

### Environmental Team Services for Tuen Mun Area 54 Sewage Pumping Station

Operation Phase Final Odour Impact Monitoring Report

November 2020

This Operation Phase Final Odour Impact Monitoring Report for Tuen Mun Area 54 Sewage Pumping Station has been reviewed, certified by the Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC).

Certified by:

hom

Ir Thomas CHAN Environmental Team Leader (ETL) Mott MacDonald Hong Kong Limited

Date:

26 November 2020

Verified by:

Wai Kwan CHIU Independent Environmental Checker (IEC) Meinhardt Infrastructure and Environment Limited

Date:

26 November 2020

Mott MacDonald 3/F International Trade Tower 348 Kwun Tong Road Kwun Tong Kowloon Hong Kong

T +852 2828 5757 mottmac.hk

Drainage Services Department

### Environmental Team Services for Tuen Mun Area 54 Sewage Pumping Station

Operation Phase Final Odour Impact Monitoring Report

November 2020

### Contents

Exe	cutive	e summary	1			
1	Introduction					
	1.1	Background	2			
	1.2	Project Organisation	2			
	1.3	Purpose of the Report	2			
	1.4	Structure of the Report	2			
2	Imp	act Odour Monitoring Requirements and Methodology	3			
	2.1	Introduction	3			
	2.2	Monitoring Requirements	3			
	2.3	Monitoring Locations	3			
	2.4	Monitoring Equipment	4			
	2.5	Monitoring Methodology	5			
	2.6	Monitoring Schedule	5			
3	Imp	act Monitoring Results and Analysis	6			
	3.1	Monitoring Results	6			
	3.2	Monitoring Results Analysis	6			
	3.3	Exceedance Investigation	7			
	3.4	Weather Condition during Impact Monitoring	9			
4	Sum	nmary of Complaints	10			
	4.1	Summary of Complaints	10			
5	Con	clusions and Recommendations	11			
	5.1	Conclusion and Recommendations	11			

#### Tables

Table 2.1: Monitoring Locations	4
Table 2.2: Odour Monitoring Equipment	4
Table 2.3: Schedule of Impact Odour Monitoring Events	5
Table 3.1: Summary of Impact Odour Monitoring Results and Comparison with Action/ LimitLevels	7
Table 3.2: Summary of Exceedances for Impact Odour Monitoring Events	7
Table C.1: Event/Action Plan for Air Quality Monitoring (Operational Phase)	15

### Figures

Figure 1.1	Layout Plan
Figure 2.1	Locations of Impact Odour Monitoring Stations

#### Appendices

A.	Project Organisation
В.	Method Statement of Odour Impact Monitoring
C.	Event and Action Plan for Air Quality (Odour)
D.	Technical Reports for Impact Odour Monitoring Events
E.	Incident Report on Action Level or Limit Level Exceedance

### **Executive summary**

In November 2018, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by the Drainage Services Department (DSD) under Quotation Ref. DEMP/2018/04 to undertake the duties of Environmental Team (ET) as specified in the Environmental Monitoring and Audit (EM&A) Manual and the EP in relation to the odour impact monitoring for the 12-month operation Tuen Mun Area 54 Sewage Pumping Station (TM54SPS). The Further Environmental Permit (FEP) No. FEP-01/381/2009) was granted by the Environmental Protection Department (EPD) on 20 February 2018.

The Operation Phase Final Odour Impact Monitoring Report summarizes the results of the four impact odour monitoring events for operation phase. Based on the measurement results of the four impact odour monitoring events for operation phase, exceedance of Action and Limit Level were observed at A1 during the third impact odour monitoring event, at A2 during the second impact odour monitoring event and at A5 during the third and fourth impact odour monitoring event. Exceedance of Action Level of 2.3 ppb but complying with the Limit Level of 2.5 ppm was observed at A2 during the third and fourth impact odour monitoring event. Based on the monitoring data review and site observation during monitoring period, it is considered that the exceedances at A1, A2 and A5 are not project related. And thus, the impact monitoring for monitoring station A1, A2 and A5 is recommended to be ceased.

### **1** Introduction

#### 1.1 Background

In November 2018, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by the Drainage Services Department (DSD) under Quotation Ref. DEMP/2018/04 to undertake the duties of Environmental Team (ET) as specified in the Environmental Monitoring and Audit (EM&A) Manual and the EP in relation to the odour impact monitoring for the 12-month operation Tuen Mun Area 54 Sewage Pumping Station (TM54SPS).

A layout plan of the Project is provided in **Figure 1.1**.

#### **1.2 Project Organisation**

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are shown in **Appendix A**.

#### **1.3** Purpose of the Report

The Final Odour Impact Monitoring Report (hereinafter as the "this Report") presents the methodology and results of the operation phase impact odour monitoring events. The measured impact odour levels are benchmarked with the Action and Limit Level for assessing the impact during operation of the Project.

#### **1.4** Structure of the Report

The structure of this Report is as follows:

- Section 1: Introduction, background, purpose and the structure of the report
- Section 2: Impact odour monitoring requirements and methodology
- Section 3: Impact odour monitoring results and the event and action plan for operation phase
- Section 4: Summary of complaints
- Section 5: Conclusions and recommendations

# 2 Impact Odour Monitoring Requirements and Methodology

#### 2.1 Introduction

H<sub>2</sub>S is one of the main components of odour emissions, which can serve as a surrogate indicator for sewage odour. During operation of TM54SPS, measurements of H<sub>2</sub>S concentrations at source and at the selected Air Sensitive Receivers (ASRs) are required. This is to indicate whether the odour concentration would be higher or lower than the baseline condition. The odour level at sources and meteorological data shall be obtained as reference information for the analysis of the exceedance event.

With reference to the EM&A Manual, an impact monitoring of H<sub>2</sub>S measurements shall be conducted in the first year of operation upon commissioning of TM54SPS (i.e. construction of TM54SPS was substantially completed in March 2018). As discussed between DSD and EPD, a new arrangement for the odour monitoring locations and level of measurement for the impact odour monitoring had been established. As it was necessary to deal with some of the major technical issues (e.g. review of H<sub>2</sub>S measurement method, monitoring locations and level of measurement, etc.) for the impact monitoring, the commencement of the monitoring exercise would be deferred from March 2018 to November 2019. Monitoring of 2 of the monitoring stations are hindered by land resumption progress, which will be discussed in **Section 2.3**.

The monitoring location, equipment, methodology and schedule will be discussed in the latter part of this report.

#### 2.2 Monitoring Requirements

With reference to the monitoring requirements in the EM&A manual, subsequent discussion among ET, Independent Environmental Checker (IEC), DSD and EPD has been conducted. A Method Statement of Odour Impact Monitoring had been established by ET and agreed with IEC and EPD before commencement of monitoring in November 2019, which is presented in **Appendix B**.

The Event and Action Plan for Air Quality Monitoring (odour) of operational phase stipulated in the EM&A Manual is extracted and presented in **Appendix C**.

#### 2.3 Monitoring Locations

5 monitoring stations (i.e. A1, A2. A3, A4 and A5) had been proposed in the EM&A manual. Before commencement of the impact odour monitoring, EPD raised that the odour monitoring stations and level of measurement for the impact odour monitoring should be further reviewed based on the latest site development and locations of potential representative sensitive receivers in the vicinity of TMA54SPS.

Having reviewed, the odour measurement for the impact odour monitoring would be taken at a height of 10m above ground level, which is the predicted worst level of the receivers as stated in the EM&A Manual. A truck mounted working platform would be employed for the odour measurement at a height of 10m above ground level. As regards the locations of odour monitoring stations, it was noticed that there are 3 odour monitoring stations selected in the EM&A Manual (i.e. A3-A5) that were located in private lots and are not accessible for the ET to conduct the

impact odour monitoring at a height of 10m above ground level, while the remaining 2 stations (i.e. A1 and A2) fell within CEDD's construction sites (i.e. Government land). As advised by Lands Department, the private land resumption (for A3 and A4) were planned to be made in early 2021, while the private land (for A5) would not be resumed. As the monitoring station "A5" fell within the boundary of private open car park, ET was unable to conduct the odour monitoring at 10m high by using a truck-mounted lifting platform at "A5". As such, the alternative location of odour monitoring station for A5 was proposed. It was noted that the sites on both sides of the road connecting to TMA54SPS are all private land lots, expect that TMA54SPS and the road itself are on government land. The odour monitoring station "A5" would be relocated to somewhere on the road connecting to TMA54SPS. In addition, according to the contours of odour concentrations at 10m above ground, the original location of A5 is within 1 OU zone which is the furthest measurement point from TMA54SPS. As a prudent approach to determine the alternative location of odour monitoring station for A5, a new A5 has been proposed to situate on the road connecting to TMA54SPS at a location within 4 OU zone which is close to TMA54SPS, and agreement on this regards have been sought between DSD, IEC and EPD.

In view of the land resumption programme, the impact odour monitoring would be spilt into two phases. The 1<sup>st</sup> phase would include the odour monitoring at the locations A1, A2 and new A5, while A3 and A4 would be included in the 2<sup>nd</sup> phase. Since the land resumption is still in progress during the preparation of this final report, the status of the 2<sup>nd</sup> phase monitoring will be updated and provided upon completion of the land resumption.

The locations of odour monitoring stations for the impact odour monitoring at stations A1, A2 and A5 for the 1<sup>st</sup> phase impact odour monitoring is shown in **Table 2.1** and **Figure 2.1**.

Monitoring Station	Monitoring Location	Description of Monitoring Station
A1	Planned Secondary School	ASR
A2	Planned Primary School	ASR
A5	Road Connecting to TMS54SPS*	ASR
SPS	Exhausted Vent Pipe of TMA54SPS	Source

#### Table 2.1: Monitoring Locations

\*Alternative monitoring location agreed by DSD, IEC and EPD as presented in the Method Statement of Odour Impact Monitoring submitted to EPD in November 2019.

#### 2.4 Monitoring Equipment

 $H_2S$  concentrations were measured using a Jerome 631-X type  $H_2S$  analyser. Grab air sample is drawn by built-in suction pump of the analyser and passed through a gold film sensor. The electrical resistance of the gold film changes according to the change in mass of hydrogen sulphide in the gas sample.

**Table 2.2** summarizes the equipment used in the impact odour monitoring. Copies of the calibration certificates for the portable  $H_2S$  analyser are presented in the technical reports in **Appendix D.** 

Equipment	Model	Impact Monitoring Event Used		
Portable H <sub>2</sub> S	Jerome X631 0003 (Serial no. 2967)	1 <sup>st</sup> Monitoring (26 – 27 November 2019)		
analyser	Jerome X631 0003 (Serial no. 2966)	2 <sup>nd</sup> Monitoring (18 – 19 February 2020)		

#### Table 2.2: Odour Monitoring Equipment

Equipment	Model	Impact Monitoring Event Used
		3 <sup>rd</sup> Monitoring (27 – 28 May 2020)
		4 <sup>th</sup> Monitoring (2 – 3 September 2020)

#### 2.5 Monitoring Methodology

A 15-min  $H_2S$  concentration was measured every 3 hours for duration of 24 hours at each of the monitoring locations. According to Section 2.35 of the EM&A Manual, impact odour monitoring was taken at a height of predicted worst level of the receivers in the EIA (i.e. 10m above ground level).

During each odour monitoring event, meteorological data including temperature, relative humidity and wind speed was obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station.

#### 2.6 Monitoring Schedule

Refer to **Section 2.1**, the commencement of the monitoring exercise was scheduled to commence in November 2019.

The first impact odour monitoring event was conducted from 26 to 27 November 2019, the second impact odour monitoring event was conducted from 18 to 19 February 2020 and the third impact odour monitoring event was conducted from 27 to 28 May 2020. The fourth impact odour monitoring event was originally scheduled to be conducted from 18 to 19 August 2020 but was cancelled due to adverse weather. In addition, due to the adverse weather predicted for the remaining calendar days of August 2020 and the shortage of time in applying access to TM54SPS, there were no alternatives available but to postpone the monitoring event. Eventually, the fourth impact odour monitoring was conducted from 2 to 3 September 2020. IEC and EPD were informed for the above arrangement. Email correspondences may be referred to the Operation Phase Fourth Odour Impact Monitoring Report. The monitoring schedule of the impact monitoring events are presented in **Table 2.3**.

Event	Scheduled Date
1 <sup>st</sup> Impact Odour Monitoring Event	26 – 27 November 2019 (Completed)
2 <sup>nd</sup> Impact Odour Monitoring Event	18 – 19 February 2020 (Completed)
3 <sup>rd</sup> Impact Odour Monitoring Event	27 – 28 May 2020 (Completed)
4 <sup>th</sup> Impact Odour Monitoring Event	2 – 3 September 2020 (Completed)

#### Table 2.3: Schedule of Impact Odour Monitoring Events

### **3 Impact Monitoring Results and Analysis**

#### 3.1 Monitoring Results

As discussed between DSD and EPD prior to commencement of monitoring, measurement results from the impact odour monitoring would be directly compared with that obtained in the baseline odour monitoring without any adjustments/ air modelling applied.

Detailed results for the odour monitoring event , as well as the meteorological data during the four impact monitoring events have been presented in the technical report given in **Appendix D**.

#### 3.2 Monitoring Results Analysis

As per review of the hydrogen sulphide analyser (i.e. Jerome X631) after submission of the Method Statement, it was found that the analyser was able to measure hydrogen sulphide concentration as low as 1ppb with the specified degree of accuracy. Therefore, the Two-Tiered Conservative Approach was no longer applicable for the impact odour monitoring to cope with the readings below 3ppb. Single-Tiered Conservative Approach was adopted for interpretation for all impact monitoring results.

This conservative approach during the time of baseline odour monitoring to cope with the uncertainty of reading below 3 ppb (0.003 ppm) (i.e. for  $H_2S$  concentration reading shown on analyser under 3 ppb were converted to 0) is the only incorporated conservative approach. While for the impact monitoring, the 24-hour average  $H_2S$  concentration is devised from  $H_2S$  reading shown on the analyser, without conversion. It is considered that taking the  $H_2S$  concentration reading on analyser during impact monitoring, to compare with the Action and Limit Levels devised based on conservative approach, can reflect the realistic odour impact and at the same time benchmarked with stringent levels.

The summarized impact monitoring results of the four impact monitoring events are presented in **Table 3.1** and the summarized exceedance of events are presented in **Table 3.2**.

Table 3.1: Summary of Impact Odour Monitoring Results and Comparison with Action/	
Limit Levels	

Monitoring	Description	24-hour Average H <sub>2</sub> S Concentration (ppb)							
Station		First (26 – 27 Nov 2019)	Second (18 – 19 Feb 2020)	Third (27 – 28 May 2020)	Fourth (2 – 3 Sep 2020)	Action Level	Limit Level		
A1	Planned Secondary School	2.4	2.4	2.7	2.4	2.5	2.5		
A2	Planned Primary School	2.0	2.6	2.4	2.4	2.3	2.5		
A5	Road connecting to TMA54SPS	2.5	2.5	2.9	2.8	2.5	2.5		
SPS	Exhausted Vent Pipe of TMA54SPS	7.6	2.4	2.5	2.7	-	-		

#### Table 3.2: Summary of Exceedances for Impact Odour Monitoring Events

Monitoring	Description	Exceedances of Action/ Limit Level (Yes/ No)								
Station		First		Second		Third		Fourth		
		(26 – 27 Nov 2019)		(18 – 19 Feb 2020)		(27 – 28 May 2020)		(2 – 3 Sep 2020)		
		Action	Limit	Action	Limit	Action	Limit	Action	Limit	
A1	Planned Secondary School	No	No	No	No	Yes	Yes	No	No	
A2	Planned Primary School	No	No	Yes	Yes	Yes	No	Yes	No	
A5	Road connecting to TMA54SPS	No	No	No	No	Yes	Yes	Yes	Yes	

#### 3.3 Exceedance Investigation

Regarding the exceedance of Action and Limit Level observed at monitoring stations for every monitoring event, a review of monitoring data has been undertaken together with site observations. Justifications are provided as follows:

#### 3.3.1 Second Monitoring Event (18 – 19 February 2020)

#### Monitoring Station A2

At A2, it was observed that half of the sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A2 is higher than at Source. Also, at Sample 3 and 4, the  $H_2S$  concentration at A2 was 31-44% higher than at Source. Under the above observations, it was considered that the Source is not the major contributor to  $H_2S$  concentration at A2 during Sample 3 and 4, and thus the exceedance at A2 is not project related.

In addition, a review of site observation throughout the whole monitoring period had been undertaken. As reported by the monitoring personnel, no significant odour was recorded at Source. Therefore, through the result of monitoring data review together with the site observation, it was considered that the exceedance at A2 is not project related.

#### **3.3.2 Third Monitoring Event (27 – 28 May 2020)**

#### Monitoring Station A1

At A1, it was observed that 3 out of the 8 sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A1 is higher than at Source. Also, at Sample 2, 3 and 5, the  $H_2S$  concentration at A1 was 23-45.8% higher than at Source. Under the above observations, it was considered that the Source is not the major contributor to  $H_2S$  concentration at A1 during Sample 2, 3 and 5, and thus the exceedance at A1 is not project related. Refer to the site observation at A1 during the monitoring period, no significant  $H_2S$  source was identified.

#### Monitoring Station A2

At A2, it was observed that 3 out of the 8 sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A2 is higher than at Source. Also, at Sample 2 and 3, the  $H_2S$  concentration at A2 was 19-20% higher than at Source. Under the above observations, it was considered that the Source is not the major contributor to  $H_2S$  concentration at A2 during Sample 2 and 3, and thus the exceedance at A2 is not project related. Refer to the site observation at A2 during the monitoring period, no significant  $H_2S$  source was identified.

#### Monitoring Station A5

At A5, it was observed that half of the sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A5 is higher than at Source. Also, at Sample 1, 2, 3 and 6, the  $H_2S$  concentration at A5 was 10-43% higher than at Source. Under the above observations, it was considered that the Source is not the major contributor to  $H_2S$  concentration at A5 during Sample 1, 2, 3 and 6, and thus the exceedance at A5 is not project related. Refer to the site observation at A5 during the monitoring period, no significant  $H_2S$  source was identified.

#### **Overall**

In addition, a review of site observation throughout the whole monitoring period had been undertaken. As reported by the monitoring personnel, no significant odour was recorded at Source. Therefore, through the result of monitoring data review together with the site observation, it was considered that the exceedances at A1, A2 and A5 are not project related.

#### **3.3.3** Fourth Monitoring Event (2 – 3 September 2020)

#### Monitoring Station A2

At A2, it was observed that 2 out of the 8 sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A2 is higher than at Source. Also, at Sample 2 and 3, the  $H_2S$  concentration at A2 was 14-17% higher than at Source. Under the above observations, it was considered that the Source is not the major contributor to  $H_2S$  concentration at A2 during Sample 2 and 3, and thus the exceedance at A2 is not project related. Refer to the site observation at A2 during the monitoring period, no significant  $H_2S$  source was identified.

#### Monitoring Station A5

At A5, it was observed that 2 of the sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A5 is higher than at Source. Also, at Sample 2 and 3, the  $H_2S$  concentration at A5 was 17-57% higher than at Source; Under the above observations, it was considered that the Source is not the major contributor to  $H_2S$  concentration at A5 during Sample

2 and 3, and thus the exceedance at A5 is not project related. Refer to the site observation at A5 during the monitoring period, no significant  $H_2S$  source was identified.

#### <u>Overall</u>

In addition, a review of site observation throughout the whole monitoring period had been undertaken. As reported by the monitoring personnel, no significant odour was recorded at Source. Therefore, through the result of monitoring data review together with the site observation, it is considered that the exceedances at A2 and A5 are not project related.

#### 3.3.4 Conclusion

Since the exceedances at A1, A2 and A5 during the second, third and fourth impact odour impact monitoring were not project related, therefore, no remedial actions had been recommended. And thus, the impact monitoring for monitoring station A1, A2 and A5 is recommended to be ceased.

Still, the Incident Report on Action Level or Limit Level Exceedance was prepared and provided in **Appendix E**.

#### 3.4 Weather Condition during Impact Monitoring

The weather condition during the impact odour monitoring events were mainly fine or cloudy, while wind was mainly mild to moderate.

### **4** Summary of Complaints

#### 4.1 Summary of Complaints

There were no complaints received by ET in relation to the environmental impact received from TMA54SPS operation commencement to the end of the 4<sup>th</sup> impact monitoring event.

### **5** Conclusions and Recommendations

#### 5.1 Conclusion and Recommendations

Impact odour monitoring (1<sup>st</sup> phase) which involved 3 monitoring stations (i.e. A1, A2 and A5) was carried out on 26 - 27 Nov 2019 (first impact monitoring), 18 - 19 Feb 2020 (second impact monitoring), 27 - 28 May 2020 (third impact monitoring) and 2 - 3 Sep 2020 (fourth impact monitoring).

Odour monitoring was conducted at A1, A2 and A5 and the Source. A 15-minute  $H_2S$  concentration was measured every 3 hours for a duration of 24 hours. All monitoring equipment used were properly calibrated and have valid calibration certificates.

As per review of the hydrogen sulphide analyser (i.e. Jerome X631) after submission of the Method Statement, it was found that the analyser was able to measure hydrogen sulphide concentration as low as 1ppb with the specified degree of accuracy. Therefore, the Two-Tiered Conservative Approach was no longer applicable for the impact odour monitoring to cope with the readings below 3ppb. Single-Tiered Conservative Approach was adopted for interpretation for all impact monitoring results. Based on the measurement results of the four impact odour monitoring events for operation phase, exceedance of Action and Limit Level were observed at A1 during the third impact odour monitoring event, at A2 during the second impact odour monitoring event and at A5 during the third and fourth impact odour monitoring event. Exceedance of Action Level of 2.3 ppb but complying with the Limit Level of 2.5 ppm was observed at A2 during the third and fourth impact odour monitoring data review and site observation during monitoring period, it was considered that the exceedance at A1, A2 and A5 are not project related. And thus, the impact monitoring for monitoring station A1, A2 and A5 is recommended to be ceased.

The weather during the impact monitoring events was generally fine or cloudy, while wind was mild to moderate.

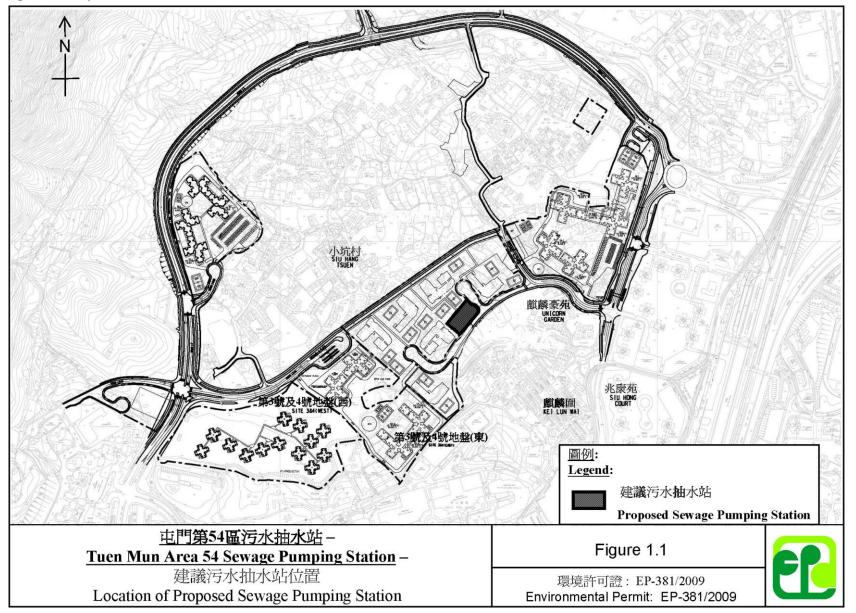
No complaints were received by ET in relation to the environmental impact received from TMA54SPS operation commencement to end of the 4<sup>th</sup> impact monitoring event.

