MTR Corporation Limited

Northern Link

Monthly EM&A Report for Contract 1635 NOL

Works Package 1

May 2026

Verified by:	Joyce Wong 
Position:	Independent Environmental Checker
Date:	12 June 2026

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Certified by:	Kenneth Chow	Kenneth Chow
Position:	Environmental Team Leader	
Date:	12 June 2026	

JOB NO.: TCS01402/25

CONTRACT 1635 – NORTHERN LINK WORKS PACKAGE 1

MONTHLY ENVIRONMENTAL MONITORING AND AUDIT REPORT – MAY 2026

PREPARED FOR

CHINA ROAD & BRIDGE CORPORATION

Date	Reference No.	Checked By
9 June 2026	TCS01402/25/600/R0037v1	Contractor's Environmental Team Leader

Ver.	Date	Remarks
1	9 June 2026	First Submission

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EXECUTIVE SUMMARY

INTRODUCTION

ES.01 To facilitate the future construction of Northern Link (NOL) Main Line, Contract 1635 – NOL Works Package 1 (hereinafter referred to as "this Works Contract") has been carried out in advance. The major construction works of this Works Contract has been commenced on 15 October 2025.

ES.02 This is the **8th** Monthly Environmental Monitoring and Audit (EM&A) Report presenting the monitoring results and inspection findings for this Works Contract for the period from **1** to **31 May 2026** (hereinafter called 'the Reporting Period").

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.03 Environmental monitoring and audit activities under the EM&A programme in the Reporting Period are summarized in the following table.

Environmental Aspect	Monitoring Parameter	Date
Air Quality	1-hour RSP level	Continuous
	24-hour RSP level (Rolling average)	Continuous
	24-hour FSP level (Rolling average)	Continuous
Noise	$L_{eq(30min)}$ Daytime	8, 14, 20 & 27 May 2026
Site Inspection	Site Audit for implementation of mitigation measures	5, 12, 19 & 26 May 2026

BREACHES OF ACTION /LIMIT LEVELS

ES.04 During the Reporting Period, no exceedance of air quality was recorded. No documented noise complaints (triggering Action Level) were received, and no exceedance Limit Level (75 dB(A)) was recorded. A summary of breaches of Action/ Limit Level is shown in the table below.

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action	
				Investigation Result	Corrective Actions
Air Quality	1-hour RSP level	0	0	--	--
	24-hour RSP level (Rolling average)	0	0	--	--
	24-hour FSP level (Rolling average)	0	0	--	--
Construction Noise	$L_{eq(30min)}$ Daytime	0	0	--	--

SITE INSPECTION

ES.05 In the Reporting Period, ***4*** nos. of weekly joint site inspection were conducted by the representatives of MTRCL, the Contractor's Environmental Team and the Contractor to evaluate the site environmental performance. No non-compliance observed was recorded during the site inspection. In addition, Independent Environmental Checker (IEC) conducted a joint site inspection on ***19 May 2026***.

ENVIRONMENTAL COMPLAINT

ES.06 In the Reporting Period, no environmental complaint was received.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.07 In the Reporting Period, no environmental summons and prosecutions were recorded.

REPORTING CHANGE

ES.08 There are no reporting changes in the Reporting Period.

FUTURE KEY ISSUES

ES.09 The construction activities to be conducted in next Reporting Period are listed in the table below.

Location	Site Activities
Shui Mei Road works area	• Construction of the Capping Beam; • Ground treatment (Lean Mix Wall and Block Grouting); and • Advance works for noise enclosure (Barrette Wall)
San Tam Road works area	• Drainage and sewerage works; • Foundation & Superstructure & External Works for temporary CLP Substation; and • Architectural Builder's Works and Finishes, Building Service Works

ES.10 Potential environmental impacts arising from the upcoming construction activities are mainly associated with construction dust, construction noise, water quality and waste management. The Contractor should fully implement the recommended mitigation measures as stipulated in the Project Implementation Schedule of the approved EM&A Manual during the construction phase of the project.

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1 INTRODUCTION

1.1 BACKGROUND

1.1.1 The Northern Link (NOL) (hereinafter referred to as "the Project") is one of the seven railway schemes recommended to be taken under in the Railway Development Strategy 2014 ("RDS-2014"). The Project will be a heavy underground railway line with a route length of about 10.7km between Kam Sheung Road (KSR) Station on the Tuen Ma Line (TML) and Kwu Tung (KTU) Station on the Lok Ma Chau Spur Line (LMCSL) of East Rail Line (EAL).

1.1.2 An Environmental Impact Assessment (EIA) study for the Project was conducted in accordance with EIA Study Brief No. ESB-346/2021. The EIA Report and Environmental Monitoring and Audit (EM&A) Manual (Register No. AEIAR – 259/2024) were approved on 9 February 2024 under the Environmental Impact Assessment Ordinance (EIAO), with an Environmental Permit (EP) granted on 9 February 2024 (EP No. EP-638/2024).

1.1.3 The key elements of the Project as assessed in Environmental Impact Assessment (EIA) Report are listed below:

- Construction and operation of 10.7km underground railway line between KSR(NOL) Station and KTU(NOL) Station;
- Construction and operation of five new stations, namely KSR(NOL) Station, Au Tau (AUT) Station, Ngau Tam Mei (NTM) Station, San Tin (SAT) Station and KTU(NOL) Station;
- Construction and operation of associated railway facilities, including ancillary buildings such ventilation shafts/buildings, Emergency Access Point (EAP) and Emergency Egress Point (EEP);
- Construction and operation of a depot at NTM area; and
- Enabling works to the south of KSR Station for potential southern extension, to the north of SAT Station for potential bifurcation to Lok Ma Chau Loop and Huanggang Port and to the east of KTU(NOL) Station for potential extension to Ping Che areas.

1.1.4 A temporary explosive magazine site for overnight storage of explosives that will be used for construction of tunnel/adits/railway facilities is proposed at Tai Shu Ha in Yuen Long. This magazine site was formerly used for the construction of the High Speed Rail (Hong Kong Section) (HSR) (formerly named as "the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL)") and the Liantang/Heung Yuen Wai Boundary Control Point (BCP) project. This site will be decommissioned upon completion of construction works of the Project.

1.1.5 In June 2025, China Road and Bridge Corporation (CRBC) was awarded Contract 1635 – NOL Works Package 1 (hereinafter referred to as "this Works Contract"). The major construction works of this Works Contract has commenced on 15 October 2025 and will be completed in December 2027 tentatively. The details of this Works Contract are described in ***Section 1.2***.

1.2 DESCRIPTION OF THE WORKS UNDER CONTRACT 1635

1.2.1 To facilitate the future construction of NOL Main Line, this Works Contract is required

to be carried out in advance, which includes the following elements:

- Site clearance / formation;
- Construction of diaphragm wall at Shui Mei Road (SMA);
- Ground treatment, excavation & lateral support and foundation works at SMA;
- Construction of noise enclosure and associated facilities at SMA;
- Construction of CLP transformer room at SMA; and
- Construction of San Tam Road (STT) Temporary CLP 132kV Power Substation.

1.2.2 The works activities involve site clearance / formation, erection of the hoardings and fencing, construction of diaphragm wall, construction of the capping beam, construction of lean mix wall and block grouting, construction of barrette wall, excavation and lateral Support (ELS), installation of earthing mat, construction of base slab and tympanum, construction of CLP transformer room, drainage and sewerage works, foundation & superstructure & external works, architectural builder's works and finishes and building service works.

1.2.3 The location of works sites/ work areas under the Works Contract 1635 are shown in ***Appendix A***. The major construction works of this Works Contract has commenced on 15 October 2025 and will be completed in December 2027 tentatively.

1.3 IMPLEMENTATION OF EM&A PROGRAMME

1.3.1 Action-United Environmental Services and Consulting (AUES) has been commissioned by CRBC as the independent Environmental Team (ET) to implement the relevant EM&A program of this Works Contract in accordance with the Project Environmental Monitoring & Audit (EM&A) Manual to ensure that the environmental performance of the this Works Contract complies with the requirements specified in the Environmental Permit (EP no. EP-638/2024), NOL EIA Report and EM&A Manual under this EP, and other relevant statutory requirements.

1.3.2 In accordance with Condition 3.3 of the Environmental Permit (EP-638/2024), Baseline Monitoring Report covering the works under this Works Contract was submitted to the Director before the commencement of construction of this Works Contract, and it was approved on ***15 October 2025***. The Baseline Monitoring Report presents the background information about the air quality and noise, and determines a set of Action and Limit Levels (A/L Levels) for the construction phase of this Works Contract.

1.3.3 This is the **8th** Monthly EM&A Report presenting the monitoring results and inspection findings for this Works Contract for the period from **1** to **31 May 2026** (hereinafter called "the Reporting Period").

1.4 REPORT STRUCTURE

1.4.1 This Monthly EM&A Report is structured into the following sections: -

Section 1 *Introduction*
Section 2 *Project Organization and Construction Progress*
Section 3 *Air Quality*
Section 4 *Airborne Noise*
Section 5 *Waste Management*
Section 6 *Site Inspection*

Section 7 *Environmental Complaints and Non-Compliances*
Section 8 *Implementation Status of Mitigation Measures*
Section 9 *Conclusions and Recommendations*

2 PROJECT ORGANISATION AND CONSTRUCTION PROGRESS

2.1 ORGANIZATION OF THE CONTRACT 1635

2.1.1 The contract organizations, lines of communication and management structure with respect to environmental protection works are shown in ***Appendix B***. The contact information for key personal is summarized in ***Table 2-1.***

Table 2-1 Contact Information of Key Personnel

Party	Project Role (Position)	Name	Tel No.
MTRCL	Project Management Team (Chief Construction Manager)	Mr. Raymond Koo	9781 8637
MTRCL	Environmental Team (Senior Environmental Manager, Project-wide ET Leader)	Mr. Kenneth Chow	2621 8315
Meinhardt	Independent Environmental Checker (IEC)	Ms. Joyce Wong	2859 5613
CRBC	Contractor (Environmental Officer)	Ms. Ping Chan	5958 7270
AUES	Contractor's Environmental Team (ET Leader)	Ms. Nicola Hon	2959 6059

2.2 CONSTRUCTION PROGRESS

2.2.1 The three-month rolling construction programme of this Works Contract is shown in ***Appendix C***, and the major construction activities conducted during the Reporting Period are shown below.

Shui Mei Road works area:

- Construction of the capping beam;
- Ground treatment (Lean Mix Wall and Block Grouting); and
- Advance works for noise enclosure (Barrette wall)

San Tam Road works area:

- Drainage and sewerage works;
- Foundation & superstructure & external work for temporary CLP Substation; and
- Architectural Builder's Works and Finishes, Building Service Works

2.3 SUMMARY OF ENVIRONMENTAL LICENSES AND PERMITS

2.3.1 A summary of the relevant permits, licenses, and notifications related to environmental protection is presented in ***Table 2-2.***

Table 2-2 Status of Environmental Licenses and Permits

Environmental Licenses / Permits / Notification	Reference No.	Valid From	Valid Till	Status
Environmental Permit	EP-638/2024	9 Feb 2024	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation	Shui Mei Road & San Tam Road (Ref. no. 10018732)	26 Jun 2025	30 Sep 2026	Superseded by Ref. no. 10026437 & 10026985
	Shui Mei Road (Ref. no. 10026437)	5 Feb 2026	31 Mar 2028	Valid
	San Tam Road (Ref. no. 10026985)	26 Feb 2026	31 Mar 2028	Valid

Environmental Licenses / Permits / Notification	Reference No.	Valid From	Valid Till	Status
Billing Account for Disposal of Construction Waste	Account No. 7055156	9 Jul 2025	End of project	Valid
Registration of Chemical Waste Producer	Shui Mei Road & Sam Tam Road (WPN: 5213-526-C5093-01)	21 Jul 2025	End of project	Superseded by WPN: 5213-526-C5093-02 & 5213-525-C5147-01
	Shui Mei Road (WPN: 5213-526-C5093-02)	23 Dec 2025	End of project	Valid
	San Tam Road (WPN: 5213-525-C5147-01)	14 Jan 2026	End of project	Valid
Effluent Discharge License under Water Pollution Control Ordinance	Shui Mei Road (WT00047341-2025)	18 Nov 2025	30 Nov 2030	Superseded by variation of license granted on 24 Apr 2026
		24 Apr 2026	30 Nov 2030	Valid
	San Tam Road (WT00047340-2025)	10 Dec 2025	31 Dec 2030	Superseded by variation of license granted on 29 May 2026
		29 May 2026	31 Dec 2030	Valid
Construction Noise Permit (CNP)	Shui Mei Road (CNP no. GW-RN1562-25)	30 Dec 2025	29 Mar 2026	Expired
	San Tam Road (CNP no. GW-RN1573-25)	31 Dec 2025	30 Mar 2026	Expired
	Shui Mei Road (CNP no. GW-RN0364-26)	30 Mar 2026	29 Jul 2026	Valid (Renewal of CNP no. GW-RN1562-25)
	San Tam Road (CNP no. GW-RN0297-26)	15 Mar 2026	14 Jun 2026	Valid (Renewal of CNP no. GW-RN1573-25)

2.4 SUMMARY OF EP SUBMISSION

2.4.1 The status of required submissions under the EP as of the Reporting Period for this Works Contract is summarised in ***Table 2-3.***

Table 2-3 Summary of Environmental Permit Submission

EP Conditions (EP-638/2024)	Submission	Submission Date
1.12	Notification of Commencement Date of Construction	11 Jul 2025
2.11	Construction Works Phasing Schedule	11 Jul 2025 (deposited) 20 Mar 2026 (deposited)
2.12	Management Organization(s)	17 Jul 2025 19 Nov 2025 5 Mar 2026 (updated)
2.13	Construction Noise Management Plan	11 Aug 2025 (1st submission) 30 Sept 2025 (2nd submission) 16 Oct 2025 (3rd submission) 20 Oct 2025 (deposited) 12 Jan 2026 (4th submission)

EP Conditions (EP-638/2024)	Submission	Submission Date
		20 Jan 2026 (5th submission) 20 Mar 2026 (deposited)
2.15	Monitoring and Emergency Response Plan for Ground Infiltration during Construction	28 May 2026 (deposited)
3.3	Baseline Monitoring Report	11 Aug 2025 (1st submission) 30 Sep 2025 (2nd submission) 15 Oct 2025 (accepted)
3.4	Monthly EM&A Report No. 1 - 6 Monthly EM&A Report No. 7	Reported in previous Monthly EM&A Reports 15 May 2026
2.18 & 2.19	Plant Preservation and Transplantation Proposal *(Batch 1 of 2 under 1635)*	19 Jun 2025 (1st submission) 16 Jul 2025 (2nd submission) 25 Jul 2025 (deposited)
2.22	Landscape and Visual Mitigation Plan (Batch 1 – Shui Mei Road Ancillary Building (SMA) and Temporary Power Substation at San Tam Road)	28 Apr 2025 (1st submission) 23 Jun 2025 (2nd submission) 25 Jul 2025 (deposited)

3 AIR QUALITY

3.1 MONITORING REQUIREMENTS

3.1.1 Potential air quality impacts arising from the construction phase of the Project were assessed in the approved EIA Report. No adverse air quality impact from construction of the Project would be anticipated with the implementation of dust suppression measures as stipulated under Air Pollution Control (Construction Dust) Regulation (Cap 311R) and EPD's Recommended Pollution Control Clauses for Construction Contracts.

3.1.2 Nonetheless, dust monitoring is recommended during the construction phase to ascertain that there would be no adverse dust impacts on the nearby sensitive receivers. Monitoring of Fine Suspended Particulates (FSP) and Respirable Suspended Particulates (RSP) is recommended to ensure the proper implementation of measures and the compliance of Air Quality Objectives (AQOs) during the construction of NOL.

3.2 MONITORING PARAMETER, FREQUENCY AND DURATION

3.2.1 For regulatory purpose, the RSP and FSP levels should be measured by the mean of air sensor such that variation in dust impact on a real-time basis could be observed and any dusty activities occurring in the concerned area can be identified. Weather stations should be installed with the air sensor to monitor the weather data, including temperature, relative humidity, pressure, wind speed, wind direction simultaneously with the air sensor. Other special phenomena and work progress of the concerned site, etc., should also be recorded in detail during monitoring period.

3.2.2 The ET should carry out hourly impact monitoring continuously with air sensor networks during major construction activity of the Project being undertaken within a radius of 500m from the monitoring stations. The 24-hour rolling averages of RSP and FSP are to be determined and reported in monthly EM&A Report, together with the 1-hour RSP data. The impact monitoring programme is summarised in ***Table 3-1***.

Table 3-1 Summary of Construction Dust Monitoring Programme

Monitoring Period	Duration	Sampling Equipment	Sampling Parameter	Frequency
Impact Monitoring	Throughout the construction phase of Contract 1635	Air Sensor Network	1-hour RSP, and 24-hour RSP and FSP	Continuous (Results to be reported once in Monthly EM&A Report)

3.3 DUST MONITORING STATION

3.3.1 Impact monitoring should be conducted at the monitoring stations when there are Project-related major construction activities being undertaken within a radius of 500m from these monitoring stations. The dust monitoring stations to be monitored under Contract 1635 are listed in ***Table 3-2*** and illustrated in ***Appendix D.***

Table 3-2 Dust Monitoring Stations for Contract 1635

Monitoring Station No.	ASR ID in the approved EIA Report	ASR Description
SMA_AM01	SMA-A02	Park Yoho
SMA_AM02	SMA-A04	Au Tau Fisheries Office, Agriculture, Fisheries and Conservation Department (AFCD)

3.4 MONITORING EQUIPMENT

3.4.1 According to the requirements specified in the approved EM&A manual, dust monitoring during construction phase should be conducted by continuous monitoring using light-scattering based air sensors, which capable of measuring parameters including 1-hour RSP, 24-hour RSP, and 24-hour FSP concentrations. The MAS-Dust Monitoring System, designed and manufactured by *Sapiens Environmental Technology Co. Limited* was adopted for dust monitoring.

3.4.2 The MAS-Dust monitor utilises optical particle counter (OPC) with active flow sampling and smart heater for humidity control for real-time simultaneously measurement of both RSP and FSP. The MAS-Dust monitor employs laser scattering technology to deliver simultaneous, real-time measurements of FSP and RSP. The dust monitoring equipment used for impact monitoring is listed in ***Table 3-3***.

Table 3-3 Dust Monitoring Equipment

Equipment	Model	Serial No.
Air sensors	MAS-Dust	dev9204Z250700009 (SMA_AM02)
		dev9204Z250800017 (SMA_AM01)

3.4.3 According to Section 2.2.10 of the approved EM&A Manual, an air monitoring plan for the proposed air sensor has been formulated by the Contractor's ET and agreed by Independent Environmental Checker (IEC) before commencing the air monitoring.

3.5 EQUIPMENT CALIBRATION AND COLLOCATION

3.5.1 To ensure the air quality measurements are acceptable, the monitoring equipment has been calibrated regularly. However, air sensor cannot be calibrated in the same way as standard method. Instead, the performance of sensor was checked by a process called collocation which places a transfer standard near the sensors and operating them simultaneously under the same conditions. Instead of adjusting the physical setting of an air sensor, which was often not possible, correction of raw data or response produced by a sensor was carried out to better match (i.e. a close approximation) the reference monitor data by applying a scaling factor to the raw data.

3.5.2 Air sensors were installed at off-site while frequent mounting and dismounting might not be practical in some situations. A collocation strategy was developed to check the performance of the off-site sensors. One of the strategies is called Transfer Standard (TS), which involves a separate air sensor, as capable of the air sensors on the field, to be collocated with an PM reference monitor and determine its performance charact-eristics. Federal Reference Method (FRM) or Federal Equivalent Method (FEM) PM monitor maintained at the accredited laboratories or research institutes were the PM reference monitors available in Hong Kong. The collocation of TS with PM reference monitor were last at least seven days. The TS was usually left collocated with PM refence monitor when not being moved around the sensor network.

3.5.3 Right before each on-site calibration, the TS itself needed to be calibrated. The TS with known performance characteristics would visit each air sensor on the field for collocation. During collocation, the TS was placed near the subject sensor (<1m if practicable) so that both devices would be monitoring under the same environment, i.e. the same pollution sources and weather conditions. The TS was first warmed up for 30 – 60 minutes and then left running with the subject sensor for the collocation period (at least three hours). The measurements from the subject sensor and TS during the

collocation period would be statistically analysed.

3.5.4 The response of the sensor would be adjusted if its performance during on-site calibration did not meet the following evaluation criteria. For each device, data below its detection limit would be excluded.

Tier 1: Correlation

The minute average measurements from the two devices when subject to linear regression should have a coefficient of determination (R2)>0.7. The regression line slope should be between 0.75 to 1.25. If these criteria are not met due to narrow range of PM concentration (>30 μg/m^3 and >25μg/m^3 as recommended span range for RSP and FSP, respectively) during the collocation period, Tier 2 will apply.

Tier 2: Root Mean Squared Error

The root mean squared error of the sensor minute average measurements should be <8 μg/m^3 for RSP and <5 μg/m^3 for FSP.

3.5.5 On-site checking/ collocation of the monitoring equipment has been conducted by ET following the approach in the Air Monitoring Plan prepared by the ET and agreed with the IEC in accordance with Section 2.2.10 of the EM&A Manual as details below:

- Prepare a transfer standard for PM monitoring, which has been calibrated against a PM reference monitor (i.e. the FRM or FEM PM monitor).
- The inlets of the transfer standard and the monitoring equipment shall be collocated at the same height with a horizontal separation distance of <1 m.
- Warm-up the transfer standard on-site if necessary.
- Collocated monitoring shall be conducted in a continuous period to collect at least 20 valid 10- minute average measurements. The valid data rate shall be at least 80% during the collocation period.
- The performance metrics and target values are shown in ***Table 3-4***. If a sensor repeated failed in 2 or 3 consecutive collocations, the sensor should be checked or maintained to improve its performance, or it should be replaced.

Table 3-4 Recommended Performance Metrics and Target Values for On-site Checking of PM Monitoring Equipment

Performance Metric			Target Value
Tier 1 – Linear regression of minute average measurements	Bias	Slope	0.75 – 1.25
	Linearity	Coefficient of Determination (R^2)	> 0.70
	Measured PM Levels	Low Concentration Range	ΔFSP ≤ 25 μg/m3, ΔRSP ≤ 30 μg/m3
		High Concentration Range	ΔFSP > 25 μg/m3, ΔRSP > 30 μg/m3
Tier 2 – Root mean squared error of minute average measurements	Error	Root Mean Squared Error (RMSE)	< 8 μg/m^3 (RSP); and < 5 μg/m^3 (FSP)

3.5.6 The TS has been collocated with a FRM / FEM PM reference monitor for every three months at EPD's Air Quality Monitoring Station, accredited laboratories or research institutions. The collocation of TS and each on-site air sensor would be carried out every month. The calibration certificates, which includes collocation records during the Reporting Period are shown in ***Appendix E1***.

3.6 ACTION AND LIMIT LEVELS

3.6.1 The ET should compare the impact monitoring results with air quality criteria set up for 1-hour RSP, 24-hour RSP and FSP (rolling average). The air quality criteria, namely A/L levels for the impact monitoring it is shown in ***Table 3-5***.

Table 3-5 Action and Limit Levels for Impact Air Quality Monitoring

Monitoring Station No.	A/L Levels	Parameter	Criteria
SMA_AM01 and SMA_AM02	Action Level	1-hour RSP level	150 μg/m^3
	Limit Level	24-hour RSP level (Rolling average)	100 μg/m^3
		24-hour FSP level (Rolling average)	50 μg/m^3

3.6.2 The Event and Action Plan prescribes the procedures and actions associated with the outcome of the comparison of air quality monitoring data recorded and the agreed A/L levels. In cases where exceedances of these A/L levels occur, the relevant actions specified in the Event and Action Plan, as shown in ***Appendix F***, should be strictly observed and followed.

3.7 AIR QUALITY MONITORING RESULTS

3.7.1 The monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

3.7.2 The monitoring results are summarized in ***Table 3-6***. The database and graphical plots of 1-hour RSP, 24-hour RSP (rolling average) and 24-hour FSP (rolling average) of monitoring results are respective provided in ***Appendix H1*** and shown in ***Appendix I1***. Moreover, the meteorological data recorded during the Reporting Period is shown in ***Appendix J***.

Table 3-6 Summary of Dust Monitoring Results

Parameter		Monitoring Station		Action Level (μg/m^3)	Limit Level (μg/m^3)
		SMA_AM01	SMA_AM02		
1-hour RSP (μg/m^3)	Average	13.2	11.5	150	N/A
	Range	3.7 – 43.6	4.1 – 39.4		
24-hour RSP (rolling average) (μg/m^3)	Average	13.2	11.5	N/A	100
	Range	6.6 – 28.9	6.1 – 26.5		
24-hour FSP (rolling average) (μg/m^3)	Average	8.6	8.3	N/A	50
	Range	4.0 – 21.7	3.8 – 22.6		

3.7.3 In the Reporting Period, all the dust monitoring results were below the Action/Limit Levels and no corrective action was therefore required.

3.7.4 According to the field observations, the major dust sources during the monitoring included the emission from construction site only.

4 AIRBORNE NOISE

4.1 MONITORING REQUIREMENTS

4.1.1 Construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). Leq_{30min} shall be used as the monitoring parameter during normal construction working hours (0700-1900 except on Sunday and public holiday). As supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.

4.1.2 In case of non-compliance with the construction noise criteria requires the implementation of appropriate corrective actions, more frequent monitoring as specified in the Event and Action Plan in ***Appendix F*** shall be carried out. This additional monitoring shall be continued until the recorded noise levels are rectified or proved to be irrelevant to the construction activities.

4.2 MONITORING PARAMETER, FREQUENCY AND DURATION

4.2.1 Construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}) during non-restricted hours at the agreed monitoring location once every week. Leq_{30min} shall be used as the monitoring parameter during normal construction working hours (0700-1900 except on Sunday and public holiday).

4.3 NOISE MONITORING LOCATION

4.3.1 Construction noise impact monitoring should be conducted at the monitoring stations when there are Project-related corresponding construction activities being undertaken within a radius of 300m from the monitoring stations. The noise monitoring station to be monitored under Contract 1635 is listed in ***Table 4-1*** and illustrated in ***Appendix D.***

Table 4-1 Noise Monitoring Stations during Construction Phase for Contract 1635

Monitoring Station ID	Noise Assessment Point (NAP ID) in the approved EIA Report	NSR Description	Measurement Setup
NM2	SMR-E1	Tower 8B, Park Yoho	Façade

4.3.2 In addition, according to the approved EIA Report Figure C1603/C/NOL/ACM/M52/333, there is a proposed school site in the Park Yoho Phase 3 Development (planned NSR PN13b), which is located adjacent to the Shui Mei Road work site. A recent site inspection revealed that this proposed school has not yet been established, and the Contractor has been reminded to remain aware of its status.

4.4 MONITORING EQUIPMENT

4.4.1 As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications were used for carrying out the noise monitoring. Immediately prior to and following each noise measurement, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements would be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.

4.4.2 Noise measurements was made in accordance with standard acoustic principles and practices in the relation to weather conditions. Noise measurements was not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed should be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

4.4.3 The ET was responsible for the provision, installation, operation, maintenance, dismantle of the monitoring equipment. Sufficient noise measuring equipment and associated instrumentation are available for carrying out the impact monitoring. The equipment and associated instrumentation have been clearly labelled.

4.4.4 Noise monitoring equipment used for impact monitoring is listed in ***Table 4-2***.

Table 4-2 Noise Monitoring Equipment

Equipment	Model	Serial No.	Used on
Integrating Sound Level Meter	Rion NL-52	00142581	8 & 14 May 2026
	Rion NL-52	00921191	20 May 2026
	Rion NL-52	00809405	27 May 2026
Calibrator	Rion NC-74	34657230	8 & 27 May 2026
	Rion NC-74	34657231	14 May 2026
	Rion NC-74	34246492	20 May 2026

4.4.5 Sound level meter listed above comply with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications, as recommended in Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), which was used for impact noise monitoring. The copies of calibration certificates of noise monitoring equipment were shown in ***Appendix E2***.

4.5 MONITORING PROCEDURES

4.5.1 The microphone of the sound level meter was positioned at 1m from the exterior of the noise sensitive façade, oriented pointed to the site and facing perpendicular to the line of sight. A correction to the measurement result is not required for façade measurement.

4.5.2 Prior to and after each noise measurement, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known frequency of sound pressure level The calibration level from before and after the noise measurement agrees to within 1.0dB.

4.5.3 Leq_{30min} shall be taken as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. After the measurement, the data were recorded and stored automatically within the sound level meter system. At the end of the monitoring period, noise levels in term of L_{eq}, L_{90} and L_{10} were recorded.

4.5.4 All the monitoring data stored in the sound level meter system were downloaded through the computer software, and all these data were checked and reviewed on computer.

4.6 ACTION AND LIMIT LEVELS

4.6.1 The ET should compare the airborne construction noise monitoring results with noise criteria. **Table 4-3** shows the noise criteria, namely A/L Levels to be used.

Table 4-3 Action and Limit Levels for Airborne Construction Noise Impact Monitoring

Monitoring Station ID	Time Period	Action Level	Limit Level
NM2	0700 - 1900 hours on normal weekdays (1)	When one documented complaint is received	75 dB(A)

Notes:
1. *If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.*

4.6.2 Should non-compliance of the noise criteria occur, actions in accordance with the Event and Action Plan in ***Appendix F*** should be carried out.

4.7 NOISE MONITORING RESULTS

4.7.1 The monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

4.7.2 In the Reporting Period, ***4*** sessions of noise measurements were conducted on ***8, 14, 20 and 27 May 2026*** at designated monitoring station NM2. The noise monitoring results are summarized in ***Table 4-4.*** Detailed noise monitoring data are presented in ***Appendix H2,*** and the relevant graphical plot is shown in ***Appendix I2***.

Table 4-4 Summary of Construction Noise Monitoring Results

Construction Noise Level ($L_{eq30min}$), dB(A)					
Station ID	**Description of location**	**Range**	**No. of Sessions**	**Action Level**	**Limit Level**
NM2	Tower 8B, Park Yoho	69.5 – 73.8	4	When one documented complaint is received during 0700 - 1900 hours on normal weekdays	75

4.7.3 As shown in ***Table 4-4***, no construction noise measurement results triggered the Limit Level (75 dB(A)) in the Reporting Period. Moreover, no documented noise complaints (which triggered Action Level exceedance) were recorded in the Reporting Period.

4.7.4 According to the field observations, the major noise sources recorded during the monitoring were associated with construction activities within the site.

5 WASTE MANAGEMENT

5.1 GENERAL WASTE MANAGEMENT

5.1.1 Waste management was carried out in accordance with the approved EM&A Manual.

5.2 RECORDS OF WASTE QUANTITIES

5.2.1 All types of waste arising from the construction work are broadly classified into the following:

- Inert construction & demolition (C&D) Material; and
- Non-inert C&D Material

5.2.2 The Contractor is advised to minimise the wastes generated through recycling or reusing. All mitigation measures stipulated in the approved EM&A Manual and Waste Management Plan shall be fully implemented.

5.2.3 The quantity of wastes generated by the construction works of this Works Contract during the Reporting Period is shown in ***Appendix K***.

5.2.4 All dump trucks for waste transportation and disposal under the Project had equipped with Global Positioning System (GPS) for real time tracking and monitoring of their travel routings and parking locations in order to avoid illegal dumping or landfilling of C&D materials or excavated sediment.

5.2.5 According to the record of travel routings and disposal locations of all dump trucks provided by the Contractor, no track deviation or abnormal disposal location was observed during the reporting period.

6 SITE INSPECTION

6.1 REQUIREMENTS

6.1.1 According to the approved EM&A Manual, site inspections should be undertaken regularly during the construction phase to ensure that appropriate environmental protection and pollution control measures are properly implemented for the activities associated with the Project. The site audit requirements shall cover the environmental aspects of water quality, waste management, ecology and landscape and visual.

6.1.2 The environmental site inspection programme should be formulated by the ET, as well as the deficiency and remedial action reporting system. Regular site inspections should be carried out and led by the representative of MTRCL and attended by the Contractor and Contractor's ET at least once per week during the construction phase.

6.2 FINDINGS / DEFICIENCIES DURING THE REPORTING PERIOD

6.2.1 In the Reporting Period, **4** nos. of joint site inspections were conducted on **5, 12, 19 and 26 May 2026** by the representatives of MTRCL, the Contractor's ET and the Contractor to evaluate the site environmental performance. In addition, IEC conducted a joint site inspection on **19 May 2026**.

6.2.2 No non-compliance was recorded during the site inspection. The observations recorded during the site inspections in the Reporting Period are listed in ***Table 6-1***.

Table 6-1 Site Inspection and Observations

Aspect	Date	Observations/ Recommendation	Follow-Up Status	Close-out Date / Status
Air Quality	N/A			
Noise	N/A			
Water Quality	12 May 2026	At San Tam Road work site, turbid water was observed at the final tank of WWTF. Regular maintenance and cleaning should be provided by the Contractor to prevent turbidity and comply with the discharge licensing standards.	The turbid water stored at final tank was pumped out for further treatment. Regular maintenance and desilting of the Wastewater Treatment Facilities have been provided to ensure the effluent discharge complies with licensing standards.	13 May 2026
Waste/ Chemical Management	19 May 2026	A full waste skip was observed at San Tam Road work site, the Contractor should dispose of the waste more frequently and enhance the waste management practice.	The waste skip at the San Tam Road works site was cleaned.	19 May 2026
Ecology	N/A			
Landscape & Visual	N/A			
Others	N/A			

6.2.3 All observations were generally rectified within the specified deadlines set by the Contractor's ET and IEC during the site inspection.

7 ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCES

7.1 ENVIRONMENTAL COMPLAINTS, SUMMONS AND PROSECUTIONS

7.1.1 No environmental complaints, prosecutions or notifications of summons were received in the Reporting Period.

7.1.2 The statistical summary table for environmental complaints, summons and prosecutions are presented in ***Tables 7-1*** to ***7-3***. The complaint log for the Project is shown in ***Appendix L***.

Table 7-1 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Number	Cumulative	Complaint Nature
1 – 31 May 2026	0	6 (#)	NA

Remark: Five environmental complaints were received before commencement of major construction works. Investigation reports for the complaints have been provided to EPD.

Table 7-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Number	Cumulative	Summons Nature
1 – 31 May 2026	0	2	NA

Table 7-3 Statistical Summary of Successful Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Number	Cumulative	Prosecution Nature
1 – 31 May 2026	0	0	NA

7.2 OTHER ENVIRONMENTAL NON-COMPLIANCES

7.2.1 In addition, no violation of environmental legislation, such as illegal dumping and landfilling, were reported in the Reporting Period.

8 IMPLEMENTATION STATUS OF MITIGATION MEASURES

8.1 GENERAL REQUIREMENTS

8.1.1 The environmental mitigation measures recommended in the Project Implementation Schedule of the approved EM&A Manual cover the aspect of dust, noise, water and waste etc. and Environmental Mitigation Implementation Schedule for the Project is shown in ***Appendix M.***

8.1.2 The works under the Project shall implement the required environmental mitigation measures in accordance with the approved EM&A Manual, subject to the site condition. The implementation status of mitigation measures are shown in ***Appendix M***.

