

MTR Corporation Limited

**Siu Ho Wan Station and  
Siu Ho Wan Depot Replanning Works**

Monthly EM&A Report

(December 2022)

Verified by: \_\_\_\_\_ James Choi *James*

Position: Independent Environmental Checker


Date: 10 January 2023

MTR Corporation Limited

**Siu Ho Wan Station and  
Siu Ho Wan Depot Replanning Works**

Monthly EM&A Report

(December 2022)

Certified by: Edan Li 

Position: Environmental Team Leader

Date: 10th January 2023



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## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 MTR Corporation Limited (MTRCL) had commenced a study to formulate a technically feasible development scheme for the Proposed Comprehensive Residential and Commercial Development atop Siu Ho Wan Depot (hereinafter referred to the “Oyster Bay (OYB) Property Development”) to optimize housing supply. To facilitate the construction of the OYB Property Development, railway related works would be required. The existing Siu Ho Wan Depot (SHD) will undergo replanning works to make room for the phased construction of the OYB Property Development, while maintenance and supporting services to the existing Tung Chung Line (TCL), Airport Express Line (AEL) and Disneyland Resort Line (DRL) should be maintained without causing disruption to the normal operation. A new Oyster Bay (OYB) Station (formerly named as Siu Ho Wan Station (SHO)) has also been proposed along the TCL tracks to meet transport needs of the OYB Property Development and enable building of a sustainable community.
- 1.1.2 The Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-214/2017) for the SHO and SHD Replanning Works (hereafter referred to as the “Project”) was approved on 29 November 2017 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) was granted on 22 March 2021 (EP No: EP-588/2021) for the construction and operation of the Project.

### 1.2 Project Programme

- 1.2.1 Two civil construction works contracts of the Project have been awarded since December 2021. The construction of the Project commenced in Decemeber 2021 and is expected to complete in 2023. **Table 1.1** summarises the information of the awarded Works Contracts.

**Table 1.1 Summary of Awarded Works Contracts**

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1732	Cable bridges and associated civil works for cable diversion	December 2021	Paul Y – CRCCI JV	Acuity Sustainability Consulting Ltd.
1733	Vehicular Access Bridge, Demolition of Paint Shop and Construction of EV Stabling Tracks	April 2022	Build King Civil Engineering Ltd.	SGS Hong Kong Ltd.

### 1.3 Purpose of the Report

- 1.3.1 The Environmental Monitoring and Audit (EM&A) programme for the Project commenced in December 2021. This is the thirteenth EM&A Report for the Project which summarises the EM&A works undertaken by the respective Contractor’s ETs during the period from 1 to 31 December 2022.

## 2 ENVIRONMENTAL MONITORING AND AUDIT

### 2.1 EM&A Results

- 2.1.1 The EM&A Report for Works Contract 1732 and 1733 prepared by the Contractor's ET are provided in **Appendices A to B**. The EM&A Report provides details of the project information, EM&A requirements, impact monitoring and audit results for the Contract.
- 2.1.2 A summary of the major construction activities undertaken by the Contractor of Works Contract during the reporting period is presented in **Table 2.1**.

**Table 2.1 Summary of Major Construction Activities in the Reporting Period**

Works Contract	Site	Construction Activities
1732	Overall	<ul style="list-style-type: none"> <li>• General Survey Works ;</li> <li>• Instrumentation Monitoring ;</li> <li>• Civil Works for Cable and Watermain Diversion Stage 2a &amp; 2b ;</li> <li>• AB11 Modification Works ;</li> <li>• Cable Brackets Construction Along Trackside ;</li> <li>• Footings 1 &amp; 2 for Link Bridge Construction ;</li> <li>• Pier and Truss Installation for the Cable Bridges ;</li> <li>• Trial Pits Digging ; and</li> <li>• Draw Pits, Ducting and Cable Trough Installation.</li> </ul>
1733	Overall	<ul style="list-style-type: none"> <li>• Paint Shop Demolition ;</li> <li>• Excavation ;</li> <li>• Substructure ;</li> <li>• Instruments Installation &amp; Plate Load Test ;</li> <li>• EV Tracks – Formation and Track Installation ;</li> <li>• UU Diversion ; and</li> <li>• Installation of Piezometer and Standpipe.</li> </ul>

- 2.1.3 During the reporting period, impact monitoring for air quality was conducted in accordance with the EM&A Manual. No exceedances of the Action / Limit Level of 1-hour TSP due to the Project construction were recorded. Results of air quality is summarised in **Tables 2.2**. Details of the monitoring requirements, locations, equipment and methodology are presented in **Appendices A to B** of this Report.

**Table 2.2 Summary of 1-Hour TSP Monitoring Results in the Reporting Period**

Monitoring Station ID	Location	TSP Concentration ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )	Exceedance due to the Project Construction (Yes/No)
<b>Works Contract 1732 &amp; 1733</b>					
DM1	Siu Ho Wan Government Maintenance Depot	59.2 – 67.6	294.7	500	No

- 2.1.4 No environmental complaints, notification of summons and successful prosecutions were recorded in the reporting period. Log for environmental complaints, notification of summons and successful prosecutions is provided in **Table 2.3**.

**Table 2.3 Log for Environmental Complaints, Notification of Summons and Successful Prosecutions for the Reporting Month**

<b>Works Contract</b>	<b>Environmental Complaints</b>	<b>Notification of Summons</b>	<b>Successful Prosecutions</b>
1732	0	0	0
1733	0	0	0

2.1.5 Regular site inspections were conducted by the Contractor's ET on a weekly basis to check the implementation of environmental pollution control and mitigation measures for the Project. No non-conformance was identified in the reporting period.

### 3 IMPLEMENTATION STATUS ON THE ENVIRONMENTAL PROTECTION REQUIREMENTS

3.1.1 The Contractor has implemented all mitigation measures and requirements as stated in the EIA Report, EM&A Manual and EP (EP No: EP-588/2021). The status of required submissions under the EP as of the reporting period are summarised in **Table 3.1**.

**Table 3.1 Summary of EP Submissions Status**

EP Condition (EP-588/2021)	Submission	Submission date
Condition 1.12	Commencement Date of Construction	11 Jun 2021 (1 <sup>st</sup> submission) 12 Jul 2021 (2 <sup>nd</sup> submission) 12 Aug 2021 (3 <sup>rd</sup> submission)
Condition 2.7	Construction Works Phasing Schedule Proposal	1 Nov 2021 (1 <sup>st</sup> Submission) 20 Dec 2021 (2 <sup>nd</sup> Submission) 29 Dec 2021 (Deposited)
Condition 2.8	Environmental Permit Submission Schedule	12 Aug 2021 10 Sep 2021 (Deposited)
Condition 2.9	Management Organization	1 Nov 2021 (1 <sup>st</sup> Submission) 20 Dec 2021 (2 <sup>nd</sup> Submission) 21 Mar 2022 (3 <sup>rd</sup> Submission) 9 Aug 2022 (4 <sup>th</sup> Submission) 16 Nov 2022 (5 <sup>th</sup> Submission)
Condition 2.10	Construction Noise Mitigation Plan	1 Nov 2021 (1 <sup>st</sup> Submission) 20 Dec 2021 (2 <sup>nd</sup> Submission) 28 Dec 2021 (3 <sup>rd</sup> Submission) 30 Dec 2022 (Deposited)
Condition 2.13	Waste Management Plan	1 Nov 2021 (1 <sup>st</sup> Submission) 20 Dec 2021 (2 <sup>nd</sup> Submission) 28 Dec 2021 (Deposited)
Condition 3.3	Baseline Monitoring Report	1 Nov 2021 16 Nov 2021 (Deposited)
Condition 3.4	Monthly EM&A Report No.13 (Dec 2022)	12 January 2023
Condition 4.2	Dedicated Internet Website	12 Jan 2022



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**Appendix A**

**Monthly EM&A Report for December 2022 – Cable Bridges  
and Associated Civil Works for Cable Diversion Works  
Contract 1732**

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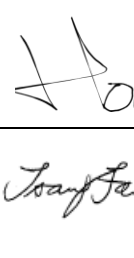
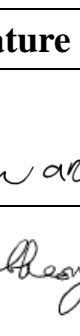
**MTR Corporation Limited**

**Siu Ho Wan Depot Property Development -**

**Cable Bridges and Associated Civil Works for Cable Diversion**

**Monthly EM&A Report**

(Period from 1 to 31 December 2022)

	<b>Name</b>	<b>Signature</b>
Prepared by	Howard Chan	
Checked & Reviewed by	F. C. Tsang	

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- I. Event-Action Plan (Air Quality Monitoring)
- J. Statistics on Complaint, Notification of Summons and Successful Prosecution
- K. Environmental Mitigation Implementation Schedule (EMIS)
- L. Monitoring Schedule of the Reporting Month
- M. Monitoring Schedule of the Coming Month

## EXECUTIVE SUMMARY

- A.1 This is the 13<sup>th</sup> monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the reporting period from 1 December to 31 December 2022.
- A.2 A summary of the construction works reported by the Contractor for the Project during the reporting month is listed below.

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### Construction activities undertaken

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- General survey works
  - Instrumentation monitoring
  - Civil works for cable and watermain diversion stage 2a & 2b
  - AB11 modification works
  - Cable brackets construction along trackside
  - Footing 1&2 for link bridge construction
  - Pier and truss installation for the cable bridges
  - Trial Pits Digging
  - Draw pits, ducting and cable trough installation
- 

- A.3 A summary of regular construction dust monitoring activities in this reporting period is listed below:

### Construction dust (1-hour TSP) monitoring

DM1

18 times

- A.4 Weekly environmental site inspections were conducted during the reporting period. A joint site inspection with the IEC was carried out on 19 December 2022. Observations were reported during the site inspections. All items are rectified within the reporting period. The environmental performance of the Project was considered satisfactory.
- A.5 Details of waste management are presented in **Section 3**.
- A.6 No Action or Limit Levels exceedance of 1-hour TSP was recorded during the reporting period.
- A.7 No complaint or non-compliance was reported in the reporting period.
- A.8 No notification of summon or prosecution was received in this reporting period.
- A.9 No changes of EM&A programme were made in this reporting period.

A.10 A summary of the construction activities provided by the Main Contractor in the next three reporting months are listed below:

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**Construction Activities to be undertaken**

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- Civil works for cable trench and draw-pit construction for cable diversion (2a/2b)
  - Instrumentation installation and monitoring
  - General survey works
  - AB11 modification works
  - Construction of footing 1&2
  - Assembly of the steel bridges piers and trusses and erection of the cable bridge and link bridges
  - Construction for cable brackets along the track side
  - Cable trench and draw-pit works along the south road
  - EVA construction and watermain installation near AB23
  - Additional trail pit
-

## 1. BASIC PROJECT INFORMATION

- 1.1.1. The Project involves the construction of the foundations and superstructure for two cable bridges and each of two spans across and above the Tung Chung Line, Airport Express Line and the Siu Ho Wan Depot test track. The Works enable the diversion of the existing utilities to provide space for the future foundation works of the Siu Ho Wan Property Development and Station.
- 1.1.2. The Siu Ho Wan Station and Siu Ho Wan Depot Replanning Works Environmental Impact Assessment Report was approved with conditions by the Environmental Protection Department (EPD) on 29 November 2017. The latest Environmental Permit (No. EP-588/2021) was issued by the EPD on 22 March 2021.
- 1.1.3. The Project (Contract 1732) was awarded to Paul Y. – CRCCI Joint Venture (JV). JV has engaged Acuity Sustainability Consulting Limited as the Environmental Team (ET) for this contract.
- 1.1.4. The Project covers the following construction activities:
- (a) Site formation, tree removal, site safety fencing and supply and installation of Engineer's Site Accommodation;
  - (b) Diversion of existing above ground water mains to create working areas within the site for the Works;
  - (c) Constructing foundations comprising pre-bored H-piles, and carrying out pile load tests on selected H-piles;
  - (d) Constructing pile caps and spread footing foundations in shallow excavation;
  - (e) Prefabrication of steel truss vertical support frames, and erection on the foundations;
  - (f) Prefabrication of steel truss cable bridges and erection on to the vertical support frames;
  - (g) Prefabrication and erection of a steel link bridge spanning between the cable bridge and the façade of the existing building AB11;
  - (h) Installation of cable trays, cable supports and sunshield in and along the cable bridges, vertical support frames and at external walls of the existing building AB11;
  - (i) Installation of cable bridge miscellaneous details such as roof, drainage, facades, lightings, lightning protection, access control;
  - (j) Installation of ground level cable troughs;
  - (k) Modification of the façade of existing AB11 building for cable feeding out from the building;
  - (l) All temporary railway protection works such as hoardings and retaining structures in course of the Execution of the works; and
  - (m) Supply and installation of equipotential bonding for the cable bridge and associated fixed metal parts attached to the cable bridge.

1.1.5. A summary of the major construction activities undertaken in this reporting period (from 1 December to 31 December 2022) is shown in **Table 1.1**. The construction programme is presented in **Appendix A**.

**Table 1.1 Summary of the construction activities reported by Main Contractor during the Reporting Month**

<b>Construction Activities undertaken</b>	
•	General survey works
•	Instrumentation monitoring
•	Civil works for cable and watermain diversion stage 2a & 2b
•	AB11 modification works
•	Cable brackets construction along trackside
•	Footing 1&2 for link bridge construction
•	Pier and truss installation for the cable bridges
•	Trial Pits Digging
•	Draw pits, ducting and cable trough installation

1.1.6. The project organisational chart specifying management structure and contact details are shown in **Appendix B**.

1.1.7. A summary of the valid permits, licences, and/ or notifications on environmental protection for this Project is presented in **Table 1.2**.

**Table 1.2 Summary of the Status of Valid Environmental License Notification, Permit and Documentations**

Permit/ Licences/ Notification/ Reference No.	Valid Period		Status	Remark
	From	To		
<b>Environmental Permit</b>				
EP-588/2021	22 Mar 2021	N/A	Valid	-
<b>Wastewater Discharge License</b>				
WT00040639-2022	23 Mar 2022	31 Mar 2027	Valid	-
<b>Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation</b>				
Ref. 472845	N/A	N/A	Notified	Notification submitted on 19 Oct 2021
<b>Chemical Waste Producer Registration</b>				
WPN5213-961-P3457-01	19 Nov 2021	N/A	Valid	-
<b>Billing Account for Disposal of Construction Waste</b>				
7042328	25 Nov 2021	N/A	Valid	-
<b>Construction Noise Permit</b>				
GW-RS0657-22	12 Aug 2022	11 Feb 2023	Valid	Site office and main works at AB11 area and cross-track area, cable bracket works
GW-RS0622-22	1 Sep 2022	31 Jan 2023	Valid	Area W3, South Road



## 2. ENVIRONMENTAL STATUS

2.1.1. Environmental permit (EP) conditions under the EIAO, submission status under the EP and implementation status of mitigation measures had been reviewed and implemented on schedule. The status of required submissions under the EP (No. EP-588/2021) as of the reporting period for the Project are summarised in **Table 2.1**.

**Table 2.1 Summary of Status of Required Submission for EP-588/2021 for the Project**

EP Condition (EP-588/2021)	Submission	Submission date
1.12	Commencement Date of Construction	11 June 2021 (1 <sup>st</sup> submission) 12 July 2021 (2 <sup>nd</sup> submission) 12 August 2021 (3 <sup>rd</sup> submission)
2.7	Construction Works Phasing Schedule	1 November 2021 (1 <sup>st</sup> submission) 20 December 2021 (2 <sup>nd</sup> submission) 29 December 2021 (Deposited)
2.8	Environmental Permit Submission Schedule	12 August 2021 10 September 2021 (Deposited)
2.9	Management Organization	1 November 2021 (1 <sup>st</sup> submission) 20 December 2021 (2 <sup>nd</sup> submission) 21 April 2022 (3 <sup>rd</sup> submission) 9 August 2022 (4 <sup>th</sup> submission) 16 November 2022 (5 <sup>th</sup> submission)
2.10	Construction Noise Mitigation Plan	1 November 2021 (1 <sup>st</sup> submission) 20 December 2021 (2 <sup>nd</sup> submission) 28 December 2021 (Deposited) 30 December 2022 (3 <sup>rd</sup> submission*)
2.13	Waste Management Plan	1 November 2021 (1 <sup>st</sup> submission) 20 December 2021 (2 <sup>nd</sup> submission) 28 December 2021 (Deposited)
3.3	Baseline Monitoring Report	1 November 2021 16 November 2021 (Deposited)
3.4	Monthly EM&A Report (December 2021)	13 January 2022
3.4	Monthly EM&A Report (January 2022)	15 February 2022
3.4	Monthly EM&A Report (February 2022)	10 March 2022
3.4	Monthly EM&A Report (March 2022)	19 April 2022

EP Condition (EP-588/2021)	Submission	Submission date
3.4	Monthly EM&A Report (April 2022)	16 May 2022
3.4	Monthly EM&A Report (May 2022)	14 June 2022
3.4	Monthly EM&A Report (June 2022)	14 July 2022
3.4	Monthly EM&A Report (July 2022)	12 August 2022
3.4	Monthly EM&A Report (August 2022)	14 September 2022
3.4	Monthly EM&A Report (September 2022)	14 October 2022
3.4	Monthly EM&A Report (October 2022)	14 November 2022
3.4	Monthly EM&A Report (November 2022)	14 December 2022
3.4	Monthly EM&A Report (December 2022)	To be submitted within 10 working days after the end of the reporting month
4.2	Dedicated Internet Website	12 January 2022

\* A new version of Construction Noise Mitigation Plan was submitted to the EPD on 30 December 2022 to cover the Phase 1 works.