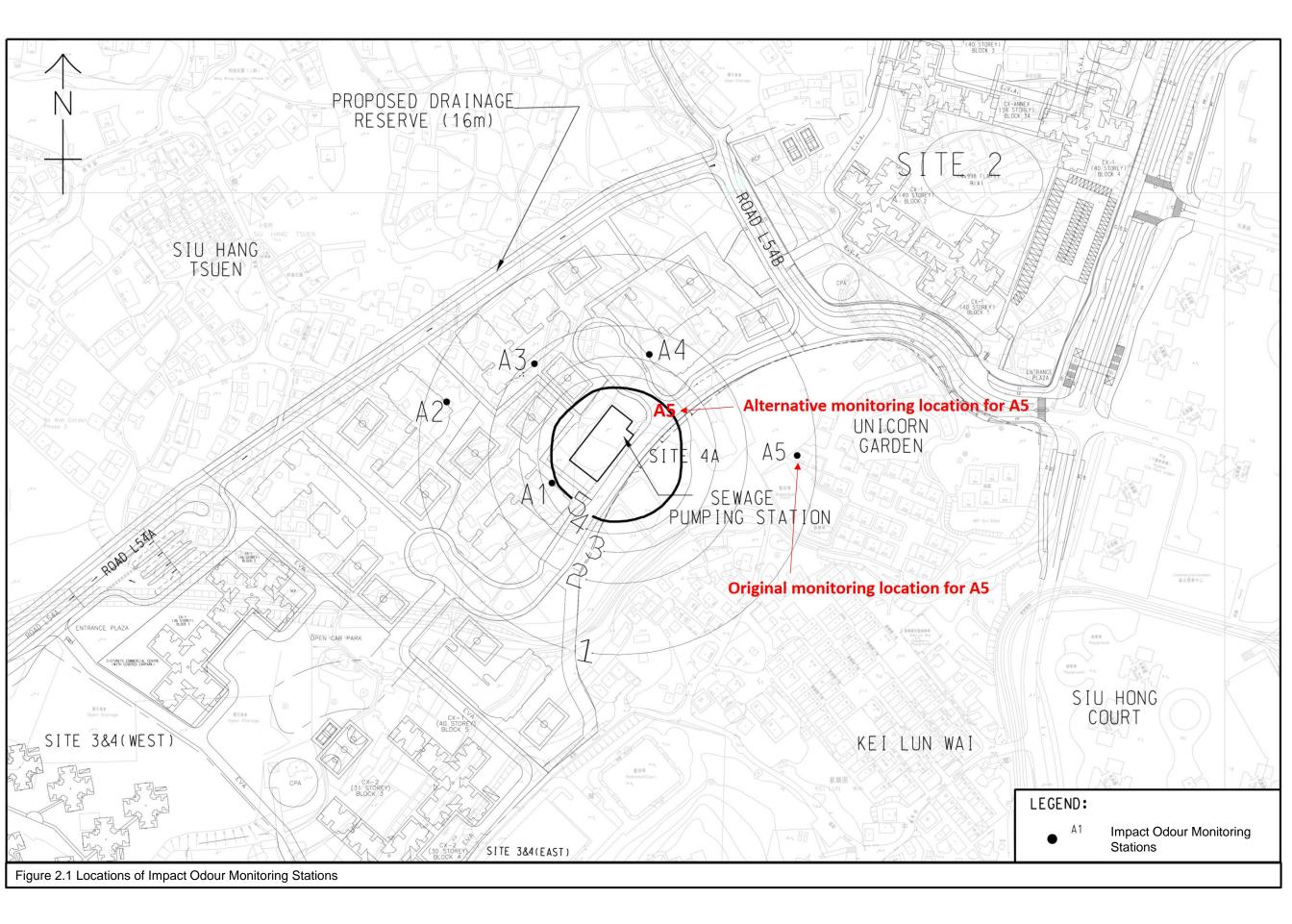
## Figures

### **Figures**

Figure 1.1: Layout Plan Figure 2.1: Locations of Impact Odour Monitoring Stations Mott MacDonald | Environmental Team Services for Tuen Mun Area 54 Sewage Pumping Station First Operation Phase Odour Impact Monitoring Report

#### Figure1.1: Layout Plan

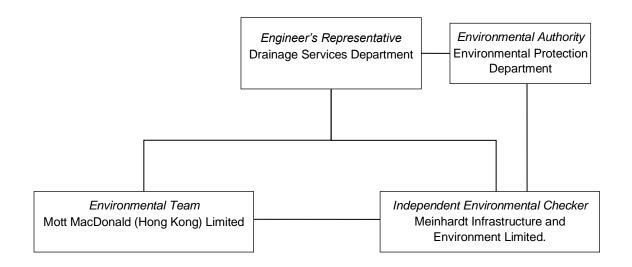




### Appendices

Α.	Project Organisation	13
В.	Method Statement of Odour Impact Monitoring	14
C.	Event and Action Plan for Air Quality (Odour)	15
D.	Technical Reports for the Impact Odour Monitoring Events	16
E.	Incident Report on Action Level or Limit Level Exceedance	17

### A. Project Organisation



#### Table A.1: Contact Information

Company / Department	Position	Name	Telephone / Mobile
Drainage Services Department	Engineer's Representative	Mr. Lui Chun-lung, Sam	2594 7306
Meinhardt Infrastructure and Environment Limited	Independent Environmental Checker	Mr. Chiu Wai Kwan	2859 5881
Mott MacDonald (Hong Kong) Ltd.	Environmental Team Leader	Ir Thomas Chan	2828 5967

### B. Method Statement of Odour Impact Monitoring



### Provision of Environmental Team (ET) Services for Tuen Mun Area 54 Sewage Pumping Station

Method Statement of Odour Impact Monitoring

September 2019

Drainage Services Department

This Method Statement of Odour Impact Monitoring for Tuen Mun Area 54 Sewage Pumping Station has been reviewed, certified by the Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC).

Certified by:

Ir Thomas Chan Environmental Team Leader (ETL) Mott MacDonald Hong Kong Limited

Date:

30 October 2019

Verified by:

Wai Kwan CHIU Independent Environmental Checker (IEC) Meinhardt Infrastructure and Environment Limited

Date:

4 Nov 2019

Mott MacDonald 3/F International Trade Tower 348 Kwun Tong Road Kowloon Hong Kong

T +852 2828 5757 F +852 2827 1823 mottmac.hk

Drainage Services Department

### Provision of Environmental Team (ET) Services for Tuen Mun Area 54 Sewage Pumping Station

Method Statement of Odour Impact Monitoring

September 2019

Drainage Services Department

### Contents

1	I Introduction		3
	1.1	Background	3
	1.2	Purpose of the Method Statement	3
	1.3	Structure of the Method Statement	3
	1.4	Abbreviation	3
2	Mor	nitoring Requirements	4
	2.1	Background	4
	2.2	Monitoring Equipment	4
	2.3	Monitoring Parameters, Frequency and Duration	5
	2.4	Impact Odour Monitoring	5
	2.5	Monitoring Programme	6
3	Cor	nclusion	8

#### Appendix

- Appendix A Technical specification of Jerome X631 0003 H2S Analyzer
- Appendix B Sample of air quality (H2S) monitoring data record sheet
- Appendix C Plan showing the odour monitoring locations for the baseline odour monitoring
- Appendix D Advice on the programme of private land resumption from LandsD
- Appendix E Plan showing the proposed locations of odour monitoring stations for the impact odour monitoring
- Appendix F Monitoring location for exhaust vent pipe from the deodourizing unit

### **1** Introduction

#### 1.1 Background

In November 2018, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by the Drainage Services Department (DSD) under Quotation Ref. DEMP/2018/04 to undertake the duties of Environmental Team (ET) as specified in the Environmental Monitoring and Audit (EM&A) Manual and the EP in relation to the odour impact monitoring for the 12-month operation Tuen Mun Area 54 Sewage Pumping Station (TMA54SPS).

#### **1.2 Purpose of the Method Statement**

With reference to Section 2.53 of the EM&A Manual (AEIAR-122/2008), Hydrogen Sulphide ( $H_2S$ ) monitoring programme shall be conducted in the first year upon commissioning of TMA54SPS. This method statement presents the methodology and monitoring requirements for the odour impact monitoring according to the EM&A Manual (AEIAR-122/2008).

#### 1.3 Structure of the Method Statement

The structure of the method statement is as follows:

- Section 1 Background, purpose and the structure of the proposal;
- Section 2 Monitoring requirements of odour impact monitoring; and
- Section 3 Conclusion.

#### 1.4 Abbreviation

The following abbreviations are used in this method statement:

ASRs	Air Sensitive Receivers
DSD	Drainage Services Department
LandsD	Lands Department
ET	Environmental Team
IEC	Independent Environmental Checker
EM&A	Environmental Monitoring and Audit
H <sub>2</sub> S	Hydrogen Sulphide
MMHK	Mott MacDonald Hong Kong Limited
TMA54SPS	Tuen Mun Area 54 Sewage Pumping Station

#### 2 **Monitoring Requirements**

#### 2.1 Background

H<sub>2</sub>S is one of the main components of odour emissions, which can serve as a surrogate indicator for sewage odours. During commissioning of TMA54SPS, measurements of H<sub>2</sub>S concentrations at source and at the selected ASRs are required. This is to indicate whether the odour concentration would be higher or lower than the baseline condition. The odour level at sources and meteorological data shall be obtained as reference information for the analysis of the exceedance event.

The site measurements of the baseline odour monitoring have been conducted in December 2016, March 2017, August 2017 and February 2018. Taking into account the locations of potential representative sensitive receivers in the vicinity of TMA54SPS during its first year of commissioning, the ET proposed and the IEC agreed to adopt alternative odour monitoring stations (A1 to A4) for the baseline odour monitoring, while the monitoring station of A5 remained unchanged. The measurements were taken from a height of 2m above ground level. The Baseline Odour Monitoring Report has been prepared to present the methodology and the measurement results of the baseline odour monitoring. It also established the Action Levels for the operational phase odour impact monitoring in accordance with Table 2.4 of the Final EM&A Manual of the approved EIA of "Tuen Mun Area 54 Sewage Pumping Station" (TMA54SPS) (hereafter known as EM&A Manual). The Report, with IEC's verification, was submitted to EPD for agreement on 9 April 2018. EPD expressed no objection to the Baseline Odour Monitoring Report on 16 May 2018.

With reference to the EM&A Manual, an impact monitoring of H<sub>2</sub>S measurements shall be conducted in the first year of operation upon commissioning of TMA54SPS (i.e. construction of TMA54SPS was substantially completed in March 2018). The monitoring measurement shall be conducted by the ET at the same monitoring stations and levels as in the baseline period (as presented in Table 3-1 of the Baseline Odour Monitoring Report). Further to discussions between DSD and EPD in the past few months, a new arrangement for odour monitoring locations and level of measurement for the impact odour monitoring has been established. As it was necessary to deal with some of the major technical issues (e.g. review of H<sub>2</sub>S measurement method, monitoring locations and level of measurement, etc) for the impact odour monitoring, the commencement of the monitoring exercise would be deferred from March 2018 to October 2019. The scheduling of the monitoring programme as well as the new locations of monitoring stations and level of measurement would be discussed in the latter part of this method statement.

#### 2.2 **Monitoring Equipment**

#### 2.2.1 **Monitoring Equipment**

Portable H<sub>2</sub>S analyser, type Jerome 631-X H<sub>2</sub>S, or equivalent will be used for H<sub>2</sub>S sampling. The analyser fulfils the following requirements:

- able to measure  $H_2S$  concentration in the range of 1ppb to 50ppm, with resolution of 1ppb;
- operates within a temperature range of 0 to 40°C, at an air flow rate of 0.15 L/min; and •
- with built-in suction pump to draw air sample and passed through a gold film sensor.

The H<sub>2</sub>S concentration is measured by the analyser through drawing a grab air sample by builtin suction pump of a portable H<sub>2</sub>S analyser and passed across a gold film sensor.

#### 2.2.2 Conservative Approach on Reading Interpretation

According to the analyser technical specifications as attached in **Appendix A**, it is noticed that the equipment sensitivity is 0.003ppm H<sub>2</sub>S, while the detection range is 3 ppb (0.003ppm) – 50 ppm in four graduated ranges. To cope with the uncertainty of reading below 3ppb, a conservative approach on reading interpretation will be adopted.

During the odour impact monitoring, for readings below 3ppb, it will be recorded as in Table 2.1.

Reading Shown on Analyser	Reading to be Recorded
0 ppb	0.5 ppb
1 ppb	1.5 ppb
2 ppb	2.5 ppb

#### Table 2.1: Conservative Approach on Reading Interpretation for Readings Below 3ppb

#### 2.3 Monitoring Parameters, Frequency and Duration

A 15-min  $H_2S$  concentration will be measured every 3 hours for duration of 24 hours at the agreed monitoring locations and level of measurement, including at the exhausted vent pipe from deodorizing unit. Monitoring will not be conducted on rainy days.

Besides, hourly meteorological data including temperature, wind speed and direction during the sampling period will be obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station.

**Appendix B** shows a sample of Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet.

#### 2.4 Impact Odour Monitoring

In accordance with Section 2.34 of the EM&A Manual,  $H_2S$  measurements will be taken at source and outside the premises of the identified ASRs for the impact odour monitoring. As discussed between DSD and EPD, new arrangements for odour monitoring locations and level of measurement for the impact odour monitoring have been established.

Monitoring locations for ASRs and the source are presented in the following paragraphs.

#### 2.4.1 Monitoring Locations for ASRs

For the baseline odour monitoring, it was conducted at the original monitoring location for A5 as given in the EM&A Manual, and the alternative monitoring locations for A1 to A4 which were agreed with the IEC and CEDD and approved by EPD. The measurements were taken from a height of 2m above ground level at the agreed monitoring locations. A plan showing the odour monitoring locations for the baseline odour monitoring is given in **Appendix C**.

However, EPD raised that the odour monitoring stations and level of measurement for the impact odour monitoring should be further reviewed based on the latest site development and locations of potential representative sensitive receivers in the vicinity of TMA54SPS. Having reviewed, the odour measurement for the impact odour monitoring would be taken at a height of 10m above ground level, which is the predicted worst level of the receivers as stated in the EM&A Manual. A truck mounted working platform would be employed for the odour measurement at a height of 10m above ground level. As regards the locations of odour monitoring stations, it is noticed that there are 3 odour monitoring stations selected in the EM&A Manual (i.e. A3-A5) are currently

located in private lots which are not accessible for the ET to conduct the impact odour monitoring at a height of 10m above ground level, while the remaining 2 stations (i.e. A1 and A2) fall within CEDD's construction sites (i.e. Government land). As advised by LandsD (attached in Appendix D), the private land resumption (for A3 and A4) are planned to be made in July 2020, while the private land (for A5) will not be resumed. As the monitoring station "A5" which falls within the boundary of private open car park, DSD approached the car park company staff in person in March 2019 to see whether they could give permission for the ET to conduct the odour monitoring at 10m high by using a truck-mounted lifting platform in their car park. However, they turned down our request with a verbal response that any activities other than car parking were not allowed in the car park. As such, the alternative location of odour monitoring station for A5 should be proposed. It is noted that the sites on both sides of the road connecting to TMA54SPS are all private land lots, expect that TMA54SPS and the road itself are on government land. The odour monitoring station "A5" should be relocated to somewhere on the road connecting to TMA54SPS. In addition, according to the contours of odour concentrations at 10m above ground, the original location of A5 is within 1 OU zone which is the furthest measurement point from TMA54SPS. As a prudent approach in determine the alternative location of odour monitoring station for A5, we propose that a new A5 is situated on the road connecting to TMA54SPS at a location within 4 OU zone which is close to TMA54SPS. In view of the land resumption programme, the impact odour monitoring will be spilt into two phases. The 1<sup>st</sup> phase will include the odour monitoring at the locations A1, A2 and new A5, while A3 and A4 will be included in the 2<sup>nd</sup> phase after the completion of private land resumption in July 2020. A plan showing the proposed locations of odour monitoring stations for the impact odour monitoring is attached in Appendix E.

#### 2.4.2 Monitoring at Source

 $H_2S$  measurements will be taken at the exhaust vent pipe from the deodourizing unit to obtain  $H_2S$  concentrations at source. The selected location is shown in **Appendix F.** 

#### 2.5 Monitoring Programme

As stipulated in Section 2.53 of the EM&A Manual, the H<sub>2</sub>S monitoring will be conducted every three months for the first year of operation for TM54SPS. However, due to some major technical issues (e.g. review of H<sub>2</sub>S measurement method, monitoring locations and level of measurement, etc), the commencement of the impact odour monitoring was deferred from March 2018 to October 2019. In addition, as discussed between DSD and EPD, measurement results from the impact odour monitoring with out any adjustments/ air modelling applied. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation of the TM54SPS, the odour monitoring will be extended until the odour concentration at the ASR in consecutive 2 times are below the limit levels (once for 3 months). Action and Limit Levels for Air Quality in operation phase are given in **Table 2.2**.

Regarding the above requirements, a tentative monitoring programme is shown in Table 2.3.

Parameter	ASR	Action Level (ppb)	Limit Level (ppb)
H <sub>2</sub> S	A1	2.5	2.5
	A2	2.3	2.5
	A3	2.5	2.5
	A4	2.5	2.5
	A5	2.5	2.5
Incidents of odour complaints	plaints received through the Odour the Odour Co		Two or more complaints through the Odour Complaint Register within three months

#### Table 2.2: Action and Limit Levels for Air Quality (Operation Phase)

Note: (1) Odour complaints are to be handled in accordance with the complaint registration system as mentioned in Section 2.26-2.29 of the EM&A Manual

#### **Table 2.3: Tentative Monitoring Programme**

For 1<sup>st</sup> phase impact odour monitoring at A1, A2 and new A5:

	1 <sup>st</sup> Monitoring	2 <sup>nd</sup> Monitoring	3 <sup>rd</sup> Monitoring	4 <sup>th</sup> Monitoring
	Event	Event	Event	Event
Monitoring Dates	November 2019	February 2020	May 2020	August 2020

For 2<sup>nd</sup> phase impact odour monitoring at A3 and A4:

	1 <sup>st</sup> Monitoring	2 <sup>nd</sup> Monitoring	3 <sup>rd</sup> Monitoring	4 <sup>th</sup> Monitoring
	Event	Event	Event	Event
Monitoring Dates	August 2020	November 2020	February 2021	May 2021

### 3 Conclusion

Overall, the impact odour monitoring will be implemented in accordance with the recommendations of the approved EIA report (AEIAR-122/2008). The impact odour monitoring will be split into 2 phases. The first monitoring events under the 1<sup>st</sup> phase and 2<sup>nd</sup> phase are tentatively scheduled for November 2019 and August 2020, respectively. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation of the TMA54SPS, the odour monitoring will be extended until the odour concentration at the ASR in consecutive 2 times are below the limit levels (once for 3 months).

Mott MacDonald | Provision of Environmental Team (ET) Services for Tuen Mun Area 54 Sewage Pumping Station Method Statement of Odour Impact Monitoring

### Appendices

### Appendix A Technical Specification of Jerome X631 0003 H2S Analyzer

Jerome X631 0003 Gold Film Hydrogen Sulphide Analyzer Technical Specifications

Resolution:	0.001 ppm	
Detection Range:	3 ppb ( $0.003$ ppm) – 50 ppm in four graduated ranges	
Sensitivity:	0.003ppm H <sub>2</sub> S	
Precision:	5% relative standard deviation	
Accuracy:	Range 0: ± 0.003ppm at 0.050ppm H2S	
	Range 1: $\pm$ 0.03ppm at 0.50ppm H2S	
	Range 2: $\pm$ 0.3ppm at 5.0ppm H2S	
	Range 3: ± 2ppm at 25ppm H2S	
<b>Operating Environment:</b>	0 – 40°C Non-Condensing, Non-Explosive	
<b>Response Time-Sample</b>	10 to 50 ppm (Range 3): 13 seconds	
Mode:	1.0 to 10.0 ppm (Range 2): 16 seconds	
	0.10 to 1.00 ppm (Range 1): 25 seconds	
	0.001 to 0.100 ppm (Range 0): 30 seconds	
<b>Response Time-Survey</b>	10 to 50 ppm (Range 3): 3 seconds	
Mode:	1.0 to 9.9 ppm (Range 2): 6 seconds	
	0.10 to 0.99 ppm (Range 1): 15 seconds	
	0.001 to 0.099 ppm (Range 0): 20 seconds	
Flow Rate:	$150 \pm 10$ ml/min (0.15 $\pm$ litres/min)	
<b>Power Requirements:</b>	100-120 V~, 50/60 Hz, 1 A or 220-240 V~, 50/60 Hz, 1 A	
Fuse:	F1A 250V, 5mm X 20mm	
<b>Internal Battery Pack:</b>	Rechargeable nickel cadmium	
Case Construction:	Aluminium alloy	
Dimensions:	33 cm L x 15 cm W x 10 cm H (13" L x 6" W x 4" H)	
Weight:	3.18 kilos (7 pounds)	
<b>Digital Meter Display:</b>	Liquid crystal display (LCD)	
Data Output:	1. RS-232 Serial, Baud Rate 1200 for use with data logger, and/or	
	Jerome® communication program.	
	2. RS-232 Serial data format with 0 & 20mA current logic levels;	
	Baud Rate 1200 (special industrial applications) and Analog 20	
	mA output.	

## Appendix B Sample of Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

		General Inf	ormation		
Monitoring Lo	cation				
Date					
Weather					
		Monitoring			
Sample No.	Time	Wind Speed	Wind Direction	Temperature	Level (ppb)
Sample 1	Start:				
	Stop:				
Sample 2	Start:				
	Stop:				
Sample 3	Start:				
	Stop:				
Sample 4	Start:				
	Stop:				
Sample 5	Start:				
	Stop:				
Sample 6	Start:				
	Stop:				
Sample 7	Start:				
	Stop:				
Sample 8	Start:				
Stop:					
Other Observa	ations				

#### APPENDIX B Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

Name & Designation

<u>Signature</u>

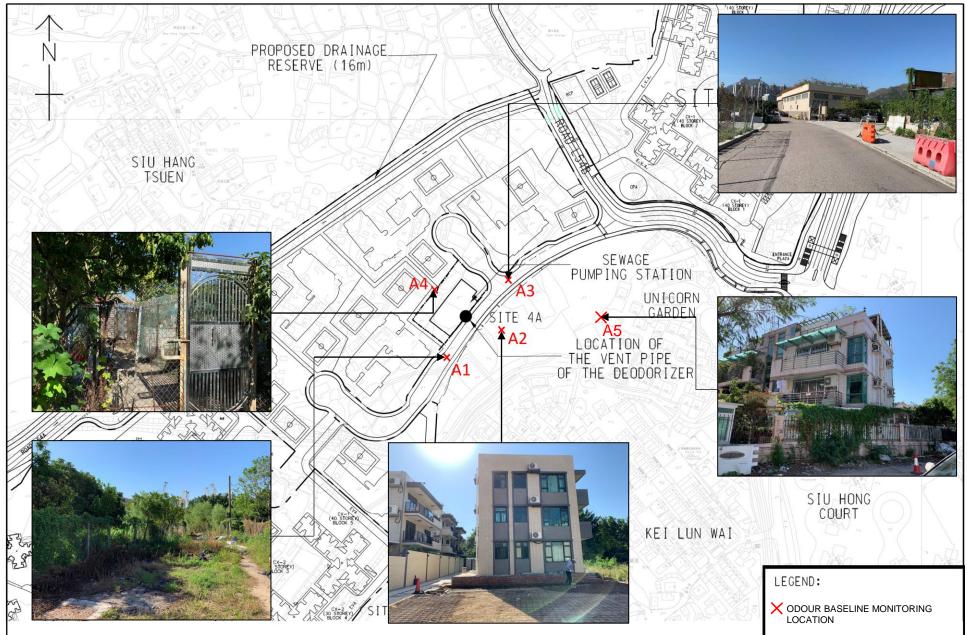
<u>Date</u>

Recorded by:

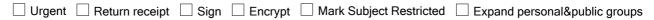
Checked by:

## Appendix C Plan Showing the Odour Monitoring Locations for the Baseline Odour Monitoring

#### APPENDIX C: PLAN SHOWING THE ODOUR MONITORING LOCATIONS FOR THE BASELINE ODOUR MONITORING



## Appendix D Advice on the Programme of Private Land Resumption from Lands Department





Re: Equiry on Land Use Status (Nearby Tuen Mun Area 54 Sewage Pumping Station)

12/07/2019 10:17

From: TW CHOI/LAO/LANDSD/HKSARG@LANDSD To: Chun Lung LUI/E&MP/DSD/HKSARG@DSD Serial No.:

#### Dear Sam,

Please be advised that for Land Nos.1, 2 and 4 as shown at our LSP, the tentative land reversion date is 4/2020 and land clearance date (site handover to CEDD) is 7/2020.

Thank you.

Best Regards, Jessica T.W. CHOI LE/SD, DLO/TM Tel: 2451 3310

 Chun Lung LUI
 Dear Jessica, We spoke. Grateful for your a...
 2019/07/12 上午 10:03:49

 From:
 Chun Lung LUI/E&MP/DSD/HKSARG@DSD
 TW CHOI/LAO/LANDSD/HKSARG@LANDSD,

 Date:
 2019/07/12 上午 10:03

 Subject:
 Re: Equiry on Land Use Status (Nearby Tuen Mun Area 54 Sewage Pumping Station)

Dear Jessica,

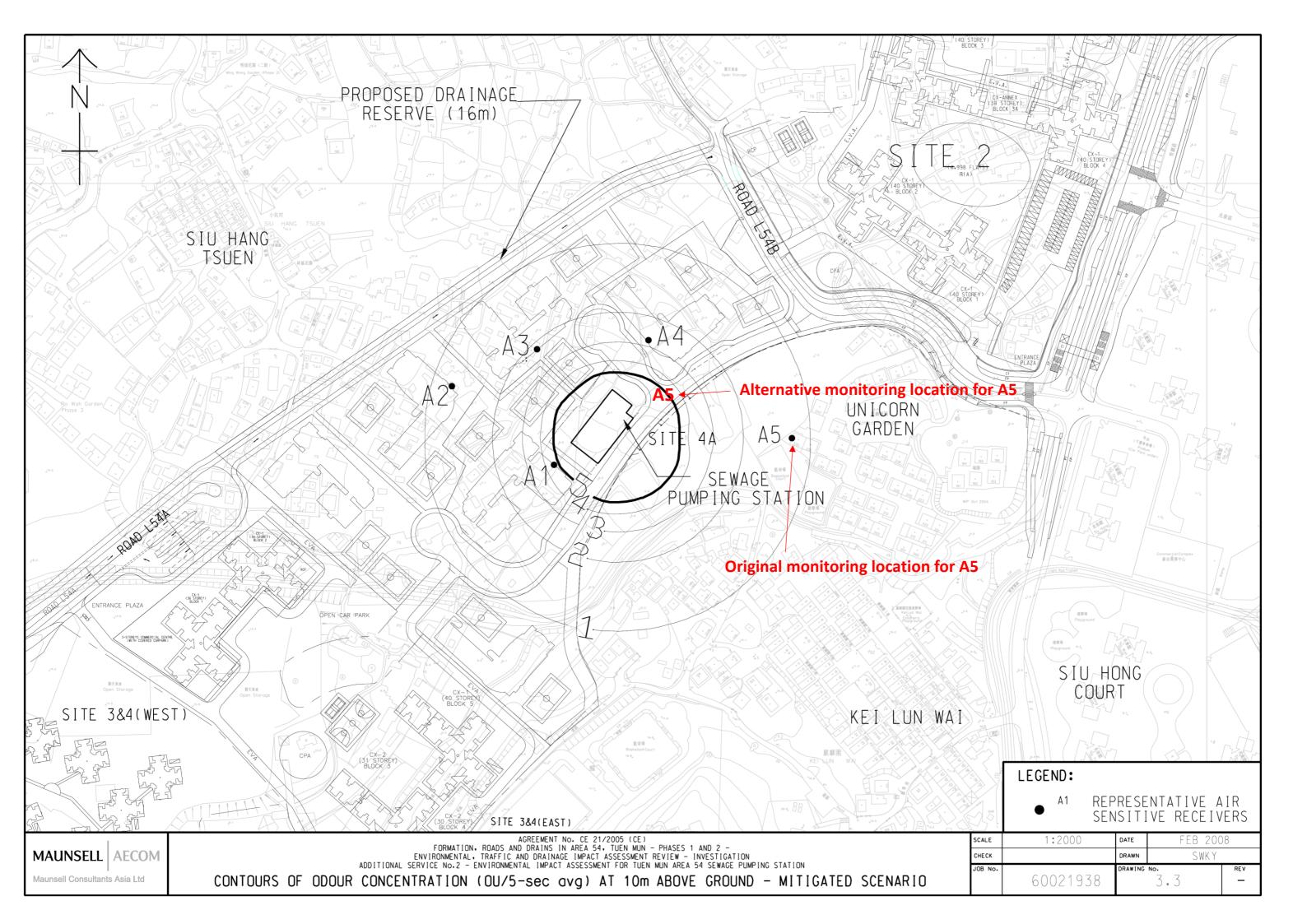
We spoke. Grateful for your advice on the tentative land resumption schedule for Land No. 1, No. 2 and No. 4 as indicated in the attached LSP. Many thanks.

