Contents

[Executive summary](#_Toc116633812)

[1 Introduction](#_Toc116633813)

[1.1 Background](#_Toc116633814)

[1.2 Project Organisation](#_Toc116633815)

[1.3 Construction Works Status in the Reporting Period](#_Toc116633816)

[1.4 Summary of EM&A Requirements and Alternative Monitoring Locations](#_Toc116633817)

[1.4.1 EM&A Requirements](#_Toc116633818)

[1.4.2 Alternative Monitoring Locations](#_Toc116633819)

[2 Impact Monitoring Methodology](#_Toc116633820)

[2.1 Introduction](#_Toc116633821)

[2.2 Air Quality](#_Toc116633822)

[2.2.1 Monitoring Parameters, Frequency and Duration](#_Toc116633823)

[2.2.2 Monitoring Locations](#_Toc116633824)

[2.2.3 Monitoring Equipment](#_Toc116633825)

[2.2.4 Monitoring Methodology](#_Toc116633826)

[2.3 Noise](#_Toc116633827)

[2.3.1 Monitoring Parameters, Frequency and Duration](#_Toc116633828)

[2.3.2 Monitoring Location](#_Toc116633829)

[2.3.3 Monitoring Equipment](#_Toc116633830)

[2.3.4 Monitoring Methodology](#_Toc116633831)

[2.4 Landscape and Visual](#_Toc116633832)

[2.4.1 Monitoring Program](#_Toc116633833)

[3 Monitoring Results](#_Toc116633834)

[3.1 Impact Monitoring](#_Toc116633835)

[3.2 Air Quality Monitoring](#_Toc116633836)

[3.2.1 1-hour TSP](#_Toc116633837)

[3.2.2 24-hour TSP](#_Toc116633838)

[3.3 Noise Monitoring](#_Toc116633839)

[3.4 Landscape and Visual Impact](#_Toc116633840)

[4 Site Environmental Management](#_Toc116633841)

[4.1 Site Inspection](#_Toc116633842)

[4.1.1 Zone 2A](#_Toc116633843)

[4.1.2 Zone 2B & 2C](#_Toc116633844)

[4.2 Advice on the Solid and Liquid Waste Management Status](#_Toc116633845)

[4.2.1 Zone 2A](#_Toc116633846)

[4.2.2 Zone 2B & 2C](#_Toc116633847)

[4.3 Status of Environmental Licenses and Permits](#_Toc116633848)

[4.3.1 Zone 2A](#_Toc116633849)

[4.3.2 Zone 2B & 2C](#_Toc116633850)

[4.4 Recommended Mitigation Measures](#_Toc116633851)

[4.4.1 Zone 2A](#_Toc116633852)

[4.4.2 Zone 2B & 2C](#_Toc116633853)

[5 Compliance with Environmental Permit](#_Toc116633854)

[6 Report in Non-compliance, Complaints, Notification of Summons and Successful Prosecutions](#_Toc116633855)

[6.1 Record on Non-compliance of Action and Limit Levels](#_Toc116633856)

[6.2 Record on Environmental Complaints Received](#_Toc116633857)

[6.3 Record on Notifications of Summons and Successful Prosecution](#_Toc116633858)

[7 Future Key Issues](#_Toc116633859)

[7.1 Construction Works for the Coming Month(s)](#_Toc116633860)

[7.2 Key Issues for the Coming Month](#_Toc116633861)

[7.2.1 Zone 2A](#_Toc116633862)

[7.2.2 Zone 2B & 2C](#_Toc116633863)

[7.3 Monitoring Schedule for the Coming Month](#_Toc116633864)

[8 Conclusions and Recommendations](#_Toc116633865)

[8.1 Conclusions](#_Toc116633866)

[8.2 Recommendations](#_Toc116633867)

[Figure 1 Site Layout Plan and Monitoring Stations](fig_1.pdf)

[Appendices](#_Toc116633869)

[A. Project Organisation](app_a.pdf)

[B. Tentative Construction Programme](app_b.pdf)

[C. Action and Limit Levels for Construction Phase](app_c.pdf)

[D. Event and Action Plan for Air Quality, Noise, Landscape and Visual Impact](app_d.pdf)

[E. Monitoring Schedule](app_e.pdf)

[F. Calibration Certifications](app_f.pdf)

[G. Graphical Plots of the Monitoring Results](app_g.pdf)

[H. Meteorological Data Extracted from Hong Kong Observatory](app_h.pdf)

[I. Waste Flow table](app_i.pdf)

[J. Environmental Mitigation Measures – Implementation Status](app_j.pdf)

[K. Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions](app_k.pdf)

Executive summary

Apex Testing & Certification Limited (Apex) was commissioned to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for the construction activities in Zone 2A, consisting of Foundation, Excavation and Lateral Support Works for Integrated Basement and Underground Road (Contract No.: GW/2020/05/073); and Zone 2B & 2C consisting of Piling Works for Integrated Basement and Underground Road (Contract No.: CC/2020/2B/088) at WKCD. The major construction works and EM&A programme for Zone 2A and Zone 2B & 2C commenced on 03 October 2020 and 30 September 2021 respectively.

The Project Proponent is the West Kowloon Cultural District Authority (WKCDA). The overall works for the WKCD fall under two separate categories of Designated Project (DP) of the Environmental Impact Assessment Ordinance (EIAO), namely an “engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100 000” (Item 1 of Schedule 3) and “an underpass more than 100m in length under the built areas” (Item A.9, Part I, Schedule 2). An Environmental Permit No. EP-453/2013/B (EP) was issued with respect to the “Underpass Road and Austin Road Flyover Serving the West Kowloon Cultural District” which specifically includes the abovementioned category of DP under Item A.9, Part I, Schedule 2 of the EIAO.

This Monthly EM&A Report presents the monitoring works at Zone 2A and Zone 2B & 2C from 01 to 30 September 2022.

**Exceedance of Action and Limit Levels**

There was no breach of Action or Limit levels for Air Quality (1-hour TSP and 24-hour TSP) in this reporting month.

One Action Level exceedance due to one complaint with no Limit Level exceedance of Construction Noise was recorded in the reporting month.

**Implementation of Mitigation Measures**

Construction phase weekly site inspections were carried out on 01, 08, 15, 21 and 9 September 2022 for Foundation, Excavation and Lateral Support Works in Zone 2A and on 07, 14, 21 and 28 September 2022 for Piling Works in Zone 2B & 2C to confirm the implementation measures undertaken by the Contractors in the reporting month. The outcomes are presented in Section 4 and the status of implementation of mitigation measures in the site is shown in [**Appendix J**](app_j.pdf).

Landscape and visual impact inspections were conducted as part of the abovementioned weekly site inspections during the reporting month. No adverse comment on landscape and visual aspects was made during these inspections.

