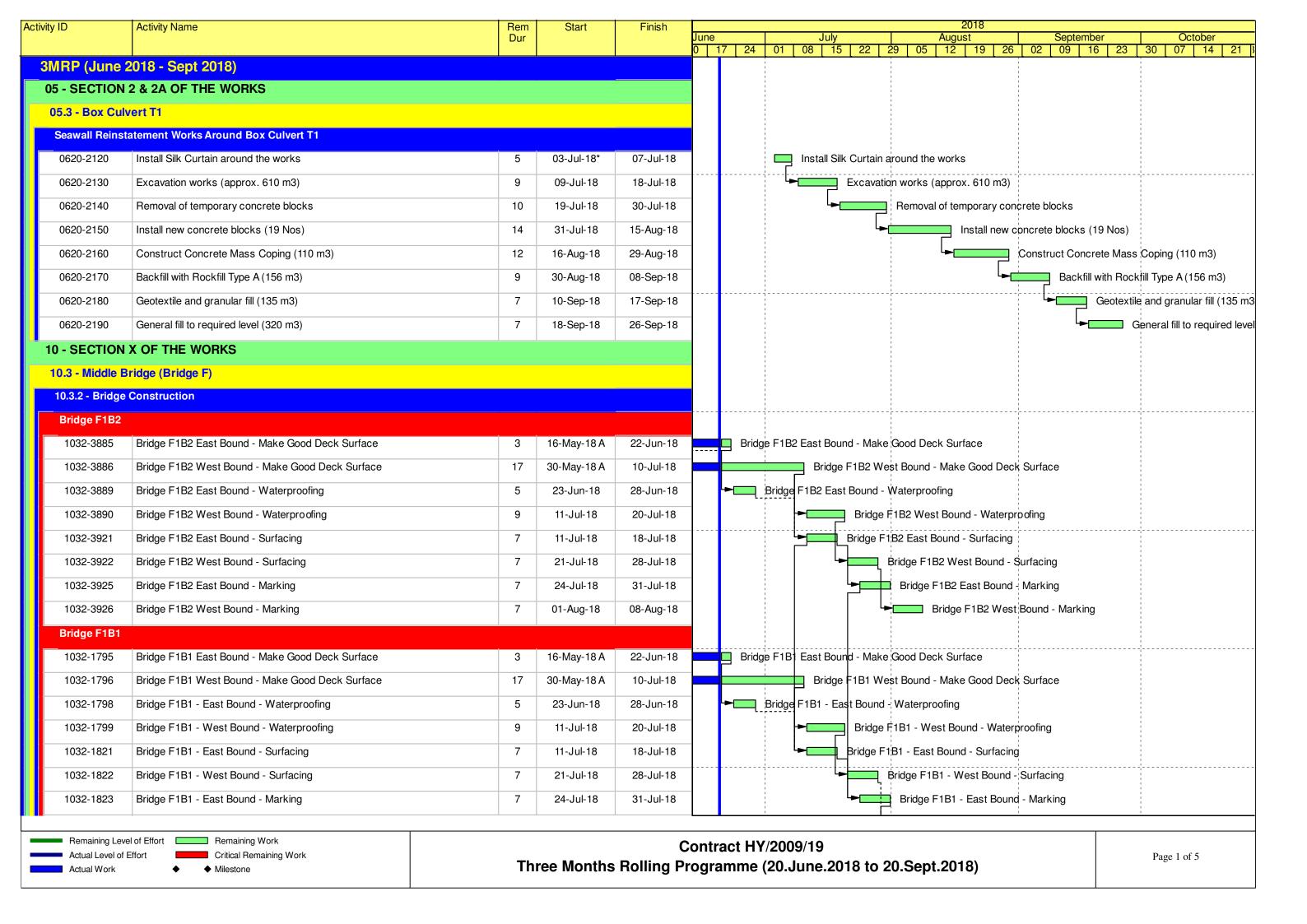
Vity ID	Activity Name	Remaining Dur	Early Start	Early Finish	Activity %.	Central - Wan Chai Bypass at Wan Chai West				
WEIGHT	N. 17 (1.30)		tony story	Carly Fillian	Activity % Complete	Feb Mar Apr May Jun Jul Acig Sep Oct Nov Dec Jan Fab Mar Apr N	2019 May Jun	Jul	Aug	Sep Oc
SIV12121	Sec IV - Roadwork & Utilities at SR3 Section 3 Carriageway - Drainage Works (M1.6-C1.1-C1.2): Backfilling & shift lane	6	16-May-18	23-May-18	0%		ay Jun	310	ma	sep Us
SIV12122	Sec IV - Roadwork & Utilities at SR3 Section 3 Carriageway - Drainage Works (M1.6-C1.1-C1.2): Construct MH C1.2	5	24-May-18	29-May-18	0%					
