



**CONTRACT NO: HY/2019/18**

**WANCHAI DEVELOPMENT PHASE II AND CENTRAL  
WANCHAI BYPASS  
SAMPLING, FIELD MEASUREMENT AND TESTING WORKS  
(STAGE 4)**

**ENVIRONMENTAL PERMIT NO. EP-356/2009**

**MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT**

**- OCTOBER 2021 -**

**CLIENTS:**

**Civil Engineering and Development  
Department**

**and**

**Highways Department**

**PREPARED BY:**

**Lam Geotechnics Limited**

Telephone: (852) 2882-3939

Facsimile: (852) 2882-3331

E-mail: [info@lamenviro.com](mailto:info@lamenviro.com)

Website: <http://www.lamenviro.com>

**CERTIFIED BY:**

---

Raymond Dai  
Environmental Team Leader

**DATE:**

November 2021



**TABLE OF CONTENTS**

**1 INTRODUCTION..... 8**

1.1 Scope of the Report ..... 8

1.2 Structure of the Report ..... 9

**2 PROJECT BACKGROUND..... 10**

2.1 Background ..... 10

2.2 Scope of the Project and Site Description..... 10

2.3 Division of the Project Responsibility ..... 12

2.4 Project Organization and Contact Personnel..... 14

**3 STATUS OF REGULATORY COMPLIANCE ..... 15**

3.1 Status of Environmental Licensing and Permitting under the Project..... 15

**4 MONITORING REQUIREMENTS ..... 17**

4.1 Noise Monitoring..... 17

4.2 Air Monitoring ..... 18

4.3 Water Quality Monitoring..... 21

**5. MONITORING RESULTS ..... 28**

**6. COMPLIANCE AUDIT ..... 32**

6.1 Review of the Reasons for and the Implications of Non-compliance..... 32

6.2 Summary of action taken in the event of and follow-up on non-compliance  
32

**7. CUMULATIVE CONSTRUCTION IMPACT DUE TO THE CONCURRENT  
PROJECTS..... 33**

**8. ENVIRONMENTAL SITE AUDIT ..... 34**

**9. COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION... 35**

**10. CONCLUSION..... 36**

**LIST OF TABLES**

<b>Table I</b>	<b>Summary of Water Quality Monitoring Exceedances in Reporting Month</b>
<b>Table II</b>	<b>Summary of Enhanced Dissolved Oxygen Monitoring Exceedances in Reporting Month</b>
<b>Table 2.1</b>	<b>Schedule 2 Designated Projects under this Project</b>
<b>Table 2.2</b>	<b>Details of Individual Contracts under the Project</b>
<b>Table 2.3</b>	<b>Contact Details of Key Personnel</b>
<b>Table 3.1</b>	<b>Summary of the current status on licences and/or permits on environmental protection pertinent to the Project</b>
<b>Table 4.1</b>	<b>Noise Monitoring Station</b>
<b>Table 4.2</b>	<b>Air Monitoring Station</b>
<b>Table 4.3</b>	<b>Marine Water Quality Stations for Water Quality Monitoring</b>
<b>Table 4.4</b>	<b>Marine Water Quality Monitoring Frequency and Parameters</b>
<b>Table 4.5</b>	<b>Marine Water Quality Stations for Enhanced Water Quality Monitoring</b>
<b>Table 9.1</b>	<b>Cumulative Statistics on Complaints</b>
<b>Table 9.2</b>	<b>Cumulative Statistics on Successful Prosecutions</b>
<b>Table 10.1</b>	<b>Construction Activities and Recommended Mitigation Measures in Coming Reporting Month</b>

**LIST OF FIGURES**

<b>Figure 2.1</b>	<b>Project Layout</b>
<b>Figure 2.2</b>	<b>Project Organization Chart</b>
<b>Figure 4.1</b>	<b>Locations of Environmental Monitoring Stations</b>

**LIST OF APPENDICES**

<b>Appendix 3.1</b>	<b>Environmental Mitigation Implementation Schedule</b>
<b>Appendix 4.1</b>	<b>Action and Limit Level</b>
<b>Appendix 6.1</b>	<b>Event Action Plans</b>
<b>Appendix 9.1</b>	<b>Complaint Log</b>

**EXECUTIVE SUMMARY**

- i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – **October 2021** for the Project of Wan Chai Development Phase II and Central-Wanchai Bypass under Environmental Permit no. EP-356/2009. This report presents the environmental monitoring findings and information recorded during the period of **27 September 2021 to 26 October 2021**. The cut-off date of reporting is at 26<sup>th</sup> of each reporting month.