EPD inspection was conducted at Zone 2A on 16 September 2022.

EPD and DSD inspection was conducted at Zone 2B & 2C on 16 September 2022.

FEHD inspection was conducted at Zone 2B & 2C on 23 September 2022.

**Record of Complaints**

Two environmental complaints were recorded in the reporting month.

**Record of Notifications of Summons and Successful Prosecutions**

No notifications of summons and successful prosecutions were recorded in the reporting month.

**Future Key Issues**

The major site works for Zone 2A scheduled to be commissioned in the coming month include:

Zone 2A-1

* Hoarding Modification
  + Hoarding Modification
* BA14 Submission
  + BD Acknowledgement of BA14

Zone 2A-2

* BA14 Submission
  + BD Acknowledgement of BA14

The major site works for Zone 2B & 2C scheduled to be commissioned in the coming month include:

KD05 (Section 1), KD09 (Section 5)

* Predrilling
* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation

KD06 (Section 2), KD07 (Section 3)

* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation

KD08 (Section 4)

* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation
* Socketed Steel H Piling

Potential environmental impacts due to the construction activities, including air, noise, water quality, waste, landscape and visual, will be monitored or reviewed. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.

# Introduction

## Background

Apex Testing & Certification Limited (Apex) was commissioned to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for the construction activities in Zone 2A, consisting of Foundation, Excavation and Lateral Support Works for Integrated Basement and Underground Road (Contract No.: GW/2020/05/073) ; and Zone 2B & 2C consisting of Piling Works for Integrated Basement and Underground Road (Contract No.: CC/2020/2B/088) at WKCD. The purpose of the development in Zone 2A and Zone 2B & 2C is to reserve for Integrated Basement (IB) and Underground Road (UR). The Zone 2A construction activities involve the foundation, excavation and lateral support (ELS) works, road works, drainage diversion works, and temporary car parking. The Zone 2B & 2C construction activities involve the piling works. The major construction works and EM&A programme for Zone 2A and Zone 2B & 2C commenced on 03 October 2020 and 30 September 2021 respectively.

The overall works for the WKCD fall under two separate categories of Designated Project (DP) of the Environmental Impact Assessment Ordinance (EIAO), namely an “engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100 000” (Item 1 of Schedule 3) and “an underpass more than 100m in length under the built areas” (Item A.9, Part I, Schedule 2). An Environmental Permit No. EP-453/2013/B (EP) was issued with respect to the “Underpass Road and Austin Road Flyover Serving the West Kowloon Cultural District” which specifically includes the abovementioned category of DP under Item A.9, Part I, Schedule 2 of the EIAO. The captioned projects include part of the abovementioned underpass road located within the site boundary falls under this same category.

The Monthly EM&A Report is prepared in accordance with the Condition 3.4 of the Environmental Permit No. EP-453/2013/B. This Monthly EM&A Report presents the monitoring works at Zone 2A and Zone 2B & 2C from 01 to 30 September 2022. The purpose of this report is to summarise the findings in the EM&A of the project over the reporting period.

## Project Organisation

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are shown in [**Appendix A**](app_a.pdf).

## Construction Works Status in the Reporting Period

During the reporting period, construction works at Zone 2A undertaken include:

Zone 2A-1

* Hoarding Modification
  + Hoarding Modification
* BA14 Submission
  + Prepare and Submit BA14
  + BD Acknowledgement of BA14

Zone 2A-2

* BA14 Submission
  + BD Acknowledgement of BA14

During the reporting period, construction works at Zone 2B & 2C undertaken include:

KD05 (Section 1)

* Predrilling
* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation

KD06 (Section 2), KD07 (Section 3)

* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation

KD08 (Section 4)

* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation
* Socketed Steel H Piling

KD09 (Section 5)

* Predrilling
* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation
* Socketed Steel H Piling

The Construction Works Programme of Zone 2A and Zone 2B & 2C is provided in [**Appendix B**](app_b.pdf). A layout plan of the Project is provided in [**Figure 1**](fig_1.pdf). Please refer to [**Table 4.3**](#Table4_2) and [**Table 4.4**](#Table4_3) on the status of the environmental licenses.

## Summary of EM&A Requirements and Alternative Monitoring Locations

### EM&A Requirements

The EM&A programme requires environmental monitoring of air quality, noise, landscape and visual as specified in the approved EM&A Manual.

A summary of impact EM&A requirements is presented in [**Table 1.1**](#Table1_1).

Table .: Summary of Impact EM&A Requirements

| **Parameters** | **Descriptions** | **Locations** | **Frequencies** |
| --- | --- | --- | --- |
| Air Quality | 24-Hours TSP | AM3-The Victoria Towers Tower 1 | At least once every 6 days |
| 1-Hour TSP | AM3-The Victoria Towers Tower 1 | At least 3 times every 6 days |
| 24-Hours TSP | AM4-Canton Road Government Primary School | At least once every 6 days |
| 1-Hour TSP | AM4-Canton Road Government Primary School | At least 3 times every 6 days |
| 24-Hours TSP | AM5-Topside Developments at West Kowloon Terminus Site | At least once every 6 days |
| 1-Hour TSP | AM5-Topside Developments at West Kowloon Terminus Site | At least 3 times every 6 days |
| Noise | Leq, 30 minutes | NM2-The Arch, Sun Tower | Weekly |
| Leq, 30 minutes | NM3-The Victoria Towers Tower 1 | Weekly |
| Leq, 30 minutes | NM4-Canton Road Government Primary School | Weekly |
| Leq, 30 minutes | NM5-Development next to Austin Station | Weekly |
| Landscape & Visual | Monitor implementation of proposed mitigation measures during the construction stage | As described in Table 9.1 and 9.2 of the EM&A Manual | Bi-Weekly |

### Alternative Monitoring Locations

The EM&A programme for the Project should require 5 noise monitoring station and 5 air quality monitoring stations located closest to the Project area. With regard to the monitoring activities at M+ Museum and the Lyric Complex, three monitoring stations had been considered, including AM1 (International Commerce Centre), AM2 (The Harbourside Tower 1) for air monitoring, and NM1 (The Harbourside Tower 1) for noise monitoring.

In the context of the construction activities in Zone 2A and Zone 2B & 2C, all other monitoring locations including AM3 (The Victoria Towers Tower 1), AM4 (Canton Road Government Primary School), and AM5 (Topside Developments at West Kowloon Terminus Site) for air monitoring; and NM2 (The Arch, Sun Tower), NM3 (The Victoria Towers Tower 1), NM4 (Canton Road Government Primary School) and NM5 (Development next to Austin Station) for noise monitoring, have been taken into account. However, access to all these originally designated monitoring stations was declined as described below point-by-point.

