Alchmex – Paul Y Joint Venture

Central Kowloon Route Contract HY/2018/02

Section of Kai Tak East

Final EM&A Report

(Period from 9 September 2019 to 31 December 2025)

Rev. 1
(5 March 2026)

	Name	Signature
Prepared by	Andre Chui (Assistant Environmental Consultant)	
Checked & Reviewed by	Joe Ho (Lead Consultant)	
Approved & Certified by	Kevin W. M. Li (Environmental Team Leader)	

路政署
HIGHWAYS DEPARTMENT
主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

ERM

Environmental Permit No. EP-457/2013/D

Central Kowloon Route

Independent Environmental Checker Verification

Works Contract:	**Kai Tak East (HY/2018/02)**

Reference Document/Plan

Document/~~Plan~~ to be ~~Certified~~/ Verified:	Final EM&A Report (R1)
Date of Report:	5 March 2026
Date received by IEC:	5 March 2026

Reference EP Condition

Environmental Permit Condition: 3.4

Submission of Monthly EM&A Report of the Project

3.4 Four hard copies and one electronic copy of monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of each reporting month throughout the entire construction period. The EM&A Reports shall include a summary of all non-compliance. The submissions shall be certified by the ET Leader and verified by the IEC as complying with the requirements as set out in the EM&A Manual before submission to the Director. Additional copies of the submission shall be provided to the Director upon request by the Director.

IEC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-457/2013/D.

Ms Mandy To Date: 6 March 2026

Independent Environmental Checker

Our ref: 0436942_IEC Verification Cert_KTE_Final EM&A Rpt.docx

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EXECUTIVE SUMMARY

A.1 Alchmex – Paul Y Joint Venture ("Contractor") commenced the construction works of Highway Department (HyD) Central Kowloon Route Contract No. HY/2018/02 – Section of Kai Tak East ("The Project") on 9 September 2019. This report is the Final Environmental Monitoring and Audit (EM&A) report presenting the summarized EM&A programme carried out during the period from 9 September 2019 to 31 December 2025.

A.2 All major construction works under Contract No. HY/2018/02 were substantially completed by the end of December 2025. No significant environmental impact will be expected in the remaining minor rectification works for defects.

A.3 The impact air quality monitoring had been carried out in accordance with section 5.8 of the approved EM&A Manual to determine the 1-hour and 24-hour total suspended particulates (TSP) levels at the monitoring locations for the duration of the Project.

A.4 The sampling frequency of at least once every 6 days was strictly followed at the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least 3 times every 6 days was undertaken when the highest dust impact occurs.

A.5 The impact air quality monitoring station for 1-hour TSP monitoring and 24-hour TSP monitoring took place at the Hong Kong International Trade and Exhibition Centre (E-A1) from 9 September 2019 to 23 March 2024, then was relocated to the Fire Services Department Kowloon Bay Workshop (E-A1a) on 25 March 2024, and monitoring took place at this location from 27 March 2024 to 31 December 2025. Relocation of the monitoring station was due to the Hong Kong International Trade and Exhibition Centre, undergoing redevelopment works.

A.6 Joint weekly site inspections were conducted by representatives of the Environmental team (ET), the Contractor and the Engineer throughout the duration of the project. A joint site inspection with the Independent Environmental Checker (IEC) was carried out on a monthly basis. All observed items were rectified within the reporting period. The environmental performance of the Project was considered satisfactory.

A.7 Bi-weekly inspection of the implementation of landscape and visual mitigation measures by ET was conducted throughout the Project duration.

A.8 No exceedance of the Action and Limit Levels of 24-hour TSP and 1-hour TSP monitoring were recorded throughout the duration of the Project.

A.9 A total of five complaints were recorded throughout the project. All complaints were settled and reported in their respective Monthly EM&A reports.

A.10 Four noise action level exceedances were recorded. All instances of action level exceedance were from noise nuisance complaints.

A.11 No non-compliance was received throughout the duration of the Project.

A.12 No notification of summons and prosecution was received throughout the duration of the Project.

1. BASIC PROJECT INFORMATION

1.1. Central Kowloon Route (CKR) is a 4.7 km long dual 3-lane trunk road in Central Kowloon linking Yau Ma Tei Interchange in West Kowloon with the road network on Kai Tak Development and Kowloon Bay in East Kowloon.

1.2. The Central Kowloon Route – Design and Construction Environmental Impact Assessment Report (Register No.: AEIAR-171/2013) was approved with conditions by the Environmental Protection Department (EPD) on 11 July 2013. An Environmental Permit (EP 457/2013) was issued on 9 August 2013. Variations of EP (VEP) was subsequently applied for and the latest EP (EP-457/2013/D) was issued by EPD on 15 June 2021.

1.3. The construction of the CKR had been divided into different sections. This Contract No. HY/2018/02 – Section of Kai Tak East (KTE) covers part of the construction activities located at Kai Tak under the EP which includes:

- Section of Kai Tak East

i. construction of an approximately 700m long dual 2-lane Central Kowloon Route mainline at Kai Tak, including at-grade roads and bridges;

ii. construction of Kai Tak Interchange, including bridges, underpass, and associated at-grade slip roads, connecting the Central Kowloon Route with the existing road network;

iii. construction of a footbridge, and demolition/backfill of an existing subway across Kai Fuk Road;

iv. realignment of existing Kai Fuk Road, Kai Cheung Road and Kai Cheung Road/Kai Fuk Road loop road;

v. reconstruction of an approximately 30m long existing multi-cell box culvert;

vi. construction of an approximately 130m long underground ventilation and E&M audit;

vii. construction of Ring Road Underpass, connecting Central Kowloon Route mainline and Central Kowloon Route Administration Building;

viii. junction improvement works at existing Wang Kwong Road/Kai Cheung Road and Wang Kwong Road/Lam Hing Street junctions;

ix. arrangement and implementation of cross boundary disposal of construction and demolition materials; and

x. associated roadworks, drainage, waterworks, landscaping works, geotechnical works, and electrical and mechanical works.

1.4. The alignment and works area for the Contract No. HY/2018/02 - are shown in **Appendix A**.

1.5. Sectional Completion of the Project had been achieved by 1 September 2025, and all major construction works were completed by 31 December 2025 with the cessation of the EM&A Programme on 31 December 2025.

1.6. Throughout the duration of the Project, no changes were made to the EM&A Programme.

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

1.8. The EM&A programme under Contract No. HY/2018/02 – Section of Kai Tai East required regular dust monitoring and environmental site audits. The EM&A requirements are described in the following section, including:

Summary of EM&A Requirements

- Environmental mitigation measures, as recommended in the EIA Report;
- Environmental impact hypothesis tested;
- Environmental quality performance limits (Action and Limit Levels);
- All monitoring parameters; and
- Event and Action Plans;

2. ENVIRONMENTAL STATUS

2.1. 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 (EP-457/2013/D) 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-457/2013/D for the Project

EP Condition (EP-457/2013/D)	Submission	Submission date
Condition 3.4	Monthly EM&A Report	Within 2 weeks after end of each monitoring period

2.2. The drawing showing the project layout and the location of the monitoring station and environmental sensitive receivers are attached in **Appendix A** and **Appendix F**. Co-ordinates of the monitoring locations are shown in below:

Table 2.2 Summary for the location of monitoring station

Monitoring Location	Location ID	Latitude	Longitude	Remark
Hong Kong International Trade and Exhibition Centre	E-A1	22.323912	114.203512	No longer available due to redevelopment of the location. The last monitoring date at this location was on 23 March 2024
Fire Services Department Kowloon Bay Workshop	E-A1a	22.324455	114.205243	Alternative location for air quality monitoring station measured since 25 March 2024. The first monitoring date at this location was 27 March 2024.

2.3. With the cessation and termination of the EMA Programme for Contract No. HY/2018/02 on 31 December 2025, the monitoring station and environmental monitoring was subsequently ceased and terminated.

3. AIR QUALITY MONITORING RESULTS

Monitoring Parameters

3.1. The impact monitoring had been carried out in accordance with section 5.8 of the approved EM&A Manual to determine the 1-hour and 24-hour total suspended particulates (TSP) levels at the monitoring locations in the reporting month.

3.2. The sampling frequency of at least once in every 6 days, was strictly followed at the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least 3 times in every 6 days was undertaken when the highest dust impact occurs.

3.3. 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

3.4. 1-hour TSP levels and 24-hour TSP had been measured with direct reading dust meter and High-Volume Samplers respectively. It has been demonstrated its capability in achieving comparable results with high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50).

3.5. The 1-hour TSP meter was calibrated by the manufacturer prior to purchasing. Zero response of the instrument was checked before and after each monitoring event. Operation of the 1-hour TSP meter followed manufacturer's Operation and Service Manual. The 24-hour TSP meter was calibrated against firmware 80570-8100-V1.0.4, annually. Operation of the 24-hour TSP meter followed manufacturer's Operation and Service Manual.