Noise Monitoring

- ii. 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.
- iii. 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.
- iv. As confirmed by CWB RSS, the marine construction works under Contract HY/2010/08 and relevant reporting have been completed by 21 September 2018, the noise monitoring station namely M2b – Noon day gun area and M3a - Tung Lo Wan Fire Station association with Contract HY/2010/08 and relevant reporting has been ceased in the reporting month.
- v. As confirmed by WDII RSS, the marine construction works under HK/2012/08 and relevant reporting have been completed by 2 January 2019, the noise monitoring station namely M1a - Footbridge for Ex-Harbour Road Sports Centre association with Contract HK/2012/08 and relevant reporting has been ceased in the reporting month.
- vi. As confirmed by CWB RSS, the seabed reinstatement works was resumed under Contract HY/2009/15 at EX-PCWA area on 26 June 2019 and the relevant noise monitoring station monitoring station namely M2b – Noon day gun area and M3a - Tung Lo Wan Fire Station would be associated with Contract HY/2009/15 in the reporting month.
- vii. As confirmed by CWB RSS, the marine construction works under Contract HY/2009/19 and relevant reporting have been completed, the monitoring association with Contract HY/2009/19 namely M4b – Victoria Centre, M5b – City Garden and M6 –HK Baptist Church Henrietta Secondary School and relevant reporting has been ceased in the reporting month.
- viii. As confirmed by CWB RSS, the seabed reinstatement works was resumed under Contract HY/2010/08 at CBTS area on 7 August 2019 and the relevant noise monitoring station monitoring station namely M2b – Noon day gun area and M3a - Tung Lo Wan Fire Station would be associated with Contract HY/2010/08 in the reporting month.
- ix. Referring to WDII RSS confirmation on the completion of marine works under HK/2009/02 within the EP-356 area on 30 September 2019, the relevant noise monitoring station namely M1a – Footbridge for Ex-Harbour Road Sports Centre would not be associated with Contract HK/2009/02 in the reporting month.

- x. As confirmed by CWB RSS that marine works under HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, noise monitoring stations M2b – Noon-day gun area and M3a – Tung Lo Wan Fire Station under EP-356/2009 were suspended from 22 March 2021.

#### Air Quality Monitoring

- xi. 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.
- xii. 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.
- xiii. As confirmed by CWB RSS, the marine construction works under Contract HY/2010/08 and relevant reporting have been completed by 21 September 2018, the air monitoring stations namely CMA3a - CWB PRE Site Office association with Contract HY/2010/08 and relevant reporting has been ceased in the reporting month.
- xiv. As confirmed by WDII RSS, the marine construction works under HK/2012/08 and relevant reporting have been completed by 2 January 2019, the air monitoring stations namely CMA5b - Pedestrian Plaza, CMA6a – WDII PRE Office association with Contract HK/2012/08 and relevant reporting has been ceased in the reporting month.
- xv. As confirmed by CWB RSS, the seabed reinstatement works was resumed under Contract HY/2009/15 at EX-PCWA area on 26 June 2019 and the relevant air monitoring station monitoring station namely CMA3a – CWB PRE Site Office would be associated with Contract HY/2009/15 in the reporting month.
- xvi. As confirmed by CWB RSS, the marine construction works under Contract HY/2009/19 and relevant reporting have been completed, the monitoring association with Contract HY/2009/19 namely CMA1b – Harbour Grand Hotel Boundary Wall and CMA2a Causeway Bay Community Centre and relevant reporting has been ceased in June 2019 reporting month.
- xvii. As confirmed by CWB RSS, the seabed reinstatement works was resumed under Contract HY/2010/08 at CBTS area on 7 August 2019 and the relevant air monitoring station monitoring station namely CMA3a – CWB PRE Site Office would be associated with Contract HY/2010/08 in the reporting month.
- xviii. Referring to WDII RSS confirmation on the completion of marine works under HK/2009/02 within the EP-356 area on 30 September 2019, the relevant air quality monitoring stations namely CMA3a – CWB PRE Site Office and CMA4a - SPCA would not be associated with Contract HK/2009/02 in the reporting month.

