


MTR Corporation Limited

TUEN MUN SOUTH EXTENSION


(No. EP-615/2022)

Baseline Dust Monitoring Report

Certified by : 

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Date : 20/11/2023

Verified by : 


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Position : Independent Environmental Checker

Date : 20/11/2023

MTR Corporation Limited

Consultancy Agreement No. C1502
(Variation Order No. C1502/009)**Environmental Monitoring and Audit
(EM&A) for Tuen Mun South Extension****Baseline Dust Monitoring Report**

November 2023

	Name	Signature
Prepared & Checked:	Ben Wong	
Reviewed & Approved:	Angela Tong	

Version: C Date: 17 November 2023

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EXECUTIVE SUMMARY

The Tuen Mun South Extension (TME) (hereinafter referred to as “the Project”) is one of the seven recommended railway schemes in the Railway Development Strategy 2014 (“RDS-2014”). The Project will extend the Tuen Ma Line (TML), from Tuen Mun (TUM) Station southwards by about 2.4 km, terminating at a new station near Tuen Mun Ferry Pier (i.e. Tuen Mun South (TMS) Station) with an intermediate station at Tuen Mun Area 16 (i.e. A16 Station).

An Environmental Impact Assessment (EIA) study for the Project was conducted in accordance with EIA Study Brief No. ESB-332/2020. The EIA Report and Environmental Monitoring and Audit (EM&A) Manual (Register No.: AEIAR-236/2022) were approved under the Environmental Impact Assessment Ordinance (EIAO), with an Environmental Permit (EP) granted on 18 August 2022 (EP No: EP-615/2022) for the construction and operation of the Project.

In accordance with the approved Environmental Monitoring and Audit Manual (EM&A Manual) for the Project, baseline environmental monitoring should be conducted prior to the commencement of construction works. Pursuant to Condition 3.3 of the EP, Baseline Monitoring Reports shall be submitted to the Director of Environmental Protection at least 2 weeks before the commencement of construction of the Project. According to Section 2.5.1 & 2.5.2 of EM&A Manual, Baseline Dust Monitoring should be carried out prior to the commencement of the major construction works. An Alternative Dust Monitoring Location Proposal with an alternative dust monitoring station of AM2a was agreed by EPD on 22 September 2023.

The baseline monitoring for dust was measured in terms of 1-hr Total Suspended Particulate (TSP). Baseline dust monitoring was carried out for a continuous period of at least two weeks (i.e. between 29 September and 14 October 2023) with three sets of 1-hour ambient measurements taken daily at each of 5 designated monitoring stations prior to the commencement of the major construction works. Due to typhoon hoisted on 8 and 9 October 2023, no dust monitoring was conducted throughout these days. As such additional monitoring days were carried out on 13 and 14 October 2023 to obtain sufficient data. The collected data was reviewed and analysed to establish the Action and Limit Levels for air quality criteria during impact monitoring.

The averaged 1-hr TSP levels at 5 designated Dust Monitoring Stations (i.e. AM1, AM2a, AM3, AM4 and AM5) are summarized in the following table:

Baseline TSP Monitoring Results	Dust Monitoring Station ID				
	AM1	AM2a	AM3	AM4	AM5
1-hr TSP					
Average ($\mu\text{g}/\text{m}^3$)	42.4	42.2	46.0	46.1	41.7
Range ($\mu\text{g}/\text{m}^3$)	35.7 – 52.7	34.9 – 54.8	35.9 – 58.1	35.1 – 57.8	33.9 – 53.0

The derived Action and Limit Levels for air quality impact monitoring during the construction stage of the Project are summarized in the following table:

Parameter	Station ID	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
1-hr TSP Level in $\mu\text{g}/\text{m}^3$	AM1	277.6	500
	AM2a	277.4	500
	AM3	279.9	500
	AM4	279.9	500
	AM5	277.1	500

1 INTRODUCTION

1.1 Background

1.1.1 The Tuen Mun South Extension (TME) (hereinafter referred to as “the Project”) is one of the seven recommended railway schemes in the Railway Development Strategy 2014 (“RDS-2014”). The Project will extend the Tuen Ma Line (TML), from Tuen Mun (TUM) Station southwards by about 2.4 km, terminating at a new station near Tuen Mun Ferry Pier (i.e. Tuen Mun South (TMS) Station) with an intermediate station at Tuen Mun Area 16 (i.e. A16 Station).

1.1.2 The Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-236/2022) for the Project was approved on 12 July 2022 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) was granted on 18 August 2022 (EP No: EP-615/2022) for the construction and operation of the Project.

1.1.3 The key elements of the Project are listed below:

- Construction and operation of 2.4-km extension of the viaduct structure from TUM Station to the new TMS Station;
- Construction and operation of two new stations, namely TMS Station and A16 Station;
- Construction and operation of Stations associated facilities; and
- Construction and operation of a railway siding adjacent to A16 Station.

1.1.4 In accordance with the approved Environmental Monitoring and Audit Manual (EM&A Manual) for the Project, baseline environmental monitoring should be conducted prior to the commencement of construction works. Pursuant to Condition 3.3 of the EP, Baseline Monitoring Reports shall be submitted to the Director of Environmental Protection at least 2 weeks before the commencement of construction of the Project.

1.1.5 Site visits were conducted at the 5 designated monitoring locations in April 2023 before the commencement of baseline dust monitoring. However, renovation work of the building façade in one of the monitoring locations (i.e. AM2) was noticed and the renovation works would take at least 1 year to complete. To minimise the effect from the renovation works to the monitoring station, an Alternative Dust Monitoring Location Proposal (**Appendix 1.1** refers) with the alternative dust monitoring station of AM2a was prepared and agreed by Environmental Protection Department (EPD) on 22 September 2023.

1.1.6 According to the EM&A Manual (Register No.: AEIAR-236/2022), Baseline Dust Monitoring should be conducted prior to the commencement of the major construction works to review the baseline conditions and establish Action and Limit (A/L) Levels. Baseline dust monitoring was conducted between 29 September and 14 October 2023 at 5 designated monitoring stations. Due to typhoon hoisted on 8 and 9 October 2023, no dust monitoring was conducted throughout these days. As such additional monitoring days were carried out on 13 and 14 October 2023 to obtain sufficient data.

1.2 Purpose of the Report

1.2.1 This Baseline Dust Monitoring Report presents the monitoring locations, equipment, period, methodology, results and observations during the baseline dust monitoring period.

1.2.2 The purposes of this Report are to:

- Summarise the findings of baseline dust monitoring; and
- Establish the A/L levels in accordance with the EM&A Manual for the subsequent impact monitoring during construction stage.

1.3 Report Structure

1.3.1 This Report comprises the following sections:

- Section 1 introduces the background of the Project and purpose of this Report;
- Section 2 presents the baseline dust monitoring requirements, methodologies and monitoring results; and
- Section 3 concludes the findings of baseline dust monitoring.

2 BASELINE DUST MONITORING

2.1 Monitoring Requirement

- 2.1.1 In accordance with the EM&A Manual, baseline 1-hr Total Suspended Particulate (TSP) levels should be monitored and audited. TSP baseline monitoring should be carried out for a continuous period of at least two weeks with three sets of 1-hour ambient measurements taken daily at the designated monitoring stations prior to the commissioning of major construction works.
- 2.1.2 Baseline dust monitoring was conducted between 29 September and 14 October 2023 at 5 designated monitoring stations. Due to typhoon hoisted on 8 and 9 October 2023, no dust monitoring was conducted throughout these days. As such additional monitoring days were carried out on 13 and 14 October 2023 to obtain sufficient data.

2.2 Monitoring Equipment

- 2.2.1 Portable direct reading dust meters were used to carry out the 1-hr TSP monitoring. The portable direct reading dust meters used in this baseline monitoring had been agreed by the Independent Environmental Checker (IEC) in accordance with the provision and requirements set out in Section 2.2.9 of the EM&A Manual. Brand and model of the equipment are given in **Table 2.1**.

Table 2.1 Dust Monitoring Equipment

Equipment	Brand and Model	Quantity	Serial Number
Portable direct reading dust meter (1-hr TSP)	Sibata Digital Dust Monitor (Model No. LD-3B)	3	A.005.11a, A.005.13a, A.005.16a

- 2.2.2 The 1-hour portable direct reading dust meters were calibrated at 1-year interval against a Tisch Environmental Mass Flow Controlled TSP High Volume Sampler to check the validity and accuracy of the results measured by direct reading method. Calibration certificates of the dust monitors are provided in **Appendix 2.1**.

2.3 Monitoring Locations

- 2.3.1 Locations of the baseline dust monitoring stations are shown in **Figure No. C1502/C/TME/ACM/M64/101** and are detailed in **Table 2.2**. Photo record of each monitoring station is provided in **Appendix 2.2**.

Table 2.2 Baseline Dust Monitoring Stations

Monitoring Station No.	Air Sensitive Receiver (ASR) ID in EIA Report	ASR Description	Remark
AM1	A7	Islamic Primary School	<ul style="list-style-type: none"> • No major source of TSP was observed. • Baseline monitoring was conducted at the ground level to represent the worst-case dust impact.
AM2a	A8	Oi Tak House, Yau Oi Estate	<ul style="list-style-type: none"> • No major source of TSP was observed. • Baseline monitoring was conducted at the ground level to represent the worst-case dust impact.
AM3	A21	Yan Chai Hospital Law Chan Chor Si Primary School	<ul style="list-style-type: none"> • Vehicular emission from Wu King Road was the major source of TSP concentration. • Baseline monitoring was conducted at the ground level to represent the worst-case dust impact.

Monitoring Station No.	Air Sensitive Receiver (ASR) ID in EIA Report	ASR Description	Remark
AM4	A28	Wu Tsui House, Wu King Estate	<ul style="list-style-type: none"> • Vehicular emission from Wu King Road was the major source of TSP concentration. • Baseline monitoring was conducted at the ground level to represent the worst-case dust impact.
AM5	A41	Tuen Mun Swimming Pool (TMSP)	<ul style="list-style-type: none"> • No major source of TSP was observed. • Baseline monitoring was conducted at the ground level to represent the worst-case dust impact.

2.4 Monitoring Parameters, Frequency and Duration

2.4.1 **Table 2.3** summarizes the monitoring parameters, frequency and duration of baseline TSP monitoring.

Table 2.3 Dust Monitoring Parameters, Frequency and Duration

Parameter	Duration	Frequency
1-hr TSP	Consecutive days of at least 2 weeks before commencement of major construction works	3 times per day

2.5 Monitoring Methodology

2.5.1 The 1-hr TSP was sampled by drawing air into the portable dust monitor 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.

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

- Placed the 1-hour dust meter at least 1.5m above ground;
- Set POWER to “ON” and make sure that the battery level was not flashed or in low level;
- Pulled the air sampling inlet cover up;
- Pushed the knob at MEASURE position;
- Set time/mode setting to [BG] by pushing the time setting switch. Then, started the background measurement by pushing the start/stop switch once. It took 6 sec. to complete the background measurement;
- Turned knob to SENSI. ADJ position and pressed in;
- Pushed Start/Stop switch once;
- Gently returned knob to the MEASURE position;
- Pushed the time setting switch to change the time setting display to [LOG] at the bottom left of the liquid crystal display;
- Removed the cap and started measurement; and
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

- 2.5.3 Internal checking of Sibata Digital Dust Monitor LD-3B was carried out before each monitoring event. First, reading of the dust monitor in [BG] mode was zero response. Then, reading of dust monitor in sensitivity adjustment scale setting was checked.
- 2.5.4 Adoption of the wind data from the existing automatic wind station, i.e. Tuen Mun Government Offices (TUN) which is operated by Hong Kong Observatory (HKO) rather than setting up wind data monitoring equipment is based on the following justifications:
- TUN is located in the vicinity of the designated monitoring locations. This Automatic wind station (22°23'26", 113°58'36") is located at the east of the Project and the anemometer is set up at 69m above mean sea level. It is clear of obstructions or turbulence caused by the buildings;
 - This automatic wind station was considered as the closest wind station to the Project that could provide representative wind data in Tuen Mun area; and
 - Wind data collected by HKO was considered as a reliable data source for the wind data, it is widely used in many EM&A Projects (e.g. Expansion of Hong Kong International Airport into a Three-runway System, Siu Ho Wan Station and Siu Ho Wan Depot Replanning Works – Advance Construction Works). The dataset is more accurate and reliable that could be downloaded periodically with real-timed data logger.
- 2.5.5 The data collected from TUN was used to check the wind speed and wind direction. Details wind data collected from the TUN wind station are presented in **Appendix 2.3**.
- 2.5.6 General meteorological conditions (i.e. prevailing wind condition and precipitation) and observations of any significant nearby dust source(s) during the baseline monitoring were also recorded.