Best Regards,

LUI Chun-lung, Sam EME/P1/2, E&MP, DSD Office: 2594 7306 Mobile: 6070 0441



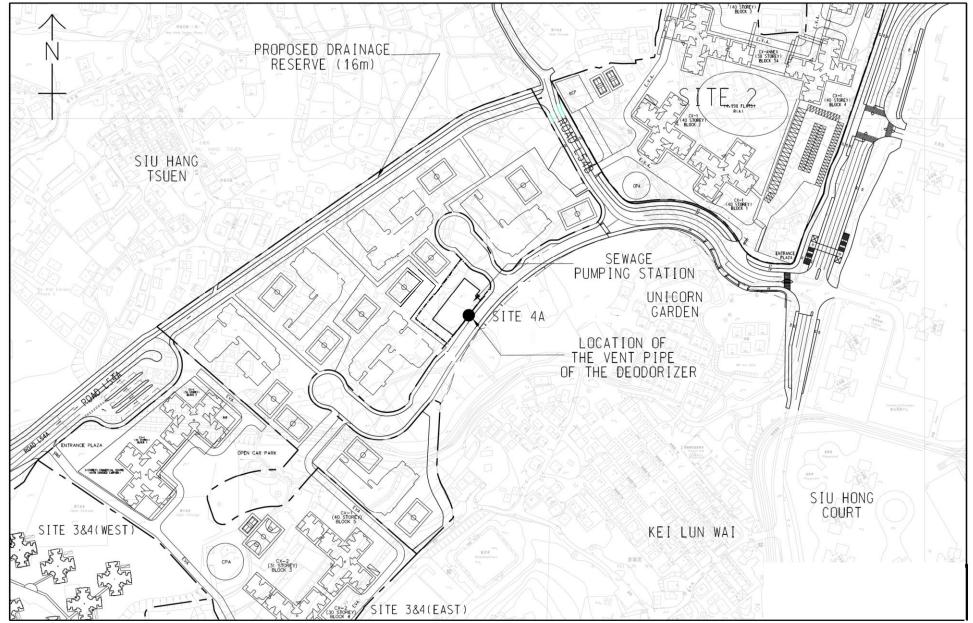
## Appendix E Plan Showing the Proposed Locations of Odour Monitoring Stations for the Impact Odour Monitoring

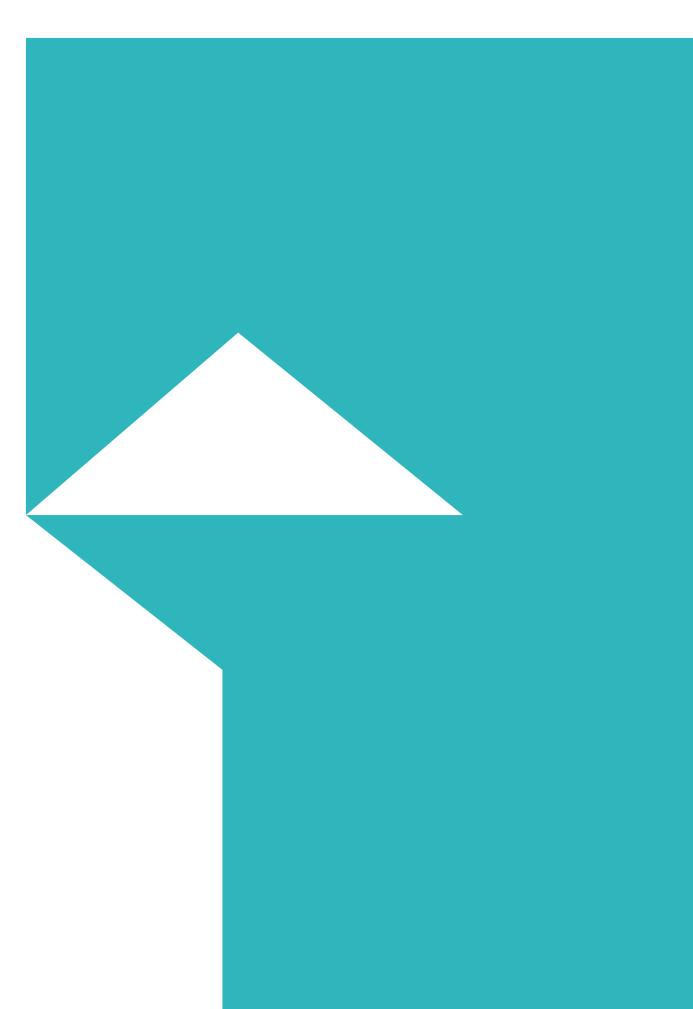




## Appendix F Monitoring Location for Exhaust Vent Pipe from the Deodourizing Unit

#### APPENDIX F: MONITORING LOCATION FOR EXHAUST VENT PIPE FROM THE DEODOURIZING UNIT





mottmac.hk

# C. Event and Action Plan for Air Quality (Odour)

#### Table C.1: Event/Action Plan for Air Quality Monitoring (Operational Phase)

EVENT	ACTION						
	ET	IEC	ER (DSD)				
Exceedance of Action level	<ol> <li>Identify source/ reason of exceedance;</li> <li>Inform IEC and ER(DSD);</li> <li>Carry out investigation to identify the source/reason of exceedance or complaints. Investigation shall be completed within 1 week and advise the findings to IEC and DSD;</li> <li>Repeat measurement to confirm finding after rectification work.</li> </ol>	<ol> <li>Check with ET and ER(DSD) on the operating activities and implementation of odour mitigation measures;</li> <li>Discuss with ER(DSD) on the possible remedial actions;</li> <li>Advise the ER(DSD) on the effectiveness of the proposed remedial measures;</li> <li>Supervise implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Rectify any unacceptable practice;</li> <li>Amend working methods as required;</li> <li>Implement amended working methods.</li> </ol>				
Exceedance of Limit level	<ol> <li>Notify IEC, ER(DSD) and EPD;</li> <li>Identify source of odour;</li> <li>Increase monitoring frequency;</li> <li>Carry out investigation to identify the source/reason of exceedance. Investigation shall be completed within 1 week and advise the findings to IEC and ER(DSD);</li> <li>Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>Assess effectiveness of the remedial actions and keep IEC, EPD and ER(DSD) informed of the results.</li> </ol>	<ol> <li>Check with ET and ER(DSD) on the operating activities and implementation of odour mitigation measures;</li> <li>Review the proposed remedial actions whenever necessary to assure their effectiveness and advise the ER(DSD) accordingly;</li> <li>Supervise implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Rectify any unacceptable practice and amend working methods as required;</li> <li>Formulate remedial actions and inform ET and IEC;</li> <li>Ensure amended working methods and remedial actions properly implemented;</li> <li>If exceedance continues, consider what portion of the work is responsible and stop that portion of work until the exceedance is abated.</li> </ol>				

## D. Technical Reports for the Impact Odour Monitoring Events

## 1<sup>st</sup> Impact Odour Monitoring



## First Operation Phase Odour Impact Monitoring Report

Impact Odour Monitoring -  $H_2S$  Measurement for Tuen Mun Area 54 Sewage Pumping Station | Hong Kong

0118/19/ED/0255 01 | 5 December 2019 For review Mott Macdonald Hong Kong Limited

## **Executive Summary**

Fugro Technical Services Limited (FTS) has been appointed by Mott MacDonald Hong Kong Limited, the Project Environmental Team (ET) of Tuen Mun Area 54 Sewage Pumping Station (TMA54SPS) to undertake the operation phase impact odour monitoring for the project.

This is the first monitoring event for the first Phase Odour Impact Monitoring Report for TMA54SPS prepared by Fugro Technical Services Limited for submission to Mott MacDonald Hong Kong Limited.

This report presents the results obtained from the first operation phase impact odour monitoring carried out from 26 November 2019 to 27 November 2019 during the operation of TMA54SPS.

It is observed that there is no exceedance (Action/Limit Level) of the 24-hour average H<sub>2</sub>S concentration for the concerned monitoring stations A1, A2 and A5.



i

## Contents

#### **Executive Summary**

	•	
1.	Introduction	1
1.1	Background	1
1.2	Project Description	1
1.3	Monitoring Arrangement	2
2.	Odour Impact Monitoring	4
2.1	Methodology	4
2.2	Sampling Duration	4
2.3	Monitoring Locations	4
2.4	Quality Assurance / Quality Control	4
3.	Monitoring Results	5
3.1	Weather Conditions and Other Factors	5
3.2	Monitoring Results	5
4.	Odour Complaint	5
5.	Conclusion and Recommendations	5

### **Appendices**

Appendix A Monitoring Station	
Appendix B Photographs of Monitoring Stations	
Appendix C Monitoring Results	
Appendix D Site Record	
Appendix E Data Logger Record	
Appendix F Calibration Certificates	
Appendix G Meteorological Conditions	

## **Tables in the Main Text**

Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)	3
Table 1.2 Tentative Monitoring Programme	3
Table 2.1 Equipment for Baseline Odour Monitoring	4
Table 2.2 Monitoring Locations	4
Table 3.1 Summary of Monitoring Results	5



## Abbreviations

ASRs	Air Sensitive Receivers
DSD	Drainage Services Department
LandsD	Lands Department
ET	Environmental Team
EM&A	Environmental Monitoring and Audit
H <sub>2</sub> S	Hydrogen Sulphide
ММНК	Mott MacDonald Hong Kong Limited
FTS	Fugro Technical Services Limited
TMA54SPS	Tuen Mun Area 54 Sewage Pumping Station
OU	Odour Unit



## 1. Introduction

#### 1.1 Background

To cope with a shortfall in flat supply and a rise in housing demand, Tuen Mun Area 54 was identified by the Government as one of the areas having the potential for housing development. Thus, the New Territories West Development Office of Territory Development Department completed the "Planning and Development Study of Potential Housing Site in Area 54, Tuen Mun" in 1999. The Study put forward proposals on housing types, development parameters and planning layouts and assessed the development impacts on transport network, infrastructural capacities and environmental quality.

According to the Review of Tuen Mun and Tsing Yi Sewerage Master Plans, a new sewage pumping station is needed to convey sewage collected from Tuen Mun Area 54 to existing trunk sewers at Ming Kum Road. Other than Tuen Mun Area 54, TMA54SPS will also collect sewage from four recognized villages within Area 54 including Tsz Tin Tsuen, Po Tong Ha, Kei Lun Wai and Siu Hang Tsuen, and the proposed Tuen Mun North Sewage Pumping Station in Area 52. TMA54SPS has a capacity of about 90,000m<sup>3</sup> per day; the design average dry weather flow is approximately 0.32m<sup>3</sup>/s.

TMA54SPS is located in the central part of Site 4A of Tuen Mun Area 54, north of Kei Lun Wai, south of Tsz Tin Tsuen and west of Site 2 of Tuen Mun Area 54. Site 4A is zoned "Government, Institution or Community" on the Tuen Mun Outline Zoning Plan No. S/TM/22 and is reserved for school development. **Appendix A** shows the location of TMA54SPS. Construction work for TMA54SPS is substantially completed and commissioning is anticipated in February 2018.

TMA54SPS is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449). A study of Environmental Impact Assessment (EIA) has been carried out to evaluate the environmental impacts associated with the project. An EIA Report and an Environmental Monitoring and Audit (EM&A) Manual were approved by the Environmental Protection Department (EPD) on 12 November 2008. An Environmental Permit (EP) No. EP-381/2009 was issued on 4 January 2010 for TMA54SPS to the Civil Engineering and Development Department as the Permit Holder. The EP stipulates that an EM&A programme is required to ensure mitigation measures recommended in the EIA Report and the EM&A Manual are implemented during the construction and operation of TMA54SPS.

#### 1.2 Project Description

FTS was commissioned to carry out operation phase odour impact monitoring for Mott MacDonald Hong Kong Limited for the project of TMA54SPS.

The EIA study of TMA54SPS has identified odour emissions from the sewage pumping station as the main potential air quality impact. To reduce odour emissions from the operation of TMA54SPS, it is recommended in the EIA Report that wet wells and screen chambers, the main



sources of odour, should be enclosed in a building structure. A deodorizing unit should also be installed; in order to treat vented air before it would be discharged into the atmosphere.

Furthermore, odour monitoring is required as per the EM&A Manual prior to and during the initial operation of TMA54SPS. The purpose of the odour impact monitoring is to indicate whether the odour concentration would be higher or lower than the baseline condition.

#### 1.3 Monitoring Arrangement

According to the EM&A Manual, gaseous hydrogen sulphide  $(H_2S)$  is one of the main components of odour emissions. Ambient  $H_2S$  concentration can serve as a surrogate indicator for sewage odours as it can be readily monitored at the Air Sensitive Receivers (ASRs).

The odour impact monitoring shall be conducted in the first year upon commissioning of TMA54SPS. Odour Impact Monitoring would be conducted every three months for the first year of operation for TMA54SPS. However, due to some major technical issues (e.g. review of H<sub>2</sub>S measurement method, monitoring locations and level of measurement, etc), the commencement of the impact odour monitoring was deferred from March 2018 to October 2019. In addition, as discussed between DSD and EPD, measurement results from the impact odour monitoring with that obtained in the baseline odour monitoring without any adjustments / air modelling applied. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation at the ASR in consecutive 2 times are below the limit levels (once for 3 months). Action and Limit Levels for Air Quality in operation phase are given in **Table 1.1**.

As regards the locations of odour monitoring stations, it is noticed that there are 3 odour monitoring stations selected in the EM&A Manual (i.e. A3-A5) are currently located in private lots which are not accessible for the ET to conduct the impact odour monitoring at a height of 10m above ground level, while the remaining 2 stations (i.e. A1 and A2) fall within CEDD's construction sites (i.e. Government land). As the monitoring station "A5" which falls within the boundary of private open car park, alternative location of odour monitoring station for A5 was proposed. It is noted that the sites on both sides of the road connecting to TMA54SPS are all private land lots, expect that TMA54SPS and the road itself are on government land. The odour monitoring station "A5" should be relocated to somewhere on the road connecting to TMA54SPS. In addition, according to the contours of odour concentrations at 10m above ground, the original location of A5 is within 1 OU zone which is the furthest measurement point from TMA54SPS. As a prudent approach in determine the alternative location of odour monitoring station for A5, the new A5 is situated on the road connecting to TMA54SPS at a location within 4 OU zone which is close to TMA54SPS. In view of the land resumption programme, the impact odour monitoring will be spilt into two phases. The 1<sup>st</sup> phase will include the odour monitoring at the locations A1, A2 and new A5.

Regarding the above requirements, a tentative monitoring programme is shown in Table 1.2.



Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)

Parameter	ASR	Action Level (ppb)	Limit Level (ppb)		
	A1	2.5	2.5		
H <sub>2</sub> S	A2	2.3	2.5		
	A5	2.5	2.5		
Incidents of odour complaints	-		Two or more complaints through the Odour Complaint Register within three months		

Note: Odour complaints are to be handled in accordance with the complaint registration system as mentioned in Section 2.26-2.29 of the EM&A Manual

Table 1.2 Tentative Monitoring Programme

For 1<sup>st</sup> phase impact odour monitoring at A1, A2 and new A5:

	1 <sup>st</sup> Monitoring Event	2 <sup>nd</sup> Monitoring Event	3 <sup>rd</sup> Monitoring Event	4 <sup>th</sup> Monitoring Event
Monitoring Dates	November 2019	February 2020	May 2020	August 2020



## 2. Odour Impact Monitoring

#### 2.1 Methodology

The H<sub>2</sub>S analyzer, type Jerome 631-X, was used for the impact monitoring. Grab air sample was drawn by built-in suction pump of the analyzer and passed through a gold film sensor. The electrical resistance of the gold film changes according to the change in mass of hydrogen sulphide in the gas sample.

The details of the equipment used for odour impact monitoring is presented in Table 2.1

Table 2.1 Equipment for Baseline Odour Monitoring

Equipment	Manufacturer / Model	Serial Number	Sensor Number	Calibration Date	Next Calibration Date
Gold Film Hydrogen Sulphide Analyzer	JEROME X631 0003	2967	16-4-13-V2DS	17 January 2019	16 January 2020

#### 2.2 Sampling Duration

A 15-min integrated gaseous  $H_2S$  sample was collected every 3 hours for a period of 24 hours at monitoring locations, in which five readings were recorded at every monitoring station during each 3-hour session. Maximum and minimum  $H_2S$  levels for each monitoring station were recorded.

#### 2.3 Monitoring Locations

 $H_2S$  measurements was taken at the sources and outside the premises of the identified ASRs as shown in **Table 2.2** and **Appendix A** show the descriptions and locations of the  $H_2S$  monitoring stations.

Monitoring Station	Monitoring Location	Description		
A1 <sup>1</sup>	Planned Secondary School	ASR		
A2 <sup>1</sup>	Planned Primary School	ASR		
A5 <sup>1</sup>	Road connecting to TMA54SPS	ASR		
SPS <sup>1</sup>	Exhausted vent pipe of TMA54SP	Source		

Table 2.2 Monitoring Locations

Note: <sup>1</sup> 1<sup>st</sup> phase odour impact monitoring.

According to the EM&A Manual, the monitoring was taken at a height of predicted worst level of the receivers in the EIA (10 m ground level). Photos showing the monitoring setup are included in **Appendix B**.

#### 2.4 Quality Assurance / Quality Control

In order to ensure the analyzer is functioning properly, manual sensor regeneration and zero adjustment were performed before each set of odour monitoring.

Calibration of the analyzer is conducted every year at the laboratory of the manufacturer. The calibration certificates for the analyzers are shown in **Appendix F**.



## 3. Monitoring Results

#### 3.1 Weather Conditions and Other Factors

The first monitoring event for the first phase operation phase odour impact monitoring for TMA54SPS was conducted from 26 November 2019 (approx. 11:00 am) to 27 November 2019 (approx. 10:00 am).

The weather was mainly fine and wind was mainly mild to moderate during the monitoring event. An anemometer was used for measuring wind speed and wind direction presented in the site record in **Appendix D**. Meteorological conditions of 26 November 2019 and 27 November 2019 obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station are shown in **Appendix G**. Meteorological data was obtained as reference information for the analysis of the exceedance event.

No significant odour sources from the project site were observed during the impact monitoring period.

#### 3.2 Monitoring Results

The monitoring results are summarised in **Table 3.1**. Details of monitoring data are shown in **Appendix C** (24-hour average, maximum and minimum H<sub>2</sub>S concentration), **Appendix D** (site record) and **Appendix E** (data logger record).

Monitoring Station	Monitoring Location	24-hour Average H2S Concentration (ppb)
A1 <sup>1</sup>	Planned Secondary School	2.4
A2 <sup>1</sup>	Planned Primary School	2.0
A5 <sup>1</sup>	Road connecting to TMA54SPS	2.5
SPS	Exhausted vent pipe of TMA54SP	7.6

Table 3.1 Summary of Monitoring Results

Note: <sup>1</sup> Air Sensitive Receiver.

### 4. Odour Complaint

There were no complaints received in relation to the environmental impact during the reporting period.

### 5. Conclusion and Recommendations

The first monitoring event for the first phase odour impact monitoring was carried out from 26 November 2019 to 27 November 2019.

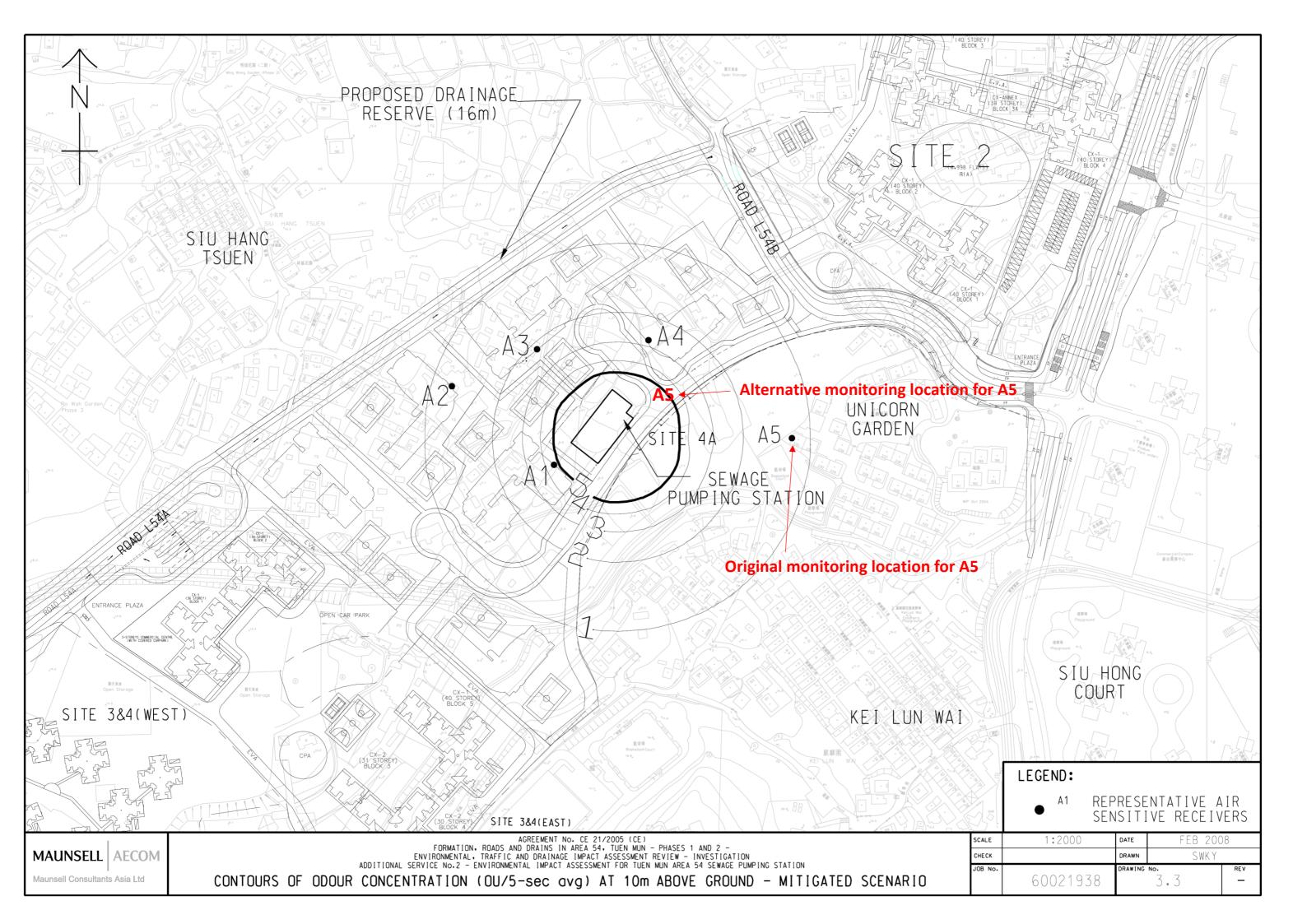
Odour impact monitoring of hydrogen sulphide ( $H_2S$ ) was conducted at four monitoring stations including three Air Sensitive Receivers around TMA54SPS and at source. It is observed that there is no exceedance (Action/Limit Level) of the 24-hour average  $H_2S$  concentration for the concerned monitoring stations A1, A2 and A5.