8.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

8.2.1 According to information provided by the Contractor, the construction works scheduled for next Reporting Period are listed below:

Shui Mei Road works area:

- Construction of the Capping Beam;
- Ground treatment (Lean Mix Wall and Block Grouting); and
- Advance works for noise enclosure (Barrette Wall)

San Tam Road works area:

- Drainage and sewerage works;
- Foundation & Superstructure & External Works for temporary CLP Substation; and
- Architectural Builder's Works and Finishes, Building Service Works

8.3 POTENTIAL ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURE IN THE COMING MONTH

8.3.1 The potential environmental impacts arising from the above construction activities are mainly associated with construction dust, noise, water quality and waste management. The foreseeable environmental impacts were taken into consideration of the planned mitigation measures in the coming months and they are summarized ***Table 8-1***. The tentative impact monitoring schedule for next Reporting Period is shown in ***Appendix G***.

Table 8-1 Summary of Site Activities, Potential Environmental Impacts and Recommended Mitigation Measure in the Coming Months

Major Site Activities	Location	Potential Environmental Impact	Recommended Mitigation Measures
i. Construction of the Capping Beam	Shui Mei Road works area	• Construction dust impact • Construction noise impact • Water quality impact • Waste management	<u>Air Quality</u> • Maintain damp / wet surface on access road. • Maintain low vehicular speed within the works areas. • Provide vehicle wheel washing facilities at construction site exit. • Provide water spraying for all dusty works area. • Stockpiles of dusty material

Major Site Activities	Location	Potential Environmental Impact	Recommended Mitigation Measures
ii. Ground treatment (Lean Mix Wall and Block Grouting)	San Tam Road works area	• Construction dust impact • Construction noise impact • Water quality impact • Waste management	cover with impervious sheeting. • Stockpile more than 20 bags of cement or dry pulverized fuel ash should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. <u>Construction Noise</u> • Restrict operation time of plants from 07:00 to 19:00 on any working day except for Public Holiday and Sunday, useless CNP is granted. • Keep good maintenance of plants. • Place noisy plants away from residence. • Provide noise barriers or hoarding to enclose the noisy plants or works. • Shut down the plants when not in used. • Use of Quality Powered Mechanical Equipment (QPME) • Other noise mitigation measures according to the deposited CNMP. <u>Water Quality</u> • Set up wastewater treatment system (AquaSed) on site. • Provide temporary drainage/ perimeter cut-off drains at site boundaries to intercept storm runoff from crossing the site. • Exposed slopes surface should be compacted and covered with tarpaulin or similar means. <u>Waste / Chemical Management</u> • Provide on-site sorting prior to disposal. • Follow requirements and procedures of the "Trip-ticket System" • Drip tray should be provided.
iii. Advance works for noise enclosure (Barrette Wall)		• Construction dust impact • Construction noise impact • Water quality impact • Waste management	
i. Drainage and sewerage works		• Construction dust impact • Construction noise impact • Water quality impact • Waste management	
ii. Foundation & superstructure & External Works for Temporary CLP Substation		• Construction dust impact • Construction noise impact • Water quality impact • Waste management	
iii. Architectural Builder's Works and Finishes, Building Service Works		• Construction dust impact • Construction noise impact • Water quality impact • Waste management	

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 CONCLUSIONS

9.1.1 This is the **8th** Monthly EM&A Report presenting the monitoring results and inspection findings for this Works Contract for the period from **1 to 31 May 2026**.

9.1.2 In this Reporting Period, no dust monitoring results triggered the Action/Limit Levels. No corrective action was therefore required.

9.1.3 In this Reporting Period, no construction noise measurement results triggered the Limit Level. Moreover, no documented noise complaints (which triggered Action Level exceedance) were recorded in the Reporting Period. No corrective action was therefore required.

9.1.4 In the Reporting Period, no environmental complaints, summons and prosecutions were received. In addition, no violation of environmental legislation regarding illegal dumping or landfilling were received.

9.1.5 In the Reporting Period, **4** nos. of joint site inspections were conducted on **5, 12, 19 and 26 May 2026** by the representatives of MTRCL, the Contractor's ET and the Contractor to evaluate the site environmental performance. No non-compliance was recorded during the site inspection. In addition, IEC conducted a joint site inspection on **19 May 2026**. Recommendations for environmental site improvement were given to the Contractor for the deficiencies identified during the site audit.

9.2 RECOMMENDATIONS

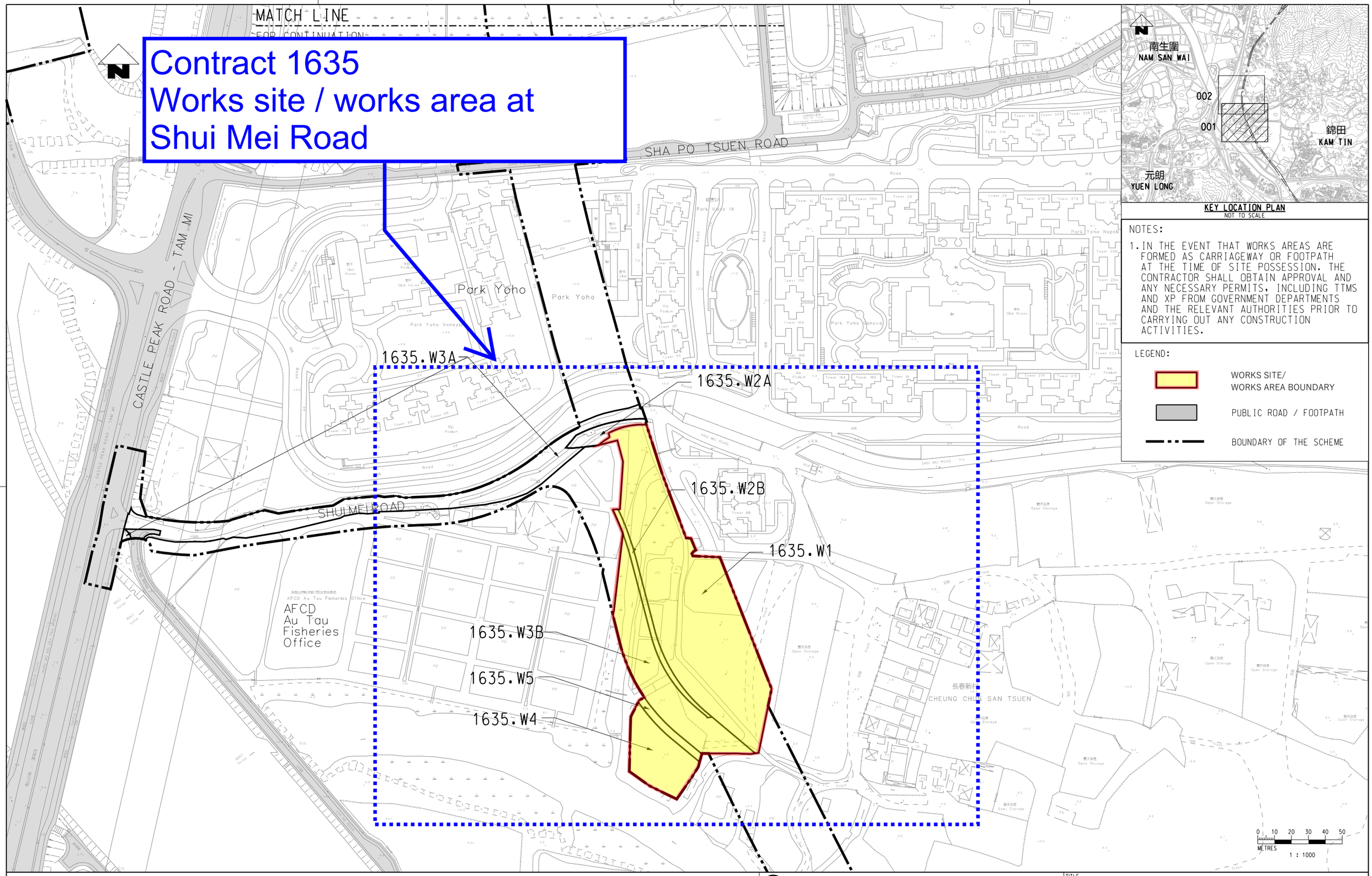
9.2.1 According to the environmental site inspections and audits conducted in the Reporting Period, turbid water was observed at the final tank of WWTF at San Tam Road work site, and regular maintenance and cleaning should be provided by the Contractor to prevent turbidity and comply with the discharge licensing standards. In addition, a full waste skip was observed at San Tam Road work site, and the Contractor should dispose of the waste more frequently and enhance the waste management practices.

9.2.2 Potential environmental impacts arising from the upcoming construction activities are mainly associated with construction dust, construction noise, water quality, waste management. The Contractor should fully implement the recommended mitigation measures as stipulated in the Project Implementation Schedule of the approved EM&A Manual during the construction phase of the project.

Appendix A

Locations of Works Sites/ Works Areas of Works Contract 1635

Contract 1635
Works site / works area at Shui Mei Road



KEY LOCATION PLAN
NOT TO SCALE

NOTES:

1. IN THE EVENT THAT WORKS AREAS ARE FORMED AS CARRIAGEWAY OR FOOTPATH AT THE TIME OF SITE POSSESSION. THE CONTRACTOR SHALL OBTAIN APPROVAL AND ANY NECESSARY PERMITS, INCLUDING TTMS AND XP FROM GOVERNMENT DEPARTMENTS AND THE RELEVANT AUTHORITIES PRIOR TO CARRYING OUT ANY CONSTRUCTION ACTIVITIES.

LEGEND:

- WORKS SITE/ WORKS AREA BOUNDARY
- PUBLIC ROAD / FOOTPATH
- BOUNDARY OF THE SCHEME

MTR

NORTHERN LINK

ORIGINATOR

中國路橋工程有限責任公司
CHINA ROAD AND BRIDGE CORPORATION

TITLE

CONTRACT 1635
LOCATIONS OF WORKS SITES/ WORKS AREAS OF WORKS CONTRACT 1635

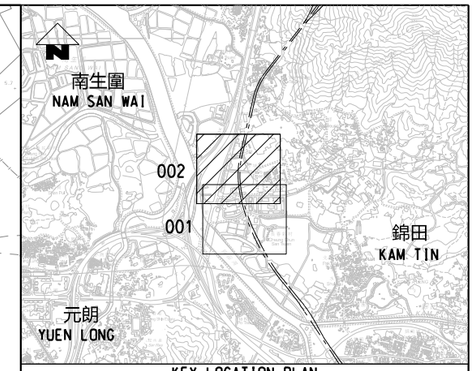
SHEET 1 OF 2

SCALE 1 : 1000 (A1)

Date: 05/12/2025

Rev B

Contract 1635
Works site / works area at San Tam Road



KEY LOCATION PLAN
NOT TO SCALE

NOTES:

1. IN THE EVENT THAT WORKS AREAS ARE FORMED AS CARRIAGEWAY OR FOOTPATH AT THE TIME OF SITE POSSESSION. THE CONTRACTOR SHALL OBTAIN APPROVAL AND ANY NECESSARY PERMITS, INCLUDING TTMS AND XP FROM GOVERNMENT DEPARTMENTS AND THE RELEVANT AUTHORITIES PRIOR TO CARRYING OUT ANY CONSTRUCTION ACTIVITIES.

LEGEND:

- WORKS SITE/ WORKS AREA BOUNDARY
- PUBLIC ROAD / FOOTPATH
- BOUNDARY OF THE SCHEME

1635.W6

1635.W7

1635.H1

MATCH LINE
FOR CONTINUATION
SEE DWG.1635/T/000/PLD/P07/001

SAN TAM ROAD

SHA PO TSUEN ROAD

TSING LONG HIGHWAY

CASTLE PEAK ROAD - TAM MI

0 10 20 30 40 50
METRES
1 : 1000

MTR

NORTHERN LINK

ORIGINATOR

中國路橋工程有限責任公司
CHINA ROAD AND BRIDGE CORPORATION

TITLE

CONTRACT 1635
LOCATIONS OF WORKS SITES/ WORKS AREAS OF WORKS CONTRACT 1635

SHEET 2 OF 2

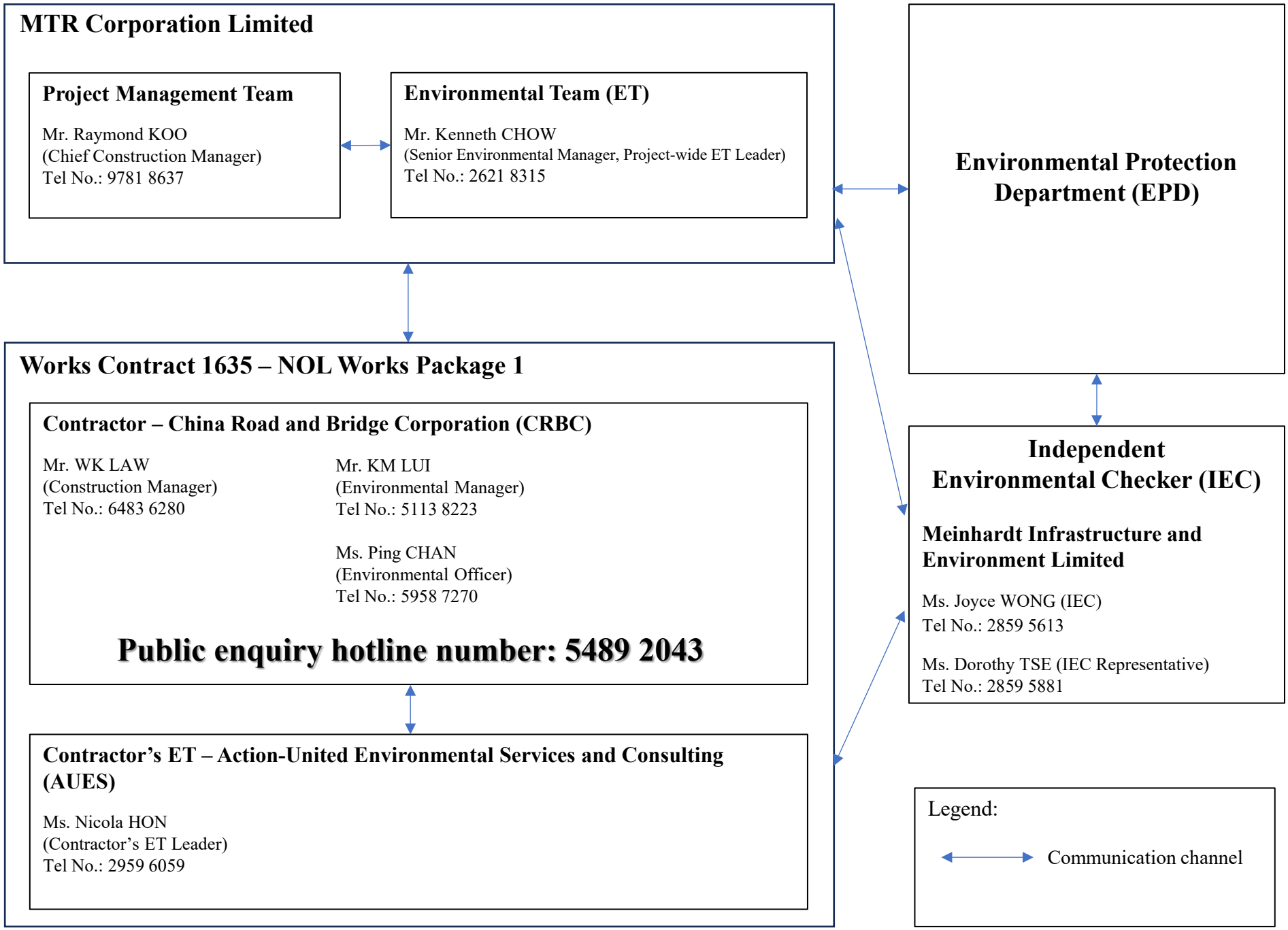
SCALE 1 : 1000 (A1)

Date: 05/12/2025

Rev B

Appendix B

Contract Organization


MTR Corporation Limited
Project Management Team
Mr. Raymond KOO
(Chief Construction Manager)
Tel No.: 9781 8637
Environmental Team (ET)
Mr. Kenneth CHOW
(Senior Environmental Manager, Project-wide ET Leader)
Tel No.: 2621 8315
Environmental Protection Department (EPD)
Works Contract 1635 – NOL Works Package 1
Contractor – China Road and Bridge Corporation (CRBC)
Mr. WK LAW
(Construction Manager)
Tel No.: 6483 6280
Mr. KM LUI
(Environmental Manager)
Tel No.: 5113 8223
Ms. Ping CHAN
(Environmental Officer)
Tel No.: 5958 7270
Public enquiry hotline number: 5489 2043
Independent Environmental Checker (IEC)
Meinhardt Infrastructure and Environment Limited
Ms. Joyce WONG (IEC)
Tel No.: 2859 5613
Ms. Dorothy TSE (IEC Representative)
Tel No.: 2859 5881
Contractor's ET – Action-United Environmental Services and Consulting (AUES)
Ms. Nicola HON
(Contractor's ET Leader)
Tel No.: 2959 6059
Legend:
Communication channel

Appendix C

3-month rolling construction programme

Works Programme of Contract 1635

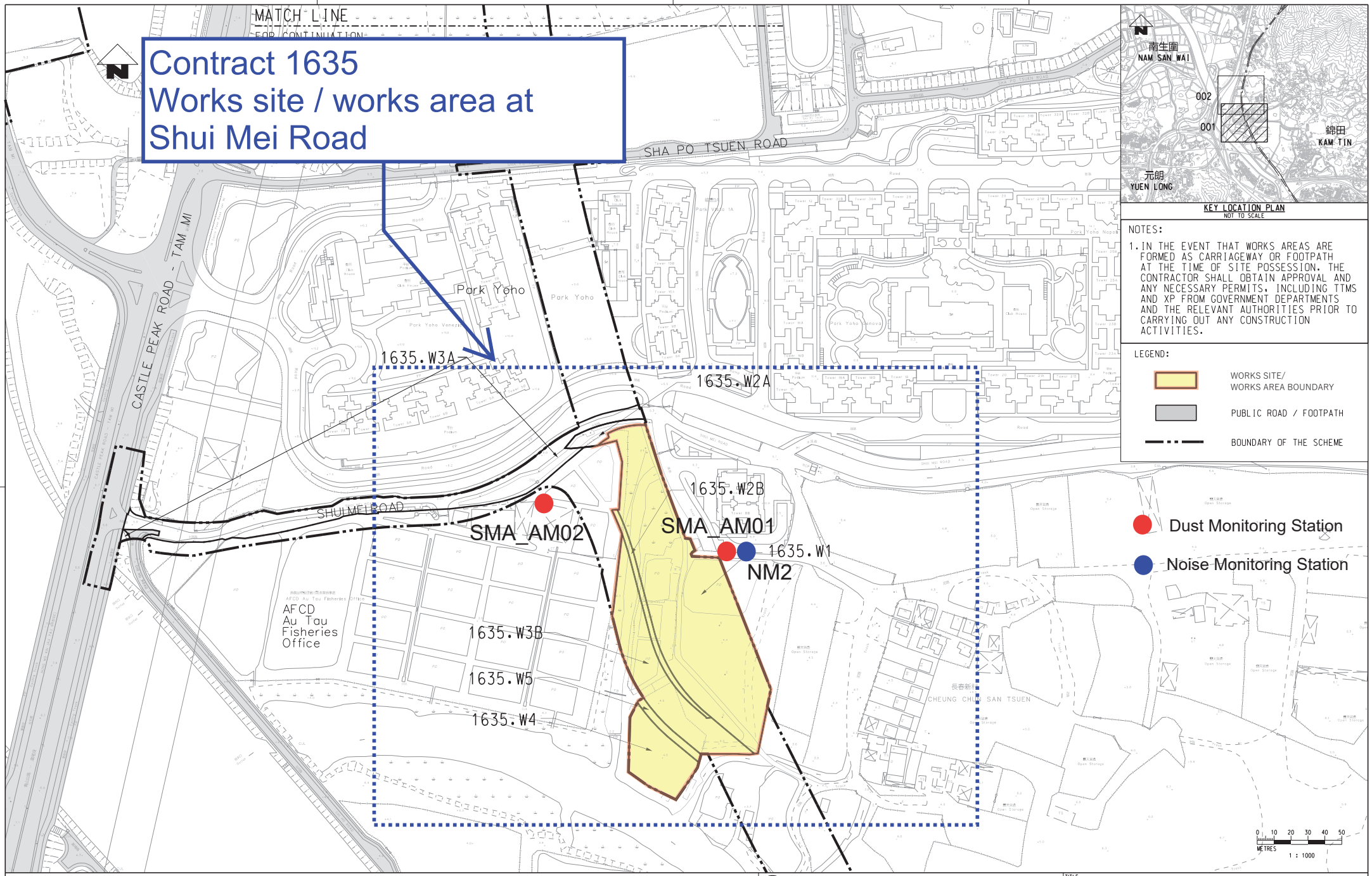
Major Construction Activities	2026			
	May	Jun	Jul	Aug
Shui Mei Road works site / works area				
Construction of the Capping Beam				
Ground Treatment (Lean Mix Wall and Block Grouting)				
Advance works for Noise Enclosure (Barrette wall)				
Excavation and Lateral Support (ELS)				
Construction of CLP Transformer Room				
San Tam Road works site / works area				
Drainage and Sewerage Works				
Foundation & Superstructure & External Works for Temporary CLP Substation				
Architectural Builder's Works and Finishes (ABWF), Building Service Works (BS) *				
Testing & Commissioning by CLP *				
Statutory Inspection *				

Remarks:

* Minor works conducted inside building structure.

Appendix D

Monitoring Locations



MTR

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ORIGINATOR

中國路橋工程有限責任公司
CHINA ROAD AND BRIDGE CORPORATION

TITLE

CONTRACT 1635
LOCATION PLAN OF MONIOTRING STATION

Appendix E

Calibration Certificates

(1) Air Sensor
(2) Noise Monitoring Equipment

ONSITE EQUIPMENT VALIDATION RECORD

Product Information:

Report No.:	ZR/T CS.004-2026-05-Z17		
Product Model:	MAS Dust	**Serial No.:**	dev9204Z250800017

Traceability of Calibration Instrument:

Test Item	Calibration Instrument
$PM_{2.5}$ (FSP) PM_{10} (RSP)	Transfer Standard: dev9524C230400002 Location: Park Yoho Date and Time: 2026-05-08 12:00 to 15:10

Calibration Result:

RSP:

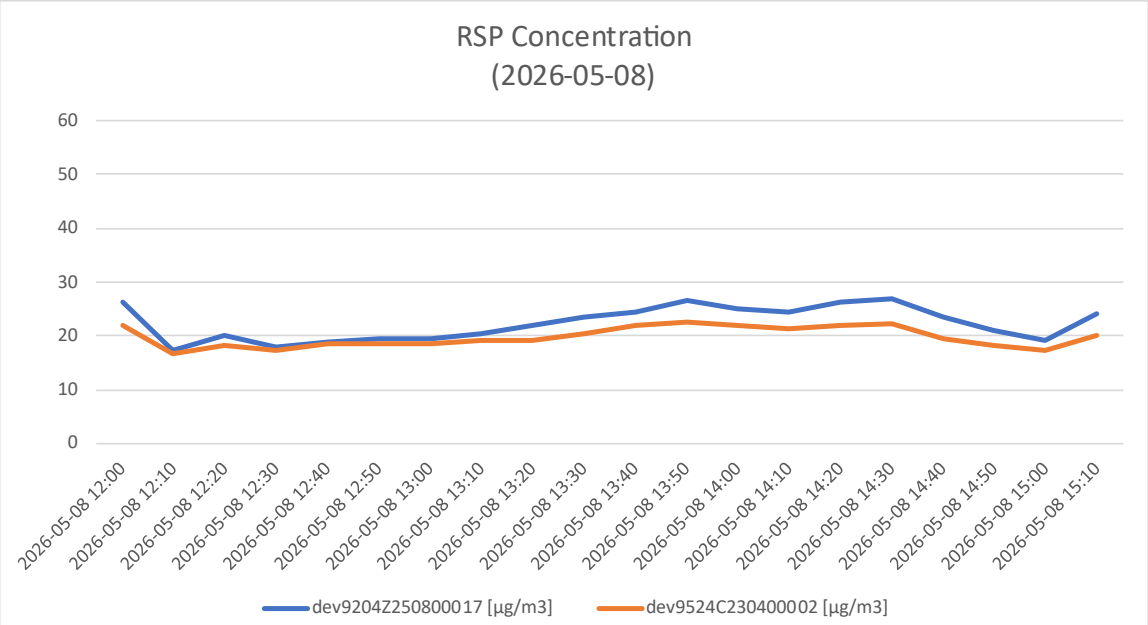
Performance Metric	Target Value	Actual Value	Result
Tier 1			
Bias (Slope)	*1.00±0.25*	1.58	☒ FAIL
Linearity (R^2)	*> 0.70*	0.93	☑ PASS
If Tier 1 fails, Conc. Range will be checked	*RSP ⩽30 μg/m³ is low conc. range*	6.0 μg/m³	If Tier 1 criteria are not met due to narrow range of PM concentration, during the collocation period, Tier 2 will apply.
Tier 2			
Error (RMSE)	*< 8 μg/m³ for RSP*	2.9 μg/m³	☑ PASS

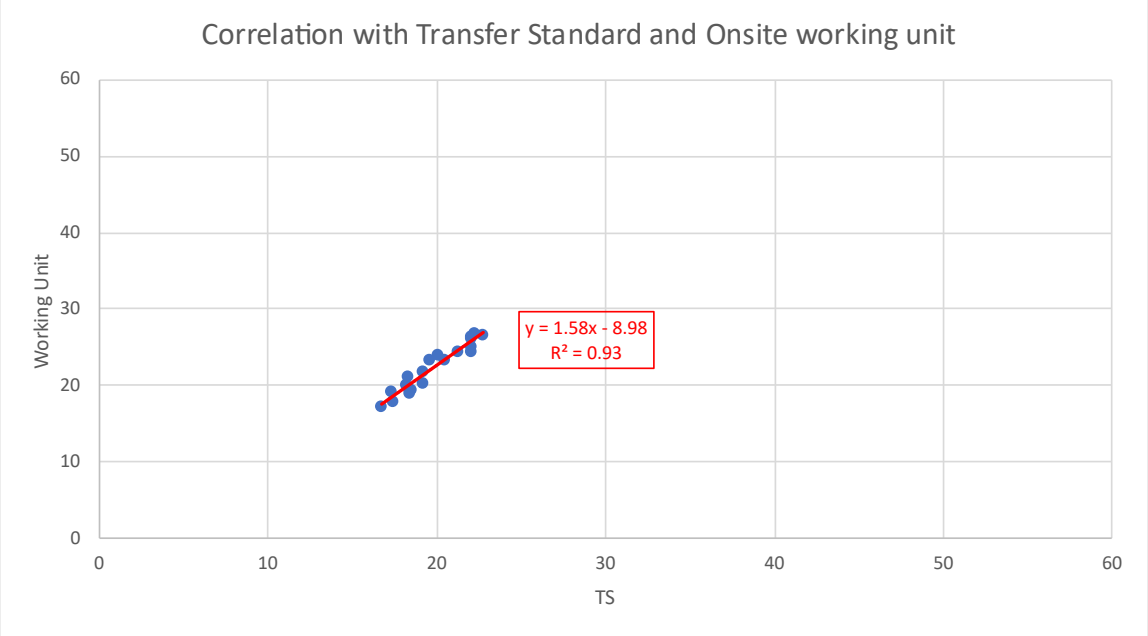
Remark: Follow QAQC Protocol Path 2 which is Criteria Tier 1 Failed while Tier 2 passed, parameter update is not required.

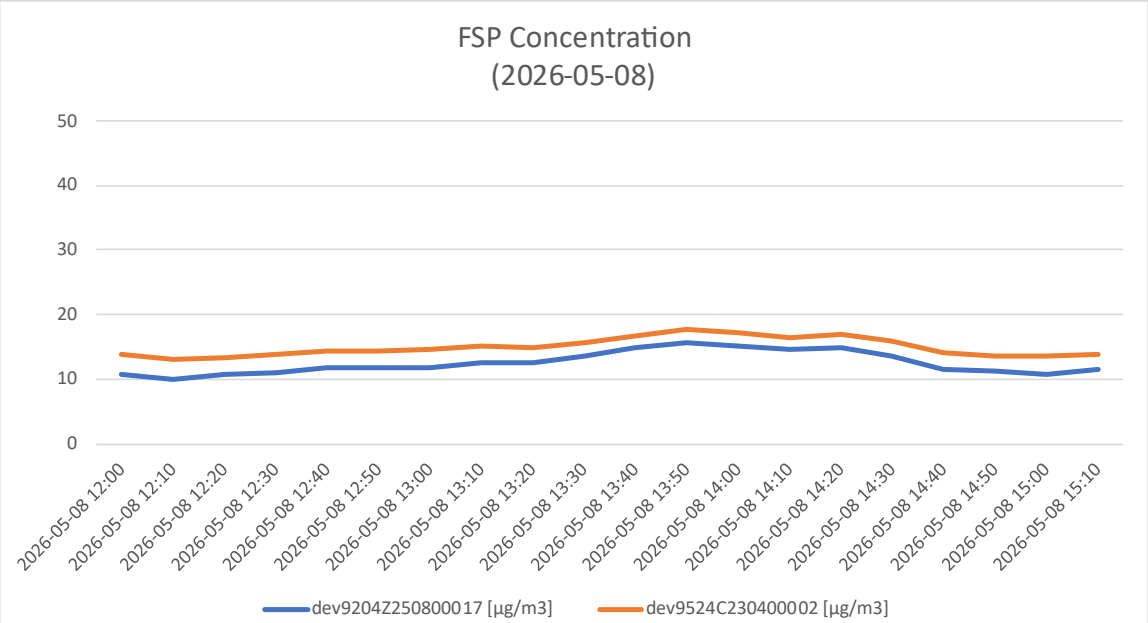
FSP:

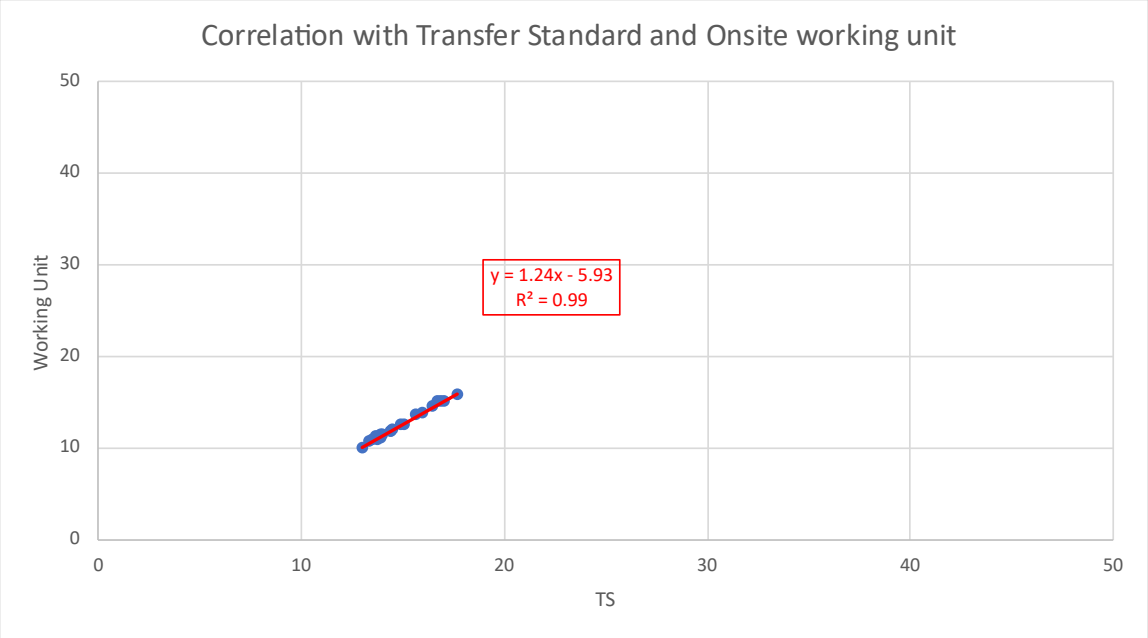
Performance Metric	Target Value	Actual Value	Result
Tier 1			
Bias (Slope)	*1.00±0.25*	1.24	☑ PASS
Linearity (R^2)	*> 0.70*	0.99	☑ PASS
If Tier 1 fails, Conc. Range will be checked	*FSP ⩽25 μg/m³ is low conc. range*	4.7 μg/m³	Not applicable.
Tier 2			
Error	*< 5 μg/m³ for FSP*	2.4 μg/m³	☑ PASS

Remark: Follow QAQC Protocol Path 1 which is both Criteria Tier 1 and Tier 2 passed.

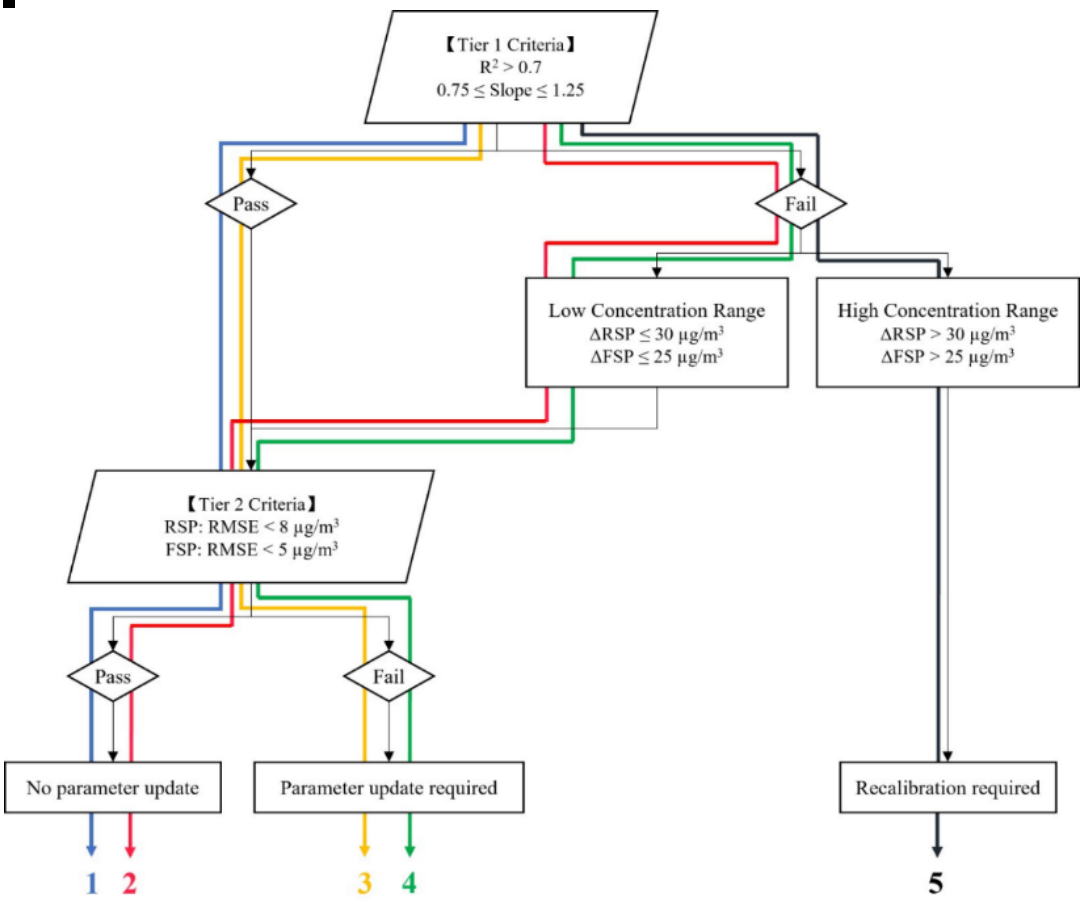

RSP Concentration
(2026-05-08)
60
50
40
30
20
10
0
2026-05-08 12:00
2026-05-08 12:10
2026-05-08 12:20
2026-05-08 12:30
2026-05-08 12:40
2026-05-08 12:50
2026-05-08 13:00
2026-05-08 13:10
2026-05-08 13:20
2026-05-08 13:30
2026-05-08 13:40
2026-05-08 13:50
2026-05-08 14:00
2026-05-08 14:10
2026-05-08 14:20
2026-05-08 14:30
2026-05-08 14:40
2026-05-08 14:50
2026-05-08 15:00
2026-05-08 15:10
dev9204Z250800017 [µg/m3]
dev9524C230400002 [µg/m3]


Correlation with Transfer Standard and Onsite working unit
Working Unit
TS
y = 1.58x - 8.98
R² = 0.93
0
10
20
30
40
50
60


FSP Concentration
(2026-05-08)
50
40
30
20
10
0
2026-05-08 12:00
2026-05-08 12:10
2026-05-08 12:20
2026-05-08 12:30
2026-05-08 12:40
2026-05-08 12:50
2026-05-08 13:00
2026-05-08 13:10
2026-05-08 13:20
2026-05-08 13:30
2026-05-08 13:40
2026-05-08 13:50
2026-05-08 14:00
2026-05-08 14:10
2026-05-08 14:20
2026-05-08 14:30
2026-05-08 14:40
2026-05-08 14:50
2026-05-08 15:00
2026-05-08 15:10
dev9204Z250800017 [µg/m3]
dev9524C230400002 [µg/m3]


Correlation with Transfer Standard and Onsite working unit
Working Unit
TS
y = 1.24x - 5.93
R² = 0.99
0
10
20
30
40
50

QAQC Protocol chart flow



Conclusion:

The report approves that each calibrated item of the product meets its technical specifications. No parameter update is required during this time co-location.

