



Environmental Protection Department  
2nd floor, West Wing  
Island West Transfer Station  
88 Victoria Road  
Kennedy Town  
Hong Kong

Your reference:

Our reference: HKEPD259/50/110865

Date: 14 November 2025

Attention: Ms Kins Lo

**BY EMAIL & POST**  
(email: [wklo@epd.gov.hk](mailto:wklo@epd.gov.hk))

Dear Sirs

Quotation Ref. 23-02230  
Provision of Independent Environmental Checker Consultancy Services for  
West New Territories Landfill Extension  
Decommissioning of Remaining Portion of Middle Ash Lagoon in Tsang Tsui  
Monthly Dust Monitoring Report No.20

We refer to email of 13 November 2025 from Hong Kong Resources Recovery Park attaching the Monthly Dust Monitoring Report No.20 of the captioned.

We have no comments and hereby verify the captioned report in accordance with Clause 2.2 of the Environmental Permit (EP No. EP/618/2022) and Further Environmental Permit (FEP No. FEP-01/618/2022).

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Ricky Lau at 2618 2831.

Yours faithfully  
ANEWR CONSULTING LIMITED

James Choi  
Independent Environmental Checker

CPSJ/LCCR/thy

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## **EXECUTIVE SUMMARY**

### Introduction

1. This is the 20th Monthly Dust Monitoring Report for Contract No. EP/SP/186/21 “West New Territories Landfill Extension (WENTX)” at Nim Wan, Tuen Mun. This report summarized the monitoring results and audit findings of the EM&A programme in accordance with the Dust Monitoring Plan under clause 2.2 of the EP (EP/618/2022) and clause 2.2 of the FEP (FEP-01/618/2022) during the 20th reporting month covering 1 October to 31 October 2025.

### Summary of Main Works Undertaken and Key Measures Implemented

1. The main works undertaken during the reporting period are as follows:
  - Backfilling Works (Commenced from March 2024)
  - Installation of Temporary Surface Drainage System
2. Implementation of the key mitigation measures during the reporting period are as follows:

#### Air Quality

- Dust Suppression by watering of construction area at least 10 times per day.
- Provide covering of 50% open area with impervious materials of concrete paving.
- Provision of pavement to the construction access road with concrete paving and provide wheel washing facility at the entrance and exit.
- Vehicle washing facilities provided at vehicle exit point.

### Summary of Exceedances, Investigation and Follow-Up

1. Exceedance of Action/Limit levels during the reporting month (1 October to 31 October 2025) and the investigation results and/or follow-up actions:

#### Air Quality

No Action/Limit Level exceedance for 1-hour TSP was recorded.

### Complaint Handling, Prosecution and Public Engagement

No complaint/summons/prosecution were received during the reporting period.

### Reporting Changes

No reporting change was recorded in the reporting month.

### Future Key Issues

The key works or activities that will be anticipated in the next reporting period are as follows:

- Backfilling Works
-

## INTRODUCTION

### 1.1 Background

#### 1.1.1 Work Scope

1.1.1.1 Decommissioning of Remaining Portion of the Middle TTAL mainly involves site clearance, removal of asbestos pipes, minor levelling of Pulverized Fuel Ash (PFA) surface, covering of the levelled PFA surface with general fill and installation of temporary surface drainage system.

#### 1.1.2 Environmental Impact Assessment Ordinance Requirements

##### Decommissioning of Remaining Portion of Middle TTAL

1.1.2.1 A Project Profile (PP) for the Decommissioning of Remaining Portion of Middle Ash Lagoon in Tsang Tsui (Register No. PP-649/2022) was submitted under the EIAO on 5 September 2022 for application for permission to apply directly for EP (DIR). The DIR was permitted by EPD on 3 October 2022. The EP for the proposed decommissioning works (Permit No. EP-618/2022) was subsequently granted by EPD on 24 October 2022.

##### Further Environmental Permit

1.1.2.2 Application to the Director of Environmental Protection under Section 12 of the EIAO for the Further Environmental Permits (FEP) of the Decommissioning of Remaining Portion of Middle TTAL has been arranged and HKRRP should take up the responsibility of the EP Holder the Decommissioning of Remaining Portion of Middle TTAL upon obtaining of the FEPs.

#### 1.1.3 Project Organizations

Different Parties with different levels of involvement in the project organization include:

- Service Manager – ARUP
- Independent Environmental Checker (IEC) – ANewR Consulting Limited (ANewR)
- Contractor – Hong Kong Resources Recovery Park (HKRRP)

1.1.4 The key contacts of the Project are shown in *Table 1.1*.

**Table 1.1 Key Project Contacts**

Party	Role	Contact Person	Phone No.	Email
ARUP	Services Manager	Mr. Thomas Wong	5932 6119	thomas-kh.wong@arup.com
ANEWR	Independent Environmental Checker	Mr. James Choi	2618 2831	jpschoi@anewr.com
HKRRP	Contractor	Mr. Kenneth Lau	9315 4944	chiwai.lau@cohl.com

## 2 AIR QUALITY

### 2.1 General

2.1.1 With the implementation of recommended mitigation measures, no adverse environmental impacts during the decommissioning phase would be anticipated. Due to the relatively close distance and public use nature of ASR3 to the Project site, dust monitoring during the decommissioning phase of the Project is proposed to ensure the recommended mitigation measures, from the project Environmental Management Plan are implemented properly.

### 2.2 Monitoring Location

2.2.1 The proposed dust monitoring location is shown in **Table 2.1**. A site visit has been conducted on 28 December 2023 and after discussion with the management representative of the Tsang Tsui Columbarium, access authorization was rejected due to unsuitable conditions for equipment installation and lack of power supply.