2.1.2. The drawings showing the project layout and the location of the monitoring station are attached in **Appendix C** and **Appendix D**, respectively. A summary of the monitoring location is shown in **Table 2.2**.

**Table 2.2 Summary of the location of the monitoring station**

Air Sensitive Receiver (ASR) ID No. in EIA Report	Monitoring Station ID	ASR Description
A2	DM1	Siu Ho Wan Government Maintenance Depot

### 3. MONITORING RESULTS

#### 3.1. Monitoring Parameters

##### Air Quality

- 3.1.1. The impact monitoring had been carried out in accordance with Section 2.6 of the approved EM&A Manual, with sampling frequency of at least 3 times in every 6 days undertaken, to determine the 1-hour total suspended particulates (TSP) levels at the monitoring locations in the reporting period.
- 3.1.2. General meteorological conditions (wind speed, direction and precipitation) and notes regarding any significant adjacent dust producing sources had also been recorded throughout the impact monitoring period.

#### 3.2. Monitoring Equipment and Methodology

##### Monitoring Equipment

- 3.2.1. Portable direct reading dust meter was used to carry out the 1-hour TSP monitoring. Portable direct reading dust meters used in this monitoring were proven to the IEC to be capable of achieving comparable result as that of the HVS and, thus, were used for sampling.
- 3.2.2. The equipment used for 1-hour TSP measurement during the reporting month are summarised in **Table 3.1**.

**Table 3.1 Construction Dust Monitoring Equipment**

Measuring Parameter	Monitoring Equipment	Brand and Model	Serial Number	Date of Calibration
1-hour TSP	Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3)	A.005.11a	4 May 2022
1-hour TSP	Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3B)	A.005.16a	4 May 2022

- 3.2.3. The portable direct reading dust meter was calibrated at 1-year interval against a High-Volume Sampler, TE-5170. Copies of calibration certificates of the portable direct reading dust meter are presented in **Appendix E**.

##### Monitoring Methodology

- 3.2.4. The 1-hour TSP measurement followed manufacturer’s instruction manual. Before initiating a measurement, zeroing the portable direct reading dust meter was carried out to ensure maximum accuracy of concentration measurements.

3.2.5. The 1-hour TSP was sampled by drawing air into the portable direct reading dust meter where particular concentrations were measured instantaneously with an in-built silicon detector sensing light scattered by the particulates in the sampled air. Continuous TSP levels were indicated and logged by a built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

### 3.3. Monitoring Location

3.3.1. Location of the designated dust monitoring station is described in **Table 3.2**.

**Table 3.2 Construction Dust Monitoring Location**

Monitoring Station ID	Dust Monitoring Station
DM1	Siu Ho Wan Government Maintenance Depot

### 3.4. Result Summary

3.4.1. Dust impact monitoring was carried out at DM1 on 5, 10, 16, 21, 24 and 30 December 2022 during the reporting month (**Appendix L**). According to the field observations, the major dust sources identified included vehicular emissions from North Lantau Highway and Cheung Tung Road. Gentle wind was recorded throughout the monitoring period, with gentle to strong wind recorded occasionally.

3.4.2. The results for 1-hour TSP are summarized in **Table 3.3**. The measurement data are presented in **Appendix F**.

**Table 3.3 Summary of 1-hour TSP Monitoring Results**

Monitoring Location	Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )	No. of Exceedances
DM1	59.2 – 67.6	294.7	500	0

### Waste management

3.4.3. The waste generated from this Project includes inert C&D materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/ cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 3.4**. Details of cumulative waste management data are presented as a waste flow table in **Appendix G**.

**Table 3.4 Quantities of waste generated from the Project**

Reporting period	Quantity						
	Inert C&D Materials (in m <sup>3</sup> )	Chemical Waste (in '000 kg)	Non-inert C&D Materials				
			Others, e.g., General Refuse disposed at Landfill (in '000 kg)	Recycled materials			
				Paper/ cardboard (in '000 kg)	Plastics (in '000 kg)	Metals (in '000 kg)	Yard Waste (in '000 kg)
Dec 2022	279.440	0.000	59.390	0.021	0.000	0.000	0.000

3.4.4. All dump trucks for C&D materials transportation and disposal were equipped with Global Positioning System (GPS) for real time tracking and monitoring their travel routings and parking locations in order to avoid illegal dumping or landfilling of C&D materials.

3.4.5. The GPS data including travel routings of dump trucks was reviewed by the ET and IEC, and no illegal dumping activities were suspected.

#### **4. SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS**

- 4.1.1. The Environmental Complaint Handling Procedure is shown in **Appendix H**.
- 4.1.2. Should non-compliance of the air quality criteria occur, action in accordance with the Event and Action Plan in **Appendix I** shall be carried out.
- 4.1.3. No Action and Limit Levels exceedance of 1-hour TSP was recorded during the reporting month.
- 4.1.4. No complaint or non-compliance was reported in the reporting month.
- 4.1.5. No notification of summons and prosecution was received in the reporting period.
- 4.1.6. Statistics on complaints, notifications of summons and successful prosecutions are summarized in **Appendix J**.

## 5. EM&A SITE INSPECTION

5.1.1. Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, four (4) site inspections were carried out on 5, 12, 19 and 28 December 2022. One joint site inspection with the IEC was also undertaken on 19 December 2022. Observations were reported during the weekly site inspections. Key observations during the site inspections are summarized in **Table 5.1**.

**Table 5.1 Site Observations**

Date	Observation/ Recommendation	Follow-up Status
5 December 2022	None	None
12 December 2022	1. Dusty materials stockpiles were observed at W5. The Contractor was advised to use dust screen for dust suppression.	1. Stockpile of dusty materials was covered properly.
19 December 2022	1. Dusty materials were observed at W1A. The Contractor was advised to water the area for dust suppression.	1. The area was watered to prevent dust emission.
28 December 2022	None	None

5.1.2. According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents are implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix K**.

## 6. FUTURE KEY ISSUES

6.1.1. Work to be undertaken in the next three reporting months are:

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### Construction Activities to be undertaken

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- Civil works for cable trench and draw-pit construction for cable diversion (2a/2b)
  - Instrumentation installation and monitoring
  - General survey works
  - AB11 modification works
  - Construction of footing 1&2
  - Assembly of the steel bridges piers and trusses and erection of the cable bridge and link bridges
  - Construction for cable brackets along the track side
  - Cable trench and draw-pit works along the south road
  - EVA Construction and watermain installation near AB23
  - Additional trail pit
- 

6.1.2. Potential environmental impacts arising from the above construction activities are mainly associated with construction dust impact, noise impact, water quality impact and waste management.

6.1.3. The tentative schedule of regular 1-hour TSP monitoring in the next reporting period is presented in **Appendix M**.

6.1.4. The construction programme for the Project for the next reporting month is presented in **Appendix A**.



## **7. CONCLUSION AND RECOMMENDATIONS**

- 7.1.1. This 13<sup>th</sup> monthly EM&A Report presents the EM&A works undertaken during the period from 1 December to 31 December 2022 in accordance with the EM&A Manual and the requirement under EP-588/2021.
- 7.1.2. Air quality (including 1-hour TSP) impact monitoring was carried out in the reporting period. No exceedance of the Action and Limit Levels was recorded for air quality impact monitoring during the reporting period.
- 7.1.3. Weekly environmental site inspections were conducted during the reporting period. A joint site inspection with the IEC was carried out on 19 December 2022. Observations were reported during the site inspections. All items are rectified within the reporting period. The environmental performance of the Project was considered satisfactory.
- 7.1.4. No complaint or non-compliance was reported in the reporting month.
- 7.1.5. No notification of summons or prosecution was received in the reporting month.
- 7.1.6. The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.
- 7.1.7. No change of EM&A programme was made in this reporting period.
- 7.1.8. The proposed mitigation measures were properly implemented and were considered effective and efficient in pollution control.

# Appendix A

## Construction Programme



# Appendix B

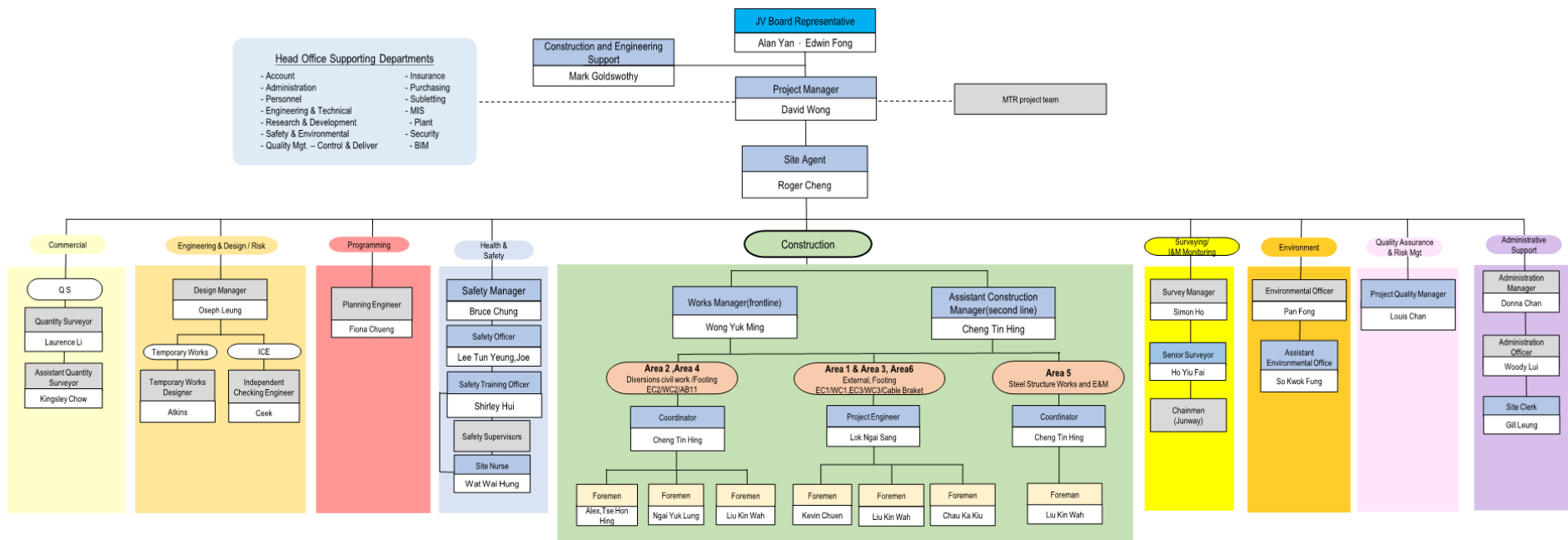
## Project Organization Chart

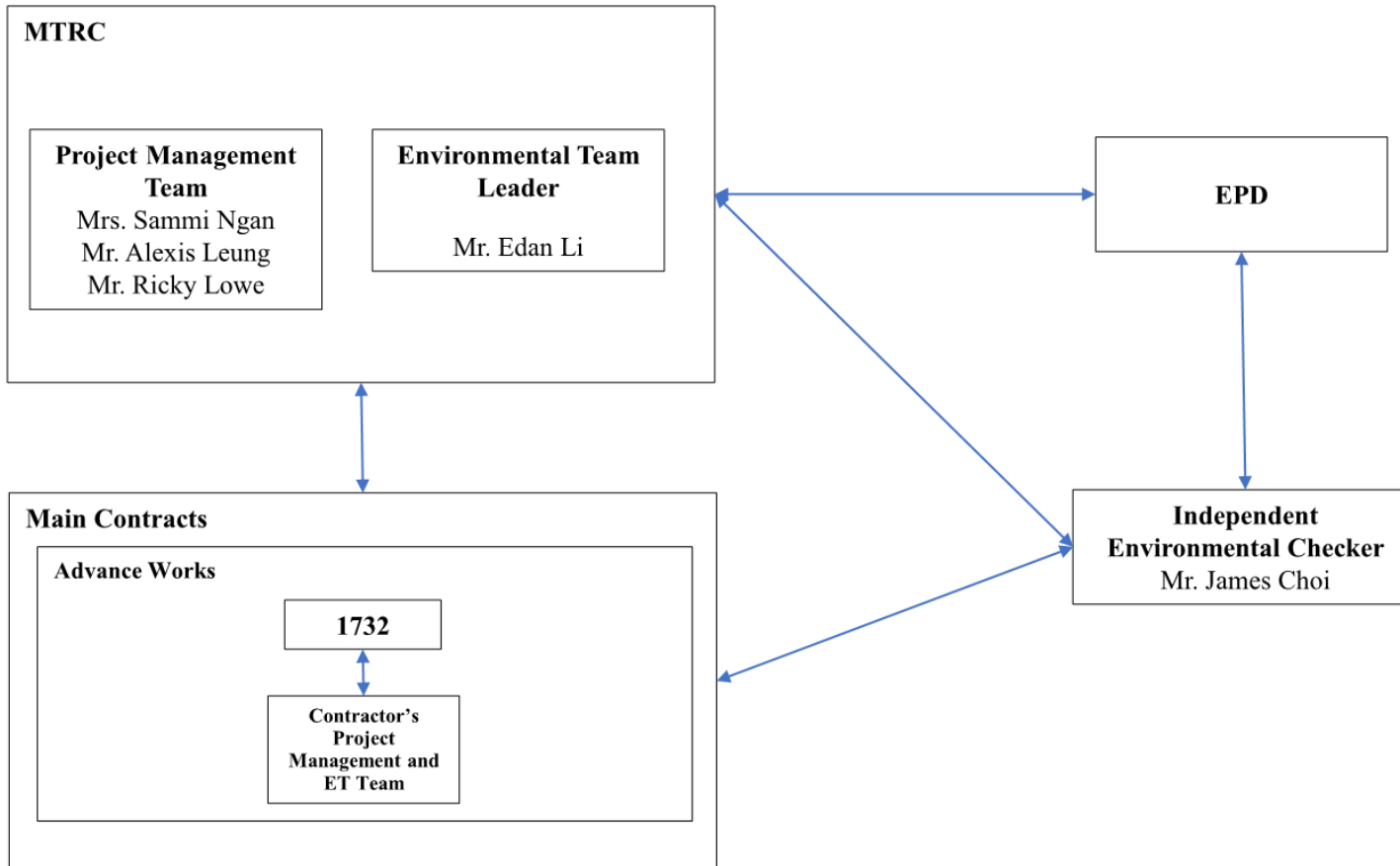
# Project O-Chart

## 1732 - Organization Chart

Contract 1732  
 Cable Bridges and Associated Civil Works for Cable  
 Diversion  
 Updated on 27 Nov 2022

Legend:  
 --- Report Line of Communication  
 - - - Liaison / Co-ordination Line





**Legend:**

↔ Communication channel

MTR's Contact:

<b><u>MTRC - Project Management Team</u></b>		
<b>Position</b>	<b>Name</b>	<b>Telephone</b>
Chief Project Co-ordination Manager	Mrs. Sammi Ngan	2208 3753
Senior Project Manager-Property	Mr. Alexis Leung	2993 8028
Senior Design Manager-Civil	Mr. Ricky Lowe	2208 3347

<b><u>MTRC - Environmental Team</u></b>		
<b>Position</b>	<b>Name</b>	<b>Telephone</b>
Environmental Team Leader	Mr. Edan Li	2688 1179
Environmental Team Member	Mr. Cyrus Lau	3127 6296

<b><u>ANewR Consulting Limited - IEC</u></b>		
<b>Position</b>	<b>Name</b>	<b>Telephone</b>
Independent Environmental Checker	Mr. James Choi	2618 2836

Contractor's Contact:

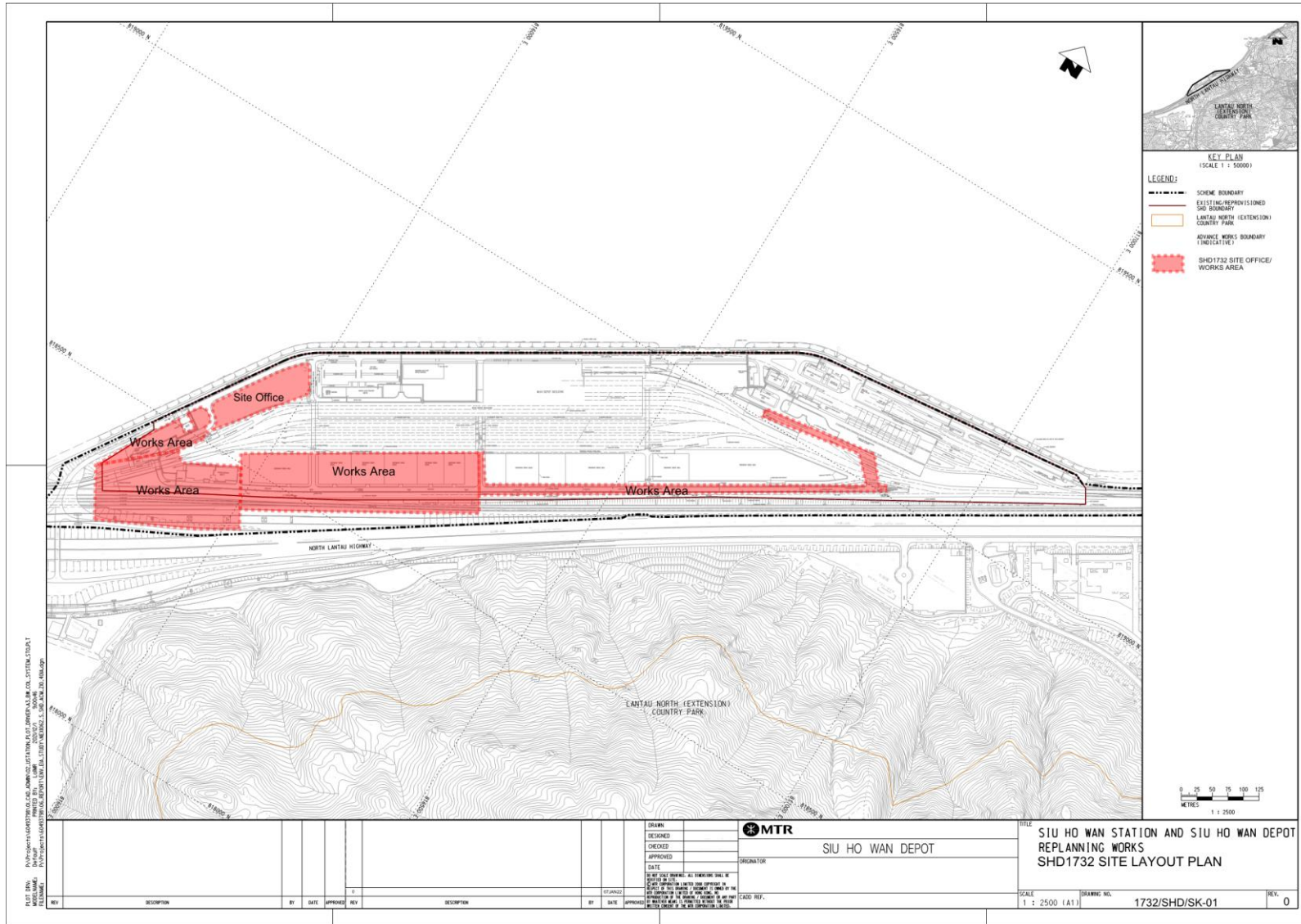
<b>Main Works Contract</b>	<b>Description</b>	<b>Contractor</b>	<b>Position</b>	<b>Name</b>	<b>Telephone</b>
<b>1732</b>	Construction of cable bridges and associated civil works for cable diversion	Paul Y – CRCCI Joint Venture	Project Manager	David Wong	9712 9984
			Environmental Officer	Pan Fong	9436 9435
			Assistant Environmental Officer	So, Kwok Fung	6273 1608
			Environmental Team Leader	Tsang, Fan Cheong	2698 8060

## Appendix C

### Alignment and Works Area for Contract No. 1732



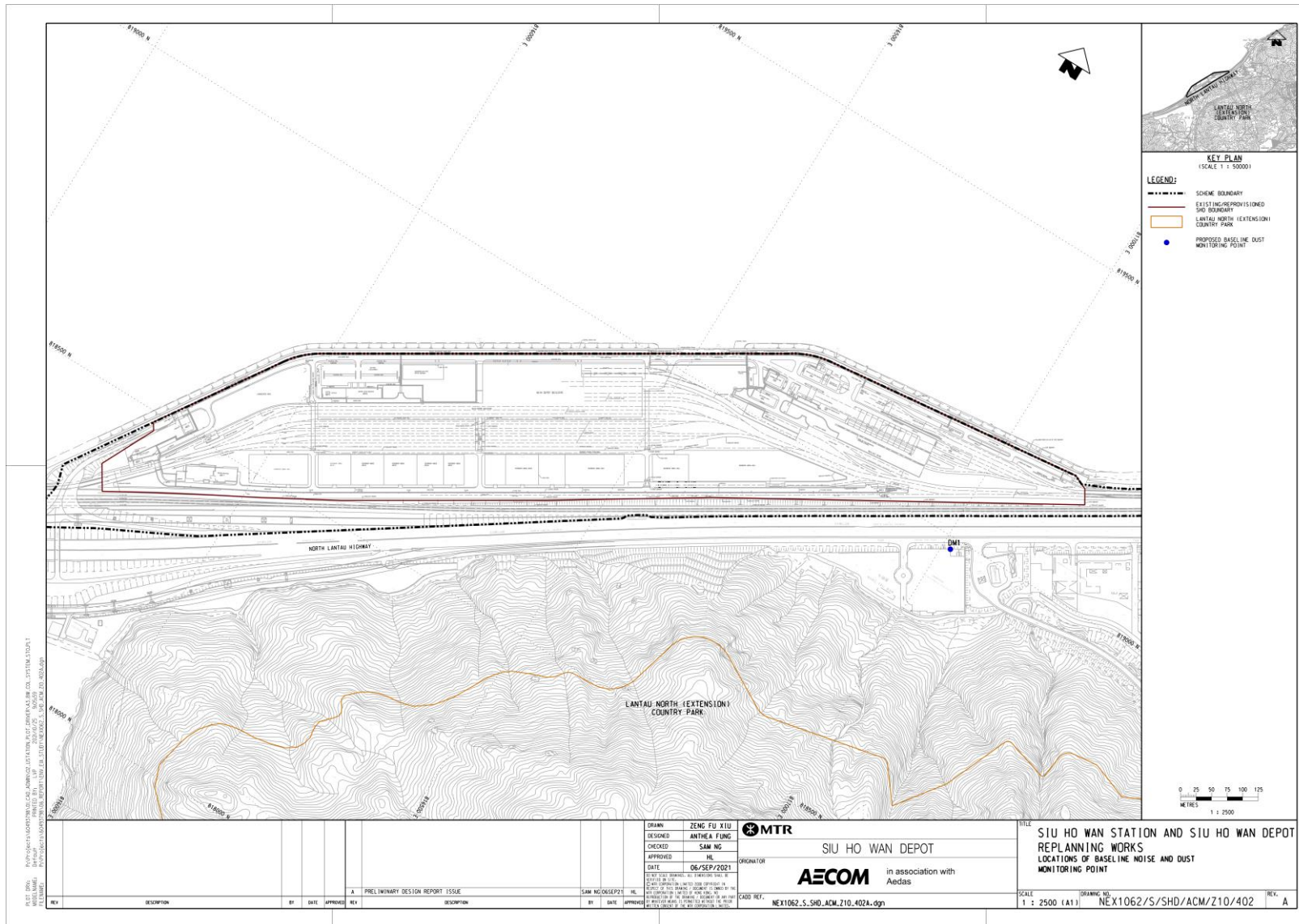
Siu Ho Wan Depot Property Development  
 Cable Bridges and Associated Civil Works for Cable Diversion  
 Monthly EM&A Report (December 2022)



## Appendix D

# Location Plan of Air Quality Monitoring Station

Siu Ho Wan Depot Property Development  
 Cable Bridges and Associated Civil Works for Cable Diversion  
 Monthly EM&A Report (December 2022)



# Appendix E

## Calibration Certificates

### (Air Quality Monitoring Equipment)

### EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3  
 Equipment No.: A.005.11a  
 Sensitivity Adjustment Scale Setting: 799 CPM

Operator: WS CHAN

#### Standard Equipment

Equipment: High Volume Sampler  
 Venue: Fanling Government Secondary School  
 Model No.: TE-5170  
 Serial No.: 3154  
 Last Calibration Date: 28-Apr-22

#### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 799 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 799 CPM

Hour	Date (dd/mm/yy)	Time	Ambient Condition		Concentration <sup>①</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>②</sup>	Count/ Minute <sup>③</sup> X-axis
			Temp (°C)	R.H.(%)			
1	03/05/22	9:30-10:30	26.0	60	0.0490	1920	32.00
2	03/05/22	10:30-11:30	26.0	60	0.0500	2010	33.50
3	03/05/22	11:30-12:30	26.0	60	0.0520	2140	35.67
4	03/05/22	12:30-13:30	26.0	60	0.0540	2290	38.17

- Note: ① Monitoring data was measured by High Volume Sampler  
 ② Total Count was logged by Laser Dust Monitor  
 ③ Count/minute was calculated by (Total Count/60)

By Linear Regression of Y on X  
 Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9991

Validity of Calibration Record: 3-May-23

Remarks:

QC Reviewer:

Yufeng

Signature:

Y

Date:

4-May-22



### EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3B  
 Equipment No.: A.005.16a  
 Sensitivity Adjustment Scale Setting: 521 CPM

Operator: WS CHAN

#### Standard Equipment

Equipment: High Volume Sampler  
 Venue: Fanling Government Secondary School  
 Model No.: TE-5170  
 Serial No.: 3154  
 Last Calibration Date: 28-Apr-22

#### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 521 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 521 CPM

Hour	Date (dd/mm/yy)	Time	Ambient Condition		Concentration <sup>①</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>②</sup>	Count/ Minute <sup>③</sup> X-axis
			Temp (°C)	R.H.(%)			
1	03/05/22	9:30-10:30	26.0	60	0.0490	1850	30.83
2	03/05/22	10:30-11:30	26.0	60	0.0500	1980	33.00
3	03/05/22	11:30-12:30	26.0	60	0.0520	2070	34.50
4	03/05/22	12:30-13:30	26.0	60	0.0540	2160	36.00

Note: <sup>①</sup> Monitoring data was measured by High Volume Sampler  
<sup>②</sup> Total Count was logged by Laser Dust Monitor  
<sup>③</sup> Count/minute was calculated by (Total Count/60)

By Linear Regression of Y on X  
 Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9995

Validity of Calibration Record: 3-May-23

Remarks:

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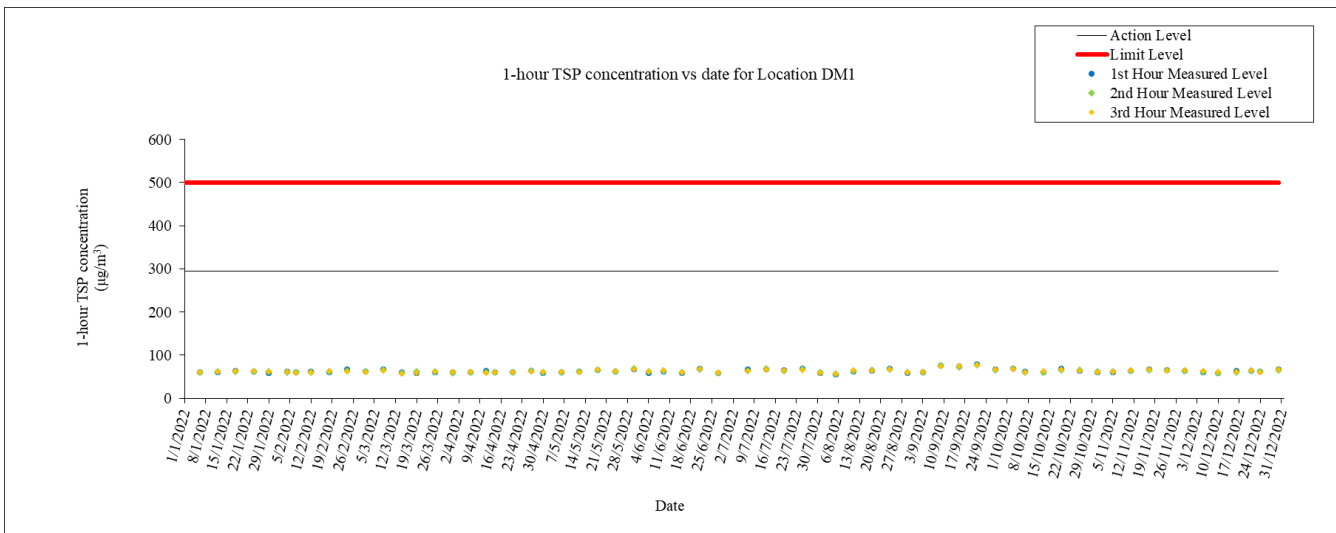
QC Reviewer: Yw Fung      Signature: [Signature]      Date: 4 May 22

# Appendix F

## Monitoring Data (Air Quality Monitoring)

### The Summary of 1-hour TSP Concentration ( $\mu\text{g}/\text{m}^3$ ) at Location DM1

Date	Weather	Start Time (hh:mm)	1 <sup>st</sup> Hour	2 <sup>nd</sup> Hour	3 <sup>rd</sup> Hour
			$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$
5 Dec 2022	Sunny	11:50	60.6	62.7	64.4
10 Dec 2022	Sunny	11:15	59.7	59.2	61.7
16 Dec 2022	Cloudy	10:50	63.3	61.0	61.6
21 Dec 2022	Sunny	10:50	64.4	63.7	65.2
24 Dec 2022	Sunny	11:25	61.9	62.2	61.1
30 Dec 2022	Sunny	10:55	66.8	65.7	67.6
Minimum: 59.2 $\mu\text{g}/\text{m}^3$			Maximum: 67.6 $\mu\text{g}/\text{m}^3$		





# Appendix G

## Waste Flow Table

**Monthly Summary Waste Flow Table**

**Name of Department:**     MTR          **Contract No. / Works Order No.:**     1732    

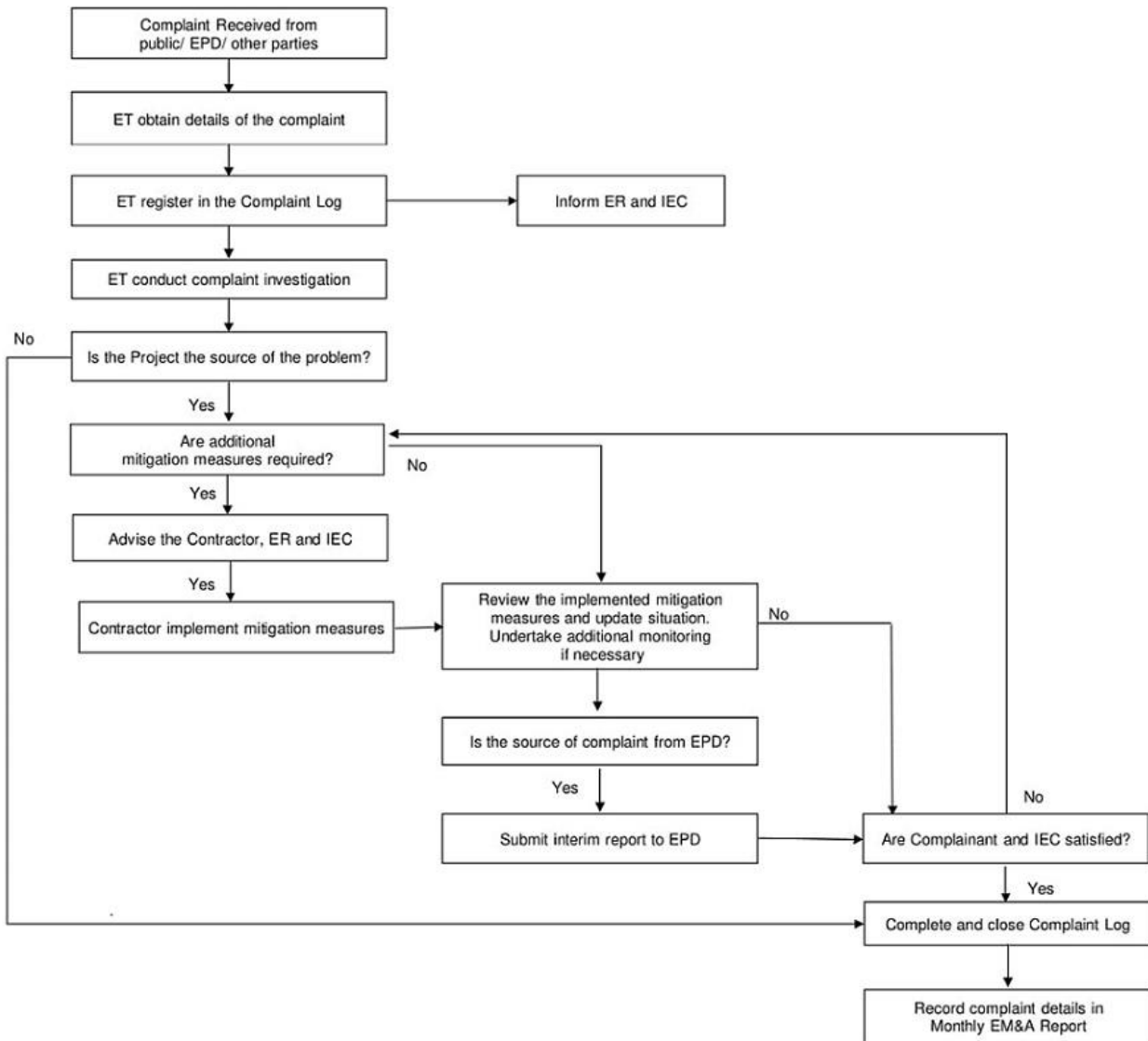
**Monthly Summary Waste Flow Table for December 2022**