- xix. As confirmed by CWB RSS that marine works under HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, air quality monitoring stations CMA3a – CWB PRE Site Office under EP-356/2009 was suspended from 22 March 2021.

#### Water Quality Monitoring

- xx. 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.
- xxi. 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.
- xxii. 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.
- xxiii. 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.
- xxiv. 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.
- xxv. 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.
- xxvi. 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.
- xxvii. 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.
- xxviii. 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
- xxix. 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.

- xxx. 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.
- xxxi. Enhanced DO monitoring at Windsor House Cooling (Station Ref: C7) was resumed from 1 February 2018 onwards with respect to the completion of removal of temporary reclamation zone.
- xxxii. Referring to CWB RSS confirmation on the completion of removal of temporary reclamation within the TS3 area and the completion of the post construction water quality monitoring, the respective Enhance DO Monitoring within TS3 for monitoring station C6 and C7 was temporarily suspended since 05 March 2018 onwards.
- xxxiii. Referring to CWB RSS confirmation on the completion of marine works within the TS3 area and the completion of the post construction water quality monitoring, the respective water quality monitoring within TS3 for monitoring station C7 was temporarily suspended since 29 October 2018 onwards.
- xxxiv. Referring to WDII RSS confirmation on the completion of marine works under HK/2012/08 within the EP-356 area on 2 January 2019 and the completion of the post construction water quality monitoring (From 2 January 2019 to 30 January 2019), the respective water quality monitoring stations P1, P3, P4, P5 and WSD19 within EP-356 area was temporarily suspended since 15 February 2019 onwards.
- xxxv. Referring to CWB RSS confirmation on the resumption of marine works within the CBTS area the respective water quality monitoring within CBTS for monitoring station C7 was resumed since 7 August 2019 and associated with Contract HY/2009/15 and HY/2010/08.
- xxxvi. Referring to WDII RSS confirmation on the completion of marine works under HK/2009/02 within the EP-356 area on 30 September 2019 and the completion of the post construction water quality monitoring (From 30 September 2019 to 26 October 2019), the respective water quality monitoring stations C1 and RW21-P789 within EP-356 area was temporarily suspended from 26 October 2019 onwards.
- xxxvii. Referring to CWB RSS confirmation, there was no marine works under EP-356/2009 until mid-September 2020. The respective water quality monitoring station C7 within EP-356 area was temporarily suspended from 15 May 2020 onwards.
- xxxviii. Referring to CWB RSS confirmation on the resumption of marine works within the CBTS area the respective water quality monitoring within CBTS for monitoring station C7 was resumed since 16 September 2020.
- xxxix. [As confirmed by CWB RSS that marine works under HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, 4 week post-construction water quality monitoring at C7 was commenced on 22 March 2021 and ended on 19 April 2021.](#)
- xl. [The water quality monitoring at Station C7 has been temporarily suspended since 20 April 2021 after the 4-week post-construction water quality monitoring as agreed with IEC.](#)



Complaints, Notifications of Summons and Successful Prosecutions

- xli. No environmental complaint, summons and prosecution were received in the reporting period.

Site Inspections and Audit

- xlii. As confirmed by CWB RSS that marine works under HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, weekly site inspection was suspended on 22 March 2021 as agreed with IEC.