The Arch management office and owners’ committee have formally declined the proposal of setting up noise monitoring instrument on its premises at the podium level of Sun Tower (NM2) on 24 July 2014. Thus, alternative noise monitoring location was identified at the ground floor in front of The Arch – Sun Tower (NM2A), which is at the same location as stated in the EM&A Manual for consistency. No management approval is required at the ground floor for conducting the noise monitoring. This alternative air monitoring location was approved by EPD on 29 September 2020.

The Victoria Towers management office formally declined the proposal of setting up air quality and noise monitoring instruments on its premises at the podium area of Tower 1 (AM3/NM3) on 16 June 2020. Alternative air monitoring location was identified at ground floor at the Northeast corner of West Kowloon Station’s station box (AM3A), in the same direction to the area of major construction site activities in Zone 2A. This alternative air monitoring location was approved by EPD on 29 September 2020. An alternative noise monitoring location was identified at the ground floor in front of the Xiqu Centre (NM3A), which is set closer to the construction site boundary with more direct line sight to the major site activities and higher exposure to the construction noise with no disturbance to the premises’ occupants during noise monitoring activities. No management approval is required at the ground floor for conducting the noise monitoring. This alternative air monitoring location was approved by EPD on 29 September 2020.

Canton Road Government Primary School formally declined the proposal of setting up air quality and noise monitoring instruments on its premise at the podium level (AM4/NM4) on 16 June 2020. Alternative air monitoring location was identified at ground floor at the Southeast corner ofWest Kowloon Station’s station box (AM4A), in same direction to the area of major construction site activities in Zone 2A. This alternative air monitoring location was approved by EPD on 29 September 2020. An alternative noise monitoring location was identified at the ground floor next to Tsim Sha Tsui Fire Station (NM4A), which is set closer to the construction site boundary with more direct line sight to the major site activities and higher exposure to the construction noise with no disturbance to the premises’ occupants during noise monitoring activities. No management approval is required at the ground floor for conducting the noise monitoring. This alternative air monitoring location was approved by EPD on 29 September 2020.

MTR also formally declined the access to the designated AM5 location (topside developments at West Kowloon Terminus Site) on 15 July 2020. Alternative air monitoring location was identified at ground floor at the North ofWest Kowloon Station’s station box (AM5A), in same direction to the area of major construction site activities in Zone 2A. This alternative air monitoring location was approved by EPD on 29 September 2020.

Grand Austin property management office formally declined our proposal of setting up noise monitoring instrument on its premises at the podium level (NM5) on 10 July 2020. Alternative noise monitoring location was identified at the Pedestrian road (ground floor) outside West Kowloon Station (NM5A), which is set closer to the construction site boundary with more direct line sight to the major site activities and higher exposure to the construction noise with no disturbance to the premises’ occupants during noise monitoring activities. No management approval is required at the ground floor for conducting the noise monitoring. This alternative air monitoring location was approved by EPD on 29 September 2020.

The Environmental Quality Performance Limits for air quality and noise are shown in **Appendix C**.

The Event and Action Plan for air quality, construction noise, and landscape and visual are shown in [**Appendix D**](app_d.pdf).

The EM&A programme followed the recommended mitigation measures in the EM&A Manual. The EM&A requirements as well as the summary of implementation status of the environmental mitigation measures are provided in [**Appendix J**](app_j.pdf).

# Impact Monitoring Methodology

## Introduction

Air quality and noise monitoring methodology, including the monitoring locations, equipment used, parameters, frequency and duration etc., are described in this Section. The environmental monitoring schedules for the reporting period and the tentative monitoring Schedule for the coming month are provided in [**Appendix E**](app_e.pdf).

The relevant EM&A monitoring requirements and details for landscape and audit impact, are also presented in this Section.

## Air Quality

### Monitoring Parameters, Frequency and Duration

[**Table 2.1**](#Table2_1) summarizes the monitoring parameters, frequency and duration of the TSP monitoring.

Table 2.1: Air Quality Monitoring Parameters, Frequency and Duration

| **Parameter** | **Frequency** | **Duration** |
| --- | --- | --- |
| 24-hour TSP | At least once in every six-days | 24 hours |
| 1-hour TSP | At least 3 times every six-days | 60 minutes |

### Monitoring Locations

Monitoring stations and locations are given in [**Table 2.2**](#Table2_2) and shown in [**Figure 1**](fig_1.pdf).

Table .: Air Quality Monitoring Station

| **Monitoring Station** | **Location Description** |
| --- | --- |
| AM3A | Northeast corner of West Kowloon Station’s station box (G/F) |
| AM4A | Southeast corner of West Kowloon Station’s station box (G/F) |
| AM5A | North of West Kowloon Station’s station box (G/F) |

### Monitoring Equipment

Continuous 24-hour TSP air quality monitoring was conducted using High Volume Sampler (HVS) (Model: TE-5170) located at the designated monitoring station. The HVS meets all the requirements stated in of the EM&A Manual. Portable direct reading dust meter was used to carry out the 1-hour TSP monitoring.[**Table 2.3**](#Table2_3)summarizes the equipment used in the impact air quality monitoring. Copies of the calibration certificates for the HVS, calibration kit and portable dust meters are attached in [**Appendix F**](app_f.pdf).

Table 2.3: TSP Monitoring Equipment

| **Equipment** | **Model** |
| --- | --- |
| **24-hour TSP monitoring** | |
| High Volume Sampler | TE-5170 (Serial No.: 4340; 3998; 4344) |
| Calibrator | TE-5025A (Orifice I.D.: 3543) |
| **1-hour TSP monitoring** | |
| Portable direct reading dust meter | Sibata LD-3B (Serial No.: 235811, 336338, 567188) |

Calibration of the HVS (five-point calibration) using Calibration Kit was carried out every two months. The HVS calibration orifice will be calibrated annually. Calibration certificate of the TE-5025A Calibration Kit and the HVS are provided in [**Appendix F**](app_f.pdf).

The 1-hour TSP monitoring should be determined periodically (e.g. annually) by the HVS to check the validity and accuracy of the results measured by direct reading method.

### Monitoring Methodology

**24-hour TSP Monitoring**

**Installation**

The HVS was installed at the site boundary. The following criteria were considered in the installation of the HVS.

* + A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
  + The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
  + A minimum of 2 metres separation from walls, parapets and penthouse was required for rooftop sampler.
  + A minimum of 2 metres separation from any supporting structure, measured horizontally was required.
  + No furnace or incinerator flues or building vent were nearby.
  + Airflow around the sampler was unrestricted.
  + The sampler has been more than 20 metres from any drip line.
  + Permission was obtained to set up the sampler and to obtain access to the monitoring station.
  + A secured supply of electricity is needed to operate the sampler.