Monitoring Methodology and QA/QC results

3.6. The 1-hour TSP monitor, portable dust meters (Sibata Digital Dust Indicator Model LD-5R) was used for the impact monitoring. The 1-hour TSP meters provides a real time 1-hour TSP measurement based on 90^{o} light scattering. Three 1-hour TSP level were logged per every six days.

3.7. The 24-hour TSP monitor, High Volume Samplers (Tisch TE-5170x High Volume Air Sampler) were used for the impact monitoring. The 24-hour TSP monitoring consists of the following:

- The HVS was set at the monitoring location, with electricity supply connected and secured;
- HVS was calibrated before commencing the 1st measurement;
- The filter paper was weight and provided by HOKLAS lab (Acumen Laboratory and Testing Limited and ALS Technichem (HK) Pty Ltd) before and after the sampling;
- The airflow over time during sampling process was recorded by the HVS.

3.8. HVSs were free-standing with no obstruction. The following criteria were considered in the installation of the HVS:

- Appropriate support to secure the samples against gusty wind needed to be provided at the monitoring station;
- A minimum of 2m separation from walls, parapets and penthouses was required for rooftop samplers;
- No furnace or incinerator flues were nearby;
- Airflow around the sampler was unrestricted; and
- Permission could be obtained to set up the samplers and gain access to the monitoring station.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring
- A secure supply of electricity is needed to operate the samplers.

3.9. Preparation of Filter Papers:

- Glass fiber filters were labelled and sufficient filters that were clean and without pinholes were selected;
- All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25℃ and not varied by more than ±3℃; the relative humidity (RH)was 40%; and
- Acumen Laboratory and Testing Limited and ALS Technichem (HK) Pty Limited, as HOKLAS accredited laboratory, implemented comprehensive quality assurance and quality control programmes on the filters.

3.10. Field Monitoring:

- The power supply was checked to ensure that the HVS was working properly;
- The filter holder and area surrounding the filter were cleaned;
- The filter holder was removed by loosening the foul bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully;
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- The shelter lid was closed and secured with an aluminum strip;
- The HVS was warmed- up for about 5 minutes to establish run- temperature conditions;
- A new flow rate record sheet was inserted into the flow recorder;
- The flow rates of the HVS was checked and adjusted to between 1.13-1.19 m3min-1, which was within the range specified in the EM&A Manual (i.e. 0.6- 1.7 m3min-1);
- The programmable timer was set for a sampling period of 24 hours ±hour, and the starting time, weather condition and filter number were recorded;
- The initial elapsed time was recorded;
- At the end of sampling, the sampled filter was removed carefully and folded in half so that only surfaces with collected particulate matter were in contact;
- The filter paper was placed in a clean plastic envelope and sealed; all monitoring information was recorded on a standard data sheet and
- The filters were sent to (Acumen Laboratory and Testing Ltd) for analysis.

3.11. Maintenance and Calibration:

- The HVS and their accessories were maintained in good working condition. For example, motor brushes were replaced routinely, and electrical wiring was checked to ensure a continuous power supply; and
- The flow rate of each HVS with mass flow controller was calibrated using an orifice calibrator, Initial calibrations of the dust monitoring equipment were conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVS using TE-5025A Calibration Kit and TE-5028A Calibration KIT. HVS is calibrated in fortnightly Intervals.

3.12. Wind Data Monitoring:

- The wind speed has been recorded from Hong Kong Observatory- King's Park meteorological station, along with portable wind speed meter stand by as back up if malfunction occurred or data was not recorded from HKO.

Monitoring Locations

3.13. As informed by the Contractor, the Hong Kong International Trade and Exhibition Centre underwent redevelopment in 2024. The original air monitoring station (E-A1) was no longer available. Therefore, the air quality monitoring station was relocated and installed to the Fire Services Department Kowloon Bay Workshop (E-A1a) on 25 March 2024, and the first monitoring date at this location was on 27 March 2024. The relocation of monitoring station was identified and agreed with IEC, and EPD notified on 12 March 2024. The details of the air monitoring stations are described in **Table 3.1**. The location plan of air quality monitoring stations is shown in **Appendix F**.

Table 3.1 Location of the Air Quality Monitoring Station

Monitoring Station	Monitoring Location	Remark
E-A1	Hong Kong International Trade and Exhibition Centre	No longer available due to redevelopment of the location. The last monitoring date at this location was on 23 March 2024
E-A1a	Fire Services Department Kowloon Bay Workshop	Alternative location for air quality monitoring station measured since 25 March 2024. The first monitoring date at this location was 27 March 2024.

Monitoring Date, Time, Frequency and Duration

3.14. A summary of impact monitoring duration, sampling parameter and frequency for the construction period is presented in **Table 3.2**.

Table 3.2 Summary of Impact Monitoring Programme

Impact Monitoring	Duration	Parameter	Frequency
Dust	1-hour continuous measurement	1-hour TSP	3 times per six days
Dust	24-hour continuous sampling	24-hour TSP	Once per six days

Result Summary

3.15. Throughout the reporting period of the Project, the weather was generally sunny, fine and cloudy. Based on field observations, the major dust source identified at the designated air quality monitoring station were from this Project when the Project was in full swing. However, from November 2025 to the completion of the Project, the major outside dust source observed was from the exterior demolition works from Kowloonbay International Trade & Exhibition Centre, located in-between this Project and monitoring station. Other than that, road traffic emission nearby and other construction works from neighbouring blocks were considered as potential dust sources.

3.16. The results for 1-hour TSP and 24-hour TSP throughout the duration of the project are summarized in **Table 3.3** and **Table 3.4**.

Table 3.3 Summary of 1-hour TSP Monitoring Results

Reporting Period	Monitoring Location	Range ($\mu g/m^3$)	Action Level($\mu g/m^3$)	Limit Level($\mu g/m^3$)	No. of Exceedance(s)
9 September 2019 – 31 December 2025	E-A1 and E-A1a	27 – 93	279	500	0

Table 3.4 Summary of 24-hour TSP Monitoring Results

Reporting Period	Monitoring Location	Range ($\mu g/m^3$)	Action Level($\mu g/m^3$)	Limit Level($\mu g/m^3$)	No. of Exceedance(s)
9 September 2019 – 31 December 2025	E-A1 and E-A1a	4 – 128	142	260	0

4. WASTE MANAGEMENT

4.1. 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 4.1**. Details of cumulative waste management data are presented as a waste flow table in **Appendix H**.

Table 4.1 Quantities of Waste Generated from the Project

Reporting period	Quantity					
	Inert C&D Materials (in '000tonnes)	Chemical Waste (in 'kg)	Non-inert C&D Materials			
			Others, e.g. General Refuse disposed at Landfill (in 'kg)	Recycled materials		
				Paper/ cardboard (in 'kg)	Plastics (in 'kg)	Metals (in 'kg)
September 2019 - December 2025	292.77	80.00	9,618,631.30	3,779.00	0.00	4,467,648.00

5. SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

5.1. The Environmental Complaint Handling Procedure is shown in below **Table 5.1**.

Table 5.1 Environmental Complaint Handling Procedure

Complaint Received via Project Hotline	Complaint Received via 1823 or from other government departments
Contractor notify ER, ET and IEC	ER notify Contractor, ET and IEC
Contractor logs complaint and date of receipt onto the complaint database. Contractor, ER and ET to conduct investigation of complaint	
If complaint is considered not valid	If complaint is found valid
ET or ER to reply to the complainant if necessary	Contractor to identify and implement remedial measures in consultation with the IEC, ET and ER.
	The ER, ET and IEC to review the effectiveness of the Contractor's remedial measures and the updated situation; ET to undertake additional monitoring and audit to verify the situation if necessary and oversee that circumstances leading to the complaint do not recur. ER to conduct further inspection as necessary.
If the complaint is referred by the EPD, the Contractor to prepare interim report on the status of the complaint investigation and follow-up actions stipulated above, including the details of the remedial measures and additional monitoring identified or already taken, for submission to EPD within the time frame assigned by the EPD	
The ET to record the details of the complaint, results of the investigation, subsequent actions taken to address the complaint and updated situation including the effectiveness of the remedial measures, supported by regular and additional monitoring results in the monthly EM&A reports	

5.2. In the case of an occurrence of non-compliance of the criteria, action in accordance with the Event and Action Plan in **Appendix C** and **Appendix D** was carried out.

5.3. No exceedance of the Action and Limit Levels of 24-hour TSP and 1-hour TSP monitoring was recorded throughout the Project.