SIV12140	Sec IV - Roadwork & Utilities at SR3 Section 3 Carriageway - Gully pipe (M/H 1.7 - L2301)	32	10-Apr-18	17-May-18	0%			Ī		
STV12150	Sec IV - Roadwork & Utilities at SR3 Section 3 Carriageway -	14	18-May-18	04-Jun-18	0%					
SIV12155	Road kerb Sec IV - Roadwork & Utilities at SR3 Section 3 Carriageway - formation	10	05-Jun-18	15-Jun-18	0%					
SIV12160	Sec IV - Roadwork & Utilities at SR3 Section 3 Carriageway - Black top	7	16-Jun-18	25-Jun-18	0%					
SIV12170	Sec IV - Roadwork & Utilities at SR3 Section 3 footpath - Utilities: TCSS	21	10-May-18	04-Jun-18	0%					
SIV12180	Sec IV - Roadwork & Utilities at SR3 Section 3 footpath - U channel	10	05-Jun-18	15-Jun-18	0%					
SIV12220	Sec IV - Roadwork & Utilities at SR3 Section 3 footpath - Paving block	25	16-Jun-18	17-Jul-18	0%					
SIV12222	Achievement of Section IV of the Works	0		30-Aug-18	0%					
Section VII - Re	emainder Works							ļ		
Road & Draina	ge Works (Culvert L - M/H1.7, Adjacent to SR3)									
SVII11600	Sec IV - Roadwork & Utilities at SR3 Section 4 Carriageway -	48	08-Jan-18 A	20-Apr-18	18.64%					
SVII11620	Drainage Works (Culvert L -MH1.7) Sec IV - Roadwork & Utilities at SR3 Section 4 Carriageway :	3	21-Apr-18	24-Apr-18	0%					
SVII11640	traffic diversion at Lung King Street Sec IV - Roadwork & Utilities at SR3 Section 4 Carriageway -	27	25-Apr-18	28-May-18	0%					