**Table 2.1 Description of Dust Monitoring Locations**

Sensitive Receiver ID	Monitoring Parameters
ASR3	1-hr TSP

2.2.2 Alternative monitoring location is proposed, the following criteria, as far as practicable, have been considered and followed:

- At the site boundary or such location close to the major dust emission source;
- Close to the sensitive receptors; and
- Account for the prevailing meteorological conditions

2.2.3 An alternative location has been sought and proposed to the site boundary of the Middle Tsang Tsui Ash Lagoon and shown in **Table 2.2**. It is proposed to relocate the monitoring location (north facing) to the site boundary of Middle Tsang Tsui Ash Lagoon and at location avoid the burner emission from the Columbarium (east facing). This proposed monitoring location is approximately 10 meters away from the Tsang Tsui Columbarium- Garden of Remembrance. Both locations are situated to the north-west of the site boundary and experiencing the same prevailing meteorological conditions.

2.2.4 As the alternative location will be handed back in late 2025 under the contract for development by others. It is considered the current location is no longer suitable for impact monitoring due to it falls within the site boundary of others. The new alternative location is proposed to the southwest of boundary of Tsang Tsui Columbarium. Both locations are experiencing the same prevailing meteorological conditions, baseline monitoring data, as well as the Action and Limit Level of alternative location, could be adopted for new alternative location for consistency. The dust monitoring location was relocated to the newly alternative location on 29 September 2025. The original monitoring location and proposed alternative monitoring location were presented in **Appendix A**.

**Table 2.2 Description of Alternative Dust Monitoring Locations**

Sensitive Receiver ID	Monitoring Parameters
ASR3 Alternative	1-hr TSP

2.2.5 When positioning the sampler, the following points shall be noted:

- horizontal platform with appropriate support to secure the samplers against gusty wind should be provided;
-

- no two samplers should be placed less than 2 meters apart;
- the distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
- a minimum of 2 meters separation from walls, parapets and penthouses is required for rooftop samplers;
- a minimum of 2 meters separation from any supporting structure, measured horizontally is required;
- no furnace or incinerator flue is nearby;
- airflow around the sampler is unrestricted;
- the sampler is more than 20 meters from the drip-line;
- any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring;
- permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
- secured supply of electricity is needed to operate the samplers.

### **2.3 Air Quality Parameters**

2.3.1 Monitoring of the Total Suspended Particulate (TSP) levels shall be carried out to ensure that any deteriorating air quality could be readily detected and timely action be taken to rectify the situation. 1-hour TSP monitoring shall be conducted and the measurement is to indicate the impacts of construction dust on air quality. The TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, USA, Chapter 1 (Part 50), **Appendix B**. Upon approval by the IEC, 1-hour TSP levels can be measured by direct reading methods which are capable of producing comparable results as that by the high-volume sampling method, to indicate short event impacts.

2.3.2 All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and other special phenomena and work progress of the concerned site etc. shall be recorded down in details.

### **2.4 Monitoring Equipment**

2.4.1 High volume sampler (HVS) in compliance with the following specifications shall be used for carrying out the 1-hr monitoring:

- 0.6-1.7 m<sup>3</sup>/min (20-60 SCFM) adjustable flow range;
- Equipped with timing/control device with +/-5minutes accuracy for 24 hours operation;
- installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
- capable of providing a minimum exposed area of 406 cm<sup>2</sup> (63 in<sup>2</sup>);
- flow control accuracy: +/- 2.5% deviation over 24-hr sampling period;
- equipped with a shelter to protect the filter and sampler;
- incorporated with an electronic mass flow rate controller or other equivalent devices;
- equipped with a flow recorder for continuous monitoring;
- provided with a peaked roof inlet;
- incorporated with a manometer;
- able to hold and seal the filter paper to the sampler housing at a horizontal position; ▪
- easy to change the filter.

2.4.2 Sufficient number of HVSs with an appropriate calibration kit are available for carrying out the baseline monitoring, regular impact monitoring and ad hoc monitoring when necessary. The HVSs shall be equipped with an electronic mass flow controller and be calibrated against a traceable standard at regular intervals. All the equipment, calibration kit, filter papers, etc. shall be clearly labelled.

2.4.3 Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognised primary

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standard and be calibrated annually. The calibration data shall be properly documented for future reference. All the data should be converted into standard temperature and pressure condition. The flow-rate of the sampler before and after the sampling exercise with the filter in position shall be verified to be constant and be recorded down in the data sheet.

- 2.4.4 If it is necessary to propose to use a direct reading dust meter to measure 1-hr TSP levels, sufficient information to the Design Checker and IEC to prove that the instrument is capable of achieving a comparable result as that of the HVS and may be used for the 1-hr sampling. The instrument should also be calibrated regularly basis.
- 2.4.5 In consideration of the safety concerns of setting up wind sensor at 10m above ground, Contractor proposed alternative method to obtain representative wind data. Meteorological information as extracted from “the Hong Kong Observatory Lau Fau Shan Station” is alternative method to obtain representative wind data. Lau Fau Shan Station is located nearby the Project site. Moreover, Lau Fau Shan station is located at 31m above mean sea level which in compliance with the general setting up requirement. This station can also provide other meteorological information include air temperature, relative humidity, wind direction, wind speed and mean sea level pressure. Adoption of meteorological information from Hong Kong Observatory is a common alternative method for a lot of EM&A projects in Hong Kong.