5.4. A total of five (5) complaints were received throughout the Project. The details of the complaints are shown in **Table 5.2**. All the complaints were investigated and settled. Interim and/or Investigations reports of the complaints were reported in their respective Monthly EM&A reports.

Table 5.2 Details of Environmental Complaint

Date	IR Case Number	Impacts of Complaint
2020-07-03	EC001	Noise nuisance arising from constriction site at Kai Tai Area 1 B, Site 4.
2020-11-03	EC002	Air concern from stockpile of dusty material not properly covered at Portion 3B.
2024-04-09	EC003	Noise nuisance arising from road breaking at construction site near Kai Fuk Road gas Station.
2025-03-15	EC004	Noise nuisance arising from bituminous paving works from construction site at Kai Cheung Road near Kowloonbay International Trade & Exhibition Centre and Electrical and Mechanical Services Department Headquarters.
2025-11-20	EC005	Noise nuisance from nightworks arising from the construction site at Kowloon Bay Exit of Kai Tak Tunnel.

5.5. Four (4) noise action level exceedances were recorded. All instances of action level exceedance were from noise nuisance complaints.

5.6. No non-compliance was received throughout the Project.

5.7. No notification of summons and successful prosecution was received throughout the duration of the Project.

5.8. Statistics on exceedances of action and limit levels, complaints, notifications of summons and successful prosecutions are summarized in **Appendix I**.

6. EM&A SITE INSPECTION

6.1. Throughout the Project, site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. A bi-weekly inspection of the implementation of landscape and visual mitigation measures was also conducted throughout the Project. One joint site inspection with IEC was undertaken on a monthly basis.

6.2. The Contractor had rectified all observation identified during environmental site inspection during each respective reporting period.

6.3. According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents had been implemented as much as practical during the construction period of the Project. The Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix E**.

7. EIA REVIEW AND COMMENTS

Validity of EIA Predictions

7.1. It is predicted in the EIA Report that with the implementation of the recommended mitigation measures, there would be no unacceptable or residual impacts arising from all project related construction works under Contract No. HY/2018/02 – Kai Tai East. During the reporting period, environmental site inspections and impact monitoring were carried to audit and monitor the performance, the Contractor had implemented environmental mitigation measures and good site practice timely and properly. Data for air quality impact obtained had shown no Action/Limit Level exceedance was caused by the Project.

7.2. The mitigation measures recommended were found to be effective and EIA predictions remained valid. No short comings in EIA recommendations were identified.

Comments on Overall EM&A Programme

7.3. The mitigation measures detailed in the Environmental Permit, the EM&A Manual and the EIA report were implemented throughout the whole project period. With the environmental monitoring and site inspection to directly ensure the timely implementation of mitigation measures during the Project, the environmental performance of the Project was acceptable, and the mitigation measures implemented by the Contractor are effective and efficient. Analysis of all EM&A data collected throughout the construction periods also demonstrated the environmental acceptability of the Project.

7.4. The overall performance of the monitoring methodology adopted and environmental management system in this Project was effective.

Overall EM&A Data

7.5. Impact air quality monitoring was carried out according to the requirements in the EM&A Manual. No exceedance of the Action and Limit Levels of air quality monitoring was recorded at the designated monitoring station throughout the duration of the Project.

Recommendations

7.6. The EM&A programme was found to be effective and efficient in monitoring impacts arising from the Project. With the implementation of the existing EM&A program, the deterioration of the environment caused by the Project/this Contract was considered to be cost-effectively identified, and necessary effective mitigation measures were implemented promptly to avoid any unacceptable impacts. The findings of the environmental monitoring program suggest that no adverse impacts on sensitive receivers were brought about by the Project. The environmental mitigation measures provided by the Contractor were generally acceptable apart from some minor deficiencies, which were rectified timely by the Contractor. In conclusion the Project was environmentally acceptable.

8. Conclusion and Recommendations

8.1. This is the Final EM&A Report presenting the summarized EM&A programme carried out during the period from 9 September 2019 to 31 December 2025 in accordance with the EM&A Manual and the requirement under EP-457/2013/D.

8.2. Air quality impact monitoring (including 1-hour TSP and 24-hour TSP) was carried out throughout the duration of the Project. No exceedance of the Action and Limit Level was recorded for air quality impact monitoring throughout the Project and duration of the EM&A Programme.

8.3. Joint weekly environmental site inspections by the representative of ET, Contractor and Engineer were conducted throughout the EM&A programme. Joint site inspection with IEC was carried out on a monthly basis. Minor deficiencies were observed during site inspection and were rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

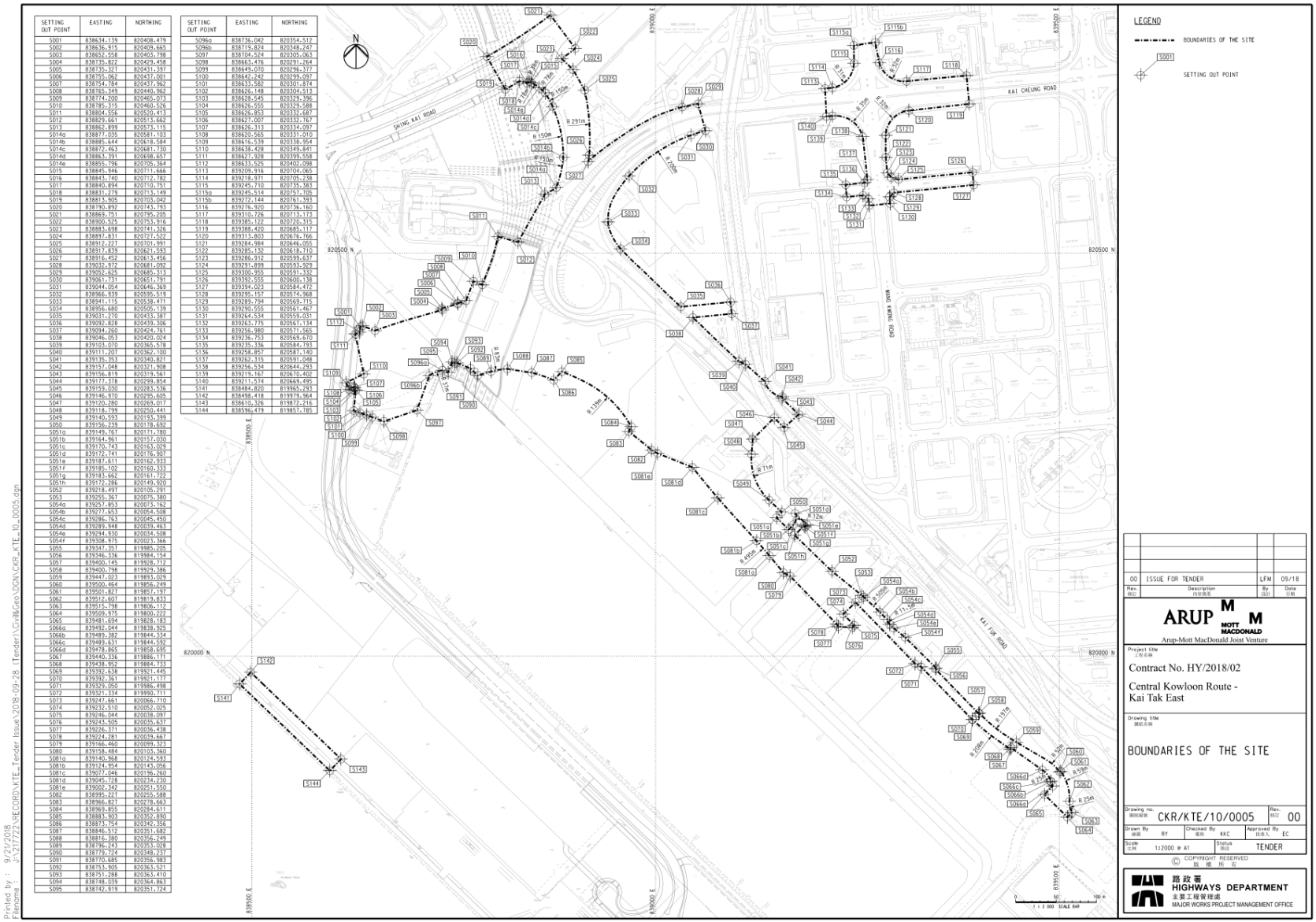
8.4. A total of five (5) complaints were recorded throughout the Project. All complaints were settled and reported in their respective Monthly EM&A reports. No non-compliance situation was received throughout the duration of the Project.

8.5. Four (4) noise action level exceedances were recorded. All instances of action level exceedance were from noise nuisance complaints.