Month	Actual Quantities of <u>Inert</u> Construction Waste Generated Monthly					
	(a) Total Quantity Generated	(b) Hard Rock and Large Broken Concrete	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed of as Public Fill	(f) Imported Fill
	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )
Jan-22	0.000	0.000	0.000	0.000	0.000	0.000
Feb-22	0.000	0.000	0.000	0.000	0.000	0.000
Mar-22	2.780	2.780	0.000	0.000	0.000	0.000
Apr-22	78.845	0.000	0.000	0.000	78.845	0.000
May-22	35.467	11.372	0.000	0.000	24.095	0.000
Jun-22	96.765	0.000	0.000	0.000	96.765	0.000
<b>Sub-total</b>	<b>213.857</b>	<b>14.152</b>	<b>0.000</b>	<b>0.000</b>	<b>199.705</b>	<b>0.000</b>
Jul-22	118.317	38.172	0.000	0.000	80.145	0.000
Aug-22	77.420	8.240	0.000	0.000	69.180	0.000
Sep-22	23.315	0.000	0.000	0.000	23.315	0.000
Oct-22	111.118	2.988	0.000	0.000	108.130	0.000
Nov-22	403.006	2.936	0.000	0.000	400.070	0.000
Dec-22	279.440	5.640	0.000	0.000	273.800	0.000
<b>Total</b>	<b>1226.473</b>	<b>72.128</b>	<b>0.000</b>	<b>0.000</b>	<b>1154.345</b>	<b>0.000</b>
2021	0.000	0.000	0.000	0.000	0.000	0.000
<b>Accumulated Total</b>	<b>1226.473</b>	<b>72.128</b>	<b>0.000</b>	<b>0.000</b>	<b>1154.345</b>	<b>0.000</b>

Month	Actual Quantities of <u>Non-inert</u> Construction Waste Generated Monthly					
	(g) Metals	(h) Paper/ cardboard packaging	(i) Plastics	(j) Chemical Waste	(k) Recyclable Yard Waste	(l) Others, e.g. General Refuse disposed of at Landfill
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
	generated	generated	generated	generated	generated	generated
Jan-22	0.000	0.030	0.000	0.000	0.000	140.760
Feb-22	0.000	0.051	0.000	0.000	0.000	28.180
Mar-22	0.000	0.000	0.000	0.000	4.430	9.520
Apr-22	0.000	0.116	0.000	0.000	0.000	0.000
May-22	0.000	0.010	0.000	0.000	47.010	0.000
Jun-22	0.000	0.000	0.000	0.000	42.220	13.030
<b>Sub-total</b>	<b>0.000</b>	<b>0.207</b>	<b>0.000</b>	<b>0.000</b>	<b>93.660</b>	<b>191.490</b>
Jul-22	0.000	0.017	0.000	0.010	0.000	6.300
Aug-22	0.000	0.024	0.000	0.000	0.000	2.860
Sep-22	0.000	0.015	0.000	0.000	0.000	28.080
Oct-22	0.200	0.005	0.300	0.000	0.000	20.930
Nov-22	0.000	0.009	0.000	0.000	0.000	84.330
Dec-22	0.000	0.021	0.000	0.000	0.000	59.390
<b>Total</b>	<b>0.200</b>	<b>0.277</b>	<b>0.300</b>	<b>0.010</b>	<b>93.660</b>	<b>393.380</b>
2021	0.000	0.000	0.000	0.000	0.000	0.000
<b>Accumulated Total</b>	<b>0.200</b>	<b>0.277</b>	<b>0.300</b>	<b>0.010</b>	<b>93.660</b>	<b>393.380</b>

# Appendix H

## Complaint Handling Procedure



# Appendix I

## Event-Action Plan (Air Quality Monitoring)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<b>ACTION LEVEL</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Repeat measurement to confirm findings;</li> <li>2. If exceedance is confirmed, inform the Contractor, IEC and ER;</li> <li>3. Identify source(s), investigate the causes of exceedance and propose remedial measures; and</li> <li>4. Increase monitoring frequency.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET;</li> <li>2. Check Contractor's working method; and</li> <li>3. Discuss with ET, ER and Contractor on possible remedial measures</li> <li>4. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source(s), investigate the causes of exceedance and propose remedial measures;</li> <li>2. Implement remedial measures; and</li> <li>3. Amend working methods agreed with the ER as appropriate.</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Repeat measurements to confirm findings;</li> <li>2. If exceedance is confirmed, inform Contractor, IEC and ER;</li> <li>3. Identify source(s), investigate the causes of exceedance and propose remedial measures;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Advise the Contractor and ER on the effectiveness of the proposed remedial measures;</li> <li>6. Discuss with IEC and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with Contractor, IEC and ER to discuss the remedial measures to be taken; and</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET;</li> <li>2. Check Contractor's working method; and</li> <li>3. Discuss with ET, ER and Contractor on possible remedial measures;</li> <li>4. Review and advise the ET and ER on the effectiveness of the proposed remedial measures; and</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. In consultation with the ET and IEC agree with the Contractor on the remedial measures to be implemented; and</li> <li>3. Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source(s) and investigate the causes of exceedance;</li> <li>2. Submit proposals for remedial measures to the ER, ET and IEC within three working days of notification for agreement;</li> <li>3. Implement the agreed proposals; and</li> <li>4. Amend proposal as appropriate.</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<b>LIMIT LEVEL</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Repeat measurement to confirm findings;</li> <li>2. If exceedance is confirmed, inform the Contractor, IEC, EPD and ER;</li> <li>3. Identify source(s), investigate the causes of exceedance and propose remedial;</li> <li>4. Increase monitoring frequency to daily; and</li> <li>5. Discuss with the ER, IEC and Contractor on the remedial measures and assess effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with the ET, ER and Contractor on possible remedial measures;</li> <li>4. Review and advise the ET and ER on the effectiveness of the proposed remedial measures; and</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Review and agree on the remedial measures proposed by the Contractor; and</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source(s) and investigate the causes of exceedance;</li> <li>2. Take immediate action to avoid further exceedance;</li> <li>3. Submit proposals for remedial measures to ER, ET and IEC within three working days of notification for agreement;</li> <li>4. Implement the agreed proposals; and</li> <li>5. Amend proposal if appropriate.</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Repeat measurement to confirm findings;</li> <li>2. If exceedance is confirmed, inform IEC, ER, Contractor and EPD;</li> <li>3. Identify source(s), investigate the causes of exceedance and propose remedial measures;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET;</li> <li>2. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>3. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and</li> <li>4. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>3. Supervise the implementation of remedial measures; and</li> <li>4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source(s) and investigate the causes of exceedance;</li> <li>2. Take immediate action to avoid further exceedance;</li> <li>3. Submit proposals for remedial measures to the ER, IEC and ET within three working days of notification for agreement;</li> <li>4. Implement the agreed proposals;</li> <li>5. Revise and resubmit proposals if problem still not under control; and</li> <li>6. Stop the relevant</li> </ol>



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.			portion of works as determined by the ER until the exceedance is abated.

Note: ET – Environmental Team; ER – Engineer’s Representative; IEC – Independent Environmental Checker

## Appendix J

# Statistics on Complaint, Notification of Summons and Successful Prosecution

**Table J1 Statistical Summary of Exceedance**

Air Quality			
Location	Action Level	Limit Level	Total
DM1	0	0	0

**Table J2 Statistical Summary of Environmental Complaint**

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 December 2022 - 31 December 2022	0	0	N/A

**Table J3 Statistical Summary of Environmental Non-compliance**

Reporting Period	Environmental Non-compliance Statistics		
	Frequency	Cumulative	Details
1 December 2022 - 31 December 2022	0	0	N/A

**Table J4 Statistical Summary of Environmental Summons**

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
1 December 2022 - 31 December 2022	0	0	N/A

**Table J5 Statistical Summary of Environmental Prosecution**

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
1 December 2022 - 31 December 2022	0	0	N/A

# Appendix K

## Environmental Mitigation Implementation Schedule (EMIS)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
<b>Air Quality (Construction Phase)</b>							
S3.8.1	Watering once per hour on active works areas, exposed areas and unpaved haul roads during working hours.	To minimize dust impacts	Contractor	All works area	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented
S3.8.9	<p>Implementation of dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices should be carried out to further minimize construction dust impact.</p> <ul style="list-style-type: none"> <li>• Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</li> <li>• Use of frequent watering for particularly dusty construction areas and areas close to ASRs.</li> <li>• Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines.</li> <li>• Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</li> <li>• Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</li> <li>• Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.</li> </ul>	To minimize dust impacts	Contractor	All works area	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented after observation

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<ul style="list-style-type: none"> <li>• Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods.</li> <li>• Imposition of speed controls for vehicles on unpaved site roads. 8 kilometres per hour is the recommended limit.</li> <li>• Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.</li> <li>• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.</li> <li>• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high-level alarm which is interlocked with the material filling line and no overfilling is allowed.</li> <li>• Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.</li> </ul>						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
<b>Noise Impact (Construction Phase)</b>							
S4.5.16	Implement the following good site practices as far as practicable: <ul style="list-style-type: none"> <li>• Only well-maintained plant should be operated on-site, and plant should be serviced regularly during the construction program;</li> <li>• Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program;</li> <li>• Mobile plant, if any, should be sited as far from NSRs as possible;</li> <li>• Machine and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and</li> <li>• Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.</li> </ul>	To minimise impacts to surrounding habitats	Contractor	All works area	Construction phase	TM-EIAO	Implemented
S4.5.17	Adopting quiet PME is recommended. The type of quiet PME adopted in this assessment is for reference only. The contractors may adopt alternative quiet PME as long as it can be demonstrated that they would not result in construction noise impacts worse than those predicted in this assessment.	To reduce impact to affected NSRs	Contractor	All works area	Construction phase	TM-EIAO	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
S4.5.19	Use of noise barriers and noise enclosures to provide screening for construction plant where recommended.	To reduce impact to affected NSRs	Contractor	All works area	Construction phase	TM-EIAO	N/A
<b>Water Quality Impact (Construction Phase)</b>							
S5.8.4	Surface and road run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sandbag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	Water Pollution Control Ordinance (WPCO), Technical Memorandum on EIA Ordinance (EIAO-TM), ProPECC PN 1/94, Technical Memorandum on	Implemented
S5.8.5	Silt removal facilities, channels and manholes should be maintained, and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re- alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal	Implemented
S5.8.6	Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If soil excavation cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g., by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g., along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place in such a	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	Waters (TM-DSS)	Implemented



EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.						
S5.8.7	Earthworks final surfaces should be well compacted, and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase		Implemented
S5.8.8	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase		Implemented
S5.8.9	If bentonite slurries are required for any construction works, they should be reconditioned and reused wherever practicable to minimise the disposal volume of used bentonite slurries. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after the related construction activities are completed. Requirements as stipulated in ProPECC Note PN 1/94 should be closely followed when handling and disposing bentonite slurries.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94	N/A
S5.8.10	Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
S5.8.11	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS	Implemented
S5.8.12	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS	Implemented
S5.8.12	<p>The following mitigation measures related to the transportation of the sediment should be implemented to minimize the potential water quality impact:</p> <ul style="list-style-type: none"> <li>• Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.</li> <li>• The barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation.</li> <li>• Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the Director of Environmental Protection (DEP).</li> </ul>	To minimise impact from transportation of sediment	Contractor	Barging point and barges	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
S5.8.13	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence.	To minimize impact from effluent discharge	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS	Approved
S5.8.14	<u>Water for Bored Piling Works</u> Water used in ground boring and drilling for site investigation or rock / soil anchoring should be re-circulated as far as practicable after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS	Implemented
S5.8.15	<u>Wheel Washing Water</u> Wash-water from wheel washing facility should have been treated by silt removal facilities before discharging into storm drains. Treated wash-water could be used as dust suppression measures as far as practicable. The section of access road between the wheel washing bay and the public road should be paved to reduce vehicle tracking of soil and to prevent silty water from entering public road and drains.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS	Implemented
S5.8.16	<u>Construction Works near Channelized Watercourse / Ditch</u> For minimization of potential water quality impacts from the works to nearby inland channelized watercourse/ditch near SHWSTW, the practices outlined in ProPECC Note PN 1/94 "Construction Site Drainage" and ETWB TC (Works) No.5/2005 "Protection of natural streams / rivers	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS, ETWB TC(Works) No. 5/2005	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>from adverse impacts arising from construction works” should be adopted where applicable. Relevant mitigation measures are listed below:</p> <ul style="list-style-type: none"> <li>• The use of less or smaller construction plants may be specified in works area close to the inland water bodies.</li> <li>• Temporary storage of material (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from watercourse/ditch when carrying out of the construction works. Stockpiling of construction materials and dusty materials should be covered and located away from any watercourse/ditch.</li> <li>• Construction debris and spoil should be covered up and / or disposed of as soon as possible to avoid being washed into the nearby water receivers.</li> <li>• Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the watercourse/ditch, where practicable. Construction effluent, site run-off and sewage should be properly collected and / or treated.</li> </ul>						
S5.8.17 – S5.8.19	<p><u>Accidental Spillage of Chemicals</u></p> <ul style="list-style-type: none"> <li>• The Contractor should register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied.</li> <li>• Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving</li> </ul>	To minimise impact from accidental spillage	Contractor	All works area	Construction phase	WPCO, EIAO-TM, Waste Disposal Ordinance (WDO), Waste Disposal (Chemical Waste) (General) Regulation	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</p> <ul style="list-style-type: none"> <li>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</li> <li>Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>						
S5.8.22 – S5.8.24	<p><u>Groundwater from Contaminated Areas, Contaminated Site Runoff and Wastewater from Land Decontamination</u></p> <ul style="list-style-type: none"> <li>Remediation of contaminated land should be properly conducted following the recommendations of Land Contamination Assessment to be conducted in future. Any excavated contaminated material and exposed contaminated surface should be properly housed and covered to avoid generation of contaminated runoff. Open stockpiling of contaminated materials should not be allowed. Any contaminated runoff or wastewater generated from the land decontamination processes should be properly collected and diverted to wastewater treatment facilities (WTF) as necessary. The WTF shall deploy suitable treatment processes</li> </ul>	To minimise impact from groundwater from contaminated areas, contaminated site run-off/ wastewater from land decontamination	Contractor	All works area confirmed with land contamination	Construction phase	WPCO, EIAO-TM, TM-DSS, Guidance Note for Contaminated Land Assessment	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>(e.g., oil interceptor/ activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment system shall meet the requirements as stated in TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.</p> <ul style="list-style-type: none"> <li>No direct discharge of groundwater from contaminated areas should be adopted. Prior to any excavation works within the potentially contaminated areas, the baseline groundwater quality in these areas should be reviewed based on the past relevant site investigation data and any additional groundwater quality measurements to be performed with reference to Guidance Note for Contaminated Land Assessment and Remediation and the review results should be submitted to EPD for examination. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with the requirements of the TM-DSS. If wastewater treatment is to be deployed for treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in the TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.</li> </ul>						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<ul style="list-style-type: none"> <li>If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in section 2.3 of TM-DSS. The baseline groundwater quality should be determined prior to the selection of the recharge wells, and submit a working plan to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor.</li> <li>The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.</li> </ul>						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
<b>Waste Management Implication (Construction Phase)</b>							
S7.5.3	Recommendations for good site practices during the construction phase include: <ul style="list-style-type: none"> <li>Nomination of approved personnel, such as a site manager, to be responsible for implementation of good site practices, arrangements for waste collection and effective disposal to an appropriate facility;</li> <li>Training of site personnel in site cleanliness, concepts of waste reduction, reuse and recycling, proper waste management and chemical waste handling procedures;</li> <li>Provision of sufficient waste reception/ disposal points, and regular collection of waste;</li> <li>Adoption of appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; Provision of regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;</li> <li>Adoption of a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites); and</li> <li>Preparation of Waste Management Plan (WMP), as part of the Environmental Management Plan (EMP)</li> </ul>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	Waste Disposal Ordinance (WDO) and Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)	Implemented
S7.5.4	Recommendations to achieve waste reduction are as follow: <ul style="list-style-type: none"> <li>Segregate and store different types of construction related waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>Provide separate labelled bins to segregate recyclable waste such as aluminium cans from other general refuse generated by the work force, and to encourage</li> </ul>	To minimize waste generation	Contractor	All works areas	Construction phase	WDO	Implemented



EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	collection by individual collectors; <ul style="list-style-type: none"> <li>• Recycle any unused chemicals or those with remaining functional capacity;</li> <li>• Maximise the use of reusable steel formwork to reduce the amount of C&amp;D materials;</li> <li>• Adopt proper storage and site practices to minimise the potential for damage to, or contamination of construction materials;</li> <li>• Plan the delivery and stock of construction materials carefully to minimise the amount of waste generated; and</li> <li>• Minimize over ordering and wastage through careful planning during purchasing of construction materials.</li> </ul>						
S7.5.6	To minimise the impact resulting from collection and transportation of C&D materials as far as practicable, C&D waste, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed to landfill. A suitable area should be designated within the site for temporary stockpiling of C&D materials and to facilitate the sorting process.	To minimise the disposal of C&D waste	Contractor	All works areas	Construction phase	WDO	Implemented
S7.5.6	Within the stockpile areas, the following measures should be taken to control potential environmental impacts or nuisance: <ul style="list-style-type: none"> <li>• Proper handling and storage of waste such as soil by means of covers and/or water spraying system to minimise the potential environmental impact and to prevent materials from wind-blown or being washed away;</li> <li>• Covering materials during heavy rainfall;</li> <li>• Locating stockpiles to minimise potential visual impacts;</li> </ul>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<ul style="list-style-type: none"> <li>Minimising land intake of stockpile areas as far as possible;</li> <li>Adopting GPS or equivalent system for tracking and monitoring of all dump trucks engaged for the Project in recording their travel routings and parking locations to prohibit illegal dumping and landfilling of C&amp;D materials; and</li> <li>Keeping record and analysis of data collected by GPS or equivalent system related to travel routings and parking locations of dump trucks engaged on site.</li> </ul>						
S7.5.7 to S7.5.9	<p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D materials and chemical waste. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D materials and chemical wastes. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light materials.</p> <p>The recyclable component of general refuse, such as aluminium cans, paper and cleansed plastic containers shall be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste shall be set up by the Contractor. The Contractor shall also be responsible for arranging recycling companies to collect these materials.</p> <p>The Contractor shall carry out an education programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins shall also be provided in the sites as reminders.</p>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
S7.5.10 to S7.5.12	<p>If chemical wastes were to be produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer, and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</p> <p>Appropriate containers with proper labels should be used for storage of chemical wastes. Chemical wastes should be collected and delivered to designated outlet by a licensed collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p> <p>Any unused chemicals or those with remaining functional capacity should be collected for reuse as far as practicable.</p>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO	Implemented
S7.5.13 to S7.5.14	<p>The sediment should be excavated, handled, transported and disposed of in a manner that would minimise adverse environmental impacts. For minimization of sediment disposal, beneficial reuse will be considered on site as far as practicable during the construction stage before the disposal of excavated sediment.</p> <p>Requirements of the Air Pollution Ordinance (Construction Dust) Regulation, where relevant, shall be adhered to during excavation, transportation and disposal of sediments.</p>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	APCO WDO	N/A
S7.5.15	In order to minimise the exposure to contaminated materials, workers shall, when necessary, wear appropriate personal protective equipment (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities shall also be provided on site.	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
S7.5.20	Stockpiling of contaminated sediments shall be avoided as far as possible. If temporary stockpiling of contaminated sediments is unavoidable, the excavated sediment shall be covered by tarpaulin and the area shall be placed within earth bunds or sandbags to prevent leachate from entering the ground, nearby drains and/or surrounding water bodies. The stockpiles shall be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas shall be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, shall be collected and discharged according to the Water Pollution Control Ordinance (WPCO).	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WPCO	N/A
S7.5.21	In order to minimise the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments shall be wetted during excavation / material handling and shall be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO APCO	N/A
<b>Land Contamination</b>							
S8.9.3	To minimise environmental impacts arising from the handling of potentially contaminated materials, the following environmental precautionary measures are recommended to be utilised during the course of any required site remediation: <ul style="list-style-type: none"> <li>• Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety;</li> <li>• Establish and maintain a Health and Safety Plan with the information below before commencement of the SI:</li> </ul>	To control land remediation work	Contractor	Area identified with land contamination	Prior to the commencement of construction works at the contaminated areas	“Guidance Note for Contaminated Land Assessment and Remediation”  “Guidance Manual for Use of Risk-based Remediation Goals for Contaminated	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>(a) Instruction of works on work procedures, safe practices, emergency duties, and applicable regulations;</p> <p>(b) Regularly scheduled meetings of the workers in which the possible hazards, problems of the job, and related safe practices are emphasized and discussed;</p> <p>(c) Good housekeeping practices; and</p> <p>(d) Availability of and instruction in the location, use and maintenance of personal protective equipment.</p> <ul style="list-style-type: none"> <li>• Excavation shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils;</li> <li>• Supply of suitable clean backfill material (or treated soil) after excavation;</li> <li>• Stockpiling site(s) shall be lined with impermeable sheeting and bunded. Stockpiles shall be fully covered by impermeable sheeting to reduce dust emission. If this is not practicable due to frequent usage, regular watering shall be applied. However, watering shall be avoided on stockpiles of contaminated soil to minimise contaminated runoff;</li> <li>• Vehicles containing any excavated materials shall be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates shall be sealed to prevent any discharge during transport or during wet conditions;</li> <li>• Speed control for the trucks carrying contaminated materials shall be enforced;</li> <li>• Vehicle wheel and body washing facilities at the site exist points shall be established and used; and</li> <li>• Pollution control measures for air emissions (e.g. from biopile blower and handling of cement), noise</li> </ul>					<p>Land Management</p> <p>“Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)”</p> <p>APCO, WDO and WPCO</p>	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	emissions (e.g. from blower or earthmoving equipment), and water discharges (e.g. runoff control from treatment facility) shall be implemented and complied with relevant regulations and guidelines.						
<b>Landscape and Visual Impact (Construction Phase)</b>							
S9.8.1	Trees unavoidably affected by the works should be transplanted as far as possible in accordance with DEVB TC(W) 7/2015 – Tree Preservation or LAO PN 7/2007 - Tree Preservation and Tree Removal Application for Building Development in Private Projects where applicable.	To transplant affected trees	Contractor	All works areas	Construction phase	DEVB TC(W) No. 7/2015 or LAO PN 7/2007 where applicable	N/A
S9.8.1	Control of night-time lighting glare.	To minimize the Landscape and visual impact on surrounding setting	Contractor	All works areas	Construction phase	TM-EIAO	N/A
S9.8.1	Erection of decorative screen hoarding which should be compatible with the surrounding setting.		Contractor	All works areas	Construction phase	TM-EIAO	N/A
S9.8.1	Management of facilities on work sites by controlling the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.	To minimize visual impact to adjacent VSRs.	Contractor	All works areas	Construction phase	-	Implemented
S9.8.1	All hard and soft landscape areas disturbed temporarily during construction should be reinstated on like-to-like basis, to the satisfaction of the relevant Government Departments.	To minimize the landscape impact on surrounding setting	Contractor	All works areas	Construction phase	-	To be implemented

## Appendix L

# Monitoring Schedule of the Reporting Month

**Consultancy Agreement No.NEX/1062**  
**Siu Ho Wan Station and Siu Ho Wan Depot Replanning Works - Advance Constuction Works**  
**Dust and Noise Monitoring Schedule in December 2022**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Dec	2-Dec	3-Dec
4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec
	1-hr Dust Monitoring					1-hr Dust Monitoring
11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec
					1-hr Dust Monitoring	
18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec
			1-hr Dust Monitoring			1-hr Dust Monitoring
25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec
					1-hr Dust Monitoring	



# Appendix M

## Monitoring Schedule of the Coming Month

**Consultancy Agreement No.NEX/1062**  
**Siu Ho Wan Station and Siu Ho Wan Depot Replanning Works - Advance Constuction Works**  
**Tentative Dust and Noise Monitoring Schedule in January 2023**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan
				1-hr Dust Monitoring		
8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan
			1-hr Dust Monitoring			
15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan
		1-hr Dust Monitoring				
22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan
				1-hr Dust Monitoring		
29-Jan	30-Jan	31-Jan				

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

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**Appendix B**

**Monthly EM&A Report for December 2022 – Vehicular Access  
Bridge, Demolition of Paint Shop and Construction of EV  
Stabling Tracks Works Contract 1733**

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**MTR Corporation Limited  
Siu Ho Wan Depot Property Development -  
Vehicular Access Bridge,  
Demolition of Paint Shop and Construction  
of EV Stabling Tracks  
Monthly EM&A Report  
(Period from 1 to 31 December 2022)**

Prepared by

**SGS Hong Kong Limited**

**MTR Corporation Limited**


## Issue and Revision Record

Revision	Description	Prepared by	Checked by	Approved by	Date
01	Submission	Various	Roy Hung A.H.	Grace Fung G.F.	Jan 2023

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**APPENDIX F – MONITORING DATA**

**APPENDIX G – WASTE FLOW TABLE**

**APPENDIX H - COMPLAINT HANDLING PROCEDURE**


**APPENDIX I - EVENT-ACTION PLAN**

**APPENDIX J - STATISTICS ON COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION**

**APPENDIX K - ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)**

**APPENDIX L - MONITORING SCHEDULE OF THE REPORTING MONTH**

**APPENDIX M - MONITORING SCHEDULE OF THE COMING MONTH**

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## EXECUTIVE SUMMARY

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SGS Hong Kong Limited. (“SGS”) has been commissioned by the Build King Civil Engineering Limited, to undertake the Environmental Team (ET) services to carry out environmental monitoring and audit (EM&A) for Vehicular Access Bridge, Demolition of Paint Shop and Construction of EV Stabling Tracks (hereafter referred to as the “Project”).

This is the 9<sup>th</sup> monthly EM&A report for the project submitted under Condition 3.4 of the Environmental Permit (No. EP-588/2021). This report summarises the findings on EM&A during the period from 1 to 31 December 2022.

### Exceedance of Action and Limit Levels

The summary of measured 1-hour TSP level is presented in **Section 3**.

No exceedance of Action or Limit Levels for 1-hour TSP levels were recorded in the Reporting Period.

### Waste Management

Details of waste management are presented in **Section 4**.

### Record of Complaints

There was no record of complaints received in the Reporting Period.

### Record of Notification of Summons and Successful Prosecutions

There were no record of notification of summons and successful prosecution in the Reporting Period.

### Reporting Changes


There are no reporting changes.

### Site inspection

Weekly environmental site inspections were conducted during the reporting period. A joint site inspection with the IEC was carried out on 19 December 2022. Non-compliance was not observed. Observation and recommendation were reported during the site inspection. Items are rectified accordingly in the reporting period. The environmental performance of the Project was therefore considered satisfactory.


### Future Key Issues

- Paint shop demolition
- Excavation
- Substructure
- Instruments installation & plate load test

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- EV Tracks - Formation and Track installation
- UU Diversion
- Installation of Piezometer and Standpipe
- Construction of southern ramp of vehicular access bridge
- Chain-link fence installation



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## 1. PROJECT INFORMATION

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The Project involves the construction of vehicular access bridge, demolition of paint shop and construction of engineering vehicle (EV) stabling tracks.

The Siu Ho Wan Station and Siu Ho Wan Depot Replanning Works Environmental Impact Assessment Report was approved with conditions by the Environmental Protection Department (EPD) on 29 Nov 2017. The latest Environmental Permit (No. EP-588/2021) was issued by the EPD on 22 March 2021.

SGS Hong Kong Limited (SGS) has been commissioned by Build King Civil Engineering Limited to undertake the Environmental Team (ET) services to carry out environmental monitoring and audit for this project.


The Project covers the following construction activities:

- Site clearance & hoarding /UU/ Cable Trenches
- Paint shop demolition
- Excavation (Soil)
- Substructure (footings, pile caps, columns, abutments)
- Backfilling
- Superstructure (Vehicle Bridge Spans)
- EV Tracks – Formation and Track installation

The construction programme is presented in **Appendix A**

A summary of the major construction activities undertaken in this reporting period (from 1 to 31 December 2022) is shown in below:

- Paint shop demolition
- Excavation
- Substructure
- Instruments installation & plate load test
- EV Tracks - Formation and Track installation
- UU Diversion
- Installation of Piezometer and Standpipe


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The project organizational chart specifying management structure and contact details are shown in **Appendix B**.

A summary of the valid permits, licenses, and /or notifications on environmental protection for this Project is presented in **Table 1.1**.

**Table 1.1 Summary of Status of Required Submission for EP-588/2021 for the Project**

Type of Permit/ License	Permit No. / Account No.	Valid From	Expiry Date	Status
Environmental Permit	EP-588/2021	22 Mar 2021	N/A	Valid
Wastewater Discharge License	WT00041829-2022	31 Aug 2022	31 Aug 2027	Valid
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation	Ref.: 477410	N/A	N/A	Notification submitted on 3 Mar 2022
Chemical Waste Producer Registration	WPN5213-961-B2653-01	15 Feb 2022	N/A	Valid
Billing Account for Disposal of Construction Waste	7043460	18 Mar 2022	N/A	Valid
Construction Noise Permit	GW-RS0484-22	22 Jun 2022	15 Dec 2022	Suspended on 16 Dec 2022
	GW-RS1036-22	16 Dec 2022	15 June 2023	Valid


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## 2. ENVIRONMENTAL STATUS

Environmental permit (EP) conditions under the EIAO, submission status under the EP and implementation status of mitigation measures had been reviewed and implemented on schedule. The status of required submissions under the EP (No. EP-588/2021) as of the reporting period for the Project are summarised in **Table 2.1**.

**Table 2.1 Summary of Status of Required Submission for EP-588/2021 for the Project**

EP Condition	Submission	Submission Date
1.12	Commencement Date of Construction	11 Jun 2021 (1st submission) 12 Jul 2021 (2nd submission) 12 Aug 2021 (3rd submission)
2.7	Construction Works Phasing Schedule	1 Nov 2021 (1st submission) 20 Dec 2021 (2nd submission) 29 Dec 2021 (Deposited)
2.8	Environmental Permit Submission Schedule	12 Aug 2021 10 Sep 2021 (Deposited)
2.9	Management Organization	1 Nov 2021 (1st Submission) 20 Dec 2021 ( 2nd Submission) 21 Mar 2022 (3rd Submission) 9 Aug 2022 (4th Submission) 16 Nov 2022 (5th Submission)
2.10	Construction Noise Mitigation Plan	1 Nov 2021 (1st submission) 20 Dec 2021 (2nd submission) 28 Dec 2021 (3rd submission) 30 Dec 2022 (Deposited)


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2.13	Waste Management Plan	1 Nov 2021 (1st submission) 20 Dec 2021 (2nd submission) 28 Dec 2021 (Deposited)
3.3	Baseline Monitoring Report	1 Nov 2021 16 Nov 2021 (Deposited)
3.4	Monthly Monitoring Report (Oct 2022)	To be submitted within 10 working days after the end of the reporting month
4.2	Dedicated Internet Website	12 Jan 2022

The drawings showing the project layout and the location of the monitoring station are attached in **Appendix C** and **Appendix D**, respectively. A summary of the monitoring location is shown in **Table 2.2**.

**Table 2.2 Summary of the location of the monitoring station**

<b>Air Sensitive Receiver (ASR) ID No. in EIA</b>	<b>Monitoring Station</b>	<b>Description</b>
A2	DM1	Siu Ho Wan Government Maintenance Depot

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### 3. AIR QUALITY MONITORING

#### MONITORING REQUIREMENTS, FREQUENCY AND DURATION

The impact monitoring had been carried out in accordance with Section 2.6 of the approved EM&A Manual, with sampling frequency of at least 3 times in every 6 days undertaken, to determine the 1-hour total suspended particulates (TSP) levels at the monitoring locations in the reporting period.

General meteorological conditions (wind speed, direction and precipitation) and notes regarding any significant adjacent dust producing sources had also been recorded throughout the impact monitoring period.

#### **Monitoring Equipment**

Portable direct reading dust meter was used to carry out the 1-hour TSP monitoring. Portable direct reading dust meters used in this monitoring were proven to the IEC to be capable of achieving comparable result as that of the HVS and, thus, were used for sampling. The equipment used for 1-hour TSP measurement during the reporting month are summarised in **Table 3.1**.

**Table 3.1 Construction Dust Monitoring Equipment**


Measuring Parameter	Monitoring Equipment	Brand	Model No.	Calibration Date
1-hour TSP	Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3)	A.005.11a	4 May 2022
1-hour TSP	Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3)	A.005.16a	4 May 2022

The portable direct reading dust meter was calibrated at 1-year interval against a High Volume Sampler, TE-5170. Copies of calibration certificates of the portable direct reading dust meter are presented in **Appendix E**.

#### **Field Monitoring Methodology**

The 1-hour TSP measurement followed manufacturer's instruction manual. Before initiating a measurement, zeroing the Portable direct reading dust meter was carried out to ensure maximum accuracy of concentration measurements.

The 1-hour TSP was sampled by drawing air into the portable direct reading dust meter where particular concentrations were measured instantaneously with an in-built silicon detector sensing light scattered by

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the particulates in the sampled air. Continuous TSP levels were indicated and logged by a built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

### **Monitoring Location**

Location of the designated dust monitoring station is described in **Table 3.2**.

**Table 3.2 Location of the designated dust monitoring station**

<b>Monitoring Station ID</b>	<b>Dust Monitoring Station</b>
DM1	Siu Ho Wan Government Maintenance Depot


### **Result Summary**

Dust impact monitoring was carried out at DM1 on 5, 10, 16, 21, 24 and 30 December 2022 during the reporting month (**Appendix L**). According to our field observations, the major dust sources identified included vehicular emissions from North Lantau Highway and Cheung Tung Road. Gentle wind was recorded throughout the monitoring period, with gentle to strong wind recorded occasionally.

The results for 1 - hour TSP are summarized in **Table 3.3**. The measurement data is presented in **Appendix F**

**Table 3.3 Summary of 1-hour TSP Monitoring Results**

<b>Monitoring Location</b>	<b>Range (µg/m3)</b>	<b>Action Level (µg/m3 )</b>	<b>Limit Level (µg/m3 )</b>	<b>No. of Exceedances</b>
DM1	59.2 – 67.6	294.7	500	0

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#### 4. WASTE MANAGEMENT


The waste generated from this Project includes inert C&D materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/ cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarized in Table 4.1. Details of cumulative waste management data are presented as a waste flow table in **Appendix G**.