## **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 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 during the period of [27 September 2021 to 26 October 2021](#). 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 ***Figure 2.1***.
- 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

- 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)
		DP1, DP2	25 August 2011 (Completed)
HK/2009/02	Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East	DP3, DP5	5 July 2010 (Completed)
		DP1	26 April 2011 (Completed)
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)



<b>Contract No.</b>	<b>Contract Title</b>	<b>Associated DP(s)</b>	<b>Construction Commencement Date</b>
HY/2009/19	Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link	DP1	24 March 2011
HK/2012/08	Wan Chai Development Phase II Central-Wan Chai Bypass at Wan Chai West	DP1,DP2, DP3	10 March 2014 (Completed)
HY/2010/08	Central- Wanchai Bypass Tunnel – Tunnel (Slip Road 8)	DP1, DP2, DP3	21 March 2013 (Completed)
HY/2011/08	Central-Wan Chai Bypass (CWB) – Tunnel Buildings, Systems and Fittings, and Works Associated with Tunnel Commissioning	DP1	8 October 2014 (Completed)

**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	Senior Resident Engineer	Mr. S.K. Lo	3519 9033	2587 1877
	Engineer's Representative for CWB	Chief Resident Engineer	Ms. Lydia Lee	3762 2760	2142 5577
Ramboll Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3465 2888	3465 2899
Lam Geotechnics Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Raymond Dai	2882 3939	2882 3331

### 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
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	Surrendered
Further Environmental Permit	FEP-04/356/2009	22 Nov 2010	Surrendered
Further Environmental Permit	FEP-05/356/2009	24 Mar 2011	Surrendered
Further Environmental Permit	FEP-06/356/2009	5 Mar 2013	Surrendered
Further Environmental Permit	FEP-07/356/2009	26 July 2013	Surrendered
Further Environmental Permit	FEP-08/356/2009	1 Aug 2016	Surrendered
Environmental Permit	EP-364/2009/H	22 Apr 2020	Valid
Further Environmental Permit	FEP-01/364/2009	24 Mar 2010	Surrendered
Further Environmental Permit	FEP-02/364/2009	21 Apr 2010	Surrendered
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	Surrendered
Further Environmental Permit	FEP-06/364/2009/A	22 Nov 2010	Surrendered
Further Environmental Permit	FEP-07/364/2009/H	22 Apr 2020	Valid
Further Environmental Permit	FEP-08/364/2009/A	15 Jun 2012	Surrendered





<b>Permits and/or Licences</b>	<b>Reference No.</b>	<b>Issued Date</b>	<b>Status</b>
Further Environmental Permit	FEP-09/364/2009/B	5 March 2013	Surrendered
Further Environmental Permit	FEP-10/364/2009/B	26 July 2013	Surrendered
Further Environmental Permit	FEP-11/364/2009/E	22 Dec 2016	Surrendered
Further Environmental Permit	FEP-12/364/2009/D	1 Aug 2016	Surrendered
Environmental Permit	EP-376/2009	13 Nov 2009	Valid
Further Environmental Permit	FEP-01/376/2009	31 Mar 2015	Surrendered
Further Environmental Permit	FEP-02/376/2009	1 Aug 2016	Surrendered

## 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
M1b	Wan Chai Ferry Pier*
M2b	Noon Gun Area
M3a	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 the temporary Footbridge for Harbour Road Sports, the respective noise monitoring station M1a was relocated to the rooftop of Wan Chai Ferry Pier, renamed M1b.

#### 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 ( $L_{eq}$ ).  $L_{eq}$  (30 minutes) shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods,  $L_{eq}$  (5 minutes) 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 <sup>TM</sup> 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
CMA3a	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.
- 4.2.4. For regular impact monitoring, the sampling frequency of at least once in every six-days, shall 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 m<sup>3</sup> 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 cm<sup>2</sup>;
  - 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 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 **Appendix 4.1**.
- 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
<b>WSD Salt Water Intake</b>			
WSD19	Sheung Wan	833415.0	816771.0
<b>Cooling Water Intake</b>			
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 (Wanchai Tower / Revenue Tower / Immigration Tower)	835895.2	816215.2
<b>Cooling Water Intake / WSD Salt Water Intake</b>			
RW21-P789	Great Eagle Centre/ Sun Hung Kai Centre/ WSD Wanchai salt water intake / China Resources Building	836268.0	816020.0

- 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 temporarily 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.
- 4-week post construction water quality monitoring at C7 was completed on 19 April 2021 and the water quality monitoring at C7 was temporarily suspended from 20 April 2021

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.