## **Appendix A**

**Monitoring Station** 







## **Appendix B**

Photographs of Monitoring

Stations







A5



A2



Source



## **Appendix C**

**Monitoring Results** 



		24-hour Average H2S Concentration (ppb)							
Monitoring Station	Time	1 <sup>st</sup> Event for Phase One Odour Impact Monitoring (26 – 27 November 2019)							
	Interval	15-minute integrated average	24-hour average	Maximum	Minimum	Action Level	Exceedance	Limit Level	Exceedance
	1100-1400	2.2							
	1400-1700	2.0							
	1700-2000	2.2							
A1	2000-2300	4.5	2.4	4.5	1.8	2.5	N	2.5	
AI	2300-0200	2.0	2.4	4.5	1.0	2.5	IN	2.5	N
	0200-0500	2.4							
	0500-0800	2.2							
	0800-1100	1.8							
	1100-1400	2.2							N
	1400-1700	2.2			1.6	2.3	Ν	2.5	
	1700-2000	2.0	- 2.0	2.2					
A2	2000-2300	2.0							
AZ	2300-0200	2.0						2.5	IN
	0200-0500	1.6							
	0500-0800	2.0							
	0800-1100	2.0							
	1100-1400	2.6			2.2	2.5	Ν	2.5	
	1400-1700	2.6							
	1700-2000	2.6							
A5	2000-2300	2.4	2.5	2.6					N
AJ	2300-0200	2.4	2.5	2.0					N
	0200-0500	2.2							
	0500-0800	2.4							
	0800-1100	2.4							
	1100-1400	6.8							
	1400-1700	7.2							
	1700-2000	5.6							
SPS	2000-2300	7.8	7.6	8.8	5.6	N/A	N/A	N/A	N/A
583	2300-0200	7.8	1.0	0.0	5.0	N/A	N/A	IN/A	IN/A
	0200-0500	8.0							
	0500-0800	8.8							
	0800-1100	8.4							



## **Appendix D**

Site Record



			General Ir	nformation			
Monitoring Station Date Weather		A1					
		r	26/11/19				
			Eine				
			Monitori	ng Results			
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)		
Comula 1	Start:	1134		$\sim$	0.002,0.002,0.002,0.0		
Sample 1	Stop:	1149	0.2m/s		0.002		
Sample 2	Start:	1429		$\wedge$	0.002 , 0.002 , 0.002		
	Stop:	1444	0. tals		0,002 , 0,002		
Sample 3	Start:	17-41		NE	0.002/0.002,0.003		
	Stop:	17 56	O.m/s		0.002,0.002		
Sample 4	Start: <sup>1</sup>	0735		ŃĔ	0.003,0.007,0.013		
p	Stop: <sup>1</sup>	0950	Octurts		0.003 ,0.005		
Sample 5	Start: <sup>2</sup>	1130			0.002, 0.002, 0.002		
	Stop: <sup>2</sup>	1145		/	0.002,0.007		
Sample 6	Start:	0240	/	/	0.002, 0.002,0.002		
	Stop:	0255			0.003,0.003		
Sample 7	Start:	0536	/	/	0.003,0.002,0.002		
	Stop:	0551			0.002,0.002		
Sample 8	Start:	0830	/	/	0.001,0.002,0.003		
	Stop:	0845	/	/	0.001,0:002		
ther Observati emarks: Sampling time of "S tart: 21:35 top: 21:50		III read as					
Sampling time of "S tart: 23:30 top: 23:45	ample 5" sha	III read as					

## Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

Recorded by: Say Chem Ho Cheary Checked by: Vincent Lu

Signature

<u>Date</u> 26/11/19 29/11/2019 IGRO

General Information							
Monitoring Station		A2					
Date		26/11					
Weather		12'ne					
			Monitorir	ng Results			
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)		
Sample 1	Start: Stop:	1100 1115	a, bm/s	$\bigvee$	0.002 / 1.002,0.002 / 0.002, 0.002		
Sample 2	Start: Stop:	1400	o.zhls	N	0.002, 0.002 /0.002		
Sample 3	Start: Stop:	1705	/	/	0.003', 0.007 0.002/2.002, 0.002 0.002/0.002		
Sample 4	Start: <sup>1</sup> Stop: <sup>1</sup>	0900	/	/	0.002 10.002,0.003		
Sample 5	Start: <sup>2</sup>	2/100 4/200	/	/	0.002,00002,0002 0.002,0002,0002 0.002,0002		
Sample 6	Start: ( Stop:	0215	/	/	0.002,0.002,0.002		
Sample 7	Start: Stop:	0500	/	/	0.001,0001,0002 0.002,0.001,0.002 0.003,0.002		
Sample 8	Start: Stop:	0800	/	/	0.002,0.002,0.002		
Other Observations Remarks: <sup>1</sup> Sampling time of "Sample 4" shall read as Start: 21:00 Stop: 21:15							
<sup>2</sup> Sampling time of "Sample 5" shall read as Start: 23:00 Stop: 23:15							
Name & DesignationSignatureDateRecorded by:Shan Ho CherrySna26/11/19							

S. M

29/11/2019 TUGRO

### Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

Name & Designation Chan Ho Cherry Vincent Lu

Checked by:

Monitoring Station $\cancel{A5}$ Date $26/11$ Weather $Fint$ WeatherFintSample NoTimeWind SpeedSample 1Start: $\cancel{IS}$ Stop: $\partial_i O_{MS}$ Sample 2Start: $\cancel{IS}$ Stop: $\partial_i O_{MS}$ Sample 3Start: $\cancel{IS}$ Start: $\partial_i O_{MS}$ Sample 3Start: $\cancel{IS}$ Start: $\partial_i O_{MS}$		General Information						
Weather $F$ / $H$ Weather $F$ / $H$ Monitoring ResultsSample NoTimeWind SpeedLevel(ppm)Sample 1Start: $\int S$ $\partial_1 O_{MS}$ $\partial_1 0.02$ , $0.002$ , $0.002$ ,Sample 1Start: $\int S$ $\partial_1 O_{MS}$ $\partial_1 0.04$ , $0.002$ , $0.002$ , $0.002$ ,Sample 2Start: $1458$ $\partial_1 0.0MS$ $0.004$ , $0.003$ , $0.002$ , $0.002$ ,Sample 2Start: $1458$ $0.0MS$ $0.004$ , $0.003$ , $0.002$ , $0.002$ ,Sample 3Start: $1810$ $0.003$ , $0.002$ , $0.002$ , $0.002$ , $0.002$ , $0.002$ ,		AS						
Monitoring ResultsSample NoTimeWind SpeedWind DirectionLevel(ppm)Sample 1Start: $\iint S$ $\partial_i O_{m/S}$ $\partial_i 0.004, 0.002, 0.002, 1.0002, 1.$		Date						
Monitoring ResultsSample NoTimeWind SpeedWind DirectionLevel(ppm)Sample 1Start: $[S]$ $\partial_i O_{mb}$ $\partial_i 0.004, 0.002, 0$				Fint	ł	Weather		
Sample NoTimeSpeedDirectionLevel(ppm)Sample 1Start: $\iint S$ $\partial_1 Om/S$ $\partial_1 004$ , $0.002$ , $0.002$ , $0.002$ ,Sample 2Start: $\iint S$ $\partial_1 Om/S$ $0.004$ , $0.002$ , $0.002$ ,Sample 2Start: $\iint S$ $\partial_1 Om/S$ $0.004$ , $0.003$ , $0.002$ ,Sample 3Start: $\iint S$ $0.0M/S$ $0.004$ , $0.003$ , $0.002$ ,								
Stop: $2$ $3$ $0.0m/s$ $0.0d^2$ $0.0d^2$ Sample 2       Start: $1458$ $0.0m/s$ $0.0d^2$ $0.0d^2$ $0.0d^2$ Sample 3       Start: $1810$ $0.0m/s$ $0.0d^2$ $0.0d^2$ $0.0d^2$ Sample 3       Start: $1810$ $0.0d^2$ $0.0d^2$ $0.0d^2$ $0.0d^2$	opm)	Level(ppm)			Time		Sample No	
Stop: $2$ $3$ $0.0m/s$ $0.0d^2$ $0.0d^2$ Sample 2       Start: $1458$ $0.0m/s$ $0.0d^2$ $0.0d^2$ $0.0d^2$ Sample 3       Start: $1810$ $0.0m/s$ $0.0d^2$ $0.0d^2$ $0.0d^2$ Sample 3       Start: $1810$ $0.0d^2$ $0.0d^2$ $0.0d^2$ $0.0d^2$	,0.002,	0.004, 0.002, 0.0	/	2	IS8	Start:	Consuls 1	
Sample 2       Start:       1458       0.0M/s       0.004, 0.003, 0.002         Stop:       1513       0.0M/s       0.002, 0.002         Sample 3       Start:       1810       0.003, 0.002, 0.002		mad and		0,0m/s	1213	Stop:	Sample I	
Stop: $( \int \int \partial $	3,01002	0.004, 0.003,00	/		1458	Start:	Sampla 2	
Sample 3 Start: $8 10$ $0.002, 0.002, 0.002, 0$	il i	0.002 , 0.002		oroms	IS 13	Stop:	Sample 2	
	,0,002,0.00]	0.003, 0.002, 0.0			1810	Start:	Sample 3	
stop: /8/25 0,00}		0,00}		Oromly	1825	Stop:		
Sample 4 Start: $^{1}$ 0958 $0.003, 0.003, 0.002,$	10,002,000	0.003, 0.003,0.	_		0758	Start: <sup>1</sup>	Sample 4	
					1013	Stop: <sup>1</sup>		
Stop:         1013         01002           Sample 5         Start:         2         1155         0.003, 0.003, 0.003	3,0.002	0.003, 0.003, 0	/	/	1155	Start: <sup>2</sup>	Comula F	
Stop: 2 0010 0.002, 0,002	2,002	0.002, 0,00			0010	Stop: <sup>2</sup>	Sample S	
Sample 6 Start: 03 07 0.002, 0.003, 0.00	3,0,002	0.002,0.003,			03 07	Start:	Sample 6	
Stop: 0322 0.34/5 NE 0.002, 0.002			NE	0.3uls	0322	Stop:	Sample 0	
Start: $0 (S9) 0 (00) (00) (00)$			/	/	0559	Start:	Sample 7	
Stop: 0614 0,002,0.003	-				0614	Stop:		
Start: $0 \times 5 $ [ $0.003 , 0.007 , 0.002$	,0,002	0.003,0.002,0	/	/	0855	Start:	Sample 8	
Stop: 09(0 0.003,0.002	102	0.003, 0.002			0910	Stop:		
Other Observations								
Remarks: <sup>1</sup> Sampling time of "Sample 4" shall read as Start: 21:58 Stop: 22:13								
<sup>2</sup> Sampling time of "Sample 5" shall refer to the logging time at Data Logger Record from 23:53 to 00:05								

#### Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

Recorded by:Name & DesignationSignatureChecked by:UniversityUniversityUniversityVincent LuUniversityUniversity

<u>Date</u> >6/11/1/



General Information							
Monitoring Station		SPS					
Date		26/11					
Weather		Fine					
Monitoring Results							
Sample No	-	Time	Wind Speed	Wind Direction	Level(ppm)		
Sample 1	Start:	= [2]7	0.0m/s	ha /	0.008,0,01,0.003		
Comula 2	Stop.	1525	5		0.010,0002		
Sample 2	Stop:	1540	Orom/s		0.009 10.009		
Sample 3	Start:	1837	O,on/s		0.003,0.011,0.009		
	Stop: Start: <sup>1</sup>	1070			0.003,0.002 0.008,0.008,0.008		
Sample 4	Stop: 1	0.035	Oouls		0.007/0.008		
Sample 5		017			0,008,0,007,0,007		
		032			0.007,0.008		
Sample 6	Start: ) Stop: (	<u>540</u> 3358	/	/	0.008, 0.010,0008 0.007,0.007		
Converte 7	Start: C	0625			0.009,0.011,0.008		
Sample 7	Stop: 🥑	\$640		/	0.008,0008		
Sample 8	Start: (	0917		/	0.008,0.008		
•	Stop: C	1932		/	0.007, 0.010		
Other Observations Remarks: <sup>1</sup> Sampling time of "Sample 4" shall read as Start: 22:20 Stop: 22:35							
Name & Designation Signature Date							
Recorded by:	Z	day 4.	o chen	e e	26/4/17		
Recorded by: En day to cherry En 26/4/17 Checked by: Vinuent La Tan 29/11/2019							

#### Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

26/4/1) 29/11/2019 TUGRO

## **Appendix E**

Data Logger Record



Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS	Sample Location: Technician: Instrument: Comment:	Inlet 631-1, 631-X, SN 2967	
		Date/Time:	十一月-29-2018 10:08am	
		Alarm Setpoint:	0 (ppm)	
				Page 1 of 5
1		1.00.09am 0.0	RESULT (ppm)	
		11:00:08am 0.0		
2	All ARE AND	11:03:08am 0.0		
3		1:06:08am 0.0		
4	21	11:09:08am 0.0		
5		11:12:08am 0.0		
6		11:34:10am /II		
7		11:34:10am 0.0		
		11:37:10am 0.0		
9		11:40:10am 0.0		
10	1 13 20 2010	11:43:10am 0.0		
11		11:47:10am 0.0		
12	1 11 20 2010	11:58:16am /II		
13		11:58:16am 0.0		
14	2: C	2:01:16pm 0.0		
15		12:04:16pm 0.0		
16		12:07:16pm 0.0		
17		2:10:16pm 0.0		
18		l2:17:51pm /II		
19		12:17:51pm 0.0		
20		2:20:51pm 0.0		
21		12:23:51pm 0.0		
22		2:26:51pm 0.0		
23		12:29:51pm 0.0		
24		)2:00:02pm //I		
25		0.0 02:00:02pm	and the second se	
24		0.0 02:03:02pm		
25		0.0 02:06:02pm		
28		0.0 02:09:02pm		
29		0.0 02:12:02pm		
30		)2:29:30pm //I		
31		0.0 02:29:30pm		
32		0.0 02:32:30pm		
33		0.0 02:35:30pm		
34		0.0 02:38:30pm		
35		0.0 02:41:30pm		
36		)2:58:44pm /II		
37		0.0 02:58:44pm		
38		0.0 03:01:44pm		
39		0.0 0:04:44pm		
40		0.0 0:07:44pm		
41		03:10:44pm 0.0		
42		)3:25:23pm //I		
43		0.0 0.0 0.0		
44		0.0 0.0 0.0		
45	十一月-26-2019 0	0.0 03:31:23pm	12	



Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS	Sample Location Technician: Instrument: Comment: Date/Time:	631	I-1, 631-X, SN 2967	
		Alarm Setpoint:		-月-29-2018 10:08am opm)	
		Alann Setpoint.	0.0	Join)	Page 2 of 5
				2.0	Tuge 2 of 5
10		02.24.02		T (ppm)	
46			0.009		
47			/11	End Of Session	
40		05:05:02pm 05:05:02pm 0	0.002	End Of Session	
50		Sector Sector	0.002		
51			0.002		
52		Selection of the select	0.002		
53	Ni 652		.002		
54		05:41:34pm	/111	End Of Session	
55	8: 12-	1.5% free	.002	Lind Of Obsalon	
56			.002		
57			.003		
58	11 10 10 10 10 10 10 10 10 10 10 10 10 1		.002		
59			.002		
60		06:10:59pm	/111	End Of Session	
61			.003		
62			.002		
63		06:16:59pm 0	.002		
64	十一月-26-2019	06:19:59pm 0	.003		
65	十一月-26-2019	06:22:59pm 0	.003		
66	十一月-26-2019	06:37:22pm	/111	End Of Session	
67	十一月-26-2019	06:37:22pm 0	.003		
68	十一月-26-2019	06:40:22pm 0	0.011		
69	十一月-26-2019	06:43:22pm 0	.009		
70	十一月-26-2019	06:46:22pm 0	0.003		
71	十一月-26-2019	06:49:22pm 0	0.002		
72	十一月-26-2019	09:00:03pm	/111	End Of Session	
73	十一月-26-2019	09:00:03pm 0	0.002		
74	十一月-26-2019	09:03:03pm 0	.002		
75	十一月-26-2019	09:06:03pm 0	0.003		
76	十一月-26-2019	09:09:03pm 0	0.002		
77	十一月-26-2019	09:12:03pm 0	0.001		
78	Ni 650	09:35:17pm	/111	End Of Session	
79			0.003		
80			0.007		
81		28	0.013		
82			0.003		
83			0.005		
84		09:58:38pm	/111	End Of Session	
85			0.003		
86			0.003		
87			0.002		
88		and the second second	0.002		
89 90		10:10:38pm 0 10:20:41pm	/111	End Of Session	
90			0.008		
<b>•</b> 1	1 13-20-2013	u contrario de la contrario de			



Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS	Sample Location: Technician: Instrument: Comment: Date/Time:	Inlet 631-1, 631-X, SN 2967 十一月-29-2018 10:08am	
		Alarm Setpoint:	0 (ppm)	
				Page 3 of 5
	DATE/TIME		RESULT (ppm)	
92	十一月-26-2019	10:23:41pm 0.00	08	
93	十一月-26-2019	10:26:41pm 0.00	08	
94	十一月-26-2019	10:29:41pm 0.00	07	
95	十一月-26-2019	10:32:41pm 0.00	08	
96	十一月-26-2019	11:00:09pm //I	End Of Session	
97	十一月-26-2019	11:00:09pm 0.00	02	
98	十一月-26-2019	11:03:09pm 0.00	02	
99	十一月-26-2019	11:06:09pm 0.00	02	
100	十一月-26-2019	11:09:09pm 0.00	02	
101	十一月-26-2019	11:12:09pm 0.00	02	
102	十一月-26-2019	11:30:51pm /II	End Of Session	
103	十一月-26-2019	11:30:51pm 0.00	02	
104	十一月-26-2019	11:33:51pm 0.00	02	
105	十一月-26-2019	11:36:51pm 0.00	02	
106	十一月-26-2019	11:39:51pm 0.00	02	
107	十一月-26-2019	11:42:51pm 0.00	02	
108	十一月-26-2019	11:53:22pm //I	End Of Session	
109	十一月-26-2019	11:53:22pm 0.00	03	
110	十一月-26-2019	11:56:22pm 0.00	03	
111	十一月-26-2019	11:59:22pm 0.00	02	
112	十一月-27-2019	00:02:22am 0.00	02	
113	十一月-27-2019	00:05:22am 0.00	02	
114	十一月-27-2019	00:17:51am /II	End Of Session	
115	十一月-27-2019	0.00 00:17:51am	08	
116		0.00 00:20:51am		
117		00:23:51am 0.00		
118		00:26:51am 0.00		
119		00:29:51am 0.00	2044	
120		02:00:36am /II		
121		02:00:36am 0.00		
122		02:03:36am 0.00		
123	1 75 21 2010	02:06:36am 0.00		
124		02:09:36am 0.00		
125		02:12:36am 0.00		
126		02:40:53am /II		
127		02:40:53am 0.00		
128		02:43:53am 0.00		
129		02:46:53am 0.00		
130		02:49:53am 0.00		
131		02:52:53am 0.00		
132		03:07:11am /II		
133 134		03:07:11am 0.00 03:10:11am 0.00		
134		03:13:11am 0.00		
135		03:17:11am 0.00		
130	all states	03:20:11am 0.00		
	1 73-21-2013	0.0		



Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS	Sample Location: Technician: Instrument: Comment: Date/Time:	Inlet 631-1, 631-X, SN 2967 十一月-29-2018 10:08am	
		Alarm Setpoint:	0 (ppm)	
				Page 3 of 5
	DATE/TIME		RESULT (ppm)	
92	十一月-26-2019	10:23:41pm 0.00	08	
93	十一月-26-2019	10:26:41pm 0.00	08	
94	十一月-26-2019	10:29:41pm 0.00	07	
95	十一月-26-2019	10:32:41pm 0.00	08	
96	十一月-26-2019	11:00:09pm //I	End Of Session	
97	十一月-26-2019	11:00:09pm 0.00	02	
98	十一月-26-2019	11:03:09pm 0.00	02	
99	十一月-26-2019	11:06:09pm 0.00	02	
100	十一月-26-2019	11:09:09pm 0.00	02	
101	十一月-26-2019	11:12:09pm 0.00	02	
102	十一月-26-2019	11:30:51pm /II	End Of Session	
103	十一月-26-2019	11:30:51pm 0.00	02	
104	十一月-26-2019	11:33:51pm 0.00	02	
105	十一月-26-2019	11:36:51pm 0.00	02	
106	十一月-26-2019	11:39:51pm 0.00	02	
107	十一月-26-2019	11:42:51pm 0.00	02	
108	十一月-26-2019	11:53:22pm //I	End Of Session	
109	十一月-26-2019	11:53:22pm 0.00	03	
110	十一月-26-2019	11:56:22pm 0.00	03	
111	十一月-26-2019	11:59:22pm 0.00	02	
112	十一月-27-2019	00:02:22am 0.00	02	
113	十一月-27-2019	00:05:22am 0.00	02	
114	十一月-27-2019	00:17:51am /II	End Of Session	
115	十一月-27-2019	0.00 00:17:51am	08	
116		0.00 00:20:51am		
117		00:23:51am 0.00		
118		00:26:51am 0.00		
119		00:29:51am 0.00	2044	
120		02:00:36am /II		
121		02:00:36am 0.00		
122		02:03:36am 0.00		
123	1 75 21 2010	02:06:36am 0.00		
124		02:09:36am 0.00		
125		02:12:36am 0.00		
126		02:40:53am /II		
127		02:40:53am 0.00		
128		02:43:53am 0.00		
129		02:46:53am 0.00		
130		02:49:53am 0.00		
131		02:52:53am 0.00		
132		03:07:11am /II		
133 134		03:07:11am 0.00 03:10:11am 0.00		
134		03:13:11am 0.00		
135		03:17:11am 0.00		
130	all states	03:20:11am 0.00		
	1 73-21-2013	0.0		



Site Name: Address:	Tuen Mun Area 54 SP Tuen Mun Area 54 SP	S Technic Instrum Comme Date/Tir	ent: nt:	Inlet 631-1, 631-X, SN 2967 十一月-29-2018 10:08am <b>0 (ppm)</b>	
					Page 4 of 5
100	DATE/TIM			RESULT (ppm)	
138	十一月-27-2019	03:40:44am	/11	End Of Session	
139	十一月-27-2019	03:40:44am	0.008		
140 141	十一月-27-2019 十一月-27-2019	03:43:44am 03:46:44am	0.010		
141	十一月-27-2019	03:49:44am	0.008		
142	十一月-27-2019	03:52:44am	0.007		
144	十一月-27-2019	05:00:06am	/11	End Of Session	
145	十一月-27-2019	05:00:06am	0.002		
146	十一月-27-2019	05:03:06am	0.001		
147	十一月-27-2019	05:06:06am	0.002		
148	十一月-27-2019	05:09:06am	0.003		
149	十一月-27-2019	05:12:06am	0.002		
150	十一月-27-2019	05:36:45am	/11	End Of Session	
151	十一月-27-2019	05:36:45am	0.003		
152	十一月-27-2019	05:39:45am	0.002		
153	十一月-27-2019	05:42:45am	0.002		
154	十一月-27-2019	05:45:45am	0.002		
155	十一月-27-2019	05:48:45am	0.002		
156	十一月-27-2019	05:59:29am	/111	End Of Session	
157	十一月-27-2019	05:59:29am	0.002		
158	十一月-27-2019	06:02:29am	0.002		
159	十一月-27-2019	06:05:29am	0.003		
160	十一月-27-2019	06:08:29am	0.002		
161	十一月-27-2019	06:11:29am	0.003		
162	十一月-27-2019	06:25:37am	/11	End Of Session	
163	十一月-27-2019	06:25:37am	0.009		
164	十一月-27-2019	06:28:37am	0.011		
165	十一月-27-2019	06:31:37am	0.008		
166	十一月-27-2019	06:34:37am	0.008		
167	十一月-27-2019	06:37:37am	0.008		
168 169	十一月-27-2019 十一月-27-2019	08:00:04am 08:00:04am	0.002	End Of Session	
170	十一月-27-2019	08:03:04am	0.002		
170	十一月-27-2019	08:06:04am	0.002		
172	十一月-27-2019	08:09:04am	0.002		
173	十一月-27-2019	08:12:04am	0.002		
174	十一月-27-2019	08:30:17am	/11	End Of Session	
175	十一月-27-2019	08:30:17am	0.001		
176	十一月-27-2019	08:33:17am	0.002		
177	十一月-27-2019	08:36:17am	0.003		
178	十一月-27-2019	08:39:17am	0.001		
179	十一月-27-2019	08:42:17am	0.002		
180	十一月-27-2019	08:55:11am	/11	End Of Session	
181	十一月-27-2019	08:55:11am	0.003		
182	十一月-27-2019	08:58:11am	0.002		
183	十一月-27-2019	09:01:11am	0.002		



Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS	Technician Instrument Comment:	r E	Inlet 631-1, 631-X, SN 2967	
		Date/Time:		十一月-29-2018 10:08am	
		Alarm Setp	point:	0 (ppm)	
					Page 5 of 5
	DATE/TIME		R	ESULT (ppm)	
184	十一月-27-2019	09:04:11am	0.003		
185	十一月-27-2019	09:07:11am	0.002		
186	十一月-27-2019	09:17:55am	/111	End Of Session	
187	十一月-27-2019	09:17:55am	0.009		
188	十一月-27-2019	09:20:55am	0.008		
189	十一月-27-2019	09:23:55am	0.008		
190	十一月-27-2019	09:26:55am	0.007		
191	十一月-27-2019	09:29:55am	0.010		
		Readings:	160		
		Minimum:	0.001		
		Maximum:	0.013		
		Average:	0.0037		
		SD:	0.0028		



## **Appendix F**

**Calibration Certificates** 





3375 N. Delaware Street, Chandler, AZ 85225 800.528.7411 | (f) 602.281.1745 | azic.com

#### Certification of Instrument Calibration

Guyline (Asia) Ltd Rm 1611, Eastern Harbour Centre Quarry Bay,

RMA# 2634783

UGRO

This is to certify that the Jerome X631 0003 Gold Film Hydrogen Sulfide Analyzer, Serial Number 2967, with Sensor Number 16-4-13-V2DS, was calibrated with standard units traceable to NIST.

Calibration	Status as Rec	eived:	Functionally	Unable to	Check	
		Actual		Calibr	ation Gas	Allowable Range
Incoming:	Range 1		ppm H2S		ppm H2S	+/- 6%
100.000.0000000	RSD %					<5%
Outgoing:	Range 1	0.501	ppm H2S	0.500	ppm H2S	+/- 6%
	RSD %	1.51				<5%
Calibration S	Status as Left:	1	In Calibration	1		
Estimated U	ncertainty of	Calibratio	n System: 2.89	%		
Calibration I	Date: 17-Jan-2	2019	Recalibra	tion Date:	16-Jan-2020	
Temperature	°F: 72.50		% Relative Hu	midity: 38.	50	
	CI	ren	ge th	rad	er.	
Approved By	n	(	3			Date Approved: 18-Jan-2019
Title: Cheryl	Hradek - Qu	ality Cont	rol			
Equipment U	ised:					
and built and see 2.5		ndard: C	C-230020 NI	ST#: 1417	575	
Calibra	tion Date: 30	)-May-20	17 Calibratio	n Date Du	e: 31-May-2020	0
Mass F	low Controlle	er B: 1246	504 NIST#: 2	15457		
Calibra	tion Date: 13	-Dec-201	8 Calibration	n Date Due	: 13-Dec-2019	
Mass Fl	low Controlle	er D: 124	502 NIST#: 2	15454		
Calibra	tion Date: 13	B-Dec-201	8 Calibration	n Date Due	:: 13-Dec-2019	
Digital	Multimeter:	74620534	NIST#: 700	3079		
Calibra	tion Date: <u>16</u>	-Feb-201	8 Calibration	Date Due	: 16-Feb-2019	
Flowme	ter: US04126	5032 NIST	F#: <u>1813; 181</u>	7; 1796		
Calibra	tion Date: <u>17</u>	-Oct-201	8 Calibration	Date Due	: 18-Oct-2019	
Calibration Pro	ocedure Used: '	730-0032				
NATIONAL INST constants, or have l	TUTE OF STAND seen derived by the	ARDS AND 1 ratio type of s	ECHNOLOGY with elf-calibration technology	hin the limitation	ns of the Institute's cal	d has been calibrated using standards whose accuracy are traceable to the abraion services, or have been derived from accepted values of natural physics on your Jerome Analyzer WILL VOID this factory calibration Because any of

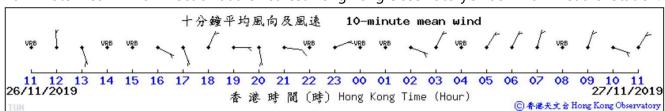
tion Because any of the tsible for any liabilities Descame: Nay unautorized adjustments, removal or recearing or QL seas, or other customer monitonions on your recome Analyzer witch your of the many cathere above acts could affect the calibration and readings of the instrument, their certification will no longer be valid and, further, AMETEK Brookfield WILL NOT be respo created as a result of using the instrument after such adjustments, seal removal, or modifications As long as a functional test is within range, according to the procedure outlined in the Operator's Manual, the instrument is performing correctly.