SVII11650	Gully pipe (Culvert L -MH1.7) Sec IV - Roadwork & Utilities at SR3 Section 4 Carriageway -	7	29-May-18	05-Jun-18	0%					
SVII11654	TCSS duct Sec TV - Roadwork & Utilities at SR3 Section 4 Carriageway -	14	06-Jun-18	22-Jun-18	0%					
SVII11660	road kerb & formation Sec IV - Roadwork & Utilities at SR3 Section 4 Carriageway -	6	23-Jun-18	29-Jun-18	0%					
SVII11680	Black top Sec IV - Roadwork & Utilities at SR3 Section 4 footpath - U	14	29-May-18	13-Jun-18	0%					
SVII11700	channel Sec IV - Roadwork & Utilities at SR3 Section 4 footpath -	14	14-Jun-18	30-Jun-18	0%					
SVII11720	utilities: TCSS Sec IV - Roadwork & Utilities at SR3 Section 4 footpath -	14	03-Jul-18	18-Jul-18	0%					
Retaining Wall	paving block RW5 Construction									
SVII10660	Sec VII - Retaining Wall RW5 (bay 1) - construct base slab	22	20-Mar-18	18-Apr-18	0%					
SVII10680	and wall Sec VII - Retaining wall RW5 (bay 2) - construct base slab	22	19-Apr-18	15-May-18	0%		4 9			
SVII10800	and wall Sec VII - Retaining wall RW5 (bay 3) - construct base slab	22	20-Mar-18	18-Apr-18	0%					
SVII10820	and wall Sec VII - Retaining wall RW5 (bay 4) - construct base slab	22	19-Apr-18		0%					
SVII10860	and wall Sec VII - Retaining wall RW5 - curing, removal formwork		TO SECURE A SECURE	15-May-18	0000					