**Table 4.1 Quantities of waste generated from the Project**

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics (See note 3)	Chemical Waste	Other, e.g. general refuse
	[in Tonne]	[in Tonne]	[in Tonne]	[in Tonne]	[in Tonne]	[in Tonne]	[in Tonne]	[in kg]	[in kg]	[in kg]	[in Tonne]
Dec	686.71	0.00	0.00	0.00	686.71	0.00	15.90	0.00	0.00	0.00	20.74

All dump trucks for C&D materials transportation and disposal will be equipped with Global Positioning System (GPS) for real time tracking and monitoring their travel routings and parking locations in order to avoid illegal dumping or landfilling of C&D materials.

The GPS data including travel routings of dump trucks was reviewed by the ET and IEC, and no illegal dumping activities were suspected.

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## 5. SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

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The Environmental Complaint Handling Procedure is shown in **Appendix H**.

Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan in **Appendix I** shall be carried out.


No exceedance of the Action and Limit Levels of 1-hour TSP was recorded during the reporting month.

No complaint or non-compliance was reported in the reporting month.

No notification of summons and prosecution was received in the reporting period.

Statistics on complaints, notifications of summons and successful prosecutions are summarized in **Appendix J**.



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## 6. EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, four (4) site inspections were carried out on 5, 12, 19 and 28 December 2022. One joint site inspection with the IEC also undertaken on 19 December 2022 with engineer, IEC, contractor and contractor's ET. No observations and reminders were reported during the weekly site inspection. Key observations during the site inspections are summarized in **Table 6.1**.

**Table 6.1 Site Observations**

<b>Date</b>	<b>Observation or Reminder</b>	<b>Follow-up Status</b>
5 December 2022	Observation 1: It is observed that wheel washing water leaked into nearby gully. The contractor was reminded to install water curve to prevent contamination. (Target date: 9 Dec 2022)	Item 1: Existing gully was screened by water barriers and will be removed due to construction works and additional sandbags bunding are provided to prevent water seepage into the drain. (Item closed on 8 Dec 2022)
12 December 2022	No particular findings	N/A
19 December 2022	No particular findings	N/A
28 December 2022	No particular findings	N/A

According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents are implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix K**.

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## 7. FUTURE KEY ISSUES

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Work to be undertaken in the next reporting month are:

- Paint shop demolition
- Excavation
- Substructure
- Instruments installation & plate load test
- EV Tracks - Formation and Track installation
- UU Diversion
- Installation of Piezometer and Standpipe
- Construction of southern ramp of vehicular access bridge
- Chain-link fence installation

The tentative schedule of regular 1-hour TSP monitoring in the next reporting period is presented in **Appendix M**.

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## 8. CONCLUSION AND RECOMMENDATION

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This 9<sup>th</sup> monthly EM&A Report presents the EM&A works undertaken during the period from 1 December to 31 December 2022 in accordance with the EM&A Manual and the requirement under EP-588/2021.

Air quality (including 1-hour TSP) impact monitoring was carried out in the reporting period. No exceedance of the Action and Limit Levels was recorded for air quality impact monitoring during the reporting period.


Weekly environmental site inspections were conducted during the reporting period. A joint site inspection with the IEC was carried out on 19 December 2022. Non-compliance was not observed. Observation and recommendation were reported during the site inspection. Items are rectified accordingly in the reporting period. The environmental performance of the Project was therefore considered satisfactory.

No complaint or non-compliance was reported in the reporting month.

No notification of summons or prosecution was received in the reporting month.

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

The proposed mitigation measures were properly implemented and were considered effective and efficient in pollution control.

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## **APPENDIX A – CONSTRUCTION PROGRAMME**

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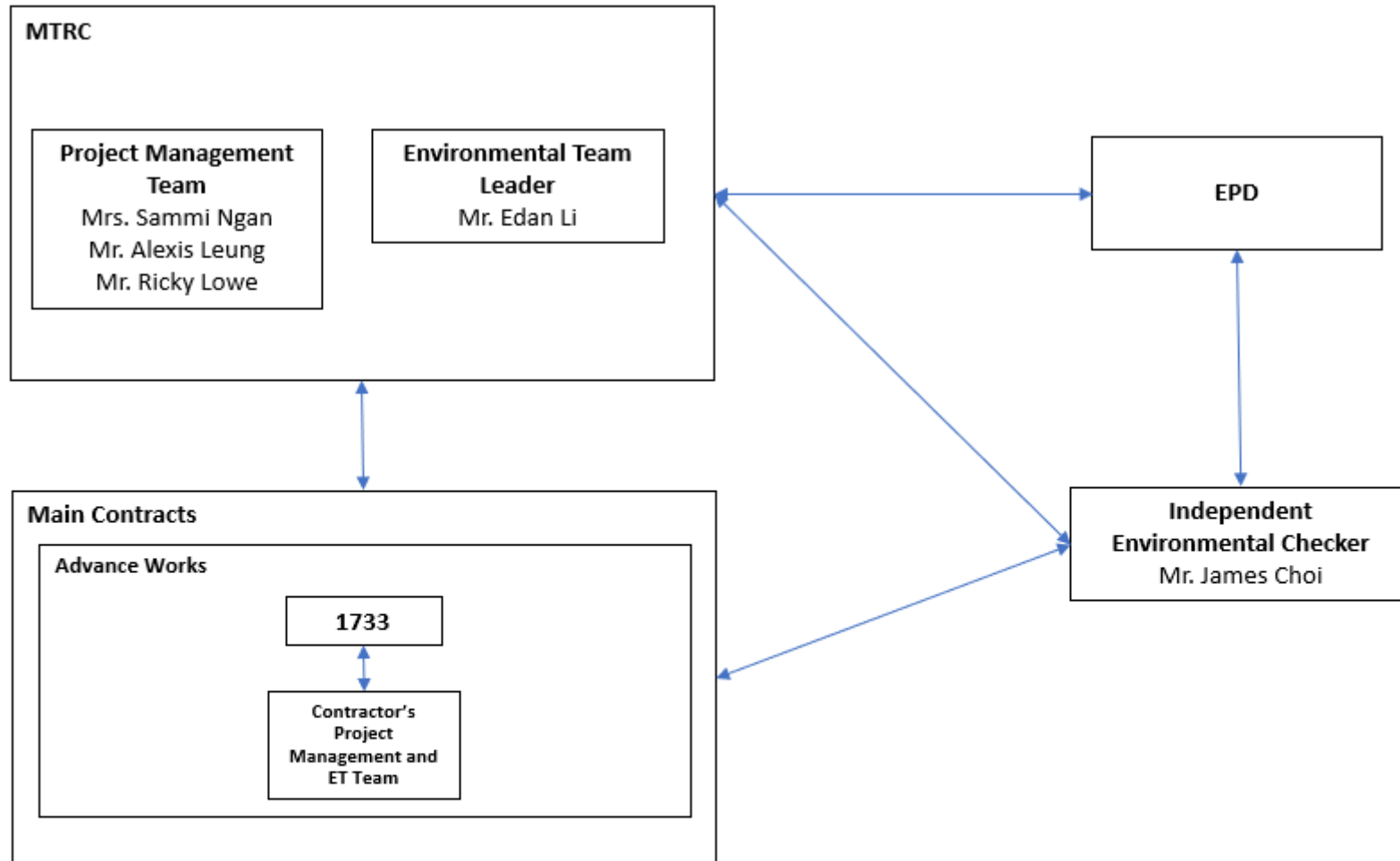
Monthly EM&A Report

Construction Activities	2022												2023											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
	<b>Contract 1733 - Vehicular Access Bridge, Demolition of Paint Shop and Construction of EV Stabling Tracks</b>																							
<i>Site Clearance &amp; Hoarding / UU / Cable Trenches</i>																								
<i>Paint Shop Demolition</i>																								
<i>Excavation (Soil)</i>																								
<i>Substructure (footing, pile caps, columns, abutments)</i>																								
<i>Backfilling</i>																								
<i>Superstructure (Vehicular Bridge Spans)</i>																								
<i>EV Tracks - Formation and Track Installation</i>																								

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**APPENDIX B – PROJECT ORGANIZATION CHART**

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**Legend:**

↔ Communication channel

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MTR's Contact:

<b>MTRC - Project Management Team</b>		
<i>Position</i>	<i>Name</i>	<i>Telephone</i>
Chief Construction Manager - OYB	Mrs. Sammi Ngan	2208 3753
Senior Project Manager-Property	Mr. Alexis Leung	2993 8028
Senior Design Manager-Civil	Mr. Ricky Lowe	2208 3347


<b>MTRC - Environmental Team</b>		
<i>Position</i>	<i>Name</i>	<i>Telephone</i>
Environmental Team Leader	Mr. Edan Li	2688 1179
Environmental Team Member	Mr. Cyrus Lau	3127 6296

<b>ANewR Consulting Limited - IEC</b>		
<i>Position</i>	<i>Name</i>	<i>Telephone</i>
Independent Environmental Checker	Mr. James Choi	2618 2836

Contractor's Contact

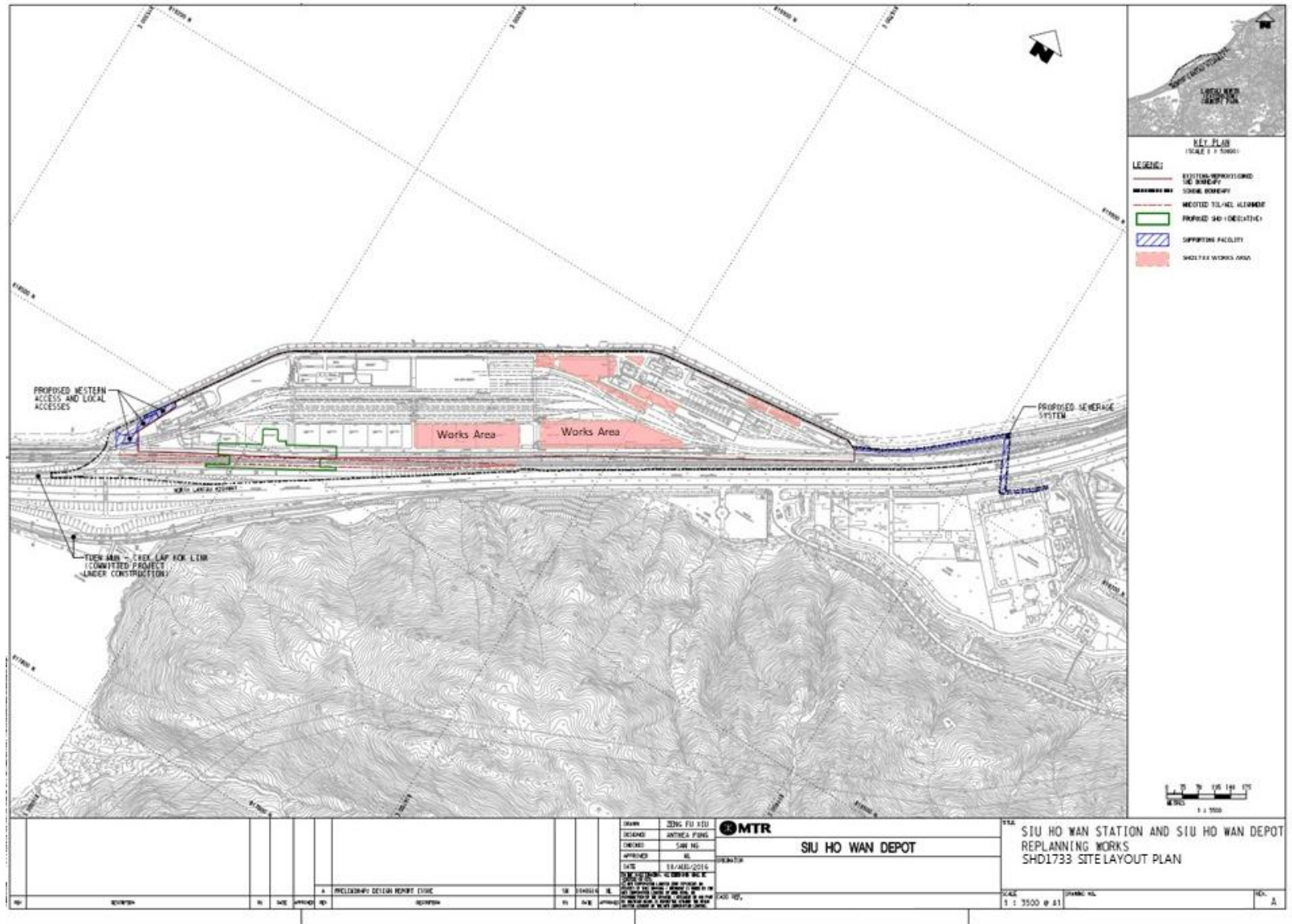
<b>Main Works Contract</b>	<b>Description</b>	<b>Contractor</b>	<b>Position</b>	<b>Name</b>	<b>Telephone</b>
<b>1733</b>	Vehicular access bridge, demolition of paint shop and construction of engineering vehicle stabling tracks	Build King Civil Engineering Ltd	Project Manager	Andy Yu	9648 4896
			Environmental Manager	Louisa Fung	9271 5370
			Environmental Officer	Jason Cheng	6158 2117
			Environmental Team Leader	Roy Hung	2204 8305




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**APPENDIX C – ALIGNMENT AND WORKS AREA FOR CONTRACT NO. 1733**

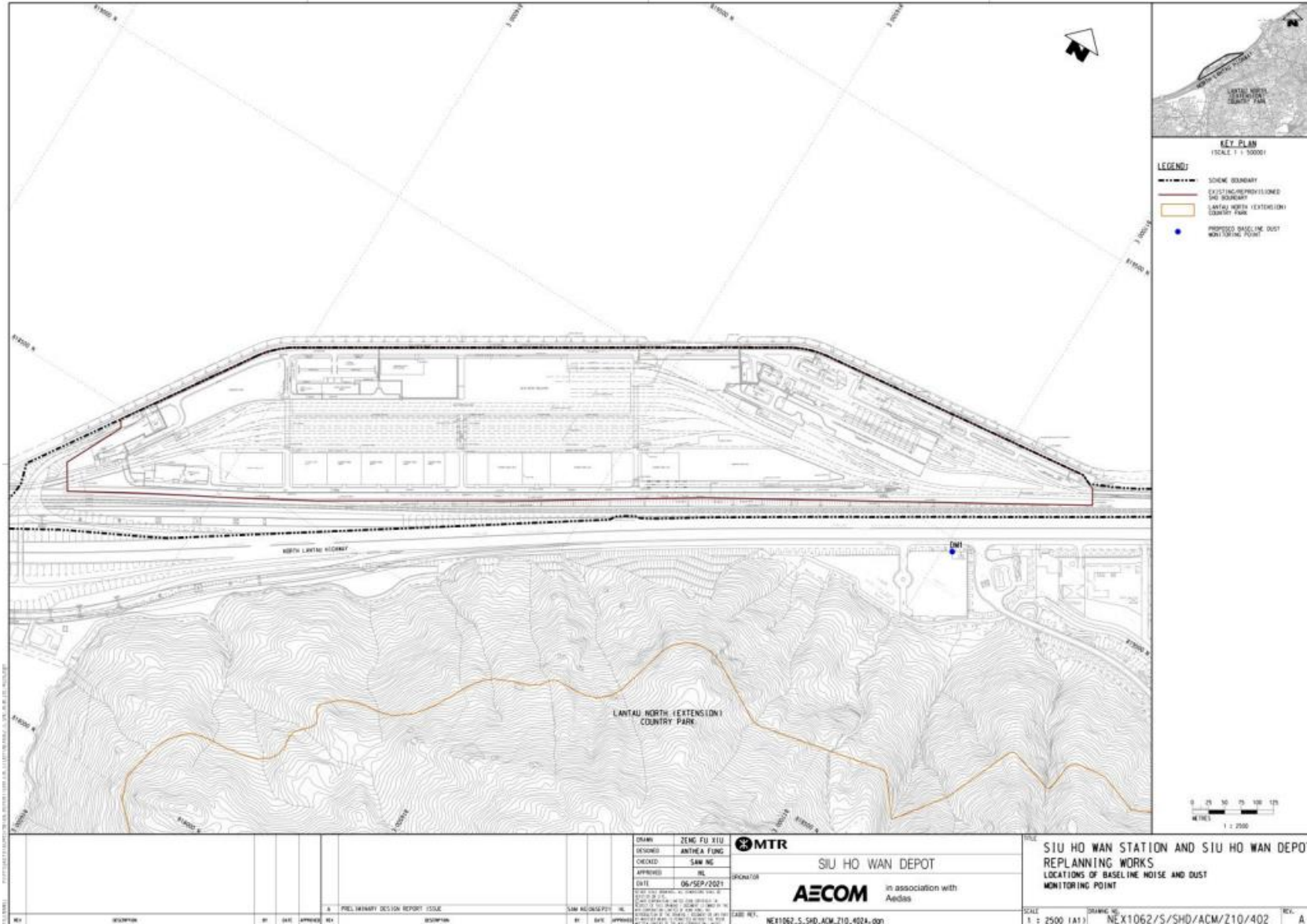
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**APPENDIX D - LOCATION PLAN OF AIR QUALITY MONITORING STATION**