Prepared by:	Curry Duan	**Reviewed by:**	Yannis Qiu
Signature:	Curry	**Signature:**	
Issue Date:	2026-05-11		

(Company Chop)

ONSITE EQUIPMENT VALIDATION RECORD

Product Information:

Report No.:	ZR/T CS.004-2026-05-Z09		
Product Model:	MAS Dust	**Serial No.:**	dev9204Z250700009

Traceability of Calibration Instrument:

Test Item	Calibration Instrument
$PM_{2.5}$ (FSP) PM_{10} (RSP)	Transfer Standard: dev9524C230400002 Location: AFCD Date and Time: 2026-05-08 17:00 to 20:10

Calibration Result:

RSP (Before parameter update):

Performance Metric	Target Value	Actual Value	Result
Tier 1			
Bias (Slope)	*1.00±0.25*	0.78	☑ PASS
Linearity (R^2)	*> 0.70*	0.98	☑ PASS
If Tier 1 fails, Conc. Range will be checked	*RSP⩽30 μg/m³ is low conc. range*	20.4 μg/m³	If Tier 1 criteria are not met due to narrow range of PM concentration, during the collocation period, Tier 2 will apply.
Tier 2			
Error (RMSE)	*< 8 μg/m³ for RSP*	9.2 μg/m³	☒ FAIL

Remark: Follow QAQC Protocol Path 3 which is Criteria Tier 1 Passed while Tier 2 Failed, parameter update is required.

RSP (After parameter update):

Performance Metric	Target Value	Actual Value	Result
Tier 1			
Bias (Slope)	*1.00±0.25*	0.84	☑ PASS
Linearity (R^2)	*> 0.70*	0.98	☑ PASS
If Tier 1 fails, Conc. Range will be checked	*RSP⩽30 μg/m³ is low conc. range*	20.4 μg/m³	If Tier 1 criteria are not met due to narrow range of PM concentration, during the collocation period, Tier 2 will apply.
Tier 2			
Error (RMSE)	*< 8 μg/m³ for RSP*	7.8 μg/m³	☑ PASS

Remark: Follow QAQC Protocol Path 1 which is both Criteria Tier 1 and Tier 2 Passed.

FSP (Before parameter update):

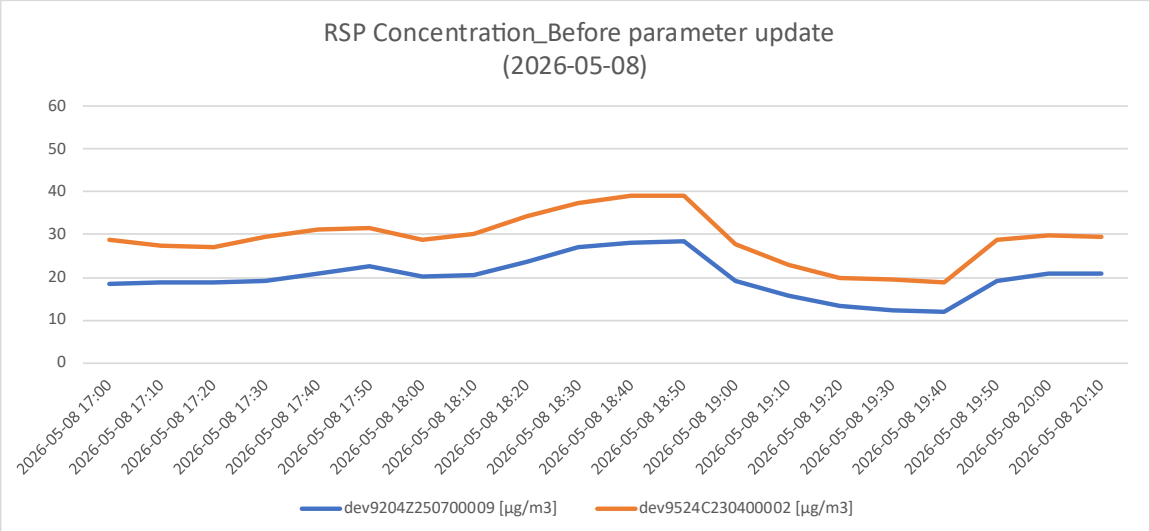
Performance Metric	Target Value	Actual Value	Result
Tier 1			
Bias (Slope)	*1.00±0.25*	0.84	☑ PASS
Linearity (R^2)	*> 0.70*	0.99	☑ PASS
If Tier 1 fails, Conc. Range will be checked	*FSP ⩽25 μg/m³ is low conc. range*	16.8 μg/m³	If Tier 1 criteria are not met due to narrow range of PM concentration, during the collocation period, Tier 2 will apply.
Tier 2			
Error (RMSE)	*< 5 μg/m³ for FSP*	7.5 μg/m³	☒ FAIL

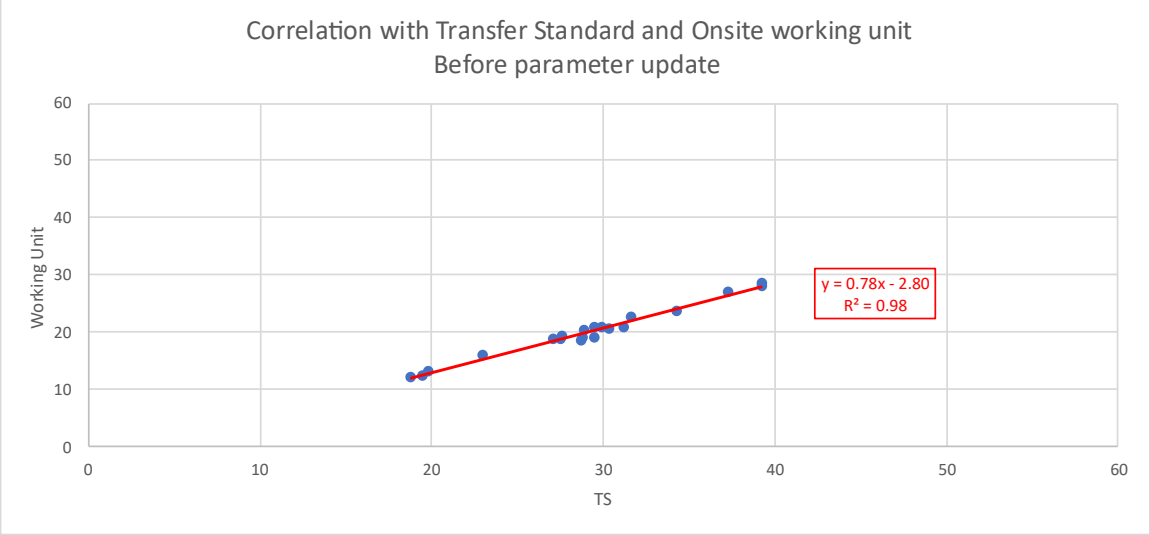
Remark: Follow QAQC Protocol Path 3 which is Criteria Tier 1 Passed while Tier 2 Failed, parameter update is required.

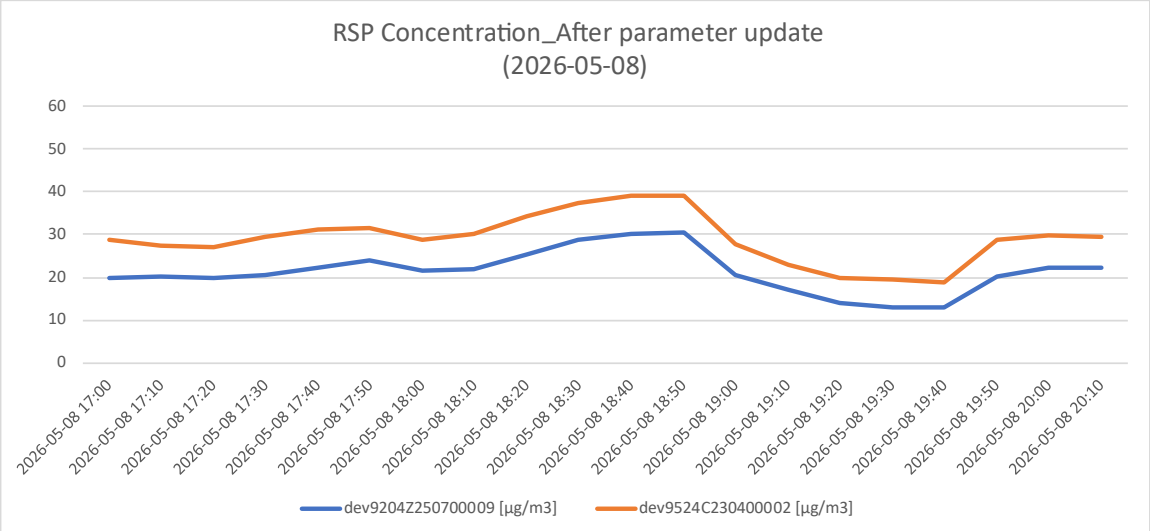
FSP (After parameter update):

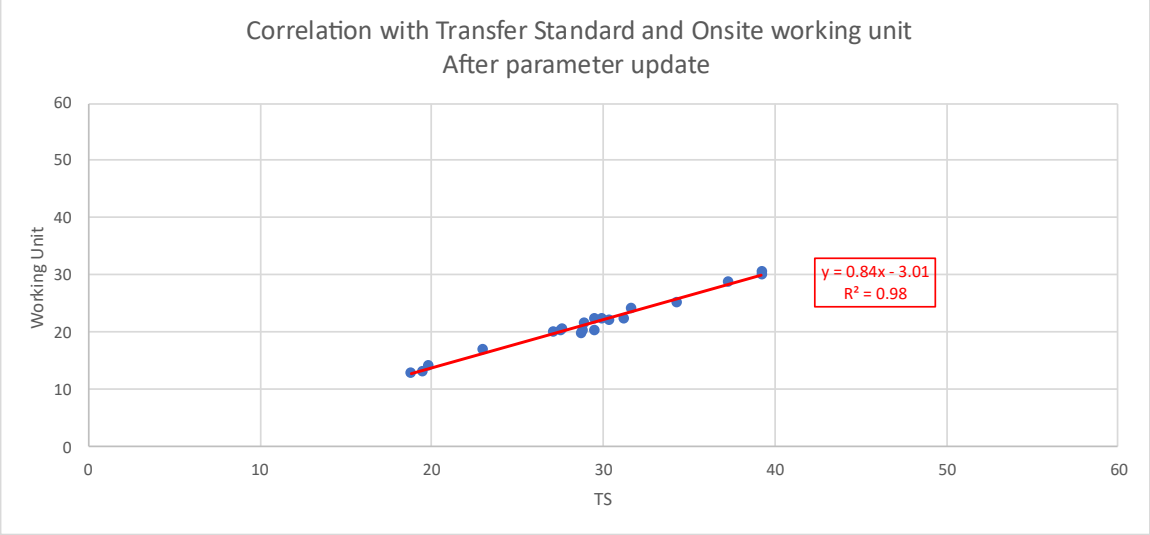
Performance Metric	Target Value	Actual Value	Result
Tier 1			
Bias (Slope)	*1.00±0.25*	0.99	☑ PASS
Linearity (R^2)	*> 0.70*	0.99	☑ PASS
If Tier 1 fails, Conc. Range will be checked	*FSP ⩽25 μg/m³ is low conc. range*	16.8 μg/m³	If Tier 1 criteria are not met due to narrow range of PM concentration, during the collocation period, Tier 2 will apply.
Tier 2			
Error (RMSE)	*< 5 μg/m³ for FSP*	4.8 μg/m³	☑ PASS

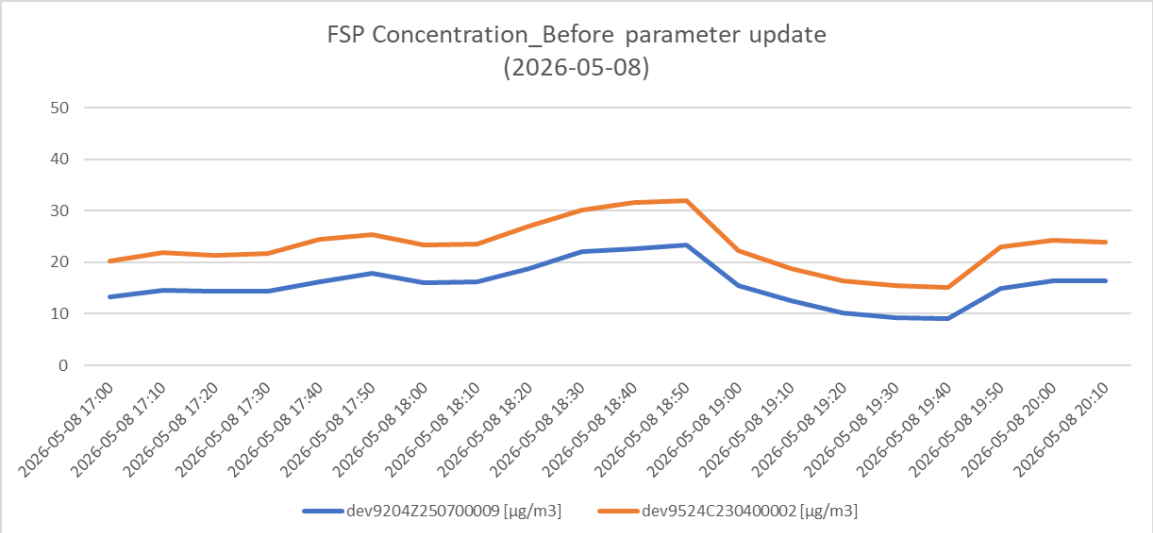
Remark: Follow QAQC Protocol Path 1 which is both Criteria Tier 1 and Tier 2 Passed.

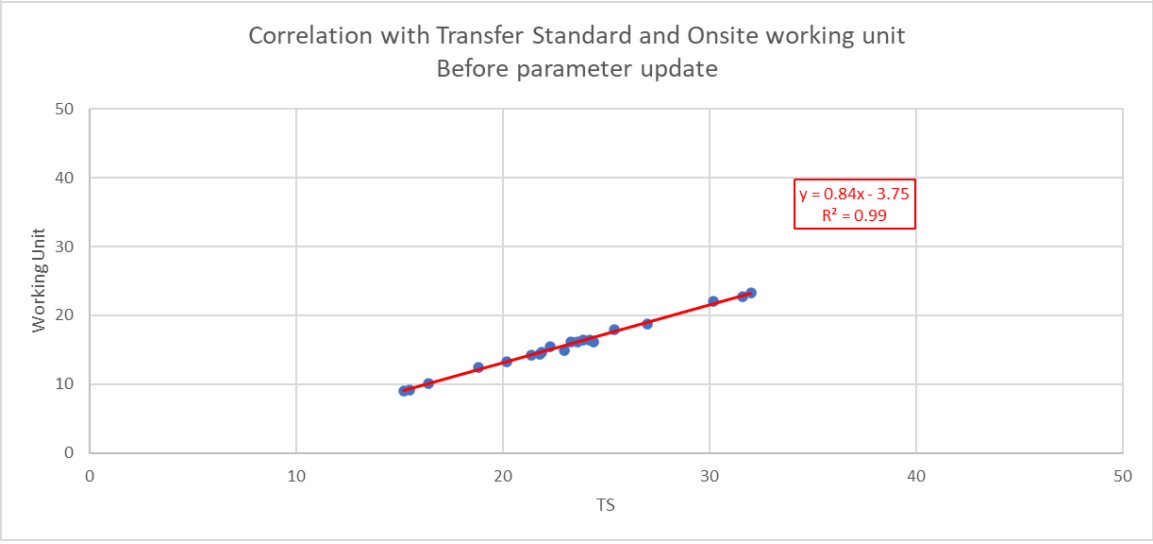

RSP Concentration_Before parameter update
(2026-05-08)
60
50
40
30
20
10
0
2026-05-08 17:00
2026-05-08 17:10
2026-05-08 17:20
2026-05-08 17:30
2026-05-08 17:40
2026-05-08 17:50
2026-05-08 18:00
2026-05-08 18:10
2026-05-08 18:20
2026-05-08 18:30
2026-05-08 18:40
2026-05-08 18:50
2026-05-08 19:00
2026-05-08 19:10
2026-05-08 19:20
2026-05-08 19:30
2026-05-08 19:40
2026-05-08 19:50
2026-05-08 20:00
2026-05-08 20:10
dev9204Z250700009 [µg/m3]
dev9524C230400002 [µg/m3]

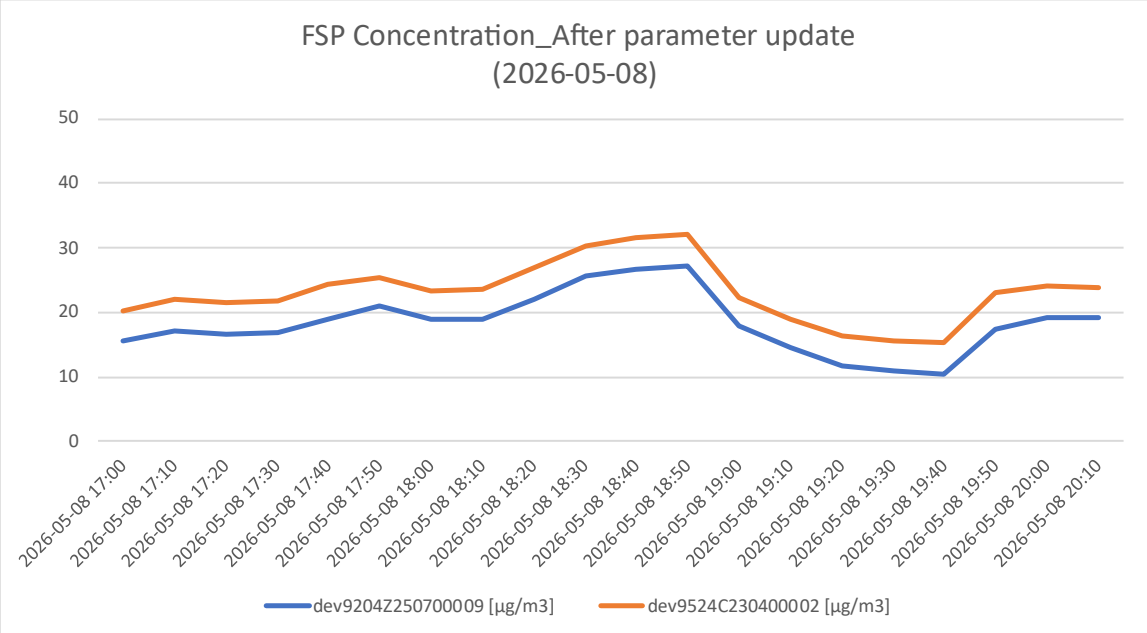

Correlation with Transfer Standard and Onsite working unit
Before parameter update
Working Unit
TS
y = 0.78x - 2.80
R² = 0.98
0
10
20
30
40
50
60

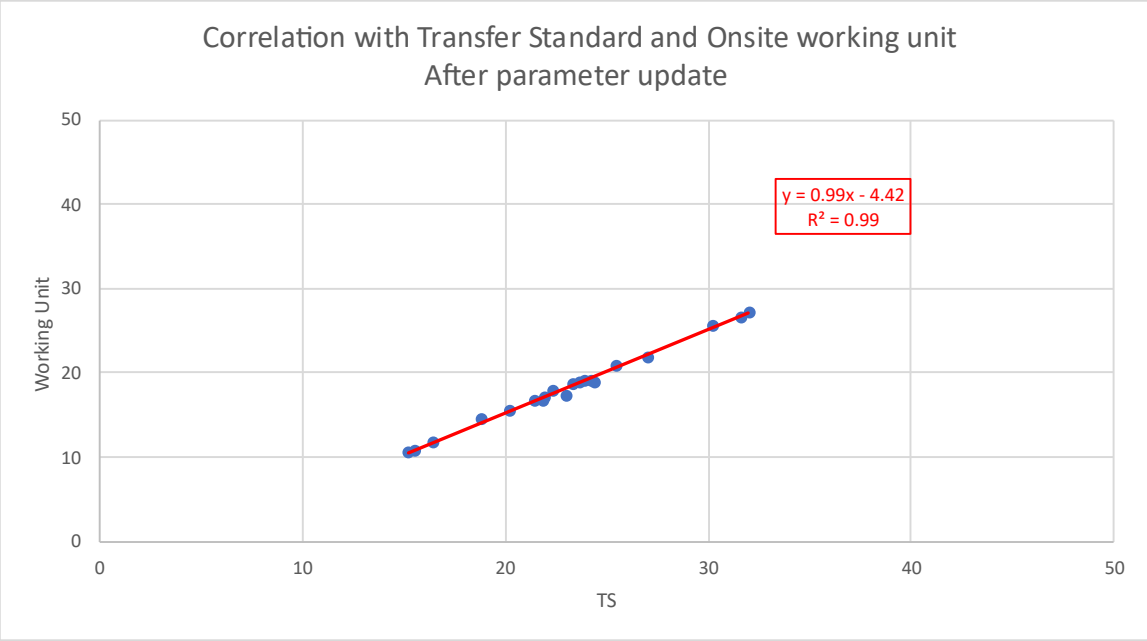

RSP Concentration_After parameter update
(2026-05-08)
60
50
40
30
20
10
0
2026-05-08 17:00
2026-05-08 17:10
2026-05-08 17:20
2026-05-08 17:30
2026-05-08 17:40
2026-05-08 17:50
2026-05-08 18:00
2026-05-08 18:10
2026-05-08 18:20
2026-05-08 18:30
2026-05-08 18:40
2026-05-08 18:50
2026-05-08 19:00
2026-05-08 19:10
2026-05-08 19:20
2026-05-08 19:30
2026-05-08 19:40
2026-05-08 19:50
2026-05-08 20:00
2026-05-08 20:10
dev9204Z250700009 [µg/m3]
dev9524C230400002 [µg/m3]


Correlation with Transfer Standard and Onsite working unit
After parameter update
Working Unit
TS
y = 0.84x - 3.01
R² = 0.98
0
10
20
30
40
50
60

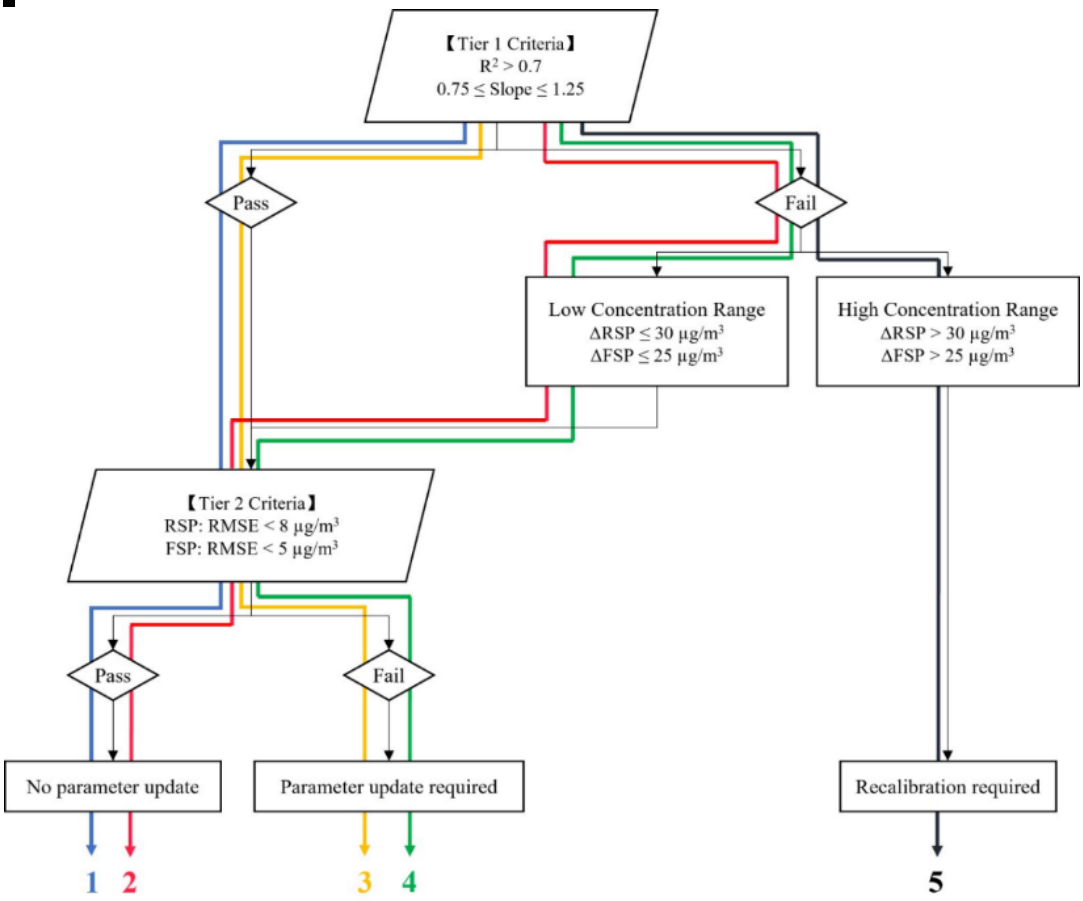

FSP Concentration_Before parameter update
(2026-05-08)
50
40
30
20
10
0
2026-05-08 17:00
2026-05-08 17:10
2026-05-08 17:20
2026-05-08 17:30
2026-05-08 17:40
2026-05-08 17:50
2026-05-08 18:00
2026-05-08 18:10
2026-05-08 18:20
2026-05-08 18:30
2026-05-08 18:40
2026-05-08 18:50
2026-05-08 19:00
2026-05-08 19:10
2026-05-08 19:20
2026-05-08 19:30
2026-05-08 19:40
2026-05-08 19:50
2026-05-08 20:00
2026-05-08 20:10
dev9204Z250700009 [µg/m3]
dev9524C230400002 [µg/m3]


Correlation with Transfer Standard and Onsite working unit
Before parameter update
y = 0.84x - 3.75
R² = 0.99
Working Unit
TS
0
10
20
30
40
50


FSP Concentration_After parameter update
(2026-05-08)
50
40
30
20
10
0
2026-05-08 17:00
2026-05-08 17:10
2026-05-08 17:20
2026-05-08 17:30
2026-05-08 17:40
2026-05-08 17:50
2026-05-08 18:00
2026-05-08 18:10
2026-05-08 18:20
2026-05-08 18:30
2026-05-08 18:40
2026-05-08 18:50
2026-05-08 19:00
2026-05-08 19:10
2026-05-08 19:20
2026-05-08 19:30
2026-05-08 19:40
2026-05-08 19:50
2026-05-08 20:00
2026-05-08 20:10
dev9204Z250700009 [µg/m3]
dev9524C230400002 [µg/m3]


Correlation with Transfer Standard and Onsite working unit
After parameter update
y = 0.99x - 4.42
R² = 0.99
Working Unit
TS
0
10
20
30
40
50

QAQC Protocol chart flow



Conclusion:

The report approves that each calibrated item of the product meets its technical specifications. Parameter update is required during this time co-location.

Prepared by:	Curry Duan	**Reviewed by:**	Yannis Qiu
Signature:	Curry	**Signature:**	
Calibration Date:	2026-05-12		

(Company Chop)

CALIBRATION CERTIFICATE

Product Information:

Report No.:	ZR/T CS.003-2026-05-C02		
Product Model:	PAS AF300	**Serial No.:**	dev9524C230400002

Traceability of Calibration Instrument:

Test Item	Calibration Instrument
$PM_{2.5}$ (FSP) PM_{10} (RSP)	Location: Tsuen Wan Air Quality Monitoring Station Date and Time: 2026-04-17 18:00 to 2026-04-26 16:00

Calibration Result:

RSP:

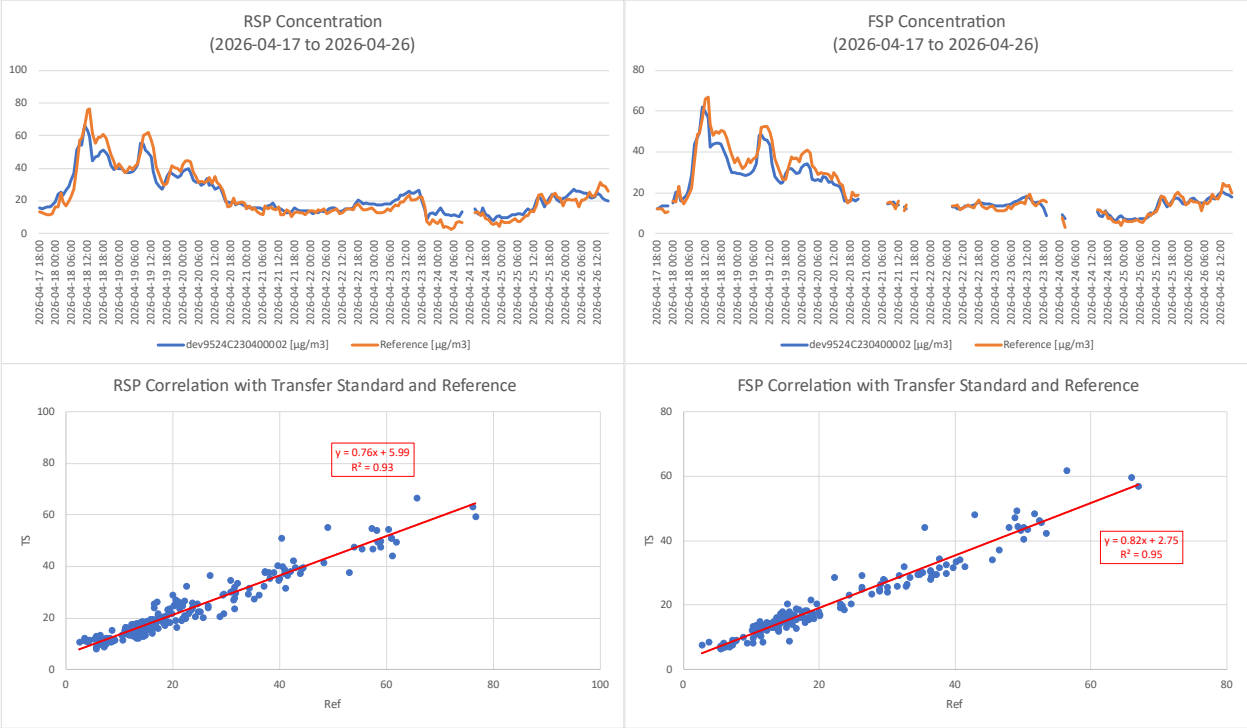
Performance Metric	Target Value	Actual Value	Result
Tier 1			
Bias (Slope)	*1.00±0.25*	0.76	☑ PASS
Linearity (R^2)	*> 0.70*	0.93	☑ PASS
If Tier 1 fails, Conc. Range will be checked	*RSP ⩽30 μg/m³ is low conc. range*	74.1 μg/m³	Not applicable.
Tier 2			
Error (RMSE)	*< 8 μg/m³ for RSP*	4.9 μg/m³	☑ PASS

Remark: Follow QAQC Protocol Path 1 which Criteria Tier 1 and 2 are passed.

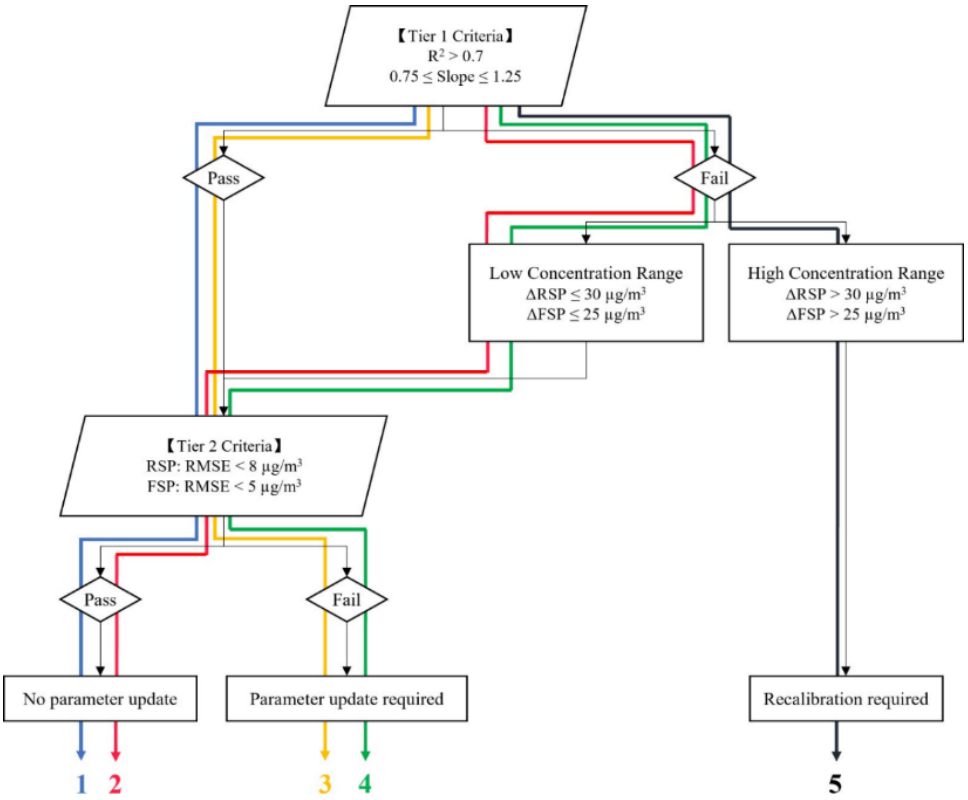
FSP:

Performance Metric	Target Value	Actual Value	Result
Tier 1			
Bias (Slope)	*1.00±0.25*	0.82	☑ PASS
Linearity (R^2)	*> 0.70*	0.95	☑ PASS
If Tier 1 fails, Conc. Range will be checked	*FSP ⩽25 μg/m³ is low conc. range*	64.2 μg/m³	Not applicable.
Tier 2			
Error (RMSE)	*< 5 μg/m³ for FSP*	3.9 μg/m³	☑ PASS

Remark: Follow QAQC Protocol Path 1 which Criteria Tier 1 and 2 are passed.



QAQC Protocol chart flow



Conclusion:

The report approves that each calibrated item of the product meets its technical specifications.