**Preparation of Filter Papers**

* + Glass fibre filters were labelled and sufficient filters that were clean and without pinholes were selected.
  + The filters used are specified to have a minimum collection efficiency of 99 percent for 0.3 µm (DOP) particles.
  + All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C with relative humidity (RH) < 50% and was not variable by more than ±5 %. A convenient working RH was 40%. All preparation of filters was done by Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory.

**Field Monitoring Procedures**

* + The power supply was checked to ensure the HVS works properly.
  + The filter holder and the area surrounding the filter were cleaned.
  + The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
  + The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
  + The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
  + The shelter lid was closed and was secured with the aluminium strip.
  + The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
  + A new flow rate record sheet was set into the flow recorder.
  + The flow rate of the HVS was checked and adjusted at around 1.3 m3/min. The range specified in the EM&A Manual was between 0.6-1.7 m3/min.
  + The programmable timer was set for a sampling period of 24 hours, and the starting time, weather condition and the filter number were recorded.
  + The initial elapsed time was recorded.
  + At the end of sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
  + It was then placed in a clean plastic envelope and sealed.
  + All monitoring information was recorded on a standard data sheet.
  + Filters were sent to a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory for analysis.

**Maintenance and Calibration**

* + The HVS and its accessories are maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
  + HVSs were calibrated upon installation and thereafter at bi-monthly intervals. The calibration kits were calibrated annually.
  + Calibration records for HVS and calibration kit are shown in [**Appendix F**](app_f.pdf).

**1-hour TSP Monitoring**

**Field Monitoring**

The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer’s Instruction Manual as follows:

* + Turn the power on.
  + Close the air collecting opening cover.
  + Push the “TIME SETTING” switch to [BG].
  + Push “START/STOP” switch to perform background measurement for 6 seconds.
  + Turn the knob at SENSI ADJ position to insert the light scattering plate.
  + Leave the equipment for 1 minute upon “SPAN CHECK” is indicated in the display.
  + Push “START/STOP” switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
  + Pull out the knob and return it to MEASURE position.
  + Setting time period of 1 hour for the 1-hour TSP measurement.
  + Push “START/STOP” to start the 1-hour TSP measurement.
  + Regular checking of the time period setting to ensure monitoring time of 1 hour.

**Maintenance and Calibration**

* + The 1-hour dust meter would be checked at 3-month intervals and calibrated at 1-year intervals throughout all stages of the air quality monitoring.
  + Calibration records for direct dust meters are shown in [**Appendix F**](app_f.pdf).

**Weather Condition**

* + Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in [**Appendix H**](app_h.pdf).

## Noise

### Monitoring Parameters, Frequency and Duration

[**Table 2.4**](#Table2_4)summarizes the monitoring parameters, frequency and duration of noise monitoring. The noise in A-weighted levels Leq, L10 and L90 are recorded in a 30-minute interval between 0700 and 1900 hours.

Table .: Noise Monitoring Parameters, Period and Frequency

| **Time Period** | **Parameters** | **Frequency** |
| --- | --- | --- |
| Daytime on normal weekdays  (0700-1900 hours) | Leq(30 min), L90(30 min) & L10(30 min) | Once every week |

Note: \*70 dB(A) for schools and 65 dB(A) during school examination periods.

If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

### Monitoring Location

Noise monitoring stations and locations are given in [**Table 2.5**](#Table2_5) and shown in [**Figure 1**](fig_1.pdf).

Table .: Noise Monitoring Station

| **Monitoring Station** | **Location** |
| --- | --- |
| NM2A | The Arch – Sun Tower (G/F) |
| NM3A | Xiqu Centre (G/F) |
| NM4A | Next to Tsim Sha Tsui Fire Station (G/F) |
| NM5A | Pedestrian road (G/F) outside West Kowloon Station |

### Monitoring Equipment

Integrating Sound Level Meter was used for noise monitoring. It was a Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (LAeq) and percentile sound pressure level (Lx). They comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). [**Table 2.6**](#Table2_6)summarizes the noise monitoring equipment model being used.

Table .: Noise Monitoring Equipment

| **Equipment Model** |  |
| --- | --- |
| **Integrating Sound Level Meter** | **Calibrator** |
| AWA5661 (Serial No.: 301135) | Quest QC-10 (Serial No.: Q19010183) |

### Monitoring Methodology

**Field Monitoring**

* + The microphone of the Sound Level Meter was set at least 1.2 m above the ground.
  + Free Field measurement was made at NM5A monitoring location.
  + The battery condition was checked to ensure the correct functioning of the meter.
  + Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

- frequency weighting: A

- time weighting: Fast

- time measurement: 30 minutes intervals (between 0700-1900 on normal weekdays)

* + Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1 kHz. If the difference in the calibration level before and after measurement was more than 1 dB, the measurement would be considered invalid and has to be repeated after re-calibration or repair of the equipment.
  + During the monitoring period, the Leq, L10 and L90 were recorded. In addition, any site observations and noise sources were recorded on a standard record sheet.
  + A correction of +3dB(A) was made to the free field measurements.

**Maintenance and Calibration**

* + The microphone head of the sound level meter and calibrator is cleaned with soft cloth at quarterly intervals.
  + The sound level meter and calibrator are sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.
  + Calibration records are shown in [**Appendix F**](app_f.pdf).

**Weather Condition**

* + Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in [**Appendix H**](app_h.pdf).

## Landscape and Visual

### Monitoring Program

[**Table 2.7**](#Table2_7)details the monitoring program (as proposed in the WKCD EIA report) for landscape and visual impact during the construction phase.

Table .: Monitoring Program for Landscape and Visual Impact during Construction Phase

| Stage | Monitoring Task | Frequency | Report | Approval |
| --- | --- | --- | --- | --- |
| Construction | Monitor implementation of proposed mitigation measures during the construction stage. | Bi-weekly | ET to report on Contractor’s compliance | Counter-signed by IEC |

During the landscape and visual impact monitoring, any changes in relation to the landscape and visual amenity should be monitored with reference to the baseline conditions of the site. In addition, mitigation measures were proposed in the WKCD EIA report to minimise the landscape and visual impacts during the construction phase. The proposed mitigation measures as shown in Table 9.1 and Table 9.2 of the EM&A Manual should be checked for proper implementation.

# Monitoring Results

## Impact Monitoring

Air quality, noise and landscape and visual impact monitoring was undertaken in compliance with the EM&A Manual during the reporting month.

## Air Quality Monitoring

### 1-hour TSP

Results of 1-hour TSP are summarised in [**Table 3.1**](#Table3_1). Graphical plots of the monitoring results are shown in [**Appendix G**](app_g.pdf).