## **2.5 Laboratory Measurement / Analysis**

- 2.5.1 A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments, to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory should be HOKLAS accredited.
- 2.5.2 If a site laboratory is set up or a non-HOKLAS accredited laboratory is hired for carrying out the laboratory analysis, the laboratory equipment shall be approved by the Design Checker and IEC and the measurement procedures (first measurement) shall be witnessed by the Design Checker and IEC.
- 2.5.3 Filter paper of size 8"x10" shall be labelled before sampling. It shall be a clean filter paper with no pin holes, and shall be conditioned in a humidity-controlled chamber for over 24-hr and be pre-weighed before use for the sampling.
- 2.5.4 After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper is then returned to the laboratory for reconditioning in the humidity-controlled chamber followed by accurate weighing by an electronic balance with a readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard. All the collected samples shall be kept in a good condition for 6 months before disposal.

## **2.6 Baseline Monitoring**

- 2.6.1 Baseline monitoring at the designated monitoring location for at least 14 consecutive days prior to the commencement of the construction works to obtain 1-hour sampling which shall be carried out 3 times per day for 1-hr TSP. During the baseline monitoring, there should not be any decommissioning construction or dust generation activities in the vicinity of the monitoring stations. Baseline air quality was conducted at the air quality monitoring station during the period of 26 January to 8 February 2024. The monitoring result for average 1-hr TSP concentration is 125 µg/m<sup>3</sup> (while Min: 51µg/m<sup>3</sup> and Max: 348µg/m<sup>3</sup>).
- 2.6.2 Impact monitoring was be carried out during the course of the Works. For regular impact monitoring for 1-hr TSP monitoring, the sampling frequency of at least three times in every six-days for 1-hr TSP during normal construction works period. The copies of certificates are shown in *Appendix B*.
-

2.6.3 In case of non-compliance with the dust criteria, more frequent monitoring exercise, as specified in the Action Plan in **Section 2.8**, shall be conducted within 24 hours after the result is obtained. The additional monitoring shall be continued until the excessive dust emission or the deterioration in air quality is rectified.

## **2.7 Event and Action**

2.7.1 The baseline monitoring results form the basis for determining the air quality criteria for the impact monitoring and compare the impact monitoring results with air quality criteria set up for 1-hour TSP. **Table 2.3** shows the dust criteria, namely Action and Limit levels to be used. Should non-compliance of the air quality criteria occur, the Design Checker, IEC, and the Contractor shall undertake the relevant action in accordance with the Action Plan in **Appendix C**.

**Table 2.3 Action and Limit Levels for Dust Impact**

<b>Parameters</b>	<b>Action Level</b>	<b>Limit Level</b>
1-hour TSP Level in $\mu\text{g}/\text{m}^3$	331	500

## **2.8 Summary of Potential Environmental Impacts and Mitigation Measures**

2.8.1 The potential environmental impacts and proposed mitigation measures to be incorporated during the decommissioning phase of the Project are summarized in **Appendix D**, which would be included in the construction contract document. The IEC would supervise and monitor the implementation of these measures by the Contractor. Upon completion of the decommissioning phase, the Project Site will be an open area with no human activity or equipment in operation, adverse environmental impact is not expected, and mitigation measures not considered to be required.

## **2.9 Results and Observations**

2.9.1 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. The monitoring schedule is shown in **Appendix E**.

2.9.2 The air temperature, precipitation and the relative humidity data was extracted from “the Hong Kong Observatory Lau Fau Shan Station”. The weather information for the reporting month is summarized in **Appendix F**.

2.9.3 The monitoring data and graphical presentation of 1-hour TSP monitoring results are shown in **Appendix G** respectively.

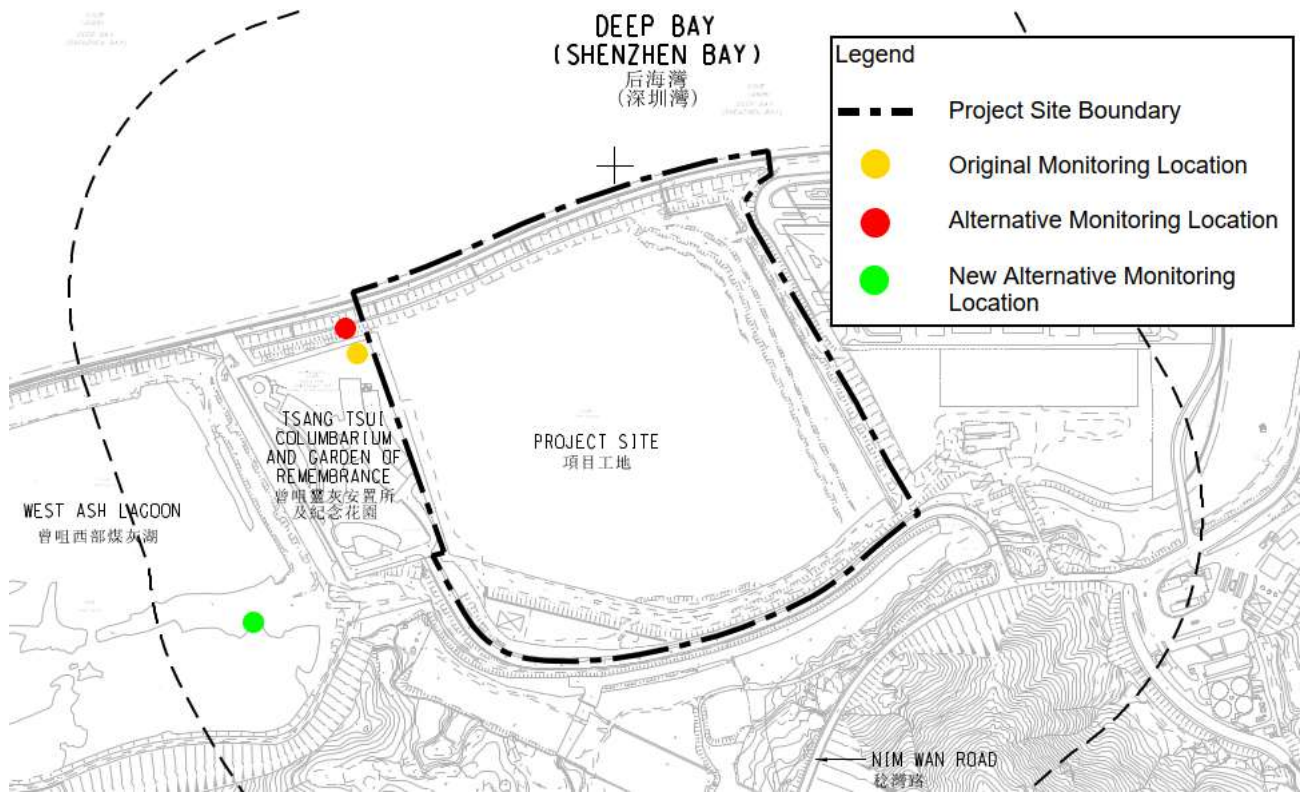
2.9.4 No Action / Limit Level exceedance was recorded for all 1-hour TSP monitoring in the reporting month.