Prepared by:	Yannis Qiu	**Reviewed by:**	George Zhang
Signature:		**Signature:**	
Calibration Date:	2026-04-29		

(Company Chop)

新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260176
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC26-0008) Date of Receipt / 收件日期 : 5 January 2026

Description / 儀器名稱 : Sound Level Meter (EQ013)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00921191
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 3)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 January 2026

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- Hottinger Brüel & Kjær Calibration Laboratory, Denmark
- Thurlby Thandar Instruments Ltd., UK

Tested By 測試 : C K Lo
Project Engineer

Certified By 核證 : K C Lee
Senior Engineer

Date of Issue 簽發日期 : 21 January 2026

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

New Creation Calibration Service Limited
Flat F & G, 11/F, Garment Centre, 576-586 Castle Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
新創校正服務有限公司
香港九龍長沙灣青山道576-586號製衣中心11樓F及G室
Tel/電話: (852) 2736 3335 Fax/傳真: (852) 2736 3332 E-mail/電郵: callab@nccsvc.com.hk Website/網址: www.nccsvc.com.hk

Certificate of Calibration
校正證書

Certificate No. : C260176
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 1 hour, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL458	Dual Function / Arb / Pulse Generator	3001978
CL461	Sound Calibrator	CDK2502138

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Limit (dB)
30 - 130	L_A	A	Fast	94.00	1	93.4	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
30 - 130	L_A	A	Fast	94.00	1	93.4 (Ref.)
				104.00		103.4
				114.00		113.4

IEC 61672 Class 1 Limit : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting				Applied Value		UUT	IEC 61672
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Limit (dB)
30 - 130	L_A	A	Fast	94.00	1	93.4	Ref.
			Slow			93.4	± 0.3

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。 局部複印本證書需先獲本實驗所書面批准。

New Creation Calibration Service Limited
Flat F & G, 11/F, Garment Centre, 576-586 Castle Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
新創校正服務有限公司
香港九龍長沙灣青山道576-586號製衣中心11樓F及G室
Tel/電話: (852) 2736 3335 Fax/傳真: (852) 2736 3332 E-mail/電郵: callab@nccsvc.com.hk Website/網址: www.nccsvc.com.hk

Certificate of Calibration
校正證書

Certificate No. : C260176
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	67.2	-26.2 ± 1.5
					125 Hz	77.2	-16.1 ± 1.5
					250 Hz	84.7	-8.6 ± 1.4
					500 Hz	90.2	-3.2 ± 1.4
					1 kHz	93.4	Ref.
					2 kHz	94.6	+1.2 ± 1.6
					4 kHz	94.4	+1.0 ± 1.6
					8 kHz	92.3	-1.1 (+2.1 ; -3.1)
					16 kHz	85.4	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	92.6	-0.8 ± 1.5
					125 Hz	93.2	-0.2 ± 1.5
					250 Hz	93.4	0.0 ± 1.4
					500 Hz	93.4	0.0 ± 1.4
					1 kHz	93.4	Ref.
					2 kHz	93.2	-0.2 ± 1.6
					4 kHz	92.6	-0.8 ± 1.6
					8 kHz	90.4	-3.0 (+2.1 ; -3.1)
					16 kHz	83.5	-8.5 (+3.5 ; -17.0)

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。 局部複印本證書需先獲本實驗所書面批准。

New Creation Calibration Service Limited
Flat F & G, 11/F, Garment Centre, 576-586 Castle Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
新創校正服務有限公司
香港九龍長沙灣青山道576-586號製衣中心11樓F及G室
Tel/電話: (852) 2736 3335 Fax/傳真: (852) 2736 3332 E-mail/電郵: callab@nccsvc.com.hk Website/網址: www.nccsvc.com.hk

新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260176
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 12910

- Mfr's Limit : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	16 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. New Creation Calibration Service Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。 局部複印本證書需先獲本實驗所書面批准。

New Creation Calibration Service Limited
Flat F & G, 11/F, Garment Centre, 576-586 Castle Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
新創校正服務有限公司
香港九龍長沙灣青山道576-586號製衣中心11樓F及G室
Tel/電話: (852) 2736 3335 Fax/傳真: (852) 2736 3332 E-mail/電郵: callab@nccsvc.com.hk Website/網址: www.nccsvc.com.hk

新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260177
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC26-0008) Date of Receipt / 收件日期 : 5 January 2026

Description / 儀器名稱 : Sound Level Meter (EQ015)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00142581
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 3)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 January 2026

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- Hottinger Brüel & Kjær Calibration Laboratory, Denmark
- Thurlby Thandar Instruments Ltd., UK

Tested By 測試 : C K Lo
Project Engineer

Certified By 核證 : K C Lee
Senior Engineer

Date of Issue 簽發日期 : 21 January 2026

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

New Creation Calibration Service Limited
Flat F & G, 11/F, Garment Centre, 576-586 Castle Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
新創校正服務有限公司
香港九龍長沙灣青山道576-586號製衣中心11樓F及G室
Tel/電話: (852) 2736 3335 Fax/傳真: (852) 2736 3332 E-mail/電郵: callab@nccsvc.com.hk Website/網址: www.nccsvc.com.hk

Certificate of Calibration
校正證書

Certificate No. : C260177
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 1 hour, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL458	Dual Function / Arb / Pulse Generator	3001978
CL461	Sound Calibrator	CDK2502138

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.1	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	93.1 (Ref.)
				104.00		103.1
				114.00		113.1

IEC 61672 Class 1 Limit : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.1	Ref.
			Slow			93.1	± 0.3

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Certificate of Calibration
校正證書

Certificate No. : C260177
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	66.8	-26.2 ± 1.5
					125 Hz	76.9	-16.1 ± 1.5
					250 Hz	84.4	-8.6 ± 1.4
					500 Hz	89.8	-3.2 ± 1.4
					1 kHz	93.1	Ref.
					2 kHz	94.3	+1.2 ± 1.6
					4 kHz	94.0	+1.0 ± 1.6
					8 kHz	92.0	-1.1 (+2.1 ; -3.1)
					16 kHz	85.1	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	92.2	-0.8 ± 1.5
					125 Hz	92.9	-0.2 ± 1.5
					250 Hz	93.0	0.0 ± 1.4
					500 Hz	93.1	0.0 ± 1.4
					1 kHz	93.1	Ref.
					2 kHz	92.9	-0.2 ± 1.6
					4 kHz	92.3	-0.8 ± 1.6
					8 kHz	90.1	-3.0 (+2.1 ; -3.1)
					16 kHz	83.2	-8.5 (+3.5 ; -17.0)

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新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260177
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 22275

- Mfr's Limit : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	16 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. New Creation Calibration Service Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。 局部複印本證書需先獲本實驗所書面批准。

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新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C261348
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC26-0437) Date of Receipt / 收件日期 : 20 April 2026

Description / 儀器名稱 : Sound Level Meter (EQ018)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00809405
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 3)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 7 May 2026

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- Hottinger Brüel & Kjær Calibration Laboratory, Denmark
- Thurlby Thandar Instruments Ltd., UK

Tested By 測試 : C K Lo
Project Engineer

Certified By 核證 : K C Lee
Senior Engineer

Date of Issue 簽發日期 : 11 May 2026

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

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Certificate of Calibration
校正證書

Certificate No. : C261348
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 1 hour, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL458	Dual Function / Arb / Pulse Generator	3001978
CL461	Sound Calibrator	CDK2502138

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.3	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	93.3 (Ref.)
				104.00		103.3
				114.00		113.3

IEC 61672 Class 1 Limit : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.3	Ref.
			Slow			93.3	± 0.3

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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Certificate of Calibration
校正證書

Certificate No. : C261348
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	67.1	-26.2 ± 1.5
					125 Hz	77.1	-16.1 ± 1.5
					250 Hz	84.7	-8.6 ± 1.4
					500 Hz	90.1	-3.2 ± 1.4
					1 kHz	93.3	Ref.
					2 kHz	94.5	+1.2 ± 1.6
					4 kHz	94.3	+1.0 ± 1.6
					8 kHz	92.3	-1.1 (+2.1 ; -3.1)
					16 kHz	85.4	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	92.5	-0.8 ± 1.5
					125 Hz	93.1	-0.2 ± 1.5
					250 Hz	93.3	0.0 ± 1.4
					500 Hz	93.4	0.0 ± 1.4
					1 kHz	93.3	Ref.
					2 kHz	93.2	-0.2 ± 1.6
					4 kHz	92.5	-0.8 ± 1.6
					8 kHz	90.4	-3.0 (+2.1 ; -3.1)
					16 kHz	83.4	-8.5 (+3.5 ; -17.0)

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New Creation Calibration Service Limited
Flat F & G, 11/F, Garment Centre, 576-586 Castle Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
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Certificate of Calibration
校正證書

Certificate No. : C261348
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 16463

- Mfr's Limit : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB	
	250 Hz - 500 Hz	: ± 0.30 dB	
	1 kHz	: ± 0.20 dB	
	2 kHz - 4 kHz	: ± 0.35 dB	
	8 kHz	: ± 0.45 dB	
	16 kHz	: ± 0.70 dB	
104 dB	: 1 kHz	: ± 0.10 dB	(Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB	(Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. New Creation Calibration Service Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260173
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC26-0008) Date of Receipt / 收件日期 : 5 January 2026

Description / 儀器名稱 : Sound Calibrator (EQ083)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-74
Serial No. / 編號 : 34246492
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 3)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 January 2026

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- Hottinger Brüel & Kjær Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies

Tested By 測試 : C K Lo
Project Engineer

Certified By 核證 : K C Lee
Senior Engineer

Date of Issue 簽發日期 : 21 January 2026

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

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New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260173
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 1 hour before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL456	6 1/2 Digit Multimeter	SO219304-4
CL461	Sound Calibrator	CDK2502138

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value	Mfr's Limit	Uncertainty of Measured Value
94 dB, 1 kHz	94.2 dB	± 0.3 dB	± 0.2 dB

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Limit	Uncertainty of Measured Value
1 kHz	1.002 kHz	1 kHz ± 1 %	± 1 Hz

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. New Creation Calibration Service Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260174
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC26-0008) Date of Receipt / 收件日期 : 5 January 2026

Description / 儀器名稱 : Sound Calibrator (EQ086)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-74
Serial No. / 編號 : 34657230
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 3)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 January 2026

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- Hottinger Brüel & Kjær Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies

Tested By 測試 : C K Lo
Project Engineer

Certified By 核證 : K C Lee
Senior Engineer

Date of Issue 簽發日期 : 21 January 2026

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

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Certificate of Calibration
校正證書

Certificate No. : C260174
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 1 hour before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL456	6 1/2 Digit Multimeter	SO219304-4
CL461	Sound Calibrator	CDK2502138

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value	Mfr's Limit	Uncertainty of Measured Value
94 dB, 1 kHz	94.3 dB	± 0.3 dB	± 0.2 dB

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Limit	Uncertainty of Measured Value
1 kHz	1.002 kHz	1 kHz ± 1 %	± 1 Hz

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. New Creation Calibration Service Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

New Creation Calibration Service Limited
Flat F & G, 11/F, Garment Centre, 576-586 Castle Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
新創校正服務有限公司
香港九龍長沙灣青山道576-586號製衣中心11樓F及G室
Tel/電話: (852) 2736 3335 Fax/傳真: (852) 2736 3332 E-mail/電郵: callab@nccsvc.com.hk Website/網址: www.nccsvc.com.hk

新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260175
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC26-0008) Date of Receipt / 收件日期 : 5 January 2026

Description / 儀器名稱 : Sound Calibrator (EQ087)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-74
Serial No. / 編號 : 34657231
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 3)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 January 2026

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- Hottinger Brüel & Kjær Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies

Tested By 測試 : C K Lo
Project Engineer

Certified By 核證 : K C Lee
Senior Engineer

Date of Issue 簽發日期 : 21 January 2026

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

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新創校正服務有限公司
New Creation Calibration Service Limited

Certificate of Calibration
校正證書

Certificate No. : C260175
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 1 hour before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL456	6 1/2 Digit Multimeter	SO219304-4
CL461	Sound Calibrator	CDK2502138

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value	Mfr's Limit	Uncertainty of Measured Value
94 dB, 1 kHz	94.2 dB	± 0.3 dB	± 0.2 dB

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Limit	Uncertainty of Measured Value
1 kHz	1.001 kHz	1 kHz ± 1 %	± 1 Hz

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. New Creation Calibration Service Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。 局部複印本證書需先獲本實驗所書面批准。

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Appendix F

Event and Action Plan

Event and Action Plan for Construction Dust Monitoring

EVENT	ACTION			
	ET	**IEC**	**ER**	**The Contractor**
ACTION LEVEL				
Exceedance one 1-hour RSP concentration	1. Notify IEC and the Engineers; 2. Check the monitoring data and error messages to confirm if the performance of the monitoring equipment is normal; 3. If exceedance is confirmed, identify source(s), investigate the causes of exceedance and propose remedial measures; and 4. Assess effectiveness of Contractor's remedial measures and keep IEC, and the Engineers informed of the results until exceedance stops.	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Discuss with ET, the Engineers and Contractor on possible remedial measures; 4. Advise the ET and the Engineers on the effectiveness of the proposed remedial measures; and 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with ET and IEC, agree with the Contractor on the remedial measures to be implemented; and 4. Ensure the proposal for remedial measures are properly implemented.	1. Identify source(s) of exceedance, and discuss with the Engineers, ET and IEC on possible remedial measures; 2. Implement remedial measures; and 3. Amend working methods if appropriate.
Exceedance for two or more consecutive 1-hour RSP concentration	1. Notify IEC and the Engineers; 2. Check the monitoring data and the performance of monitoring equipment (refer to Figure 1 in the Air Monitoring Plan) to confirm if the performance of the monitoring equipment is normal; 3. If exceedance is confirmed, identify source(s), investigate the causes of exceedance and propose remedial measures; 4. Discuss with IEC, the Engineers and Contractor on possible remedial measures required; 5. Assess effectiveness of Contractor's remedial measures and keep IEC, and the Engineers informed of the results until exceedance stops; and 6. Notify EPD if the exceedance is confirmed to be related to the Project.	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method and verify the performance of the monitoring equipment to be checked by ET (refer to Figure 1 in the Air Monitoring Plan); 3. Discuss with ET, the Engineers and Contractor on possible remedial measures; 4. Review and advise the ET and ER on the effectiveness of the proposed remedial measures; and 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the ET and IEC, agree with the Contractor on the proposal for remedial measures to be implemented; and 4. Ensure the proposal for remedial measures are properly implemented.	1. Identify source(s) of exceedance and discuss with the Engineers, ET and IEC on possible remedial measures; 2. Submit a proposal for remedial measures to the Engineers, IEC and ET within two working days of notification of exceedance for agreement; 3. Implement the agreed proposals; and 4. Amend proposal as appropriate.

EVENT	ACTION			
	ET	**IEC**	**ER**	**The Contractor**
LIMIT LEVEL				
Exceedance for one 24-hour rolling average RSP concentration record and/or one 24-hour rolling FSP concentration record	1. Notify IEC, the Engineers and Contractor and EPD; 2. Check the monitoring data and the performance of the monitoring equipment (refer to Figure 1 in the Air Monitoring Plan); 3. If exceedance is confirmed, identify source(s), investigate the causes of exceedance and propose remedial measures; 4. Discuss with IEC, the Engineers and Contractor on possible remedial measures required; and 5. Assess effectiveness of Contractor's remedial measures and keep IEC, the Engineers and EPD informed of the results until exceedance stops. 6. Notify EPD if the exceedance is confirmed to be related to the Project.	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; and verify the performance of the monitoring equipment to be checked by ET (refer to Figure 1 in the Air Monitoring Plan); 3. Discuss with the ET, the Engineers and Contractor on possible remedial measures; 4. Advise the ET and the Engineers on the effectiveness of the proposed remedial measures; 5. Review Contractors' remedial measures whenever necessary to assure their effectiveness and advise ET and the Engineers accordingly; and 6. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the ET and IEC, agree with the Contractor on the proposal for remedial measures to be implemented; 4. Ensure the proposal for remedial measures properly implemented. 5. If exceedance continues, identify what portion of the work is responsible and instruct the Contractor to stop that portion of work until exceedance is abated.	1. Identify source(s) and discuss with the Engineers, ET and IEC on possible remedial measures; 2. Take immediate action to avoid further exceedance; 3. Submit a proposal for remedial measures to the Engineers, ET and IEC within two working days of notification for agreement; 4. Implement the agreed proposals; 5. Review and resubmit proposals if the problem is still not under control. 6. Stop the relevant portion of works as determined by the Engineers until exceedance is abated.

Eq. 1: Root mean square error

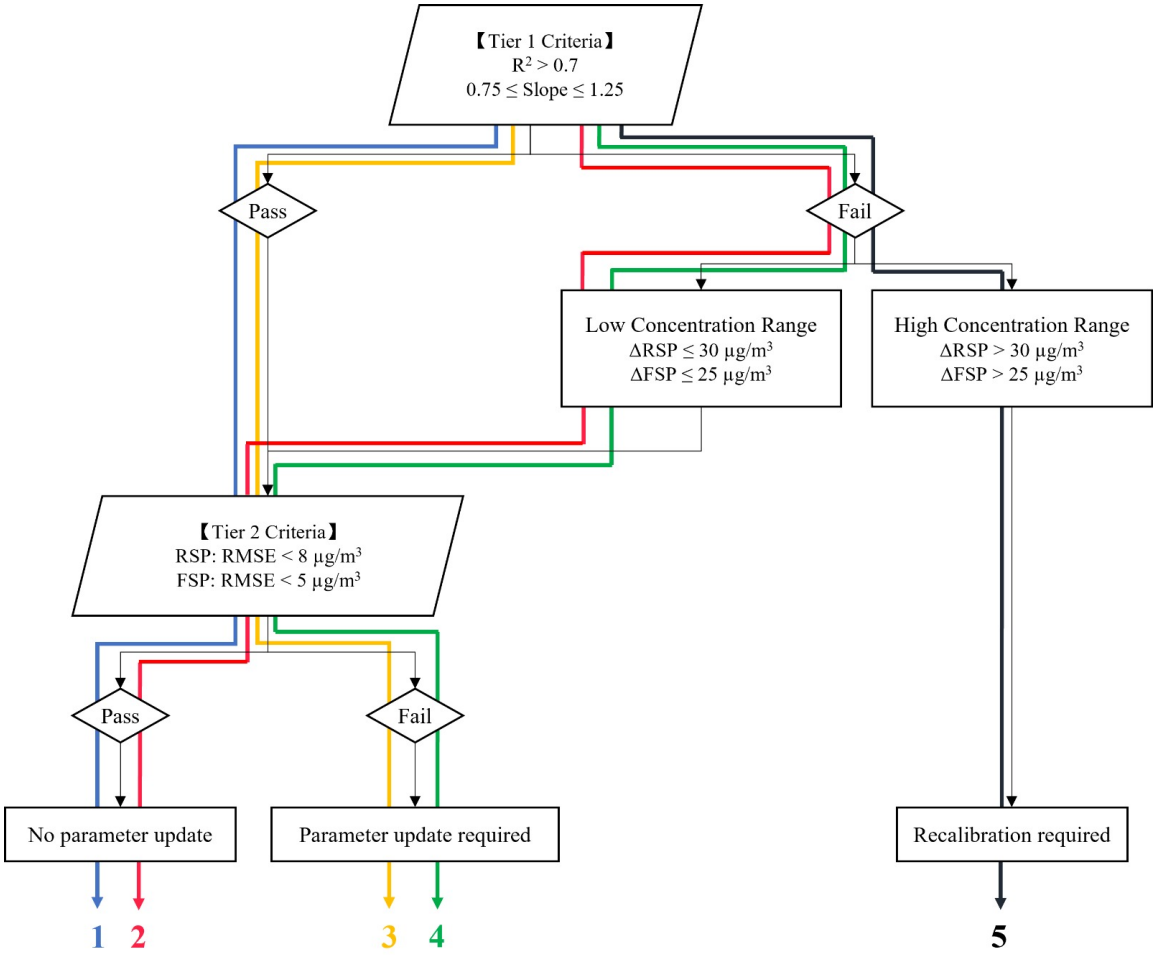
$$RMSE = \sqrt{\frac{\sum_1^n([PM]_{TS,t} - [PM]_{Ref,t})^2}{n}}$$

Where $[PM]_{TS,t}$ is the PM readings from transfer standard unit at time stamp t
$[PM]_{Ref,t}$ is the PM readings from FRM/FEM PM reference monitor unit at time stamp t
n is the total number of valid data points during collocation.

Eq. 2: Root mean square error

$$RMSE = \sqrt{\frac{\sum_1^n([PM]_{Air\ sensor,t} - [PM]_{TS,t})^2}{n}}$$

Where $[PM]_{Air\ sensor,t}$ is the PM readings from on-site working unit at time stamp t
$[PM]_{TS,t}$ is the PM readings from transfer standard unit at time stamp t
n is the total number of valid data points during collocation.



Practices for TS collocation with PM reference monitor and on-site Air sensor collocation with TS	
TS collocation with PM reference monitor	every 3 months
Air sensor collocation with TS	every month

Figure 1 Extracted from Air Monitoring Plan as per EM&A Manual

Event and Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action level being exceeded	1. Notify IEC, ER and Contractor; 2. Identify source and carry out investigation; 3. Discuss with the Contractor and formulate remedial measures; and 4. Increase monitoring frequency to check mitigation effectiveness if the exceedance is relevant to the Project-related construction activities.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; and 3. Ensure remedial measures properly implemented.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; and 4. Ensure remedial measures are properly implemented.	1. Identify source, and carry out investigation and report the investigation to the ET, IEC and ER; 2. Submit noise mitigation proposals to IEC and ER; and 3. Implement noise mitigation proposals.
Limit level being exceeded	1. Notify IEC, ER, EPD and Contractor; 2. Identify source and carry out investigation; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency if the exceedance is relevant to the Project-related construction activities; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring results and discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 3. Ensure remedial measures properly implemented.	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 properly implemented; and 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. Identify source and carry out investigation and report the investigation to the ET, IEC and ER; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER, ET and IEC within 3 working days of notification; 4. Implement the agreed proposals; 5. Resubmit proposals if problem still not under control; and 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix G

Monitoring Schedule

Impact Monitoring Schedule for May 2026

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
3	4	5	6	7	8	9
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
					Collocation of air sensor Daytime Noise Monitoring for NM2	
10	11	12	13	14	15	16
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
				Daytime Noise Monitoring for NM2		
17	18	19	20	21	22	23
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
			Daytime Noise Monitoring for NM2			
24	25	26	27	28	29	30
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
			Daytime Noise Monitoring for NM2			
31						
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						

	Public Holiday or Sunday

Remark:

1. The monitoring schedule will be changed in the case of unforeseen circumstances (e.g. adverse weather etc.);
2. Air quality monitoring parameter: 1-hr RSP, 24-hr RSP (rolling average) and 24-hr FSP (rolling average);
3. Noise monitoring parameter: $L_{eq(30min)}$ during normal construction working hours (0700-1900 Monday to Saturday).

Tentative Impact Monitoring Schedule for June 2026

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	**2**	**3**	**4**	**5**	**6**
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
		Daytime Noise Monitoring for NM2				
7	**8**	**9**	**10**	**11**	**12**	**13**
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
	Collocation of air sensor Daytime Noise Monitoring for NM2					
14	**15**	**16**	**17**	**18**	**19**	**20**
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
			Daytime Noise Monitoring for NM2			
21	**22**	**23**	**24**	**25**	**26**	**27**
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
			Daytime Noise Monitoring for NM2			
28	**29**	**30**				
Continuous Air Quality Monitoring for SMA_AM01 & SMA_AM02						
		Daytime Noise Monitoring for NM2				

	Public Holiday or Sunday

Remark:

1. The monitoring schedule will be changed in the case of unforeseen circumstances (e.g. adverse weather etc.);
2. Air quality monitoring parameter: 1-hr RSP, 24-hr RSP (rolling average) and 24-hr FSP (rolling average);
3. Noise monitoring parameter: $L_{eq(30min)}$ during normal construction working hours (0700-1900 Monday to Saturday).

Appendix H

Detailed Monitoring Results

1. Air Quality
2. Construction Noise

Appendix H1 - Air Quality Monitoring Results

Parameter: 1-hour RSP (µg/m³)

Location: SMA_AM01

Hour	May 2026																														
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
00:00	13.8	14.7	16.9	9.7	13.7	9.4	16.5	11.6	17.9	19.0	25.4	22.3	9.8	6.4	12.6	7.5	5.8	13.8	12.1	10.2	7.1	7.7	9.5	8.0	8.6	8.6	9.5	8.9	8.5	8.2	20.8
01:00	11.9	12.5	19.0	9.4	14.3	6.7	16.4	13.1	10.1	18.2	26.4	31.4	12.0	6.2	15.8	8.2	6.2	14.5	10.3	9.3	6.3	8.0	9.6	8.5	8.7	8.7	9.4	8.7	8.8	6.1	21.9
02:00	12.2	11.3	16.9	8.6	14.2	6.9	16.8	16.0	7.9	19.4	23.8	43.6	16.5	6.3	12.9	10.4	5.3	14.9	6.0	9.3	4.4	8.1	10.2	9.0	8.7	8.9	8.6	8.5	8.0	6.9	27.3
03:00	11.0	12.2	18.9	9.1	13.8	7.7	17.7	16.2	6.6	18.7	23.2	34.2	14.8	6.3	9.8	9.1	7.3	11.6	4.6	9.5	6.2	11.0	11.9	9.6	9.0	9.5	8.5	8.2	10.3	7.8	24.7
04:00	11.4	12.3	20.8	9.8	13.5	9.4	16.9	15.8	7.1	18.9	25.9	32.2	11.9	6.2	10.2	4.8	10.3	8.6	5.2	10.6	7.1	16.9	10.5	9.6	9.3	9.3	8.4	9.1	10.1	8.6	24.1
05:00	11.6	12.7	18.5	10.5	12.4	10.7	17.4	14.7	8.5	18.5	26.7	30.5	7.3	6.1	11.3	7.7	10.4	9.8	7.9	10.2	8.5	15.9	11.0	9.6	9.0	9.4	10.4	8.3	8.9	9.5	16.1
06:00	11.2	12.3	20.8	10.7	11.0	10.8	16.4	17.1	7.6	17.6	26.6	30.1	14.9	6.2	13.2	7.4	7.0	10.2	8.2	9.0	5.7	11.2	10.3	13.4	9.4	11.6	10.3	9.3	14.6	9.5	5.2
07:00	11.3	12.4	13.9	11.2	7.9	10.0	15.6	20.5	7.3	18.1	33.2	30.1	6.5	8.3	11.6	8.2	4.9	9.3	8.3	7.6	5.4	8.8	9.2	9.9	9.7	13.4	11.5	10.2	14.2	10.3	7.4
08:00	11.5	15.4	13.2	13.4	8.0	9.2	13.6	18.1	7.7	16.2	42.9	16.3	9.1	10.8	8.3	8.1	6.1	10.8	9.4	6.5	9.1	8.8	11.3	10.8	10.3	13.6	15.7	11.8	12.6	13.8	9.5
09:00	9.1	17.4	14.3	13.6	7.4	9.0	9.6	14.3	9.7	17.3	35.0	18.6	13.6	10.7	6.5	10.2	8.6	12.6	7.2	6.5	6.7	8.6	11.1	11.0	12.3	16.8	19.2	15.3	15.2	13.6	12.0
10:00	7.8	17.5	14.6	14.6	6.4	7.7	11.5	14.4	11.0	18.1	31.5	19.6	11.3	11.9	5.4	12.3	10.3	9.3	9.0	7.5	7.6	10.4	12.4	11.4	12.3	16.8	14.7	15.9	13.3	12.9	23.9
11:00	7.9	16.8	13.2	17.6	7.0	8.4	12.5	20.4	11.6	20.4	35.6	20.6	10.1	10.5	4.9	11.7	9.6	11.7	9.2	8.2	7.4	9.4	14.1	12.8	12.1	16.3	16.8	35.1	17.9	20.1	27.1
12:00	8.9	17.7	14.5	12.9	6.2	13.0	12.8	18.8	12.7	20.8	29.7	18.8	11.4	11.8	5.5	10.8	7.7	17.8	8.2	6.5	7.6	10.4	12.6	14.3	13.5	15.6	13.2	19.3	23.1	20.0	23.8
13:00	9.9	18.2	7.9	15.0	6.2	8.9	15.2	23.5	12.7	21.5	24.7	22.4	9.0	12.6	6.9	10.8	13.4	18.2	6.3	7.2	10.2	12.8	11.9	13.3	13.5	15.4	19.7	20.5	22.1	27.9	19.3
14:00	11.3	19.3	7.1	12.2	7.1	11.9	14.3	23.7	13.7	24.5	19.6	23.0	12.5	11.9	4.2	11.8	10.4	19.9	5.3	8.3	12.3	18.0	11.2	13.6	15.0	16.1	17.7	23.8	28.1	22.1	14.6
15:00	12.6	16.4	6.6	12.4	9.8	11.3	12.9	27.7	15.3	23.6	22.1	19.2	11.7	11.0	3.7	11.0	9.5	20.9	8.8	9.4	10.3	12.2	9.8	14.2	14.8	15.4	17.7	19.3	25.9	30.4	17.4
16:00	13.8	18.1	5.9	11.4	7.8	11.5	11.3	31.7	17.3	24.1	20.1	20.5	11.0	7.4	4.4	4.9	13.8	21.8	8.3	7.6	10.1	12.7	11.3	13.0	13.9	15.7	14.4	17.8	24.1	30.2	21.5
17:00	14.2	15.8	6.7	13.4	8.9	10.7	11.7	31.5	18.0	22.3	21.5	18.0	13.8	7.2	5.0	5.4	13.5	22.3	7.9	15.0	9.8	10.3	9.1	12.0	12.4	14.5	14.4	20.3	24.6	22.8	22.4
18:00	12.5	18.4	7.4	10.5	9.3	11.4	11.9	39.7	16.7	21.9	23.7	17.0	9.4	7.6	4.8	4.5	13.0	22.4	10.5	7.8	8.9	9.3	8.6	10.8	11.2	12.3	12.2	22.5	21.1	21.7	22.7
19:00	11.6	14.6	8.5	11.1	8.1	12.4	10.3	24.4	18.3	22.4	25.0	13.3	7.6	8.8	5.9	6.0	13.7	18.8	10.6	8.0	9.2	8.9	8.5	9.8	10.2	11.1	10.6	11.6	19.6	17.5	22.7
20:00	10.9	15.8	9.6	11.0	10.0	13.8	17.2	27.7	16.4	22.6	24.5	16.4	7.6	9.8	7.3	5.2	11.6	15.2	13.4	8.0	9.2	9.1	8.8	9.7	9.7	10.7	9.8	12.2	19.4	17.1	22.0
21:00	11.2	16.4	8.5	12.8	12.3	12.5	11.8	31.6	19.1	22.8	30.2	11.8	6.8	11.3	7.9	4.6	12.9	15.7	10.3	7.5	8.9	9.6	8.3	9.3	9.3	10.0	9.6	10.8	21.2	17.2	22.0
22:00	11.4	15.2	6.6	12.7	11.2	14.7	11.1	32.1	19.3	23.1	25.7	8.9	6.7	9.7	6.5	4.4	12.3	14.6	8.5	6.4	9.2	9.6	8.1	9.1	8.6	9.9	9.4	9.8	11.9	18.7	21.8
23:00	11.7	17.6	8.8	13.2	8.4	15.1	10.6	29.3	20.1	22.8	23.5	8.6	6.4	13.5	7.8	5.2	13.9	13.1	8.5	7.3	9.7	9.5	8.1	9.0	8.7	9.5	9.4	8.4	9.4	20.2	22.3

Remark: Action Level: 150µg/m³

The data in bold and italic form indicate Action Level exceedance

Appendix H1 - Air Quality Monitoring Results

Parameter: 24-hour RSP (rolling average) (µg/m³)

Location: SMA_AM01

Hour	May 2026																													
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
00:00	13.0	11.3	15.6	12.2	12.1	9.6	10.8	13.6	22.5	13.1	20.8	26.8	21.5	10.3	9.4	7.8	7.9	10.2	14.8	8.4	8.3	8.2	10.8	10.2	10.9	10.8	12.5	12.5	14.4	16.4	16.9
01:00	13.2	11.3	15.8	11.8	12.3	9.3	11.2	13.5	22.4	13.4	21.1	27.0	20.6	10.1	9.8	7.5	7.8	10.6	14.7	8.4	8.2	8.3	10.9	10.2	10.9	10.8	12.5	12.5	14.4	16.2	17.6
02:00	13.4	11.3	16.1	11.4	12.6	9.0	11.7	13.5	22.0	13.9	21.3	27.8	19.5	9.7	10.0	7.4	7.6	11.0	14.3	8.5	8.0	8.5	10.9	10.2	10.9	10.9	12.5	12.5	14.4	16.2	18.4
03:00	13.5	11.4	16.3	11.0	12.8	8.7	12.1	13.4	21.6	14.4	21.5	28.3	18.7	9.3	10.2	7.4	7.5	11.2	14.0	8.7	7.9	8.7	11.0	10.1	10.9	10.9	12.5	12.5	14.5	16.1	19.1
04:00	13.7	11.4	16.7	10.6	12.9	8.6	12.4	13.4	21.3	14.9	21.8	28.6	17.9	9.1	10.4	7.1	7.7	11.1	13.9	8.9	7.7	9.1	10.7	10.0	10.9	10.9	12.4	12.5	14.5	16.0	19.8
05:00	13.9	11.4	16.9	10.2	13.0	8.5	12.7	13.2	21.0	15.3	22.1	28.7	16.9	9.0	10.6	7.0	7.8	11.1	13.8	9.0	7.7	9.4	10.5	10.0	10.9	10.9	12.5	12.4	14.5	16.1	20.0
06:00	14.1	11.5	17.3	9.8	13.0	8.5	12.9	13.3	20.6	15.7	22.5	28.9	16.3	8.7	10.9	6.7	7.8	11.2	13.7	9.1	7.5	9.6	10.5	10.1	10.7	11.0	12.4	12.4	14.7	15.8	19.9
07:00	14.2	11.5	17.3	9.7	12.9	8.6	13.1	13.5	20.1	16.2	23.2	28.7	15.3	8.8	11.0	6.6	7.7	11.4	13.7	9.0	7.4	9.7	10.5	10.1	10.7	11.1	12.3	12.3	14.9	15.7	19.7
08:00	14.4	11.7	17.3	9.7	12.6	8.6	13.3	13.7	19.6	16.5	24.3	27.6	15.0	8.8	10.9	6.6	7.6	11.6	13.6	8.9	7.5	9.7	10.6	10.1	10.7	11.3	12.4	12.2	14.9	15.7	19.6
09:00	14.4	12.0	17.1	9.7	12.4	8.7	13.3	13.9	19.5	16.8	25.0	26.9	14.8	8.7	10.7	6.7	7.5	11.7	13.4	8.9	7.6	9.8	10.7	10.1	10.7	11.5	12.5	12.0	14.9	15.7	19.5
10:00	14.4	12.4	17.0	9.7	12.0	8.7	13.5	14.0	19.3	17.1	25.6	26.5	14.4	8.7	10.4	7.0	7.4	11.7	13.4	8.8	7.6	9.9	10.8	10.1	10.8	11.6	12.4	12.0	14.8	15.7	20.0
11:00	14.2	12.8	16.9	9.8	11.6	8.8	13.7	14.3	18.9	17.5	26.2	25.8	14.0	8.7	10.2	7.3	7.4	11.8	13.3	8.8	7.5	10.0	11.0	10.0	10.7	11.8	12.5	12.8	14.1	15.7	20.2
12:00	14.0	13.2	16.7	9.8	11.3	9.1	13.7	14.6	18.7	17.8	26.6	25.4	13.7	8.8	10.0	7.5	7.2	12.2	12.9	8.7	7.6	10.1	11.1	10.1	10.7	11.9	12.4	13.1	14.3	15.6	20.4
13:00	13.8	13.5	16.3	10.1	10.9	9.2	13.9	14.9	18.2	18.2	26.7	25.3	13.1	8.9	9.7	7.7	7.3	12.4	12.4	8.8	7.7	10.2	11.0	10.1	10.7	12.0	12.5	13.1	14.3	15.9	20.0
14:00	13.5	13.9	15.8	10.3	10.7	9.4	14.0	15.3	17.8	18.7	26.5	25.4	12.7	8.9	9.4	8.0	7.3	12.8	11.8	8.9	7.9	10.5	10.8	10.2	10.8	12.0	12.6	13.4	14.5	15.6	19.7
15:00	13.4	14.0	15.4	10.5	10.6	9.5	14.1	15.9	17.3	19.0	26.4	25.3	12.4	8.9	9.1	8.3	7.2	13.3	11.2	8.9	7.9	10.6	10.7	10.4	10.8	12.1	12.7	13.4	14.8	15.8	19.2
16:00	13.3	14.2	14.9	10.8	10.5	9.6	14.1	16.8	16.7	19.3	26.3	25.3	12.0	8.7	9.0	8.3	7.6	13.6	10.7	8.9	8.0	10.7	10.6	10.5	10.8	12.1	12.7	13.6	15.1	16.0	18.8
17:00	13.1	14.3	14.5	11.0	10.3	9.7	14.1	17.6	16.1	19.5	26.2	25.2	11.8	8.4	8.9	8.4	7.9	14.0	10.1	9.2	7.8	10.7	10.5	10.6	10.8	12.2	12.7	13.8	15.2	16.0	18.8
18:00	12.9	14.5	14.0	11.2	10.2	9.8	14.1	18.7	15.2	19.7	26.3	24.9	11.5	8.4	8.8	8.3	8.3	14.4	9.6	9.1	7.8	10.7	10.5	10.7	10.9	12.3	12.6	14.2	15.2	16.0	18.9
19:00	12.2	14.6	13.8	11.3	10.1	10.0	14.1	19.3	14.9	19.9	26.4	24.4	11.2	8.4	8.6	8.3	8.6	14.6	9.2	9.0	7.9	10.7	10.5	10.7	10.9	12.3	12.6	14.3	15.5	15.9	19.1
20:00	11.9	14.8	13.5	11.3	10.1	10.1	14.2	19.8	14.5	20.1	26.5	24.1	10.9	8.5	8.5	8.3	8.9	14.7	9.2	8.7	7.9	10.7	10.5	10.8	10.9	12.3	12.6	14.4	15.8	15.8	19.3
21:00	11.6	15.1	13.2	11.5	10.1	10.1	14.2	20.6	13.9	20.3	26.8	23.3	10.7	8.7	8.4	8.1	9.2	14.8	8.9	8.6	8.0	10.7	10.4	10.8	10.9	12.4	12.6	14.4	16.2	15.6	19.5
22:00	11.4	15.2	12.8	11.8	10.0	10.3	14.0	21.5	13.4	20.4	26.9	22.6	10.6	8.8	8.3	8.0	9.5	14.9	8.7	8.5	8.1	10.7	10.4	10.9	10.9	12.4	12.6	14.4	16.3	15.9	19.6
23:00	11.3	15.5	12.5	12.0	9.8	10.5	13.8	22.2	13.0	20.5	26.9	22.0	10.5	9.1	8.0	7.9	9.9	14.9	8.5	8.5	8.2	10.7	10.3	10.9	10.8	12.5	12.5	14.4	16.4	16.4	19.7