Table 3.1: Summary of 1-hour TSP monitoring results

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Monitoring Station | Monitoring Date | Start Time | 1-hour TSP (μg/m3) | | | Range (μg/m3) | Action Level (μg/m3) | Limit Level (μg/m3) |
| 1st Result | 2nd Result | 3rd Result |
| AM3A | 01-Sep-22 | 14:10 | 65 | 68 | 67 | 35-73 | 280.4 | 500 |
| 07-Sep-22 | 08:11 | 55 | 54 | 60 |
| 13-Sep-22 | 14:02 | 70 | 72 | 71 |
| 19-Sep-22 | 08:07 | 67 | 69 | 70 |
| 24-Sep-22 | 14:15 | 73 | 72 | 70 |
| 30-Sep-22 | 08:03 | 37 | 35 | 36 |
| AM4A | 01-Sep-22 | 14:18 | 65 | 72 | 70 | 31-77 | 278.5 | 500 |
| 07-Sep-22 | 08:19 | 53 | 53 | 52 |
| 13-Sep-22 | 14:10 | 63 | 69 | 67 |
| 19-Sep-22 | 08:15 | 70 | 68 | 66 |
| 24-Sep-22 | 14:23 | 77 | 77 | 72 |
| 30-Sep-22 | 08:11 | 32 | 40 | 31 |
| AM5A | 01-Sep-22 | 14:33 | 68 | 68 | 70 | 31-76 | 275.4 | 500 |
| 07-Sep-22 | 08:36 | 53 | 58 | 55 |
| 13-Sep-22 | 14:25 | 63 | 65 | 64 |
| 19-Sep-22 | 08:32 | 67 | 66 | 71 |
| 24-Sep-22 | 14:38 | 76 | 68 | 72 |
| 30-Sep-22 | 08:19 | 31 | 39 | 34 |

### 24-hour TSP

Results of 24-hour TSP are summarised in [**Table 3.2**](#Table3_2). Graphical plots of the monitoring results are shown in [**Appendix G**](app_g.pdf).

Table 3.2: Summary of 24-hour TSP monitoring results

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Monitoring Station | Monitoring Date | Start Time | Monitoring Results (μg/m3) | Range (μg/m3) | Action Level (μg/m3) | Limit Level (μg/m3) |
| AM3A | 01-Sep-22 | 10:00 | 62.4 | 30.8-66.6 | 152.4 | 260 |
| 07-Sep-22 | 10:00 | 56.8 |
| 13-Sep-22 | 10:00 | 66.6 |
| 19-Sep-22 | 10:00 | 66.3 |
| 24-Sep-22 | 10:00 | 65.0 |
| 30-Sep-22 | 10:00 | 30.8 |
| AM4A | 01-Sep-22 | 10:00 | 61.9 | 30.4-67.6 | 152.6 | 260 |
| 07-Sep-22 | 10:00 | 52.4 |
| 13-Sep-22 | 10:00 | 63.4 |
| 19-Sep-22 | 10:00 | 66.8 |
| 24-Sep-22 | 10:00 | 67.6 |
| 30-Sep-22 | 10:00 | 30.4 |
| AM5A | 01-Sep-22 | 10:00 | 66.0 | 28.6-66.3 | 141.1 | 260 |
| 07-Sep-22 | 10:00 | 51.3 |
| 13-Sep-22 | 10:00 | 61.2 |
| 19-Sep-22 | 10:00 | 63.7 |
| 24-Sep-22 | 10:00 | 66.3 |
| 30-Sep-22 | 10:00 | 28.6 |

No exceedance of 1-hour and 24-hour TSP (Action or Limit Level) was recorded in the reporting period.

## Noise Monitoring

The construction noise monitoring results are summarized in [**Table 3.3**](#Table3_3). Graphical plots of the monitoring data and the station set-up as façade and free-field measurements are shown in [**Appendix G**](app_g.pdf).

Table 3.3: Summary of noise monitoring results during normal weekdays

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Monitoring  Stations | Monitoring Date | Start Time | End Time | Leq (30 mins) dB(A) | Limit Level for Leq (dB(A)) |
| NM2A | 01-Sep-22 | 14:40 | 15:10 | 61.3 | 75 |
| 07-Sep-22 | 08:41 | 09:11 | 61.6 |
| 13-Sep-22 | 14:32 | 15:02 | 61.7 |
| 19-Sep-22 | 08:37 | 09:07 | 61.5 |
| 24-Sep-22 | 14:45 | 15:15 | 62.2 |
| 30-Sep-22 | 08:03 | 08:33 | 61.8 |
| NM3A | 01-Sep-22 | 16:10 | 16:40 | 64.9 | 75 |
| 07-Sep-22 | 10:14 | 10:44 | 65.2 |
| 13-Sep-22 | 16:02 | 16:32 | 64.4 |
| 19-Sep-22 | 10:10 | 10:40 | 63.5 |
| 24-Sep-22 | 16:15 | 16:45 | 63.7 |
| 30-Sep-22 | 09:45 | 10:15 | 63.5 |
| NM4A | 01-Sep-22 | 16:45 | 17:15 | 64.5 | 70/65^# |
| 07-Sep-22 | 10:49 | 11:19 | 65.0 |
| 13-Sep-22 | 16:37 | 17:07 | 63.9 |
| 19-Sep-22 | 10:45 | 11:15 | 62.9 |
| 24-Sep-22 | 16:50 | 17:20 | 63.1 |
| 30-Sep-22 | 10:20 | 10:50 | 63.0 |
| NM5A\* | 01-Sep-22 | 15:30 | 16:00 | 65.1 | 75 |
| 07-Sep-22 | 09:33 | 10:03 | 64.6 |
| 13-Sep-22 | 15:22 | 15:52 | 64.6 |
| 19-Sep-22 | 09:29 | 09:59 | 64.4 |
| 24-Sep-22 | 15:35 | 16:05 | 64.7 |
| 30-Sep-22 | 09:04 | 09:34 | 64.5 |

|  |
| --- |
| Remarks:  \* +3dB (A) correction was applied to free-field measurement.  ^ 70 dB(A) for schools and 65 dB(A) during school examination periods.  # No school examination was conducted in the reporting period. |

One Action Level exceedance due to one complaint with no Limit Level exceedance of Construction Noise was recorded in the reporting month

Construction works were extended to 1900-2300 hours on 01 to 03, 06, 09, 14, 19, 21 and 26 to 28 September 2022; and to holidays 1000-1900 hours on 04 and 18 September 2022. In accordance with the EM&A Manual, additional monitoring was carried out during the restricted hours on 01, 04, 06, 14, 18, 19 and 26 September 2022. The Leq (5 mins) is in the range of 56.1-65.1 dB(A). Construction Noise Permits for the works carried out during restricted hours were obtained and listed in **Table 4.3** and **Table 4.4**.

## Landscape and Visual Impact

Landscape and visual impact inspections were conducted as part of the weekly site inspections on 01, 15 and 29 September 2022 for Zone 2A and 07 and 21 September 2022 for Zone 2B & 2C during the reporting month. As reviewed by the registered Landscape Architect, no adverse comment on landscape and visual aspects was made during these inspections.