2.9.5 No Complaint / Enquiry was received in the reporting period.

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**Appendix A**  
**THE ORIGINAL MONITORING LOCATION AND PROPOSED**  
**ALTERNATIVE MONITORING LOCATION**

Appendix A - The Original Monitoring Location and Proposed Alternative Monitoring Location



**Appendix B**  
**THE CALIBRATION CERTIFIATES**

## ALS Technichem (HK) Pty Ltd

### ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



#### SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: HK2437860
CLIENT	: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T.	SUB-BATCH	: 1
		DATE RECEIVED	: 16-SEP-2024
		DATE OF ISSUE	: 24-SEP-2024
PROJECT	: ---	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ---

#### General Comments

- Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.
- Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.
- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition.
- Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.

#### Signatories

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

Signatories

Position

Richard Fung

Managing Director

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release.

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

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**Decommissioning of Remaining Portion of Middle Ash Lagoon in Tsang Tsui  
Monthly Dust Monitoring Report No.20 (1 Oct to 31 Oct 2025)**

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WORK ORDER : HK2437860  
SUB-BATCH : 1  
CLIENT : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING  
PROJECT : ---

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2437860-001	S/N: 467392 (EQ128)	AIR	16-Sep-2024	S/N: 467392 (EQ128)

----- END OF REPORT -----

**Equipment Verification Report (TSP)**

**Equipment Calibrated:**

Type: Laser Dust monitor  
 Manufacturer: Sibata LD-5R  
 Serial No.: 467392  
 Equipment Ref: EQ128

**Standard Equipment:**

Standard Equipment: Higher Volume Sampler (TSP)  
 Location & Location ID: AUES office (calibration room)  
 Equipment Ref: HVS 018  
 Last Calibration Date: 15 August 2024

**Equipment Verification Results:**

Verification Date: 3 September 2024

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m <sup>3</sup> (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
3-Sep-24	2hr00mins	09:26 ~ 11:26	30.2	1006.1	24.3	2190	18.3
3-Sep-24	2hr00mins	11:37 ~ 13:37	30.2	1006.1	42.3	3887	32.4
3-Sep-24	2hr00mins	12:49 ~ 14:49	30.2	1006.1	45.5	4273	35.6

Sensitivity Adjustment Scale Setting (Before Calibration) 715 (CPM)

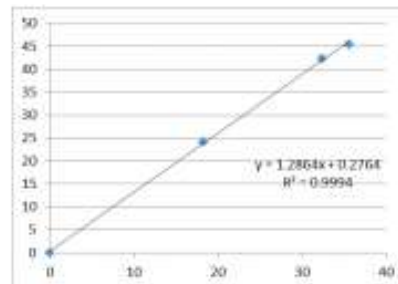
Sensitivity Adjustment Scale Setting (After Calibration) 714 (CPM)

**Linear Regression of Y or X**

Slope (K-factor): 1.2864g/m<sup>3</sup>/CPM

Correlation Coefficient (R) 0.9997

Date of Issue 10 September 2024



**Remarks:**

- Strong Correlation (R>0.8)**
- Factor 1.2864g/m<sup>3</sup>/CPM should be apply for TSP monitoring

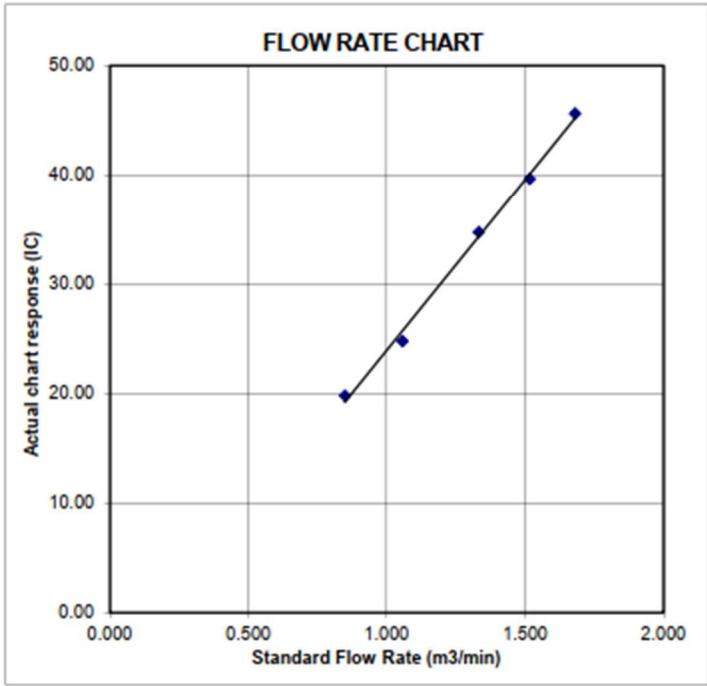
\*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : [Signature] Date : 10 September 2024