Remark: Limit Level: 100µg/m³
The data in underlined and bold form indicate Limit Level exceedance

Appendix H1 - Air Quality Monitoring Results

Parameter: 24-hour FSP (rolling average) (µg/m³)

Location: SMA_AM01

Hour	May 2026																														
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
00:00	7.7	7.8	10.3	8.4	7.6	6.8	6.8	8.4	13.8	8.7	13.3	19.3	15.0	6.0	5.7	4.4	5.1	7.0	9.2	5.1	5.7	5.7	7.1	7.6	8.4	8.0	8.2	7.6	7.7	9.8	10.6
01:00	7.9	7.9	10.5	8.1	7.8	6.6	7.1	8.3	13.7	9.0	13.5	19.7	14.3	5.8	5.8	4.2	5.1	7.3	9.1	5.1	5.6	5.8	7.2	7.6	8.4	8.0	8.2	7.6	7.7	9.7	11.2
02:00	8.0	7.9	10.6	7.8	8.1	6.3	7.4	8.2	13.5	9.3	13.6	20.5	13.3	5.6	5.9	4.1	5.1	7.5	8.8	5.2	5.4	5.9	7.3	7.5	8.4	8.0	8.2	7.6	7.7	9.6	11.9
03:00	8.2	8.0	10.8	7.5	8.2	6.1	7.6	8.1	13.3	9.6	13.7	20.9	12.6	5.4	6.0	4.1	5.0	7.7	8.6	5.4	5.2	6.0	7.5	7.5	8.3	8.0	8.2	7.5	7.7	9.6	12.4
04:00	8.3	8.0	11.1	7.1	8.4	5.9	7.8	8.0	13.2	9.9	13.8	21.3	12.0	5.3	6.0	4.0	5.2	7.6	8.5	5.5	5.0	6.1	7.6	7.5	8.3	8.0	8.1	7.6	7.7	9.5	13.0
05:00	8.4	8.1	11.2	6.8	8.4	5.9	8.1	7.8	13.2	10.1	14.0	21.6	11.2	5.3	6.0	4.0	5.2	7.6	8.4	5.6	4.8	6.3	7.6	7.5	8.3	8.0	8.1	7.5	7.7	9.5	13.2
06:00	8.6	8.1	11.5	6.5	8.5	5.8	8.2	7.7	13.1	10.3	14.2	21.7	10.6	5.2	6.1	4.0	5.2	7.7	8.4	5.7	4.7	6.4	7.6	7.5	8.2	8.0	8.1	7.5	7.8	9.5	13.1
07:00	8.7	8.2	11.5	6.3	8.5	5.9	8.4	7.7	12.9	10.6	14.5	21.7	10.0	5.3	6.2	4.0	5.1	7.8	8.4	5.7	4.6	6.6	7.6	7.6	8.2	8.0	8.0	7.5	7.8	9.4	13.0
08:00	8.8	8.2	11.5	6.3	8.4	5.9	8.5	7.9	12.7	10.8	15.4	20.9	9.7	5.4	6.1	4.0	5.0	7.9	8.4	5.6	4.7	6.6	7.7	7.6	8.2	8.0	8.0	7.5	7.8	9.5	12.9
09:00	8.9	8.4	11.5	6.2	8.2	5.9	8.5	8.0	12.6	10.9	16.0	20.3	9.5	5.4	6.1	4.0	5.0	8.0	8.2	5.5	4.7	6.7	7.7	7.6	8.2	8.0	8.0	7.4	7.8	9.5	12.8
10:00	9.0	8.7	11.5	6.1	8.1	6.0	8.6	8.1	12.5	11.0	16.7	19.8	9.2	5.4	6.0	4.2	5.0	8.0	8.2	5.5	4.7	6.7	7.8	7.6	8.1	8.1	8.0	7.4	7.8	9.5	13.0
11:00	8.9	8.9	11.4	6.1	7.9	6.0	8.7	8.2	12.4	11.2	17.2	19.3	8.8	5.5	5.8	4.4	4.9	8.1	8.1	5.5	4.7	6.8	7.9	7.6	8.1	8.1	7.9	7.6	7.8	9.5	13.4
12:00	8.9	9.1	11.4	6.0	7.8	6.1	8.8	8.3	12.3	11.4	17.6	18.9	8.5	5.5	5.7	4.6	4.9	8.3	7.9	5.5	4.8	6.8	8.0	7.7	8.1	8.1	7.8	7.6	8.0	9.4	13.6
13:00	8.9	9.2	11.1	6.1	7.6	6.1	8.8	8.6	12.1	11.6	17.7	18.7	8.1	5.5	5.6	4.7	4.9	8.4	7.6	5.5	4.9	6.8	8.1	7.7	8.0	8.1	7.8	7.6	8.1	9.4	13.6
14:00	8.8	9.4	10.8	6.3	7.5	6.2	8.9	8.8	11.9	11.9	17.7	18.7	7.7	5.6	5.4	5.0	4.9	8.5	7.3	5.7	5.0	6.8	8.0	7.8	8.1	8.1	7.8	7.6	8.3	9.4	13.4
15:00	8.8	9.4	10.5	6.4	7.4	6.2	8.9	9.1	11.7	12.1	17.7	18.6	7.5	5.6	5.3	5.2	4.9	8.7	7.0	5.8	5.0	6.8	8.0	8.0	8.1	8.1	7.7	7.6	8.6	9.4	13.3
16:00	8.7	9.4	10.3	6.5	7.3	6.2	8.9	9.6	11.3	12.4	17.7	18.5	7.2	5.5	5.2	5.2	5.2	8.8	6.7	5.8	5.1	6.9	7.9	8.1	8.1	8.1	7.7	7.6	8.8	9.5	13.3
17:00	8.7	9.5	10.0	6.7	7.2	6.2	9.0	10.1	11.0	12.6	17.7	18.3	7.1	5.3	5.1	5.2	5.4	8.9	6.3	6.0	5.1	6.9	7.9	8.2	8.1	8.1	7.7	7.6	8.9	9.6	13.2
18:00	8.7	9.6	9.8	6.8	7.2	6.3	8.9	10.8	10.4	12.7	17.9	18.0	6.9	5.2	5.0	5.2	5.6	9.1	6.1	6.0	5.1	6.9	7.9	8.2	8.1	8.1	7.7	7.7	9.0	9.6	13.2
19:00	8.2	9.7	9.6	6.9	7.1	6.4	8.9	11.2	10.2	12.9	18.1	17.6	6.7	5.3	4.9	5.3	5.9	9.1	5.8	6.0	5.2	6.9	7.9	8.2	8.1	8.1	7.7	7.7	9.2	9.7	13.2
20:00	8.0	9.8	9.4	7.0	7.1	6.5	8.9	11.6	9.9	13.1	18.3	17.2	6.5	5.3	4.8	5.2	6.1	9.2	5.7	5.9	5.3	6.9	7.9	8.3	8.1	8.1	7.6	7.8	9.4	9.7	13.2
21:00	7.8	10.0	9.2	7.1	7.1	6.4	8.8	12.2	9.5	13.1	18.7	16.6	6.3	5.4	4.7	5.1	6.3	9.2	5.5	5.9	5.4	6.9	7.8	8.3	8.1	8.1	7.6	7.8	9.7	9.7	13.1
22:00	7.7	10.2	8.9	7.3	7.1	6.5	8.7	12.9	9.1	13.2	19.0	15.9	6.2	5.5	4.6	5.1	6.6	9.3	5.3	5.8	5.5	7.0	7.7	8.3	8.1	8.2	7.6	7.8	9.7	9.9	13.1
23:00	7.7	10.3	8.6	7.5	7.0	6.6	8.6	13.5	8.7	13.2	19.2	15.4	6.1	5.6	4.5	5.1	6.8	9.2	5.2	5.7	5.7	7.0	7.7	8.4	8.0	8.2	7.6	7.8	9.8	10.2	13.0

Remark: Limit Level: 50µg/m³

The data in underlined and bold form indicate Limit Level exceedance

Appendix H1 - Air Quality Monitoring Results

Parameter: 1-hour RSP (µg/m³)

Location: SMA_AM02

Hour	May 2026																														
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
00:00	13.2	16.5	15.8	11.2	14.9	11.8	17.8	11.3	17.1	19.4	22.5	23.5	8.7	6.1	10.0	7.2	8.0	15.7	11.6	9.1	8.1	7.9	10.3	8.4	8.5	8.0	8.5	7.7	7.4	6.2	17.9
01:00	12.5	14.2	17.0	10.3	15.7	8.3	16.5	10.7	9.3	18.3	23.9	30.4	11.0	5.9	11.0	8.2	8.1	15.3	10.2	9.4	7.0	8.0	10.4	9.0	8.8	8.5	8.2	7.9	7.2	5.3	18.4
02:00	12.2	13.1	16.3	10.0	16.2	7.4	16.5	12.7	10.1	18.7	23.2	39.4	12.4	6.0	10.7	8.3	6.6	15.3	6.5	9.6	4.4	8.2	11.0	9.4	9.2	8.7	8.2	7.7	7.1	6.0	23.6
03:00	12.0	13.5	17.7	11.7	15.6	8.8	16.7	12.7	9.3	18.5	23.2	34.0	13.0	6.0	9.2	8.4	8.7	12.8	4.7	10.1	5.3	8.6	11.2	9.9	9.4	8.6	7.7	7.5	7.7	6.7	21.9
04:00	12.6	13.3	20.2	11.5	15.4	10.1	16.5	12.6	9.8	18.6	24.1	32.7	11.1	5.9	8.7	5.1	11.6	9.8	5.3	10.8	5.2	9.1	10.3	9.9	9.4	8.5	7.6	7.7	8.2	7.1	21.7
05:00	13.0	14.0	19.0	12.2	13.9	11.9	17.8	12.6	12.1	18.6	25.1	31.1	8.2	6.1	8.5	9.4	12.8	10.8	9.0	10.9	5.9	11.2	10.1	9.9	9.2	8.6	8.0	7.7	7.7	7.7	13.7
06:00	12.5	13.4	20.5	12.3	13.3	11.6	16.5	12.9	10.5	18.1	25.1	26.9	6.6	6.1	9.5	9.3	9.1	10.6	9.4	9.8	5.6	10.5	9.9	11.8	9.7	9.1	8.4	7.6	8.8	7.8	4.9
07:00	11.9	12.6	13.6	12.5	10.5	11.2	14.4	14.2	10.2	18.1	28.2	22.4	4.8	6.1	9.9	10.4	6.1	9.8	9.3	9.0	6.1	10.8	9.1	10.6	9.3	10.2	7.7	8.0	9.1	7.9	5.8
08:00	12.2	11.1	11.0	12.7	11.3	9.7	11.8	12.2	10.7	15.5	39.4	12.9	4.3	6.4	8.4	9.6	7.5	10.9	11.1	8.4	8.7	8.3	8.9	10.2	9.5	10.3	8.1	7.9	8.0	9.6	7.4
09:00	9.6	12.1	10.9	13.0	9.4	7.8	8.6	11.0	13.8	14.0	31.0	13.2	5.8	6.3	7.8	11.9	9.4	12.9	8.1	7.6	12.2	7.7	8.7	9.3	10.3	10.2	8.3	8.0	8.9	11.9	9.0
10:00	8.3	12.8	10.7	13.4	8.9	7.1	9.1	10.6	13.9	14.2	27.3	13.0	6.5	6.2	5.6	11.8	10.3	10.4	9.6	7.2	9.6	7.7	9.2	9.1	10.1	9.8	8.5	9.2	9.2	11.4	15.0
11:00	9.0	14.4	10.0	15.6	9.1	11.8	9.4	10.9	13.5	15.3	28.9	14.3	5.8	6.1	4.1	11.6	9.5	11.4	9.0	6.4	10.1	8.1	8.6	10.2	11.0	9.8	8.7	11.7	11.9	10.6	18.1
12:00	10.1	14.7	10.0	12.8	7.4	7.8	10.0	14.3	13.3	16.4	23.8	14.0	5.7	5.7	4.6	10.1	7.8	15.0	9.6	6.3	13.5	7.7	8.0	10.8	9.8	9.4	9.0	10.2	14.6	12.3	21.0
13:00	10.6	14.2	7.1	13.2	8.2	7.5	9.0	17.3	13.3	17.3	21.4	15.6	5.8	6.3	5.7	9.9	11.7	15.5	8.0	6.6	11.8	7.0	8.6	10.2	9.9	10.4	9.1	10.8	15.4	15.1	18.7
14:00	10.9	13.4	7.8	12.3	7.3	9.3	8.8	14.8	13.4	19.5	18.5	15.3	6.5	7.1	5.5	11.2	10.7	16.3	5.0	7.2	26.0	7.4	8.9	9.7	9.6	11.0	9.7	10.9	16.8	16.6	14.6
15:00	12.5	13.3	7.7	12.8	8.6	9.0	8.9	13.7	13.5	18.2	21.0	15.4	7.7	8.2	4.3	11.6	10.8	16.7	7.6	7.8	9.7	8.3	8.7	9.4	9.6	9.6	9.6	9.7	16.3	16.8	16.3
16:00	12.8	11.9	7.3	11.4	9.6	8.0	8.1	18.7	14.2	18.5	17.5	13.8	8.1	6.6	4.9	5.6	14.5	14.9	6.9	7.5	9.9	7.7	8.7	9.0	9.4	9.9	11.2	9.6	16.9	16.8	16.6
17:00	11.4	11.4	7.9	13.8	9.0	8.3	8.6	21.4	15.8	18.5	19.3	12.0	6.9	7.3	5.4	6.0	14.5	15.0	7.1	6.7	9.5	7.8	7.7	8.9	9.4	9.4	8.8	8.1	14.4	16.6	15.8
18:00	11.4	10.6	9.6	11.7	10.4	10.1	8.3	26.2	15.8	18.7	18.6	12.5	6.5	7.3	4.7	5.0	14.6	15.3	8.2	6.9	9.0	8.0	7.7	8.7	9.1	8.8	8.2	7.7	12.0	16.5	15.5
19:00	10.8	12.4	9.8	12.3	10.5	11.3	8.2	16.6	16.5	18.9	22.2	11.3	6.2	8.2	5.7	7.5	15.6	14.8	8.1	7.7	9.5	8.4	8.1	8.9	8.8	8.7	7.8	7.7	13.2	15.1	16.2
20:00	10.6	13.4	11.5	13.2	12.6	13.0	9.3	21.1	16.7	19.7	23.3	12.4	6.4	9.4	6.2	6.3	13.9	13.8	8.8	7.7	9.5	9.2	8.2	8.9	8.6	8.9	8.0	8.6	13.2	14.1	16.7
21:00	11.1	14.7	10.9	15.1	15.2	13.2	10.1	26.6	18.9	20.9	27.0	10.8	6.2	9.9	6.7	5.5	14.8	14.5	8.6	7.6	9.2	10.4	7.9	8.7	8.3	8.8	8.0	8.3	14.8	14.9	16.8
22:00	11.9	14.8	8.9	14.5	14.4	14.0	10.9	28.2	19.7	21.2	26.2	9.6	6.0	9.3	6.4	5.5	14.1	13.6	8.0	6.3	9.5	10.5	7.8	8.6	7.8	8.7	8.3	7.9	10.0	15.8	17.2
23:00	12.3	15.8	10.4	14.9	11.1	15.9	9.9	27.3	20.7	20.8	23.4	9.3	6.1	10.0	7.1	6.8	15.4	12.1	8.4	6.9	9.7	10.4	8.2	8.7	8.1	8.7	7.9	7.5	9.0	17.0	17.2

Remark: Action Level: 150µg/m³

The data in bold and italic form indicate Action Level exceedance

Appendix H1 - Air Quality Monitoring Results

Parameter: 24-hour RSP (rolling average) (µg/m³)

Location: SMA_AM02

Hour	May 2026																														
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
00:00	13.6	11.6	13.4	12.0	12.8	11.5	10.5	11.5	16.5	13.9	18.3	24.4	18.0	7.2	7.2	7.0	8.5	11.4	13.3	8.2	8.0	9.4	8.8	8.9	9.5	9.3	9.3	8.4	8.6	11.1	12.4
01:00	13.8	11.7	13.5	11.7	13.1	11.2	10.8	11.2	16.5	14.3	18.5	24.7	17.2	7.0	7.4	6.9	8.5	11.7	13.1	8.1	7.9	9.4	8.9	8.9	9.5	9.3	9.3	8.4	8.5	11.0	12.9
02:00	14.0	11.7	13.6	11.4	13.3	10.8	11.2	11.1	16.4	14.7	18.7	25.3	16.0	6.8	7.6	6.8	8.4	12.1	12.7	8.2	7.7	9.6	9.0	8.8	9.5	9.2	9.3	8.4	8.5	11.0	13.7
03:00	14.1	11.8	13.8	11.2	13.5	10.5	11.5	10.9	16.2	15.1	18.9	25.8	15.2	6.5	7.7	6.7	8.4	12.2	12.4	8.5	7.5	9.7	9.1	8.8	9.5	9.2	9.2	8.4	8.5	10.9	14.3
04:00	14.3	11.8	14.1	10.8	13.6	10.3	11.8	10.7	16.1	15.4	19.1	26.1	14.3	6.3	7.8	6.6	8.7	12.2	12.2	8.7	7.3	9.9	9.2	8.7	9.5	9.2	9.2	8.4	8.5	10.9	14.9
05:00	14.5	11.9	14.3	10.5	13.7	10.2	12.0	10.5	16.1	15.7	19.4	26.4	13.3	6.2	7.9	6.6	8.8	12.1	12.1	8.8	7.1	10.1	9.1	8.7	9.4	9.1	9.2	8.4	8.5	10.9	15.2
06:00	14.7	11.9	14.6	10.2	13.8	10.1	12.2	10.4	16.0	16.0	19.7	26.5	12.5	6.1	8.1	6.6	8.8	12.1	12.1	8.8	6.9	10.3	9.1	8.8	9.3	9.1	9.1	8.4	8.6	10.9	15.0
07:00	14.9	11.9	14.6	10.1	13.7	10.2	12.4	10.4	15.8	16.3	20.1	26.2	11.7	6.2	8.2	6.6	8.6	12.3	12.0	8.8	6.8	10.5	9.0	8.9	9.3	9.1	9.0	8.4	8.6	10.8	15.0
08:00	15.1	11.9	14.6	10.2	13.6	10.1	12.4	10.4	15.7	16.5	21.1	25.1	11.4	6.3	8.3	6.7	8.5	12.4	12.1	8.7	6.8	10.5	9.1	8.9	9.3	9.2	8.9	8.4	8.6	10.9	14.9
09:00	15.1	12.0	14.6	10.3	13.5	10.0	12.5	10.5	15.9	16.5	21.8	24.4	11.1	6.3	8.4	6.9	8.4	12.6	11.9	8.7	7.0	10.3	9.1	8.9	9.3	9.2	8.9	8.4	8.7	11.0	14.7
10:00	15.1	12.2	14.5	10.4	13.3	10.0	12.6	10.5	16.0	16.6	22.4	23.8	10.8	6.3	8.4	7.1	8.4	12.6	11.8	8.6	7.1	10.2	9.2	8.9	9.3	9.2	8.8	8.4	8.7	11.1	14.9
11:00	14.9	12.4	14.3	10.6	13.0	10.1	12.5	10.6	16.1	16.6	22.9	23.2	10.4	6.3	8.3	7.4	8.3	12.7	11.7	8.4	7.2	10.1	9.2	9.0	9.4	9.1	8.8	8.5	8.7	11.0	15.2
12:00	14.7	12.6	14.1	10.8	12.8	10.1	12.6	10.8	16.1	16.8	23.2	22.8	10.1	6.3	8.2	7.7	8.2	13.0	11.5	8.3	7.5	9.9	9.2	9.1	9.3	9.1	8.7	8.6	8.9	10.9	15.6
13:00	14.5	12.7	13.8	11.0	12.6	10.1	12.6	11.1	15.9	16.9	23.4	22.5	9.7	6.3	8.2	7.8	8.3	13.1	11.2	8.2	7.7	9.7	9.3	9.2	9.3	9.1	8.7	8.6	9.1	10.9	15.7
14:00	14.2	12.8	13.6	11.2	12.4	10.1	12.6	11.4	15.8	17.2	23.4	22.4	9.3	6.4	8.1	8.1	8.2	13.4	10.7	8.3	8.5	8.9	9.3	9.2	9.3	9.2	8.6	8.7	9.3	10.9	15.6
15:00	14.0	12.9	13.3	11.4	12.2	10.2	12.6	11.6	15.8	17.4	23.5	22.2	9.0	6.4	8.0	8.4	8.2	13.6	10.3	8.3	8.6	8.8	9.3	9.3	9.3	9.2	8.6	8.7	9.6	10.9	15.6
16:00	13.8	12.8	13.2	11.6	12.1	10.1	12.6	12.0	15.6	17.6	23.5	22.0	8.7	6.3	7.9	8.4	8.6	13.6	10.0	8.4	8.7	8.8	9.4	9.3	9.3	9.2	8.7	8.6	9.9	10.9	15.6
17:00	13.6	12.8	13.0	11.8	11.9	10.1	12.6	12.6	15.4	17.7	23.5	21.7	8.5	6.3	7.8	8.4	8.9	13.6	9.7	8.4	8.8	8.7	9.4	9.3	9.4	9.2	8.7	8.6	10.1	11.0	15.6
18:00	13.3	12.8	13.0	11.9	11.9	10.1	12.5	13.3	15.0	17.8	23.5	21.4	8.3	6.4	7.7	8.4	9.3	13.7	9.4	8.3	8.9	8.6	9.4	9.4	9.4	9.2	8.6	8.6	10.3	11.2	15.5
19:00	12.3	12.9	12.9	12.0	11.8	10.1	12.4	13.7	15.0	17.9	23.6	21.0	8.1	6.4	7.6	8.5	9.7	13.6	9.1	8.3	9.0	8.6	9.4	9.4	9.4	9.2	8.6	8.6	10.5	11.3	15.6
20:00	11.9	13.0	12.8	12.1	11.8	10.1	12.2	14.1	14.8	18.0	23.8	20.5	7.8	6.6	7.5	8.5	10.0	13.6	8.9	8.2	9.1	8.6	9.3	9.4	9.4	9.2	8.6	8.6	10.7	11.3	15.7
21:00	11.7	13.1	12.6	12.3	11.8	10.0	12.1	14.8	14.5	18.1	24.0	19.9	7.6	6.7	7.4	8.5	10.4	13.6	8.6	8.2	9.1	8.6	9.2	9.5	9.3	9.2	8.5	8.6	11.0	11.3	15.8
22:00	11.6	13.3	12.4	12.5	11.8	10.0	12.0	15.6	14.1	18.2	24.2	19.2	7.5	6.9	7.2	8.4	10.7	13.6	8.4	8.1	9.3	8.7	9.1	9.5	9.3	9.3	8.5	8.6	11.1	11.6	15.8
23:00	11.5	13.4	12.2	12.7	11.6	10.2	11.7	16.3	13.8	18.2	24.3	18.6	7.3	7.0	7.1	8.4	11.1	13.5	8.3	8.1	9.4	8.7	9.0	9.5	9.3	9.3	8.5	8.6	11.2	11.9	15.8

Remark: Limit Level: 100µg/m³

The data in underlined and bold form indicate Limit Level exceedance

Appendix H1 - Air Quality Monitoring Results

Parameter: 24-hour FSP (rolling average) (µg/m^3)

Location: SMA_AM02

Hour	May 2026																														
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
00:00	7.8	6.9	8.6	7.6	6.9	6.7	6.1	7.1	12.9	9.5	12.9	19.9	15.4	5.2	5.0	4.2	5.2	7.2	8.8	5.0	5.8	6.7	7.1	7.8	8.3	7.8	7.5	6.8	6.8	9.3	10.7
01:00	7.9	7.0	8.7	7.4	7.1	6.4	6.4	7.0	12.8	9.8	13.1	20.3	14.7	5.1	5.1	4.0	5.3	7.4	8.7	5.0	5.7	6.7	7.2	7.7	8.3	7.8	7.5	6.7	6.8	9.3	11.2
02:00	8.0	7.0	8.8	7.1	7.3	6.1	6.7	6.9	12.7	10.0	13.2	21.1	13.6	4.9	5.2	3.9	5.3	7.7	8.5	5.2	5.5	6.9	7.4	7.6	8.3	7.8	7.5	6.7	6.7	9.2	11.9
03:00	8.1	7.1	8.9	6.8	7.5	5.9	6.9	6.8	12.7	10.3	13.4	21.6	12.8	4.6	5.2	3.9	5.3	7.8	8.2	5.4	5.3	6.9	7.6	7.6	8.2	7.7	7.4	6.7	6.7	9.2	12.5
04:00	8.3	7.1	9.2	6.5	7.6	5.8	7.2	6.6	12.6	10.6	13.6	22.0	12.0	4.5	5.2	3.8	5.4	7.8	8.1	5.6	5.1	7.0	7.8	7.6	8.2	7.7	7.4	6.7	6.7	9.2	13.1
05:00	8.4	7.2	9.4	6.2	7.6	5.8	7.4	6.5	12.6	10.7	13.8	22.4	11.1	4.5	5.2	3.9	5.5	7.8	8.1	5.7	4.8	7.2	7.8	7.6	8.2	7.7	7.4	6.7	6.7	9.2	13.3
06:00	8.5	7.3	9.6	5.8	7.7	5.7	7.6	6.4	12.6	10.9	14.1	22.6	10.3	4.5	5.2	3.9	5.4	7.9	8.0	5.8	4.6	7.4	7.9	7.7	8.1	7.6	7.3	6.7	6.7	9.2	13.2
07:00	8.6	7.3	9.7	5.7	7.7	5.7	7.7	6.4	12.5	11.1	14.5	22.5	9.7	4.5	5.3	4.0	5.3	8.0	8.0	5.8	4.5	7.6	7.9	7.7	8.1	7.6	7.3	6.7	6.8	9.1	13.1
08:00	8.7	7.3	9.7	5.6	7.7	5.7	7.8	6.4	12.4	11.2	15.4	21.7	9.4	4.6	5.3	4.0	5.3	8.1	8.0	5.7	4.5	7.6	7.9	7.8	8.0	7.6	7.2	6.7	6.8	9.2	13
09:00	8.8	7.4	9.7	5.5	7.6	5.7	7.8	6.5	12.5	11.2	16.1	21.0	9.1	4.6	5.4	4.0	5.2	8.2	7.9	5.7	4.7	7.6	8.0	7.8	8.1	7.5	7.1	6.7	6.8	9.3	12.9
10:00	8.8	7.5	9.7	5.5	7.5	5.7	7.9	6.6	12.5	11.3	16.7	20.5	8.8	4.6	5.3	4.2	5.2	8.2	7.9	5.6	4.7	7.6	8.0	7.8	8.1	7.5	7.1	6.7	6.8	9.4	13
11:00	8.8	7.7	9.7	5.5	7.4	5.7	7.9	6.7	12.6	11.3	17.3	20.0	8.4	4.6	5.3	4.4	5.1	8.3	7.8	5.6	4.9	7.6	8.1	7.8	8.1	7.5	7.0	6.8	6.8	9.4	13.2
12:00	8.7	7.8	9.6	5.5	7.3	5.8	7.9	6.9	12.5	11.5	17.7	19.6	8.1	4.7	5.2	4.5	5.0	8.5	7.6	5.5	5.1	7.4	8.1	7.9	8.1	7.4	7.0	6.9	7.0	9.3	13.5
13:00	8.6	7.9	9.3	5.6	7.2	5.8	8.0	7.2	12.3	11.6	18.0	19.4	7.7	4.7	5.2	4.7	5.1	8.6	7.4	5.6	5.2	7.3	8.1	8.0	8.0	7.4	7.0	7.0	7.2	9.3	13.5
14:00	8.5	7.9	9.2	5.7	7.1	5.8	8.0	7.5	12.2	11.8	18.1	19.3	7.3	4.7	5.1	4.8	5.1	8.7	7.1	5.7	5.7	6.9	8.2	8.1	8.0	7.4	6.9	7.0	7.5	9.4	13.3
15:00	8.4	7.9	9.0	5.8	7.0	5.9	7.9	7.7	12.1	12.0	18.3	19.1	6.9	4.7	5.0	5.1	5.1	8.8	6.8	5.8	5.7	6.8	8.2	8.1	8.0	7.4	6.9	7.0	7.8	9.4	13.2
16:00	8.3	7.9	8.8	5.9	7.0	5.9	7.9	8.2	11.9	12.2	18.3	19.0	6.6	4.7	4.9	5.1	5.3	8.9	6.5	5.9	5.8	6.7	8.3	8.1	8.0	7.4	7.0	6.9	8.1	9.4	13.2
17:00	8.2	7.9	8.7	6.1	6.8	5.9	7.9	8.7	11.6	12.3	18.4	18.8	6.4	4.7	4.8	5.1	5.6	8.9	6.3	6.0	5.9	6.7	8.3	8.2	8.0	7.4	6.9	6.9	8.3	9.5	13.1
18:00	8.0	8.0	8.6	6.2	6.8	5.9	7.9	9.5	11.1	12.4	18.4	18.6	6.2	4.7	4.7	5.1	5.8	9.0	6.0	6.0	6.0	6.6	8.2	8.2	8.0	7.4	6.9	6.8	8.5	9.6	13
19:00	7.3	8.0	8.5	6.3	6.8	5.9	7.7	9.8	11.0	12.6	18.6	18.2	6.0	4.7	4.6	5.2	6.1	9.0	5.8	6.0	6.1	6.6	8.2	8.3	8.0	7.4	6.9	6.8	8.7	9.7	12.9
20:00	7.0	8.2	8.4	6.3	6.8	6.0	7.6	10.4	10.7	12.7	18.8	17.8	5.7	4.8	4.5	5.2	6.3	9.0	5.6	6.0	6.3	6.6	8.2	8.3	8.0	7.4	6.9	6.8	8.9	9.7	12.9
21:00	6.8	8.3	8.2	6.4	6.8	5.9	7.5	11.1	10.3	12.8	19.2	17.2	5.6	4.8	4.4	5.1	6.5	9.0	5.4	6.0	6.4	6.7	8.1	8.3	7.9	7.4	6.9	6.8	9.2	9.7	12.9
22:00	6.7	8.5	8.0	6.6	6.9	5.8	7.4	11.8	9.9	12.8	19.5	16.5	5.5	4.9	4.4	5.1	6.8	9.0	5.2	5.9	6.5	6.8	8.0	8.3	7.9	7.5	6.8	6.8	9.3	9.9	12.8
23:00	6.7	8.6	7.8	6.8	6.8	6.0	7.3	12.6	9.5	12.8	19.7	16.0	5.4	4.9	4.3	5.2	7.0	8.9	5.1	5.9	6.7	6.9	7.9	8.3	7.9	7.5	6.8	6.8	9.4	10.2	12.7