The landscape and visual mitigation measures were implemented during the reporting period. The summary of implementation status of the environmental mitigation measures is provided in [**Appendix J**](app_j.pdf).

# Site Environmental Management

## Site Inspection

### Zone 2A

Construction phase weekly site inspections were carried out on 01, 08, 15, 21 and 29 September 2022 at Zone 2A. The joint site inspection with IEC, ET, ER and Contractor for Zone 2A was held on 21 September 2022. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary.

EPD inspection was carried out on 16 September 2022 at Zone 2A site. The EPD inspectors focused on the discharge point. No adverse comment was given.

The key observations from the site inspections and associated recommendations are summarized in[**Table 4.1**](#Table4_1).

Table 4.1: Summary of Site Inspections and Recommendations for Zone 2A

| **Inspection Date** | **Parameter** | **Observation / Recommendation** | **Contactor’s Responses / Action(s) Undertaken** | **Close-out (Date)** |
| --- | --- | --- | --- | --- |
| 01-Sep-22 | Water Quality/ Land Contamination | The contractor was reminded that fuel drums shall only be stored in designated areas which have pollution prevention facilities or drip tray with adequate capacity. | The contractor has placed the fuel drums with drip tray. | 01-Sep-22 |
| 01-Sep-22 | Water Quality | The contractor was reminded that stagnant water in u-channel shall be removed regularly. | The contractor has removed the stagnant water in the u-channel. | 02-Sep-22 |
| 15-Sep-22 | Water Quality/ Land Contamination | The contractor was reminded that chemical container shall only be stored in designated areas which have pollution prevention facilities or drip tray with adequate capacity. | The contractor has removed the chemical container. | 16-Sep-22 |
| 21-Sep-21 | Air Quality/ Water Quality | The contractor was reminded that idle stockpile of dusty materials shall be fully covered with tarpaulin or removed off site as far as practicable. | The contractor has removed the idle stockpile off site. | 22-Sep-22 |
| 29-Sep-22 | Water Quality | The contractor was reminded that stagnant water near the seafront site boundary should be removed. | The contractor has removed the stagnant water near the seafront site boundary. | 29-Sep-22 |
| 29-Sep-22 | Water Quality | The contractor was reminded that sufficient nos. of water pump shall provide when rainstorms are likely. | The contractor has provided more water pumps standby on site. | 30-Sep-22 |

### Zone 2B & 2C

Construction phase weekly site inspections were carried out on 07, 14, 21 and 28 September 2022 at Zone 2B & 2C. The joint site inspection with IEC, ET, ER and Contractor for Zone 2B & 2C was held on 21 September 2022. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary.

EPD and DSD inspection was carried out on 16 September 2022 at Zone 2B & 2C site. EPD and DSD officers inspected the condition of wastewater treatment facilities, outfall, DSD manhole and the effluent discharge manhole. No adverse comments have been given.

FEHD inspection was carried out on 23 September 2022 at Zone 2B & 2C site. The purpose of the FEHD visit was to inspect the cleanness in front of the site entrance. No adverse comments have been given. FEHD officer reminded contractor to keep cleaning regularly and maintain the cleanness of public road.

The key observations from the site inspections and associated recommendations are summarized in [**Table 4.2**](#Table4_2).

Table 4.2: Summary of Site Inspections and Recommendations for Zone 2B & 2C

| **Inspection Date** | **Parameter** | **Observation / Recommendation** | **Contactor’s Responses / Action(s) Undertaken** | **Close-out (Date)** |
| --- | --- | --- | --- | --- |
| 07-Sep-22 | Air Quality | The contractor was reminded that NRMM label shall be properly displayed on all regulated machineries on site. | The contractor has provided the NRMM label for the regulated machineries. | 08-Sep-22 |
| 07-Sep-22 | Water Quality/Land Contamination | The contractor was reminded that fuel drums shall only be stored in designated areas which have pollution prevention facilities or drip tray with adequate capacity. | The contractor has removed the fuel drums to designated areas. | 08-Sep-22 |
| 07-Sep-22 | Noise impact | The contractor was reminded that noise barriers shall be set up properly to minimize noise impact to the NSRs | The contractor has properly set up the noise barriers to minimize noise impact. | 08-Sep-22 |
| 07-Sep-22 | Land Contamination | The contractor was reminded that to clean up the oil stains to minimize any potential for contamination of inert C&D materials. | The contractor has cleaned up the oil stains. | 08-Sep-22 |
| 14-Sep-22 | Waste  Management | The contractor was reminded to  carry out waste sorting as far as  practicable and to remove all  general refuse to designated  landfill facilities regularly. | The contractor has removed  general refuse to designated  landfill facilities. | 20-Sep-22 |
| 14-Sep-22 | Water Quality/Land Contamination | The contractor was reminded that fuel drums shall only be stored in designated areas which have pollution prevention facilities or drip tray with adequate capacity. | The contractor has removed the fuel drums to designated areas. | 19-Sep-22 |
| 14-Sep-22 | Water Quality/Land Contamination | The contractor was reminded to clean up the drip trays regularly to avoid overflow and maintain sufficiency of drip tray capacity. | The contractor has cleaned up the drip tray. | 14-Sep-22 |
| 14-Sep-22 | Land Contamination | The contractor was reminded that to clean up the oil stains to minimize any potential contamination to the surrounding area. | The contractor has cleaned up the oil stains. | 14-Sep-22 |
| 21-Sep-22 | Noise impact | The contractor was reminded to close the door/flap of the air compressor/power pack/generator when they are in use. | The contractor has closed the door/flap of the air compressor/power pack/generator. | 28-Sep-22 |
| 21-Sep-22 | Water Quality | The contractor was reminded that temporary drainage system shall be cleaned regularly to ensure the temporary drainage system can be operated efficiently. | The contractor has cleaned up the stagnant water. | 21-Sep-22 |
| 21-Sep-22 | Waste  Management | The contractor was reminded to  Remove general refuse to designated landfill facilities regularly to avoid accumulation. | The contractor has removed  general refuse to designated  landfill facilities. | 28-Sep-22 |
| 21-Sep-22 | Noise impact | The contractor was reminded that noise barriers shall be set up properly to minimize noise impact to the NSRs. | The contractor has properly set up the noise barriers to minimize noise impact. | 22-Sep-22 |
| 21-Sep-22 | Air Quality | The contractor was reminded that NRMM label shall be displayed on all regulated machineries which can be easily visible. | The contractor has properly displayed the NRMM label on the regulated machineries. | 21-Sep-22 |
| 28-Sep-22 | Noise impact | The contractor was reminded that noise barriers shall be set up properly particular for RCD platforms and power pack to minimize noise impact to the NSRs. | The contractor has properly set up the noise barriers for the RCD platforms and power pack. | 05-Oct-22 |
| 28-Sep-22 | Water Quality | The contractor was reminded that idle stockpile of dusty materials shall be fully covered with tarpaulin or removed off site as frequently as practicable. | The contractor has removed the idle stockpile from the site. | 05-Oct-22 |
| 28-Sep-22 | Air Quality | The contractor was reminded to strengthen the dust suppression measures at the construction area to minimize dust impact. | The contractor has spayed water at the construction area. | 05-Oct-22 |
| 28-Sep-22 | Noise impact | The contractor was reminded to close the door/flap of the air compressor/power pack/generator when they are in use. | The contractor has closed the door/flap of the air compressor/power pack/generator. | 28-Sep-22 |

## Advice on the Solid and Liquid Waste Management Status

The Contractors have been registered as a chemical waste producer for the Project. Construction and demolition (C&D) material sorting will be carried out on site. A sufficient number of receptacles were available for general refuse collection.