8.6. No notification of summons or prosecution was received throughout the duration of the Project.

8.7. The ET kept track of the construction works throughout the project to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Appendix A
Alignment and Works Area for the Contract No. HY/2018/02



SETTING OUT POINT	EASTING	NORTHING
S001	838634.139	820408.479
S002	838636.915	820409.665
S003	838652.558	820403.798
S004	838735.822	820429.458
S005	838735.327	820431.397
S006	838755.062	820437.001
S007	838754.784	820437.962
S008	838765.349	820440.962
S009	838774.200	820465.073
S010	838785.315	820460.526
S011	838804.556	820520.413
S012	838829.661	820513.662
S013	838862.899	820573.115
S014a	838877.035	820581.103
S014b	838885.644	820618.584
S014c	838872.463	820681.730
S014d	838863.391	820698.657
S014e	838855.796	820705.364
S015	838845.946	820711.666
S016	838843.740	820712.782
S017	838840.894	820710.751
S018	838831.279	820713.149
S019	838813.905	820703.042
S020	838790.892	820743.783
S021	838869.751	820795.205
S022	838900.525	820753.916
S023	838883.698	820741.326
S024	838897.831	820727.522
S025	838912.227	820701.991
S026	838917.839	820671.583
S027	838916.452	820613.456
S028	839032.972	820681.092
S029	839052.625	820685.313
S030	839061.731	820651.791
S031	839044.054	820646.369
S032	838966.939	820595.519
S033	838941.115	820538.471
S034	838956.680	820505.139
S035	839031.270	820433.387
S036	839092.828	820439.326
S037	839094.260	820474.761
S038	839046.053	820420.024
S039	839103.070	820365.578
S040	839111.207	820362.100
S041	839135.353	820340.821
S042	839157.048	820321.908
S043	839156.819	820319.561
S044	839177.378	820299.854
S045	839159.030	820283.536
S046	839146.970	820295.605
S047	839120.280	820269.017
S048	839118.799	820250.441
S049	839140.593	820133.399
S050	839156.239	820178.692
S051a	839149.767	820171.780
S051b	839164.961	820157.030
S051c	839170.743	820163.029
S051d	839172.741	820176.907
S051e	839187.611	820162.933
S051f	839185.702	820160.533
S051g	839183.662	820161.722
S051h	839172.286	820149.920
S052	839218.497	820105.291
S053	839255.167	820075.380
S054a	839257.853	820073.162
S054b	839277.653	820054.508
S054c	839286.763	820045.450
S054d	839289.948	820039.463
S054e	839294.930	820034.508
S054f	839308.975	820023.366
S055	839347.357	819985.205
S056	839346.336	819984.154
S057	839400.145	819928.712
S058	839400.798	819929.386
S059	839447.023	819893.029
S060	839500.464	819856.249
S061	839501.827	819857.197
S062	839512.607	819819.833
S063	839515.798	819806.112
S064	839509.975	819800.222
S065	839481.694	819828.183
S066a	839492.044	819838.925
S066b	839489.382	819844.334
S066c	839489.631	819844.592
S066d	839478.865	819858.695
S067	839440.336	819886.171
S068	839438.952	819884.733
S069	839392.638	819921.445
S070	839392.361	819921.177
S071	839329.050	819986.498
S072	839321.334	819990.711
S073	839247.661	820066.710
S074	839232.510	820052.025
S075	839246.044	820038.097
S076	839243.505	820035.637
S077	839226.371	820036.438
S078	839224.281	820039.661
S079	839186.460	820099.321
S080	839158.484	820103.360
S081a	839140.968	820124.593
S081b	839124.954	820143.056
S081c	839077.046	820196.260
S081d	839045.728	820234.230
S081e	839002.342	820251.550
S082	838995.227	820255.588
S083	838966.827	820278.661
S084	838969.855	820284.611
S085	838883.903	820352.890
S086	838873.754	820342.356
S087	838846.512	820351.680
S088	838816.380	820356.249
S089	838786.243	820353.028
S090	838779.724	820348.237
S091	838770.685	820356.983
S092	838753.905	820363.521
S093	838751.288	820363.410
S094	838748.039	820364.863
S095	838742.919	820351.724

SETTING OUT POINT	EASTING	NORTHING
S096a	838736.042	820354.512
S096b	838719.824	820348.247
S097	838704.524	820305.063
S098	838663.476	820291.264
S099	838649.070	820296.377
S100	838642.242	820299.097
S101	838633.582	820301.874
S102	838626.148	820304.513
S103	838628.545	820329.396
S104	838626.555	820329.588
S105	838626.853	820332.687
S106	838627.007	820332.767
S107	838626.313	820334.097
S108	838620.565	820331.010
S109	838616.539	820338.954
S110	838638.428	820349.841
S111	838627.928	820399.558
S112	838633.525	820402.098
S113	839209.916	820706.065
S114	839218.971	820705.238
S115	839245.710	820735.383
S115a	839245.514	820757.705
S115b	839272.144	820761.393
S116	839276.920	820736.160
S117	839310.726	820713.173
S118	839385.122	820720.315
S119	839388.420	820685.117
S120	839313.803	820676.766
S121	839284.984	820646.055
S122	839285.132	820618.710
S123	839286.912	820599.637
S124	839291.899	820593.929
S125	839300.955	820591.332
S126	839392.555	820600.138
S127	839394.023	820584.472
S128	839295.157	820574.968
S129	839289.794	820569.715
S130	839290.555	820561.467
S131	839264.534	820559.031
S132	839263.775	820567.134
S133	839256.980	820571.565
S134	839236.753	820569.670
S135	839235.336	820584.793
S136	839258.857	820587.140
S137	839262.315	820591.048
S138	839256.534	820644.293
S139	839219.167	820670.402
S140	839211.574	820669.495
S141	838484.820	819965.293
S142	838498.418	819979.964
S143	838610.326	819872.216
S144	838596.479	819857.785

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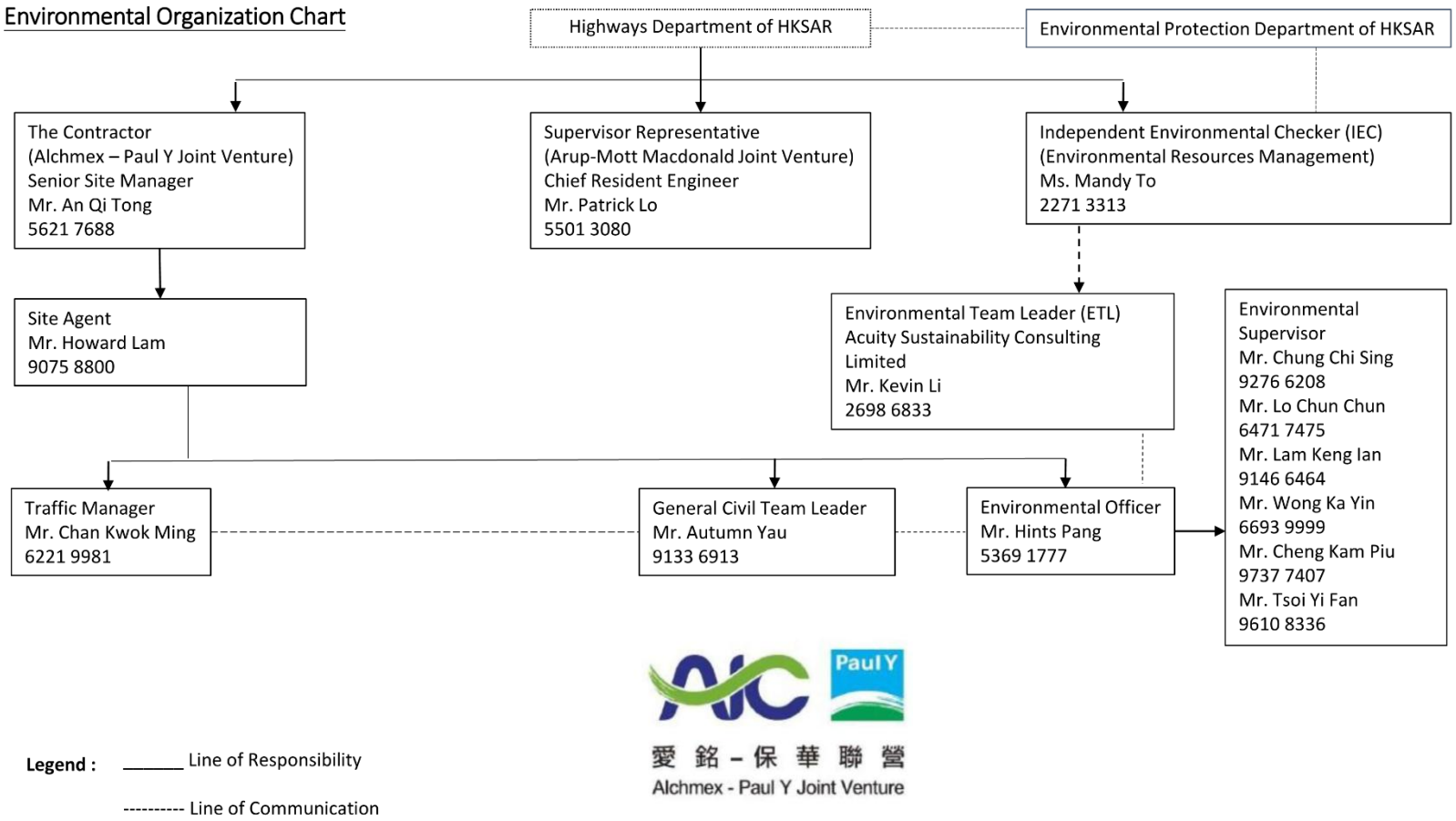
Appendix B
Project Organization Chart