QC Reviewer : Ben Tam Signature : [Signature] Date : 10 September 2024

**TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET**

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration: 15-Aug-24					
Location ID :	Calibration Room - TISCH Higher Volume Sampler (Model TE-5170) S/N:1260	Next Calibration Date: 15-Nov-24					
<b>CONDITIONS</b>							
Sea Level Pressure (hPa)	1005.2	Corrected Pressure (mm Hg) <span style="border: 1px solid black; text-align:center;">753.9</span>					
Temperature (°C)	27.7	Temperature (K) <span style="border: 1px solid black; text-align:center;">301</span>					
<b>CALIBRATION ORIFICE</b>							
Make->	TISCH	Qstd Slope -> <span style="border: 1px solid black; text-align:center;">2.13163</span>					
Model->	5025A	Qstd Intercept -> <span style="border: 1px solid black; text-align:center;">-0.03523</span>					
Calibration Date->	15-Dec-23	Expiry Date-> <span style="border: 1px solid black; text-align:center;">15-Dec-24</span>					
<b>CALIBRATION</b>							
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.4	6.4	12.8	1.681	46	45.61	Slope = 31.2876 Intercept = -7.3464 Corr. coeff. = 0.9981
13	5.2	5.2	10.4	1.517	40	39.66	
10	4	4	8.0	1.332	35	34.70	
8	2.5	2.5	5.0	1.057	25	24.79	
5	1.6	1.6	3.2	0.849	20	19.83	
<b>Calculations :</b>							
$Qstd = 1/m[\text{Sqrt}(H20(Pa/Pstd)(Tstd/Ta))-b]$ $IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$							
Qstd = standard flow rate IC = corrected chart responses I = actual chart response m = calibrator Qstd slope b = calibrator Qstd intercept Ta = actual temperature during calibration ( deg K ) Pstd = actual pressure during calibration ( mm Hg )							
<b>For subsequent calculation of sampler flow:</b>							
$1/m(( I )[\text{Sqrt}(298/Tav)(Pav/760)]-b)$							
m = sampler slope b = sampler intercept I = chart response Tav = daily average temperature Pav = daily average pressure							





RECALIBRATION DUE DATE: <b>December 15, 2024</b>
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# Certificate of Calibration

Calibration Certification Information			
Cal. Date: December 15, 2023	Rootsmeter S/N: 438320	Ta: 295 °K	
Operator: Jim Tisch		Pa: 748.5 mm Hg	
Calibration Model #: TE-5025A	Calibrator S/N: 1941		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4590	3.2	2.00
2	3	4	1	1.0360	6.4	4.00
3	5	6	1	0.9260	8.0	5.00
4	7	8	1	0.8840	8.9	5.50
5	9	10	1	0.7290	12.9	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left( \frac{Ta}{Pa} \right)}$ (y-axis)
0.9907	0.6790	1.4106	0.9957	0.6825	0.8878
0.9864	0.9522	1.9949	0.9914	0.9570	1.2556
0.9843	1.0630	2.2304	0.9893	1.0684	1.4037
0.9831	1.1121	2.3393	0.9881	1.1178	1.4723
0.9778	1.3413	2.8213	0.9828	1.3481	1.7756
<b>QSTD</b>	m=	<b>2.13163</b>	<b>QA</b>	m=	<b>1.33479</b>
	b=	<b>-0.03523</b>		b=	<b>-0.02217</b>
	r=	<b>0.99999</b>		r=	<b>0.99999</b>

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

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

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

## ALS Technichem (HK) Pty Ltd

### ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



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#### SUB-CONTRACTING REPORT

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CONTACT	: MR BEN TAM	WORK ORDER	: <b>HK2540542</b>
CLIENT	: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T.	SUB-BATCH	: 1
		DATE RECEIVED	: 17-SEP-2025
		DATE OF ISSUE	: 22-SEP-2025
PROJECT	: Not Specified	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ---

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#### General Comments

- Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.
  - Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.
  - Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.
  - No sample is received in this Work Order. The report presents non-laboratory testing data only.
- 

#### Signatories

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

Signatories	Position
	
Richard Fung	Managing Director

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This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release.

**ALS Technichem (HK) Pty Ltd**  
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**Decommissioning of Remaining Portion of Middle Ash Lagoon in Tsang Tsui  
Monthly Dust Monitoring Report No.20 (1 Oct to 31 Oct 2025)**

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WORK ORDER : HK2540542  
SUB-BATCH : 1  
CLIENT : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING  
PROJECT : Not Specified



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2540542-001	S/N: 467392	AIR	17-Sep-2025	S/N: 467392

----- END OF REPORT -----

**Equipment Verification Report (TSP)**

**Equipment Calibrated:**

Type: Laser Dust monitor  
 Manufacturer: Sibata LD-5R  
 Serial No. 467392  
 Equipment Ref: EQ128

**Standard Equipment:**

Standard Equipment: Higher Volume Sampler (TSP)  
 Location & Location ID: Ha Pak Nai  
 Equipment Ref: HVS 023  
 Last Calibration Date: 16 August 2025