### Zone 2A

As advised by the Zone 2A Contractor, 28.53 tonnes and 71.02 tonnes of inert C&D material were disposed of as public fill to Tseung Kwan O Area 137 Public Fill and Tuen Mun Area 38 Public Fill respectively, while 13.82 tonnes of general refuse were disposed of at SENT landfill respectively. 0.0 tonne of metals, 0.0 tonne of paper/cardboard packaging, 0.0 tonne of plastics and 0.0 tonne of timber was collected by recycling contractors in the reporting month. 37.09 tonnes of inert C&D material were reused on site. 0.0 tonne of inert C&D material were reused in other projects and 0.0 tonne of inert C&D material was imported for reuse at site in the reporting month. 5.75 tonnes of inert C&D material were disposed to sorting facility and 0.0 tonne of chemical waste was collected by licensed contractors in the reporting period.

### Zone 2B & 2C

As advised by the Zone 2B & 2C Contractor, 9333.41 tonnes and 23108.52 tonnes of inert C&D material were disposed of as public fill to Tseung Kwan O Area 137 Public Fill and Tuen Mun Area 38 Public Fill respectively, while 29.88 tonnes of general refuse were disposed of at SENT landfill. 15.80 tonne of metals, 0.0 tonne of paper/cardboard packaging, 0.0 tonne of plastics and 0.0 tonne of timber was collected by recycling contractors in the reporting month. 3664.45 tonnes of inert C&D material were reused on site. 2790.24 tonnes of inert C&D material were reused in other projects and 0.0 tonne of inert C&D material was imported for reuse at site in the reporting month. 0.0 tonne of inert C&D material was disposed to sorting facility and 0.0 tonne of chemical waste was collected by licensed contractors in the reporting period.

The cumulative waste generation records for Zone 2A and Zone 2B & 2C are shown in [**Appendix I**](app_i.pdf).

## Status of Environmental Licenses and Permits

The environmental permits, licenses, and/or notifications on environmental protection for this Project which were valid during the period are summarised in [**Table 4.3**](#Table4_2).

### Zone 2A

Table .: Status of Environmental Submissions, Licenses and Permits for Zone 2A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Permit / License No.  / Notification /  Reference No. | Valid Period | | Status | Remarks |
| From | To |
| **Chemical Waste Producer Registration** | | | | |
| WPN5113-256-B2597-01 | 10-Sep-20 | -- | Valid | -- |
| **Billing Account Construction Waste Disposal** | | | | |
| 7037500 | 09-Jun-20 | -- | Account Active | -- |
| **Construction Noise Permit** | | | | |
| GW-RE0432-22 | 11-May-22 | 10-Nov-22 | Valid | Pumping Test |
| **Wastewater Discharge License** | | | | |
| WT00037344-2021 | 01-Feb-21 | 28-Feb-26 | Valid | -- |
| **Notification under Air Pollution Control (Construction Dust) Regulation** | | | | |
| 456376 | 21-May-20 | -- | Notified | -- |

### Zone 2B & 2C

The environmental permits, licenses, and/or notifications on environmental protection for this Project which were valid during the period are summarised in [**Table 4.4**](#Table4_3).

Table .: Status of Environmental Submissions, Licenses and Permits for Zone 2B & 2C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Permit / License No.  / Notification /  Reference No. | Valid Period | | Status | Remarks |
| From | To |
| **Chemical Waste Producer Registration** | | | | |
| WPN5113-256-V2302-01 | 17-Aug-21 | -- | Valid | -- |
| **Billing Account Construction Waste Disposal** | | | | |
| 7041264 | 11-Aug-21 | -- | Account Active | -- |
| **Construction Noise Permit** | | | | |
| GW-RE0718-22 | 22-Jul-22 | 21-Sep-22 | Valid | -- |
| GW-RE0984-22 | 24-Sep-22 | 23-Nov-22 | Valid | -- |
| **Wastewater Discharge License** | | | | |
| WT00039734-2021 | 25-Nov-21 | 30-Nov-26 | Valid | -- |
| **Notification under Air Pollution Control (Construction Dust) Regulation** | | | | |
| 470022 | 29-Jul-21 | -- | Notified | -- |

## Recommended Mitigation Measures

The EM&A programme followed the recommended mitigation measures in the EM&A Manual. The EM&A requirements as well as the summary of implementation status of the environmental mitigation measures are provided in [**Appendix J**](app_j.pdf). In particular, the following mitigation measures were brought to attention during the site inspections:

### Zone 2A

Air Quality

* + Dusty stockpile should be fully covered with tarpaulin or removed off site as far as practicable.

Temporary Water Drainage System & Water Quality

* + Idle stockpile of materials should be fully covered with tarpaulin when not being used.
  + Temporary drainage system should be maintained and reviewed regularly to ensure proper function at all time.
  + Sufficient numbers of water pumps shall be provided on site to direct storm water to water treatment facilities during rainstorm.
  + Chemical containers should be properly placed with drip trays/ removed to storage area to prevent chemical spillage.

### Zone 2B & 2C

Air Quality

* + NRMM Label should be provided for all regulated machinery on site.

Noise Impact

* + Noise barriers should be properly set up to minimize noise impact to NSRs.

Waste Management

* + Chemical wastes should be properly placed with drip trays/removed to storage area to prevent chemical spillage.
  + Carry out waste sorting as far as practicable and remove all general waste to designated landfill facilities regularly.

Temporary Water Drainage System & Water Quality

* + Idle stockpile of construction materials should be fully covered with tarpaulin when not being used or removed from the site during rainstorm.
  + Sandbags barriers/ water pumps shall be provided on site to direct storm water to water treatment facilities during rainstorm.
  + Temporary drainage system shall be maintained regularly to ensure efficient operation.

# Compliance with Environmental Permit

The status of the required submission under the EP during the reporting period is summarized in [**Table 5.1**](#Table5_1).