Environmental Organization Chart



Appendix C
Dust Event-Action Plan (EAP) (Air Quality Monitoring)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3.Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1.Check monitoring data submitted by ET; 2.Check Contractor's working method.	1. Notify Contractor.	1.Rectify any unacceptable practice; 2.Amend working methods if appropriate.
Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3.Advise the ER on the effectiveness of the proposed remedial measures; 4.Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6.Discuss with IEC and Contractor on remedial actions required; 7.If exceedance continues, arrange meeting with IEC and ER; 8.If exceedance stops, cease additional monitoring.	1.Check monitoring data submitted by ET; 2.Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4.Advise the ET on the effectiveness of the proposed remedial measures; 5.Supervise Implementation of remedial measures.	1.Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3.Ensure remedial measures properly implemented.	1.Submit proposals for remedial to ER within 3 working days of notification; 2.Implement the agreed proposals; 3.Amend proposal if appropriate.
LIMIT LEVEL				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD;	1.Check monitoring data submitted by ET; 2.Check Contractor's working method; 3. Discuss with ET and	1.Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3.Ensure remedial measures	1.Take immediate action to avoid further exceedance; 2.Submit proposals for remedial actions to IEC within 3 working days

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	3.Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5.Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	Contractor on possible remedial measures; 4.Advise the ER on the effectiveness of the proposed remedial measures; 5.Supervise implementation of remedial measures.	properly implemented.	of notification; Implement the agreed proposals; 4.Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1.Notify IEC, ER, Contractor and EPD; 2. Identify source; 3.Repeat measurement to confirm findings; 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; 8. If exceedance stops, cease additional monitoring.	1.Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2.Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3.Supervise the implementation of remedial measures.	1.Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4.Ensure remedial measures properly implemented; 5.If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1.Take immediate action to avoid further exceedance; 2.Submit proposals for remedial actions to IEC within 3 working days of notification; 3.Implement the agreed proposals; 4.Resubmit proposals if problem still not under control; 5.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

Appendix D
Noise Event-Action Plan (EAP) (Noise Monitoring)

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Notify IEC and Contractor; 3.Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1.Review the analysed results submitted by the ET; 2.Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1.Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3.Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented	1.Submit noise mitigation proposals to IEC; 2.Implement noise mitigation proposals.

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer's Representative

Appendix E
Environmental Mitigation Implementation Schedule (EMIS)

Environmental Mitigation Implementation Schedule – Contract No.: HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
Construction Dust Impact								
S4.3.10	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation.	Minimize dust impact and adverse health effects at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	Implemented
S4.3.10	D2	• Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.3 L/m^2 to achieve the dust removal efficiency.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	Implemented
xS4.3.10	D3	• Proper watering at exposed spoil should be undertaken throughout the construction phase; • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones;	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	Implemented

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		• The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle. • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Any skip hoist for material transport should be totally enclosed by impervious sheeting;						

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		• 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; • 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 • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.						
S4.3.10	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected rep. dust monitoring station	Construction stage	• TM-EIA	Implemented
Construction Noise (Airborne)								
S5.4.1	N1	Implement the following good site practices: • Only well-maintained plant should be operated on-site, and plant should be serviced regularly during the construction programme; • Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;	Control construction airborne noise	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIAO	Implemented

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		• Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • Mobile plant should be sited as far away from NSRs as possible and practicable; • Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.						
S5.4.1	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIAO	Implemented
S5.4.1	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressors, generators and handheld breakers, etc.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIAO	Implemented
S5.4.1	N4	Use 'Quiet plant'	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIAO	Implemented
S5.4.1	N5	Loading/ unloading activities should be carried out inside the full enclosure of mucking out points.	Reduce the noise levels of loading/ unloading activities	Contractor	Mucking out locations	Construction stage	• Annex 5, TM-EIAO	Implemented
S5.4.1	N6	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIAO	Implemented

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
			reduce the construction airborne noise					
S5.4.1	N7	Implement a noise monitoring programme under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected rep. noise monitoring station	Construction stage	• TM-EIAO	Implemented
Water Quality (Construction Phase)								
S6.9.1.1	W1	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: Construction Runoff • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sandbag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/ sediment trap. The sediment/ silt traps should be	To minimize water quality impact from the construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN 1/94 • TM-EIAO • TM-DSS	Implemented

EIA Ref.	EM& A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		incorporated in the permanent drainage channels to enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/ sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m3/s a sedimentation basin of 30 m3 would be required and for a flow rate of 0.5 m3/s the basin would be 150 m3. The detailed design of the sand/ silt traps shall be undertaken by the contractor prior to the commencement of construction; • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means; • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas;						

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		• Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and site wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of						

EIA Ref.	EM& A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/ fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby; • Adopt best management practices; • All earth works should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable.						
S6.9.1.2	W2	<u>Tunneling Works and Underground Works</u> • Cut-&-cover tunneling work should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge;	To minimize construction water quality impact from tunneling works	Contractor	All tunneling portion	Construction stage	• Water Pollution Control Ordinance • ProPECC PN 1/94 • TM-DSS • TM-EIAO	N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		• The wastewater with a high concentration of SS should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater; • Direct discharge of the bentonite slurry (as a result of D-wall) is not allowed. It should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities area completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.						
S6.9.1.3	W3	Sewage Effluent • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS	Implemented
S6.9.1.5	W4	Groundwater from Potential Contaminated Area: • No direct discharge of groundwater from contaminated areas should be adopted. • A discharge license under the WPCO through the Regional Office of EPD for groundwater discharge should be applied. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed during the process of discharge license application. The	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found	Construction stage	• Water Pollution Control Ordinance • TM-DSS • TM-EIAO	Implemented

EIA Ref.	EM& A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		compliance to the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-DSS) and the existence of prohibited substance should be confirmed. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, the contaminated groundwater should be either properly treated in compliance with the requirements of the TM-DSS or properly recharged into the ground. • If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. TPH) to undetectable range. All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be discharged into the foul sewers. • If groundwater recharging wells are deployed, 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 the Section 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) 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. Prior to recharge,						

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		any prohibited substances such as TPH products should be removed as necessary by installing the petrol interceptor.						
S6.9.1.6	W6	<u>Accidental Spillage</u> In order to prevent accidental spillage of chemicals, the following is recommended: • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains; • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste Disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction site where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN 1/94 • TM-EIAO • TM-DSS	Implemented
Waste Management (Construction Waste)								
S7.4.1	WM1	<u>On-site sorting of C&D material</u> • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc.). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile area preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ending up at concrete batching plants and	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	• DEVB (W) No. 6/2010	N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractor for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc. should be explored.						
S7.5.1	WM2	Construction and Demolition Material • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'selective demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	Implemented

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
S7.5.1	WM3	C&D Waste • Standard formwork or pre-fabrication should be used as far as practicable in order to minimize the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage; • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	Implemented
S7.5.1	WM4	Excavated Contaminated Soils • Details of the mitigation measures on handling of the contaminated soil shall be referred to Section on Land Contamination below.	The contaminated soil will be excavated for on-site reuse	Contractor	PBH4	Prior to commencement of construction works within the contaminated area	• Practice Guide (PG) for Investigation and Remediation of Contaminated Land • GN/GM for land contamination	Implemented

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
S7.5.1	WM5	Land-based Sediment • All construction plant and equipment shall be designed and maintained to minimize the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location; • All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • Before moving the vessels which are used for transporting dredged material, excess material shall be cleaned from the decks and exposed fittings of vessels and the excess materials shall never be dumped into the sea except at the approved locations; • Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action. • The Contractors shall monitor all vessels transporting material to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers; • The Contractors shall comply with the conditions in the dumping license. • All bottom dumping vessels (Hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material; • The material shall be placed into the disposal pit by bottom dumping;	To control pollution due to marine sediment	Contractor	Along CKR alignment	Construction stage	• ETWB TCW No. 34/2002	Implemented