**Equipment Verification Results:**

Verification Date: 3 September 2025

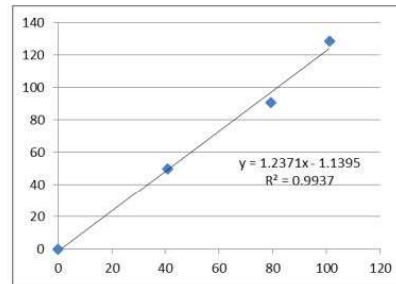
Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m <sup>3</sup> (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
3-Sep-25	1hr00min	11:18 ~ 12:18	30.5	1008.2	90.9	4752	79.2
3-Sep-25	1hr00min	12:23 ~ 13:23	30.5	1008.2	49.7	2453	40.9
3-Sep-25	1hr00min	13:28 ~ 14:28	30.5	1008.2	128.5	6065	101.1

Sensitivity Adjustment Scale Setting (Before Calibration) 715 (CPM)

Sensitivity Adjustment Scale Setting (After Calibration) 714 (CPM)

**Linear Regression of Y or X**

Slope (K-factor): 1.2371(µg/m<sup>3</sup>)/CPM  
 Correlation Coefficient (R) 0.9968  
 Date of Issue 10 September 2025



**Remarks:**

- Strong** Correlation (R>0.8)
- Factor 1.2371(µg/m<sup>3</sup>)/CPM should be apply for TSP monitoring

\*If R<0.5, repair or re-verification is required for the equipment

Operator : Gary Ng Signature : [Signature] Date : 10 September 2025

QC Reviewer : Ben Tam Signature : [Signature] Date : 10 September 2025

**TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET**

Location : Ha Pak Nai Date of Calibration: 16-Aug-25  
 Location ID : AM(D)3 Next Calibration Date: 16-Oct-25  
 Model:TISCH High Volume Air Sampler TE-5170

**CONDITIONS**

Sea Level Pressure (hPa) 1008.5 Corrected Pressure (mm Hg) 756.375  
 Temperature (°C) 29.3 Temperature (K) 302

**CALIBRATION ORIFICE**

Make-> TISCH Qstd Slope -> 2.09671  
 Model-> 5025A Qstd Intercept -> -0.01852  
 Calibration Date-> 16-Dec-24 Expiry Date-> 16-Dec-25

**CALIBRATION**

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.4	6.4	12.8	1.699	54	53.10	Slope = 26.8673 Intercept = 7.0086 Corr. coeff. = 0.9983
13	5.2	5.2	10.4	1.532	49	48.19	
10	3.8	3.8	7.6	1.311	42	41.30	
8	2.6	2.6	5.2	1.086	37	36.39	
5	1.5	1.5	3.0	0.827	30	29.50	

**Calculations :**

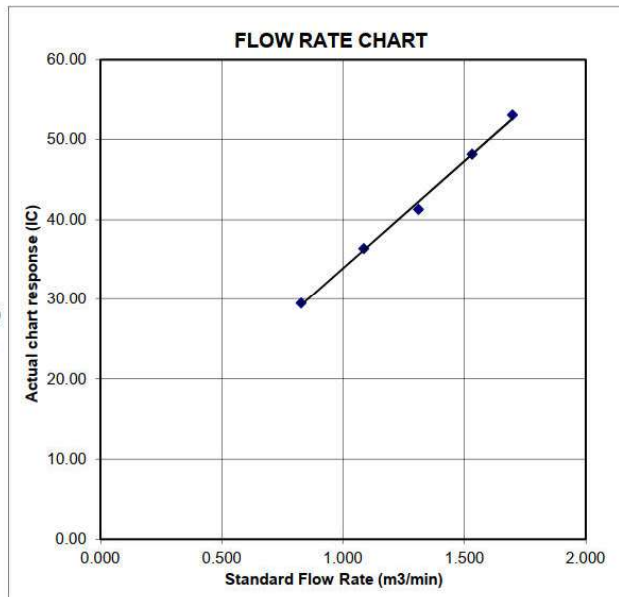
$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$   
 $IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$

Qstd = standard flow rate  
 IC = corrected chart responses  
 I = actual chart response  
 m = calibrator Qstd slope  
 b = calibrator Qstd intercept  
 Ta = actual temperature during calibration ( deg K )  
 Pstd = actual pressure during calibration ( mm Hg )

**For subsequent calculation of sampler flow:**

$1/m(( I )[\text{Sqrt}(298/Tav)(Pav/760)]-b)$

m = sampler slope  
 b = sampler intercept  
 I = chart response  
 Tav = daily average temperature  
 Pav = daily average pressure





<b>RECALIBRATION</b>
<b>DUE DATE:</b>
<b>December 16, 2025</b>

# Certificate of Calibration

Calibration Certification Information			
Cal. Date: December 16, 2024	Rootsometer S/N: 438320	Ta: 293	°K
Operator: Jim Tisch		Pa: 749.0	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: <b>4064</b>		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4600	3.2	2.00
2	3	4	1	1.0300	6.4	4.00
3	5	6	1	0.9220	8.0	5.00
4	7	8	1	0.8770	8.8	5.50
5	9	10	1	0.7250	12.8	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left( \frac{Ta}{Pa} \right)}$ (y-axis)
0.9981	0.6836	1.4159	0.9957	0.6820	0.8845
0.9938	0.9649	2.0024	0.9915	0.9626	1.2509
0.9917	1.0756	2.2388	0.9893	1.0730	1.3985
0.9906	1.1296	2.3480	0.9883	1.1269	1.4668
0.9853	1.3590	2.8318	0.9829	1.3557	1.7690
<b>QSTD</b>	m=	<b>2.09671</b>	<b>QA</b>	m=	<b>1.31292</b>
	b=	<b>-0.01852</b>		b=	<b>-0.01157</b>
	r=	<b>0.99999</b>		r=	<b>0.99999</b>