			16-May-18	25-May-18	0%					
Landing Steps										
Landing Steps	BSW13									
SVII10900	Sec VII - Landing steps (BSW13) - install vertical fender / step fender	15	15-May-18	01-Jun-18	0%		1			
SVII10920	Sec VII - Landing steps (BSW13) - install s.s. handrail / tactile / sign board / bollard	25	02-Jun-18	03-Jul-18	0%					
Landing Steps										
SVII10980	Sec VII - Landing steps (BSW4) - install vertical fender / step fender	15	20-Jun-18	07-Jul-18	0%					
SVII11000	Sec VII - Landing steps (BSW4) - Install s.s. handrall / tactile / sign board / bollard	25	09-Jul-18	06-Aug-18	0%					
Landing Steps										
SVII11060	Sec VII - Landing steps (BSW5) - install vertical fender / step	15	25-Jul-18	10-Aug-18	0%	<del>                                     </del>				
SVII11080	fender Sec VII - Landing steps (BSW5) - install s.s. handrail / tactile	25	11-Aug-18	08-Sep-18	0%					
Landing Steps	/ sign board / bollard BSW9									
SVII11140	Sec VII - Landing steps (BSW9) - install vertical fender / step	15	13-Jun-18	30-Jun-18	0%					
SVII11160	fender Sec VII - Landing steps (BSW9) - install s.s. handrail / factile	25	03-Jul-18	31-Jul-18	0%					
21111100	/ sign board / bollard		03-341-10	31-VW-19	U%			Ī		

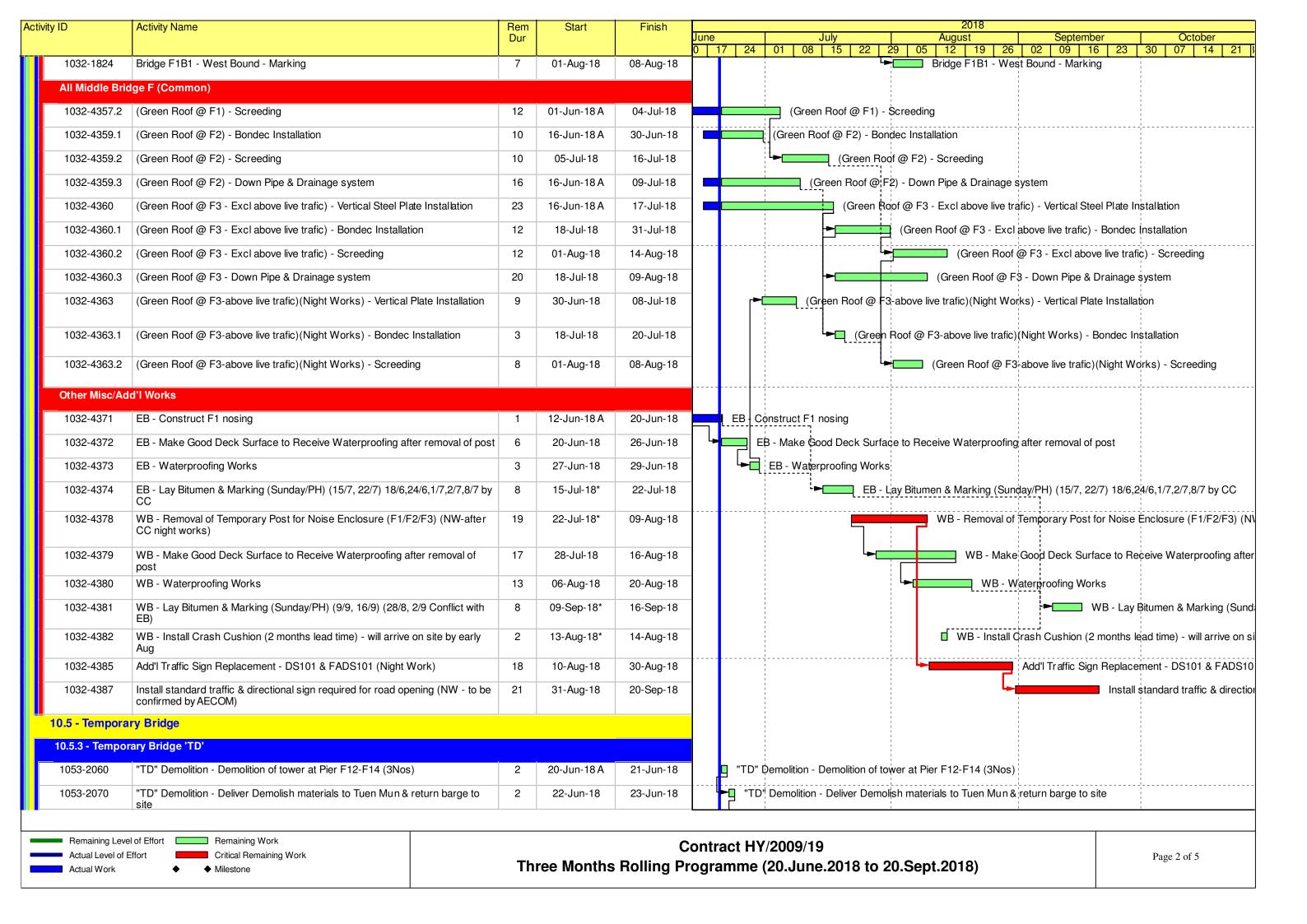
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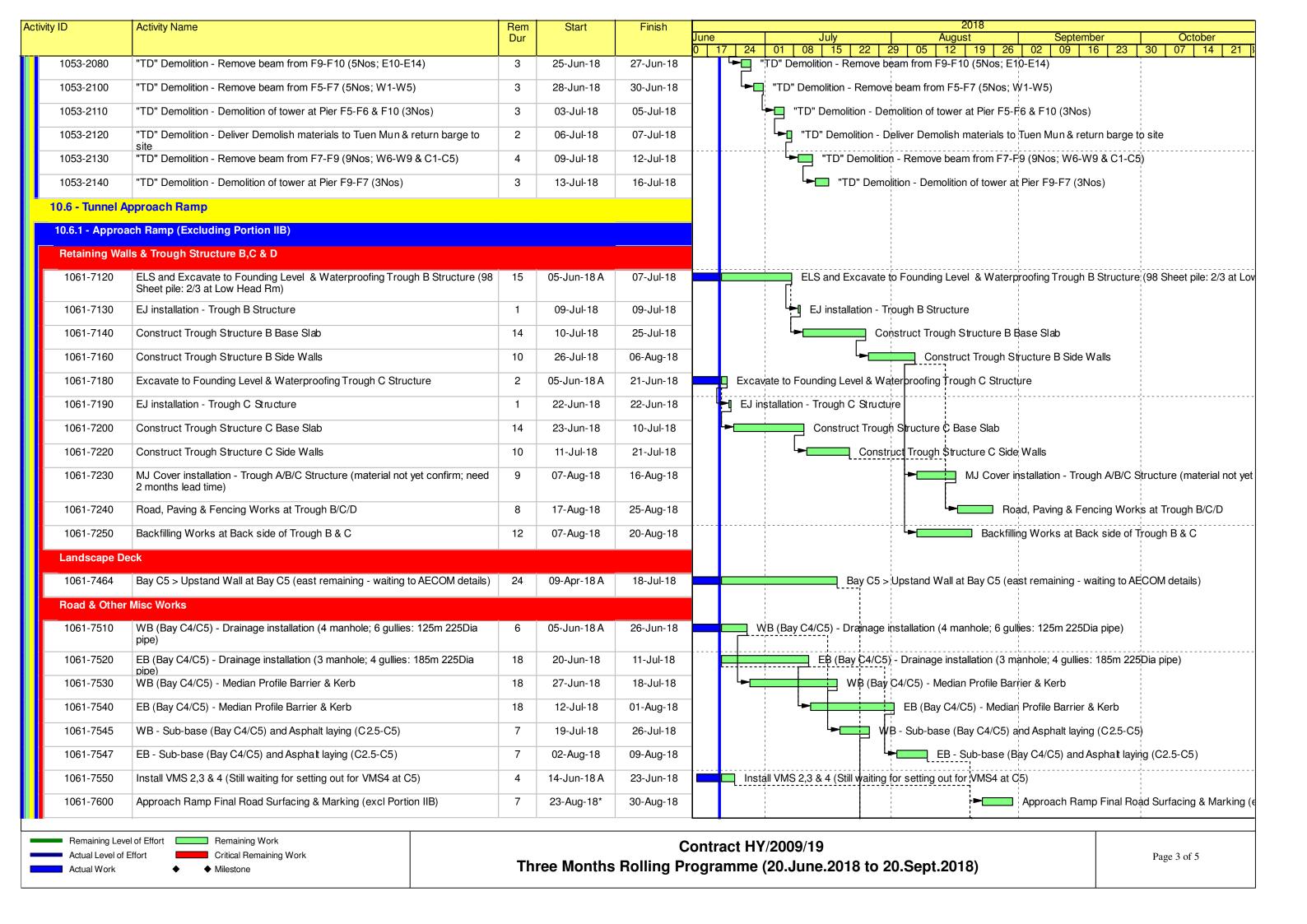