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**APPENDIX E - CALIBRATION CERTIFICATES (AIR QUALITY MONITORING EQUIPMENT)**

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Monthly EM&A Report

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3  
 Equipment No.: A.005.11a  
 Sensitivity Adjustment Scale Setting: 799 CPM  
 Operator: WS CHAN

Standard Equipment

Equipment: High Volume Sampler  
 Venue: Fanling Government Secondary School  
 Model No.: TE-5170  
 Serial No.: 3154  
 Last Calibration Date: 28-Apr-22

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 799 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 799 CPM

Hour	Date (dd/mm/yy)	Time	Ambient Condition		Concentration <sup>①</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>②</sup>	Count/ Minute <sup>③</sup> X-axis
			Temp (°C)	R.H.(%)			
1	03/05/22	9:30-10:30	26.0	60	0.0490	1920	32.00
2	03/05/22	10:30-11:30	26.0	60	0.0500	2010	33.50
3	03/05/22	11:30-12:30	26.0	60	0.0520	2140	35.67
4	03/05/22	12:30-13:30	26.0	60	0.0540	2290	38.17

- Note:
- ① Monitoring data was measured by High Volume Sampler
  - ② Total Count was logged by Laser Dust Monitor
  - ③ Count/minute was calculated by (Total Count/60)

By Linear Regression of Y on X  
 Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9991

Validity of Calibration Record: 3-May-23

Remarks:

QC Reviewer:

Yurong

Signature:

Y

Date:

4-May-22



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EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3B  
 Equipment No.: A.005.16a  
 Sensitivity Adjustment Scale Setting: 521 CPM  
 Operator: WS CHAN

Standard Equipment

Equipment: High Volume Sampler  
 Venue: Fanling Government Secondary School  
 Model No.: TE-5170  
 Serial No.: 3154  
 Last Calibration Date: 28-Apr-22

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 521 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 521 CPM

Hour	Date (dd/mm/yy)	Time	Ambient Condition		Concentration <sup>①</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>②</sup>	Count/ Minute <sup>③</sup> X-axis
			Temp (°C)	R.H.(%)			
1	03/05/22	9:30-10:30	26.0	60	0.0490	1850	30.83
2	03/05/22	10:30-11:30	26.0	60	0.0500	1980	33.00
3	03/05/22	11:30-12:30	26.0	60	0.0520	2070	34.50
4	03/05/22	12:30-13:30	26.0	60	0.0540	2160	36.00

Note: ① Monitoring data was measured by High Volume Sampler  
 ② Total Count was logged by Laser Dust Monitor  
 ③ Count/minute was calculated by (Total Count/60)

By Linear Regression of Y on X  
 Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9995

Validity of Calibration Record: 3-May-23

Remarks:

QC Reviewer:


Yw Fung

Signature:

[Signature]

Date:

4 May 22

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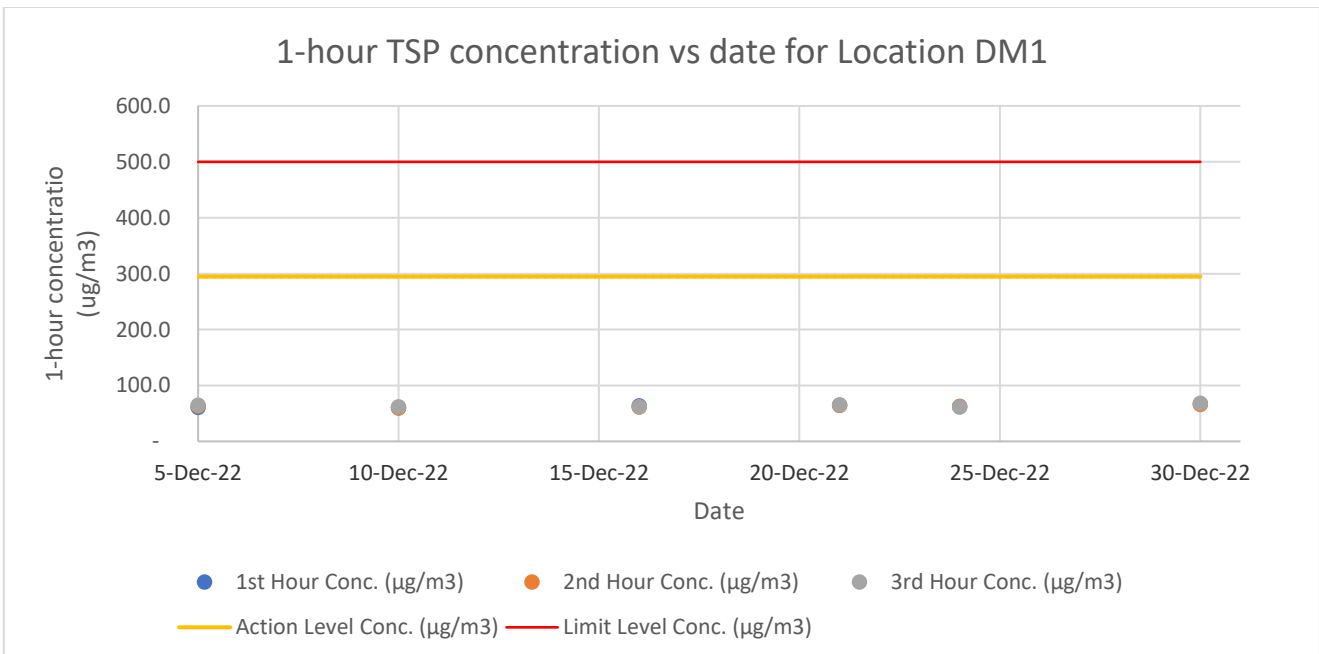
**APPENDIX F – MONITORING DATA (AIR QUALITY MONITORING)**


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The Summary of 1-hour TSP Concentration ( $\mu\text{g}/\text{m}^3$ ) at Location DM1

Date	Start Time (hh:mm)	1st Hour	2nd Hour	3rd Hour	Action Level	Limit Level	Exceedance (Y/N)
		Conc. ( $\mu\text{g}/\text{m}^3$ )	Conc. ( $\mu\text{g}/\text{m}^3$ )	Conc. ( $\mu\text{g}/\text{m}^3$ )	Conc. ( $\mu\text{g}/\text{m}^3$ )	Conc. ( $\mu\text{g}/\text{m}^3$ )	
5-Dec-22	10:50	60.6	62.7	64.4	294.7	500	N
10-Dec-22	11:15	59.7	59.2	61.7			N
16-Dec-22	10:50	63.3	61	61.6			N
21-Dec-22	10:50	64.4	63.7	65.2			N
24-Dec-22	11:25	61.9	62.2	61.1			N
30-Dec-22	10:55	66.8	65.7	67.6			N
		Average		62.9			
		Min		59.2			
		Max		67.6			



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**APPENDIX G – WASTE FLOW TABLE**


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### Monthly Summary Waste Flow Table for 2022 Year

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of <u>Non-inert</u> C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics (See note 3)	Chemical Waste	Other, e.g. general refuse
	[in Tonne]	[in Tonne]	[in Tonne]	[in Tonne]	[in Tonne]	[in Tonne]	[in Tonne]	[in kg]	[in kg]	[in kg]	[in Tonne]
Jan											
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.49
Jun	306.77	0.00	0.00	0.00	306.77	0.00	0.00	0.00	0.00	0.00	95.20
<b>SUB-TOTAL</b>	<b>306.77</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>306.77</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>107.69</b>
Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.51
Aug	3.22	0.00	0.00	0.00	3.22	0.00	0.00	0.00	0.00	0.00	32.81
Sep	162.85	0.00	0.00	0.00	162.85	0.00	0.00	0.00	0.00	0.00	64.01
Oct	597.20	0.00	0.00	0.00	597.20	0.00	4.62	0.00	0.00	0.00	28.63
Nov	2015.92	0.00	0.00	0.00	2015.92	0.00	0.00	0.00	0.00	0.00	22.76
Dec	686.71	0.00	0.00	0.00	686.71	0.00	15.90	0.00	0.00	0.00	20.74
<b>TOTAL</b>	<b>3772.67</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3772.67</b>	<b>0.00</b>	<b>20.52</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>298.15</b>

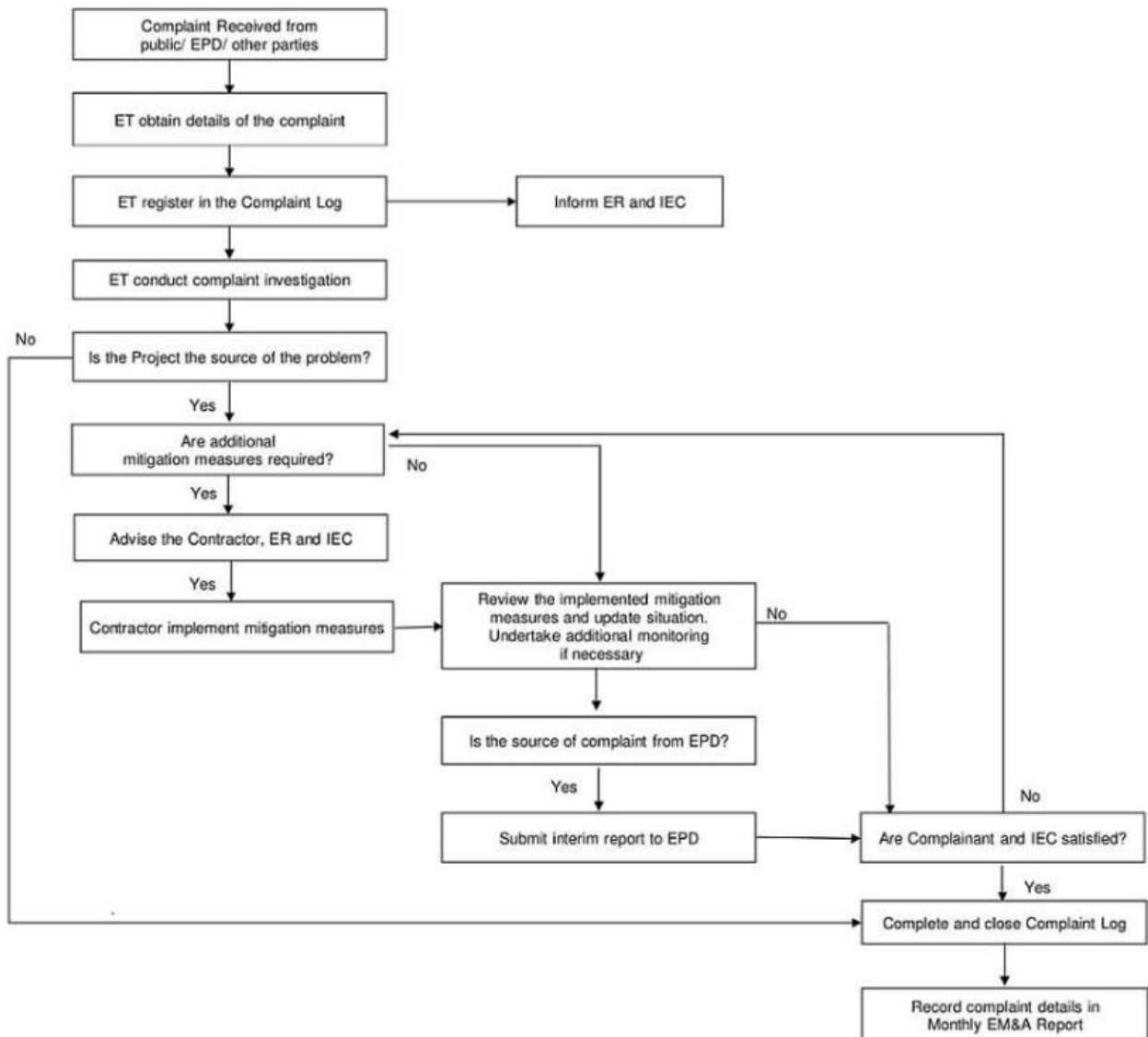
Note: <sup>1</sup> full loaded dumping truck is assumed equivalent to 6.5 m<sup>3</sup> by volume from Archsd D/OL03/09.002  
 Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material


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**APPENDIX H - COMPLAINT HANDLING PROCEDURE**

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**APPENDIX I - EVENT-ACTION PLAN (AIR QUALITY MONITORING)"**

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EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<b>ACTION LEVEL</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>Repeat measurement to confirm findings;</li> <li>If exceedance is confirmed, inform the Contractor, IEC and ER;</li> <li>Identify source(s), investigate the causes of exceedance and propose remedial measures; and</li> <li>Increase monitoring frequency.</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by the ET;</li> <li>Check Contractor's working method; and</li> <li>Discuss with ET, ER and Contractor on possible remedial measures</li> <li>Review and advise the ET and ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing.</li> </ol>	<ol style="list-style-type: none"> <li>Identify source(s), investigate the causes of exceedance and propose remedial measures;</li> <li>Implement remedial measures; and</li> <li>Amend working methods agreed with the ER as appropriate.</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>Repeat measurements to confirm findings;</li> <li>If exceedance is confirmed, inform Contractor, IEC and ER;</li> <li>Identify source(s), investigate the causes of exceedance and propose remedial measures;</li> <li>Increase monitoring frequency to daily;</li> <li>Advise the Contractor and ER on the effectiveness of the proposed remedial measures;</li> <li>Discuss with IEC and Contractor on remedial actions required;</li> <li>If exceedance continues, arrange meeting with Contractor, IEC and ER to</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by the ET;</li> <li>Check Contractor's working method; and</li> <li>Discuss with ET, ER and Contractor on possible remedial measures;</li> <li>Review and advise the ET and ER on the effectiveness of the proposed remedial measures; and</li> <li>Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing;</li> <li>In consultation with the ET and IEC agree with the Contractor on the remedial measures to be implemented; and</li> <li>Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>Identify source(s) and investigate the causes of exceedance;</li> <li>Submit proposals for remedial measures to the ER, ET and IEC within three working days of notification for agreement;</li> <li>Implement the agreed proposals; and</li> <li>Amend proposal as appropriate.</li> </ol>




EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	discuss the remedial measures to be taken; and 8. If exceedance stops, cease additional monitoring.			
<b>LIMIT LEVEL</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>Repeat measurement to confirm findings;</li> <li>If exceedance is confirmed, inform the Contractor, IEC, EPD and ER;</li> <li>Identify source(s), investigate the causes of exceedance and propose remedial;</li> <li>Increase monitoring frequency to daily; and</li> <li>Discuss with the ER, IEC and Contractor on the remedial measures and assess effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by the ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with the ET, ER and Contractor on possible remedial measures;</li> <li>Review and advise the ET and ER on the effectiveness of the proposed remedial measures; and</li> <li>Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Review and agree on the remedial measures proposed by the Contractor; and</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>Identify source(s) and investigate the causes of exceedance;</li> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial measures to ER, ET and IEC within three working days of notification for agreement;</li> <li>Implement the agreed proposals; and</li> <li>Amend proposal if appropriate.</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>Repeat measurement to confirm findings;</li> <li>If exceedance is confirmed, inform IEC, ER, Contractor and EPD;</li> <li>Identify source(s), investigate the causes of exceedance and propose remedial measures;</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by the ET;</li> <li>Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>Review Contractor's remedial actions whenever necessary to assure their</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing;</li> <li>In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>Supervise the implementation of remedial measures; and</li> </ol>	<ol style="list-style-type: none"> <li>Identify source(s) and investigate the causes of exceedance;</li> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial measures to the ER, IEC and ET within three working days of notification for agreement;</li> </ol>






EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.	effectiveness and advise the ER accordingly; and 4. Supervise the implementation of remedial measures.	4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; and 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note: ET – Environmental Team; ER – Engineer's Representative; IEC – Independent Environmental Checker

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**APPENDIX J - STATISTICS ON COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION**

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Statistic Summary of Exceedance

<b>Air Quality</b>			
<b>Location</b>	<b>Action Level</b>	<b>Limit Level</b>	<b>Total</b>
DM1	0	0	0

Statistical Summary of Environmental Complaint


<b>Reporting Period</b>	<b>Environmental Complaint Statistics</b>		
	<b>Frequency</b>	<b>Cumulative</b>	<b>Complaint Nature</b>
1 December 2022 – 31 December 2022	0	0	0

Statistical Summary of Environmental Non-compliance

<b>Reporting Period</b>	<b>Environmental Non-compliance Statistics</b>		
	<b>Frequency</b>	<b>Cumulative</b>	<b>Complaint Nature</b>
1 December 2022 – 31 December 2022	0	0	0


Statistical Summary of Environmental Summons

<b>Reporting Period</b>	<b>Environmental Summons Statistics</b>		
	<b>Frequency</b>	<b>Cumulative</b>	<b>Complaint Nature</b>
1 December 2022 – 31 December 2022	0	0	0

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Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 December 2022 – 31 December 2022	0	0	0

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**APPENDIX K - ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)**