2.6 Results and Observations

- 2.6.1 The baseline dust monitoring was conducted between 29 September and 14 October 2023. Based on the Hong Kong Observation weather record, typhoon signal No. 9 and No. 8 were hoisted on 8 and 9 October 2023 respectively, no dust monitoring was conducted throughout these days. As such, additional monitoring days were carried out on 13 and 14 October 2023 to obtain sufficient data. The weather conditions were consistently sunny throughout the monitoring period, except 8 and 9 October 2023. The baseline monitoring results of 1-hr TSP are summarized in **Table 2.4** and the detailed TSP monitoring results are presented in **Appendix 2.4**.

Table 2.4 Summary of 1-hr TSP Baseline Monitoring Results

1-hr TSP Levels	Dust Monitoring Station ID				
	AM1	AM2a	AM3	AM4	AM5
1-hr TSP					
Average (µg/m ³)	42.4	42.2	46.0	46.1	41.7
Range (µg/m ³)	35.7 – 52.7	34.9 – 54.8	35.9 – 58.1	35.1 – 57.8	33.9 – 53.0

2.7 Action and Limit Levels

- 2.7.1 The air quality monitoring results of 1-hr TSP were well below the Limit Level set out in the EM&A Manual respectively at the monitoring locations. The A/L for air quality impact monitoring were established according to the criteria and methodology in the EM&A Manual as presented in **Table 2.5**.

Table 2.5 Derivation of Action and Limit Levels for Dust Level

Parameter	Action Level	Limit Level
1-hr TSP Level in $\mu\text{g}/\text{m}^3$	For Baseline Level $\leq 384 \mu\text{g}/\text{m}^3$, Action Level = (baseline level *1.3 + Limit level) /2 For Baseline Level $> 384 \mu\text{g}/\text{m}^3$, Action Level = Limit Level	500 $\mu\text{g}/\text{m}^3$

2.7.2 Table 2.6 shows the derived A/L Levels for air quality impact monitoring during the construction of the Project.

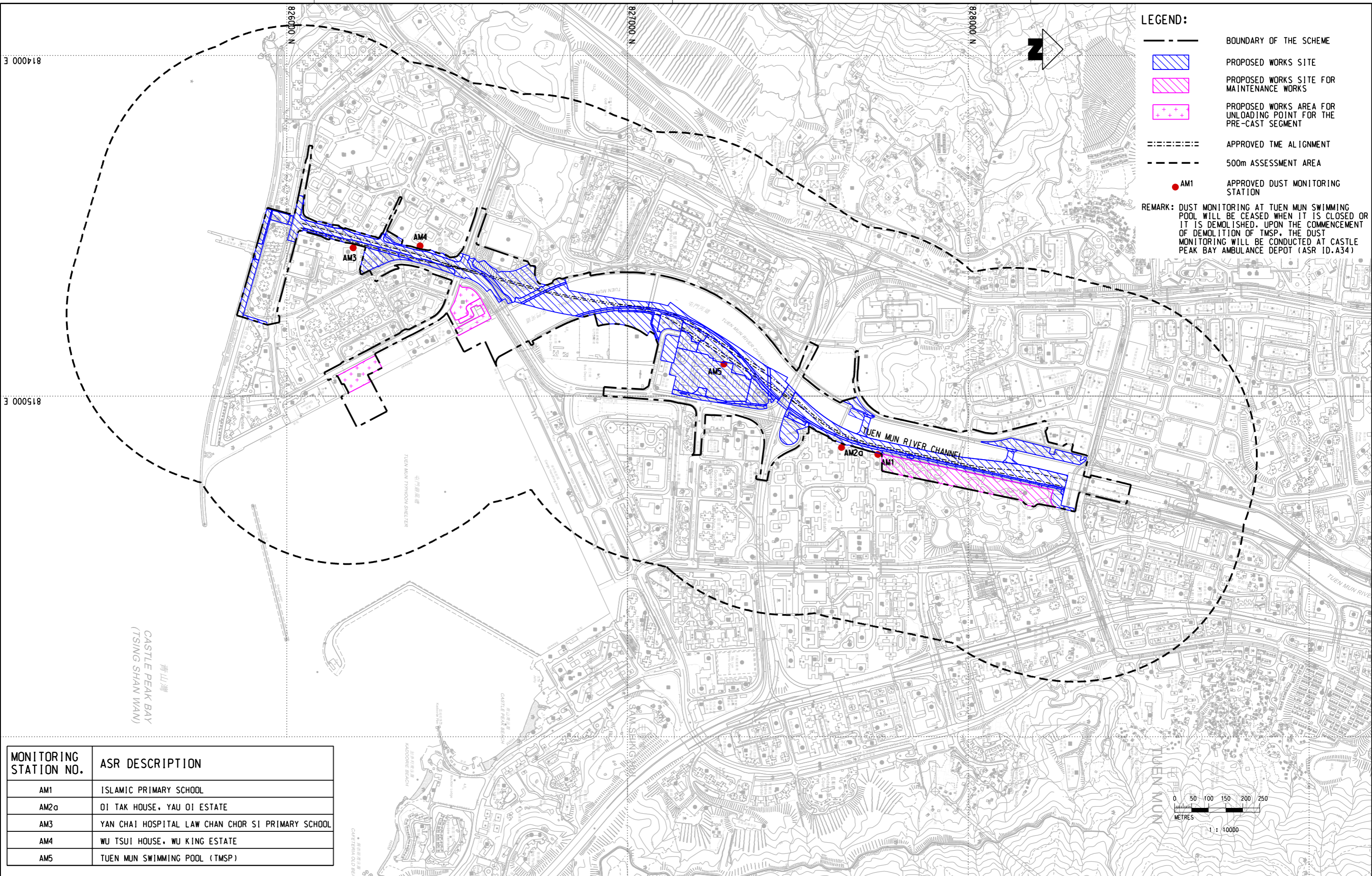
Table 2.6 Action and Limit Levels for Dust Level

Parameter	Station ID	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
1-hr TSP Level in $\mu\text{g}/\text{m}^3$	AM1	277.6	500
	AM2a	277.4	500
	AM3	279.9	500
	AM4	279.9	500
	AM5	277.1	500

3 CONCLUSION

- 3.1.1 Baseline dust monitoring was carried out between 29 September and 14 October 2023 at the 5 designated monitoring stations. During the monitoring period, typhoon signal No.9 and No.8 were hoisted on 8 and 9 October 2023 respectively, no dust monitoring were conducted throughout these days. As such, two additional monitoring (i.e. 13 and 14 October 2023) were conducted to obtain sufficient data. During the baseline monitoring period, no major sources of TSP was observed near the designated monitoring stations (i.e. AM1, AM2 and AM5), and vehicular emission from Wu King Road was the major source near AM3 and AM4.
- 3.1.2 The air quality monitoring results of 1-hr TSP were below the Limit Level set out in the EM&A Manual at all monitoring locations. The air quality A/L Levels at each location were derived from the baseline monitoring results and the derived A/L Levels will be used for the subsequent impact monitoring during construction stage.

Figure

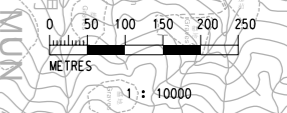


- LEGEND:**
- BOUNDARY OF THE SCHEME
 - PROPOSED WORKS SITE
 - PROPOSED WORKS SITE FOR MAINTENANCE WORKS
 - PROPOSED WORKS AREA FOR UNLOADING POINT FOR THE PRE-CAST SEGMENT
 - APPROVED TME ALIGNMENT
 - 500m ASSESSMENT AREA
 - AM1 APPROVED DUST MONITORING STATION

REMARK: DUST MONITORING AT TUEN MUN SWIMMING POOL WILL BE CEASED WHEN IT IS CLOSED OR IT IS DEMOLISHED. UPON THE COMMENCEMENT OF DEMOLITION OF TMSP, THE DUST MONITORING WILL BE CONDUCTED AT CASTLE PEAK BAY AMBULANCE DEPOT (ASR ID.A34)

青山灣
CASTLE PEAK BAY
(TSING SHAN WAN)

MONITORING STATION NO.	ASR DESCRIPTION
AM1	ISLAMIC PRIMARY SCHOOL
AM2a	OI TAK HOUSE, YAU OI ESTATE
AM3	YAN CHAI HOSPITAL LAW CHAN CHOR SI PRIMARY SCHOOL
AM4	WU TSUI HOUSE, WU KING ESTATE
AM5	TUEN MUN SWIMMING POOL (TMSP)



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				ORIGINATOR AECOM				SCALE 1 : 10000 (A3)						
				CADD REF. C1502_C_TME_ACM_M64_101.dgn				FIGURE NO. C1502/C/TME/ACM/M64/101						
REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

Appendix 1.1

Alternative Dust Monitoring Location Proposal

本署檔號
OUR REF: () in EP2/N4/A/131 Pt.3
來函檔號
YOUR REF: C1502-COR-CEM-ENV-060060
電話
TEL. NO. : 2835 1109
圖文傳真
FAX NO : 2591 0558
電子郵件
E-MAIL: virginia.wong@epd.gov.hk
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22 September 2023

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MTR Corporation Limited
Environmental Section
8/F Fo Tan Railway House,
No.9 Lok King Street, Fo Tan
Sha Tin, Hong Kong
(Attn: Raymond WONG, Senior Environmental Manager (Capital Works))

Dear Mr. WONG,

Environmental Impact Assessment (EIA) Ordinance, Cap. 499

Project Title: Tuen Mun South Extension

Environmental Permit (EP) No.EP-615/2022

Revised Alternative Dust Monitoring Proposal

I refer to your letter dated 18 September 2023 submitting Revised Alternative Dust Monitoring Proposal for Tuen Mun South Extension.

According to the information provided, one baseline dust monitoring station (i.e. AM2) in Oi Lai House, Yau Oi House is proposed to be shifted slightly to Oi Tak House, Yau Oi House. The relocation proposal is also certified by Environmental Team Leader and verified by the Independent Environmental Checker.

Based on the above, we have no comment on the proposed relocation of baseline dust monitoring station. Please update the EM&A Manual to reflect the changes as appropriate and deposit the updated manual with us.

Yours sincerely,

(Ms. Virginia WONG)

Environmental Protection Officer
for Director of Environmental Protection

C.C.

HyD/RDO
Meinhardt (IEC)
AECOM

Attn: Mr. Y.C. TING
Attn: Mr. Adi Yuk-ming LEE / Ms. Wing-man LUI
Attn: Ms. Angela Tong


Fax no: 3525 1527
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By email

MTR Corporation Limited

TUEN MUN SOUTH EXTENSION


(No. EP-615/2022)

Alternative Dust Monitoring Location Proposal

Certified by : 

(Raymond Wong)
Position : Environmental Team Leader

Date : 14 Sept 2023

Verified by : 

(Adi Lee)
Position : Independent Environmental Checker



Date : 14 September 2023

MTR Corporation Limited

Consultancy Agreement No. C1502

Tuen Mun South Extension**Baseline Environmental Monitoring –
Alternative Dust Monitoring Location
Proposal**

September 2023

	Name	Signature
Prepared & Checked:	Ben Wong	
Reviewed & Approved:	Angela Tong	

Version: - Date: 18 September 2023

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Appendix B	Photos of existing condition of Oi Lai House

1. INTRODUCTION

1.1 Background

- 1.1.1 The Tuen Mun South Extension (TME) (hereinafter referred to as “the Project”) is one of the seven recommended railway schemes in the Railway Development Strategy 2014 (“RDS-2014”). The Project will extend the Tuen Ma Line (TML), from Tuen Mun (TUM) Station southwards by about 2.4 km, terminating at a new station near Tuen Mun Ferry Pier (i.e. Tuen Mun South (TMS) Station) with an intermediate station at Tuen Mun Area 16 (i.e. A16 Station).
- 1.1.2 The Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-236/2022) for the Project was approved on 12 July 2022 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) was granted on 18 August 2022 (EP No: EP-615/2022) for the construction and operation of the Project.
- 1.1.3 The key elements of the Project as assessed in the Environmental Impact Assessment (EIA) Report are listed below:
- Construction and operation of 2.4-km extension of the viaduct structure from TUM Station to the new TMS Station;
 - Construction and operation of two new stations, namely TMS Station and A16 Station;
 - Construction and operation of Stations associated facilities; and
 - Construction and operation of a railway siding adjacent to A16 Station.
- 1.1.4 According to the approved EM&A Manual (Register No.: AEIAR-236/2022), air quality monitoring is recommended during the construction phase of the Project to ascertain that there would be no adverse dust impacts at the nearby sensitive receivers. Therefore 1-hour Total Suspended Particulates (TSP) is recommended to be monitored and audited at the proposed monitoring locations. The 1-hr TSP levels should be measured by a direct dust meter. A methodology including the monitoring procedures and calibration of direct dust meter has been submitted and agreed by the Independent Environmental (IEC).
- 1.1.5 Based on the latest construction programme, the construction works of the Project would commence in early November 2023.