This document shall not be reproduced, except in full, without the written approval of AMETEK Brookfield

# **Appendix G**

### Meteorological Conditions





10-Minute Mean Wind Direction at the nearest Hong Kong Observatory's Tuen Mun Weather Station:

10-Minute Mean Wind Speed at the nearest Hong Kong Observatory's Tuen Mun Weather Station:





		Weather Parameters				
Date	Time	Temperature	Wind Direction	Wind Speed (km/hour		
	1100	23		7.0		
-	1200	23	Ν	7.0		
_	1300	24	SE	9.0		
_	1400	23		4.0		
_	1500	24		3.0		
_	1600	23	SE	7.0		
 26 November 2019	1700	23	SE	7.0		
	1800	23	NE	2.0		
_	1900	22	E	1.0		
_	2000	22	SE	5.5		
_	2100	22	SE	18.0		
_	2200	22		2.5		
	2300	22	NE	3.0		
_	2400	23		2.5		
	0100	23		1.0		
_	0200	22	SE	8.5		
_	0300	22	NE	6.0		
_	0400	22		2.5		
	0500	21	NE	0.5		
27 November 2019 –	0600	21		2.5		
_	0700	21		5.5		
_	0800	21	NE	0.5		
_	0900	21	SE	8.0		
_	1000	22	NE	3.0		

#### Meteorological conditions during the first operation phase odour impact monitoring





#### PRESS WEATHER NO. 082 - HOURLY READINGS

AT 11 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 71 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	22	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	22	DEGREES;
LAU FAU SHAN	22	DEGREES;
TAI PO	21	DEGREES;
SHA TIN	21	DEGREES;
TUEN MUN	23	DEGREES;
TSEUNG KWAN O	22	DEGREES;
SAI KUNG	21	DEGREES;
CHEUNG CHAU	22	DEGREES;
CHEK LAP KOK	22	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	22	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	22	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	22	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	21	DEGREES;
YUEN LONG PARK	22	DEGREES;
TAI MEI TUK		DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 11:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 094 - HOURLY READINGS

AT NOON AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 71 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	22	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	24	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	23	DEGREES;
TUEN MUN	23	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	22	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	23	DEGREES;
SHEK KONG	23	DEGREES;
TSUEN WAN HO KOON	23	DEGREES;
TSUEN WAN SHING MUN VALLEY	23	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	22	DEGREES;
KOWLOON CITY	22	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	23	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	24	DEGREES;
TAI MEI TUK	24	DEGREES.

A TRACE OF RAINFALL WAS RECORDED AT THE HONG KONG OBSERVATORY BETWEEN MIDNIGHT LAST NIGHT AND MIDDAY TODAY.

DISPATCHED BY HONG KONG OBSERVATORY AT 12:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 102 - HOURLY READINGS

AT 1 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 23 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 69 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	22	DEGREES;
WONG CHUK HANG	23	DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	25	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	23	DEGREES;
TUEN MUN	24	DEGREES;
TSEUNG KWAN O	23	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	24	DEGREES;
CHEK LAP KOK	24	DEGREES;
TSING YI	23	DEGREES;
SHEK KONG	25	DEGREES;
TSUEN WAN HO KOON	22	DEGREES;
TSUEN WAN SHING MUN VALLEY	23	DEGREES;
HONG KONG PARK	23	DEGREES;
SHAU KEI WAN	22	DEGREES;
KOWLOON CITY	22	DEGREES;
HAPPY VALLEY	23	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	23	DEGREES;
KWUN TONG	22	DEGREES;
SHAM SHUI PO	23	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK		DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 13:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 108 - HOURLY READINGS

AT 2 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 23 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 68 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	23	DEGREES;
WONG CHUK HANG	23	DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	27	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	23	DEGREES;
TUEN MUN	23	DEGREES;
TSEUNG KWAN O	22	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	24	DEGREES;
CHEK LAP KOK	25	DEGREES;
TSING YI	23	DEGREES;
SHEK KONG	23	DEGREES;
TSUEN WAN HO KOON	23	DEGREES;
TSUEN WAN SHING MUN VALLEY	23	DEGREES;
HONG KONG PARK	23	DEGREES;
SHAU KEI WAN	22	DEGREES;
KOWLOON CITY	23	DEGREES;
HAPPY VALLEY	23	DEGREES;
WONG TAI SIN	23	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	22	DEGREES;
SHAM SHUI PO	24	DEGREES;
KAI TAK RUNWAY PARK	23	DEGREES;
YUEN LONG PARK	25	DEGREES;
TAI MEI TUK	23	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 14:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 112 - HOURLY READINGS

AT 3 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 23 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 72 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	22	DEGREES;
WONG CHUK HANG	23	DEGREES;
TA KWU LING	23	DEGREES;
LAU FAU SHAN	26	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	23	DEGREES;
TUEN MUN	24	DEGREES;
TSEUNG KWAN O	22	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	23	DEGREES;
CHEK LAP KOK	24	DEGREES;
TSING YI	23	DEGREES;
SHEK KONG	23	DEGREES;
TSUEN WAN HO KOON	22	DEGREES;
TSUEN WAN SHING MUN VALLEY	23	DEGREES;
HONG KONG PARK	11	DEGREES;
SHAU KEI WAN	22	DEGREES;
KOWLOON CITY	23	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	23	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	22	DEGREES;
SHAM SHUI PO	24	DEGREES;
KAI TAK RUNWAY PARK		DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK		DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 15:04 HKT ON 26.11.2019



#### PRESS WEATHER NO. 116 - HOURLY READINGS

AT 4 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 73 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.8. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	22	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	23	DEGREES;
LAU FAU SHAN	25	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	22	DEGREES;
TUEN MUN	23	DEGREES;
TSEUNG KWAN O	22	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	22	DEGREES;
CHEK LAP KOK	24	DEGREES;
TSING YI	23	DEGREES;
SHEK KONG	23	DEGREES;
TSUEN WAN HO KOON	22	DEGREES;
TSUEN WAN SHING MUN VALLEY	22	DEGREES;
HONG KONG PARK	//	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	22	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	23	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK	23	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 16:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 130 - HOURLY READINGS

AT 5 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 75 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	22	DEGREES;
LAU FAU SHAN	23	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	22	DEGREES;
TUEN MUN	23	DEGREES;
TSEUNG KWAN O	22	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	23	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	22	DEGREES;
HONG KONG PARK	//	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	23	DEGREES;
TAI MEI TUK	22	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 17:02 HKT ON 26.11.2019



### PRESS WEATHER NO. 136 - HOURLY READINGS

AT 6 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.0. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	22	DEGREES;
LAU FAU SHAN	22	DEGREES;
TAI PO	21	DEGREES;
SHA TIN	22	DEGREES;
TUEN MUN	23	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	22	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	21	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	23	DEGREES;
TAI MEI TUK	21	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 18:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 146 - HOURLY READINGS

AT 7 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	22	DEGREES;
LAU FAU SHAN	21	DEGREES;
TAI PO	21	DEGREES;
SHA TIN	21	DEGREES;
TUEN MUN	22	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	22	DEGREES;
TSUEN WAN HO KOON	20	DEGREES;
TSUEN WAN SHING MUN VALLEY	21	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	22	DEGREES;
TAI MEI TUK	21	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 19:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 152 - HOURLY READINGS

AT 8 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	22	DEGREES;
LAU FAU SHAN	21	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	21	DEGREES;
TUEN MUN	22	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	22	DEGREES;
TSUEN WAN HO KOON	20	DEGREES;
TSUEN WAN SHING MUN VALLEY	21	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	22	DEGREES;
TAI MEI TUK	21	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 20:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 160 - HOURLY READINGS

AT 9 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
TAI PO		DEGREES;
SHA TIN		DEGREES;
TUEN MUN		DEGREES;
TSEUNG KWAN O		DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	21	DEGREES;
TSUEN WAN HO KOON	20	DEGREES;
TSUEN WAN SHING MUN VALLEY	21	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	21	DEGREES;
TAI MEI TUK	21	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 21:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 166 - HOURLY READINGS

HOUKLY READINGS

AT 10 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21 DEGREES;
WONG CHUK HANG	22 DEGREES;
TA KWU LING	21 DEGREES;
LAU FAU SHAN	21 DEGREES;
TAI PO	22 DEGREES;
SHA TIN	22 DEGREES;
TUEN MUN	22 DEGREES;
TSEUNG KWAN O	21 DEGREES;
SAI KUNG	22 DEGREES;
CHEUNG CHAU	21 DEGREES;
CHEK LAP KOK	23 DEGREES;
TSING YI	22 DEGREES;
SHEK KONG	22 DEGREES;
TSUEN WAN HO KOON	20 DEGREES;
TSUEN WAN SHING MUN VALLEY	21 DEGREES;
HONG KONG PARK	22 DEGREES;
SHAU KEI WAN	21 DEGREES;
KOWLOON CITY	21 DEGREES;
HAPPY VALLEY	22 DEGREES;
WONG TAI SIN	22 DEGREES;
STANLEY	21 DEGREES;
KWUN TONG	21 DEGREES;
SHAM SHUI PO	22 DEGREES;
KAI TAK RUNWAY PARK	22 DEGREES;
YUEN LONG PARK	22 DEGREES;
TAI MEI TUK	21 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 22:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 172 - HOURLY READINGS

AT 11 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 79 PER

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	21	DEGREES;
LAU FAU SHAN	21	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	22	DEGREES;
TUEN MUN	22	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	22	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	21	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	21	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK		DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 23:02 HKT ON 26.11.2019



PRESS WEATHER NO. 004 - HOURLY READINGS

AT MIDNIGHT AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 79 PER CENT.

STRONG WINDS ARE EXPECTED FROM THE EAST. THE PUBLIC SHOULD BEWARE OF THE POSSIBLE DANGER BROUGHT BY ROUGH SEAS.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	22	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	22	DEGREES;
LAU FAU SHAN	22	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	22	DEGREES;
TUEN MUN	23	DEGREES;
TSEUNG KWAN O	22	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	22	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	23	DEGREES;
SHEK KONG	23	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	22	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	22	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	23	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	23	DEGREES;
TAI MEI TUK	22	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 00:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 010 - HOURLY READINGS

HOULLI NEADINOS

AT 1 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT.

STRONG WINDS ARE EXPECTED FROM THE EAST. THE PUBLIC SHOULD BEWARE OF THE POSSIBLE DANGER BROUGHT BY ROUGH SEAS.

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	22	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	21	DEGREES;
LAU FAU SHAN	22	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	22	DEGREES;
TUEN MUN	23	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	22	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	22	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	22	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	23	DEGREES;
TAI MEI TUK	22	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 01:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 016 - HOURLY READINGS

AT 2 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT.

STRONG WINDS ARE EXPECTED FROM THE EAST. THE PUBLIC SHOULD BEWARE OF THE POSSIBLE DANGER BROUGHT BY ROUGH SEAS.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	22	DEGREES;
TA KWU LING	21	DEGREES;
LAU FAU SHAN	22	DEGREES;
TAI PO	22	DEGREES;
SHA TIN	22	DEGREES;
TUEN MUN	22	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	23	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	22	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	22	DEGREES;
HONG KONG PARK	22	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	22	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	22	DEGREES;
TAI MEI TUK	22	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 02:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 020 - HOURLY READINGS

AT 3 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT.

STRONG WINDS ARE EXPECTED FROM THE EAST. THE PUBLIC SHOULD BEWARE OF THE POSSIBLE DANGER BROUGHT BY ROUGH SEAS

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

	2 DEGREES; ) DEGREES;
	) DEGREES;
TA KWU LING 20	
LAU FAU SHAN 2	DEGREES;
TAI PO 2	DEGREES;
SHA TIN 22	DEGREES;
TUEN MUN 21	2 DEGREES;
TSEUNG KWAN O 2	DEGREES;
SAI KUNG 22	DEGREES;
CHEUNG CHAU 2	DEGREES;
CHEK LAP KOK 2.	B DEGREES;
TSING YI 22	DEGREES;
SHEK KONG 2	DEGREES;
TSUEN WAN HO KOON 2	DEGREES;
TSUEN WAN SHING MUN VALLEY 2	DEGREES;
HONG KONG PARK 22	DEGREES;
SHAU KEI WAN 2	DEGREES;
KOWLOON CITY 2	DEGREES;
HAPPY VALLEY 22	DEGREES;
WONG TAI SIN 2	DEGREES;
STANLEY 2	DEGREES;
KWUN TONG 2	DEGREES;
SHAM SHUI PO 22	DEGREES;
KAI TAK RUNWAY PARK 22	DEGREES;
YUEN LONG PARK 2	DEGREES;
TAI MEI TUK 20	) DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 03:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 026 - HOURLY READINGS

AT 4 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 81 PER CENT.

STRONG WINDS ARE EXPECTED FROM THE EAST. THE PUBLIC SHOULD BEWARE OF THE POSSIBLE DANGER BROUGHT BY ROUGH SEAS.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	21	DEGREES;
TA KWU LING	20	DEGREES;
LAU FAU SHAN	21	DEGREES;
TAI PO	21	DEGREES;
SHA TIN	22	DEGREES;
TUEN MUN	22	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	22	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	22	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	21	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	21	DEGREES;
HONG KONG PARK	21	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	21	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	21	DEGREES;
TAI MEI TUK	20	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 04:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 032 - HOURLY READINGS

AT 5 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 22 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 81 PER CENT.

STRONG WINDS ARE EXPECTED FROM THE EAST. THE PUBLIC SHOULD BEWARE OF THE POSSIBLE DANGER BROUGHT BY ROUGH SEAS.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
		· · · · · · · · · · · · · · · · · · ·
TAI PO		DEGREES;
SHA TIN	21	,
TUEN MUN		DEGREES;
TSEUNG KWAN O		DEGREES;
SAI KUNG	21	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	22	DEGREES;
TSING YI	21	DEGREES;
SHEK KONG	20	DEGREES;
TSUEN WAN HO KOON	20	DEGREES;
TSUEN WAN SHING MUN VALLEY	21	DEGREES;
HONG KONG PARK	21	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY		DEGREES;
HAPPY VALLEY		DEGREES;
WONG TAI SIN	21	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	21	DEGREES;
SHAM SHUI PO	21	DEGREES;
KAI TAK RUNWAY PARK	22	DEGREES;
YUEN LONG PARK	21	
TAI MEI TUK		DEGREES.
	20	DEGREED.

DISPATCHED BY HONG KONG OBSERVATORY AT 05:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 042 - HOURLY READINGS

AT 6 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 21 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 77 PER CENT.

STRONG WINDS ARE EXPECTED FROM THE EAST. THE PUBLIC SHOULD BEWARE OF THE POSSIBLE DANGER BROUGHT BY ROUGH SEAS.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

WONG CHUK HANG21 DEGREES;TA KWU LING19 DEGREES;LAU FAU SHAN20 DEGREES;TAI PO21 DEGREES;SHA TIN21 DEGREES;TUEN MUN21 DEGREES;TSEUNG KWAN O20 DEGREES;CHEUNG CHAU21 DEGREES;CHEK LAP KOK22 DEGREES;SHEK KONG20 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;SHAU KEI WAN20 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK21 DEGREES;SHAM SHUI PO21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;TAI MEI TUK19 DEGREES;	KING'S PARK	21	DEGREES;
LAU FAU SHAN20 DEGREES;TAI PO21 DEGREES;SHA TIN21 DEGREES;SHA TIN21 DEGREES;TUEN MUN21 DEGREES;TSEUNG KWAN O20 DEGREES;SAI KUNG20 DEGREES;CHEUNG CHAU21 DEGREES;CHEK LAP KOK22 DEGREES;TSING YI21 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK21 DEGREES;YUEN LONG PARK21 DEGREES;KAI TAK RUNWAY PARK20 DEGREES;YUEN LONG PARK20 DEGREES;	WONG CHUK HANG	21	DEGREES;
TAI PO21 DEGREES;SHA TIN21 DEGREES;TUEN MUN21 DEGREES;TSEUNG KWAN O20 DEGREES;SAI KUNG20 DEGREES;CHEUNG CHAU21 DEGREES;CHEK LAP KOK22 DEGREES;TSING YI21 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;WONG TAI SIN21 DEGREES;SHAM SHUI PO21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK20 DEGREES;YUEN LONG PARK21 DEGREES;VUEN LONG PARK21 DEGREES;SHAM SHUI PO21 DEGREES;YUEN LONG PARK21 DEGREES;YUEN LONG PARK20 DEGREES;YUEN LONG PARK20 DEGREES;	TA KWU LING	19	DEGREES;
SHA TIN21 DEGREES;TUEN MUN21 DEGREES;TSEUNG KWAN O20 DEGREES;SAI KUNG20 DEGREES;CHEUNG CHAU21 DEGREES;CHEK LAP KOK22 DEGREES;TSING YI21 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK21 DEGREES;	LAU FAU SHAN	20	DEGREES;
TUEN MUN21DEGREES;TSEUNG KWAN O20DEGREES;SAI KUNG20DEGREES;CHEUNG CHAU21DEGREES;CHEK LAP KOK22DEGREES;TSING YI21DEGREES;SHEK KONG20DEGREES;TSUEN WAN HO KOON20DEGREES;TSUEN WAN SHING MUN VALLEY21DEGREES;HONG KONG PARK21DEGREES;SHAU KEI WAN20DEGREES;KOWLOON CITY20DEGREES;WONG TAI SIN21DEGREES;STANLEY21DEGREES;SHAM SHUI PO21DEGREES;KAI TAK RUNWAY PARK20DEGREES;YUEN LONG PARK20DEGREES;	TAI PO	21	DEGREES;
TSEUNG KWAN O20 DEGREES;SAI KUNG20 DEGREES;CHEUNG CHAU21 DEGREES;CHEK LAP KOK22 DEGREES;TSING YI21 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;STANLEY21 DEGREES;STANLEY21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	SHA TIN	21	DEGREES;
SAI KUNG20 DEGREES;CHEUNG CHAU21 DEGREES;CHEK LAP KOK22 DEGREES;TSING YI21 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	TUEN MUN	21	DEGREES;
CHEUNG CHAU21 DEGREES;CHEK LAP KOK22 DEGREES;TSING YI21 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;STANLEY21 DEGREES;STANLEY21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	TSEUNG KWAN O	20	DEGREES;
CHEK LAP KOK22 DEGREES;TSING YI21 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	SAI KUNG	20	DEGREES;
TSING YI21 DEGREES;SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	CHEUNG CHAU	21	DEGREES;
SHEK KONG20 DEGREES;TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	CHEK LAP KOK	22	DEGREES;
TSUEN WAN HO KOON20 DEGREES;TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	TSING YI	21	DEGREES;
TSUEN WAN SHING MUN VALLEY21 DEGREES;HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	SHEK KONG	20	DEGREES;
HONG KONG PARK21 DEGREES;SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	TSUEN WAN HO KOON	20	DEGREES;
SHAU KEI WAN20 DEGREES;KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	TSUEN WAN SHING MUN VALLEY	21	DEGREES;
KOWLOON CITY20 DEGREES;HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	HONG KONG PARK	21	DEGREES;
HAPPY VALLEY21 DEGREES;WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	SHAU KEI WAN	20	DEGREES;
WONG TAI SIN21 DEGREES;STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	KOWLOON CITY	20	DEGREES;
STANLEY21 DEGREES;KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	HAPPY VALLEY	21	DEGREES;
KWUN TONG20 DEGREES;SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	WONG TAI SIN	21	DEGREES;
SHAM SHUI PO21 DEGREES;KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	STANLEY	21	DEGREES;
KAI TAK RUNWAY PARK21 DEGREES;YUEN LONG PARK20 DEGREES;	KWUN TONG	20	DEGREES;
YUEN LONG PARK 20 DEGREES;	SHAM SHUI PO	21	DEGREES;
-	KAI TAK RUNWAY PARK	21	DEGREES;
TAI MEI TUK 19 DEGREES.	YUEN LONG PARK	20	DEGREES;
	TAI MEI TUK	19	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 06:02 HKT ON 26.11.2019



#### 

HOURLY READINGS

AT 7 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 21 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 75 PER CENT.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	21	DEGREES;
TA KWU LING	19	DEGREES;
LAU FAU SHAN	19	DEGREES;
TAI PO	20	DEGREES;
SHA TIN	20	DEGREES;
TUEN MUN	21	DEGREES;
TSEUNG KWAN O	20	DEGREES;
SAI KUNG	20	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	21	DEGREES;
TSING YI	21	DEGREES;
SHEK KONG	19	DEGREES;
TSUEN WAN HO KOON	20	DEGREES;
TSUEN WAN SHING MUN VALLEY	20	DEGREES;
HONG KONG PARK	21	DEGREES;
SHAU KEI WAN	20	DEGREES;
KOWLOON CITY	20	DEGREES;
HAPPY VALLEY	21	DEGREES;
WONG TAI SIN	21	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	19	DEGREES;
SHAM SHUI PO	20	DEGREES;
KAI TAK RUNWAY PARK	21	DEGREES;
YUEN LONG PARK	20	DEGREES;
TAI MEI TUK	19	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 07:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 060 - HOURLY READINGS

AT 8 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 21 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 74 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.1. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THA

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

WINGLO DADY	0.1	DEGDEEG
KING'S PARK		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING	19	DEGREES;
LAU FAU SHAN	19	DEGREES;
TAI PO	20	DEGREES;
SHA TIN	20	DEGREES;
TUEN MUN	21	DEGREES;
TSEUNG KWAN O	20	DEGREES;
SAI KUNG	20	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	21	DEGREES;
TSING YI	21	DEGREES;
SHEK KONG	19	DEGREES;
TSUEN WAN HO KOON	20	DEGREES;
TSUEN WAN SHING MUN VALLEY	20	DEGREES;
HONG KONG PARK	21	DEGREES;
SHAU KEI WAN	20	DEGREES;
KOWLOON CITY	20	DEGREES;
HAPPY VALLEY	21	DEGREES;
WONG TAI SIN	21	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	19	DEGREES;
SHAM SHUI PO	21	DEGREES;
KAI TAK RUNWAY PARK	21	DEGREES;
YUEN LONG PARK	20	DEGREES;
TAI MEI TUK	20	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 08:02 HKT ON 26.11.2019



#### PRESS WEATHER NO. 066 - HOURLY READINGS

AT 9 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 21 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 73 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.5. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	21	DEGREES;
TA KWU LING	20	DEGREES;
LAU FAU SHAN	20	DEGREES;
TAI PO	20	DEGREES;
SHA TIN	21	DEGREES;
TUEN MUN	21	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	20	DEGREES;
CHEUNG CHAU	21	DEGREES;
CHEK LAP KOK	21	DEGREES;
TSING YI	21	DEGREES;
SHEK KONG	20	DEGREES;
TSUEN WAN HO KOON	20	DEGREES;
TSUEN WAN SHING MUN VALLEY	20	DEGREES;
HONG KONG PARK	21	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	21	DEGREES;
WONG TAI SIN	21	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	20	DEGREES;
SHAM SHUI PO	21	DEGREES;
KAI TAK RUNWAY PARK	21	DEGREES;
YUEN LONG PARK	20	DEGREES;
TAI MEI TUK	20	DEGREES.

BETWEEN MIDNIGHT AND 9 A.M. THE MINIMUM TEMPERATURE WAS 21.0 DEGREES CELSIUS AT THE HONG KONG OBSERVATORY.



#### PRESS WEATHER NO. 078 - HOURLY READINGS

AT 10 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 21 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 72 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 1. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE STRONG MONSOON SIGNAL HAS BEEN ISSUED.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	21	DEGREES;
WONG CHUK HANG	21	DEGREES;
TA KWU LING	21	DEGREES;
LAU FAU SHAN	22	DEGREES;
TAI PO	20	DEGREES;
SHA TIN	21	DEGREES;
TUEN MUN	22	DEGREES;
TSEUNG KWAN O	21	DEGREES;
SAI KUNG	20	DEGREES;
CHEUNG CHAU	23	DEGREES;
CHEK LAP KOK	22	DEGREES;
TSING YI	22	DEGREES;
SHEK KONG	21	DEGREES;
TSUEN WAN HO KOON	21	DEGREES;
TSUEN WAN SHING MUN VALLEY	21	DEGREES;
HONG KONG PARK	21	DEGREES;
SHAU KEI WAN	21	DEGREES;
KOWLOON CITY	21	DEGREES;
HAPPY VALLEY	22	DEGREES;
WONG TAI SIN	21	DEGREES;
STANLEY	21	DEGREES;
KWUN TONG	20	DEGREES;
SHAM SHUI PO	22	DEGREES;
KAI TAK RUNWAY PARK	21	DEGREES;
YUEN LONG PARK	21	DEGREES;
TAI MEI TUK	21	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 10:02 HKT ON 26.11.2019



# 2<sup>nd</sup> Impact Odour Monitoring



## Second Operation Phase Odour Impact Monitoring Report

Impact Odour Monitoring -  $H_2S$  Measurement for Tuen Mun Area 54 Sewage Pumping Station | Hong Kong

0118/19/ED/0336 01 | 20 February 2020 For review Mott Macdonald Hong Kong Limited

## **Executive Summary**

Fugro Technical Services Limited (FTS) has been appointed by Mott MacDonald Hong Kong Limited, the Project Environmental Team (ET) of Tuen Mun Area 54 Sewage Pumping Station (TMA54SPS) to undertake the operation phase impact odour monitoring for the project.

This is the second monitoring report for the Odour Impact Monitoring of TMA54SPS, prepared by Fugro Technical Services Limited for submission to Mott MacDonald Hong Kong Limited.

This report presents the results obtained from the second operation phase impact odour monitoring carried out from 18 February 2020 to 19 February 2020 during the operation of TMA54SPS.