#### SALINITY

- 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	Proposed Exhibition Station / World Trade Centre
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 turbidity 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 shall 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 DISSOLVED OXYGEN MONITORING FOR CULVERT 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 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 **Figure 2.1** and **Figure 4.1**. The monitoring results are presented in according to the Individual Contract(s).
- 5.0.2. 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.
- 5.0.3. 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.
- 5.0.4. As confirmed by CWB RSS, the seabed reinstatement works was resumed under Contract HY/2009/15 at EX-PCWA area on 26 June 2019. The relevant noise monitoring station monitoring stations namely M2b – Noon day gun area, M3a - Tung Lo Wan Fire Station and relevant air quality monitoring stations namely CMA3a – CWB PRE Site Office would be associated with Contract HY/2009/15 in the reporting month.
- 5.0.5. As confirmed by CWB RSS, the marine construction works under Contract HY/2010/08 and relevant reporting have been completed by 21 September 2018, the air monitoring stations namely CMA3a - CWB PRE Site Office and noise monitoring station namely M2b – Noon day gun area and M3a - Tung Lo Wan Fire Station association with Contract HY/2010/08 and relevant reporting has been ceased in the reporting month.
- 5.0.6. As confirmed by WDII RSS, the marine construction works under HK/2012/08 and relevant reporting have been completed by 2 January 2019, the air monitoring stations namely CMA5b - Pedestrian Plaza, CMA6a – WDII PRE Office and noise monitoring station namely M1a - Footbridge for Ex-Harbour Road Sports Centre association with Contract HK/2012/08 and relevant reporting has been ceased in the reporting month.
- 5.0.7. As confirmed by CWB RSS, the marine construction works under Contract HY/2009/19 and relevant reporting have been completed, the monitoring association with Contract HY/2009/19 and relevant reporting has been ceased in the reporting month.
- 5.0.8. As confirmed by CWB RSS, the seabed reinstatement works was resumed under Contract HY/2010/08 at CBTS area on 7 August 2019. The relevant noise and air quality monitoring station monitoring station namely CMA3a – CWB PRE Site Office, M2b – Noon day gun area and M3a - Tung Lo Wan Fire Station would be associated with Contract HY/2010/08 in the reporting month.

- 5.0.9. Referring to WDII RSS confirmation on the completion of marine works under HK/2009/02 within the EP-356 area on 30 September 2019, the relevant air quality and noise monitoring stations namely CMA3a – CWB PRE Site Office, CMA4a - SPCA, and M1a – Footbridge for Ex-Harbour Road Sports Centre would not be associated with Contract HK/2009/02 in the reporting month.
- 5.0.10. 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.
- 5.0.11. 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.
- 5.0.12. 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.
- 5.0.13. 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.
- 5.0.14. As advised by the Contractor of HK/2009/01, all silt screen removal works at P1, P3, P4, P5 and C1 water quality monitoring stations were completed on 8 May 2016.
- 5.0.15. 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.
- 5.0.16. 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.
- 5.0.17. 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.
- 5.0.18. 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.