1.2 Purpose of this Proposal

- 1.2.1 According to **Section 2.5.3** of approved EM&A Manual, alternative baseline dust monitoring locations should seek approval from ER and should be agreed with the Independent Environmental Checker (IEC) and Environmental Protection Department (EPD). This Proposal presents the reason for proposing alternative dust monitoring location and the proposed alternative location.

2. BASELINE DUST MONITORING LOCATIONS

2.1 Monitoring Locations

2.1.1 Dust monitoring should be conducted during the construction of the Project. **Table 2.1** shows the designated monitoring locations identified in EM&A Manual.

Table 2.1 Proposed Baseline Dust Monitoring Stations

Dust Monitoring Station ID ⁽¹⁾	Air Sensitive Receiver (ASR) ID in EIA	Location
AM1	A7	Islamic Primary School
AM2	A9	Oi Lai House, Yau Oi Estate
AM3	A21	Yan Chai Hospital Law Chan Chor Si Primary School
AM4	A28	Wu Tsui House, Wu King Estate
AM5 ⁽²⁾	A41	Tuen Mun Swimming Pool (TMSP)

Notes:

- (1) 1-hour TSP impact monitoring should be conducted at the monitoring stations when there are Project-related major construction activities including site formation and piling works being undertaken within a radius of 500m from the monitoring stations.
- (2) Impact dust monitoring at Tuen Mun Swimming Pool will be ceased when it is closed or it is demolished. Upon the commencement of demolition of TMSP, the impact dust monitoring will be conducted at Castle Peak Bay Ambulance Depot (ASR ID. A34).

2.1.2 Site visits were conducted at the designated monitoring locations in April 2023 to obtain access from the residents for monitoring. All access permissions were granted except the access to Oi Lai House, Yau Oi Estate (i.e. AM2) due to the renovation of its building facade and the renovation works will take at least 1 year to complete according to the assistant housing manager of Housing Department. Photo record of showing the existing condition of Oi Lai House is presented in **Appendix B**. Given that the renovation works at Oi Lai House will affect the baseline monitoring result, an alternative dust monitoring location is therefore proposed.

2.2 Alternative Dust Monitoring Location

2.2.1 According to Section 2.4.2 and 2.4.3 of the approved EM&A Manual, alternative air quality location should be chosen based on the following criteria:

- Monitoring at ASRs close to the major site activities which are likely to have air quality impacts;
- Monitoring as close as possible to the ASRs as defined in the EIAO-TM;
- Assurance of minimal disturbance to the occupants and working under a safe condition during monitoring; and
- Take into account the prevailing meteorological conditions.

2.2.2 Further site visits were conducted accordingly to identify the feasible alternative dust monitoring location for AM2. An alternative baseline dust monitoring station (i.e. AM2a) at Oi Tak House, Yau Oi Estate (**Figure No. C1502/C/TME/ACM/M64/001** refers), which is located at about 70m to the north of AM2, is proposed.

2.2.3 AM2 and AM2a are located at approximately 1m and 5m from the works site boundary respectively and thus it is anticipated that the predicted dust impact levels at these ASRs would be similar. To capture the worst-case dust impact, AM2a will be set at the ground level. Based on the site observations, AM2a is considered a safe condition during monitoring.

2.2.4 For the renovation works at Oi Lai House, dust screen will be enclosed the building façade to minimize dust escaping from the renovation works according to the assistant housing manager of Housing Department. As such, AM2a would have insignificant dust impact due to the renovation works at Oi Lai House and can satisfy the selection criteria as mentioned in **Section 2.2.1**.

2.2.5 The baseline monitoring locations together with alternative dust monitoring location are provided in **Table 2.2**.

Table 2.2 Baseline Dust Monitoring Stations

Dust Monitoring Station ID ⁽¹⁾⁽²⁾	ASR ID in EIA	Location
AM1	A7	Islamic Primary School
AM2a	A8	Oi Tak House, Yau Oi Estate
AM3	A21	Yan Chai Hospital Law Chan Chor Si Primary School
AM4	A28	Wu Tsui House, Wu King Estate
AM5 ⁽³⁾	A41	Tuen Mun Swimming Pool (TMSP)

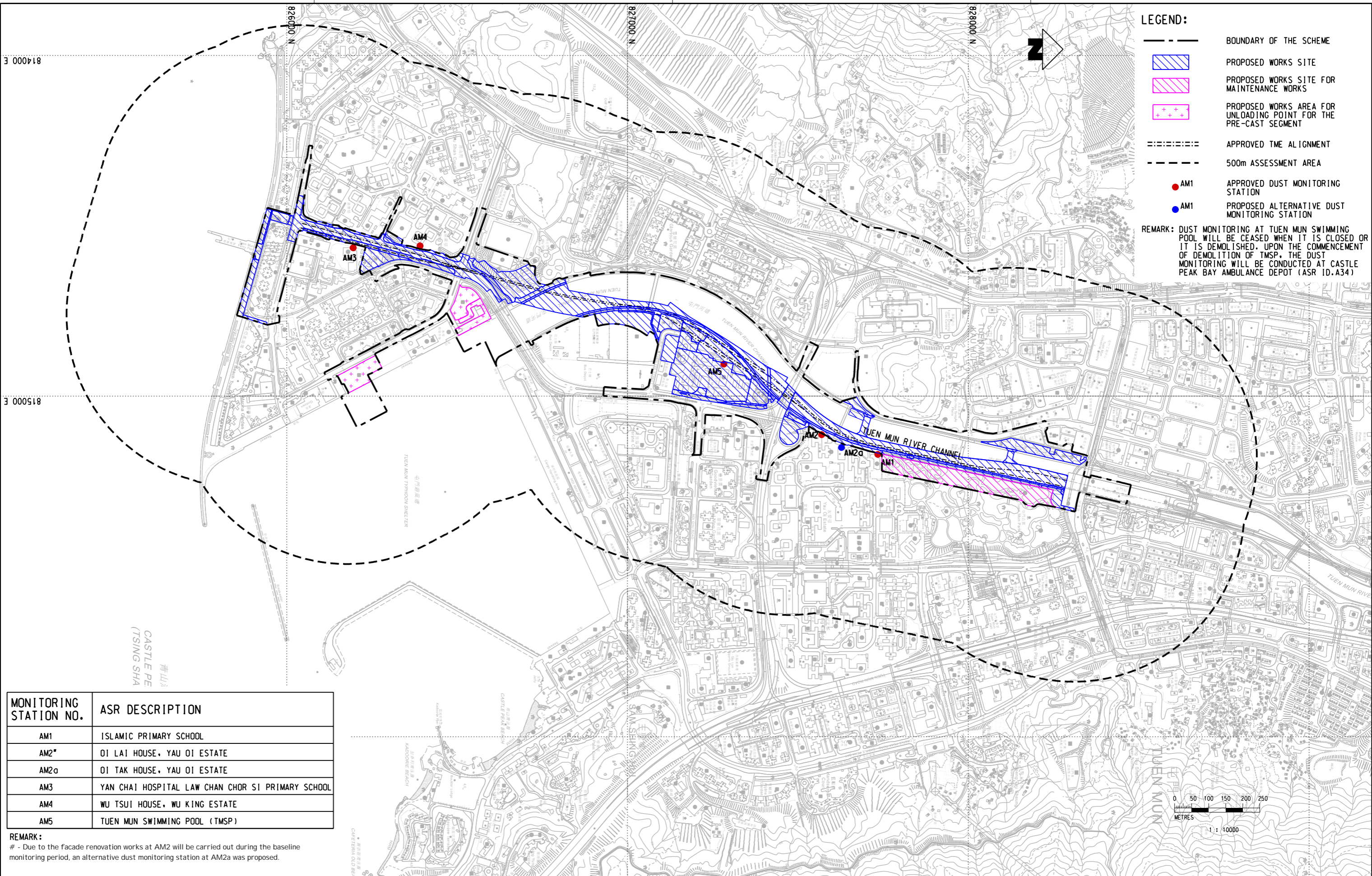
Notes:

- (1) ASR specified as '**Bold**' represents the alternative baseline dust monitoring location.
- (2) 1-hour TSP impact monitoring should be conducted at the monitoring stations when there are Project-related major construction activities including site formation and piling works being undertaken within a radius of 500m from the monitoring stations.
- (3) Impact dust monitoring at Tuen Mun Swimming Pool will be ceased when it is closed or it is demolished. Upon the commencement of demolition of TMSP, the impact dust monitoring will be conducted at Castle Peak Bay Ambulance Depot (ASR ID. A34).

3. CONCLUSION

- 3.1.1 Based on the selection criteria and site observations, Oi Tak House, Yau Oi Estate is considered as suitable alternative dust monitoring location for Oi Lai House, Yau Oi Estate.

Figure

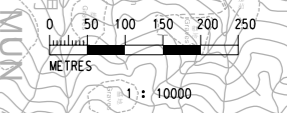


- LEGEND:**
- BOUNDARY OF THE SCHEME
 - PROPOSED WORKS SITE
 - PROPOSED WORKS SITE FOR MAINTENANCE WORKS
 - PROPOSED WORKS AREA FOR UNLOADING POINT FOR THE PRE-CAST SEGMENT
 - APPROVED TME ALIGNMENT
 - 500m ASSESSMENT AREA
 - AM1 APPROVED DUST MONITORING STATION
 - AM1 PROPOSED ALTERNATIVE DUST MONITORING STATION

REMARK: DUST MONITORING AT TUEN MUN SWIMMING POOL WILL BE CEASED WHEN IT IS CLOSED OR IT IS DEMOLISHED. UPON THE COMMENCEMENT OF DEMOLITION OF TMSP, THE DUST MONITORING WILL BE CONDUCTED AT CASTLE PEAK BAY AMBULANCE DEPOT (ASR ID.A34)

MONITORING STATION NO.	ASR DESCRIPTION
AM1	ISLAMIC PRIMARY SCHOOL
AM2*	OI LAI HOUSE, YAU OI ESTATE
AM2a	OI TAK HOUSE, YAU OI ESTATE
AM3	YAN CHAI HOSPITAL LAW CHAN CHOR SI PRIMARY SCHOOL
AM4	WU TSUI HOUSE, WU KING ESTATE
AM5	TUEN MUN SWIMMING POOL (TMSP)

REMARK:
 # - Due to the facade renovation works at AM2 will be carried out during the baseline monitoring period, an alternative dust monitoring station at AM2a was proposed.



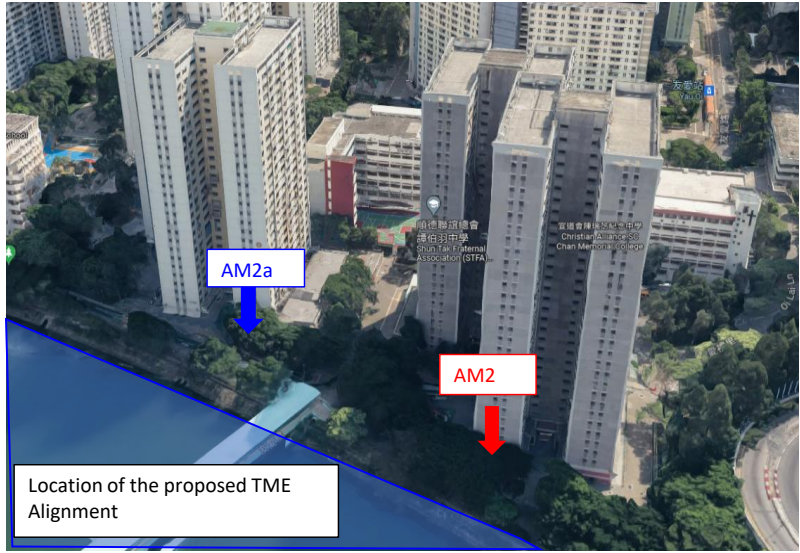
				DRAWN				 TUEN MUN SOUTH EXTENSION ORIGINATOR AECOM				TITLE			
				DESIGNED								C1502			
				CHECKED								TUEN MUN SOUTH EXTENSION			
				APPROVED								LOCATIONS OF DUST MONITORING STATIONS			
				DATE				SCALE							
				DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED ON SITE. © MTR CORPORATION LIMITED 2008 COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.				1 : 10000 (A3)							
								CADD REF.				FIGURE NO.			
				C1502_C_TME_ACM_M64_001.dgn				C1502/C/TME/ACM/M64/001							
								REV. A							