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		• Contaminated marine mud shall be transported by spit barge of not less than 750m3 capacity and capable of rapid opening and discharge at the disposal site; • Discharge shall be undertaken rapidly, and the hoppers shall be closed immediately. Material adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site. • For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping designated mud pit would be a possible arrangement. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping at the disposal site, thereby fulfilling the requirements for fully confined mud disposal.						
S7.5.1	WM6	Chemical Waste • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes; • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed, have a capacity of less than 450 L unless the specification has been approved by EPD, and display a label in English and	Control the chemical waste and ensure proper storage, handling and disposal	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	Implemented

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		Chinese in accordance with instructions prescribed in Schedule 2 of the regulation; • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste, enclosed on at least 3 sides, have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest, have adequate ventilation, covered to prevent rainfall entering, and arranged so that incompatible materials are adequately separated; • Disposal of chemical waste should be via a licensed waste collector, be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers, or be to a reuser of the waste, under approval from EPD.						
S7.5.1	WM7	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes; • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminum cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible;	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	Implemented

<table>
<tr><th>EIA Ref.</th><th>EM&A Log Ref.</th><th>Recommended Mitigation Measures</th><th>Objectives of the Recommended Measures & Main Concerns to address</th><th>Implementation Agent</th><th>Location / Timing</th><th>Implementation Stage</th><th>Requirements and/ or standards to be achieved</th><th>Implementation Status</th></tr>
<tr><td></td><td></td><td>• Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="9">Land Contamination</td></tr>
<tr><td>S8.9 & Appendix 8.4</td><td>LC2</td><td><u>Excavation of the Contaminated Soil</u>
• Prior to commencement of the excavation works at the contamination zone, the zone should be clearly marked out on site and the surface levels recorded. Excavation of contaminated material should be undertaken using dedicated earth-moving plant.
• The excavated contaminated soils would be stockpiled at designated area on site and covered by sheet to prevent dispersion of contamination during stockpiling.
• The Contractor should pay attention to the selection of suitable groundwater lowering schemes and discharge points if the groundwater table is higher than the contaminated soils during excavation. The Contractor should also obtain a valid Water Pollution Control Ordinance (WPCO) discharge license from EPD where applicable.</td><td rowspan="2">The contaminated soil will be excavated for on-site reuse</td><td rowspan="2">Contractor</td><td rowspan="2">PBH4</td><td rowspan="2">Prior to commencement of construction works within the contaminated area</td><td rowspan="2">• Practice Guide (PG) for Investigation and Remediation of Contaminated Land
• Guidance Notes for Contaminated Land Assessment and Remediation
• Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management</td><td>N/A</td></tr>
<tr><td>S8.9 & Appendix 8.4</td><td>LC3</td><td>• Following completion of the excavation to the specified depth, at least one sample from the base of the excavation and four samples evenly distributed along the boundary of the excavation shall be taken for a closure assessment testing. The acceptance criterion is shown below:
<table><tr><th>Locations</th><th>Testing requirement</th><th>Acceptance Criteria</th></tr><tr><td>PBH4</td><td>PCBs</td><td>RBRGs (Public Park)</td></tr></table></td><td>N/A</td></tr>
</table>

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		• If the results of analysis below the RBRGs (Public Park), no further excavation will be required. If the analysis indicates presence of contamination (i.e. noncompliance of the acceptance criteria), further excavation shall be carried out in 0.5m increment vertically and/or horizontally depending on the location(s) of the sample(s) which has exceeded the acceptance criteria. Further sampling shall also be conducted for compliance testing. The process of excavation, sampling and compliance testing should continue until all contaminated materials are removed and should be supervised by a Land Contamination Specialist.						
Appendix 8.4	LC4	A Remediation Report (RR) to demonstrate adequate clean-up shall be prepared and submitted to EPD for endorsement prior to the commencement of any construction/development works within the sites. No construction/development works shall be carried out prior to the endorsement of the RR by EPD.						N/A
Hazard to Life								
S9.18	H8	The driver and his assistant should be physically healthy, experienced and have good safe driving records. The driver should hold a proper driving license for the approved transport truck. Dedicated training programme and regular road safety briefing sessions/ workshops should be provided to enhance their safe driving attitude and practice. Smoking should be strictly prohibited.	To reduce the risk during explosives transport	Contractor	Works areas at which explosives would be used	Construction stage	-	N/A
S9.18	H9	Emergency response plans in case of road accident should be prepared and implemented. The driver and his assistant should be familiar with the emergency procedures including evacuation, and proper communication/ fire-fighting equipment should be provided to the driver and his assistant.	To reduce the risk during explosives transport	Contractor	Works areas at which explosives would be used	Construction stage	-	N/A

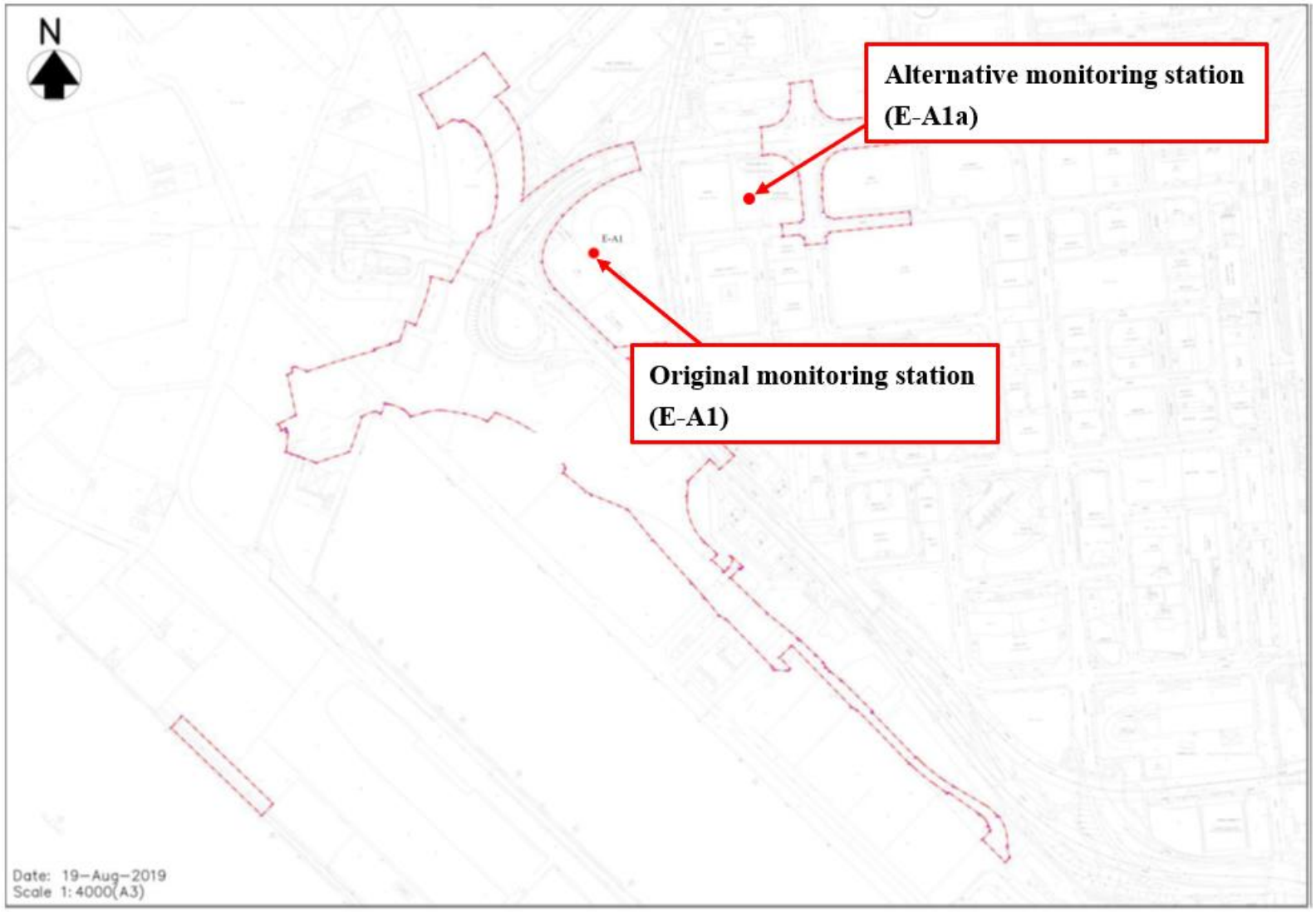
EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
Landscape & Visual								
S10.10.1 Table 10.11	LV3	Good Site Management • Large temporary stockpiles of excavated material shall be covered with unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. • Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance.	Minimize visual impact	Contractor	Within Project site	Construction stage	-	Implemented
S10.10.1 Table 10.11	LV4	Screen Hoarding • Decorative screen hoarding should be erected to screen the public from the construction area. It should be designed to be compatible with the existing urban context.	Minimize visual impact	Contractor	Within Project site	Construction stage	-	Implemented
S10.10.1 Table 10.11	LV5	Lighting Control during Construction • All lighting in the construction site shall be carefully controlled to minimize light pollution and night-time glare to nearby residencies and GIC. The Contractor shall consider other security measures, which shall minimize the visual impacts.	Minimize visual impact	Contractor	Within Project site	Construction stage	-	Implemented
S10.10.1 Table 10.11	LV6	Erosion Control • The potential for soil erosion shall be reduced by minimizing the extent of vegetation disturbance on site and by providing a protective cover over newly exposed soil.	Minimize landscape impact	Contractor	Within Project site	Construction stage	-	Implemented
S10.10.1 Table 10.11	LV7	Tree Protection & Preservation • Carefully protected during construction. Tree protection measures will be detailed at the Tree Removal Application stage and plans submitted to the relevant Government Department for approval in due course in accordance with ETWB TC no. 3/2006.	Minimize landscape and visual impact	Contractor	Within Project site	Construction stage	• 'Guidelines for Tree Risk Management and Assessment Arrangement on an Area	Implemented