Remark: Limit Level: 50µg/m^3

The data in underlined and bold form indicate Limit Level exceedance

Appendix H2 - Construction Noise Monitoring Results

Location: NM2 - Tower 8B, Park Yoho

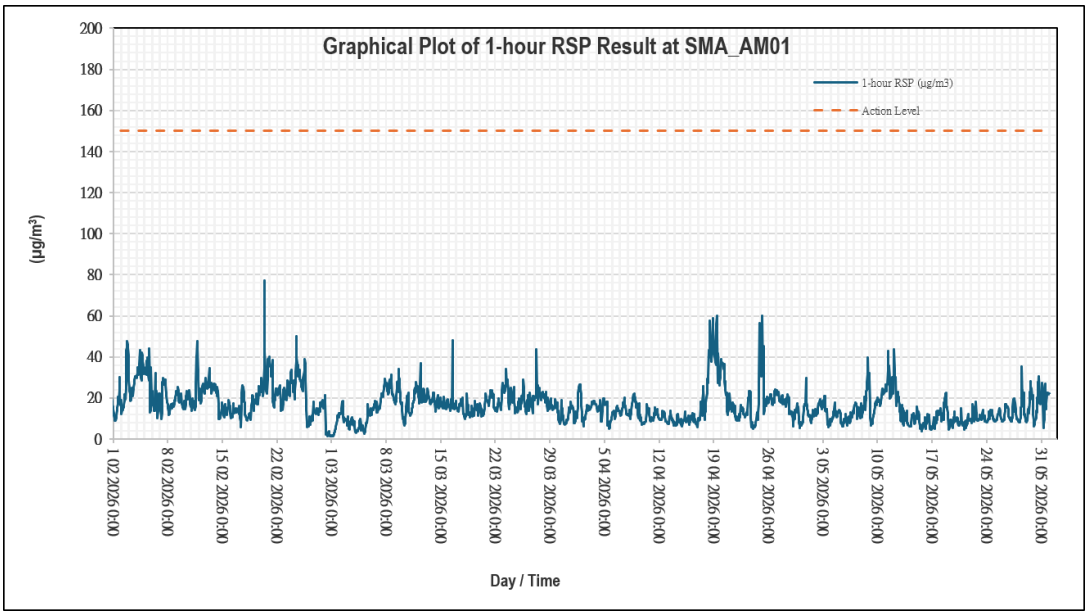
Date	Weather	Time	Measure Level Unit: dB(A) (5-mins)			$L_{eq(30min)}$ dB(A)	Limit Level dB(A)
			L_{eq}	L_{10}	L_{90}		
8-May-2026	Cloudy	10:38	68.3	69.3	65.8	69.5	75
		10:43	68.2	69.4	65.7		
		10:48	69.1	70.4	67.3		
		10:53	70.3	71.9	68.3		
		10:58	70.1	72.1	66.2		
		11:03	70.2	71.5	68.9		
14-May-2026	Cloudy	13:47	70.3	71.1	69.3	70.6	75
		13:52	70.4	71.3	69.4		
		13:57	70.3	71.6	68.6		
		14:02	70.8	71.6	70.0		
		14:07	71.0	71.9	69.2		
		14:12	70.6	71.8	69.1		
20-May-2026	Cloudy	13:17	71.5	73.2	70.1	71.3	75
		13:22	72.0	73.9	70.0		
		13:27	71.7	73.9	69.0		
		13:32	70.2	71.3	65.9		
		13:37	70.5	71.4	69.4		
		13:42	71.4	72.8	68.2		
27-May-2026	Fine	15:33	73.7	74.2	72.1	73.8	75
		15:38	73.5	74.2	72.7		
		15:43	74.8	76.0	73.2		
		15:48	73.4	74.1	72.4		
		15:53	72.9	73.8	71.7		
		15:58	74.1	75.2	72.7		

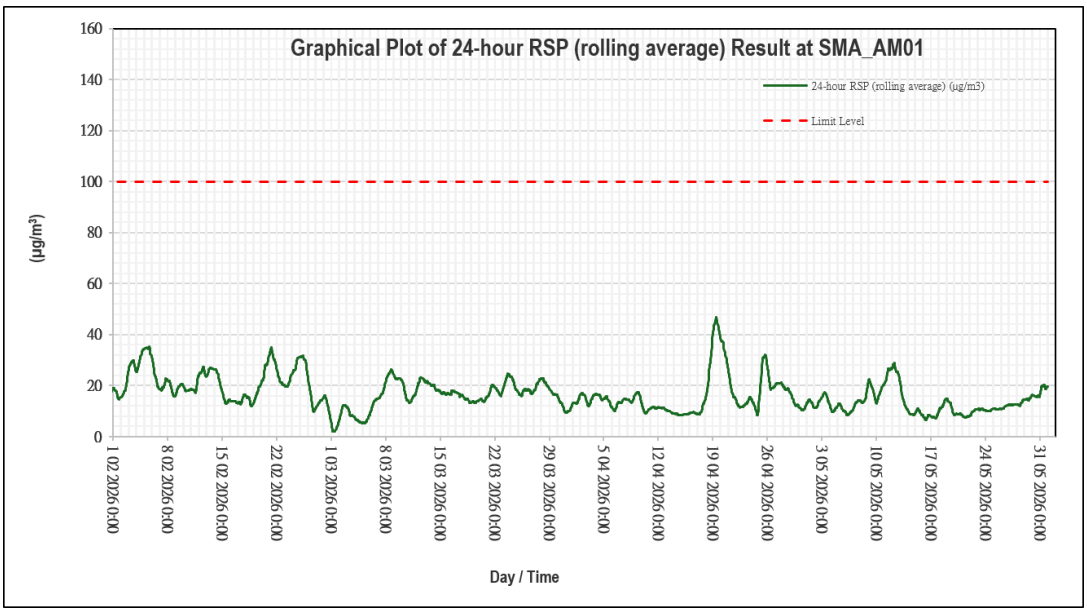
Appendix I

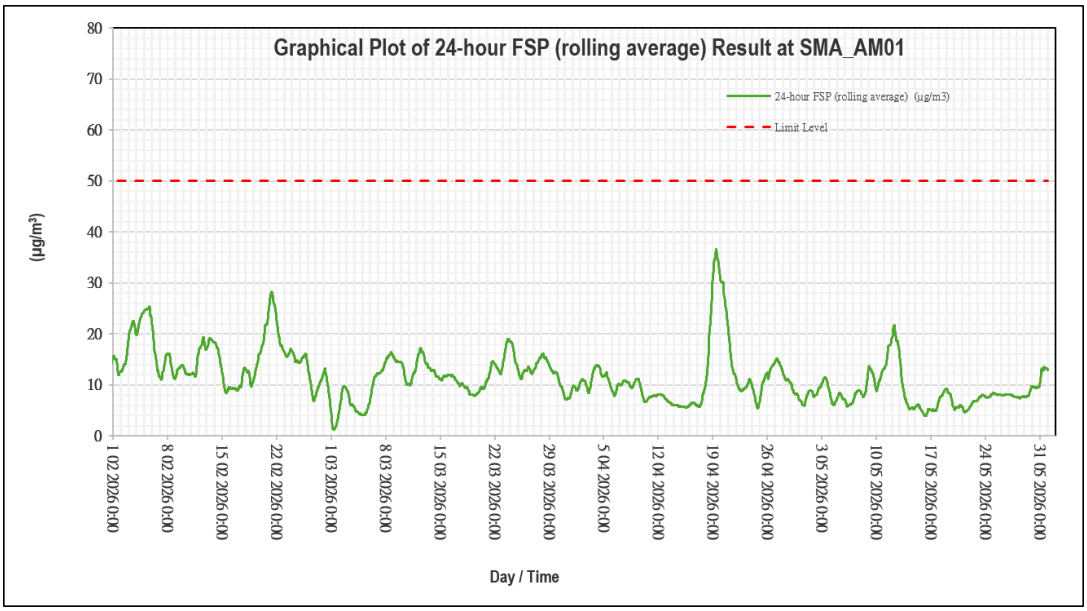
Graphical Plots for Monitoring Result

1. **Air Quality**
2. **Construction Noise**

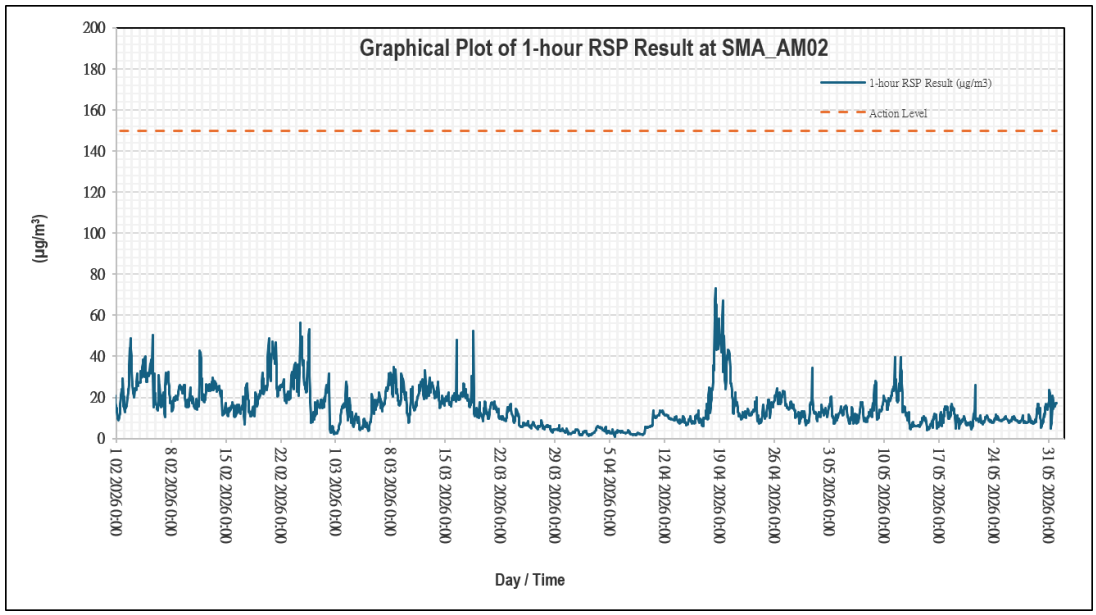
Appendix I1 - Graphical Plots for Air Quality Monitoring Result – SMA_AM01

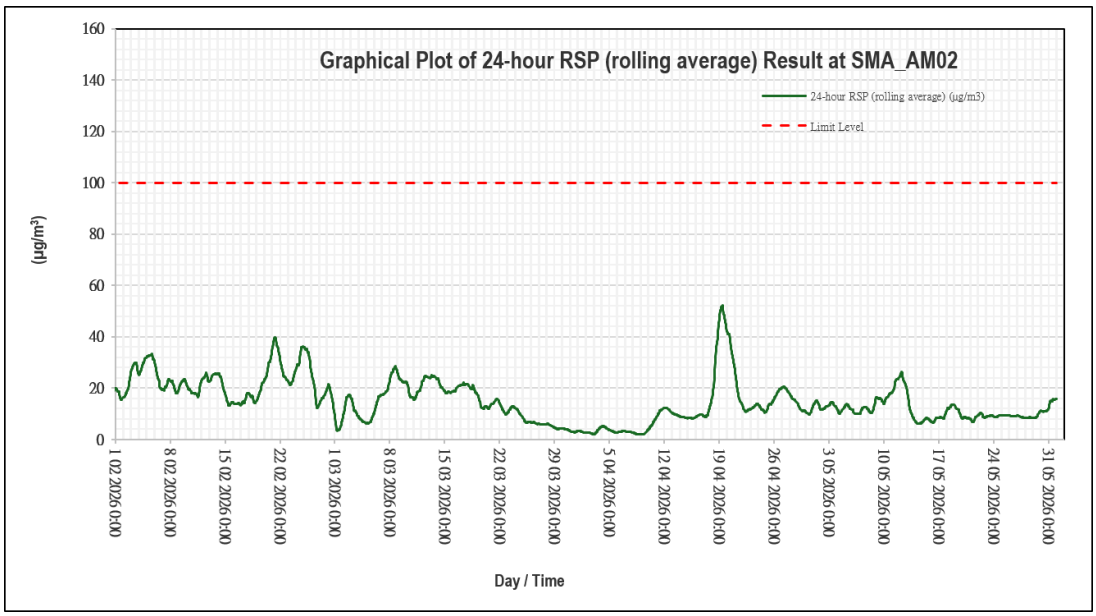


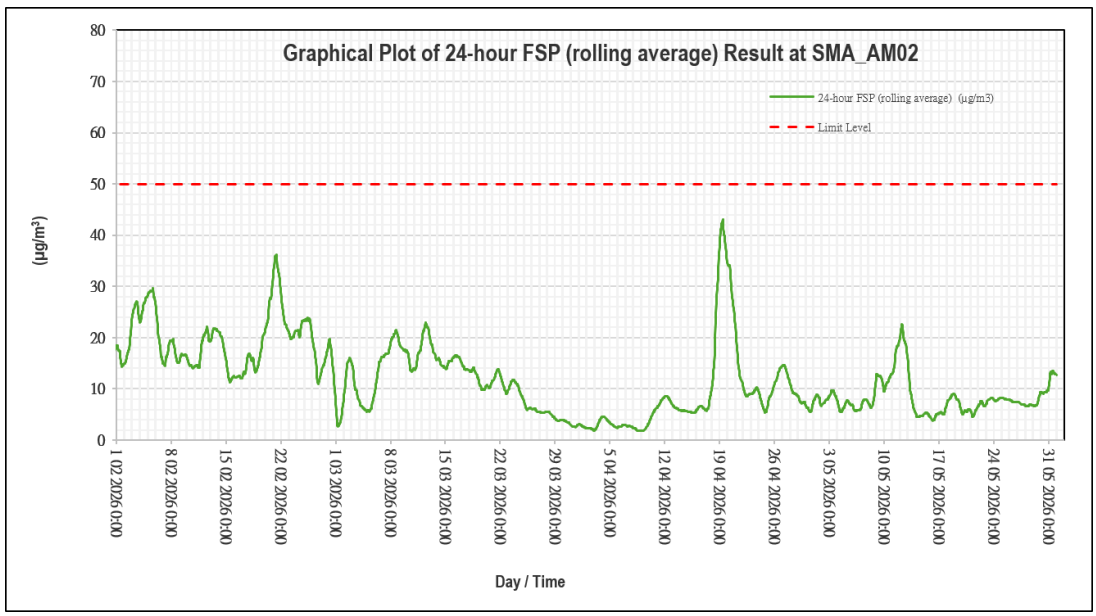




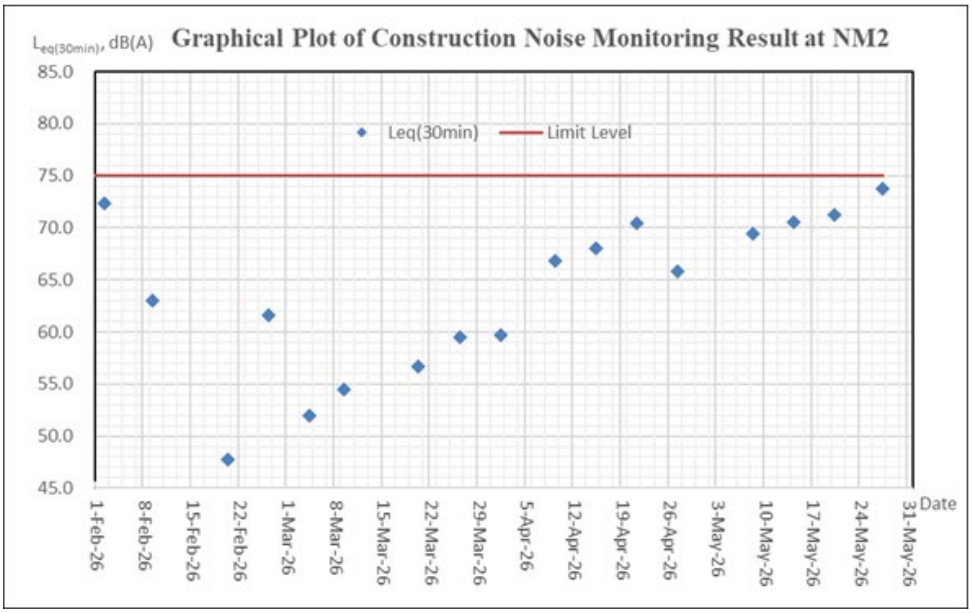
Appendix I1 - Graphical Plots for Air Quality Monitoring Result - SMA_AM02





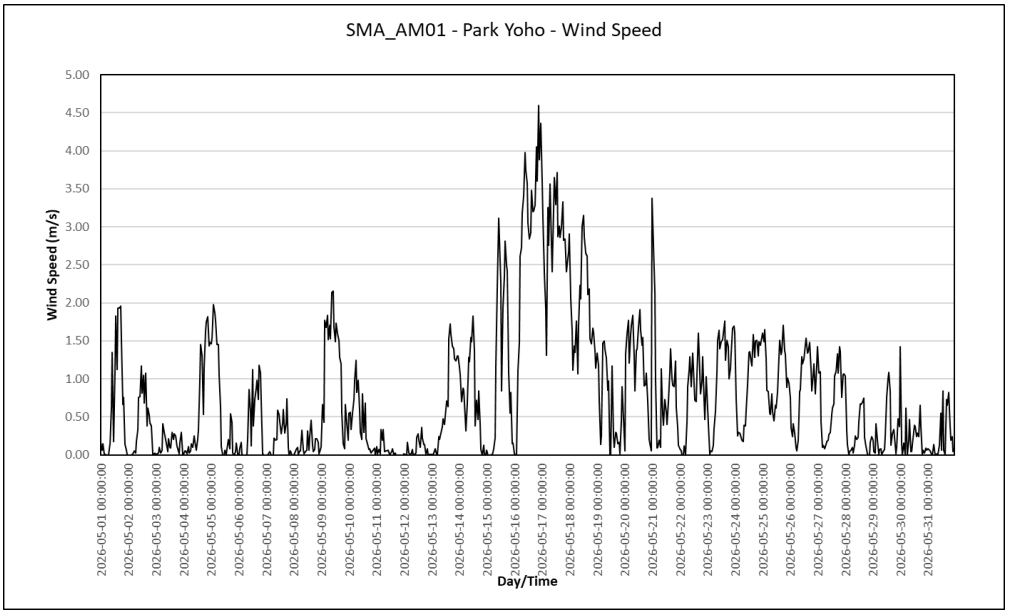


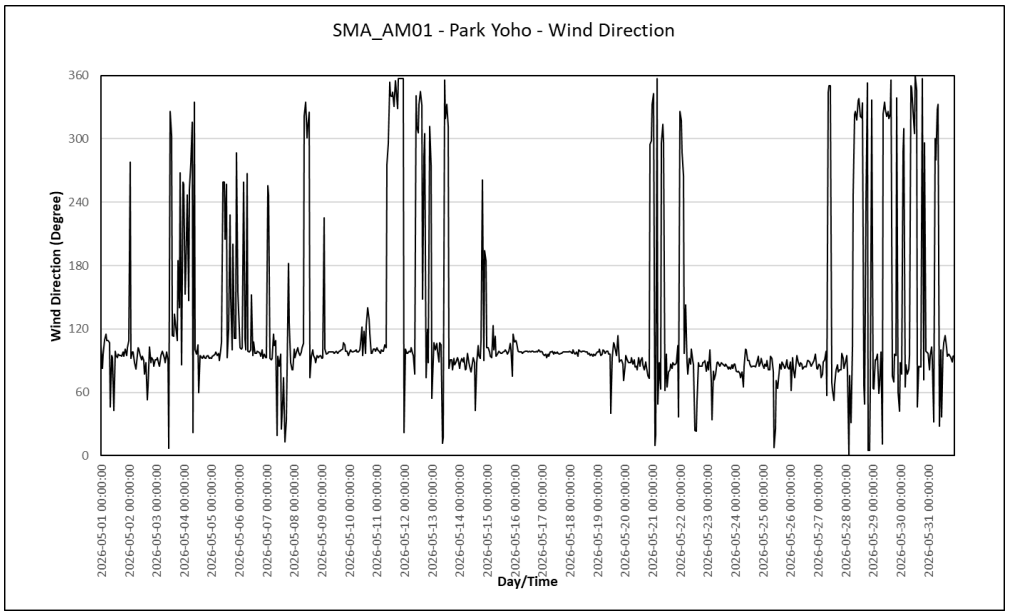
Appendix I2 - Graphical Plots for Construction Noise Monitoring Results

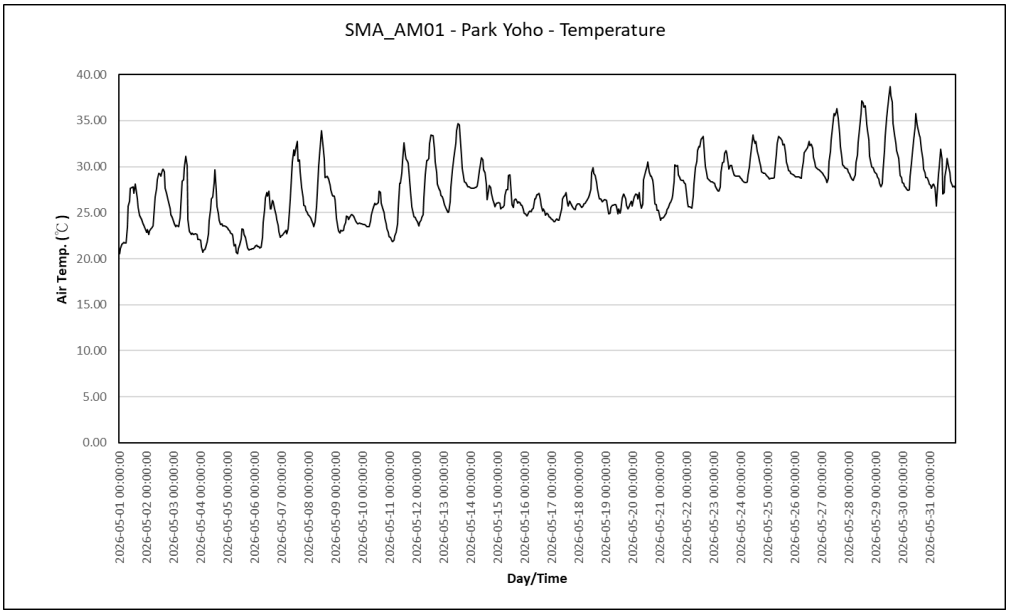


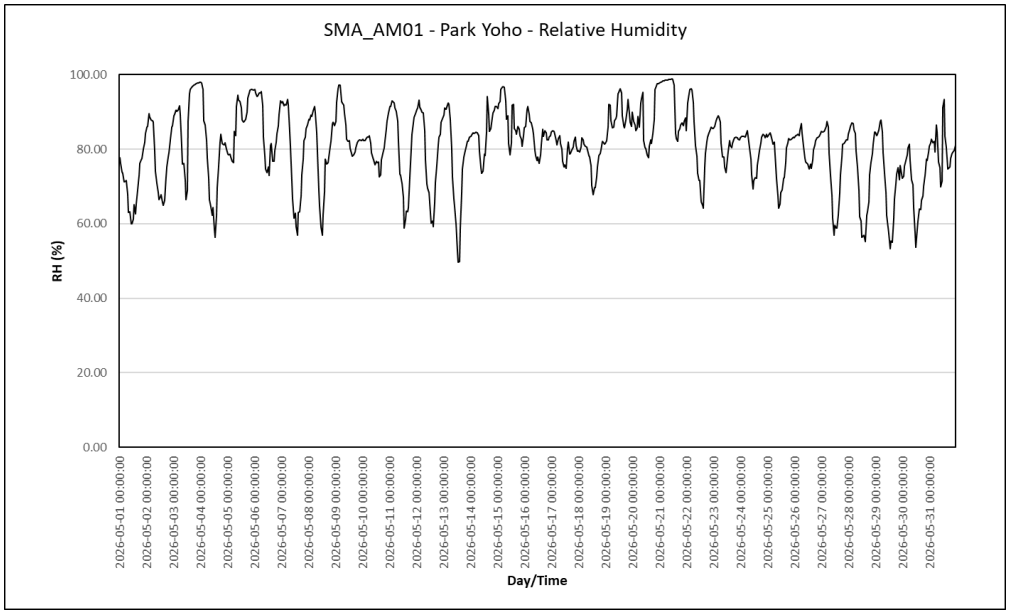
Appendix J

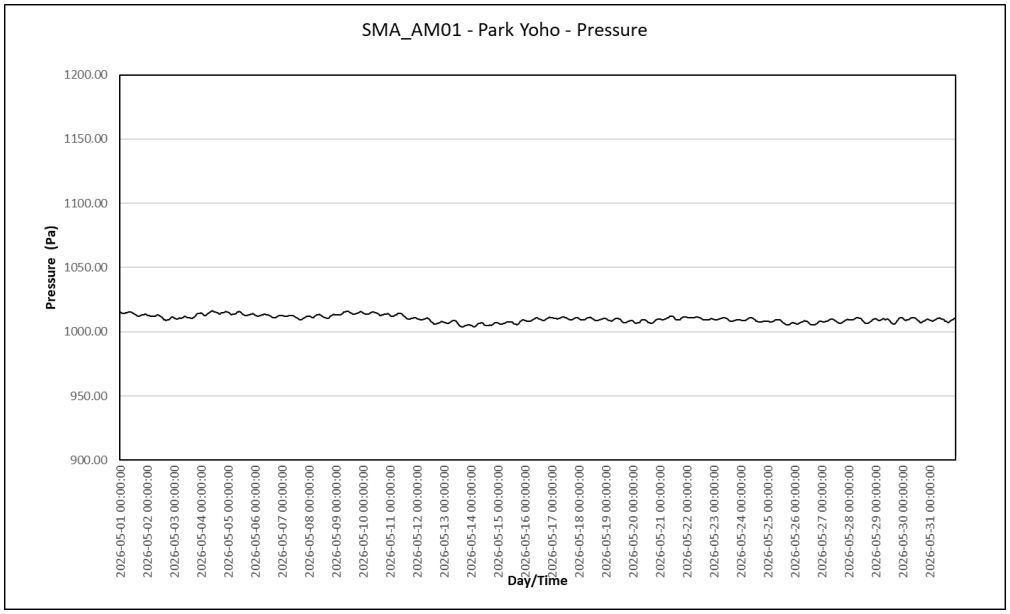
Meteorological Data

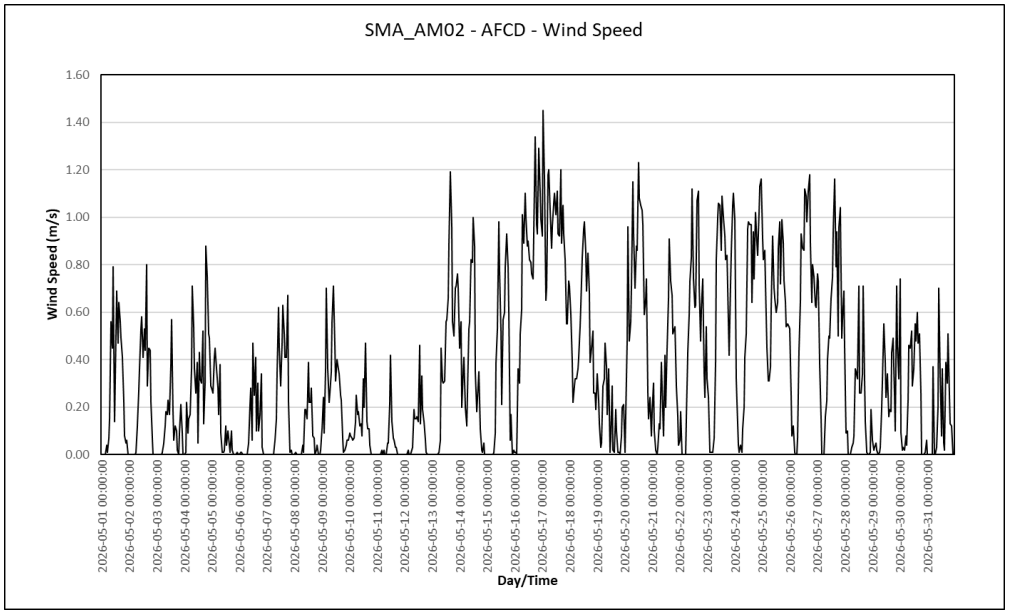

SMA_AM01 - Park Yoho - Wind Speed
Wind Speed (m/s)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
2026-05-01 00:00:00
2026-05-02 00:00:00
2026-05-03 00:00:00
2026-05-04 00:00:00
2026-05-05 00:00:00
2026-05-06 00:00:00
2026-05-07 00:00:00
2026-05-08 00:00:00
2026-05-09 00:00:00
2026-05-10 00:00:00
2026-05-11 00:00:00
2026-05-12 00:00:00
2026-05-13 00:00:00
2026-05-14 00:00:00
2026-05-15 00:00:00
2026-05-16 00:00:00
2026-05-17 00:00:00
2026-05-18 00:00:00
2026-05-19 00:00:00
2026-05-20 00:00:00
2026-05-21 00:00:00
2026-05-22 00:00:00
2026-05-23 00:00:00
2026-05-24 00:00:00
2026-05-25 00:00:00
2026-05-26 00:00:00
2026-05-27 00:00:00
2026-05-28 00:00:00
2026-05-29 00:00:00
2026-05-30 00:00:00
2026-05-31 00:00:00
Day/Time

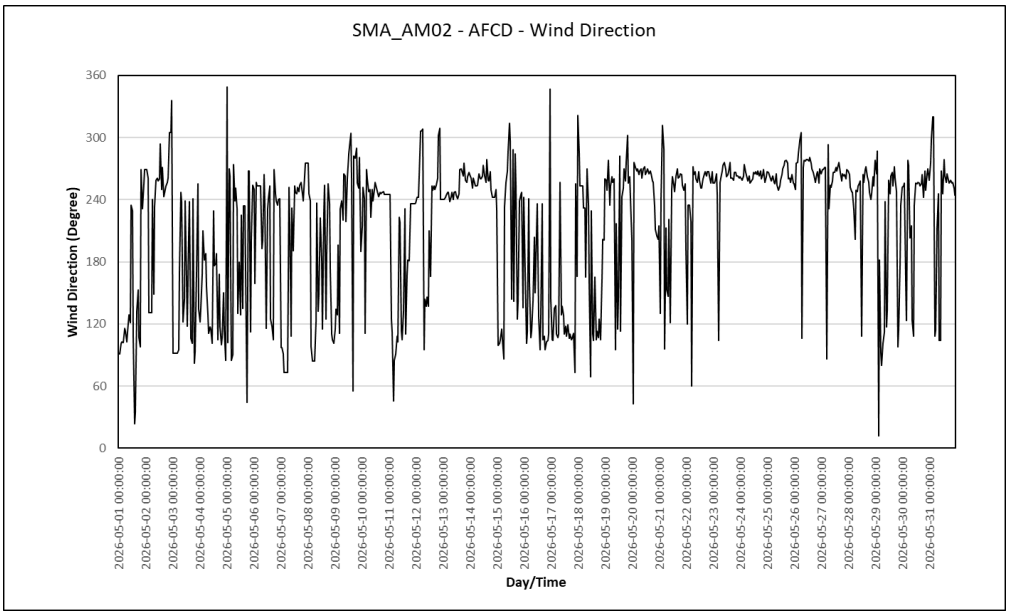

SMA_AM01 - Park Yoho - Wind Direction
Wind Direction (Degree)
360
300
240
180
120
60
0
2026-05-01 00:00:00
2026-05-02 00:00:00
2026-05-03 00:00:00
2026-05-04 00:00:00
2026-05-05 00:00:00
2026-05-06 00:00:00
2026-05-07 00:00:00
2026-05-08 00:00:00
2026-05-09 00:00:00
2026-05-10 00:00:00
2026-05-11 00:00:00
2026-05-12 00:00:00
2026-05-13 00:00:00
2026-05-14 00:00:00
2026-05-15 00:00:00
2026-05-16 00:00:00
2026-05-17 00:00:00
2026-05-18 00:00:00
2026-05-19 00:00:00
2026-05-20 00:00:00
2026-05-21 00:00:00
2026-05-22 00:00:00
2026-05-23 00:00:00
2026-05-24 00:00:00
2026-05-25 00:00:00
2026-05-26 00:00:00
2026-05-27 00:00:00
2026-05-28 00:00:00
2026-05-29 00:00:00
2026-05-30 00:00:00
2026-05-31 00:00:00
Day/Time

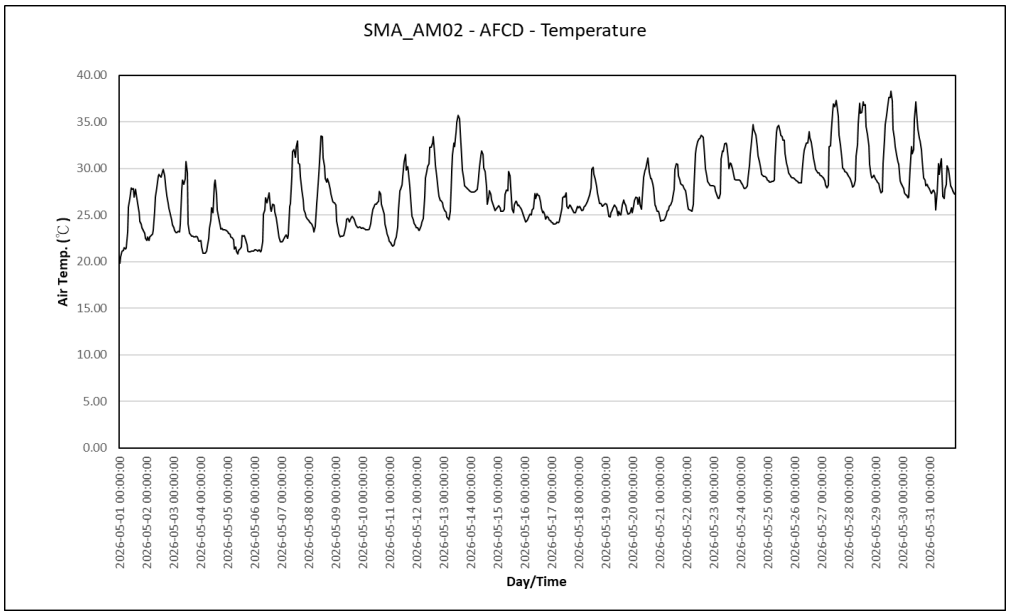

SMA_AM01 - Park Yoho - Temperature
Air Temp. (℃)
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
2026-05-01 00:00:00
2026-05-02 00:00:00
2026-05-03 00:00:00
2026-05-04 00:00:00
2026-05-05 00:00:00
2026-05-06 00:00:00
2026-05-07 00:00:00
2026-05-08 00:00:00
2026-05-09 00:00:00
2026-05-10 00:00:00
2026-05-11 00:00:00
2026-05-12 00:00:00
2026-05-13 00:00:00
2026-05-14 00:00:00
2026-05-15 00:00:00
2026-05-16 00:00:00
2026-05-17 00:00:00
2026-05-18 00:00:00
2026-05-19 00:00:00
2026-05-20 00:00:00
2026-05-21 00:00:00
2026-05-22 00:00:00
2026-05-23 00:00:00
2026-05-24 00:00:00
2026-05-25 00:00:00
2026-05-26 00:00:00
2026-05-27 00:00:00
2026-05-28 00:00:00
2026-05-29 00:00:00
2026-05-30 00:00:00
2026-05-31 00:00:00
Day/Time

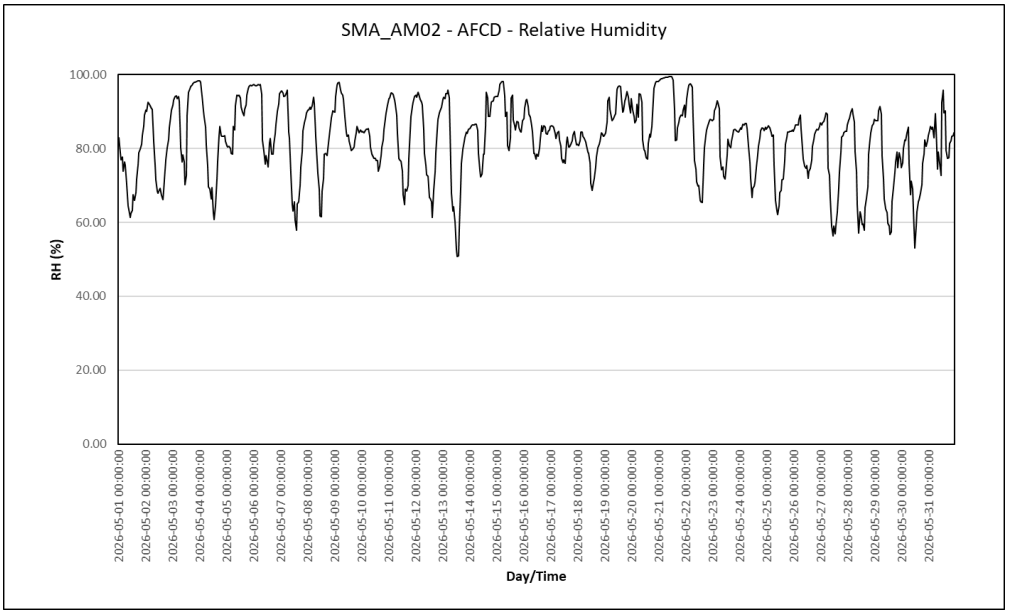

SMA_AM01 - Park Yoho - Relative Humidity
RH (%)
100.00
80.00
60.00
40.00
20.00
0.00
Day/Time