Appendix A

Photos of the Proposed Baseline Dust Monitoring Location

Appendix A

Photos of The Alternative Baseline Dust Monitoring Station



Baseline Dust Monitoring Station of AM2 and AM2a

Appendix B

Photo of the Existing Condition of Oi Lai House

Appendix B Photos of Existing Condition of Oi Lai House



Photo was taken on 25 Aug 2023 at Oi Lai House

Site preparation works were conducted at rooftop of Oi Lai House

Appendix 2.1

Calibration Certificates of 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: Ma Wan Chung Village
 Model No.: TE-5170
 Serial No.: 3383
 Last Calibration Date: 4-Aug-23

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 ^① (mg/m3) Y-axis	Total Count ^②	Count/ Minute ^③ X-axis
			Temp (°C)	R.H.(%)			
1	15/08/23	9:00-10:00	32.0	80	0.038	1536	25.60
2	15/08/23	11:30-12:30	32.0	80	0.035	1321	22.02
3	15/08/23	13:50-14:50	32.0	80	0.041	1721	28.68

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: 0.9982

Validity of Calibration Record: 22-Aug-23

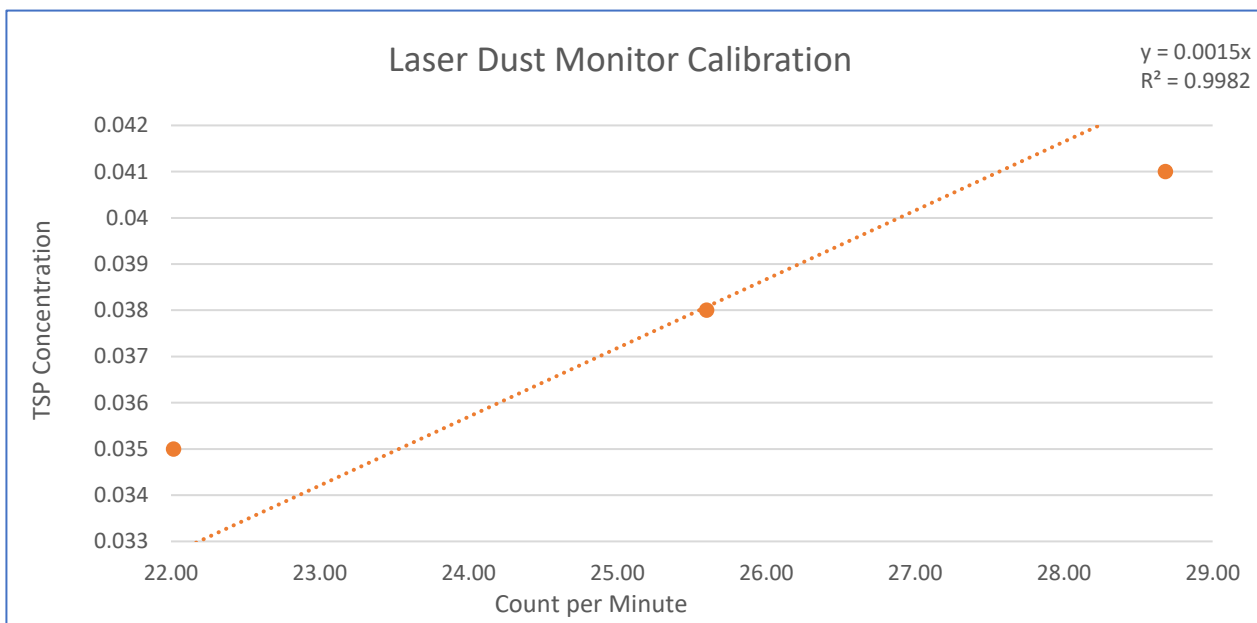
Remarks:

QC Reviewer: Y.W. Fung Signature:  Date: 22-Aug-23

Laser Dust Monitor Calibration

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

Hour	Count/Minute X-axis	Concentration (mg/m3) Y-axis
1	25.60	0.0380
2	22.02	0.0350
3	28.68	0.0410



Prepare by: WS CHAN
Date: 22-Aug-23

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3B
 Equipment No.: A.005.13a
 Sensitivity Adjustment Scale Setting: 643 CPM

Operator: WS CHAN

Standard Equipment

Equipment: High Volume Sampler
 Venue: Ma Wan Chung Village
 Model No.: TE-5170
 Serial No.: 3383
 Last Calibration Date: 4-Aug-23

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 643 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 643 CPM

Hour	Date (dd/mm/yy)	Time	Ambient Condition		Concentration ^① (mg/m3) Y-axis	Total Count ^②	Count/ Minute ^③ X-axis
			Temp (°C)	R.H.(%)			
1	15/08/23	9:00-10:00	32.0	80	0.038	1512	25.20
2	15/08/23	11:30-12:30	32.0	80	0.035	1338	22.30
3	15/08/23	13:50-14:50	32.0	80	0.041	1703	28.38

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: 0.9989

Validity of Calibration Record: 22-Aug-23

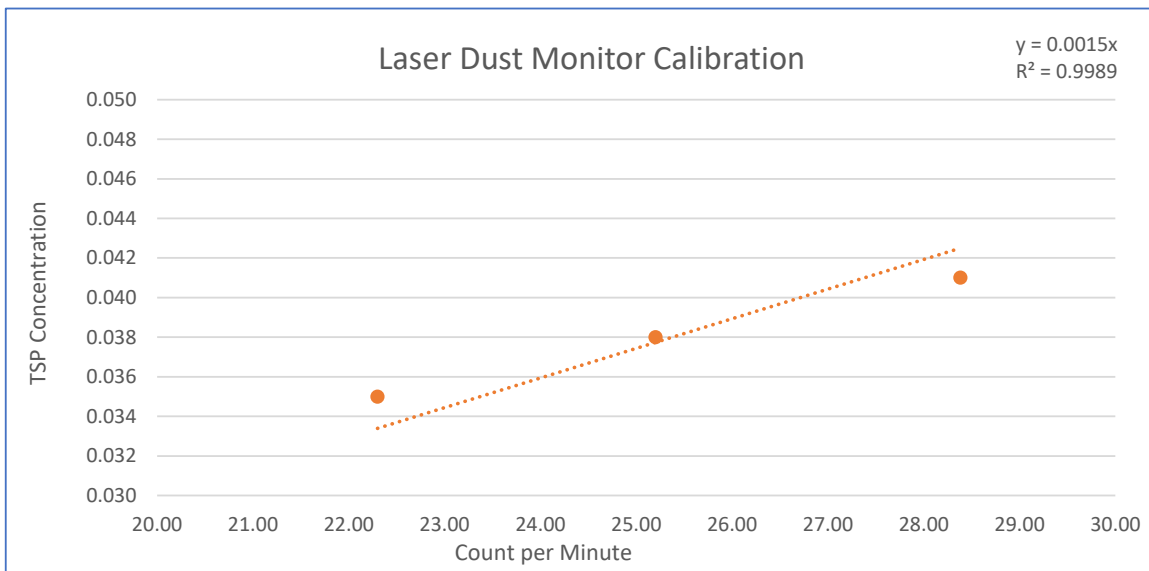
Remarks:

QC Reviewer: Y.W. Fung Signature:  Date: 22-Aug-23

Laser Dust Monitor Calibration

Type: Laser Dust Monitor
Manufacturer/Brand: SIBATA
Model No.: LD-3B
Equipment No.: A.005.13a
Sensitivity Adjustment
Scale Setting: 643 CPM

Hour	Count/Minute X-axis	Concentration (mg/m3) Y-axis
	0.00	0.0000
1	25.20	0.0380
2	22.30	0.0350
3	28.38	0.0410



Prepare by: WS CHAN
Date: 22-Aug-23

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: Ma Wan Chung Village
 Model No.: TE-5170
 Serial No.: 3383
 Last Calibration Date: 4-Aug-23

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 ^① (mg/m3) Y-axis	Total Count ^②	Count/ Minute ^③ X-axis
			Temp (°C)	R.H.(%)			
1	15/08/23	9:00-10:00	32.0	80	0.038	1569	26.15
2	15/08/23	11:30-12:30	32.0	80	0.035	1335	22.25
3	15/08/23	13:50-14:50	32.0	80	0.041	1744	29.07

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: 0.9981

Validity of Calibration Record: 22-Aug-23

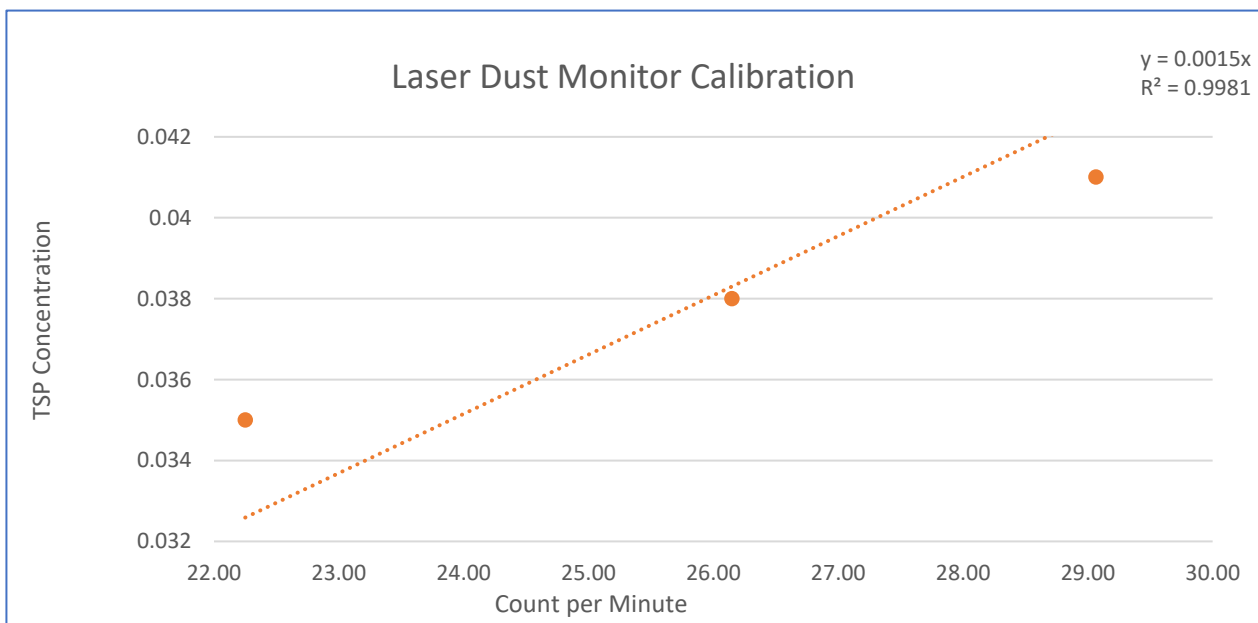
Remarks:

QC Reviewer: Y.W. Fung Signature:  Date: 22-Aug-23

Laser Dust Monitor Calibration

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

Hour	Count/Minute X-axis	Concentration (mg/m3) Y-axis
1	26.15	0.038
2	22.25	0.035
3	29.07	0.041



Prepare by: WS CHAN
Date: 22-Aug-23

ALS Technichem (HK) Pty Ltd



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AECOM ASIA COMPANY LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 4
Contact	: MS LEMON LAM	Contact	: Richard Fung	Work Order	: HK2332933
Address	: 13/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: lemon.lam@aecom.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: —	Telephone	: +852 2610 1044		
Facsimile	: —	Facsimile	: +852 2610 2021		
Project	: [REDACTED]			Date Samples Received	: 16-Aug-2023
Order number	: —	Quote	: HKE/1782/2023	Issue Date	: 21-Aug-2023
		number			
C-O-C number	: —			No. of samples received	: 9
Site	:			No. of samples analysed	: 9

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This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
		
Fung Lim Chee, Richard	Managing Director	Inorganics

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsglobal.com



General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Testing period is from 16-Aug-2023 to 17-Aug-2023.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2332933

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.