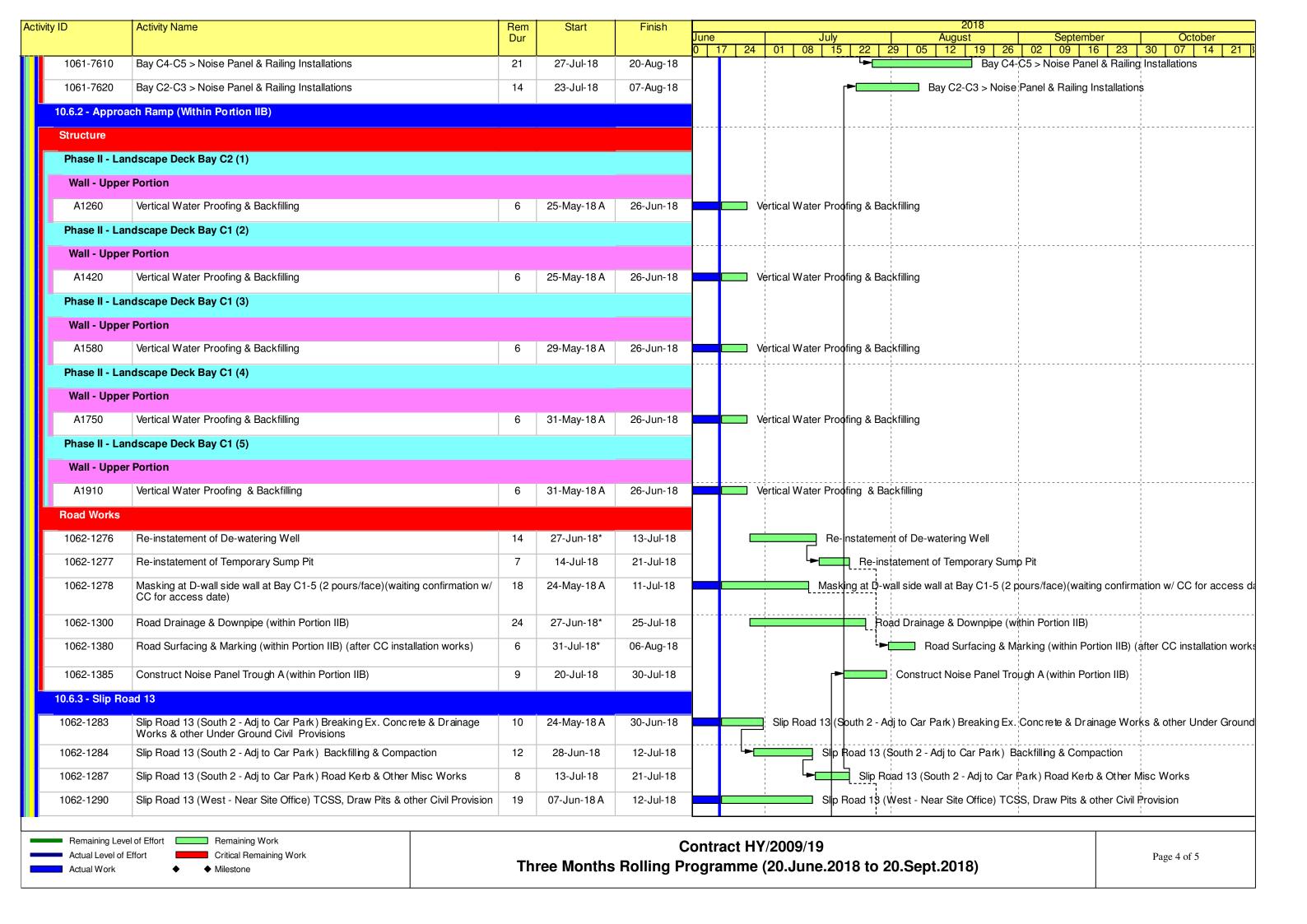
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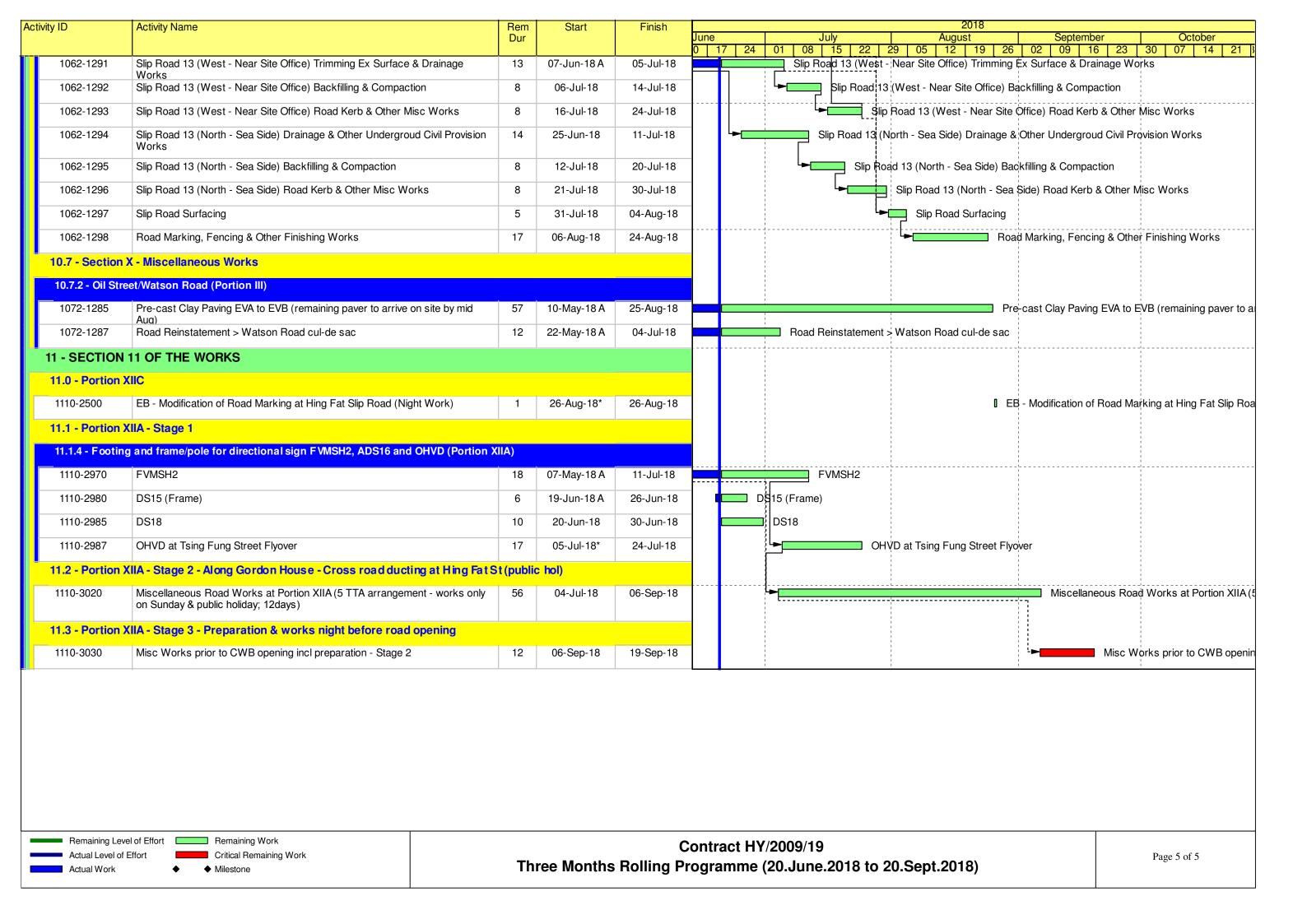


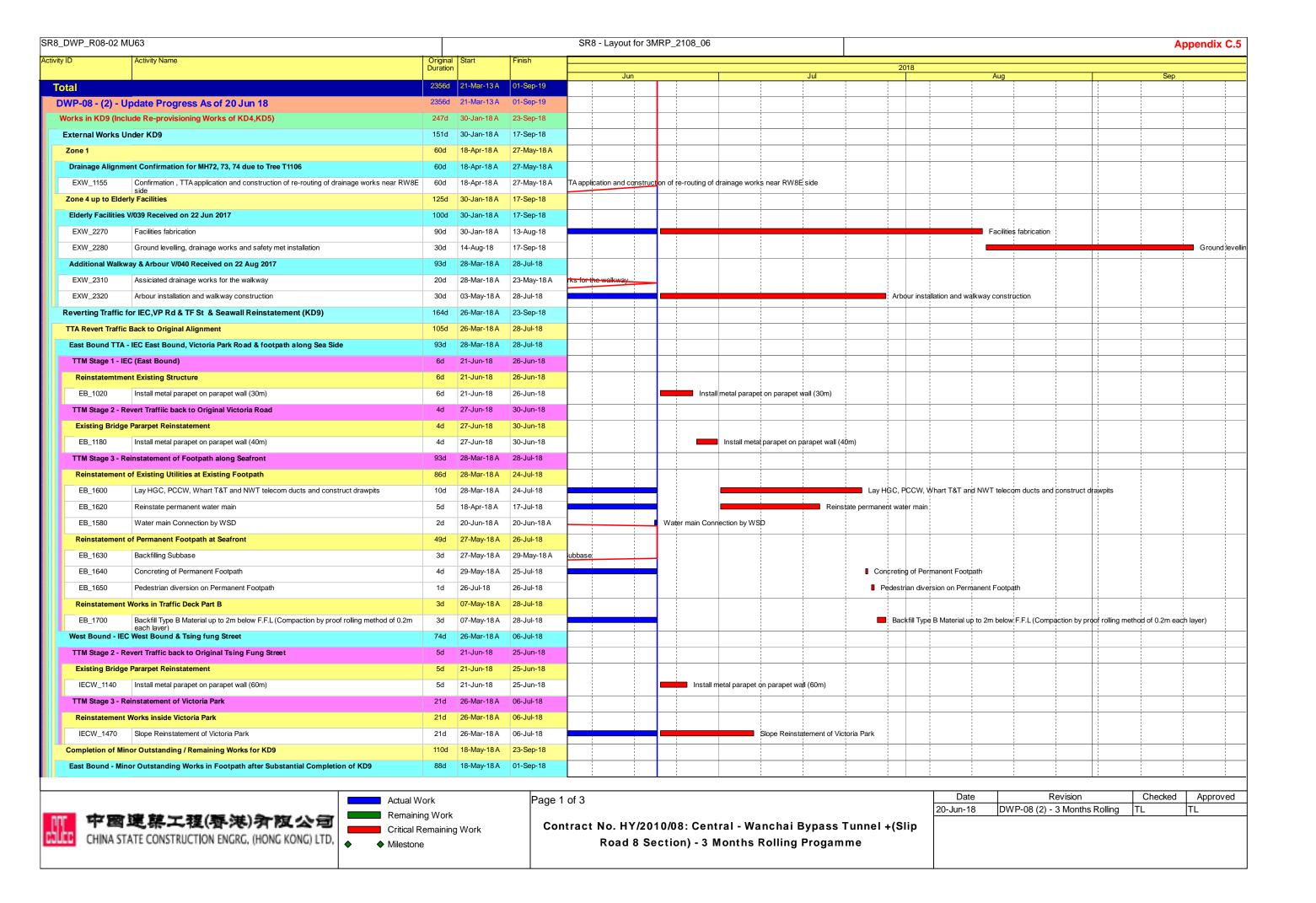


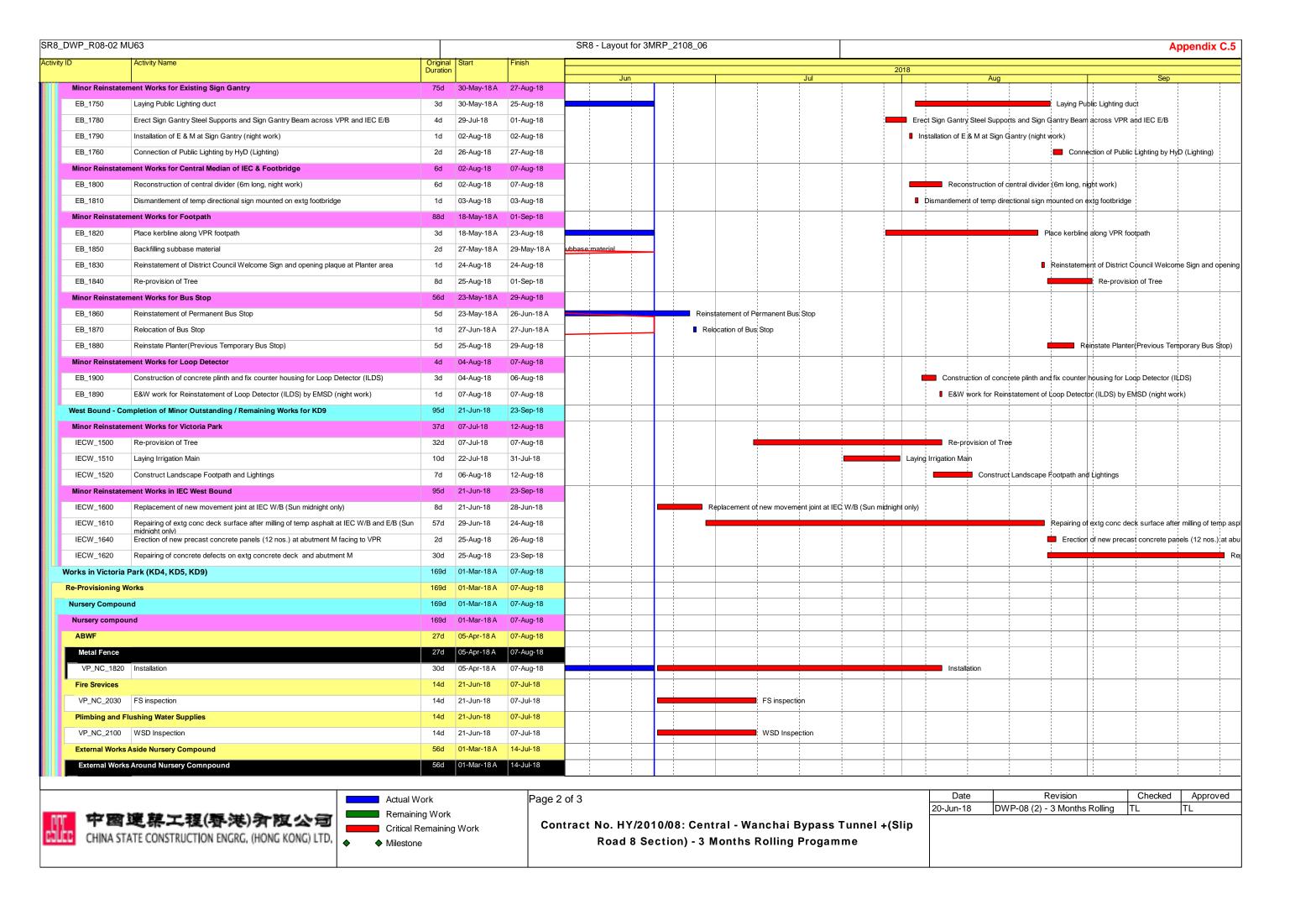


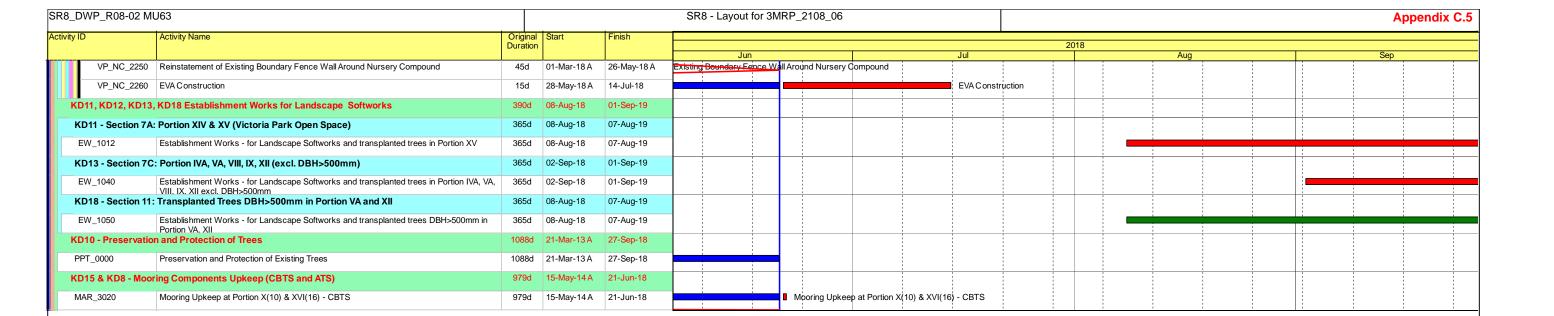


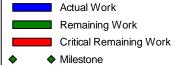












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Contract No. HY/2010/08: Central - Wanchai Bypass Tunnel +(Slip
Road 8 Section) - 3 Months Rolling Progamme

Date	Revision	Checked	Approved
20-Jun-18	DWP-08 (2) - 3 Months Rolling	TL	TL
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