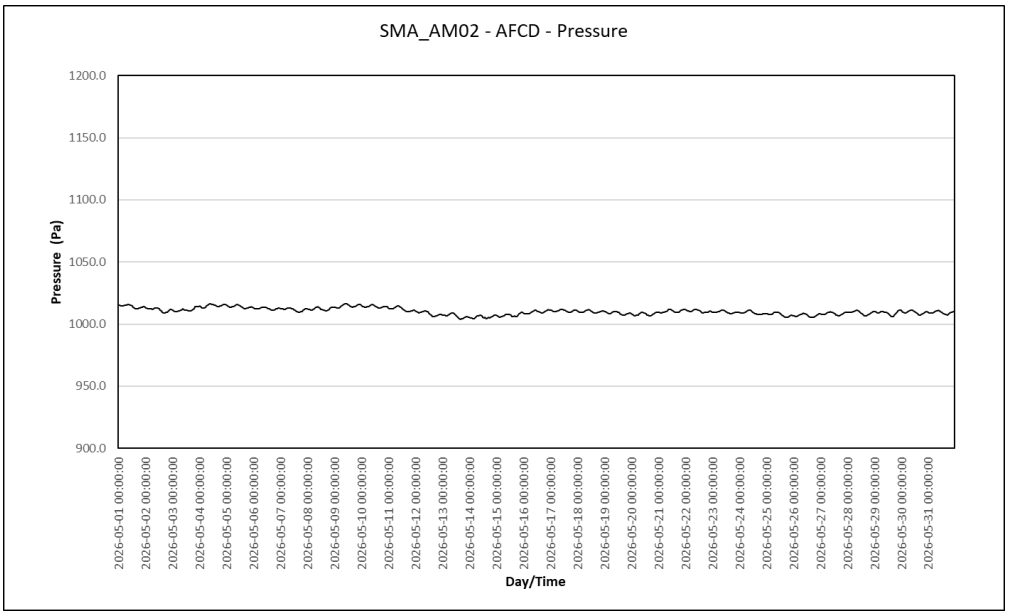

SMA_AM01 - Park Yoho - Pressure
Pressure (Pa)
1200.00
1150.00
1100.00
1050.00
1000.00
950.00
900.00
Day/Time


SMA_AM02 - AFCD - Wind Speed
Wind Speed (m/s)
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
2026-05-01 00:00:00
2026-05-02 00:00:00
2026-05-03 00:00:00
2026-05-04 00:00:00
2026-05-05 00:00:00
2026-05-06 00:00:00
2026-05-07 00:00:00
2026-05-08 00:00:00
2026-05-09 00:00:00
2026-05-10 00:00:00
2026-05-11 00:00:00
2026-05-12 00:00:00
2026-05-13 00:00:00
2026-05-14 00:00:00
2026-05-15 00:00:00
2026-05-16 00:00:00
2026-05-17 00:00:00
2026-05-18 00:00:00
2026-05-19 00:00:00
2026-05-20 00:00:00
2026-05-21 00:00:00
2026-05-22 00:00:00
2026-05-23 00:00:00
2026-05-24 00:00:00
2026-05-25 00:00:00
2026-05-26 00:00:00
2026-05-27 00:00:00
2026-05-28 00:00:00
2026-05-29 00:00:00
2026-05-30 00:00:00
2026-05-31 00:00:00
Day/Time


SMA_AM02 - AFCD - Wind Direction
Wind Direction (Degree)
360
300
240
180
120
60
0
2026-05-01 00:00:00
2026-05-02 00:00:00
2026-05-03 00:00:00
2026-05-04 00:00:00
2026-05-05 00:00:00
2026-05-06 00:00:00
2026-05-07 00:00:00
2026-05-08 00:00:00
2026-05-09 00:00:00
2026-05-10 00:00:00
2026-05-11 00:00:00
2026-05-12 00:00:00
2026-05-13 00:00:00
2026-05-14 00:00:00
2026-05-15 00:00:00
2026-05-16 00:00:00
2026-05-17 00:00:00
2026-05-18 00:00:00
2026-05-19 00:00:00
2026-05-20 00:00:00
2026-05-21 00:00:00
2026-05-22 00:00:00
2026-05-23 00:00:00
2026-05-24 00:00:00
2026-05-25 00:00:00
2026-05-26 00:00:00
2026-05-27 00:00:00
2026-05-28 00:00:00
2026-05-29 00:00:00
2026-05-30 00:00:00
2026-05-31 00:00:00
Day/Time


SMA_AM02 - AFCD - Temperature
Air Temp. (℃)
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
2026-05-01 00:00:00
2026-05-02 00:00:00
2026-05-03 00:00:00
2026-05-04 00:00:00
2026-05-05 00:00:00
2026-05-06 00:00:00
2026-05-07 00:00:00
2026-05-08 00:00:00
2026-05-09 00:00:00
2026-05-10 00:00:00
2026-05-11 00:00:00
2026-05-12 00:00:00
2026-05-13 00:00:00
2026-05-14 00:00:00
2026-05-15 00:00:00
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2026-05-18 00:00:00
2026-05-19 00:00:00
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2026-05-22 00:00:00
2026-05-23 00:00:00
2026-05-24 00:00:00
2026-05-25 00:00:00
2026-05-26 00:00:00
2026-05-27 00:00:00
2026-05-28 00:00:00
2026-05-29 00:00:00
2026-05-30 00:00:00
2026-05-31 00:00:00
Day/Time


SMA_AM02 - AFCD - Relative Humidity
RH (%)
100.00
80.00
60.00
40.00
20.00
0.00
2026-05-01 00:00:00
2026-05-02 00:00:00
2026-05-03 00:00:00
2026-05-04 00:00:00
2026-05-05 00:00:00
2026-05-06 00:00:00
2026-05-07 00:00:00
2026-05-08 00:00:00
2026-05-09 00:00:00
2026-05-10 00:00:00
2026-05-11 00:00:00
2026-05-12 00:00:00
2026-05-13 00:00:00
2026-05-14 00:00:00
2026-05-15 00:00:00
2026-05-16 00:00:00
2026-05-17 00:00:00
2026-05-18 00:00:00
2026-05-19 00:00:00
2026-05-20 00:00:00
2026-05-21 00:00:00
2026-05-22 00:00:00
2026-05-23 00:00:00
2026-05-24 00:00:00
2026-05-25 00:00:00
2026-05-26 00:00:00
2026-05-27 00:00:00
2026-05-28 00:00:00
2026-05-29 00:00:00
2026-05-30 00:00:00
2026-05-31 00:00:00
Day/Time


SMA_AM02 - AFCD - Pressure
Pressure (Pa)
1200.0
1150.0
1100.0
1050.0
1000.0
950.0
900.0
2026-05-01 00:00:00
2026-05-02 00:00:00
2026-05-03 00:00:00
2026-05-04 00:00:00
2026-05-05 00:00:00
2026-05-06 00:00:00
2026-05-07 00:00:00
2026-05-08 00:00:00
2026-05-09 00:00:00
2026-05-10 00:00:00
2026-05-11 00:00:00
2026-05-12 00:00:00
2026-05-13 00:00:00
2026-05-14 00:00:00
2026-05-15 00:00:00
2026-05-16 00:00:00
2026-05-17 00:00:00
2026-05-18 00:00:00
2026-05-19 00:00:00
2026-05-20 00:00:00
2026-05-21 00:00:00
2026-05-22 00:00:00
2026-05-23 00:00:00
2026-05-24 00:00:00
2026-05-25 00:00:00
2026-05-26 00:00:00
2026-05-27 00:00:00
2026-05-28 00:00:00
2026-05-29 00:00:00
2026-05-30 00:00:00
2026-05-31 00:00:00
Day/Time

Appendix K

Waste Flow Table

Monthly Summary Waste Flow Table for 2026 (year)

Name of Person completing the record: Ping Chan (EO)

Project : Contract 1635 - NOL Works Package 1

Month	Total Quantity Generated (a) (see Note 1)	Actual Quantities of Inert C&D Materials Generated				Imported Fill (f) (see Note 4)	Actual Quantities of Non-inert C&D Materials Generated Monthly					
		Hard Rock and Large Broken Concrete (b)	Reused in the Contract (c)	Reused in other Projects (d) (see Note 2)	Disposed as Public Fill (e) (See Note 3)		Metals (g)	Paper/ cardboard packaging (h)	Plastics (i) (see Note 5)	Chemical Waste (j)	Others, e.g. general refuse (k) (see Note 6)	Yard Waste (l) (see Note 7)
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
Jan	6834.592	0.000	0.000	2065.000	4749.520	0.000	1.642	0.003	0.007	0.000	18.420	0.000
Feb	590.380	0.000	0.000	0.000	583.610	0.000	0.000	0.000	0.000	0.000	6.770	0.000
Mar	488.110	0.000	0.000	0.000	478.700	508.810	0.000	0.000	0.000	0.000	9.410	0.000
Apr	3987.640	0.000	0.000	0.000	3980.170	70.380	0.001	0.036	0.003	0.000	7.430	0.000
May	6654.070	0.000	0.000	1010.520	5630.030	14.700	0.000	0.000	0.000	0.000	13.520	0.000
Jun												
Sub-total	18554.792	0.000	0.000	3075.520	15422.030	593.890	1.643	0.039	0.010	0.000	55.550	0.000
Jul												
Aug												
Sep												
Oct												
Nov												
Dec												
Total	18554.792	0.000	0.000	3075.520	15422.030	593.890	1.643	0.039	0.010	0.000	55.550	0.000

Year	Total Quantity Generated (a) (see Note 1)	Actual Quantities of Inert C&D Materials Generated Yearly				Imported Fill (f) (see Note 4)	Actual Quantities of Non-inert C&D Wastes Generated Yearly					
		Hard Rock and Large Broken Concrete (b)	Reused in the Contract (c)	Reused in other Projects (d) (see Note 2)	Disposed as Public Fill (e) (See Note 3)		Metals (g)	Paper/ cardboard packaging (h)	Plastics (i) (see Note 5)	Chemical Waste (j)	Others, e.g. general refuse (k) (see Note 6)	Yard Waste (l) (see Note 7)
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
2025	19836.011	0.000	0.000	8815.690	10673.930	0.000	3.372	0.007	0.002	0.000	343.010	0.000
2026	18554.792	0.000	0.000	3075.520	15422.030	593.890	1.643	0.039	0.010	0.000	55.550	0.000
Cumulative	38390.803	0.000	0.000	11891.210	26095.960	593.890	5.015	0.046	0.012	0.000	398.560	0.000

Note:

1. Total Quantity Generated refers to gross C&D Materials generated in the reporting month, which (a) = (b) + (c) + (d) + (e) + (g) + (h) + (i) + (j) + (k) + (l).
2. This includes delivery to listed recyclers for Construction and Demolition (C&D) Materials recognized by EPD.
3. This includes Tuen Mun Area 38 Fill Bank and Tseung Kwan O Area 137 Fill Bank.
4. The waste flow table shall also include C&D materials that are specified in the contract to be imported for use at the site.
5. Plastic refers to plastic bottle/ containers, plastic sheets/ foam from packaging material.
6. This includes NENT Landfill and WENT Landfill.
7. This includes Yard Waste Recycling Centre "Y · PARK"
8. All values are round off to the third decimal places.

Appendix L

Environmental Complaints Log

Environmental Complaint Log

Log ref.	Date of Complaint	Complaint Route	Complaint Nature	Investigation finding	Status
01	25 Aug 2025	Referred by EPD	Dust	Non-project related.	IR submitted to EPD.
02	27 Aug 2025	Referred by EPD	Dust	Project-related. The Contractor will set up more water spraying points in advance of any dusty activities in the upcoming construction phase of the project.	IR submitted to EPD.
03	28 Aug 2025	Referred by EPD	Water quality	Project-related. The Contractor will enhance and the location of wheel washing facilities has been relocated closer to the site and more away from the river	IR submitted to EPD.
04	1 Sep 2025	Referred by EPD	Dust	Non-project related.	IR submitted to EPD.
05	1 Sep 2025	Referred by EPD	Dust	Non-project related.	IR submitted to EPD.
06	9 Feb 2026	Referred by EPD	Noise	Non-project related.	IR submitted to EPD.

Remark: Complaint log ref. 01 to 05 were received before commencement of major construction works.

Appendix M

Environmental Mitigation Implementation Schedule

Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
Air Quality (Construction Phase)							
S3.7.1	Regular watering on construction work sites and exposed site surface should be conducted.	To minimize dust impacts	Contractor	All works sites and areas identified with heavy construction works	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented
S3.7.1	Paving should be provided to open haul road within works sites / works areas.	To minimize dust impacts	Contractor	Open haul roads within works site/area where appropriate	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented
S3.7.1	For the works sites close to the ASRs with the air sensitive facades at a separation distance of less than 10 m, provide with a combined height of up to 3m (i.e. 2.4m hoarding with 0.6m dust screen on top), subject to site constraints and status of ASRs; for the other work sites in general, provide hoarding of not less than 2.4m high from ground level along site boundary except for site entrance or exit.	To minimize dust impacts	Contractor	Along the site boundary, except for site entrance or exit	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented
S3.7.1	Dust control measures will be implemented in the concrete batching plant (CBP) as required in *A Guidance Note on the Technical, Management and Monitoring Requirements for Specified Process – Cement Works (Concrete Batching Plant)* (BPM 3/2 (16)).	To minimize dust impacts	Contractor	Concrete batching plant	Construction phase	Air Pollution Control Ordinance (APCO)	N/A
S3.7.1	For the mucking-out operation at TBM launching shafts, regular watering should be provided at the unloading point of spoils generated by the TBM excavation.	To minimize dust impacts	Contractor	TBM launching shafts	Construction phase	Air Pollution Control Ordinance (APCO)	N/A
S3.7.1	For the tunnelling works by drill-and-blast, a blast door should be provided to avoid the escape of fugitive dust from blasting. Water spaying should be applied to facilitate dust settlement. A filtration system comprising watering and dust collector with overall dust removal efficiency of at least 80% should be provided at the ventilation exhaust to treat dust- laden exhaust before release to the ambient.	To minimize dust impacts	Contractor	At the of openings at works sites for tunnelling works by drill- and-blast	Construction phase	Air Pollution Control Ordinance (APCO)	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
3.8.1	The following good site practices should be carried out: • Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather; • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines; • Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs; • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site; • Imposition of speed controls for vehicles on site haul roads; • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs; and • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	To further minimize dust impacts	Contractor	All works sites and areas	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented
S3.8.3	To minimize the exhaust emission from NRMMs, the following measures should be applied as far as practicable: • Connect construction plant and equipment to main electricity supply and avoid use of diesel generators and diesel-powered equipment; • Avoid the use of exempted NRMMs as far as practicable; and • Deploy electrified NRMMS as far as practicable.	To minimize the exhaust emission from NRMMs	Contractor	All works sites and areas identified with NRMM associated works	Construction phase	Air Pollution Control Ordinance (APCO)	Implemented
Airborne Noise Impact (Construction Phase)							
S4.5.18 to S.4.5.23	Adoption of Quieter Construction Methods where appropriate: • Use of TBM; • Use of large diameter bored piling; • Use of pre-casting and prefabrication technology; • Use of silent piling such as hydraulic press-in method; and • Use of rubber head poker vibrator.	To reduce noise impact from construction activities to nearby NSRs	Contractor	All works sites and areas where applicable	Detailed design stage and construction phase	EIAO-TM	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S4.5.24	Good site practice and noise management techniques should be practised during construction: • 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) 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 should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; • Silencers or mufflers which available on construction equipment should be properly fitted and maintained during the construction works; • Spoil transportation routes should be directed away from NSRs as far as practicable; • Mobile plant should be sited as far away from NSRs as possible and practicable; • Material stockpiles, site office and other structures should be effectively utilized, wherever practicable, to screen noise from on-site construction activities; and • Noise monitoring at selected NSRs should be conducted as far as practicable.	To reduce noise impact from construction activities on nearby NSRs	Contractor	All works sites and areas	Detailed design stage and construction phase	EIAO-TM	Implemented
S4.5.26 to S4.5.27	Use of quiet plant where appropriate, with reference to the PME listed in the GW-TM, the Quality Powered Mechanical Equipment (QPME)/ other commonly used PME listed in EPD web pages or PME specification published by equipment manufacturer	To reduce noise impact from construction activities to nearby NSRs	Contractor	All works sites and areas where applicable	Detailed design stage and construction phase	EIAO-TM	Implemented
S4.5.28 to S4.5.35	• Use of temporary movable noise barrier, noise insulating fabric, silencer, and noise enclosure • Use of soundproof hammer bracket together with a temporary movable noise barrier or other equivalent mitigation measure(s) for excavator-mounted hydraulic breaker	To reduce noise impact from construction activities to nearby NSRs	Contractor	All works sites and areas where applicable	Detailed design stage and construction phase	EIAO-TM	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S4.5.36	Installation of temporary noise barrier along the PWA works site boundary to screen noise for the NSR (i.e. POW-E3) at Pok Wai	To reduce noise impact from construction activities to nearby NSRs	Contractor	A section of PWA works site boundary	Detailed design stage and construction phase	EIAO-TM	N/A
S4.5.38	Avoid conducting construction activities during restricted hours as far as practicable. If such construction activities are unavoidable, quieter construction methods such as the use of QPME, quieter PME, quieter construction method (such as the use of hydraulic crusher/wire saw/hand-held concrete crusher instead of hydraulic breaker for demolition works), purpose-built noise barrier and noise enclosure should be adopted as far as practicable.	To reduce noise impact from construction activities to nearby NSRs during restricted hours	Contractor	All works sites and areas where applicable	Detailed design stage and construction phase	EIAO-TM, NCO	Implemented
4.5.40	The Contractor should liaise with the representative of concerned school and/or the Examination Authority to ascertain the exact dates and times of all examination periods during the construction period and should avoid conducting noisy activities during the examination periods if the school is relied on opened windows for ventilation. With the avoidance of particular noisy construction activities during the examination periods, the mitigated construction noise impact at the concerned school would comply with the stipulated noise criterion.	To reduce noise impact from construction activities to nearby NSRs	Contractor	Works sites and areas of KSR(NOL) and C&C Tunnel section between PHD and KSR(NOL)	Construction phase	EIAO-TM, NCO	N/A
4.5.41	Construction Noise Management Plan(s) (CNMP(s)) should be prepared based on the best available information before the issue of tender and the commencement of construction works, subject to the contract arrangement of the Project and agreement with EPD. The plan should include a quantitative construction noise impact assessment with details on the construction method, plant inventory and recommended noise mitigation measures for the future contractors' further update on CNMP before commencement of construction works and implementation in order to minimise the construction noise impact and comply with the EIAO-TM. In addition, further review on the cumulative construction noise impact should be conducted as necessary in the later CNMP when the information of the concurrent project is available. The CNMP(s) should be certified by Certified Noise Modelling Professional of Hong Kong Institute of Qualified Environmental Professionals (HKIQEP) or equivalent.	To reduce noise impact from construction activities to nearby NSRs	Contractor	All works sites and areas	Detailed design stage and construction phase	EIAO-TM, NCO	Implemented
Water Quality Impact (Construction Phase)							
S6.8.1	<u>Construction Site Runoff and General Construction</u> <u>Activities</u> Control of potential pollution of nearby water bodies during the construction	To minimize impact from construction site run-off and	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	phase of the Project should be achieved by measures to: • prevent or minimise the likelihood of pollutants (generated from construction activities including demolition works) being in contact with rainfall or runoff; and • abate pollutants in the stormwater surface runoff prior to the discharge of surface runoff to the nearby water bodies.	general construction activities					
S6.8.2	It is important that Best Management Practices (BMPs) of mitigation measures in controlling water pollution and good site management, as specified in the ProPECC PN 1/94 "Construction Site Drainage" are followed, where applicable, to prevent runoff with high level of SS from entering the surrounding waters.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented
S6.8.3	All effluent discharged from the construction site should comply with the standards stipulated in the DSS-TM. The measures discussed below are recommended to protect water quality of the inland and coastal waters, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	N/A
S6.8.4	Surface runoff from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers should be provided on site during construction to properly direct stormwater to such silt removal facilities. Perimeter channels should also be provided at site boundaries where necessary to intercept storm runoff from outside to the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented
S6.8.5	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented after observation
S6.8.6	Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September) as far as practicable. If soil excavation cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place such that adequate surface protection	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	measures can be safely carried out well before the arrival of a rainstorm.						
S6.8.7	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented
S6.8.8	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	N/A
S6.8.9	If bentonite slurries are required for any construction works, they should be reconditioned and reused wherever practicable to minimise the disposal volume of used bentonite slurries. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after the related construction activities are completed. Requirements as stipulated in ProPECC PN 1/94 should be closely followed when handling and disposing bentonite slurries.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94	N/A
S6.8.10	Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented
S6.8.11	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm runoff from getting into foul sewers. Discharge of surface runoff into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	N/A
S6.8.12	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading over the site area. It is recommended to clean the construction sites on a regular basis.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S6.8.13	The following mitigation measures related to the transportation of the sediment should be implemented, where applicable, to minimize the potential water quality impact: • Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water; • The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation; and • Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the Director of Environmental Protection (DEP).	To minimize the potential water quality impact	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	N/A
S6.8.14	Discharge licence issued by the EPD for discharge of effluent from the construction site under the WPCO is needed. The discharge quality and quantity should meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the DSS-TM. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence.	To minimize impact from effluent discharge	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S6.8.15	<u>Groundwater infiltration and change in groundwater levels</u> Preventive or mitigation measures during construction period would be required to minimise the potential impact on groundwater system. Examples of preventive or mitigation measures are listed below: • Adoption of close mode TBM at ecological sensitive area (e.g. wetland), if any, to prevent the groundwater ingress to tunnel excavation and control the ground settlement; • Adoption of robust hydraulic cut-off to control groundwater inflow into the excavation; • Provision of recharge well to mitigate the excessive groundwater drawdown out; • Adoption of ground treatment if necessary to control groundwater inflow into the excavation; • For mined or drill & blast tunnels, adoption of probing ahead before excavation to identify the geological features and water inflow ahead to determine the need for pre-excavation grouting and the type of temporary support. In case of excessive groundwater inflow observed, pre-excavation grouting should be applied as suitable mitigation measure; • In the event of excessive drawdown being observed within the groundwater as a result of the tunnelling works even after incorporation of the water control strategies by the pre-grouting measures, post-grouting should be applied as far as practicable before the lining is cast; • Provision of ground treatment for undrained tunnel (e.g. mined tunnel in soft and permeable ground) to enhance the properties of ground; and • Monitoring of groundwater level and settlement during the construction.	To minimize impact on groundwater system	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, DSS-TM	N/A
S6.8.17 to S6.8.19	<u>Groundwater from Contaminated Areas, Contaminated Site Runoff and Wastewater from Land Decontamination</u> Remediation of contaminated land, if any, should be properly conducted following the recommendations of the agreed Remediation Action Plan (RAP). Any excavated contaminated material and exposed contaminated surface should be properly housed and covered to avoid generation of contaminated runoff. Open stockpiling of contaminated materials should not be allowed. Any contaminated runoff or wastewater generated from the land decontamination processes should be properly collected and diverted to wastewater treatment facilities (WTF). The WTF should deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and	To minimize impact from groundwater from contaminated areas, contaminated site run-off/ wastewater from land decontamination	Contractor	All works sites/areas confirmed with land contamination	Construction phase	WPCO, EIAO-TM, DSS-TM, Guidance Note for Contaminated Land Assessment and Remediation	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment system should meet the requirements as stated in DSS-TM and should be either discharged into the foul sewers or tankered away for proper disposal. No direct discharge of groundwater from contaminated areas should be adopted. Prior to any excavation works within the potentially contaminated areas, the baseline groundwater quality in these areas should be reviewed based on the past relevant site investigation data and any additional groundwater quality measurements to be performed with reference to *Guidance Note for Contaminated Land Assessment and Remediation* and the review results should be submitted to EPD under the Contamination Assessment Report (CAR) for examination. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with the requirements of the DSS- TM. If wastewater treatment is to be deployed for treating the contaminated groundwater, the wastewater treatment unit should deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment plant should meet the requirements as stated in the DSS-TM and should be either discharged into the foul sewers or tankered away for proper disposal. If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in section 2.3 of DSS-TM. The baseline groundwater quality should be determined prior to the selection of the recharge wells. Pollution levels of groundwater to be recharged should not be higher than pollutant levels of ambient groundwater at the recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S6.8.20	<u>Construction Works in Close Proximity to Inland Water</u> The practices outlined in ETWB TC (Works) No. 5/2005 "Protection of Natural Streams / Rivers from Adverse Impacts Arising from Construction Works" should be adopted where applicable to minimise the water quality impacts on any natural streams or surface water systems. Relevant mitigation measures from the ETWB TC (Works) No. 5/2005 are listed below: • Use of less or smaller construction plants may be specified in works area close to the inland water bodies as far as practicable; • Temporary storage of material (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from watercourses when carrying out of the construction works; • Stockpiling of construction materials and dusty materials should be covered and located away from any watercourses; • Construction debris and spoil should be covered up and / or disposed of as soon as possible to avoid being washed into the nearby water receivers; • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the watercourses, where practicable; • Construction effluent, site run-off and sewage should be properly collected and / or treated; and • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies.	To minimize impact from construction site run-off	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM, ETWB TC(Works) No. 5/2005	Implemented
S6.8.21 to S6.8.22	<u>Construction Works in Inland Water</u> The construction method and sequence of the proposed construction works at Ho Pui Channel (W13) should be carefully designed so that all the construction works including any excavation would be undertaken within a dry zone and physically separated from the watercourses downstream. Impermeable sheet pile walls or cofferdam walls should be installed to fully enclose the construction works area (including all the excavation and piling works) in the watercourse prior to the commencement of any works in watercourse. Dewatering of the construction works area should be undertaken before the commencement of construction works to avoid water flow in the construction works area. Silt	To minimize impact from construction site run-off	Contractor	Works sites and areas near Ho Pui Channel	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM, ETWB TC(Works) No. 5/2005	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	removal facilities should be used to clarify the effluent generated from the dewatering operation before discharging back to the watercourse / drainage system. Any construction works including excavation and piling activities should be undertaken in a dry zone surrounded by the impermeable sheet pile walls or cofferdam walls. All wastewater generated from the piling activities should be regarded as part of the construction site effluent, which should be properly collected and treated as appropriate to meet the standards stipulated in the DSS-TM before disposal. It is recommended that the construction works in watercourses should be undertaken in dry seasons, where practicable, when the water flow is low.						
S6.8.24	The pilling works for the temporary vehicular bridge in Ho Pui Channel should be conducted by phases. The method and sequence of the proposed bridge works in Ho Pui Channel should be carefully designed so that wastewater and sediment laden water generated from the pilling works would be confined and physically separated from the watercourse. All pilling, the associated construction works in the watercourse should be fully enclosed by concrete cofferdam/sheet pile. Concrete cofferdam should be constructed to isolate the construction activities from the river water. The detail design of the concrete cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in Drainage Services Department (DSD) Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater System" for DSD approval in order to formulate feasible options of these temporary structure. Water pumps should be used to collect any construction site runoff and ingress/seepage water within the concrete cofferdam. The collected construction site surface runoff and ingress/seepage water should be diverted to the on-site wastewater treatment facilities for treatment to satisfactory levels before discharge. Discharge licence for discharging effluent from the construction site under the WPCO should be obtained from the EPD . The discharge quality and quantity should meet the requirements specified in the discharge licence and follow the DSS-TM.	To minimize impact from construction site run-off	Contractor	Works sites and areas near Ho Pui Channel	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM, Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater System" by DSD	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S6.8.25 to S6.8.28	<u>Removal or Diversion of Watercourses</u> The construction works for removal and diversion of watercourses should be undertaken within a dry zone. Cofferdams or similar impermeable sheet pile walls should be used as necessary to isolate the works areas from the neighbouring waters. The tentative works sequence for provision of a dry zone for the construction works is described as follows. Construction works at watercourse should be undertaken only after flow diversion or dewatering operation is fully completed to avoid water flow in the works area. Dewatering of watercourse should be performed by diverting the water flow to new or temporary drainage. Where necessary, cofferdams or similar impermeable sheet pile walls should be used to isolate the works areas from neighbouring waters. The permanent or temporary drainage for carrying the diverted flow from existing watercourse to be removed should be constructed and completed before dewatering of that existing watercourse. Construction of all the proposed permanent and temporary drainage should be undertaken in a dry zone prior to receiving any water flow. The Contractor should provide a dry zone for all the construction works to be undertaken in watercourses and stormwater drainage following the tentative works sequence as described above or using other approved methods as appropriate to suit the works condition. The flow diversion works should be conducted in dry season, where possible, when the flow in the watercourse is low. The wastewater and ingress water from the site should be properly treated to comply with the WPCO and the DSS-TM before discharge. The site practices outlined in the ProPECC PN 1/94 “Construction Site Drainage” and ETWB TC (Works) No. 5/2005 “Protection of natural streams/rivers from adverse impacts arising from construction works” should be adopted for the proposed demolition or diversion of watercourses where applicable.	To minimize impact from construction site run-off	Contractor	Watercourses that would require removal or diversion	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS- TM	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S6.8.29 to S6.8.30	<u>Removal or Filling of Ponds</u> Construction works at the existing ponds should be conducted after dewatering is completed if practicable. The drained water generated from the dewatering of these ponds to be removed should be temporarily stored as appropriate in storage tanks or containers for reuse on-site where practical and any surplus drained water should be tankered away for disposal or treated as necessary before disposal in compliance with the DSS-TM. It is recommended to drain ponds by stages to minimise the potential water quality impact. Dewatering works at ponds should be conducted within dry season as far as practicable to minimise the quantity of drained water. No direct discharge of drained water to the stormwater drainage system or marine water should be allowed.	To minimize impact from construction site run-off	Contractor	Ponds that would require removal or filling	Construction phase	WPCO, EIAO-TM, DSS-TM	N/A
S6.8.31 to S6.8.33	<u>Accidental Spillage of Chemicals</u> The Contractor should register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes. The Contractor is also recommended to develop management procedures for chemicals used and prepare an emergency spillage handling procedure to deal with chemical spillage in case of accident occurs. Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes" published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and	To minimise impact from accidental spillage	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, WDO, Waste Disposal (Chemical Waste) (General) Regulation	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	• Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.						
S6.8.34 to S6.8.35	<u>Sewage Effluent from Construction Workforce</u> No discharge of sewage to the storm water system and marine water will be allowed. Adequate and sufficient portable chemical toilets should be provided in the works areas to handle sewage from construction workforce. A licensed waste collector should be employed to clean and maintain the chemical toilets on a regular basis. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site should be conducted to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.	To minimize impact from general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, DSS-TM	Implemented
Waste Management Implications (Construction Phase)							
S8.5.3	<u>Good Site Practice</u> The following good site practices are recommended throughout the construction: • Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • Training of site personnel in proper waste management and chemical waste handling procedures; • Provision of sufficient waste disposal points and regular collection of waste; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • The Contractor should prepare a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ETWB TCW No. 19/2005. The WMP should be submitted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted; and • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas and all waste transportation vehicles	Construction phase	WDO, Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK), ETWB TCW No. 19/2005	Implemented after observation