Analytical Results

Sub-Matrix: FILTER (TSP/RSP)

				Sample ID
				Sampling date / time
Compound	CAS Number	LOR	Unit	
EA/ED: Physical and Aggregate Properties				
HK-TSP: Total Suspended Particulates	--	1	µg/m ³	



Sub-Matrix: FILTER (TSP/RSP)				Sample ID	DM-5b 1st Hour - 180001	DM-5b 2nd Hour - 180004	DM-5b 3rd Hour - 180007	---
				Sampling date / time	15-Aug-2023	15-Aug-2023	15-Aug-2023	---
Compound	CAS Number	LOR	Unit		HK2332933-007	HK2332933-008	HK2332933-009	----
EA/ED: Physical and Aggregate Properties								
HK-TSP: Total Suspended Particulates	--	1	µg/m³		38	35	41	---



**RECALIBRATION
DUE DATE:
January 16, 2024**

Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 16, 2023	Rootsmeter S/N: 438320	Ta: 293	°K
Operator: Jim Tisch		Pa: 748.8	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 0843		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3860	3.2	2.00
2	3	4	1	0.9840	6.4	4.00
3	5	6	1	0.8780	8.0	5.00
4	7	8	1	0.8430	8.8	5.50
5	9	10	1	0.6950	12.7	8.00

Data Tabulation						
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)	
0.9978	0.7199	1.4157	0.9957	0.7184	0.8846	
0.9935	1.0097	2.0021	0.9915	1.0076	1.2511	
0.9914	1.1291	2.2384	0.9893	1.1268	1.3987	
0.9903	1.1747	2.3476	0.9882	1.1723	1.4670	
0.9851	1.4174	2.8313	0.9830	1.4144	1.7693	
QSTD	m=	2.03196	QA	m=	1.27238	
	b=	-0.04813		b=	-0.03007	
	r=	0.99993		r=	0.99993	

Calculations			
Vstd=	$\Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta)$	Va=	$\Delta Vol((Pa-\Delta P)/Pa)$
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime
For subsequent flow rate calculations:			
Qstd=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

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

5. HVS Calibration Data Record Sheet

AECOM Asia Company Limited
1-hour TSP Dust Monitoring - Data Record Sheet

HK 332 (33-7,8,9)
Rec'd date: 16/8 (23)
Weighing date: 17/8 (23)

Project Name: TUE 1201 Tung Chung West Station and Tunnels
Equipment: Tisch TE-5170 & GMW-2310 TSP MFC Hi-vel Sampler
The condition and weighing of filters were in accordance with USEPA Standard Method 40 CFR Part 50 Appendix B

Monitoring Location		DM-5b	DM-5b	DM-5b	
Details of Location		Ma Wan Chung Village	Ma Wan Chung Village	Ma Wan Chung Village	
Equipment Number		A-001-78T	A-001-78T	A-001-78T	
Pump Serial Number		3383	3383	3383	
Date of Sampling		15/8/23	15/8/23	15/8/23	
Time of Sampling		0900	1130	1350	
No. of Measurement Set		1st Hour	2nd Hour	3rd Hour	
Weather Condition		Sunny / Fine / Cloudy / Rainy	Sunny / Fine / Cloudy / Rainy	Sunny / Fine / Cloudy / Rainy	Sunny / Fine / Cloudy / Rainy
Elapsed-time Meter Reading	Initial	8735.73	8736.73	8737.73	
	Final	8736.73	8737.73	8738.73	
Total Sampling Time (Hours)		1.0	1.0	1.0	
Initial Flow Rate (m3/min)		1.299	1.299	1.299	
Final Flow Rate (m3/min)		1.299	1.299	1.299	
Average Flow Rate (m3/min)		1.299	1.299	1.299	
Total Sampling Volume (m3)		77.9	77.9	77.9	
Filter Identification Number		180001	180004	180007	
Initial Weight of Filter (g)		2.7639	2.7635	2.7628	
Final Weight of Filter (g)		2.7669	2.7662	2.7557	
Weight of Particulate (g)		0.0030	0.0027	0.0037	
Particulate Concentration (ug/m3)		3825	34.6	46.4	
Site Condition		<input checked="" type="radio"/> Normal Operation <input type="radio"/> Breaker / Excavator / Backhoe <input type="radio"/> Traffic Emission <input type="radio"/> Dust from other activities <input type="radio"/> Others _____	<input checked="" type="radio"/> Normal Operation <input type="radio"/> Breaker / Excavator / Backhoe <input type="radio"/> Traffic Emission <input type="radio"/> Dust from other activities <input type="radio"/> Others _____	<input checked="" type="radio"/> Normal Operation <input type="radio"/> Breaker / Excavator / Backhoe <input type="radio"/> Traffic Emission <input type="radio"/> Dust from other activities <input type="radio"/> Others _____	<input type="radio"/> Normal Operation <input type="radio"/> Breaker / Excavator / Backhoe <input type="radio"/> Traffic Emission <input type="radio"/> Dust from other activities <input type="radio"/> Others _____
Remarks					

	Name	Signature	Date
Filter placed by:			9/8/23
Filter collected by:			15/8/23
Checked by:			

Appendix 2.2

Photo Records of Dust Monitoring Stations

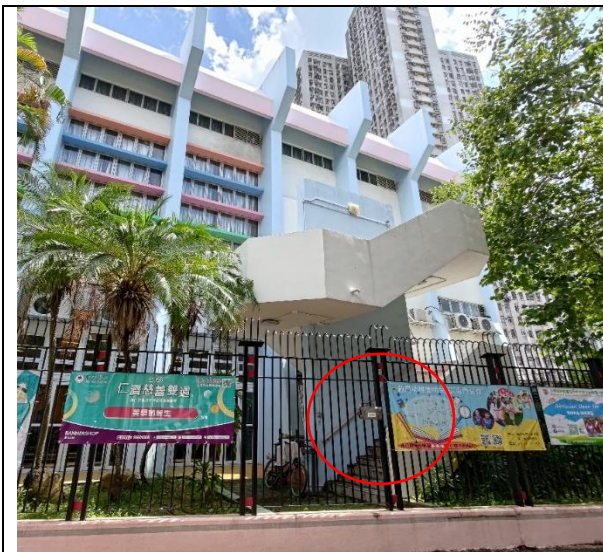
Appendix 2.2 Photo Records of Dust Monitoring Stations



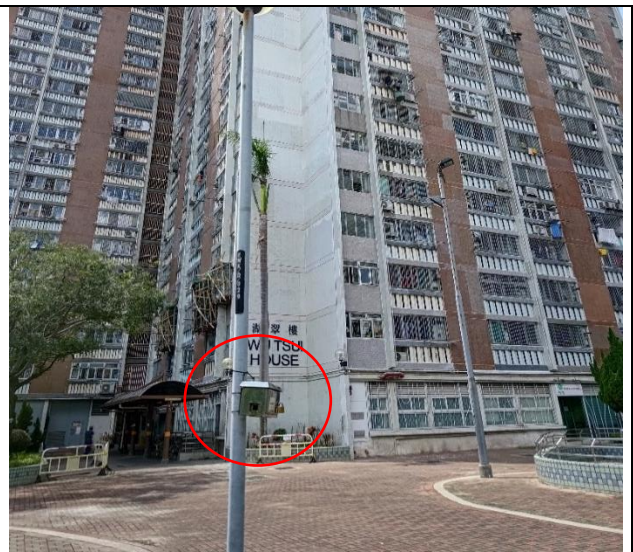
AM 1 - Islamic Primary School



AM 2a - Oi Tak House, Yau Oi Estate



AM 3 - Yan Chai Hospital Law Chan Chor Si Primary School



AM 4 - Wu Tsui House, Wu King Estate



AM 5 - Tuen Mun Swimming Pool



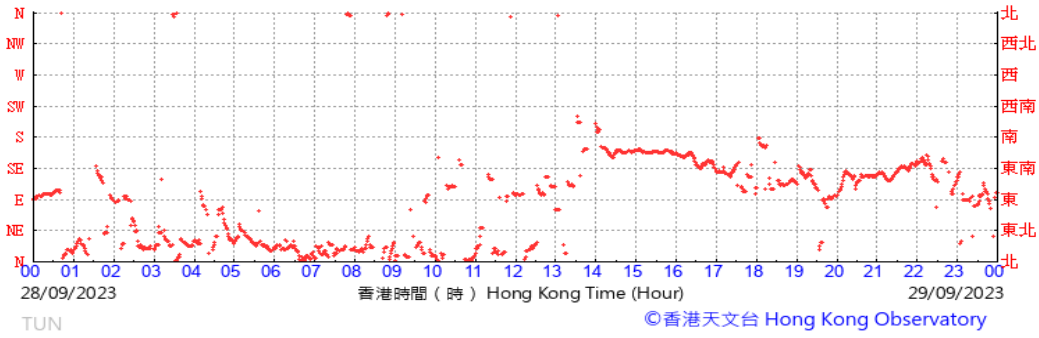
Appendix 2.3

Wind Data and Rainfall Record from Hong Kong Observatory Weather Station

Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

29-Sep-2023

(於香港時間29/09/2023 00 時 00 分更新) (Updated at 00:00H on 29/09/2023)

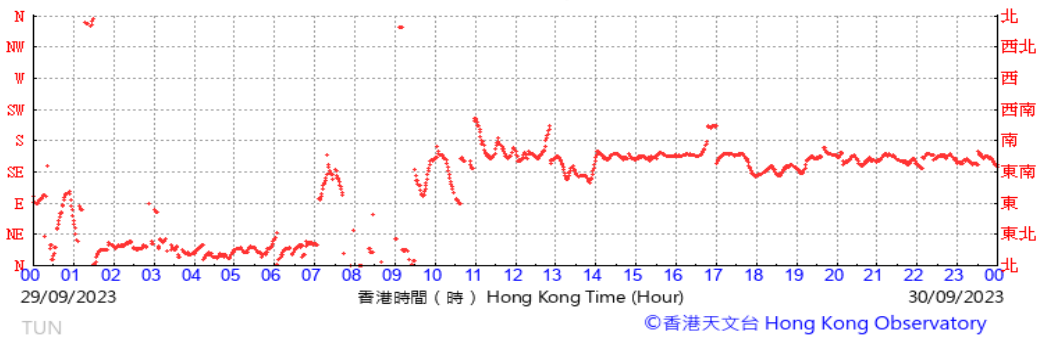


(公里/小時) (於香港時間29/09/2023 00 時 00 分更新) (Updated at 00:00H on 29/09/2023) (km/h)



30-Sep-2023

(於香港時間30/09/2023 00 時 00 分更新) (Updated at 00:00H on 30/09/2023)



(公里/小時) (於香港時間30/09/2023 00 時 00 分更新) (Updated at 00:00H on 30/09/2023) (km/h)



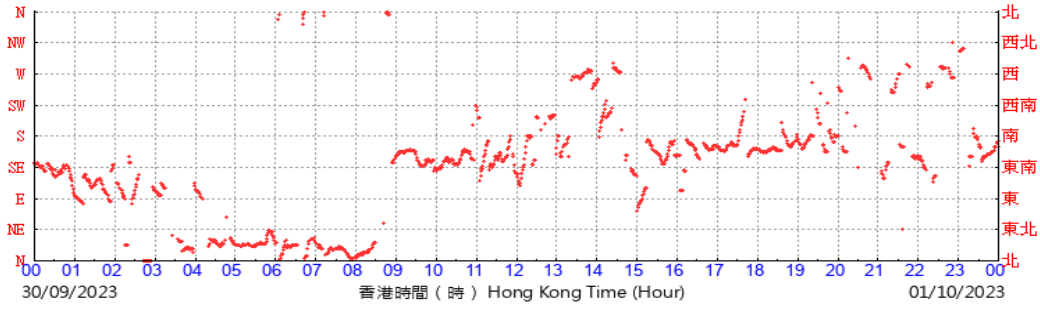
Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

TUN

©香港天文台 Hong Kong Observatory

1-Oct-2023

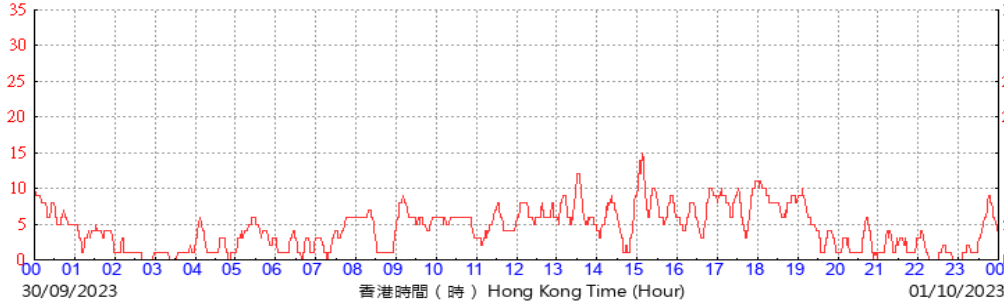
(於香港時間01/10/2023 00 時 00 分更新) (Updated at 00:00H on 01/10/2023)



TUN

©香港天文台 Hong Kong Observatory

(公里/小時) (於香港時間01/10/2023 00 時 00 分更新) (Updated at 00:00H on 01/10/2023) (km/h)