- 5.0.19. 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.
- 5.0.20. Referring to CWB RSS confirmation on the completion of marine works within the TS3 area and the completion of the post construction water quality monitoring, the respective water quality monitoring within TS3 for monitoring station C7 was temporarily suspended since 29 October 2018 onwards.
- 5.0.21. Referring to WDII RSS confirmation on the completion of marine works under HK/2012/08 within the EP-356 area on 2 January 2019 and the completion of the post construction water quality monitoring (From 2 January 2019 to 30 January 2019), the respective water quality monitoring stations P1, P3, P4, P5 and WSD19 within EP-356 area was temporarily suspended since 15 February 2019 onwards.
- 5.0.22. Referring to CWB RSS confirmation on the resumption of marine works within the CBTS area. The respective water quality monitoring within CBTS for monitoring station C7 was resumed since 7 August 2019 and associated with HY/2009/15 and HY/2010/08.
- 5.0.23. Referring to WDII RSS confirmation on the completion of marine works under HK/2009/02 within the EP-356 area on 30 September 2019 and the completion of the post construction water quality monitoring (From 30 September 2019 to 26 October 2019), the respective water quality monitoring stations C1 and RW21-P789 within EP-356 area was temporarily suspended from 26 October 2019 onwards
- 5.0.24. Referring to CWB RSS confirmation on the resumption of marine works within the CBTS area. The respective water quality monitoring within CBTS for monitoring station C7 was resumed since 7 August 2019 and associated with HY/2009/15 and HY/2010/08
- 5.0.25. Referring to CWB RSS confirmation, there was no marine works under EP-356/2009 until mid-September 2020. The respective water quality monitoring station C7 within EP-356 area was temporarily suspended from 15 May 2020.
- 5.0.26. Referring to CWB RSS confirmation on the resumption of marine works within the CBTS area the respective water quality monitoring within CBTS for monitoring station C7 was resumed since 16 September 2020
- 5.0.27. As confirmed by CWB RSS that marine works under HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, noise monitoring stations M2b – Noon-day gun area and M3a – Tung Lo Wan Fire Station, air quality monitoring stations CMA3a – CWB PRE Site Office under EP-356/2009 were suspended from 22 March 2021.
- 5.0.28. As confirmed by CWB RSS that marine works under HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, 4 week post-construction water quality monitoring at C7 was commenced on 22 March 2021 and ended on 19 April 2021.



5.0.29. The water quality monitoring at Station C7 has been temporarily suspended since 20 April 2021 after the 4-week post-construction water quality monitoring as agreed with IEC



## 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 Review of the Reasons for and the Implications of Non-compliance

- 6.1.1 As confirmed by CWB RSS that marine works for Contract no. HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, weekly site inspection was suspended on 22 March 2021 as agreed with IEC.

### 6.2 Summary of action taken in the event of and follow-up on non-compliance

- 6.2.1 As confirmed by CWB RSS that marine works for Contract no. HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, weekly site inspection was suspended on 22 March 2021 as agreed with IEC.

## **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 Final EM&A Report of EP-122/2002/E, the construction works at the area of EP-122/2002/E were completed. In view of the above, the cumulative construction impact due to the Central Reclamation Phase III (CRIII) was not anticipated.
- 7.0.4. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, no construction works under Wan Chai Development Phase II was conducted at Wan Chai. The major construction activities under Central-Wan Chai Bypass and Island Eastern Corridor Link Projects were bridge noise enclosure installation works, road works, drainage works and soft landscape works 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. As relevant site mitigation measures for air quality, construction noise and water quality were implemented, no significant air quality, noise and water quality impact was concluded in the reporting period. No construction work was conducted under EP-356/2009 in the reporting period. Thus, it is evaluated that the cumulative construction impact from the concurrent projects including 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. As confirmed by CWB RSS that marine works for Contract no. HY/2010/08 and HY/2009/15 under EP-356/2009 was completed on 22 March 2021, weekly site inspection was suspended on 22 March 2021.

**9. Complaints, Notification of Summons and Prosecution**

9.0.1. No environmental complaints, summons and prosecution were received in the reporting period.

9.0.2. The details of cumulative complaint log and updated summary of complaints are presented in **Appendix 9.1**

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	51
October 2021	0
<b>Total</b>	<b>51</b>

**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
<b>Total</b>	<b>-</b>	<b>0</b>	<b>0</b>

## **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. Termination of EM&A programme of construction phase under EM&A Manual section 10.5.1 is in progress.