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EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
<b>Air Quality (Construction Phase)</b>							
S3.8.1	Watering once per hour on active works areas, exposed areas and unpaved haul roads during working hours.	To minimize dust impacts	Contractor	All works area	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented
S3.8.9	<p>Implementation of dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices should be carried out to further minimize construction dust impact.</p> <ul style="list-style-type: none"> <li>• Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</li> <li>• Use of frequent watering for particularly dusty construction areas and areas close to ASRs.</li> <li>• Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines.</li> <li>• Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</li> <li>• Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</li> <li>• Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.</li> <li>• Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points,</li> </ul>	To minimize dust impacts	Contractor	All works area	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented



EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods.</p> <ul style="list-style-type: none"> <li>• Imposition of speed controls for vehicles on unpaved site roads. 8 kilometres per hour is the recommended limit.</li> <li>• Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.</li> <li>• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.</li> <li>• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.</li> <li>• Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.</li> </ul>						
<b>Noise Impact (Construction Phase)</b>							
S4.5.16	<p>Implement the following good site practices as far as practicable:</p> <ul style="list-style-type: none"> <li>• Only well-maintained plant should be operated on-site, and plant should be serviced regularly during the</li> </ul>	To minimise impacts to surrounding habitats	Contractor	All works area	Construction phase	TM-EIAO	Implemented



EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>construction program;</p> <ul style="list-style-type: none"> <li>• Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program;</li> <li>• Mobile plant, is any, should be sited as far from NSRs as possible;</li> <li>• Machine and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and</li> <li>• Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities</li> </ul>						
S4.5.17	Adopting quiet PME is recommended. The type of quiet PME adopted in this assessment is for reference only. The contractors may adopt alternative quiet PME as long as it can be demonstrated that they would not result in construction noise impacts worse than those predicted in this assessment.	To reduce impact to affected NSRs	Contractor	All works area	Construction phase	TM-EIAO	Implemented
S4.5.19	Use of noise barriers and noise enclosures to provide screening for construction plant where recommended.	To reduce impact to affected NSRs	Contractor	All works area	Construction phase	TM-EIAO	N/A
<b>Water Quality Impact (Construction Phase)</b>							
S5.8.4	Surface and road run-off from construction sites should be discharged into storm drains via adequately designed	To minimise impact from	Contractor	All works area	Construction phase	Water Pollution Control	





EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	construction site run-off				Ordinance (WPCO), Technical Memorandum on EIA Ordinance (EIAO-TM), ProPECC PN 1/94, Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)	implemented
S5.8.5	Silt removal facilities, channels and manholes should be maintained, and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re- alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	implemented
S5.8.6	Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If soil excavation cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	implemented

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	roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.						
S5.8.7	Earthworks final surfaces should be well compacted, and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	implemented
S5.8.8	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	implemented
S5.8.9	If bentonite slurries are required for any construction works, they should be reconditioned and reused wherever practicable to minimise the disposal volume of used bentonite slurries. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after the related construction activities are completed. Requirements as stipulated in ProPECC Note PN 1/94 should be closely followed when handling and disposing bentonite slurries.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94	Implemented
S5.8.10	Open stockpiles of construction materials (e.g. aggregates,	To minimise	Contractor	All works area	Construction	WPCO,	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	impact from construction site run-off			phase	EIAO- TM, ProPECC PN 1/94, TM-DSS	implemented
S5.8.11	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	Implemented
S5.8.12	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	Implemented
S5.8.12	The following mitigation measures related to the transportation of the sediment should be implemented to minimize the potential water quality impact: Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. <ul style="list-style-type: none"> <li>The barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation.</li> <li>Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as</li> </ul>	To minimise impact from transportation of sediment	Contractor	Barging point and barges	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94	N/A

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EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	specified by the Director of Environmental Protection (DEP).						
S5.8.13	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. The beneficial uses of the treated effluent for other on- site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence.	To minimize impact from effluent discharge	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	Implemented
S5.8.14	<u>Water for Bored Piling Works</u> Water used in ground boring and drilling for site investigation or rock / soil anchoring should be re-circulated as far as practicable after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	To be implemented
S5.8.15	<u>Wheel Washing Water</u> Wash-water from wheel washing facility should have been treated by silt removal facilities before discharging into storm drains. Treated wash-water could be used as dust suppression measures as far as practicable. The section of access road between the wheel washing bay and the public road should be paved to reduce vehicle tracking of soil and to prevent silty water from entering public road and drains.	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO- TM, ProPECC PN 1/94, TM-DSS	implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
S5.8.16	<p><u>Construction Works near Channelized Watercourse / Ditch</u></p> <p>For minimization of potential water quality impacts from the works to nearby inland channelized watercourse/ditch near SHWSTW, the practices outlined in ProPECC Note PN 1/94 “Construction Site Drainage” and ETWB TC (Works) No.5/2005 “Protection of natural streams / rivers from adverse impacts arising from construction works” should be adopted where applicable. Relevant mitigation measures are listed below:</p> <ul style="list-style-type: none"> <li>• The use of less or smaller construction plants may be specified in works area close to the inland water bodies.</li> <li>• Temporary storage of material (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from watercourse/ditch when carrying out of the construction works. Stockpiling of construction materials and dusty materials should be covered and located away from any watercourse/ditch.</li> <li>• Construction debris and spoil should be covered up and / or disposed of as soon as possible to avoid being washed into the nearby water receivers.</li> <li>• Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the watercourse/ditch, where practicable. Construction effluent, site run-off and sewage should be properly collected and / or treated.</li> </ul>	To minimise impact from construction site run-off	Contractor	All works area	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS, ETWB TC(Works) No. 5/2005	Implemented
S5.8.17 – S5.8.19	<p><u>Accidental Spillage of Chemicals</u></p> <ul style="list-style-type: none"> <li>• The Contractor should register as a chemical waste producer if chemical wastes would be produced from</li> </ul>	To minimise impact from accidental spillage	Contractor	All works area	Construction phase	WPCO, EIAO-TM, Waste Disposal	Implemented



EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied.</p> <ul style="list-style-type: none"> <li>Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</li> <li>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: <ul style="list-style-type: none"> <li>Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul> </li> </ul>					Ordinance (WDO), Waste Disposal (Chemical Waste) (General) Regulation	
S5.8.22 – S5.8.24	<p><u>Groundwater from Contaminated Areas, Contaminated Site Runoff and Wastewater from Land Decontamination</u></p> <ul style="list-style-type: none"> <li>Remediation of contaminated land should be properly</li> </ul>	To minimise impact from groundwater from	Contractor	All works area confirmed with land	Construction phase	WPCO, EIAO-TM, TM-DSS, Guidance	N/A



EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>conducted following the recommendations of Land Contamination Assessment to be conducted in future. Any excavated contaminated material and exposed contaminated surface should be properly housed and covered to avoid generation of contaminated runoff. Open stockpiling of contaminated materials should not be allowed. Any contaminated runoff or wastewater generated from the land decontamination processes should be properly collected and diverted to wastewater treatment facilities (WTF) as necessary. The WTF shall deploy suitable treatment processes (e.g. oil interceptor/ activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment system shall meet the requirements as stated in TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.</p> <ul style="list-style-type: none"> <li>No direct discharge of groundwater from contaminated areas should be adopted. Prior to any excavation works within the potentially contaminated areas, the baseline groundwater quality in these areas should be reviewed based on the past relevant site investigation data and any additional groundwater quality measurements to be performed with reference to Guidance Note for Contaminated Land Assessment and Remediation and the review results should be submitted to EPD for examination. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with</li> </ul>	<p>contaminated areas, contaminated site run-off/ wastewater from land decontamination</p>		<p>contamination</p>		<p>Note for Contaminated Land Assessment</p>	



EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>the requirements of the TM-DSS. If wastewater treatment is to be deployed for treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in the TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.</p> <ul style="list-style-type: none"> <li>• If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in section 2.3 of TM-DSS. The baseline groundwater quality should be determined prior to the selection of the recharge wells, and submit a working plan to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor.</li> </ul>						




EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<ul style="list-style-type: none"> <li>The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.</li> </ul>						
<b>Waste Management Implication (Construction Phase)</b>							
S7.5.3	<p>Recommendations for good site practices during the construction phase include:</p> <ul style="list-style-type: none"> <li>Nomination of approved personnel, such as a site manager, to be responsible for implementation of good site practices, arrangements for waste collection and effective disposal to an appropriate facility;</li> <li>Training of site personnel in site cleanliness, concepts of waste reduction, reuse and recycling, proper waste management and chemical waste handling procedures;</li> <li>Provision of sufficient waste reception/ disposal points, and regular collection of waste;</li> <li>Adoption of appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; Provision of regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;</li> <li>Adoption of a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites); and</li> <li>Preparation of Waste Management Plan (WMP), as part of the Environmental Management Plan (EMP)</li> </ul>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	Waste Disposal Ordinance (WDO) and Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)	Implemented
S7.5.4	<p>Recommendations to achieve waste reduction are as follow:</p> <ul style="list-style-type: none"> <li>Segregate and store different types of construction</li> </ul>	To minimize waste generation	Contractor	All works areas	Construction phase	WDO	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	<p>related waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</p> <ul style="list-style-type: none"> <li>• Provide separate labelled bins to segregate recyclable waste such as aluminium cans from other general refuse generated by the work force, and to encourage collection by individual collectors;</li> <li>• Recycle any unused chemicals or those with remaining functional capacity;</li> <li>• Maximise the use of reusable steel formwork to reduce the amount of C&amp;D materials;</li> <li>• Adopt proper storage and site practices to minimise the potential for damage to, or contamination of construction materials;</li> <li>• Plan the delivery and stock of construction materials carefully to minimise the amount of waste generated; and</li> <li>• Minimize over ordering and wastage through careful planning during purchasing of construction materials.</li> </ul>						
S7.5.6	To minimise the impact resulting from collection and transportation of C&D materials as far as practicable, C&D waste, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed to landfill. A suitable area should be designated within the site for temporary stockpiling of C&D materials and to facilitate the sorting process.	To minimise the disposal of C&D waste	Contractor	All works areas	Construction phase	WDO	Implemented
S7.5.6	Within the stockpile areas, the following measures should be taken to control potential environmental impacts or nuisance:	To avoid and minimize impacts	Contractor	All works areas	Construction phase	WDO	Implemented

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	<ul style="list-style-type: none"> <li>• Proper handling and storage of waste such as soil by means of covers and/or water spraying system to minimise the potential environmental impact and to prevent materials from wind-blown or being washed away;</li> <li>• Covering materials during heavy rainfall;</li> <li>• Locating stockpiles to minimise potential visual impacts;</li> <li>• Minimising land intake of stockpile areas as far as possible;</li> <li>• Adopting GPS or equivalent system for tracking and monitoring of all dump trucks engaged for the Project in recording their travel routings and parking locations to prohibit illegal dumping and landfilling of C&amp;D materials; and</li> <li>• Keeping record and analysis of data collected by GPS or equivalent system related to travel routings and parking locations of dump trucks engaged on site.</li> </ul>	arising from waste management					
S7.5.7 to S7.5.9	<p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D materials and chemical waste. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D materials and chemical wastes. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light materials.</p> <p>The recyclable component of general refuse, such as aluminium cans, paper and cleansed plastic containers shall be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste shall be</p>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO	Implemented

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	<p>set up by the Contractor. The Contractor shall also be responsible for arranging recycling companies to collect these materials.</p> <p>The Contractor shall carry out an education programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins shall also be provided in the sites as reminders.</p>						
S7.5.10 to S7.5.12	<p>If chemical wastes were to be produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer, and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</p> <p>Appropriate containers with proper labels should be used for storage of chemical wastes. Chemical wastes should be collected and delivered to designated outlet by a licensed collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p> <p>Any unused chemicals or those with remaining functional capacity should be collected for reuse as far as practicable.</p>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO	Implemented
S7.5.13 to S7.5.14	<p>The sediment should be excavated, handled, transported and disposed of in a manner that would minimise adverse environmental impacts. For minimization of sediment disposal, beneficial reuse will be considered on site as far as practicable during the construction stage before the disposal</p>	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	APCO WDO	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	of excavated sediment.  Requirements of the Air Pollution Ordinance (Construction Dust) Regulation, where relevant, shall be adhered to during excavation, transportation and disposal of sediments.						
S7.5.15	In order to minimise the exposure to contaminated materials, workers shall, when necessary, wear appropriate personal protective equipment (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities shall also be provided on site.	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO	N/A
S7.5.20	Stockpiling of contaminated sediments shall be avoided as far as possible. If temporary stockpiling of contaminated sediments is unavoidable, the excavated sediment shall be covered by tarpaulin and the area shall be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and/or surrounding water bodies. The stockpiles shall be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas shall be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, shall be collected and discharged according to the Water Pollution Control Ordinance (WPCO).	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WPCO	N/A
S7.5.21	In order to minimise the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments shall be wetted during excavation / material handling and shall be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding	To avoid and minimize impacts arising from waste management	Contractor	All works areas	Construction phase	WDO APCO	N/A



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EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location of the Measures	Implementation Stage	Requirements	Implementation Status
	water.						
<b>Land Contamination</b>							
S8.9.3	<p>To minimise environmental impacts arising from the handling of potentially contaminated materials, the following environmental precautionary measures are recommended to be utilised during the course of any required site remediation:</p> <ul style="list-style-type: none"> <li>Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety;</li> <li>Establish and maintain a Health and Safety Plan with the information below before commencement of the SI: <ul style="list-style-type: none"> <li>(a) Instruction of works on work procedures, safe practices, emergency duties, and applicable regulations;</li> <li>(b) Regularly scheduled meetings of the workers in which the possible hazards, problems of the job, and related safe practices are emphasized and discussed;</li> <li>(c) Good housekeeping practices; and</li> <li>(d) Availability of and instruction in the location, use and maintenance of personal protective equipment.</li> </ul> </li> <li>Excavation shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils;</li> <li>Supply of suitable clean backfill material (or treated soil) after excavation;</li> <li>Stockpiling site(s) shall be lined with impermeable sheeting and banded. Stockpiles shall be fully covered by impermeable sheeting to reduce dust emission. If this is not practicable due to frequent usage, regular</li> </ul>	To control land remediation work	Contractor	Area identified with land contamination	Prior to the commencement of construction works at the contaminated areas	<p>“Guidance Note for Contaminated Land Assessment and Remediation”</p> <p>“Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management</p> <p>“Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)”</p> <p>APCO, WDO and WPCO</p>	N/A




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	<p>watering shall be applied. However, watering shall be avoided on stockpiles of contaminated soil to minimise contaminated runoff;</p> <ul style="list-style-type: none"> <li>• Vehicles containing any excavated materials shall be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates shall be sealed to prevent any discharge during transport or during wet conditions;</li> <li>• Speed control for the trucks carrying contaminated materials shall be enforced;</li> <li>• Vehicle wheel and body washing facilities at the site's exist points shall be established and used; and</li> <li>• Pollution control measures for air emissions (e.g. from biopile blower and handling of cement), noise emissions (e.g. from blower or earthmoving equipment), and water discharges (e.g. runoff control from treatment facility) shall be implemented and complied with relevant regulations and guidelines.</li> </ul>						
<b>Landscape and Visual Impact (Construction Phase)</b>							
S9.8.1	Trees unavoidably affected by the works should be transplanted as far as possible in accordance with DEVB TC(W) 7/2015 – Tree Preservation or LAO PN 7/2007 - Tree Preservation and Tree Removal Application for Building Development in Private Projects where applicable.	To transplant affected trees	Contractor	All works areas	Construction phase	DEVB TC(W) No. 7/2015 or LAO PN 7/2007 where applicable	Implemented
S9.8.1	Control of night-time lighting glare.	To minimize the Landscape and visual impact on surrounding setting	Contractor	All works areas	Construction phase	TM-EIAO	Implemented
S9.8.1	Erection of decorative screen hoarding which should be compatible with the surrounding setting.	To minimize the Landscape and visual impact on	Contractor	All works areas	Construction phase	TM-EIAO	Implemented

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		surrounding setting					
S9.8.1	Management of facilities on work sites by controlling the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.	To minimize visual impact to adjacent VSRs.	Contractor	All works areas	Construction phase	-	Implemented
S9.8.1	All hard and soft landscape areas disturbed temporarily during construction should be reinstated on like-to-like basis, to the satisfaction of the relevant Government Departments.	To minimize the landscape impact on surrounding setting	Contractor	All works areas	Construction phase	-	To be implemented



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**APPENDIX L - MONITORING SCHEDULE OF THE REPORTING MONTH**

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**Consultancy Agreement No.NEX/1062**  
**Siu Ho Wan Station and Siu Ho Wan Depot Replanning Works - Advance Constuction Works**  
**Dust and Noise Monitoring Schedule in December 2022**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Dec	2-Dec	3-Dec
4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec
	1-hr Dust Monitoring					1-hr Dust Monitoring
11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec
					1-hr Dust Monitoring	
18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec
			1-hr Dust Monitoring			1-hr Dust Monitoring
25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec
					1-hr Dust Monitoring	

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**APPENDIX M - MONITORING SCHEDULE OF THE COMING MONTH**

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**Consultancy Agreement No.NEX/1062**  
**Siu Ho Wan Station and Siu Ho Wan Depot Replanning Works - Advance Constuction Works**  
**Dust and Noise Monitoring Schedule in January 2023**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan
				1-hr Dust Monitoring		
8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan
			1-hr Dust Monitoring			
15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan
		1-hr Dust Monitoring				
22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan
				1-hr Dust Monitoring		
29-Jan	30-Jan	31-Jan				