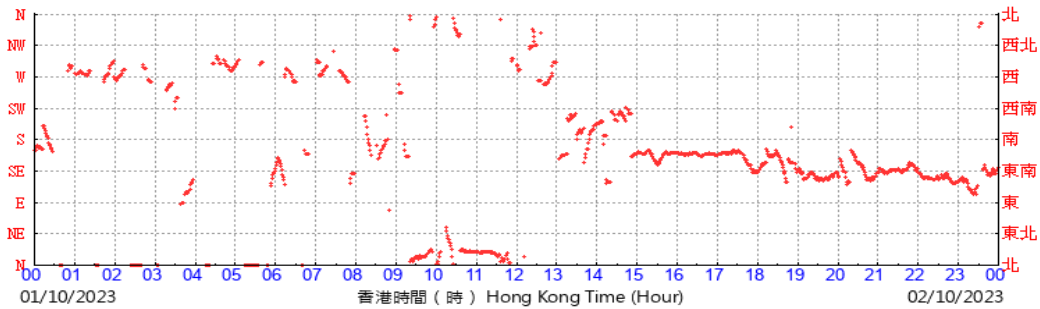


TUN

©香港天文台 Hong Kong Observatory

2-Oct-2023

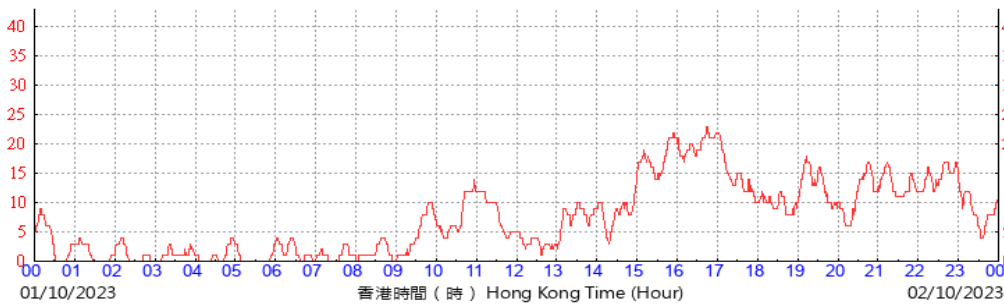
(於香港時間02/10/2023 00 時 00 分更新) (Updated at 00:00H on 02/10/2023)



TUN

©香港天文台 Hong Kong Observatory

(公里/小時) (於香港時間02/10/2023 00 時 00 分更新) (Updated at 00:00H on 02/10/2023) (km/h)



TUN

©香港天文台 Hong Kong Observatory

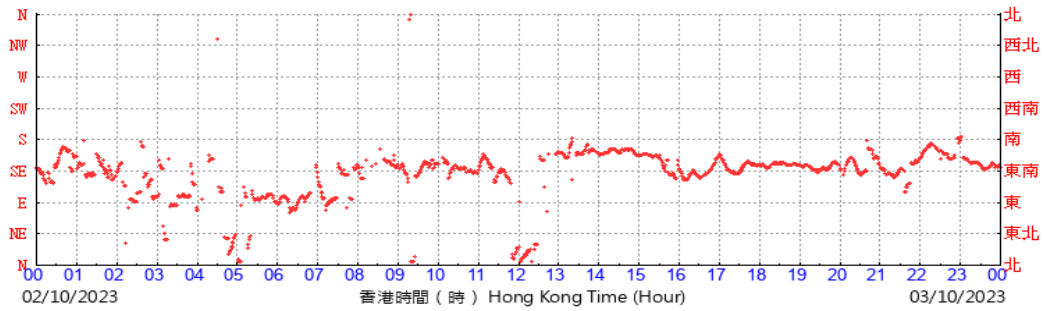
Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

TUN

©香港天文台 Hong Kong Observatory

3-Oct-2023

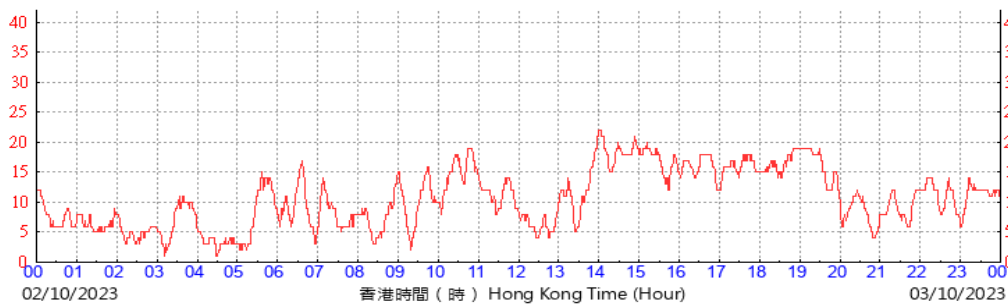
(於香港時間03/10/2023 00 時 00 分更新) (Updated at 00:00H on 03/10/2023)



TUN

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(公里/小時) (於香港時間03/10/2023 00 時 00 分更新) (Updated at 00:00H on 03/10/2023) (km/h)

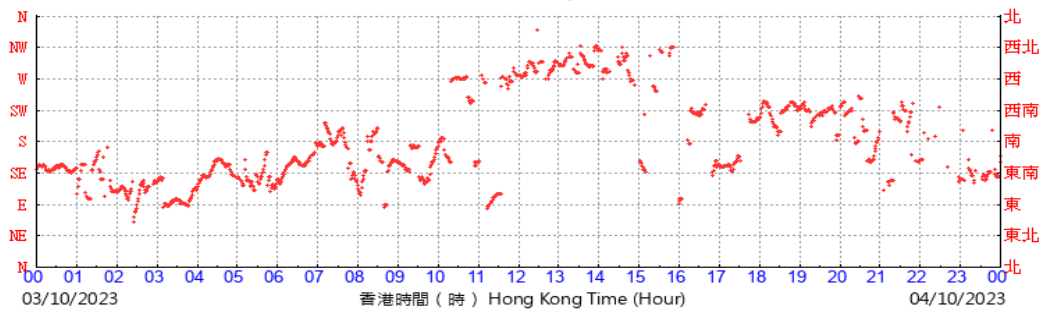


TUN

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4-Oct-2023

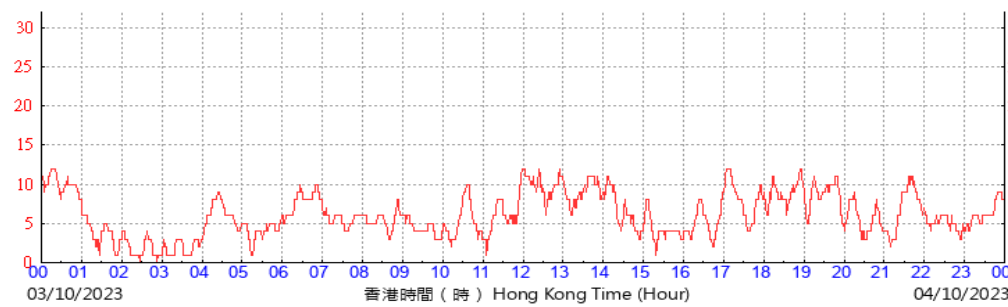
(於香港時間04/10/2023 00 時 00 分更新) (Updated at 00:00H on 04/10/2023)



TUN

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(公里/小時) (於香港時間04/10/2023 00 時 00 分更新) (Updated at 00:00H on 04/10/2023) (km/h)



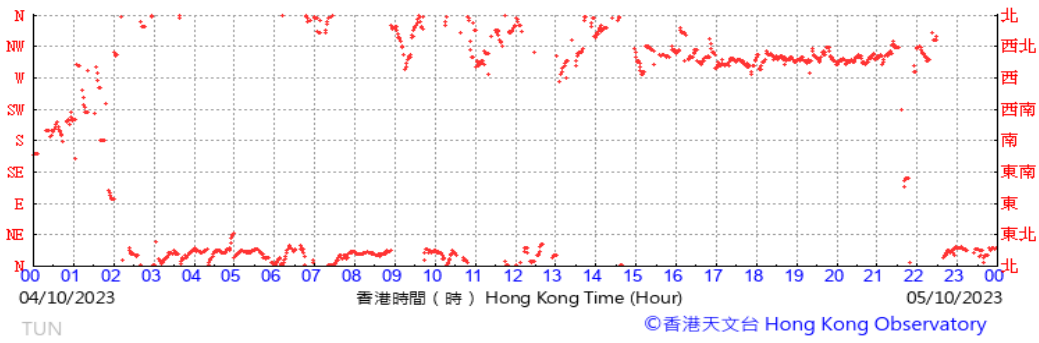
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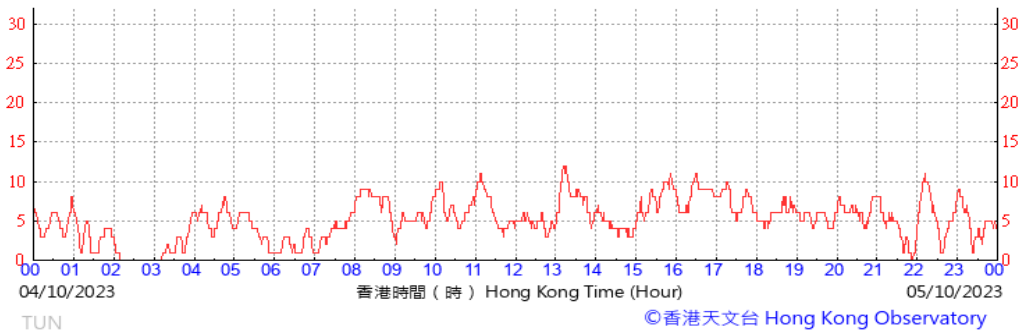
Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

5-Oct-2023

(於香港時間05/10/2023 00 時 00 分更新) (Updated at 00:00H on 05/10/2023)

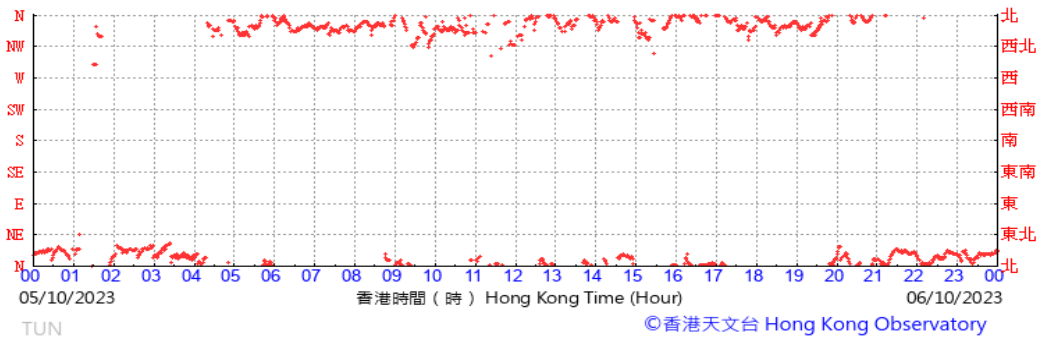


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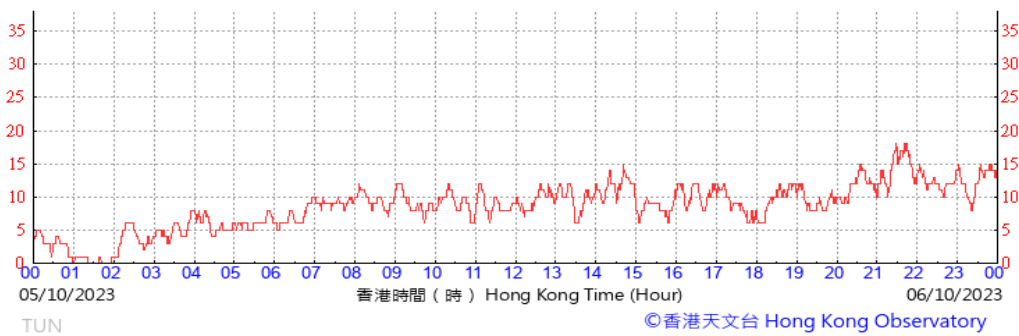


6-Oct-2023

(於香港時間06/10/2023 00 時 00 分更新) (Updated at 00:00H on 06/10/2023)



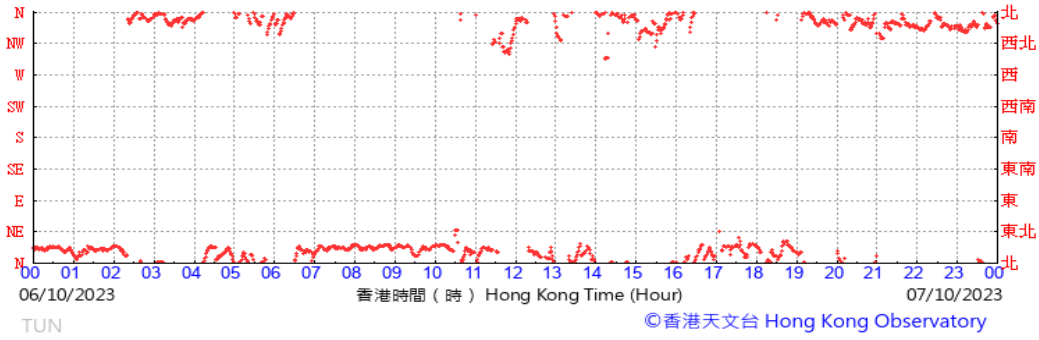
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Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