EIA Ref.	EM& A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
							Basis and on a Tree Basis', Greening, Landscape and Tree Management (GLTM) Section, DEVB • Latest recommended horticultural practices from GLTM Section, DEVB	
S10.10.1 Table 10.11	LV8	Tree Transplantation • For trees unavoidably affected by the Project that have to be removed, where practical transplantation will be chosen as the top priority method of removal. If this is not possible or practical compensatory planting will be provided for trees unavoidably felled (See LV10). For trees unavoidably affected by the Project works that are transplanted, transplantation must be carried out in accordance with ETWB TCW 2/2004 and 3/2006.	Minimize landscape and visual impact	Contractor	Within Project site and designated off-site locations	Prior to Construction stage	• ETWB TCW 3/2006 • Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DEVB • ETWB TCW 2/2004	N/A
S10.10.1 Table 10.11	LV9	Compensatory Planting • For trees unavoidably affected by the Project that have to be removed, where practical transportation will be chosen as the top priority method of removal but if this is not possible or practical compensatory planting will be provided for trees unavoidably	Minimize visual impact and also enhance landscape	Contractor	Within Project site	Construction stage	• ETWB TCW 3/2006 • Latest recommended horticultural practices from	N/A

EIA Ref.	EM& A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		felled. All felled trees shall be compensated for by planting trees to the satisfaction of relevant Government projects. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006. • Compensatory tree planting may be incorporated into public open spaces and along roadside amenity areas affected by the construction works and therefore be part of the bigger wider planting plans. Onsite compensation planting is preferred but if necessary, additional receptor sites outside the Works Area shall be agreed separately with Government during the Tree Felling Application process.					Greening, Landscape and Tree Management (GLTM) Section, DEVB • ETWB TCW 2/2004	
S10.10.1 Table 10.11	LV10	Screen Planting • Tall screen/buffer trees, shrubs and climbers should be planted, in so far as is possible, to soften and screen proposed structures such as roads and central strip, vertical edges and buildings and to enhance streetscape greening effect where appropriate. Indiscriminate use of trees for screening must be avoided and the principle of 'right tree for the right place' must be followed. This detail will be provided at the Detailed Design stage. This measure may additionally form part of the compensatory planting and will improve and create a pleasant pedestrian environment.	Minimize visual impact and also enhance landscape.	Contractor	Within Project Site	Construction Phase	• Guidelines on Greening of Noise Barriers, issued April 2012, GLTMS, DevB • ETWB TCW 2/2004	N/A
S10.10.1 Table 10.11	LV12	Reinstatement • All works areas, excavated areas and disturbed areas for tunnel construction and temporary road diversion or any other proposed works shall be reinstated to former conditions or better, with reasonable landscape treatment and to the satisfaction of the	Minimize landscape impact	Contractor	Within Project Site	Construction Phase	• N/A	N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		relevant Government departments. (Specific mitigation for disturbance to public open space is detailed separately under LV14)						
Cultural Heritage Impact (Construction Phase)								
S11.4.4	CH1	The contractor should be alerted during the construction on the possibility of locating archaeological remains and as a precautionary measure, AMO shall be informed immediately in case of discovery of antiquities or supposed antiquities in the subject sites.	To preserve any cultural heritage items which may be removed and damaged by the excavation	Contractor	During construction works for cut and cover tunnels	Construction stage	• AMOs requirements	Implemented
EM&A Project								
S13.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual	Control EM&A Performance	Highways Department	All construction sites	Construction stage	• EIAO Guidance Note No. 4/2010 • TM-EIAO	Implemented
S13.2-13.4	EM2	• An Environmental Team needs to be employed as per the EM&A Manual; • Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures; • An environmental impact monitoring needs to be implemented by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Highways Department/ Contractor	All construction sites	Construction stage	• EIAO Guidance Note No. 4/2010 • TM-EIAO	Implemented

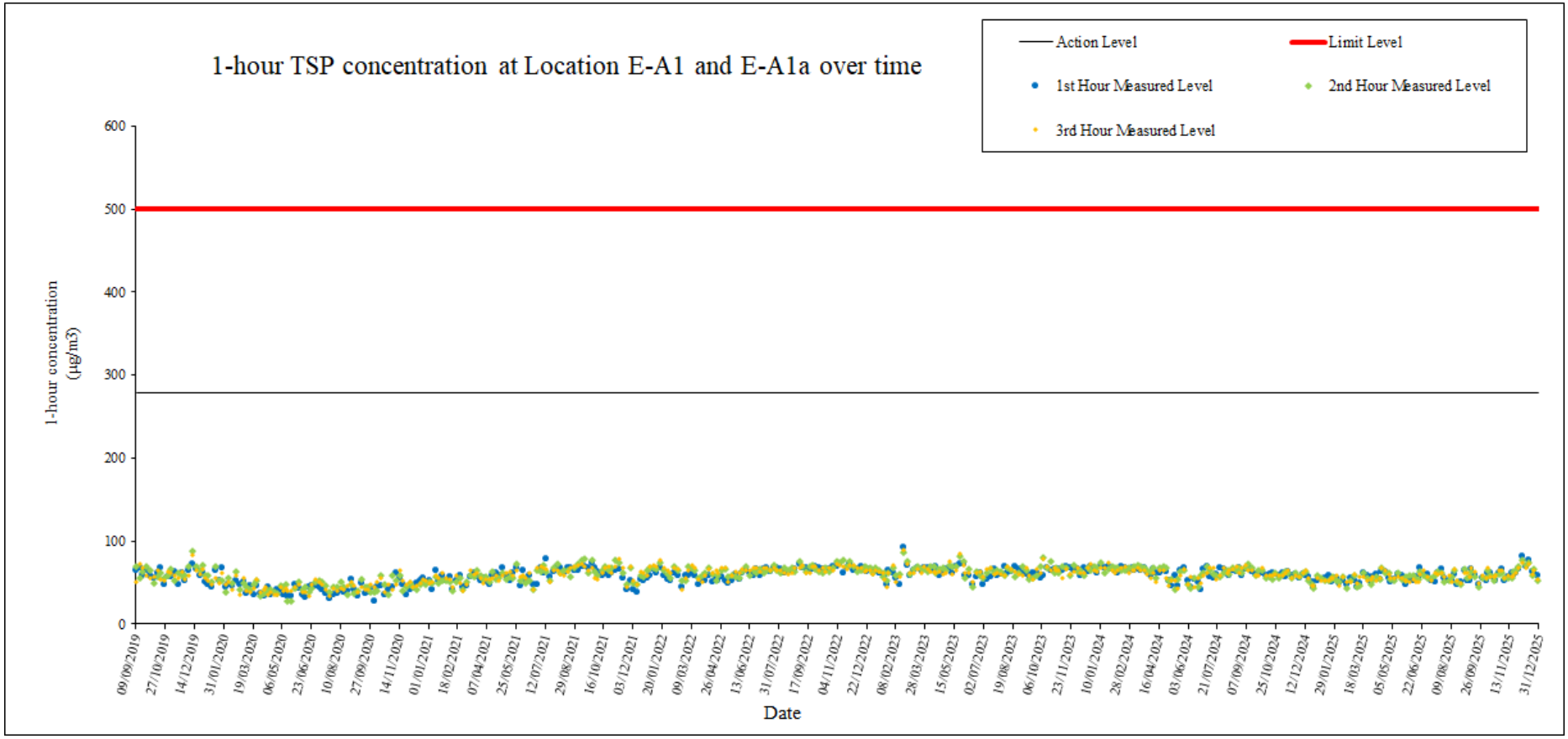
Appendix F
Location Plan of Air Quality Monitoring Station