Exceedances of Action level of 2.3 ppb and Limit Level of 2.5 ppb  $H_2S$  concentration at A2 was recorded. As the major monitoring results of A2 were higher than the result at Source, it is considered that the Source (SPS) is not the major contributor to  $H_2S$  concentration at A2 during sample 3 and 4, and thus the exceedance at A2 is not project related.

In this reporting period, there were no records of odour complaint received.



i

## Contents

#### **Executive Summary**

1.	Introduction	1
1.1	Background	1
1.2	Project Description	1
1.3	Monitoring Arrangement	2
2.	Odour Impact Monitoring	3
2.1	Methodology	3
2.2	Sampling Duration	3
2.3	Monitoring Locations	3
2.4	Quality Assurance / Quality Control	4
3.	Monitoring Results	4
3.1	Weather Conditions and Other Factors	4
3.2	Monitoring Results	4
4.	Odour Complaint	5
5.	Conclusion and Recommendations	5

## Appendices

Appendix A	Monitoring Station
Appendix B	Photographs of Monitoring Stations
Appendix C	Monitoring Results
Appendix D	Site Record
Appendix E	Data Logger Record
Appendix F	Calibration Certificates
Appendix G	Meteorological Conditions

## **Tables in the Main Text**

Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)	3
Table 1.2 Tentative Monitoring Programme	3
Table 2.1 Equipment for Baseline Odour Monitoring	3
Table 2.2 Monitoring Locations	4
Table 3.1 Summary of Monitoring Results	5



## Abbreviations

ASRs	Air Sensitive Receivers
DSD	Drainage Services Department
LandsD	Lands Department
ET	Environmental Team
EM&A	Environmental Monitoring and Audit
H <sub>2</sub> S	Hydrogen Sulphide
ММНК	Mott MacDonald Hong Kong Limited
FTS	Fugro Technical Services Limited
TMA54SPS	Tuen Mun Area 54 Sewage Pumping Station
OU	Odour Unit



## 1. Introduction

### 1.1 Background

To cope with a shortfall in flat supply and a rise in housing demand, Tuen Mun Area 54 was identified by the Government as one of the areas having the potential for housing development. Thus, the New Territories West Development Office of Territory Development Department completed the "Planning and Development Study of Potential Housing Site in Area 54, Tuen Mun" in 1999. The Study put forward proposals on housing types, development parameters and planning layouts and assessed the development impacts on transport network, infrastructural capacities and environmental quality.

According to the Review of Tuen Mun and Tsing Yi Sewerage Master Plans, a new sewage pumping station is needed to convey sewage collected from Tuen Mun Area 54 to existing trunk sewers at Ming Kum Road. Other than Tuen Mun Area 54, TMA54SPS will also collect sewage from four recognized villages within Area 54 including Tsz Tin Tsuen, Po Tong Ha, Kei Lun Wai and Siu Hang Tsuen, and the proposed Tuen Mun North Sewage Pumping Station in Area 52. TMA54SPS has a capacity of about 90,000m<sup>3</sup> per day; the design average dry weather flow is approximately 0.32m<sup>3</sup>/s.

TMA54SPS is located in the central part of Site 4A of Tuen Mun Area 54, north of Kei Lun Wai, south of Tsz Tin Tsuen and west of Site 2 of Tuen Mun Area 54. Site 4A is zoned "Government, Institution or Community" on the Tuen Mun Outline Zoning Plan No. S/TM/22 and is reserved for school development. **Appendix A** shows the location of TMA54SPS. Construction work for TMA54SPS is substantially completed and commissioning is anticipated in February 2018.

TMA54SPS is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449). A study of Environmental Impact Assessment (EIA) has been carried out to evaluate the environmental impacts associated with the project. An EIA Report and an Environmental Monitoring and Audit (EM&A) Manual were approved by the Environmental Protection Department (EPD) on 12 November 2008. An Environmental Permit (EP) No. EP-381/2009 was issued on 4 January 2010 for TMA54SPS to the Civil Engineering and Development Department as the Permit Holder. The EP stipulates that an EM&A programme is required to ensure mitigation measures recommended in the EIA Report and the EM&A Manual are implemented during the construction and operation of TMA54SPS.

### 1.2 Project Description

FTS was commissioned to carry out operation phase odour impact monitoring for Mott MacDonald Hong Kong Limited for the project of TMA54SPS.

The EIA study of TMA54SPS has identified odour emissions from the sewage pumping station as the main potential air quality impact. To reduce odour emissions from the operation of TMA54SPS, it is recommended in the EIA Report that wet wells and screen chambers, the main



sources of odour, should be enclosed in a building structure. A deodorizing unit should also be installed; in order to treat vented air before it would be discharged into the atmosphere.

Furthermore, odour monitoring is required as per the EM&A Manual prior to and during the initial operation of TMA54SPS. The purpose of the odour impact monitoring is to indicate whether the odour concentration would be higher or lower than the baseline condition.

#### 1.3 Monitoring Arrangement

According to the EM&A Manual, gaseous hydrogen sulphide (H<sub>2</sub>S) is one of the main components of odour emissions. Ambient H<sub>2</sub>S concentration can serve as a surrogate indicator for sewage odours as it can be readily monitored at the Air Sensitive Receivers (ASRs).

The odour impact monitoring shall be conducted in the first year upon commissioning of TMA54SPS. Odour Impact Monitoring would be conducted every three months for the first year of operation for TMA54SPS. However, due to some major technical issues (e.g. review of H<sub>2</sub>S measurement method, monitoring locations and level of measurement, etc), the commencement of the impact odour monitoring was deferred from March 2018 to October 2019. In addition, as discussed between DSD and EPD, measurement results from the impact odour monitoring with that obtained in the baseline odour monitoring without any adjustments / air modelling applied. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation of the TMA54SPS, the odour monitoring will be extended until the odour concentration at the ASR in consecutive 2 times are below the limit levels (once for 3 months). Action and Limit Levels for Air Quality in operation phase are given in **Table 1.1**.

As regards the locations of odour monitoring stations, it is noticed that there are 3 odour monitoring stations selected in the EM&A Manual (i.e. A3-A5) are currently located in private lots which are not accessible for the ET to conduct the impact odour monitoring at a height of 10m above ground level, while the remaining 2 stations (i.e. A1 and A2) fall within CEDD's construction sites (i.e. Government land). As the monitoring station "A5" which falls within the boundary of private open car park, alternative location of odour monitoring station for A5 was proposed. It is noted that the sites on both sides of the road connecting to TMA54SPS are all private land lots, expect that TMA54SPS and the road itself are on government land. The odour monitoring station "A5" should be relocated to somewhere on the road connecting to TMA54SPS. In addition, according to the contours of odour concentrations at 10m above ground, the original location of A5 is within 1 OU zone which is the furthest measurement point from TMA54SPS. As a prudent approach in determine the alternative location of odour monitoring station for A5, the new A5 is situated on the road connecting to TMA54SPS at a location within 4 OU zone which is close to TMA54SPS. In view of the land resumption programme, the impact odour monitoring will be spilt into two phases. The 1<sup>st</sup> phase will include the odour monitoring at the locations A1, A2 and new A5.

Regarding the above requirements, a tentative monitoring programme is shown in **Table 1.2**.



Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)

Parameter	ASR	Action Level (ppb)	Limit Level (ppb)	
	A1	2.5	2.5	
H <sub>2</sub> S	A2	2.3	2.5	
	A5	2.5	2.5	
Incidents of odour complaints	ur - received through the Odour		Two or more complaints through the Odour Complaint Register within three months	

Note: Odour complaints are to be handled in accordance with the complaint registration system as mentioned in Section 2.26-2.29 of the EM&A Manual

Table 1.2 Tentative Monitoring Programme

For 1<sup>st</sup> phase impact odour monitoring at A1, A2 and new A5:

	1 <sup>st</sup> Monitoring Event	2 <sup>nd</sup> Monitoring Event	3 <sup>rd</sup> Monitoring Event	4 <sup>th</sup> Monitoring Event
Monitoring Dates	November 2019	February 2020	May 2020	August 2020

## 2. Odour Impact Monitoring

#### 2.1 Methodology

The H<sub>2</sub>S analyzer, type Jerome 631-X, was used for the impact monitoring. Grab air sample was drawn by built-in suction pump of the analyzer and passed through a gold film sensor. The electrical resistance of the gold film changes according to the change in mass of hydrogen sulphide in the gas sample.

The details of the equipment used for odour impact monitoring is presented in Table 2.1

Table 2.1 Equipment for	Baseline Odour Monitoring
-------------------------	---------------------------

Equipment	Manufacturer / Model	Serial Number	Sensor Number	Calibration Date	Next Calibration Date
Gold Film Hydrogen Sulphide Analyzer	JEROME X631 0003	2966	19-8-23-S4AS	17 October 2020	16 October 2020

#### 2.2 Sampling Duration

A 15-min integrated gaseous H<sub>2</sub>S sample was collected every 3 hours for a period of 24 hours at monitoring locations, in which five readings were recorded at every monitoring station during each 3-hour session. Maximum and minimum H2S levels for each monitoring station were recorded.

#### 2.3 Monitoring Locations

 $H_2S$  measurements was taken at the sources and outside the premises of the identified ASRs as shown in **Table 2.2** and **Appendix A** show the descriptions and locations of the  $H_2S$  monitoring stations.



Table 2.2 Monitoring Locations

Monitoring Station	Monitoring Location	Description
A1 <sup>1</sup>	Planned Secondary School	ASR
A2 <sup>1</sup>	Planned Secondary School	ASR
A5 <sup>1</sup>	Road connecting to TMA54SPS	ASR
SPS <sup>1</sup>	Exhausted vent pipe of TMA54SP	Source

Note: <sup>1</sup>1<sup>st</sup> phase odour impact monitoring.

According to the EM&A Manual, the monitoring was taken at a height of predicted worst level of the receivers in the EIA (10 m ground level). Photos showing the monitoring setup are included in **Appendix B**.

### 2.4 Quality Assurance / Quality Control

In order to ensure the analyzer is functioning properly, manual sensor regeneration and zero adjustment were performed before each set of odour monitoring.

Calibration of the analyzer is conducted every year at the laboratory of the manufacturer. The calibration certificates for the analyzers are shown in **Appendix F**.

## 3. Monitoring Results

#### 3.1 Weather Conditions and Other Factors

The second monitoring event for the second phase operation phase odour impact monitoring for TMA54SPS was conducted from 18 February 2020 (approx. 11:00 am) to 19 February 2020 (approx. 10:59 am).

The weather was mainly fine and wind was mainly mild to moderate during the monitoring event. An anemometer was used for measuring wind speed and wind direction presented in the site record in **Appendix D**. Meteorological conditions of 18 February 2020 and 19 February 2020 obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station are shown in **Appendix G**. Meteorological data was obtained as reference information for the analysis of the exceedance event.

No significant odour sources from the project site were observed during the impact monitoring period.

#### 3.2 Monitoring Results

The monitoring results are summarised in **Table 3.1**. Details of monitoring data are shown in **Appendix C** (24-hour average, maximum and minimum H<sub>2</sub>S concentration), **Appendix D** (site record) and **Appendix E** (data logger record).



Table 3.1 Summary of Monitoring Results

Monitoring Station	Monitoring Location	24-hour Average H2S Concentration (ppb)
A1 <sup>1</sup>	Planned Secondary School	2.4
A2 <sup>1</sup>	Planned Secondary School	2.6
A5 <sup>1</sup>	Road connecting to TMA54SPS	2.5
SPS	Exhausted vent pipe of TMA54SP	2.4

Note: <sup>1</sup> Air Sensitive Receiver.

## 4. Odour Complaint

There were no complaints received in relation to the environmental impact during the reporting period.

## 5. Conclusion and Recommendations

The second monitoring event for the odour impact monitoring was carried out from 18 February 2020 to 19 February 2020.

Odour impact monitoring of H<sub>2</sub>S was conducted at four monitoring stations including three Air Sensitive Receivers around TMA54SPS and at Source. Exceedances of Action level of 2.3 ppb and Limit Level of 2.5 ppb H<sub>2</sub>S concentration at A2 was recorded.

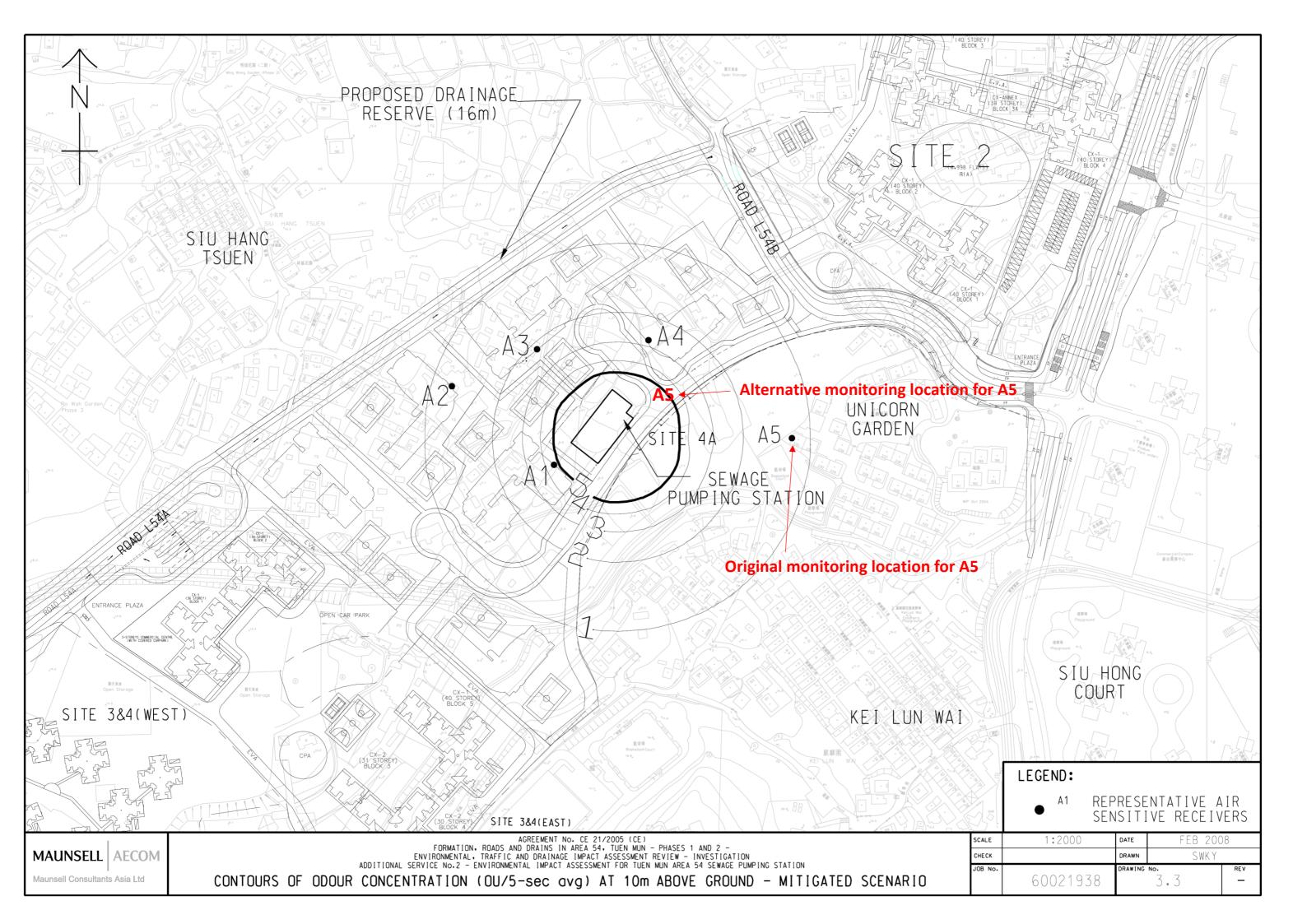
As the major monitoring results of A2 were higher than the result at Source. Also, at Sample 3 and 4, the H<sub>2</sub>S concentration at A2 is 31-44% higher than at Source (SPS). Under the above observations, it is considered that the Source (SPS) is not the major contributor to H<sub>2</sub>S concentration at A2 during sample 3 and 4, and thus the exceedance at A2 is not project related.



## **Appendix A**

**Monitoring Station** 







## **Appendix B**

Photographs of Monitoring

Stations







A5







Source



# **Appendix C**

**Monitoring Results** 



			24-hour Average H2S Concentration (ppb)						
Monitoring	Time	2 <sup>nd</sup> Event for Phase One Odour Impact Monitoring (18 – 19 February 2020) 15-minute							
Station	Interval	integrated	24-hour average	Maximum	Minimum	Action Level	Exceedance	Limit Level	Exceedance
		average	average						
	1100-1400	1.6						2.5	N
	1400-1700	<u> </u>							
	1700-2000	2.8							
A1	2000-2300	2.8	2.4	3.2	1.6	2.5	N		
	2300-0200	2.0							
	0200-0500	3.2							
	0500-0800	2.4							
	0800-1100	2.2							
	1100-1400	1.6							
	1400-1700	2.4			1.6	2.3	Y	2.5	Y
	1700-2000	3.6		3.6					
A2	2000-2300	3.2	2.6						
74	2300-0200	2.0	-						
	0200-0500	2.4							
	0500-0800	2.4							
	0800-1100	2.8							
	1100-1400	1.4			1.4	2.5	Ν	2.5	
	1400-1700	2.0							
	1700-2000	1.4							
٨٢	2000-2300	3.4	25	2.4					N
A5	2300-0200	3.0	2.5	3.4					Ν
	0200-0500	2.4							
	0500-0800	2.8							
	0800-1100	3.2							
	1100-1400	1.6							
	1400-1700	2.0							
	1700-2000	2.2							
656	2000-2300	2.2	2.4	2.6	1.0	<b>N</b> 1 / A	<b>N</b> 1 / A	<b>N1</b> / A	N1/A
SPS	2300-0200	2.2	2.4	3.6	1.6	N/A	N/A	N/A	N/A
	0200-0500	3.0							
	0500-0800	3.6							
	0800-1100	2.6							



## **Appendix D**

Site Record



		General In	formation	
Monitoring	Station	AL		
Date		18/	2	
Weath	er		Ne	
		, ,	ng Results	
Sample No	Time	Wind Speed	Wind Direction	Level(ppm)
Comple 1	Start: 1   48	021		0,002,0002,0,002
Sample 1	Stop: 12 0 3	O 3als	@ Sh	0,001 ,000
Sample 2	Start: 1436			0,001,0002,0002
Sample 2	Stop: 1451	0.2m/s	SW	9.002 101007
Sampla 2	Start: 17-39			0,002,01007 0,002,01002;6.053
Sample 3	Stop: 1754		1	0,005 0,002
Sample 4	Start: 2035		-	0,003,0003,01003
Sample 4	Stop: 20 50	0. bul		0,003, 0,002
Sample 5	Start: 2330	)		0,002,0.002,00
Sample 5	stop: 2345			0,002, 0.002
Sample 6	Start: 022	9		0.004, 0,004,
Sample 0	Stop: 074	-4 /	/	0 1003, 0 1003, 0 1002
Sample 7	Start: 0 5 3 0	> /	C	Giocz, 0,002, 01
Sample 7	Stop: 054	5 O.Jmls	>	0,003, 0,003
Sample 8	Start: 08 37			0.002,0.002,0.003
Sample 6	Stop: 08 5 2			0.002,0002
ther Observat	ions			
	Nama	2 Docignotion	Ciana	
ecorded by:	-	<u>&amp; Designation</u> Chan To	<u>Signa</u>	$\frac{\text{Date}}{2}$



Ting Chan To 10/ 20/2/2020 Vincent Lu EL 120 20/02/2020 -fugro

			General Ir	formation	
Monitoring	Station		42		
Date	•		181	2	
Weath	er		Fin	Y.	
				ng Results	
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)
Comple 1	Start:	100		E	0,002/0,002
Sample 1	Stop:	1115	0,2	L	
Cample 2	Start:	1400		0	G. Co2, G, OG/ 10,00) Or003, 0,003, 0,002
Sample 2	Stop:	1415	0 .	S	0,002, 0,007-
Sampla 2	Start:	1700			0.002, 0.002
Sample 3	Stop:	1715			0.004,0,003
Sample 4	Start:	2000	O. Fords	SE	0,004,0,005,0,003
Sample 4	Stop:	2015			
Sample 5	Start:	2300			0.003,0.003
Sample 5	Stop:	2315			0.002/01001
Sample 6	Start:	0200			0.00210.002/0.002
Sample 0	Stop:	0215			0.003,0.003
Sample 7	Start:	0500			0.003,0.002,0005
Sample 7	Stop:	0515			0,002,01002
Sample 8	Start:	0800	073	$\vdash$	0.003, 0.003, 0.002
Sumple 0	Stop:	0815	0,3	E	0.003,0,003
Other Observat	ions				
Recorded by:		Name & Desi		Signa	1
		Thy Chein		10	81 2012/2020
hecked by:		Vincent Lu	CL	18	20/02/2020

20/02/2020 ugro

			General In	formation					
Monitoring	Station		7	45					
Date			/`	6/2					
Weath	er		ſ	ine					
Monitoring Results									
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)				
Sample 1	Start:	1220	a d i	P	0.002,0092,0100				
Sumple 1	Stop:	1235	0. Ink	34	0,000/ (0,00)				
Sample 2	Start:	1501	2	n.E	0.002,0,002,0,002				
Sumple 2	Stop:	15/6	OBmls	JE	01002 01002				
Sample 3	Start:	180 9			0,002,000/ 0,002				
Sample 5	Stop:	1824							
Sample 4	Start:	2103			0,00),0,00 0,004,0,003,0,003				
Sample 4	Stop:	2/18			0,004,0,003				
Sample 5	Start:	23 S.g		/	0,004,0.003,				
Sample 5	Stop:	00 14			0.003,0.003,0.00				
Sample 6	Start:	0255		/	0.003,0.003,0.00				
Sample 0	Stop:	0310			0.002, 0.002				
Sample 7	Start:	0555		7	0.003,0.003,0.00]				
Sample /	Stop:	0610			0,003,0,002 0,003,0,004,0003				
Sample 8	Start:	A80905			0.003, 0.004, 0003				
Sample o	Stop:	6920	/	/	0,003,0003				
ther Observat	tions								

Recorded by:

Ting Chan TO 25T Vincent Lie EC 75



2012/2020 20/02/2020

TUGRO

			General In	formation				
Monitoring	Station			SPS				
Date				18/2				
Weath	er			Fine				
Monitoring Results								
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)			
Sample 1	Start:	1238	0,1	C.	6,002, 0,00 / 1010-1			
Sumple I	Stop:	1252	011	SW	0,002 20100>			
Sample 2	Start:	1520			0,002,000,000,000 0,002,0002 0.002,0002,0			
Sample 2	Stop:	1535			0.002, 8,002			
Sample 3	Start:	1830			0.002 10.003 101002			
Sample S	Stop:	1845	-	/	0.002, 0,002			
	Start:	2/23	0.3m/	CI =	0.002/0.003/0.002			
Sample 4	Stop:	2138		.>=	0,002,00,002			
Sampla E	Start:	0020			0.003,0,002,00			
Sample 5	Stop:	0035			0,002,01002,			
Sampla 6	Start:	0313			@1003,0.003,0.003			
Sample 6	Stop:	0328			0.003,0,002			
Sample 7	Start:	0614		0	0.004,0.003,0.003			
Sample 7	Stop:	0629	Octorly	5				
Sample 8	Start:	0925		1E	0,003,0003,0003			
Sample o	Stop:	0740	0, Sing	E	0,004, 0,004 0,003, 0,003, 0,003 0,002, 0,002			
ther Observat	ions							

Recorded by:

Ting Clim To Vincent Lu EC

Name & Designation

<u>Signature</u>

23-1 Ten

Date 20/2/2020 20/02/2020

Fugro

## **Appendix E**

Data Logger Record



Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS	Sample Location: Technician:	Inlet
		Instrument: Comment:	631-1, 631-X, SN 2966
		Date/Time:	二月-20-2020 09:12am
		Alarm Setpoint:	0 (ppm)

Page 1 of 5

	DATE	/TIME	RESU	JLT (ppm)
1	二月-18-2020	11:00:29am	0.002	ur <i>)</i>
2	二月-18-2020	11:03:29am	0.002	
3	二月-18-2020	11:06: 29am	0.002	
4	二月-18-2020	11:09: 29am	0.001	
5	二月-18-2020	11:12: 29am	0.001	
6	二月-18-2020	11:48:52am	/111	End Of Session
7	二月-18-2020	11:48:52am	0.002	
8	二月-18-2020	11:51:52am	0.002	
9	二月-18-2020	11:54:52am	0.002	
10	二月-18-2020	11:57:52am	0.001	
11	二月-18-2020	12:00:52pm	0.001	
12	二月-18-2020	12:20:33pm	/111	End Of Session
13	二月-18-2020	12:20:33pm	0.002	
14	二月-18-2020	12:23:33pm	0.002	
15	二月-18-2020	12:26:33pm	0.001	
16	二月-18-2020	12:29:33pm	0.001	
17	二月-18-2020	12:32:33pm	0.001	
18	二月-18-2020	12:38:42pm	/111	End Of Session
19	二月-18-2020	12:38:42pm	0.002	
20	二月-18-2020	12:41:42pm	0.001	
21	二月-18-2020	12:44:42pm	0.001	
22	二月-18-2020	12:47:42pm	0.002	
23	二月-18-2020	12:50:42pm	0.002	
24	二月-18-2020	02:00:21pm	/111	End Of Session
25	二月-18-2020	02:00:21pm	0.003	
24	二月-18-2020	02:03:21pm	0.003	
25	二月-18-2020	02:06:21pm	0.002	
28	二月-18-2020	02:09:21pm	0.002	
29	二月-18-2020	02:12:21pm	0.002	
30	二月-18-2020	02:36:44pm	/111	End Of Session
31	二月-18-2020	02:36:44pm	0.004	
32	二月-18-2020	02:39:44pm	0.002	
33	二月-18-2020	02:42:44pm	0.002	
34	二月-18-2020	02:45:44pm	0.002	
35	二月-18-2020	02:48:44pm	0.002	
36	二月-18-2020	03:01:08pm	/111	End Of Session
37	二月-18-2020	03:01:08pm	0.002	
38	二月-18-2020	03:04:08pm	0.002	
39	二月-18-2020	03:07:08pm	0.002	
40	二月-18-2020	03:10:08pm	0.002	
41	二月-18-2020	03:13:08pm	0.002	
42	二月-18-2020	03:20:22pm	/111	End Of Session
43	二月-18-2020	03:20:22pm	0.002	
44	二月-18-2020	03:23:22pm	0.002	
45	二月-18-2020	03:26:22pm	0.002	

Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS		Sample Locatio	on:	Inlet
			Instrument: Comment:		631-1, 631-X, SN 2966
			Date/Time:		二月-20-2020 09:12am
			Alarm Setpoint	:	0 (ppm)
	DATE/TIME	=		RF	ESULT (ppm)
46	二月-18-2020	- 03:29:22	2pm	0.002	
47	二月-18-2020	03:32:22		0.002	
48	二月-18-2020	05:00:36		/111	End Of Session
49	二月-18-2020	05:00:36	Spm	0.004	
50	二月-18-2020	05:03:36	Spm	0.004	
51	二月-18-2020	05:06:36	Spm	0.003	
52	二月-18-2020	05:09:36	Spm	0.004	
53	二月-18-2020	05:12:36	Spm	0.003	
54	二月-18-2020	05:39:51	lpm	/111	End Of Session
55	二月-18-2020	05:39:51	lpm	0.002	
56	二月-18-2020	05:42:51	lpm	0.002	
57	二月-18-2020	05:45:51	lpm	0.003	
58	二月-18-2020	05:48:51	lpm	0.005	
59	二月-18-2020	05:51:51	lpm	0.002	
60	二月-18-2020	06:09:24	lpm	/111	End Of Session
61	二月-18-2020	06:09:24	lpm	0.002	
62	二月-18-2020	06:12:24	lpm	0.001	
63	二月-18-2020	06:15:24	lpm	0.002	
64	二月-18-2020	06:18:24	lpm	0.001	
65	二月-18-2020	06:21:24	1pm	0.001	
66	二月-18-2020	06:30:15	ōpm	/111	End Of Session
67	二月-18-2020	06:30:15	īpm	0.002	
68	二月-18-2020	06:33:15	īpm	0.003	
69	二月-18-2020	06:36:15	ōpm	0.002	
70	二月-18-2020	06:39:15		0.002	
71	二月-18-2020	06:42:15		0.002	
72	二月-18-2020	08:00:39		/111	End Of Session
73	二月-18-2020	08:00:39	•	0.004	
74	二月-18-2020	08:03:39	•	0.003	
75	二月-18-2020	08:06:39	•	0.003	
76	二月-18-2020	08:09:39		0.003	
77	二月-18-2020	08:12:39		0.003	
78	二月-18-2020	08:35:41		/111	End Of Session
79	二月-18-2020	08:35:41		0.003	
80	二月-18-2020	08:38:41		0.003	
81	二月-18-2020	08:41:41	•	0.003	
82	二月-18-2020	08:44:41		0.003	
83	二月-18-2020	08:47:41		0.002	
84 85	二月-18-2020	09:03:16		/III 0.004	End Of Session
85 86	二月-18-2020	09:03:16		0.004	
86 87	二月-18-2020	09:06:16	•	0.003 0.003	
	二月-18-2020	09:09:16	•	0.003	
88 89	二月-18-2020 一旦-18-2020	09:12:16 09:15:16		0.004	
89 90	二月-18-2020 二月-18-2020	09:15:16		0.003 /III	End Of Session
90 91	二月-18-2020 二月-18-2020	09:23:27		0.002	
31	一一一10-2020	00.20.21	P111	0.002	

#### Page 2 of 5

Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS	3	Sample Location: Technician: Instrument: Comment: Date/Time: Alarm Setpoint:	Inlet 631-1, 631-X, SN 2966 二月-20-2020 09:12am <b>0 (ppm)</b>
	DATE/TIME			RESULT (ppm)
92	二月-18-2020	09:26:27p	m 0.003	
93	二月-18-2020	09:29:27p		
94	二月-18-2020	09:32:27p		
95	二月-18-2020	09:35:27p		
96	二月-18-2020	11:00:42p		End Of Session
97	二月-18-2020	11:00:42p		
98	二月-18-2020	11:03:42p	m 0.002	
99	二月-18-2020	11:06:42p	m 0.003	
100	二月-18-2020	11:09:42p	m 0.002	
101	二月-18-2020	11:12:42p	m 0.001	
102	二月-18-2020	11:30:29p	m /III	End Of Session
103	二月-18-2020	11:30:29p	m 0.002	
104	二月-18-2020	11:33:29p	m 0.002	
105	二月-18-2020	11:36:29p	m 0.002	
106	二月-18-2020	11:39:29p	m 0.002	
107	二月-18-2020	11:42:29p	m 0.002	
108	二月-18-2020	11:59:58p	m /III	End Of Session
109	二月-18-2020	11:59:58p	m 0.004	
110	二月-19-2020	00:02:58a	m 0.003	
111	二月-19-2020	00:05:58a	m 0.003	
112	二月-19-2020	00:08:58a	m 0.003	
113	二月-19-2020	00:11:58a	m 0.002	
114	二月-19-2020	00:20:33a	m /III	End Of Session
115	二月-19-2020	00:20:33a	m 0.003	
116	二月-19-2020	00:23:33a	m 0.002	
117	二月-19-2020	00:26:33a	m 0.002	
118	二月-19-2020	00:29:33a	m 0.002	
119	二月-19-2020	00:32:33a	m 0.002	
120	二月-19-2020	02:00:28a	m /III	End Of Session
121	二月-19-2020	02:00:28a	m 0.002	
122	二月-19-2020	02:03:28a	m 0.002	
123	二月-19-2020	02:06:28a	m 0.002	
124	二月-19-2020	02:09:28a	m 0.003	
125	二月-19-2020	02:12:28a	m 0.003	
126	二月-19-2020	02:29:20a	m /III	End Of Session
127	二月-19-2020	02:29:20a	m 0.004	
128	二月-19-2020	02:32:20a	m 0.004	
129	二月-19-2020	02:35:20a	m 0.003	
130	二月-19-2020	02:38:20a	m 0.003	
131	二月-19-2020	02:41:20a	m 0.002	
132	二月-19-2020	02:55:08a	m /III	End Of Session
133	二月-19-2020	02:55:08a	m 0.003	
134	二月-19-2020	02:58:08a	m 0.003	
135	二月-19-2020	03:01:08a	m 0.002	
136	二月-19-2020	03:04:08a	m 0.002	
137	二月-19-2020	03:07:08a	m 0.002	

Page 3 of 5

Site Name: Address:	Tuen Mun Area 54 S Tuen Mun Area 54 S	SPS Techni Instrur Comm Date/T	nent: ent:	Inlet 631-1, 631-X, SN 2966 二月-20-2020 09:12am <b>0 (ppm)</b>	
			-		
	DATE/T	IME	RE	SULT (ppm)	
138	二月-19-2020	03:13:17am	/111	End Of Session	
139	二月-19-2020	03:13:17am	0.003		
140	二月-19-2020	03:16:17am	0.003		
141	二月-19-2020	03:19:17am	0.003		
142	二月-19-2020	03:22:17am	0.003		
143	二月-19-2020	03:25:17am	0.003		
144	二月-19-2020	05:00:47am	/111	End Of Session	
145	二月-19-2020	05:00:47am	0.003		
146	二月-19-2020	05:03:47am	0.002		
147	二月-19-2020	05:06:47am	0.003		
148	二月-19-2020	05:09:47am	0.002		
149	二月-19-2020	05:12:47am	0.002		
150	二月-19-2020	05:30:24am	/111	End Of Session	
151	二月-19-2020	05:30:24am	0.002		
152	二月-19-2020	05:33:24am	0.002		
153	二月-19-2020	05:36:24am	0.002		
154	二月-19-2020	05:39:24am	0.003		
155	二月-19-2020	05:42:24am	0.003		
156	二月-19-2020	05:55:07am	/111	End Of Session	
157	二月-19-2020	05:55:07am	0.003		
158	二月-19-2020	05:58:07am	0.003		
159	二月-19-2020	06:01:07am	0.003		
160	二月-19-2020	06:04:07am	0.003		
161	二月-19-2020	06:07:07am	0.002		
162	二月-19-2020	06:14:32am	/111	End Of Session	
163	二月-19-2020	06:14:32am	0.004		
164	二月-19-2020	06:17:32am	0.003		
165	二月-19-2020	06:20:32am	0.003		
166	二月-19-2020 一	06:23:32am	0.004		
167	二月-19-2020 一	06:26:32am	0.004		
168	二月-19-2020	08:00:36am	/111	End Of Session	
169	二月-19-2020	08:00:36am	0.003		
170	二月-19-2020	08:03:36am	0.003		
171	二月-19-2020	08:06:36am	0.002		
172	二月-19-2020	08:09:36am	0.003		
173	二月-19-2020	08:12:36am	0.003		
174	二月-19-2020	08:37:44am	/111	End Of Session	
175	二月-19-2020	08:37:44am	0.002		
176	二月-19-2020	08:40:44am	0.002		
177	二月-19-2020	08:43:44am	0.003		
178	二月-19-2020	08:46:44am	0.002		
179	二月-19-2020	08:49:44am	0.002	End Of Socian	
180	二月-19-2020	09:05:29am	0.003	End Of Session	
181	二月-19-2020	09:05:29am	0.003		
182	二月-19-2020	09:08:29am	0.004		
183	二月-19-2020	09:11:29am	0.003		

Page 4 of 5

Site Name: Address:	Tuen Mun Area 54 S Tuen Mun Area 54 S		Sample Lo Techniciar Instrumen Comment: Date/Time Alarm Set	n: t: :	Inlet 631-1, 631-X, SN 2966 二月-20-2020 09:12am <b>0 (ppm)</b>
	DATE/TI	RESULT (ppm)			
184	二月-19-2020	09:14:29	9am	0.003	
185	二月-19-2020	09:17:29	9am	0.003	
186	二月-19-2020	09:25:52	2am	/111	End Of Session
187	二月-19-2020	09:25:52	2am	0.003	
188	二月-19-2020	09:28:52	2am	0.003	
189	二月-19-2020	09:31:52	2am	0.003	
190	二月-19-2020	09:34:52	2am	0.002	
191	二月-19-2020	09:37:52	2am	0.002	
		Read	ings:	160	
		Minin		0.001	
		Maxir		0.005	
		Avera	ige:	0.00246	
		SD:		0.00079	

Page 5 of 5

## **Appendix F**

**Calibration Certificates** 





#### **Certification of Instrument Calibration**

Guyline (Asia) Ltd Rm 1611, Eastern Harbour Centre Quarry Bay,

This is to certify that the Jerome X631 0003 Gold Film Hydrogen Sulfide Analyzer, Serial Number 2966, with Sensor Number 19-8-23-S4AS, was calibrated with standard units traceable to NIST.

Calibration Status as Received:			Out of Calibration			
		Actual		Calibr	ation Gas	Allowable Range
Incoming:	Range 1 RSD %	0.094 11.33	ppm H2S	0.500	ppm H2S	+/- 6% <5%
Outgoing:	Range 1 RSD %	0.518 2.11	ppm H2S	0.500	ppm H2S	+/- 6% <5%

Calibration Status as Left:

ft: In Calibration

Estimated Uncertainty of Calibration System: 2.8%

Calibration Date: 17-Oct-2019

Recalibration Date: 16-Oct-2020

Temperature °F: 70.60

% Relative Humidity: 32.90

Jackie Kreitlow Approved By:

Title: Jackie Kreitlow - Quality Control

Equipment Used:

H2S Calibration Standard: CC-75664 NIST#: 1467976 Calibration Date: 25-Sep-2018 Calibration Date Due: 25-Sep-2021

Mass Flow Controller B: 124604 NIST#: 215457 Calibration Date: 13-Dec-2018 Calibration Date Due: 13-Dec-2019

Mass Flow Controller D: 124602 NIST#: 215454 Calibration Date: 13-Dec-2018 Calibration Date Due: 13-Dec-2019

Digital Multimeter: <u>74620505</u> NIST#: <u>7003079</u> Calibration Date: <u>05-Apr-2019</u> Calibration Date Due: <u>05-Apr-2020</u>

Flowmeter: <u>US04I26032</u> NIST#: <u>1813</u>; <u>1817</u>; <u>1796</u> Calibration Date: <u>12-Aug-2019</u> Calibration Date Due: <u>12-Aug-2020</u>

Calibration Procedure Used: 730-0032

AMETEK Brookfield certifies that the above listed instrument meets or exceeds all published specifications and has been calibrated using standards whose accuracy are traceable to the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY within the limitations of the Institute's calibration services, or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of self-calibration techniques.

Disclaimer: Any unauthorized adjustments, removal or breaking of QC seals, or other customer modifications on your Jerome Analyzer WILL VOID this factory calibration. Because any of the above acts could affect the calibration and readings of the instrument, their certification will no longer be valid and, further, AMETEK Brookfield WILL NOT be responsible for any liabilities created as a result of using the instrument after such adjustments, seal removal, or modifications.

As long as a functional test is within range, according to the procedure outlined in the Operator's Manual, the instrument is performing correctly.

This document shall not be reproduced, except in full, without the written approval of AMETEK Brookfield.

RMA# 2694299

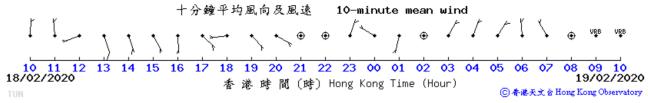
Date Approved: 18-Oct-2019

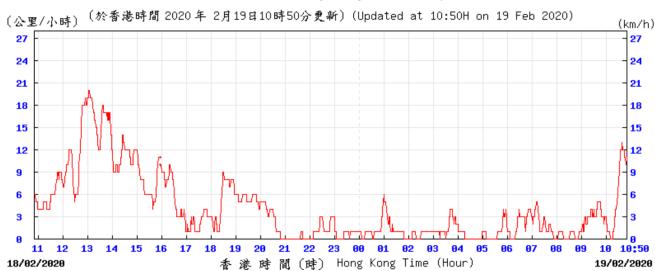
## **Appendix G**

## **Meteorological Conditions**



10-Minute Mean Wind Direction at the nearest Hong Kong Observatory's Tuen Mun Weather Station:





#### 10-Minute Mean Wind Speed at the nearest Hong Kong Observatory's Tuen Mun Weather Station:

0118/19/ED/0336 01 | Second Operation Phase Odour Impact Monitoring Report Appendix G | Page 1



Date	Time	Weather Parameters						
Date	Time	Temperature	Wind Direction	Wind Speed (km/hour)				
	1100	16	Ν	4.0				
-	1200	17	SW	7.0				
_	1300	17	SE	18.0				
_	1400	17	SE	9.0				
	1500	18	SE	12.0				
_	1600	18	S	9.0				
	1700	17	SE	1.0				
· · · ·	1800	16	W	3.0				
-	1900	14	SE	6.0				
-	2000	13	SE	4.0				
-	2100	13		0.0				
-	2200	12		0.0				
-	2300	12	Ν	1.0				
-	2400	13	NW	1.0				
	0100	14	S	6.0				
-	0200	14		0.0				
-	0300	14	Ν	1.0				
-	0400	14	Ν	1.0				
-	0500	13	Ν	1.0				
19 February 2020 -	0600	13	Ν	1.5				
-	0700	14	Ν	2.0				
-	0800	14		0.0				
-	0900	15		1.5				
-	1000	17		3.0				

### Meteorological conditions during the second operation phase odour impact monitoring





#### PRESS WEATHER NO. 078 - HOURLY READINGS

HOURLY READINGS

AT 11 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 50 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 4. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	16	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		
		DEGREES;
LAU FAU SHAN		DEGREES;
TAI PO		DEGREES;
SHA TIN		DEGREES;
TUEN MUN		DEGREES;
TSEUNG KWAN O	17	DEGREES;
SAI KUNG	15	DEGREES;
CHEUNG CHAU	17	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	15	DEGREES;
SHEK KONG	16	DEGREES;
TSUEN WAN HO KOON	15	DEGREES;
TSUEN WAN SHING MUN VALLEY	16	DEGREES;
HONG KONG PARK	16	DEGREES;
SHAU KEI WAN	16	DEGREES;
KOWLOON CITY	16	DEGREES;
HAPPY VALLEY	17	DEGREES;
WONG TAI SIN	17	DEGREES;
STANLEY	16	DEGREES;
KWUN TONG	15	DEGREES;
SHAM SHUI PO	16	DEGREES;
KAI TAK RUNWAY PARK	16	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK		DEGREES.
	10	

DISPATCHED BY HONG KONG OBSERVATORY AT 11:02 HKT ON 18.02.2020



#### PRESS WEATHER NO. 084 - HOURLY READINGS

AT NOON AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 17 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 51 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 5. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	16	DEGREES;
WONG CHUK HANG	16	DEGREES;
TA KWU LING	17	DEGREES;
LAU FAU SHAN	15	DEGREES;
TAI PO	15	DEGREES;
SHA TIN	16	DEGREES;
TUEN MUN	17	DEGREES;
TSEUNG KWAN O	17	DEGREES;
SAI KUNG	15	DEGREES;
CHEUNG CHAU	17	DEGREES;
CHEK LAP KOK	17	DEGREES;
TSING YI	16	DEGREES;
SHEK KONG	17	DEGREES;
TSUEN WAN HO KOON	16	DEGREES;
TSUEN WAN SHING MUN VALLEY	17	DEGREES;
HONG KONG PARK	17	DEGREES;
SHAU KEI WAN	16	DEGREES;
KOWLOON CITY	17	DEGREES;
HAPPY VALLEY	17	DEGREES;
WONG TAI SIN	16	DEGREES;
STANLEY	16	DEGREES;
KWUN TONG	15	DEGREES;
SHAM SHUI PO	17	DEGREES;
KAI TAK RUNWAY PARK	16	DEGREES;
YUEN LONG PARK	18	DEGREES;
TAI MEI TUK	19	DEGREES.

NO RAINFALL WAS RECORDED AT THE HONG KONG OBSERVATORY BETWEEN MIDNIGHT LAST NIGHT AND MIDDAY TODAY.

DISPATCHED BY HONG KONG OBSERVATORY AT 12:02 HKT ON 18.02.2020



### PRESS WEATHER NO. 092 - HOURLY READINGS

AT 1 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 17 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 48 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 6. THE INTENSITY OF UV RADIATION WAS HIGH.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

WONG CHUK HANG16 DEGREES;TA KWU LING17 DEGREES;LAU FAU SHAN18 DEGREES;TAI PO15 DEGREES;SHA TIN17 DEGREES;TUEN MUN17 DEGREES;TSEUNG KWAN O17 DEGREES;SAI KUNG15 DEGREES;CHEUNG CHAU18 DEGREES;CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;TSUEN WAN SHING MUN VALLEY18 DEGREES;
LAU FAU SHAN18 DEGREES;TAI PO15 DEGREES;SHA TIN17 DEGREES;TUEN MUN17 DEGREES;TSEUNG KWAN O17 DEGREES;SAI KUNG15 DEGREES;CHEUNG CHAU18 DEGREES;CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
TAI PO15 DEGREES;SHA TIN17 DEGREES;TUEN MUN17 DEGREES;TSEUNG KWAN O17 DEGREES;SAI KUNG15 DEGREES;CHEUNG CHAU18 DEGREES;CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
SHA TIN17 DEGREES;TUEN MUN17 DEGREES;TSEUNG KWAN O17 DEGREES;SAI KUNG15 DEGREES;CHEUNG CHAU18 DEGREES;CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
TUEN MUN17 DEGREES;TSEUNG KWAN O17 DEGREES;SAI KUNG15 DEGREES;CHEUNG CHAU18 DEGREES;CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
TSEUNG KWAN O17 DEGREES;SAI KUNG15 DEGREES;CHEUNG CHAU18 DEGREES;CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
SAI KUNG15 DEGREES;CHEUNG CHAU18 DEGREES;CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
CHEUNG CHAU18 DEGREES;CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
CHEK LAP KOK17 DEGREES;TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
TSING YI17 DEGREES;SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
SHEK KONG18 DEGREES;TSUEN WAN HO KOON17 DEGREES;
TSUEN WAN HO KOON 17 DEGREES;
TSUEN WAN SHING MUN VALLEY 18 DEGREES;
HONG KONG PARK 17 DEGREES;
SHAU KEI WAN 16 DEGREES;
KOWLOON CITY 17 DEGREES;
HAPPY VALLEY 16 DEGREES;
WONG TAI SIN 17 DEGREES;
STANLEY 16 DEGREES;
KWUN TONG 16 DEGREES;
SHAM SHUI PO 18 DEGREES;
KAI TAK RUNWAY PARK 16 DEGREES;
YUEN LONG PARK 18 DEGREES;
TAI MEI TUK 19 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 13:02 HKT ON 18.02.2020



### PRESS WEATHER NO. 096 - HOURLY READINGS

AT 2 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 17 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 48 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 6. THE INTENSITY OF UV RADIATION WAS HIGH.

#### PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	17	DEGREES;
WONG CHUK HANG	17	DEGREES;
TA KWU LING	18	DEGREES;
LAU FAU SHAN	17	DEGREES;
TAI PO	16	DEGREES;
SHA TIN	17	DEGREES;
TUEN MUN	17	DEGREES;
TSEUNG KWAN O	17	DEGREES;
SAI KUNG	15	DEGREES;
CHEUNG CHAU	18	DEGREES;
CHEK LAP KOK	18	DEGREES;
TSING YI	18	DEGREES;
SHEK KONG	19	DEGREES;
TSUEN WAN HO KOON	18	DEGREES;
TSUEN WAN SHING MUN VALLEY	19	DEGREES;
HONG KONG PARK	17	DEGREES;
SHAU KEI WAN	16	DEGREES;
KOWLOON CITY	18	DEGREES;
HAPPY VALLEY	17	DEGREES;
WONG TAI SIN	17	DEGREES;
STANLEY	17	DEGREES;
KWUN TONG	16	DEGREES;
SHAM SHUI PO	18	DEGREES;
KAI TAK RUNWAY PARK	16	DEGREES;
YUEN LONG PARK	19	DEGREES;
TAI MEI TUK	20	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 14:02 HKT ON 18.02.2020



### PRESS WEATHER NO. 100 - HOURLY READINGS

AT 3 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 18 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 49 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 4. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	17 DEGREES;
WONG CHUK HANG	17 DEGREES;
TA KWU LING	19 DEGREES;
LAU FAU SHAN	17 DEGREES;
TAI PO	17 DEGREES;
SHA TIN	17 DEGREES;
TUEN MUN	18 DEGREES;
TSEUNG KWAN O	17 DEGREES;
SAI KUNG	16 DEGREES;
CHEUNG CHAU	17 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	18 DEGREES;
SHEK KONG	19 DEGREES;
TSUEN WAN HO KOON	18 DEGREES;
TSUEN WAN SHING MUN VALLEY	19 DEGREES;
HONG KONG PARK	17 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	18 DEGREES;
HAPPY VALLEY	18 DEGREES;
WONG TAI SIN	17 DEGREES;
STANLEY	17 DEGREES;
KWUN TONG	16 DEGREES;
SHAM SHUI PO	18 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	19 DEGREES;
TAI MEI TUK	20 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 15:02 HKT ON 18.02.2020



### PRESS WEATHER NO. 104 - HOURLY READINGS

AT 4 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 18 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 50 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	17	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING	19	DEGREES;
LAU FAU SHAN	18	DEGREES;
TAI PO	16	DEGREES;
SHA TIN	17	DEGREES;
TUEN MUN	18	DEGREES;
TSEUNG KWAN O	17	DEGREES;
SAI KUNG	16	DEGREES;
CHEUNG CHAU	17	DEGREES;
CHEK LAP KOK	17	DEGREES;
TSING YI	18	DEGREES;
SHEK KONG	19	DEGREES;
TSUEN WAN HO KOON	18	DEGREES;
TSUEN WAN SHING MUN VALLEY	18	DEGREES;
HONG KONG PARK	17	DEGREES;
SHAU KEI WAN	16	DEGREES;
KOWLOON CITY	18	DEGREES;
HAPPY VALLEY	18	DEGREES;
WONG TAI SIN	18	DEGREES;
STANLEY	17	DEGREES;
KWUN TONG	17	DEGREES;
SHAM SHUI PO	18	DEGREES;
KAI TAK RUNWAY PARK	17	DEGREES;
YUEN LONG PARK	19	DEGREES;
TAI MEI TUK	17	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 16:02 HKT ON 18.02.2020



#### PRESS WEATHER NO. 118 - HOURLY READINGS

AT 5 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 17 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 51 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 1. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	17 DEGREES;
WONG CHUK HANG	17 DEGREES;
TA KWU LING	18 DEGREES;
LAU FAU SHAN	17 DEGREES;
TAI PO	16 DEGREES;
SHA TIN	17 DEGREES;
TUEN MUN	17 DEGREES;
TSEUNG KWAN O	15 DEGREES;
SAI KUNG	16 DEGREES;
CHEUNG CHAU	17 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	18 DEGREES;
SHEK KONG	18 DEGREES;
TSUEN WAN HO KOON	17 DEGREES;
TSUEN WAN SHING MUN VALLEY	18 DEGREES;
HONG KONG PARK	17 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	17 DEGREES;
HAPPY VALLEY	17 DEGREES;
WONG TAI SIN	18 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	16 DEGREES;
SHAM SHUI PO	18 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	17 DEGREES;
TAI MEI TUK	16 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 17:02 HKT ON 18.02.2020



#### PRESS WEATHER NO. 124 - HOURLY READINGS

AT 6 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 16 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 60 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	15 DEGREES;
WONG CHUK HANG	16 DEGREES;
TA KWU LING	16 DEGREES;
LAU FAU SHAN	16 DEGREES;
TAI PO	16 DEGREES;
SHA TIN	15 DEGREES;
TUEN MUN	16 DEGREES;
TSEUNG KWAN O	13 DEGREES;
SAI KUNG	15 DEGREES;
CHEUNG CHAU	14 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	17 DEGREES;
SHEK KONG	17 DEGREES;
TSUEN WAN HO KOON	16 DEGREES;
TSUEN WAN SHING MUN VALLEY	16 DEGREES;
HONG KONG PARK	16 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	16 DEGREES;
HAPPY VALLEY	16 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	15 DEGREES;
SHAM SHUI PO	16 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	16 DEGREES;
TAI MEI TUK	15 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 18:02 HKT ON 18.02.2020