7-Oct-2023

(於香港時間07/10/2023 00 時 00 分更新) (Updated at 00:00H on 07/10/2023)

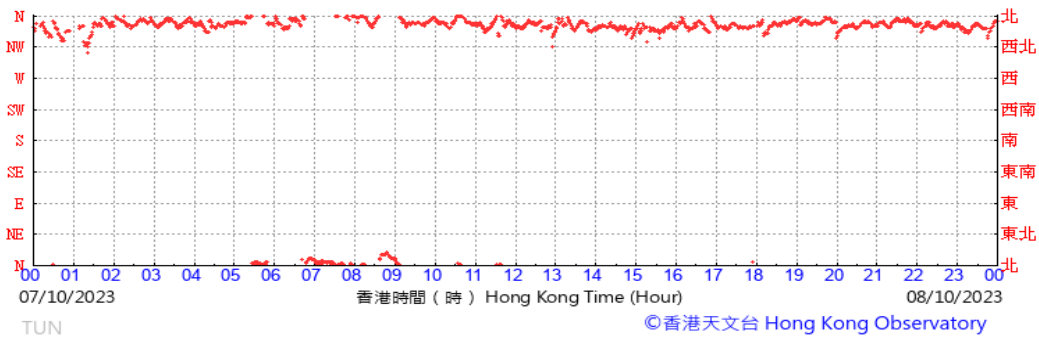


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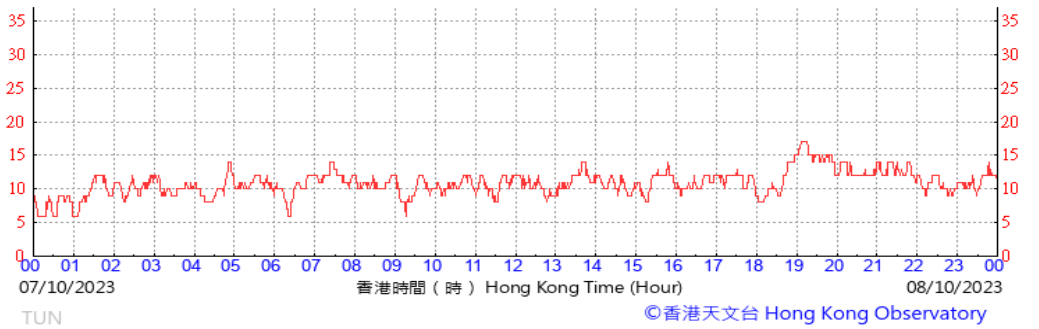


8-Oct-2023

(於香港時間08/10/2023 00 時 00 分更新) (Updated at 00:00H on 08/10/2023)



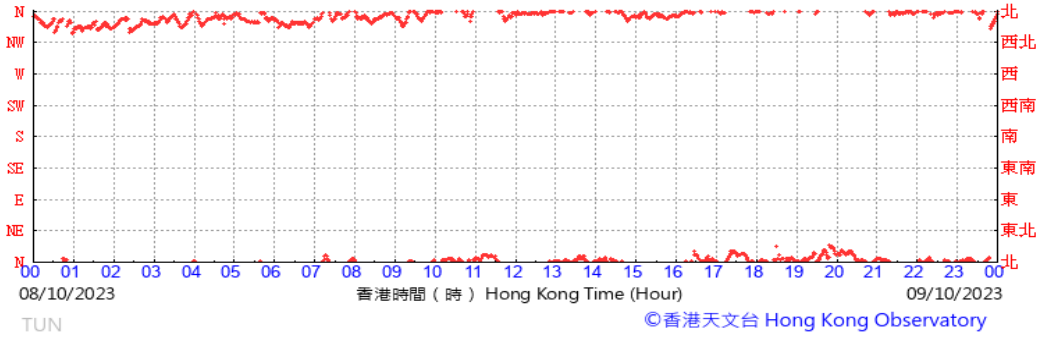
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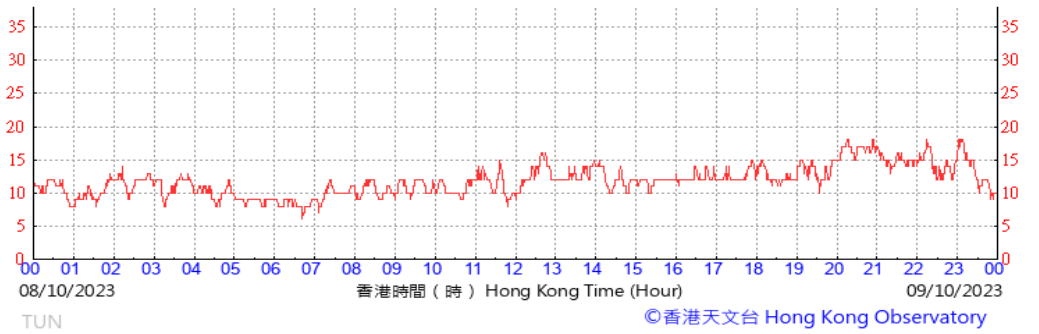
Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

9-Oct-2023

(於香港時間09/10/2023 00 時 00 分更新) (Updated at 00:00H on 09/10/2023)

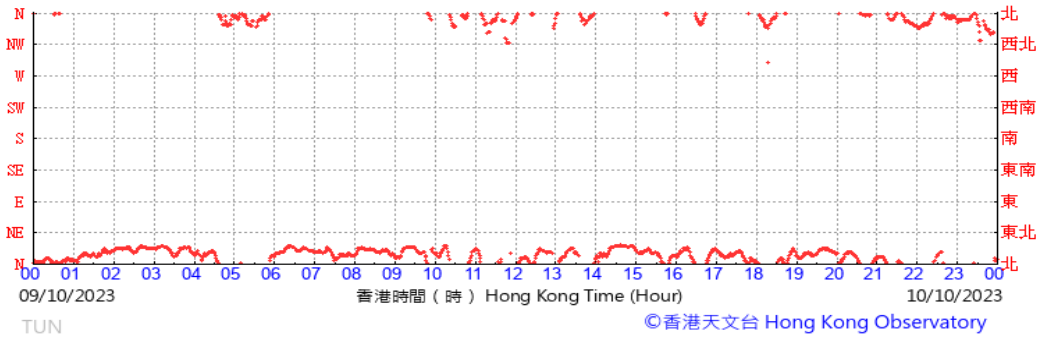


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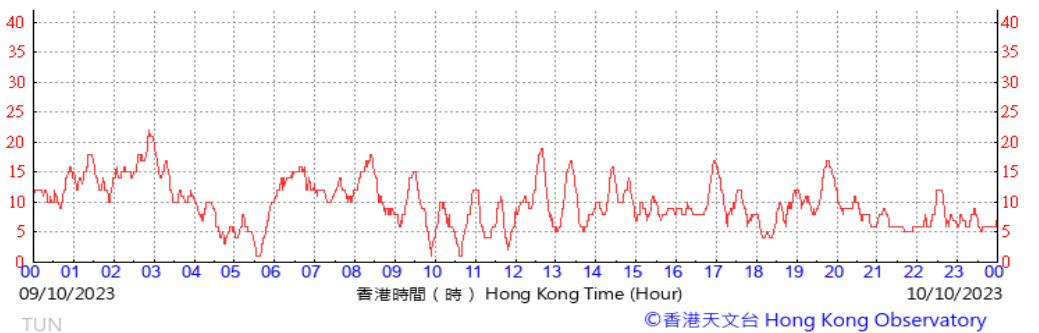


10-Oct-2023

(於香港時間10/10/2023 00 時 00 分更新) (Updated at 00:00H on 10/10/2023)



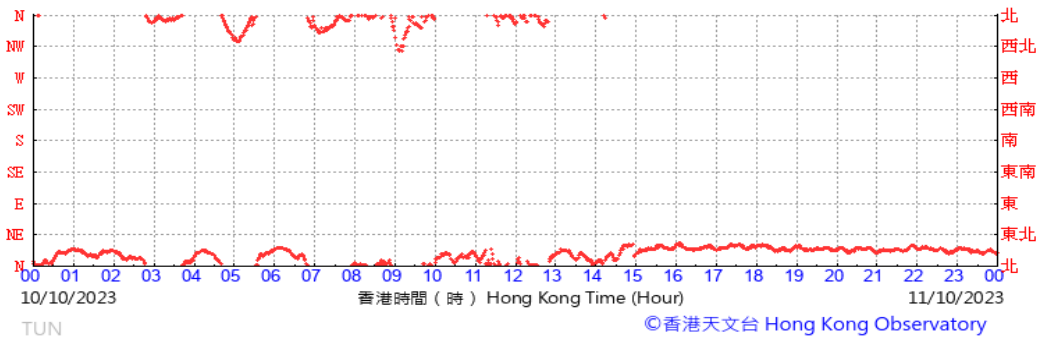
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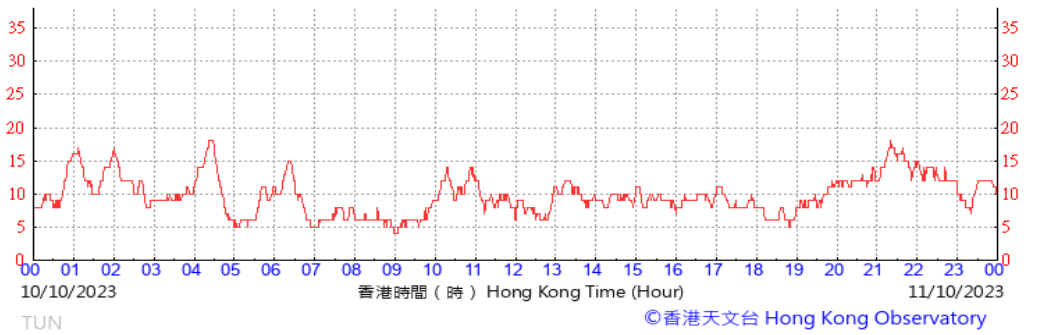
Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

11-Oct-2023

(於香港時間11/10/2023 00 時 00 分更新) (Updated at 00:00H on 11/10/2023)

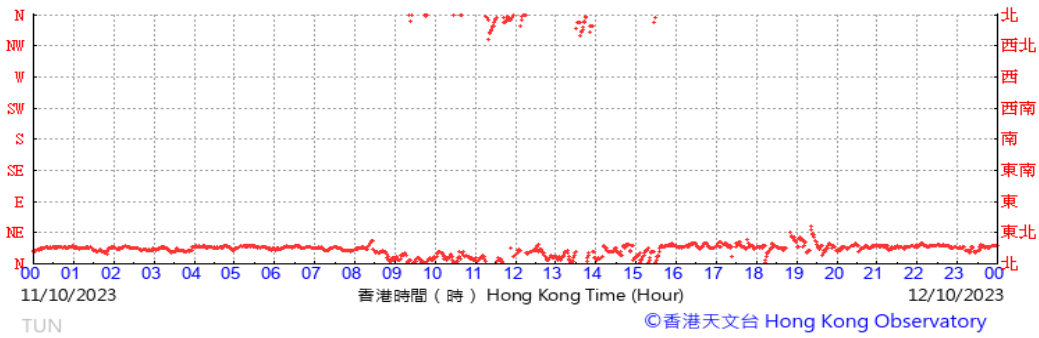


(公里/小時) (於香港時間11/10/2023 00 時 00 分更新) (Updated at 00:00H on 11/10/2023) (km/h)

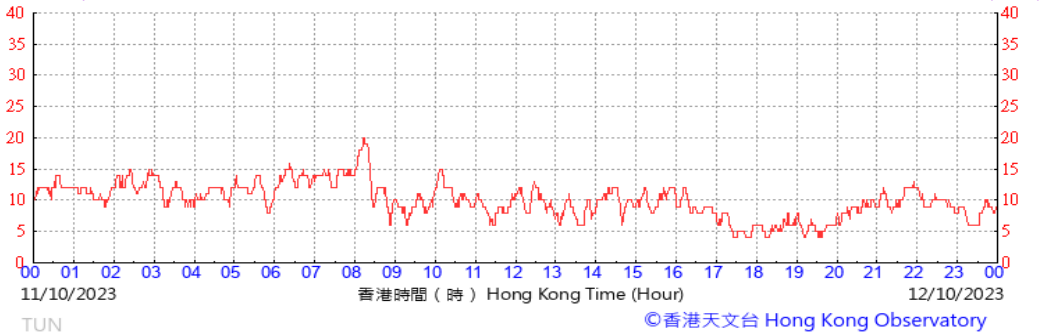


12-Oct-2023

(於香港時間12/10/2023 00 時 00 分更新) (Updated at 00:00H on 12/10/2023)