N
Alternative monitoring station
(E-A1a)
E-A1
Original monitoring station
(E-A1)
Date: 19-Aug-2019
Scale 1:4000(A3)

Appendix G
Monitoring Data (Air Monitoring)

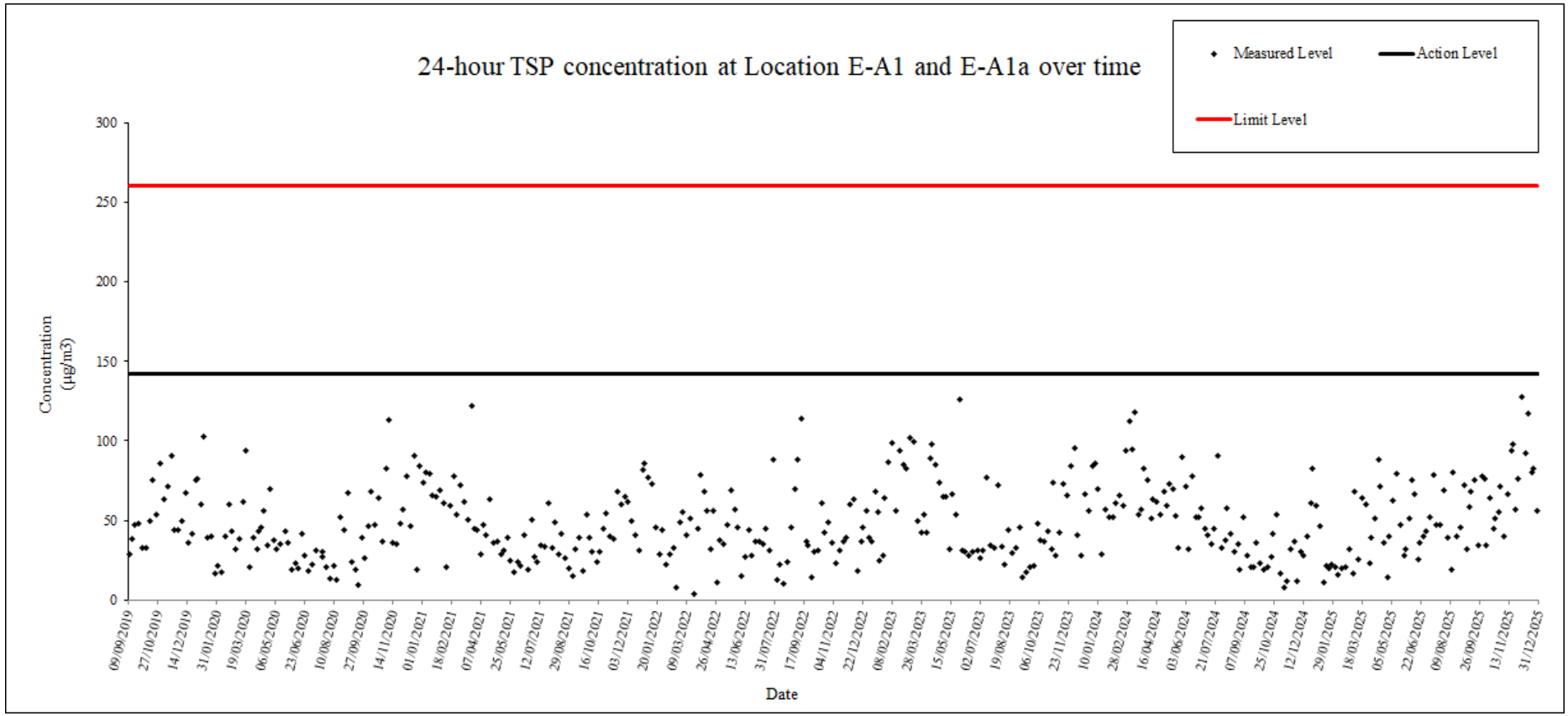
Parameter: 1-hour TSP (μg/m3)	
Location	Time Period
Hong Kong International Trade and Exhibition Centre (E-A1)	9 September 2019 to 23 March 2024
Fire Services Department Kowloon Bay Workshop (E-A1a)	27 March 2024 to 31 December 2025

Figure 1: Graphical Illustration of Measured 1-hour TSP (μg/m^3) Levels at E-A1 and E-A1a



Parameter: 24-hour TSP (μg/m3)	
Location	Time Period
Hong Kong International Trade and Exhibition Centre (E-A1)	9 September 2019 to 23 March 2024
Fire Services Department Kowloon Bay Workshop (E-A1a)	27 March 2024 to 31 December 2025

Figure 2: Graphical Illustration of Measured 24-hour TSP (μg/m^3) Levels at E-A1 and E-A1a



Appendix H
Waste Flow Table

愛銘－保華聯營
Alchmex - Paul Y Joint Venture

Contract No.: HY/2018/02
Central Kowloon Route - Kai Tak East

Name of Department: HyD

Monthly Summary Waste Flow Table - Sep 2019 to Dec 2025

Month	Actual Quantities of Inert C&D Material Generated Monthly													Actual Quantities of C&D Waste Generated Monthly						
	Total Qty Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects (KSZHJV)	Reused in other Projects (SFK)	Reused in other Projects (CWB)	Reused in other Projects (TKO-LTT)	Reused in other Projects (KTW)	Reused in other Projects (SFK-DH)	Reused in other Projects (Tapbo)	Disposal at Sorting Facility	Disposed as Public Fill	Imported Fill	Metals (Steel)	Metals (Aluminum)	Metals (Copper)	Paper/cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in '000tonne)	(in 'kg)	(in 'kg)	(in 'kg)	(in 'kg)	(in 'kg)	(in 'kg)	(in 'kg)
2019	**7.12**	**0.34**	**0.14**	**NIL**	**NIL**	**NIL**	**NIL**	**0.00**	**NIL**	**NIL**	**NIL**	**7.88**	**0.00**	**22,570.00**	**0.00**	**0.00**	**50.00**	**0.00**	**0.00**	**500,000.00**
2020	**142.34**	**0.00**	**0.14**	**NIL**	**4.40**	**19.47**		**10.50**			**0.62**	**104.95**	**1.11**	**207,420.00**	**48.00**	**0.00**	**1,284.00**	**0.00**	**0.00**	**419,060.00**
2021	**98.11**	**0.00**	**0.10**	**2.28**	**0.00**	**13.42**	**0.17**	**2.32**	**1.63**	**20.50**	**0.00**	**57.79**	**0.00**	**1028670.00**	**0.00**	**0.00**	**525.00**	**0.00**	**0.00**	**1100340.00**
2022	**13.34**	**0.00**	**1.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.99**	**0.00**	**1716230.00**	**0.00**	**0.00**	**715.00**	**0.00**	**80.00**	**1328300.00**
2023	**5.58**	**0.00**	**5.23**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.23**	**2.50**	**1492710.00**	**0.00**	**0.00**	**510.00**	**0.00**	**0.00**	**1334730.00**
2024	**8.41**	**0.00**	**8.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**14.30**	**1.70**	**0.00**	**0.00**	**0.00**	**695.00**	**0.00**	**0.00**	**3082030.00**
2025	**17.87**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**17.88**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1854171.30**
Total	**292.77**	**0.34**	**14.98**	**2.28**	**4.40**	**32.89**	**0.17**	**12.83**	**1.63**	**20.50**	**0.62**	**221.02**	**5.30**	**4,467,600.00**	**48.00**	**0.00**	**3,779.00**	**0.00**	**80.00**	**9,618,631.30**

Appendix I
Statistics on Complaint, Notifications of Summons and Successful Prosecutions

Statistical Summary of Exceedances

Air Quality			
Location	**Action Level**	**Limit Level**	**Total**
E-A1 and E-A1a	0	0	0

Noise		
Action Level	**Total**	**Remarks**
4	4	All exceedances from environmental complaints.

Statistical Summary of Environmental Complaints

Reporting Period	**Environmental Complaint Statistics**	
	Cumulative	**Complaint Nature**
9 September 2019 - 31 December 2025	5	Air Concern and Noise Nuisance

Statistical Summary of Environmental Non-compliance

Reporting Period	**Environmental Non-compliance Statistics**	
	Cumulative	**Details**
9 September 2019 - 31 December 2025	0	N/A

Statistical Summary of Environmental Summons

Reporting Period	**Environmental Summons Statistics**	
	Cumulative	**Details**
9 September 2019 - 31 December 2025	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	**Environmental Prosecution Statistics**	
	Cumulative	**Details**
9 September 2019 - 31 December 2025	0	N/A