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

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

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

**Appendix C**  
**EVENT / ACTION PLAN FOR DUST IMPACT**

*Decommissioning of Remaining Portion of Middle Ash Lagoon in Tsang Tsui*  
**Monthly Dust Monitoring Report No.20 (1 Oct to 31 Oct 2025)**

Event	Action		
	IEC	Services Manager	Contractor
Action level exceedance for one sample	<ul style="list-style-type: none"> <li>Check monitoring data and Contractor's working methods</li> </ul>	<ul style="list-style-type: none"> <li>Notify Contractor for the identification of cause</li> </ul>	<ul style="list-style-type: none"> <li>Rectify any unacceptable practice</li> <li>Amend working methods if appropriate</li> </ul>
Action Level exceedance for two or more consecutive samples	<ul style="list-style-type: none"> <li>Review monitoring data submitted by Contractor</li> <li>Review the investigation finding submitted by Contractor and check the Contractor's working method</li> <li>Review the proposed remedial measures by Contractor and advise SM accordingly</li> <li>Supervise the implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing</li> <li>Require Contractor to propose remedial measures for the analysed dust problem</li> <li>Ensure remedial measures properly implemented</li> </ul>	<ul style="list-style-type: none"> <li>Rectify any unacceptable practice</li> <li>Amend working methods if appropriate</li> <li>Submit proposals for remedial actions to IEC within 3 working days of notification</li> <li>Implement the agreed proposals</li> <li>Amend proposal if appropriate</li> </ul>
Limit level exceedance for one sample	<ul style="list-style-type: none"> <li>Review monitoring data submitted by Contractor</li> <li>Discuss amongs SM, Leader and Contractor on the potential remedial actions.</li> <li>Supervise the implementation of remedial measure.</li> </ul>	<ul style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing</li> <li>Require Contractor to propose remedial measures for the analysed dust problem</li> <li>Ensure remedial measures properly implemented</li> </ul>	<ul style="list-style-type: none"> <li>Take immediate action to avoid further exceedance</li> <li>Submit proposals for remedial actions to IEC within 3 working days of notification</li> <li>Implement the agreed proposals</li> <li>Amend proposal if appropriate</li> </ul>
Limit level exceedance for two or more consecutive samples	<ul style="list-style-type: none"> <li>Review monitoring data submitted by Contractor</li> <li>Discuss amongs SM, and Contractor on the potential remedial actions.</li> <li>Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise SM accordingly</li> <li>Supervise the implementation of remedial measures.</li> </ul>	<ul style="list-style-type: none"> <li>Require Contractor to propose remedial measures for the analysed dust problem</li> <li>Ensure remedial measures properly implemented;</li> <li>If exceedance continues, consider what activity of the work is responsible and instruct Contractor to stop that activity of work until the exceedance is abated</li> </ul>	<ul style="list-style-type: none"> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Resubmit proposals if problem still not under control;</li> <li>Stop the relevant portion of works as determined by the Contractor until the exceedance is abated.</li> </ul>

**Appendix D**  
**SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND**  
**MITIGATION MEASURE**

**Decommissioning of Remaining Portion of Middle Ash Lagoon in Tsang Tsui  
Monthly Dust Monitoring Report No.20 (1 Oct to 31 Oct 2025)**

Potential Environmental Impacts	Mitigation Measures	Implementation Agent
<b>Decommissioning Phase</b>		
Air Quality (Construction Dust)	<p>Dust control and suppression measures stipulated in the <i>Air Pollution Control (Construction Dust) Regulation</i> should be implemented to control dust emissions from the Project Site. Relevant dust control and suppression measures are listed below:</p> <ul style="list-style-type: none"> <li>• Dust Suppression by watering of construction area at least 10 times per day;</li> <li>• Provide covering of 50% of open area with impervious materials or concrete paving;</li> <li>• Provision of pavement to construction access road with concrete paving and provide wheel washing facility at entrance and exit;</li> <li>• Skip hoist for material transport should be completely enclosed by impervious sheeting;</li> <li>• Vehicle washing facilities should be provided at every vehicle exit point;</li> <li>• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore surfaces;</li> <li>• Where a site boundary adjoining a road, streets or other areas accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;</li> <li>• For site boundary near ASR3, hoarding of higher than 2.4m high from ground level should be provided;</li> <li>• Every main construction access road should be paved with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet;</li> <li>• The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials;</li> <li>• Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides;</li> <li>• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet;</li> </ul>	Contractor
	<ul style="list-style-type: none"> <li>• Open stockpiles should be avoided or covered. Where possible prevent placing dusty material storage piles near ASRs;</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;</li> <li>• The load of dusty materials carried by vehicles leaving a construction site should be covered entirely by clean impervious sheets to ensure dusty materials do not leak from the vehicle;</li> <li>• Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly during dry periods/seasons;</li> <li>• Imposition of speed limit for vehicles on unpaved site roads – the recommended limit is 10 km/hr;</li> <li>• Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs; and</li> <li>• Setting up of an environmental auditing program to monitor the construction activities in order to enforce controls and modify the method of works in the event that dusty conditions arise.</li> </ul>	

**APPENDIX E**  
**THE MONITORING SCHEDULE**

**Impact Monitoring Schedule**

<b>Date</b>		<b>Air Quality Monitoring</b>
		<b>1-Hour TSP</b>
Wed	1- Oct -25	
Thu	2- Oct -25	
Fri	3- Oct -25	✓
Sat	4- Oct -25	
Sun	5- Oct -25	
Mon	6- Oct -25	✓
Tue	7- Oct -25	
Wed	8- Oct -25	
Thu	9- Oct -25	
Fri	10- Oct -25	
Sat	11- Oct -25	✓
Sun	12- Oct -25	
Mon	13- Oct -25	
Tue	14- Oct -25	
Wed	15- Oct -25	✓
Thu	16- Oct -25	
Fri	17- Oct -25	✓
Sat	18- Oct -25	
Sun	19- Oct -25	
Mon	20- Oct -25	
Tue	21- Oct -25	✓
Wed	22- Oct -25	
Thu	23- Oct -25	✓
Fri	24- Oct -25	
Sat	25- Oct -25	✓
Sun	26- Oct -25	
Mon	27- Oct -25	
Tue	28- Oct -25	✓
Wed	29- Oct -25	
Thu	30- Oct -25	
Fri	31- Oct -25	✓