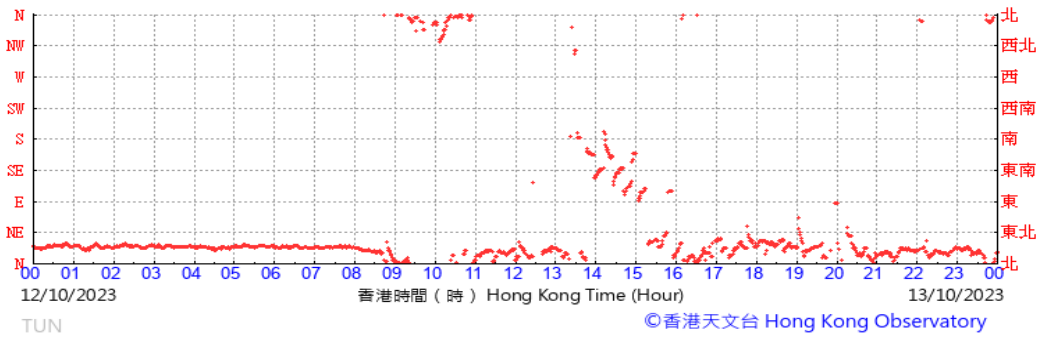
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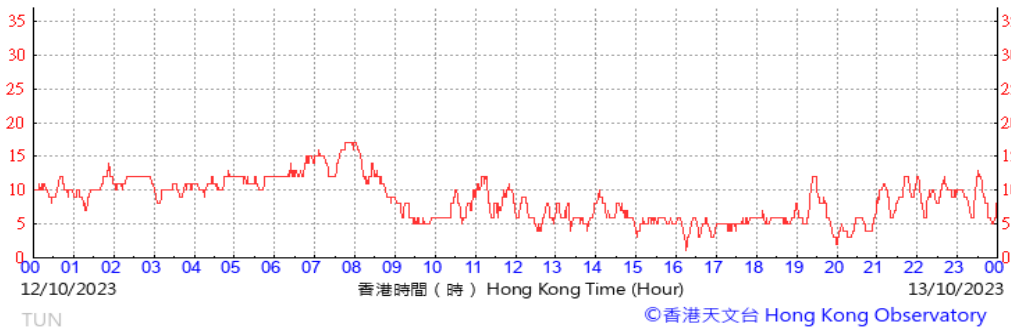
Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

13-Oct-2023

(於香港時間13/10/2023 00 時 00 分更新) (Updated at 00:00H on 13/10/2023)

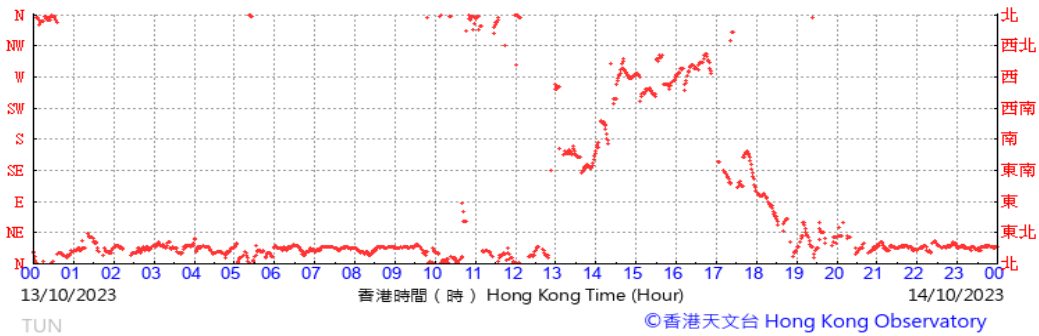


(公里/小時) (於香港時間13/10/2023 00 時 00 分更新) (Updated at 00:00H on 13/10/2023) (km/h)



14-Oct-2023

(於香港時間14/10/2023 00 時 00 分更新) (Updated at 00:00H on 14/10/2023)



(公里/小時) (於香港時間14/10/2023 00 時 00 分更新) (Updated at 00:00H on 14/10/2023) (km/h)



Appendix 2.3 Wind data and Rainfall Record from Hong Kong Observatory Weather Station

Rainfall Record

Date	Rainy Period
29-Sep	No Rainfall Recorded in Tuen Mun Area
30-Sep	No Rainfall Recorded in Tuen Mun Area
1-Oct	No Rainfall Recorded in Tuen Mun Area
2-Oct	No Rainfall Recorded in Tuen Mun Area
3-Oct	No Rainfall Recorded in Tuen Mun Area
4-Oct	No Rainfall Recorded in Tuen Mun Area
5-Oct	No Rainfall Recorded in Tuen Mun Area
6-Oct	No Rainfall Recorded in Tuen Mun Area
7-Oct	7:45-8:45am
8-Oct	Typhoon Signal No. 9
9-Oct	Typhoon Signal No. 8
10-Oct	No Rainfall Recorded in Tuen Mun Area
11-Oct	No Rainfall Recorded in Tuen Mun Area
12-Oct	No Rainfall Recorded in Tuen Mun Area
13-Oct	No Rainfall Recorded in Tuen Mun Area
14-Oct	No Rainfall Recorded in Tuen Mun Area

Note:

Rainfall records are based on site observation and Hong Kong Observatory website

Appendix 2.4

Baseline Dust Monitoring Results

Appendix 2.4 Baseline Air Quality Monitoring Results

1-hour TSP Monitoring Results

Station ID : AM1

Date	Start Time (hh:mm)	Weather Condition	1st Hour Conc. (µg/m3)	2nd Hour Conc. (µg/m3)	3rd Hour Conc. (µg/m3)
29-Sep-23	11:05	Sunny	36.7	37.0	37.5
30-Sep-23	14:40	Sunny	39.9	40.3	40.7
1-Oct-23	11:00	Sunny	40.1	41.7	42.3
2-Oct-23	14:40	Sunny	38.6	39.5	37.5
3-Oct-23	11:00	Sunny	38.9	39.5	41.0
4-Oct-23	14:40	Sunny	50.5	51.9	52.7
5-Oct-23	10:50	Sunny	48.4	49.1	47.0
6-Oct-23	14:25	Sunny	43.7	44.9	45.7
7-Oct-23	11:00	Sunny	42.0	44.4	46.2
8-Oct-23	Monitoring was suspended due to Typhoon				
9-Oct-23	Monitoring was suspended due to Typhoon				
10-Oct-23	11:00	Sunny	37.4	35.7	36.8
11-Oct-23	14:35	Sunny	37.0	36.3	38.1
12-Oct-23	11:00	Sunny	45.6	45.0	46.8
13-Oct-23	14:05	Sunny	39.3	41.1	42.8
14-Oct-23	11:00	Sunny	47.8	48.8	46.7
				Average	42.4
				Min	35.7
				Max	52.7

Appendix 2.4 Baseline Air Quality Monitoring Results

Station ID : AM2a

Date	Start Time (hh:mm)	Weather Condition	1st Hour Conc. (µg/m3)	2nd Hour Conc. (µg/m3)	3rd Hour Conc. (µg/m3)
29-Sep-23	11:15	Sunny	39.2	39.5	40.0
30-Sep-23	14:45	Sunny	43.3	42.5	42.0
1-Oct-23	11:05	Sunny	45.5	46.7	46.0
2-Oct-23	14:45	Sunny	37.7	38.8	39.6
3-Oct-23	11:05	Sunny	39.7	40.7	41.9
4-Oct-23	14:45	Sunny	52.2	53.1	54.8
5-Oct-23	10:55	Sunny	45.9	46.9	48.8
6-Oct-23	14:30	Sunny	42.7	43.3	44.0
7-Oct-23	11:05	Sunny	43.3	45.5	46.3
8-Oct-23	Monitoring was suspended due to Typhoon				
9-Oct-23	Monitoring was suspended due to Typhoon				
10-Oct-23	11:05	Sunny	36.2	36.9	38.1
11-Oct-23	14:40	Sunny	35.5	36.7	34.9
12-Oct-23	14:05	Sunny	41.1	38.8	39.5
13-Oct-23	11:00	Sunny	37.5	38.5	39.7
14-Oct-23	14:10	Sunny	45.1	43.3	42.0
				Average	42.2
				Min	34.9
				Max	54.8

Appendix 2.4 Baseline Air Quality Monitoring Results

Station ID : AM3

Date	Start Time (hh:mm)	Weather Condition	1st Hour Conc. ($\mu\text{g}/\text{m}^3$)	2nd Hour Conc. ($\mu\text{g}/\text{m}^3$)	3rd Hour Conc. ($\mu\text{g}/\text{m}^3$)
29-Sep-23	15:05	Sunny	41.7	41.8	42.0
30-Sep-23	11:00	Sunny	44.9	45.2	45.4
1-Oct-23	14:30	Sunny	43.0	43.9	44.7
2-Oct-23	11:05	Sunny	41.6	42.7	43.8
3-Oct-23	14:25	Sunny	47.2	48.8	45.7
4-Oct-23	11:05	Sunny	56.2	56.6	58.1
5-Oct-23	14:15	Sunny	51.0	53.9	55.7
6-Oct-23	10:50	Sunny	49.2	51.7	52.0
7-Oct-23	14:25	Sunny	49.8	51.5	52.3
8-Oct-23	Monitoring was suspended due to Typhoon				
9-Oct-23	Monitoring was suspended due to Typhoon				
10-Oct-23	14:30	Sunny	38.2	37.1	36.2
11-Oct-23	10:50	Sunny	37.7	38.1	35.9
12-Oct-23	14:25	Sunny	44.9	45.7	43.6
13-Oct-23	14:45	Sunny	43.4	45.9	47.8
14-Oct-23	11:20	Sunny	46.1	45.3	43.9
				Average	46.0
				Min	35.9
				Max	58.1

Appendix 2.4 Baseline Air Quality Monitoring Results

Station ID : AM4

Date	Start Time (hh:mm)	Weather Condition	1st Hour Conc. (µg/m3)	2nd Hour Conc. (µg/m3)	3rd Hour Conc. (µg/m3)
29-Sep-23	14:55	Sunny	42.8	43.8	43.5
30-Sep-23	11:15	Sunny	45.7	46.4	45.2
1-Oct-23	14:45	Sunny	43.8	45.1	46.1
2-Oct-23	11:20	Sunny	42.2	43.4	44.6
3-Oct-23	14:40	Sunny	45.7	46.4	45.0
4-Oct-23	11:20	Sunny	55.7	57.0	57.8
5-Oct-23	14:35	Sunny	56.2	57.4	54.5
6-Oct-23	11:05	Sunny	50.5	51.1	52.7
7-Oct-23	14:45	Sunny	48.8	49.9	51.1
8-Oct-23	Monitoring was suspended due to Typhoon				
9-Oct-23	Monitoring was suspended due to Typhoon				
10-Oct-23	14:55	Sunny	35.8	35.1	36.2
11-Oct-23	11:10	Sunny	40.4	43.1	41.1
12-Oct-23	12:30	Sunny	42.9	45.0	45.8
13-Oct-23	11:20	Sunny	40.9	42.4	41.1
14-Oct-23	14:50	Sunny	44.0	42.6	45.6
Average					46.1
Min					35.1
Max					57.8

Appendix 2.4 Baseline Air Quality Monitoring Results

Station ID : AM5

Date	Start Time (hh:mm)	Weather Condition	1st Hour Conc. (µg/m3)	2nd Hour Conc. (µg/m3)	3rd Hour Conc. (µg/m3)
29-Sep-23	11:35	Sunny	37.7	37.9	38.5
30-Sep-23	11:35	Sunny	41.6	41.9	42.2
1-Oct-23	11:20	Sunny	40.9	41.7	43.5
2-Oct-23	11:35	Sunny	39.7	40.4	41.0
3-Oct-23	11:25	Sunny	40.0	40.7	39.2
4-Oct-23	11:35	Sunny	51.2	50.9	53.0
5-Oct-23	11:10	Sunny	46.7	48.0	46.0
6-Oct-23	11:25	Sunny	44.4	46.5	44.9
7-Oct-23	11:25	Sunny	40.9	41.9	43.2
8-Oct-23	Monitoring was suspended due to Typhoon				
9-Oct-23	Monitoring was suspended due to Typhoon				
10-Oct-23	11:35	Sunny	34.2	33.9	35.8
11-Oct-23	11:30	Sunny	37.7	36.2	35.5
12-Oct-23	10:30	Sunny	43.3	44.2	46.0
13-Oct-23	11:40	Sunny	38.0	36.3	36.6
14-Oct-23	11:45	Sunny	43.7	42.4	44.4
Average					41.7
Min					33.9
Max					53.0