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	in enclosed containers.						
S8.5.4	<u>Waste Reduction Measures</u> The following recommendations are proposed to achieve reduction: • Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Adopt proper storage and good site practices to minimise the potential for damage and/or contamination of construction materials; • Plan the delivery and stock of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • Sort out demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); • Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling; and • Minimise over ordering and wastage through careful planning during purchasing of construction materials.	To minimize waste generation	Contractor	All works sites and areas	Construction phase	WDO	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S8.5.5 to S8.5.6	<u>Storage, Collection and Transportation of Waste</u> The following recommendation should be implemented to minimise the impacts: • Non-inert C&D materials such as top soil should be handled and stored well to ensure secure containment of the materials; • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind- blown or being washed away; and • Different locations should be designated to stockpile each material to enhance reuse. The collection and transportation of waste from works areas to respective disposal sites as well as imported fill materials from fill bank to works areas may also induce adverse environmental impacts if not properly managed. The following recommendation should be implemented to minimise the impacts: • Remove waste in timely manner; • Employ the trucks with cover or enclosed containers for waste transportation; • Obtain relevant waste disposal permits from the appropriate authorities; • Disposal of waste should be done at licensed waste disposal facilities; • All dump trucks engaged on site for delivery of inert and non-inert C&D material from the site to the designated disposal location, including PFRFs, landfill etc., should be equipped with GPS or equivalent system for tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials; and • The data collected by GPS or equivalent system should be recorded properly for checking and analysis the travel routing and parking locations of dump truck engaged on site.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas and all waste transportation vehicles	Construction phase	WDO, Land (Miscellaneous Provision) Ordinance (Cap.28)	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S8.5.7	<u>Construction and Demolition Materials</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at PFRFs areas or reclamation sites. The following mitigation measures should be implemented in handling the C&D materials: • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Implement a trip-ticket system for each works contract in accordance with DEVB TCW No. 06/2010 to ensure that the disposal of C&D materials is properly documented and verified; • All dump trucks engaged on site for delivery of inert and non-inert C&D material from the site to the designated disposal location, including PFRFs, landfill etc., should be equipped with GPS or equivalent system for tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials; and • The data collected by GPS or equivalent system should be recorded properly for checking and analysis the travel routing and parking locations of dump truck engaged on site.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO, DEVB TCW No. 06/2010	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S8.5.8 to S8.5.9	<u>On-site Sorting of C&D Materials</u> Storage or stockpiling of C&D materials is not anticipated as the C&D materials generated would be removed from site immediately due to lack of space on sites; however, should any temporary storage or stockpiling of C&D materials is required, recommendations to minimise the impacts include: • Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind- blown or being washed away; and • Different locations should be designated to stockpile each material to enhance reuse. The materials could be segregated according to the categories as shown below: • Excavated materials suitable for reuse; • Excavated materials for delivery to PFRFs; • Sediments for delivery to sea disposal; and • Non-inert C&D materials for delivery to landfills.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO	Implemented
S8.5.10 to S8.5.12	<u>Re-use of C&D materials</u> The following potential measures are identified to maximize the re-use/recycle of C&D materials generated from the Project: • Re-use suitable material from excavation works for backfilling as far as practicable if temporary storage area availability, site condition and programme allow; • Re-use suitable excavated rock by reworking at approved quarries (e.g. crushed as aggregates); • Sorting of demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal, etc.); • Protect recyclable material to keep it in usable condition; and • Provide recycle bins on site to increase awareness for general refuse items	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	such as aluminum cans, paper to facilitate segregation of waste streams and maximise recovery. In order to maximise the quantity of C&D materials that can be re-used or recycled, each type of material should be carefully segregated and sorted at designated areas as far as practicable to avoid cross-contamination and to maintain the quality of the product. Arrangement with recycling contractors should be made to ensure the recyclables sorted from the waste stream are collected with reasonable care. Opportunities to use the recycled materials in other works areas of the project/ other projects should also be explored.						
S8.5.13 to S8.5.14	<u>Specification of Inert C&D Materials to be Delivered Off-site</u> In case there are surplus inert C&D materials generated in the Project and are required to be delivered to the PFRFs, the inert C&D materials should fulfil the following requirements: • Remove waste in timely manner; • Waste collectors should only collect waste prescribed by their permit; • Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; • Reclaimed asphalt pavement should not be mixed with other materials when delivered to the PFRFs; • Moisture content of inert C&D materials should be lowered to 25% max. when delivered to the PFRFs; • Inert C&D materials delivered to the PFRFs should be of a size less than 250mm; • Inert construction waste should not be in liquid form such that it can be contained and delivered by dump truck instead of tanker truck. Inert C&D materials in liquid form should be solidified before delivering to the PFRFs • Waste should be disposed of at licensed waste disposal facilities; and • Maintain records of quantities of waste generated, recycled and disposed. Nevertheless, the acceptance criteria of inert C&D materials to PFRFs are subject to the Fill Management Division of CEDD.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S8.5.15	<u>Other Mitigation Measures</u> Other mitigation measure to avoid or minimise the quantity of C&D material generated from NOL Main Line construction are described below: • Plan carefully to ensure material is not over ordered; • Avoid use of timber by adopting alternative material as far as practicable, e.g. steel formwork; • Avoid use of bamboo scaffolding by adopting metal scaffolding as far as practicable ; • Plan construction activities carefully to improve the efficiency of resources; • Design works to optimise material use and reduce C&D waste; • Apply pre-cast elements to minimise concrete waste as far as practicable; • Design for manufacture and assembly to reduce use of formwork/ temporary works; • Plan and stock construction materials carefully to minimise the amount of waste generated and avoid unnecessary waste generation; • Timber and woody materials in non-inert C&D materials should be delivered to the Yard Waste Recycling Centre in Y-Park for recycling as far as practicable prior to disposal at the designated landfill site; and • Encourage use of re-usable/ recyclable packaging materials by suppliers.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO	Implemented
S8.5.16 to S8.5.17	If chemical wastes are produced at the construction site, the Contractor should register with EPD as chemical waste producers. Storage, handling, transportation and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by the EPD. Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical wastes that cannot be recycled should be disposed of at either the approved Chemical Waste Treatment Centre (CWTC) at Tsing Yi, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. A trip-ticket system should be adopted to monitor the disposal of chemical waste.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S8.5.18 to S8.5.20	General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a regular basis. The recyclable component of general refuse, such as aluminum cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. Recycling bins should be placed in prominent places to promote waste separation at-source. Arrangements should be made with the recycling companies to collect the recycle waste as required. The Contractor should implement an education programme for workers relating to avoiding, reducing, reusing and recycling general waste. Participation in a local collection scheme should be considered by the Contractor to facilitate waste reduction.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO, Public Health and Municipal Services Ordinance (Cap. 132)	Implemented
S8.5.21 to S8.5.22	The sediment should be excavated, handled, transported and disposed of in a manner that would minimise adverse environmental impacts. For minimization of sediment disposal, beneficial reuse should be considered on site as far as practicable during the detailed design and construction stages before the disposal of excavated sediment. Possible methods for the reuse of land-based marine sediment on site including the reuse of land-based marine sediment as backfilling materials after mixing with cement should be explored. The criteria for reuse of treated sediments are proposed with reference to the Unconfined Compressive Strength (UCS) and the Universal Treatment Standards (UTS), which specify the Toxicity Characteristics Leaching Procedure (TCLP) test limits as given in *Section 4.1* and *Table 4.6* of the *Practice Guide for Investigation and Remediation of Contaminated Land*.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas confirmed with sediments	Construction phase	WDO, Practice Guide for Investigation and Remediation of Contaminated Land	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S8.5.23 to S8.5.31	For off-site marine disposal, the requirements and procedures specified under PNAP ADV-21 should be followed. The MFC of CEDD is managing the disposal facilities in Hong Kong for the excavated sediment, while EPD is the authority of issuing marine dumping permit under the DASO. For the purpose of site allocation and application of marine dumping permit and if considered necessary by EPD (Marine Dumping Section), a separate SSTP should be submitted to EPD for agreement under DASO. Additional SI works, based on the approved SSTP, should then be carried out in order to confirm the disposal arrangements of the excavated sediment. A Sediment Quality Report (SQR), reporting the chemical and biological screening results and the estimated quantities of sediment under different disposal options, should then be submitted to EPD for agreement under DASO. To ensure disposal space is allocated for the Project, the Project Proponent should be responsible for obtaining agreement from MFC on the allocation of the disposal site. The contractor(s), on the other hand, should be responsible for the application of the marine dumping permit under DASO from EPD for the sediment disposal. The excavated sediments is expected to be loaded onto the barge at public barging point of which the exact location will be determined by the contractor(s) and agreed by EPD/CEDD and transported to the designated disposal sites allocated by MFC. The excavated sediment would be disposed of according to its determined disposal options and PNAP ADV-21. Stockpiling of excavated sediments should be avoided as far as possible. If temporary stockpiling of excavated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiles should be placed on surface completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). In order to minimise the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments should be wetted during	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas confirmed with sediments	Construction phase	WDO, DASO. ADV-21	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	excavation / material handling and should be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. In case off-site marine disposal is unavoidable, the mitigation measures to handle the excavated sediment are summarised as follows: • All construction plants and equipment shall be designed and maintained to minimise the risk of sediments being released into the water column or deposited in the locations other than designated locations; • All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to minimise that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and • Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action. The Contractor shall monitor all vessels transporting the excavated sediment 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 Contractor shall comply with the conditions in the dumping permit issued under the Dumping at Sea Ordinance; • All bottom dumping vessels (hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of materials; • The excavated sediment shall be placed into the disposal pit by bottom dumping; and • Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Sediments 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. If mixing of excavated sediment with cement is to be used for backfilling on-site, the following mitigation measures should be followed:						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	• The loading, unloading, handling, transfer or storage of bulk cement should be carried out in an enclosed system as far as practicable. • Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission. • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers and be sited under covers to minimise dust nuisance to the nearby receivers.						
Ecology (Terrestrial and Aquatic) (Construction Phase)							
S10.9.5.2	<u>Avoidance of Direct Injury / Mortality of Roosting Bats</u> A bat inspection should be conducted before the commencement of demolition of the existing structure to ensure no bat is roosting in the structure. Bat exclusion devices e.g. non-transparent mat could be installed over the entrance and other possible entry/exit point before commencement of demolition works at the deserted Pok Wai Public School to prevent the bats from utilizing the classroom as day-roost to avoid direct injury or mortality of the roosting bats.	To minimize the direct impacts to the potential day roost of Himalayan Leaf- nosed Bats	Contractor	PWA	Before commencement of demolition works at the Pok Wai Public School	EIAO-TM, EIAO Guidance Note. 3/2010	N/A
S10.9.5.3	<u>Minimisation of Disturbance</u> Mitigation measures should be implemented to minimise the disturbance impacts (e.g. noise, glare and dust) to the surrounding habitats and their associated wildlife arising from the construction activities, including but not limited to the following: • Noise mitigation measures by effective placing of temporary noise barriers where practicable as screening, noise enclosure for relatively fixed plant source, shut down of machines and plants that are in intermittent use, and the use of quiet power mechanical equipment (PME) to limit noise emissions at source (refer to Airborne Noise Impact Section above for details); • Glare reduction measures such as restriction of construction hours, hoarding provision, night-time lighting control and avoidance of any directional lightings to the adjoining habitats and roosts to minimise the impact to nearby nocturnal fauna especially avifauna and bat; and • Dust suppression measures (such as regular watering on heavy construction works areas and at the unloading point of spoils generated by the TBM	To minimize the disturbance impacts to the surrounding habitats and their associated wildlife arising from the construction activities	Contractor	All works sites and areas where applicable	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	excavation, installation of blast door at the opening of tunnelling works by drill-and-blast, proper storage of construction materials, and environmental control measures as stipulated in the Air Pollution Ordinance (Construction Dust) Regulation) to avoid and minimise emission and dispersal dust, which would cover vegetation and potentially discourage usage of nearby wildlife (refer to Air Quality Section above for details).						
S10.9.5.4	Site screen of 3 m high should be erected around the works site and works area of SMA, which are located adjacent to wetlands before commencement of construction activities. The purpose is to shield the avifauna in the nearby wetlands from the disturbance of human activities during construction phase. Such hoarding would be non-transparent and in dull colour to avoid the risk of potential bird collision. Such hoarding would be non-transparent and in dull colour to avoid the risk of potential bird collision.	To minimize the disturbance impacts to the surrounding habitats and their associated wildlife arising from the construction activities	Contractor	Around the works sites and works areas of SMA, which are located adjacent to wetlands	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010	Implemented
S10.9.5.5	<u>Establishment of Buffer Zone, Phasing of Works and</u> <u>Control of Working Hours</u> A buffer zone from the Kam Po Road Egretry and ANR should be established to mitigate the potential indirect impacts on the Egretry and ANR. A pre-construction survey should be conducted for areas within 100m from the boundaries of works site/area to confirm the location and status of the Egretry and ANR. Noisy construction works using PME within 100 m from the Egretry and ANR should be scheduled outside the breeding season through careful phasing of works. No noisy construction works should be undertaken within 100m from the Egretry and ANR approximately 30 minutes before sunset, until the ardeids leave the roosting location of the following day (i.e. around 30 minutes after sunrise).	To minimize potential disturbance impacts on Kam Po Road Egretry and ANR	Contractor	Works site and area within 100 m from Kam Po Road Egretry and ANR	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010	N/A

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S10.9.5.7 to S10.9.5.8	<u>Avoidance of Bird Collision</u> Use of opaque and dull colour site hoarding with non- transparent panels as the noise enclosure and adopt non- glaring tinted materials, as per *Guidelines on Design of Noise Barriers (EPD & HyD, 2003)* and *Practice Notes No. BSTR/PN/003 (Revision E) Noise Barriers with Transparent Panels* (HyD, 2020). Tall landscape plants should also be avoided in the green roof system to avoid potential collision to commuting ardeids above the Station. Window walls or reflective materials should be avoided at the northeastern corner of service building, which is the nearest to the conjunction of MWC S-KP-1 and Ho Pui Channel. In general, all glass panels should be coated with either anti-bird-collision film superimposing dark patterns or one-way transparent film to make the panels opaque on the outside. Dense tree or shrub stands should also be avoided near the glass panel in terms of landscape design.	To avoid and minimise bird mortality from collision	MTRCL and Contractor	All works sites and areas, stations, ancillary buildings and NTD where glass panels are installed	Detailed design stage, construction and operational phase	EIAO-TM, EIAO Guidance Note. 3/2010, *Guidelines on Design of Noise Barriers (EPD & HyD, 2003)* and *Practice Notes No. BSTR/PN/003 (Revision E) Noise Barriers with Transparent Panels* (HyD, 2020)	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S10.9.5.9 to S10.9.5.10	<u>Protection of Plant Species of Conservation Importance</u> Avoid direct impact to flora species of conservation importance recorded in the vicinity of works sites/areas as far as practicable during construction phase. All the unavoidably affected flora individuals of conservation importance should be transplanted to nearby suitable habitat(s) prior to the commencement of site clearance as a last resort. A Detailed Vegetation Survey should be undertaken in the identified affected area (i.e. SPAUT area) by a suitably qualified botanist / ecologist to identify any potentially affected plant species of conservation importance and to ascertain their presence, update their physical conditions and determine the abundance and locations of the flora species of conservation importance prior to the commencement of any site clearance works. A Protection and Transplantation Proposal including the subsequent monitoring for the affected individuals should be prepared and conducted by a suitably qualified local ecologist / botanist with at least 7 years relevant experience. The Proposal should be submitted for approval from EPD at least one month before works commencement. In case plant preservation or transplantation is not practical as recommended by the qualified ecologist / botanist (e.g. due to poor health and low survive rate of the plant), other mitigation measures (e.g. compensation by seedling planting) should be considered.	To minimize the impacts on plant species of conservation importance	Contractor	All works sites and areas with Species of Conservation Importance identified	Before site clearance works and during Construction phase	EIAO-TM, DEVB TC(W) No. 7/2015	Implemented
S10.9.5.11	<u>Control of Construction Runoff</u> During construction phase, surface runoff from construction sites should be discharged into storm drains via appropriately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sandbag barriers should be provided on site during construction works to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept storm runoff from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	To minimise impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	EIAO-TM, DEVB TC(W) No. 7/2015, ProPECC PN 1/94	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S10.9.5.12 to S10.9.5.15	<u>Minimization of Groundwater Infiltration</u> Appropriate measures during the underground tunnel construction should be implemented to minimise the groundwater infiltration during tunnel construction. The water control strategies include: • Probing Ahead: The Contractor will undertake rigorous probing of the ground ahead of tunnel excavation works to identify zones of significant water inflow. The probe drilling results will be evaluated to determine specific grouting requirements in line with the tunnel advance. In such zones of significant water inflow that could occur as a result of discrete, permeable features, the intent would be to reduce overall inflow by means of cut–off grouting executed ahead of the tunnel advance; • Pre–grouting: Where water inflow quantities are excessive, pre–grouting will be required to reduce the water inflow into the tunnel. The pre–grouting will be achieved via a systematic and carefully specified protocol of grouting; • In principle, the grout pre–treatment would be designed on the basis of probe hole drilling ahead of the tunnel face; and • The installation of waterproof lining would also be adopted after the formation of the tunnels Recharge wells would be installed as necessary to mitigate the excessive groundwater drawdown and minimize the potential impact on groundwater system. In the event of excessive drawdown being observed within the ground water table as a result of the tunnelling works even after incorporation of the water control strategies, post–grouting should be applied as far as practicable as described below: • Post–grouting: Groundwater drawdown will be most likely due to inflows of water into the tunnel that have not been sufficiently controlled by the pre–grouting measures. Where this occurs, post grouting will be undertaken before the lining is cast. Whilst unlikely to be required in significant measure, such a contingency should be allowed for reduction in permeability of the tunnel surround (by grouting) to limit inflow to acceptable levels.	To minimise the groundwater infiltration during tunnel construction	Contractor	All works sites of underground tunnel construction	Construction phase	WPCO, EIAO-TM, DSS-TM	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	These measures or other similar methods, as approved by the Engineer to suit the works condition, shall be applied to minimize the groundwater infiltration. In case seepage of groundwater occurs, groundwater should be pumped out from the areas and discharged to the drainage system via silt trap. Groundwater from dewatering process should also be discharged to the drainage system via silt removal facilities (refer to Water Quality Section above for details).						
S10.9.5.16	<u>Good Site Practices</u> Recommendations for good site practices during the construction phase include: • Nomination of approved personnel, such as a site manager, to be responsible for implementation of good site practices, arrangements for waste collection and effective disposal to an appropriate facility; • Training of site personnel in site cleanliness, concepts of waste reduction, reuse and recycling, proper waste management and chemical waste handling procedures; • Provision of sufficient waste reception/ disposal points, and regular collection of waste; • Adoption of appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Provision of regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Adoption of a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites); and • Preparation of Waste Management Plan (WMP), as part of the Environmental Management Plan (EMP).	To avoid adverse impacts arising from the construction activities	Contractor	All works sites and areas	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S10.9.5.17	Good practices (i.e. avoidance of night-time activities) would be adopted for the materials storage site in proximity to Sha Po ANR.	To avoid potential disturbance to Sha Po ANR	Contractor	Materials storage site adjoining Castle Peak Road – Tam Mei	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010	N/A
S10.9.6.8, S10.9.6.11	Wetland Compensation would be provided for direct impacts on wetlands of moderate ecological values or above on 1:1 ratio. The design of wetland compensatory area will be further elaborated and presented in Habitat Creation and Management Plan (HCMP) for agreement with AFCD.	To mitigate the direct loss of wetland	MTRCL	Affected wetland with moderate ecological values or above	Detailed design stage, construction and operation phases	EIAO-TM	N/A
S10.9.6.35 to S10.9.6.36	The bat shelter would be provided before the end of hibernation period and the demolition of the concerned classroom. In view of the potential indirect disturbance impacts arising from the construction of PWA in vicinity, disturbance minimization measures would be implemented. Details for the provision of a bat shelter will be further studied and submitted before the construction of bat shelter, detailing the location, design, management, maintenance and monitoring requirement for agreement with AFCD.	To mitigate the direct loss of potential day roosting site at deserted Pok Wai Public School	MTRCL	Woodland south of the existing bat roost	Detailed design stage, pre-construction (i.e. before the end of hibernation period and the demolition of the concerned classroom) and operational phases	EIAO-TM	N/A
Fisheries Impact (Construction Phase)							

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S11.7.4 to S11.7.5	<u>Control of Site Runoff</u> Measures and good site practices stipulated in the ProPECC PN 1/94 "Construction Site Drainage" and in ETWB TC (Works) No. 5/2005 "Protection of Natural Streams / Rivers from Adverse Impacts Arising from Construction Works" to minimise surface run-off and the chance of erosion should be followed to minimise potential impacts to nearby fisheries resources. Relevant good site practices include: • Construction works near watercourses should be programmed to minimise soil excavation in the wet season (i.e. April to September). If soil excavation cannot be avoided in these months or at any time of year when rainstorms are likely, temporarily exposed slope surfaces should be covered (e.g. by tarpaulin), and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds; • Construction works close to the inland waters should be carried out in the dry season as far as practicable where the flow in the surface channel or stream is low; • Surface run-off from construction sites should be discharged into storm drains via adequately designed sand / silt removal facilities such as sand traps, silt traps and sedimentation basins; • Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm run-off from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of rainstorm; • Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary. • Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis; and	To minimize surface run-off and the chance of erosion	Contractor	All works sites and areas	Construction phase	ProPECC PN 1/94, ETWB TC (Works) No. 5/2005	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	• Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly (as well as at the onset of and after each rainstorm) to prevent overflows and localized flooding.						
S11.7.6 to S11.7.7	The impacts from construction noise would be temporary and negligible with the following good site practices in place during the construction phase; such as: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; • Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program; • Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby fishponds; • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction programme; • Use of movable barrier for certain powered mechanical equipment (PME); and • Use of noise enclosure or acoustic shed to cover stationary PME.	To avoid adverse impacts on fishponds from construction activities nearby	Contractor	All works sites and areas where applicable	Construction phase	EIAO-TM	Implemented
S11.7.8 to S11.7.10	Minimising Chance of Accidental Spillage and Potential Contamination of Surface Water and Groundwater Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap	To minimising chance of accidental spillage and potential contamination of surface water and	Contractor	All works sites and areas	Construction phase	WDO (Cap 354) , Waste Disposal (Chemical Waste) General Regulation	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes. Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes to avoid accidents; and • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	groundwater					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S11.7.11	*Other Good Site Practice* Recommendations for good site practices during the construction phase include: • Nomination of approved personnel, such as a site manager, to be responsible for implementation of good site practices, arrangements for waste collection and effective disposal to an appropriate facility; • Training of site personnel in site cleanliness, concepts of waste reduction, reuse and recycling, proper waste management and chemical waste handling procedures; • Provision of sufficient waste reception/ disposal points, and regular collection of waste; • Adoption of appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Provision of regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Adoption of a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites); and • Preparation of Waste Management Plan (WMP), as part of the Environmental Management Plan (EMP).	To avoid adverse impacts on fishponds	Contractor	All works sites and areas	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010	Implemented
Landscape and Visual Impact (Construction Phase)							
Table 12.9	*CM1 – Tree Preservation and Transplantation* Tree without impact from the proposed works should be retained and any existing trees unavoidably affected by the works should be transplanted as far as possible in accordance with LAO Practice Note 6/2023.	To minimize the landscape and visual impact on surrounding setting	Contractor	All works sites and areas	Construction phase	LAO Practice Note 6/2023	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
Table 12.9	*CM2 – Control of Night-time Lighting Glare* Control of night-time lighting glare to prevent light overspill to the nearby VSRs and into the sky. Relevant best practices as suggested in the "Charter on External Lighting" and "Guidelines on Industry Best Practices for External Lighting Installations" promulgated by ENB shall be adopted.	To minimize the landscape and visual impact on surrounding setting	Contractor	All works sites and areas	Construction phase	EIAO-TM, Charter on External Lighting, and Guidelines on Industry Best Practices for External Lighting Installations	Implemented
Table 12.9	*CM3 – Erection of Decorative Screen Hoarding* Erection of decorative screen hoarding or hoarding compatible with the surrounding setting.	To minimize the landscape and visual impact on surrounding setting	Contractor	All works sites and areas	Construction phase	EIAO-TM	Implemented
Table 12.9	*CM4 – Management of Construction Activities and Facilities* Construction facilities and activities on work sites and areas should be carefully managed and controlled on the height and disposition /arrangement to minimise any potential adverse landscape and visual impacts.	To minimize the landscape and visual impact on surrounding setting	Contractor	All works sites and areas	Construction phase	EIAO-TM	Implemented
Cultural Heritage (Construction Phase)							
S13.5.3.1 & Table 13.9	Cartographic and Photographic Record Cartographic and photographic record, and other documentation means (including 3D scanning), should be conducted at two other identified items including Pok Wai Public School (POW17) and Fung Kat Vegetable Marketing Co-operative Society Ltd. (VEG04) prior to the commencement of any construction works at the respective locations and the record should be shared with AMO for record purposes and future use, such as research, exhibition and educational programmes.	To record the other identified items for future conservation/ interpretation.	MTRCL	Fung Kat Vegetable Marketing Co-operative Society Ltd., Pok Wai Public School	Prior to the commencement of the construction works at the concerned areas	EIAO-TM	N/A
S13.5.3.2 to S13.5.3.4 & Table 13.9	Monitoring of Ground-borne Vibration, Tilting and Ground Settlement Monitoring of ground-borne vibration, tilting and ground settlement, is proposed to be employed for the other identified item (i.e. San Yau Vegetable Marketing Co- operative Society Ltd. (VEG02)) during the construction phase under Buildings Ordinance. The monitoring should be incorporated with a set of Alert, Alarm and Action (3As) system strictly following the requirements set out in Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers - Ground-borne Vibrations and Ground	To avoid/ minimise impacts from construction activities on other identified items.	Contractor	San Yau Vegetable Marketing Co-operative Society Ltd. and locations of concerned other identified items where necessary	Construction phase	EIAO-TM Buildings Ordinance	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	Settlements Arising from Pile Driving and Similar Operations (PNAP APP-137) on vibration-sensitive and dilapidated buildings. If the alert level is exceeded, the monitoring frequency should be increased. If the alarm level is exceeded, the design of the construction may have to be amended. If the action level is exceeded, all works should be stopped. The actual 3As criteria shall be further confirmed via an assessment on the effects of ground-borne vibrations, settlements and tilting on VEG02. Prior agreement and consent should be sought from the owner(s), stakeholder(s) and relevant Government department(s) for the installation of monitoring points on the building before commencement of the works. Record of monitoring should be submitted regularly to the Buildings Department during the construction under Buildings Ordinance. Buildings Department should be alerted in case any irregularities are observed. Should the construction method of the tunnel boring machine (TBM) tunnel resort to blasting, the abovementioned mitigation measures should be applied to all other identified items located within 100m from the underground works sites and areas under the same 3As system.						
S13.5.3.5 & Table 13.9	<u>Temporary Change of Access</u> There would be a temporary change of access to San Yau Vegetable Marketing Co-operative Society Ltd. (VEG02) during the construction phase. To ensure the smooth and continuous operation of the Society, a safe access route should be maintained for the users of the Society.	To ensure the operation of San Yau Vegetable Marketing Co-operative Society Ltd. during construction phase.	Contractor	Access roads to San Yau Vegetable Marketing Co-operative Society Ltd.	Construction phase	-	N/A
S13.6.6.1 to S13.6.6.4 & Table 13.14	<u>Survey-cum-Excavation</u> Archaeological potential areas encroach on the north of AUT Station, and south of NTM Station and NTD. Considering their high archaeological potential and potential direct impact to archaeology, archaeological survey-cum- excavation at these areas is recommended. In principle, archaeological survey should be conducted within the Long Ha ASA and Ngau Tam Mei ASA with an aim to locate the precise horizontal extent and nature of the archaeological deposits (if any). Should key archaeological findings occurred, excavation works should be applied to retrieve archaeological data completely before the commencement of site formation and construction works.	To fully retrieve the archaeological data before commencement of site formation and construction works.	MTRCL	Long Ha Archae-ologically Sensitive Area (ASA) and Ngau Tam Mei ASA, including the north of AUT Station, south of NTM Station and NTD.	Prior to the commencement of the site formation and construction works at the concerned areas	EIAO-TM	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	Survey-cum-excavation works should be carried out after land resumption and before the commencement of site formation and construction works, subject to future land resumption status and discussion with AMO in later stage. Further archaeological field survey at NTM-TP3 should be carried out after land resumption and before site formation and construction works to remove the fill soil and reveal the pre-filled natural soil in order to retrieve adequate archaeological information. The survey-cum-excavation should be conducted by an archaeologist who should have obtained a *Licence to Excavate and Search for Antiquities* from the Antiquities Authority prior to the commencement of the fieldworks. The scope, methodology and programme of the survey-cum- excavation should be agreed with AMO. Should archaeological deposits discovered in the archaeological fieldworks, mitigation measures should be proposed and agreed with AMO.						
S13.6.6.5 to S13.6.6.6 & Table 13.14	<u>Archaeological Survey</u> Archaeological survey is required after land resumption and before site formation and construction works at the south of SAT Station. The survey should satisfy the licence requirements and provide a more comprehensive analysis on the archaeological potential within the Licence Area. The survey should be conducted by an archaeologist who should obtain a *Licence to Excavate and Search for Antiquities*. The scope and work programme of the survey should be agreed with AMO prior to commencement.	To satisfy the licence requirements and provide a more comprehensive analysis on the archaeological potential within the Licence Area.	MTRCL	South of SAT Station	Prior to the commencement of the site formation and construction works at the concerned area	EIAO-TM	N/A
S13.6.6.7 to S13.6.6.8 & Table 13.14	<u>Archaeological Watching Brief</u> Archaeological watching brief is recommended to be carried out by an archaeologist for Mai Po Lung (South) ASA at the northwest of SAT Station during the course of excavation works. An archaeologist should obtain a *Licence to Excavate and Search for Antiquities* from the Antiquities Authority prior the commencement of the fieldworks. The scope, methodology and programme of the archaeological works should be agreed with AMO.	To ensure protection to the archaeological information and preservation of any potential archaeological deposits.	MTRCL	Northwest of SAT Station	Construction phase	EIAO-TM	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
S13.6.6.13 & Table 13.14	If antiquities or supposed antiquities under the Antiquities and Monuments Ordinance (Cap. 53) are discovered during the construction phase, the project proponent is required to inform AMO immediately for discussion of appropriate mitigation measures to be agreed by AMO before implementation by the project proponent to the satisfaction of AMO.	As a precautionary measure in case of discovery of antiquities or supposed antiquities.	MTRCL	All works site/ areas	Construction phase	EIAO-TM Antiquities and Monuments Ordinance (Cap.53)	N/A
Hazard to Life (Construction Phase)							
S14.9.5.1	<u>Recommendations for Meeting the ALARP Requirements</u> • The truck should be designed and improved to reduce the amount of combustibles in the cabin. The fuel carried in the fuel tank should also be minimized to reduce the duration of any fire. • The accident frequency of the explosive truck should be minimized through the implementation of a defensive driving attitude and a dedicated training programme for both driver and his attendants which includes regular briefing sessions. Moreover, drivers should be selected based on good safety record and providing regular medical checks for the driver. • The required quantity of explosives should only be transported for a particular blast to avoid any unused explosives send back to the magazine. • The contractor should combine the explosive deliveries for a given work area as far as practicable. • A minimum headway between two consecutive truck convoys of 10 mins should be maintained whenever practicable. To reduce the explosive truck fire involvement frequency, a better emergency response and training should be implemented to ensure adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible. All explosive vehicles should also be equipped with bigger capacity AFFF- type extinguishers.	To meet the ALARP requirements stipulated in the EIAO-TM	Contractor	Works site/areas where trucks with explosives would operate	Construction phase	EIAO-TM	N/A
S14.9.5.2 to S14.9.5.3	<u>General Recommendations</u> Each blasting activities including storage and transport of explosives should be supervised and audited by competent site staff to ensure strict compliance with the blasting permit conditions. For the storage and transport of explosives, the recommendation listed below should also be considered:	To ensure compliance with blasting permit conditions	Contractor	All blasting sites	Construction phase	-	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	• The security plan should address different alert security level to reduce opportunity for arson or deliberate initiation of explosives. • Emergency plan like magazine operation manual should be developed to address uncontrolled ire in magazine area and during transport of explosives. • Adverse weather working guideline should be developed to clearly define procedure for transport of explosives during thunderstorm.						
S14.9.6.1	<u>Good Practices to be Implemented for Use of Explosives</u> The good practice could be made reference to the latest guideline including, but not limited to, Practice Note for Authorized Persons and Registered Structural Engineers – Control of Blasting (APP-72) by Buildings Department (BD). Following are some Typical Items regarding Good Practices to Blasting Works extracted from the APP-72, for detail, please reference to the latest APP-72 by BD. • Carry out checking of the registered contractor's blasting method statement; • Check (including both document and site checks) and satisfy, for each blast, that the registered contractor's blast design and precautionary measures comply with the plans approved by the Building Authority and the blasting permit requirements; • Verify on site that the ground conditions and geology are as stated or assumed in the blasting assessment, and that the provisions in the method statement and the preventive, protective and precautionary measures are adequate for the conditions as encountered on site; • Ensure that the preventive measures, if required, have been properly carried out prior to commencement of the blasting works; • Prepare regular reports with records of the condition of the site, sensitive receivers, adjacent grounds, structures and services etc. after each phase of blasting operation and completion of related works. • Inspect the construction of preventive works, if required, for the sensitive receivers; • Inspect the provision and installation of all necessary protective and precautionary measures prior to each blast, in accordance with the blast design; • Monitor the site operations and working methods to ensure that they meet	To minimise the hazard-to-life impact and ensure that any blasting carried out will not adversely affect services, utilities, slopes, retaining walls, buildings and structures through ground vibrations or other effects.	Contractor	All blasting sites	Construction phase	EIAO-TM , Practice Note for Authorized Persons and Registered Structural Engineers (APP-72) by Buildings Department (BD)	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	the safety requirements set out in the blasting permit; and • Inspect and monitor the conditions of all sensitive receivers regularly and carry out reviews of the quality of monitoring for the sensitive receivers before and after each blast.						
S14.9.6.2 to S14.9.6.4	<u>Good Practices to be Implemented for Magazine Site</u> The good practice could be made reference to the latest guideline including, but not limited to, "Guidance Note No. GN 8 How to Apply for a Mode A Store Licence for Storage of Blasting Explosives" by CEDD. While the design, operation and maintenance of the magazine should follow Mines Division guidelines and industry best practice. Some other good practices listed below can also be implemented: • To ensure the undertaken work activities during the operation of the magazine are properly controlled, a suitable work control system such as an operational manual including Permit-to-Work system should be introduced. • Good house-keeping should be maintained within the magazine to ensure that combustible materials are not allowed to accumulate. • The magazine store should not have any open drains, traps, pits or pocket which any molten ammonium nitrate could flow and be confined in the even of a fire. • Regular checking of the magazine building should be conducted for water seepage through the roof, walls or floor. • Caked explosives shall be disposed of in an appropriate manner. • Permission to remain the secured fenced off magazine store area shall not be given to explosives delivery vehicles. • Speed limit control should be implemented within the magazine area in order to reduce the risk of a vehicle impact or incident within the magazine area.	To minimize the hazard-to-life impact and ensure that overnight store of explosives will not adversely affect services, utilities, slopes, retaining walls, buildings and structures through ground vibrations or other effects.	Contractor	Magazine site	Construction phase	EIAO-TM , "Guidance Note No. GN 8 How to Apply for a Mode A Store Licence for Storage of Blasting Explosives" by Civil Engineering and Development Department (CEDD)	N/A
S14.9.6.5	<u>Good Practices to be Implemented for Transport of Explosives</u> Contractor should implement all good practices to minimize the hazard-to-life even further and ensure that transport of explosives will not result in adverse impact. A summary of these good practices is given below for reference. The good practice could made reference to the latest guideline including, but not limited to "Guidance Note No. GN 2 Approval of an Explosives Delivery Vehicle" and "Guidance Note No. GN 3 Application and Handling of a Removal Permit" by	To minimize the hazard-to-life impact and ensure that transport of explosives will not result in adverse impact.	Contractor	Transportation routes of explosives	Construction phase	EIAO-TM , "Guidance Note No. GN 2 Approval of an Explosives Delivery Vehicle", "Guidance Note No. GN 3	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	CEDD: • Typical Removal Permit Conditions o A placard as specified in the section 80 of Dangerous Goods (Control) Regulation must be displayed in a conspicuous place on the vehicle carrying explosives. o No unnecessary waiting or parking of the vehicle is permitted at any place along the transportation route. o The vehicle carrying the explosives is prohibited from passing through any tunnel on a public road. o Except with the permission in writing of the Authority, the vehicle must not carry more than 200kg net explosives content of explosives at any one time. The vehicle for moving explosives shall be a licensed vehicle equipped with effective fire- extinguishers and maintained in good running conditions at all time. o The vehicle shall use the intended route of transportation specified in the application for this conveyance permit. o The vehicle with explosives on board is prohibited from refuelling at any fuel station. o Conveyance of blasting explosives or entertainment fireworks shall only be undertaken by the vehicle/s and driver/s approved by the Authority and in the presence of a Resident Explosives Supervisor and a Shot Firer or a Fireworks Master/Assistant. When carrying explosives/fireworks, the approved vehicle/s shall display the correct dangerous goods placards and warning signs. o Explosives and detonators must be conveyed on separate vehicles or in separate compartments on the vehicle. Electric detonators must be carried in an approved and properly labelled wooden container; and o The Permittee is required to input the actual date and time of the use of this Permit in Centralised Explosives Licensing and Management System (CELIMS) after the conveyance of the explosives as soon as reasonably practicable. If the Permit is unused before its expiry date, the Permittee is also required to provide reason(s) for not using the Permit in CELIMS. • Safer Design of the Explosive Carrying Vehicle o Fire screen could be installed between the cabin and the load of the vehicle to reduce the chance of fire escalating to the load and cause explosion.					Application and Handling of a Removal Permit" by CEDD	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements	Implementation Status
	• Reduction of Accident Involvement Frequency o Different administrative measures can be implemented to reduce the accident involvement frequency and increase the situational awareness of the driver during the transportation of explosives; o Administrative measures can include "Tool-box" talk training regarding the safety precautions when transporting explosives; o Ensuring that the detonators and the cartridged emulsion are under good conditions and well-intact within their packaging before transporting; and o Recruiting experienced driver with good safety record and checking their health condition in a regular basis. • Reduction of Fire Involvement o Carrying fire extinguishers or other active fire protection devices with higher standard and higher capacity onboard of the Explosives Carrying Vehicle; o Create a contingency plan with consideration of different scenarios that may occur, such as the action that the driver should take in case of fire near the Explosives Carrying Vehicle in the middle of traffic jam; o Regulations for the drivers should be set, such as hot work should be prohibited when handling explosives to avoid any sources of ignition; and o Working Guidelines should be developed to provide clear instructions to the drivers when encountering different situations like extreme weather.						

Implementation status:	**Responsibility**	**Description**
	Implemented	Mitigation measure was fully implemented
	Implemented after Observation	Observation was made during site audit but improved/rectified by the contractor
	To be improved	Observation/reminder was made during last site audit but not yet improved/rectified by the contractor
	Being implemented	Mitigation measure was being implemented
	NC	Non-compliance of mitigation measure
	Rectified	Non-compliance but rectified by the contractor
	N/A	Not Applicable at this stage as no such site activities were conducted in the reporting period.