✓	Monitoring Day
	Sunday or Public Holiday

**Appendix F**  
**THE WEATHER INFORMATION FOR THE REPORTING MONTH**

*Decommissioning of Remaining Portion of Middle Ash Lagoon in Tsang Tsui*  
 Monthly Dust Monitoring Report No.20 (1 Oct to 31 Oct 2025)

Date	Weather	Total Rainfall (mm)	Lau Fau Shan Station				
			Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction	
1-Oct-25	Wed	Mainly fine. Very hot.	0	29	13.2	76	W/SW
2-Oct-25	Thu	Very hot. Light to moderate easterly winds.	Trace	28.7	8.7	81.2	W/NW
3-Oct-25	Fri	Very hot. Light to moderate easterly winds.	0	28	13.7	82.5	W/SW
4-Oct-25	Sat	Mainly fine. Very hot.	0.6	30	20	72	E
5-Oct-25	Sun	Very hot. Light to moderate easterly winds.	1	28	19.5	80.7	SE
6-Oct-25	Mon	Sunny periods. Moderate east to southeasterly winds	0.6	29.5	13.2	79.2	E/SE
7-Oct-25	Tue	Mainly fine. Very hot and dry	0	28.7	13	71	W/SW
8-Oct-25	Wed	Very hot and dry. Moderate easterly winds.	0	29.1	11.5	77.5	E
9-Oct-25	Thu	Hot with sunny periods.	Trace	30.7	14.2	72.5	E/NE
10-Oct-25	Fri	Isolated showers. Moderate easterly winds.	0.1	30	11.2	75.7	E
11-Oct-25	Sat	Moderate easterly winds.	0	30.6	10.0	52.0	E
12-Oct-25	Sun	Sunny periods, a few showers and isolated thunderstorms.	15.7	28.4	15	87	E
13-Oct-25	Mon	Mainly fine apart from isolated showers	3.8	28.7	11.5	85	E
14-Oct-25	Tue	Hot in the afternoon. Moderate east to northeasterly winds.	5.5	29.7	10.7	78.7	E
15-Oct-25	Wed	Mainly fine. Hot	0	29	9.5	78.5	E/NE
16-Oct-25	Thu	Hot. Moderate easterly winds	0	30.4	14.2	74.2	E
17-Oct-25	Fri	Hot with sunny periods.	0	Maintenance	14.2	Maintenance	E
18-Oct-25	Sat	Mainly fine. Very hot and dry	0	29.7	13.2	72.5	N
19-Oct-25	Sun	Hot with sunny periods.	0	29.9	15.5	63.5	N/NE
20-Oct-25	Mon	Mainly fine. Very hot and dry	Trace	25.9	19.5	69	NE
21-Oct-25	Tue	Hot in the afternoon. Moderate east to northeasterly winds.	0.1	21.2	31	77	NE
22-Oct-25	Wed	Moderate to fresh northerly winds, strong offshore.	3.3	18	23.5	83	N/NE
23-Oct-25	Thu	Mainly cloudy. One or two light rain	0	19.6	21	78.2	N/NE
24-Oct-25	Fri	Sunny intervals. Mainly cloudy .	Trace	22.9	21.7	66	N/NE
25-Oct-25	Sat	Moderate to fresh north to northeasterly winds.	Trace	24.6	17.5	69	N/NE
26-Oct-25	Sun	Moderate north to northeasterly winds, occasionally fresh.	0	26.6	13.5	64	N/NE
27-Oct-25	Mon	Mainly cloudy. One or two light rain	Trace	23.2	16	71.2	N/NE
28-Oct-25	Tue	Mainly cloudy. One or two light rain patches.	0.5	22.3	14.2	81.2	E/NE
29-Oct-25	Wed	Moderate north to northeasterly winds.	Trace	24.8	12.5	74.2	E
30-Oct-25	Thu	Mainly cloudy. Sunny intervals	Trace	27.1	10.7	71	E
31-Oct-25	Fri	Dry with sunny intervals. Mainly cloudy.	0	26.2	12.2	76.2	N/NE

**Appendix G**  
**THE MONITORING DATA AND GRAPHICAL PRESENTATION OF 1-  
HOUR TSP MONITORING RESULT**

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**Impact Monitoring Results for 1-hour TSP at Location ASR3**

Date	Start Time	1-hour TSP ( $\mu\text{g}/\text{m}^3$ )			Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
		1 <sup>st</sup> reading	2 <sup>nd</sup> reading	3 <sup>rd</sup> reading		
3-Oct-25	10:04	46	55	52	331	500
6-Oct-25	10:00	52	70	59	331	500
11-Oct-25	10:02	39	36	36	331	500
15-Oct-25	10:00	41	31	37	331	500
17-Oct-25	12:27	57	62	69	331	500
21-Oct-25	10:00	32	35	36	331	500
23-Oct-25	09:50	210	174	177	331	500
25-Oct-25	10:00	32	21	30	331	500
28-Oct-25	09:55	55	66	62	331	500
31-Oct-25	10:00	72	60	76	331	500

**Graphical Plot for 1-hour TSP Monitoring Result at Location ASR3**