Table .: Status of Submissions under the Environmental Permit

| EP Condition | Submission | Submission Date |
| --- | --- | --- |
| Condition 3.4 | Monthly EM&A Report for August 2022 | 14 September 2022 |

# Report in Non-compliance, Complaints, Notification of Summons and Successful Prosecutions

## Record on Non-compliance of Action and Limit Levels

There was no breach of Action or Limit levels for Air Quality (1-hour TSP and 24-hour TSP) in this reporting month.

One Action Level exceedance due to one complaint with no Limit Level exceedance of Construction Noise was recorded in the reporting month.

## Record on Environmental Complaints Received

Two environmental complaints were received in the reporting month.

On 04 September 2022, the EPD has received a complaint from a public regarding polluted water discharge at WKCD construction site on 26 July 2022 and referred the case to the WKCDA on 05 September 2022. Investigation at Zone 2A site revealed that the location of the concerned feculent water was not within the boundary of Zone 2A site. There was no feculent water flowing from Zone 2A site into the waterbody of Victoria Harbor during the self-inspection and neither from the picture provided by the complainant. No abnormalities were found at the Zone 2A site boundary. Thereby, the concerned feculent water on 26 July 2022 was not from WKCD Zone 2A site. Protective measures were properly maintained to avoid water leakage from the site. Thereby, the complaint might not be attributable to the Zone 2A site. Observed feculent brownish debris spread on 26 July 2022 from the pier of Tsim Sha Tsui Fire Station into the waterbody of Victoria Harbor, might possibly be the source of the feculent water showed at the pier of Tsim Sha Tsui Fire Station in one of the pictures provided by the complainant. Nonetheless, the Contractor is recommended to strictly maintain good site practices to avoid water pollution. Investigation at Zone 2B & 2C site revealed that the locations of the concerned discharge were not within the boundary of Zone 2B & 2C site. Thereby, the complaint might not be attributable to the Zone 2B & 2C site. Nonetheless, the Contractor is recommended to strictly maintain good site practices to avoid water pollution to the waterbody of Victoria Harbour.

On 08 September 2022, the EPD has received a complaint from a public regarding noise pollution at WKCD construction site and referred the case to the WKCDA on the same day. The complainant claimed that:“居民投訴西九龍文化區3B區打槄噪音, 今早07:00開始, 要求環保署跟進回覆. 早上七時太早”(Resident claims that noise generated from piling works from WKCD Zone 3B starting from early morning at 7 a.m.). Investigation at Zone 2A site revealed that no site activity was conducted before 8:00 a.m. and no piling work was carried out on Zone 2A site on 08 September 2022. Thereby, the complaint might not be attributable to the Zone 2A site. Nonetheless, the Contractor is recommended to maintain close monitoring of noise control on site, and strengthen the implementation of noise mitigation measures to reduce impacts to the nearby residents. Investigation at Zone 2B & 2C site revealed that some noise might be related to the general construction activities conducted at Zone 2B & 2C site. However, those construction activities were conducted from 7:00 a.m. to 7:00 p.m., which were within statutory working hour; and there was no percussive piling conducted at Zone 2B & 2C site on 08 September 2022. Nonetheless, the Contractor is recommended to maintain close monitoring of noise control on site, and strengthen the implementation of noise mitigation measures to reduce impacts to the nearby residents.

The cumulative statistics on complaints were provided in[**Appendix K**](app_k.pdf).

## Record on Notifications of Summons and Successful Prosecution

No notifications of summons or successful prosecutions were received this month. The cumulative statistics on notifications of summons and successful prosecutions were provided in [**Appendix K**](app_k.pdf).

# Future Key Issues

## Construction Works for the Coming Month(s)

The major site works for Zone 2A scheduled to be commissioned in the coming month include:

Zone 2A-1

* Hoarding Modification
  + Hoarding Modification
* BA14 Submission
  + BD Acknowledgement of BA14

Zone 2A-2

* BA14 Submission
  + BD Acknowledgement of BA14

The major site works for Zone 2B & 2C scheduled to be commissioned in the coming month include:

KD05 (Section 1), KD09 (Section 5)

* Predrilling
* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation

KD06 (Section 2), KD07 (Section 3)

* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation

KD08 (Section 4)

* Bored Pile Works
  + RCD Drilling, Airlifting, Cage Installation & Concreting and Excavation
* Socketed Steel H Piling

## Key Issues for the Coming Month

### Zone 2A

Key issues to be considered in the coming month include:

* Generation of dust from construction works;
* Noise impact from construction works;
* Generation of site surface runoffs and wastewater from activities on-site;
* The temporary drainage system should be well managed and updated with the site condition, particularly on rainy days;
* Management of stockpiles and slopes, particularly on rainy days;
* Management of chemicals and avoidance of oil spillage on-site.
* Sorting, recycling, storage and disposal of general refuse and construction waste; and

### Zone 2B & 2C

Key issues to be considered in the coming month include:

* Generation of dust from construction works;
* Noise impact from piling works;
* Generation of site surface runoffs and wastewater from activities on-site;
* Management of stockpiles and slopes, particularly on rainy days;
* Sorting, recycling, storage and disposal of general refuse and construction waste; and
* Management of chemicals and avoidance of oil spillage on-site.

## Monitoring Schedule for the Coming Month

The environmental site inspection and environmental monitoring will be continued in the coming month. Impact monitoring for air quality and noise for Zone 2A and Zone 2B & 2C in accordance with the approved EM&A Manual has commenced since 03 October 2020 and 30 September 2021 respectively. The tentative monitoring schedule for the coming month is shown in the **Appendix E**.

# Conclusions and Recommendations

## Conclusions

The EM&A programme as recommended in the EM&A Manual has been undertaken with the commencement of the construction activities at Zone 2A on 03 October 2020, and the major construction works of Zone 2B & 2C commenced on 30 September 2021.

Monitoring of air quality and noise with respect to the Projects is underway. In particular, the 1-hour TSP, 24-hour TSP, noise level (as Leq, 30 minutes) under monitoring have been checked against established Action and Limit levels. There was no breach of Action or Limit levels for Air Quality (1-hour TSP and 24-hour TSP) in this reporting month. One Action Level exceedance due to one complaint with no Limit Level exceedance of Construction Noise was recorded in the reporting month.

Two environmental complaints were recorded in the reporting month. No notifications of summons or successful prosecutions were received during the reporting month.

Weekly construction phase site inspections and bi-weekly landscape and visual impact inspections were conducted during the reporting month as required. It was observed that the Contractors had implemented all possible and feasible mitigation measures to mitigate the potential environmental impacts during construction phase works.

## Recommendations

Potential environmental impacts due to the construction activities, including air quality, noise, water quality, waste, landscape and visual, will be monitored or reviewed. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.