#### PRESS WEATHER NO. 132 - HOURLY READINGS

AT 7 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 62 PER CENT.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14	DEGREES;
WONG CHUK HANG	14	DEGREES;
TA KWU LING	14	DEGREES;
LAU FAU SHAN	15	DEGREES;
TAI PO	13	DEGREES;
SHA TIN	14	DEGREES;
TUEN MUN	14	DEGREES;
TSEUNG KWAN O	12	DEGREES;
SAI KUNG	14	DEGREES;
CHEUNG CHAU	13	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	16	DEGREES;
SHEK KONG	15	DEGREES;
TSUEN WAN HO KOON	12	DEGREES;
TSUEN WAN SHING MUN VALLEY	14	DEGREES;
HONG KONG PARK	14	DEGREES;
SHAU KEI WAN	14	DEGREES;
KOWLOON CITY	14	DEGREES;
HAPPY VALLEY	14	DEGREES;
WONG TAI SIN	14	DEGREES;
STANLEY	14	DEGREES;
KWUN TONG	14	DEGREES;
SHAM SHUI PO	15	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	14	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 19:02 HKT ON 18.02.2020





PRESS WEATHER NO. 138 - HOURLY READINGS

HOURLY READINGS

AT 8 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 66 PER CENT.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14	DEGREES;
WONG CHUK HANG	13	DEGREES;
TA KWU LING	13	DEGREES;
LAU FAU SHAN	14	DEGREES;
TAI PO	13	DEGREES;
SHA TIN	14	DEGREES;
TUEN MUN	13	DEGREES;
TSEUNG KWAN O	11	DEGREES;
SAI KUNG	13	DEGREES;
CHEUNG CHAU	13	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	15	DEGREES;
SHEK KONG	12	DEGREES;
TSUEN WAN HO KOON	11	DEGREES;
TSUEN WAN SHING MUN VALLEY	13	DEGREES;
HONG KONG PARK	14	DEGREES;
SHAU KEI WAN	14	DEGREES;
KOWLOON CITY	14	DEGREES;
HAPPY VALLEY	14	DEGREES;
WONG TAI SIN	14	DEGREES;
STANLEY	14	DEGREES;
KWUN TONG	14	DEGREES;
SHAM SHUI PO	14	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	13	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 20:02 HKT ON 18.02.2020



#### PRESS WEATHER NO. 146 - HOURLY READINGS

AT 9 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 66 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14	DEGREES;
WONG CHUK HANG	13	DEGREES;
TA KWU LING	12	DEGREES;
LAU FAU SHAN	13	DEGREES;
TAI PO	13	DEGREES;
SHA TIN	13	DEGREES;
TUEN MUN	13	DEGREES;
TSEUNG KWAN O	11	DEGREES;
SAI KUNG	12	DEGREES;
CHEUNG CHAU	13	DEGREES;
CHEK LAP KOK	14	DEGREES;
TSING YI	15	DEGREES;
SHEK KONG	12	DEGREES;
TSUEN WAN HO KOON	11	DEGREES;
TSUEN WAN SHING MUN VALLEY	12	DEGREES;
HONG KONG PARK	13	DEGREES;
SHAU KEI WAN	14	DEGREES;
KOWLOON CITY	14	DEGREES;
HAPPY VALLEY	14	DEGREES;
WONG TAI SIN	13	DEGREES;
STANLEY	14	DEGREES;
KWUN TONG	14	DEGREES;
SHAM SHUI PO	14	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	12	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 21:02 HKT ON 18.02.2020





### PRESS WEATHER NO. 152 - HOURLY READINGS

HOURLY READINGS

AT 10 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 68 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	14 DEGREES;
TA KWU LING	11 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	12 DEGREES;
TSEUNG KWAN O	11 DEGREES;
SAI KUNG	13 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	12 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	11 DEGREES;
HONG KONG PARK	13 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	13 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	12 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 22:02 HKT ON 18.02.2020





### PRESS WEATHER NO. 156 - HOURLY READINGS

\_\_\_\_\_

AT 11 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 71 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	15	DEGREES;
WONG CHUK HANG	15	DEGREES;
TA KWU LING	10	DEGREES;
LAU FAU SHAN	11	DEGREES;
TAI PO	12	DEGREES;
SHA TIN	12	DEGREES;
TUEN MUN	12	DEGREES;
TSEUNG KWAN O	12	DEGREES;
SAI KUNG	14	DEGREES;
CHEUNG CHAU	13	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	15	DEGREES;
SHEK KONG	12	DEGREES;
TSUEN WAN HO KOON	12	DEGREES;
TSUEN WAN SHING MUN VALLEY	12	DEGREES;
HONG KONG PARK	14	DEGREES;
SHAU KEI WAN	14	DEGREES;
KOWLOON CITY	14	DEGREES;
HAPPY VALLEY	14	DEGREES;
WONG TAI SIN	15	DEGREES;
STANLEY	15	DEGREES;
KWUN TONG	15	DEGREES;
SHAM SHUI PO	14	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	11	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 23:02 HKT ON 18.02.2020





### PRESS WEATHER NO. 004 - HOURLY READINGS

AT MIDNIGHT AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 71 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	15 DEGREES;
WONG CHUK HANG	15 DEGREES;
TA KWU LING	10 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	12 DEGREES;
TUEN MUN	13 DEGREES;
TSEUNG KWAN O	12 DEGREES;
SAI KUNG	14 DEGREES;
CHEUNG CHAU	14 DEGREES;
CHEK LAP KOK	16 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	11 DEGREES;
TSUEN WAN HO KOON	13 DEGREES;
TSUEN WAN SHING MUN VALLEY	12 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	16 DEGREES;
KWUN TONG	15 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	11 DEGREES;
TAI MEI TUK	12 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 00:02 HKT ON 19.02.2020





#### PRESS WEATHER NO. 010 - HOURLY READINGS

AT 1 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 74 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14	DEGREES;
WONG CHUK HANG	15	DEGREES;
TA KWU LING	11	DEGREES;
LAU FAU SHAN	12	DEGREES;
TAI PO	12	DEGREES;
SHA TIN	13	DEGREES;
TUEN MUN	14	DEGREES;
TSEUNG KWAN O	13	DEGREES;
SAI KUNG	14	DEGREES;
CHEUNG CHAU	14	DEGREES;
CHEK LAP KOK	16	DEGREES;
TSING YI	15	DEGREES;
SHEK KONG	11	DEGREES;
TSUEN WAN HO KOON	13	DEGREES;
TSUEN WAN SHING MUN VALLEY	13	DEGREES;
HONG KONG PARK	14	DEGREES;
SHAU KEI WAN	15	DEGREES;
KOWLOON CITY	14	DEGREES;
HAPPY VALLEY	15	DEGREES;
WONG TAI SIN	15	DEGREES;
STANLEY	15	DEGREES;
KWUN TONG	15	DEGREES;
SHAM SHUI PO	14	DEGREES;
KAI TAK RUNWAY PARK	16	DEGREES;
YUEN LONG PARK	11	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 01:02 HKT ON 19.02.2020





#### PRESS WEATHER NO. 014 - HOURLY READINGS

AT 2 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14	DEGREES;
WONG CHUK HANG	15	DEGREES;
TA KWU LING	12	DEGREES;
LAU FAU SHAN	12	DEGREES;
TAI PO	12	DEGREES;
SHA TIN	13	DEGREES;
TUEN MUN	14	DEGREES;
TSEUNG KWAN O	14	DEGREES;
SAI KUNG	14	DEGREES;
CHEUNG CHAU	14	DEGREES;
CHEK LAP KOK	16	DEGREES;
TSING YI	15	DEGREES;
SHEK KONG	11	DEGREES;
TSUEN WAN HO KOON	13	DEGREES;
TSUEN WAN SHING MUN VALLEY	14	DEGREES;
HONG KONG PARK	15	DEGREES;
SHAU KEI WAN	15	DEGREES;
KOWLOON CITY	14	DEGREES;
HAPPY VALLEY	15	DEGREES;
WONG TAI SIN	15	DEGREES;
STANLEY	15	DEGREES;
KWUN TONG	14	DEGREES;
SHAM SHUI PO	14	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	10	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 02:02 HKT ON 19.02.2020





#### PRESS WEATHER NO. 018 - HOURLY READINGS

AT 3 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14	DEGREES;
WONG CHUK HANG	15	DEGREES;
TA KWU LING	11	DEGREES;
LAU FAU SHAN	12	DEGREES;
TAI PO	12	DEGREES;
SHA TIN	13	DEGREES;
TUEN MUN	14	DEGREES;
TSEUNG KWAN O	13	DEGREES;
SAI KUNG	14	DEGREES;
CHEUNG CHAU	14	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	15	DEGREES;
SHEK KONG	11	DEGREES;
TSUEN WAN HO KOON	12	DEGREES;
TSUEN WAN SHING MUN VALLEY	13	DEGREES;
HONG KONG PARK	15	DEGREES;
SHAU KEI WAN	15	DEGREES;
KOWLOON CITY	14	DEGREES;
HAPPY VALLEY	15	DEGREES;
WONG TAI SIN	14	DEGREES;
STANLEY	15	DEGREES;
KWUN TONG	14	DEGREES;
SHAM SHUI PO	14	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	11	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 03:02 HKT ON 19.02.2020





#### PRESS WEATHER NO. 024 - HOURLY READINGS

AT 4 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 79 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14	DEGREES;
WONG CHUK HANG	14	DEGREES;
TA KWU LING	12	DEGREES;
LAU FAU SHAN	12	DEGREES;
TAI PO	12	DEGREES;
SHA TIN	12	DEGREES;
TUEN MUN	14	DEGREES;
TSEUNG KWAN O	13	DEGREES;
SAI KUNG	13	DEGREES;
CHEUNG CHAU	14	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	14	DEGREES;
SHEK KONG	11	DEGREES;
TSUEN WAN HO KOON	11	DEGREES;
TSUEN WAN SHING MUN VALLEY	13	DEGREES;
HONG KONG PARK	14	DEGREES;
SHAU KEI WAN	14	DEGREES;
KOWLOON CITY	13	DEGREES;
HAPPY VALLEY	15	DEGREES;
WONG TAI SIN	14	DEGREES;
STANLEY	15	DEGREES;
KWUN TONG	14	DEGREES;
SHAM SHUI PO	13	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	11	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 04:02 HKT ON 19.02.2020





### PRESS WEATHER NO. 032 - HOURLY READINGS

AT 5 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	13	DEGREES;
WONG CHUK HANG	14	DEGREES;
TA KWU LING	11	DEGREES;
LAU FAU SHAN	12	DEGREES;
TAI PO	12	DEGREES;
SHA TIN	13	DEGREES;
TUEN MUN	13	DEGREES;
TSEUNG KWAN O	13	DEGREES;
SAI KUNG	13	DEGREES;
CHEUNG CHAU	13	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	14	DEGREES;
SHEK KONG	12	DEGREES;
TSUEN WAN HO KOON	11	DEGREES;
TSUEN WAN SHING MUN VALLEY	13	DEGREES;
HONG KONG PARK	14	DEGREES;
SHAU KEI WAN	14	DEGREES;
KOWLOON CITY	13	DEGREES;
HAPPY VALLEY	14	DEGREES;
WONG TAI SIN	14	DEGREES;
STANLEY	14	DEGREES;
KWUN TONG	13	DEGREES;
SHAM SHUI PO	13	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	11	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 05:02 HKT ON 19.02.2020





#### PRESS WEATHER NO. 044 - HOURLY READINGS

AT 6 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 14 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	13	DEGREES;
WONG CHUK HANG	14	DEGREES;
TA KWU LING	12	DEGREES;
LAU FAU SHAN	12	DEGREES;
TAI PO	12	DEGREES;
SHA TIN	13	DEGREES;
TUEN MUN	13	DEGREES;
TSEUNG KWAN O	12	DEGREES;
SAI KUNG	12	DEGREES;
CHEUNG CHAU	13	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	14	DEGREES;
SHEK KONG	11	DEGREES;
TSUEN WAN HO KOON	11	DEGREES;
TSUEN WAN SHING MUN VALLEY	12	DEGREES;
HONG KONG PARK	13	DEGREES;
SHAU KEI WAN	13	DEGREES;
KOWLOON CITY	12	DEGREES;
HAPPY VALLEY	13	DEGREES;
WONG TAI SIN	13	DEGREES;
STANLEY	14	DEGREES;
KWUN TONG	13	DEGREES;
SHAM SHUI PO	13	DEGREES;
KAI TAK RUNWAY PARK	14	DEGREES;
YUEN LONG PARK	12	DEGREES;
TAI MEI TUK	12	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 06:02 HKT ON 19.02.2020





### PRESS WEATHER NO. 052 - HOURLY READINGS

AT 7 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 14 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 79 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	13	DEGREES;
WONG CHUK HANG	14	DEGREES;
TA KWU LING	11	DEGREES;
LAU FAU SHAN	12	DEGREES;
TAI PO	12	DEGREES;
SHA TIN	12	DEGREES;
TUEN MUN	14	DEGREES;
TSEUNG KWAN O	12	DEGREES;
SAI KUNG	13	DEGREES;
CHEUNG CHAU	13	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	14	DEGREES;
SHEK KONG	11	DEGREES;
TSUEN WAN HO KOON	11	DEGREES;
TSUEN WAN SHING MUN VALLEY	13	DEGREES;
HONG KONG PARK	13	DEGREES;
SHAU KEI WAN	13	DEGREES;
KOWLOON CITY	12	DEGREES;
HAPPY VALLEY	14	DEGREES;
WONG TAI SIN	13	DEGREES;
STANLEY	14	DEGREES;
KWUN TONG	13	DEGREES;
SHAM SHUI PO	13	DEGREES;
KAI TAK RUNWAY PARK	14	DEGREES;
YUEN LONG PARK	12	DEGREES;
TAI MEI TUK	13	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 07:02 HKT ON 19.02.2020





### PRESS WEATHER NO. 060 - HOURLY READINGS

AT 8 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 14 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 77 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.1. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14	DEGREES;
WONG CHUK HANG	14	DEGREES;
TA KWU LING	11	DEGREES;
LAU FAU SHAN	12	DEGREES;
TAI PO	13	DEGREES;
SHA TIN	13	DEGREES;
TUEN MUN	14	DEGREES;
TSEUNG KWAN O	13	DEGREES;
SAI KUNG	13	DEGREES;
CHEUNG CHAU	13	DEGREES;
CHEK LAP KOK	15	DEGREES;
TSING YI	14	DEGREES;
SHEK KONG	12	DEGREES;
TSUEN WAN HO KOON	11	DEGREES;
TSUEN WAN SHING MUN VALLEY	13	DEGREES;
HONG KONG PARK	14	DEGREES;
SHAU KEI WAN	14	DEGREES;
KOWLOON CITY	13	DEGREES;
HAPPY VALLEY	14	DEGREES;
WONG TAI SIN	13	DEGREES;
STANLEY	14	DEGREES;
KWUN TONG	13	DEGREES;
SHAM SHUI PO	14	DEGREES;
KAI TAK RUNWAY PARK	14	DEGREES;
YUEN LONG PARK	12	DEGREES;
TAI MEI TUK	14	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 08:02 HKT ON 19.02.2020





### PRESS WEATHER NO. 066 - HOURLY READINGS

AT 9 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 76 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.3. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

WINIGLG DIDU		DEGDEEG
KING'S PARK		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING	14	DEGREES;
LAU FAU SHAN	14	DEGREES;
TAI PO	14	DEGREES;
SHA TIN	15	DEGREES;
TUEN MUN	15	DEGREES;
TSEUNG KWAN O	14	DEGREES;
SAI KUNG	15	DEGREES;
CHEUNG CHAU	15	DEGREES;
CHEK LAP KOK	17	DEGREES;
TSING YI	15	DEGREES;
SHEK KONG	14	DEGREES;
TSUEN WAN HO KOON	13	DEGREES;
TSUEN WAN SHING MUN VALLEY	15	DEGREES;
HONG KONG PARK	15	DEGREES;
SHAU KEI WAN	14	DEGREES;
KOWLOON CITY	14	DEGREES;
HAPPY VALLEY	15	DEGREES;
WONG TAI SIN	15	DEGREES;
STANLEY	15	DEGREES;
KWUN TONG	14	DEGREES;
SHAM SHUI PO	15	DEGREES;
KAI TAK RUNWAY PARK	15	DEGREES;
YUEN LONG PARK	15	DEGREES;
TAI MEI TUK	15	DEGREES.

BETWEEN MIDNIGHT AND 9 A.M. THE MINIMUM TEMPERATURE WAS 14.0 DEGREES CELSIUS AT THE HONG KONG OBSERVATORY.

DISPATCHED BY HONG KONG OBSERVATORY AT 09:02 HKT ON 19.02.2020



### PRESS WEATHER NO. 082 - HOURLY READINGS

HOURLY READINGS

AT 10 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 16 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 69 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 1. THE INTENSITY OF UV RADIATION WAS LOW.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	16	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
TAI PO		DEGREES;
SHA TIN		DEGREES;
TUEN MUN		DEGREES;
TSEUNG KWAN O		DEGREES;
SAI KUNG		DEGREES;
CHEUNG CHAU		DEGREES;
CHEK LAP KOK		DEGREES;
TSING YI		DEGREES;
SHEK KONG		DEGREES;
TSUEN WAN HO KOON		DEGREES;
TSUEN WAN SHING MUN VALLEY		DEGREES;
HONG KONG PARK		DEGREES;
SHAU KEI WAN		DEGREES;
KOWLOON CITY		DEGREES;
HAPPY VALLEY		DEGREES;
WONG TAI SIN		DEGREES;
STANLEY		DEGREES;
KWUN TONG		DEGREES;
SHAM SHUI PO		DEGREES;
KAI TAK RUNWAY PARK		DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK		DEGREES.
	1/	PLOILLD.

DISPATCHED BY HONG KONG OBSERVATORY AT 10:02 HKT ON 19.02.2020



# 3<sup>rd</sup> Impact Odour Monitoring



## Third Operation Phase Odour Impact Monitoring Report

Impact Odour Monitoring - Hydrogen Sulphide Measurement for Tuen Mun Area 54 Sewage Pumping Station | Hong Kong

0118/19/ED/0392 01 | 10 June 2020 For review Mott Macdonald Hong Kong Limited

### **Executive Summary**

Fugro Technical Services Limited (FTS) has been appointed by Mott MacDonald Hong Kong Limited, the Project Environmental Team (ET) of Tuen Mun Area 54 Sewage Pumping Station (TMA54SPS) to undertake the operation phase impact odour monitoring for the project.

This is the third monitoring report for the Odour Impact Monitoring of TMA54SPS, prepared by Fugro Technical Services Limited for submission to Mott MacDonald Hong Kong Limited.

This report presents the results obtained from the third operation phase impact odour monitoring carried out from 27 May 2020 to 28 May 2020 during the operation of TMA54SPS.

Exceedance of Action and Limit level at A1 and A5 were recorded. Exceedance of Action level at A2 was recorded.

In this reporting period, there were no records of odour complaint received.



i

### Contents

### **Executive Summary**

	-	
1.	Introduction	1
1.1	Background	1
1.2	Project Description	1
1.3	Monitoring Arrangement	2
2.	Odour Impact Monitoring	4
2.1	Methodology	4
2.2	Sampling Duration	4
2.3	Monitoring Locations	4
2.4	Quality Assurance / Quality Control	4
3.	Monitoring Results	5
3.1	Weather Conditions and Other Factors	5
3.2	Monitoring Results	5
4.	Odour Complaint	5
5.	Conclusion and Recommendations	5
-		

### Appendices

Monitoring Station
Photographs of Monitoring Stations
Monitoring Results
Site Record
Data Logger Record
Calibration Certificates
Meteorological Conditions

### **Tables in the Main Text**

Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)	3
Table 1.2 Tentative Monitoring Programme	3
Table 2.1 Equipment for Baseline Odour Monitoring	4
Table 2.2 Monitoring Locations	4
Table 3.1 Summary of Monitoring Results	5



### Abbreviations

ASRs	Air Sensitive Receivers
DSD	Drainage Services Department
LandsD	Lands Department
ET	Environmental Team
EM&A	Environmental Monitoring and Audit
H <sub>2</sub> S	Hydrogen Sulphide
ММНК	Mott MacDonald Hong Kong Limited
FTS	Fugro Technical Services Limited
TMA54SPS	Tuen Mun Area 54 Sewage Pumping Station
OU	Odour Unit



### 1. Introduction

### 1.1 Background

To cope with a shortfall in flat supply and a rise in housing demand, Tuen Mun Area 54 was identified by the Government as one of the areas having the potential for housing development. Thus, the New Territories West Development Office of Territory Development Department completed the "Planning and Development Study of Potential Housing Site in Area 54, Tuen Mun" in 1999. The Study put forward proposals on housing types, development parameters and planning layouts and assessed the development impacts on transport network, infrastructural capacities and environmental quality.

According to the Review of Tuen Mun and Tsing Yi Sewerage Master Plans, a new sewage pumping station is needed to convey sewage collected from Tuen Mun Area 54 to existing trunk sewers at Ming Kum Road. Other than Tuen Mun Area 54, TMA54SPS will also collect sewage from four recognized villages within Area 54 including Tsz Tin Tsuen, Po Tong Ha, Kei Lun Wai and Siu Hang Tsuen, and the proposed Tuen Mun North Sewage Pumping Station in Area 52. TMA54SPS has a capacity of about 90,000m<sup>3</sup> per day; the design average dry weather flow is approximately 0.32m<sup>3</sup>/s.

TMA54SPS is located in the central part of Site 4A of Tuen Mun Area 54, north of Kei Lun Wai, south of Tsz Tin Tsuen and west of Site 2 of Tuen Mun Area 54. Site 4A is zoned "Government, Institution or Community" on the Tuen Mun Outline Zoning Plan No. S/TM/22 and is reserved for school development. **Appendix A** shows the location of TMA54SPS. Construction work for TMA54SPS is substantially completed and commissioning is anticipated in February 2018.

TMA54SPS is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449). A study of Environmental Impact Assessment (EIA) has been carried out to evaluate the environmental impacts associated with the project. An EIA Report and an Environmental Monitoring and Audit (EM&A) Manual were approved by the Environmental Protection Department (EPD) on 12 November 2008. An Environmental Permit (EP) No. EP-381/2009 was issued on 4 January 2010 for TMA54SPS to the Civil Engineering and Development Department as the Permit Holder. The EP stipulates that an EM&A programme is required to ensure mitigation measures recommended in the EIA Report and the EM&A Manual are implemented during the construction and operation of TMA54SPS.

### 1.2 Project Description

FTS was commissioned to carry out operation phase odour impact monitoring for Mott MacDonald Hong Kong Limited for the project of TMA54SPS.

The EIA study of TMA54SPS has identified odour emissions from the sewage pumping station as the main potential air quality impact. To reduce odour emissions from the operation of TMA54SPS, it is recommended in the EIA Report that wet wells and screen chambers, the main



sources of odour, should be enclosed in a building structure. A deodorizing unit should also be installed; in order to treat vented air before it would be discharged into the atmosphere.

Furthermore, odour monitoring is required as per the EM&A Manual prior to and during the initial operation of TMA54SPS. The purpose of the odour impact monitoring is to indicate whether the odour concentration would be higher or lower than the baseline condition.

### 1.3 Monitoring Arrangement

According to the EM&A Manual, gaseous hydrogen sulphide (H<sub>2</sub>S) is one of the main components of odour emissions. Ambient H<sub>2</sub>S concentration can serve as a surrogate indicator for sewage odours as it can be readily monitored at the Air Sensitive Receivers (ASRs).

The odour impact monitoring shall be conducted in the first year upon commissioning of TMA54SPS. Odour Impact Monitoring would be conducted every three months for the first year of operation for TMA54SPS. However, due to some major technical issues (e.g. review of H<sub>2</sub>S measurement method, monitoring locations and level of measurement, etc), the commencement of the impact odour monitoring was deferred from March 2018 to October 2019. In addition, as discussed between DSD and EPD, measurement results from the impact odour monitoring with that obtained in the baseline odour monitoring without any adjustments / air modelling applied. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation of the TMA54SPS, the odour monitoring will be extended until the odour concentration at the ASR in consecutive 2 times are below the limit levels (once for 3 months). Action and Limit Levels for Air Quality in operation phase are given in **Table 1.1**.

As regards the locations of odour monitoring stations, it is noticed that there are 3 odour monitoring stations selected in the EM&A Manual (i.e. A3-A5) are currently located in private lots which are not accessible for the ET to conduct the impact odour monitoring at a height of 10m above ground level, while the remaining 2 stations (i.e. A1 and A2) fall within CEDD's construction sites (i.e. Government land). As the monitoring station "A5" which falls within the boundary of private open car park, alternative location of odour monitoring station for A5 was proposed. It is noted that the sites on both sides of the road connecting to TMA54SPS are all private land lots, expect that TMA54SPS and the road itself are on government land. The odour monitoring station "A5" should be relocated to somewhere on the road connecting to TMA54SPS. In addition, according to the contours of odour concentrations at 10m above ground, the original location of A5 is within 1 OU zone which is the furthest measurement point from TMA54SPS. As a prudent approach in determine the alternative location of odour monitoring station for A5, the new A5 is situated on the road connecting to TMA54SPS at a location within 4 OU zone which is close to TMA54SPS. In view of the land resumption programme, the impact odour monitoring will be spilt into two phases. The 1<sup>st</sup> phase will include the odour monitoring at the locations A1, A2 and new A5.

Regarding the above requirements, a tentative monitoring programme is shown in **Table 1.2**.



Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)

Parameter	ASR	Action Level (ppb)	Limit Level (ppb)
	A1	2.5	2.5
$H_2S$	A2	2.3	2.5
	A5	2.5	2.5
Incidents of odour complaints	-		Two or more complaints through the Odour Complaint Register within three months

Note: Odour complaints are to be handled in accordance with the complaint registration system as mentioned in Section 2.26-2.29 of the EM&A Manual

Table 1.2 Tentative Monitoring Programme

For 1<sup>st</sup> phase impact odour monitoring at A1, A2 and new A5:

	1 <sup>st</sup> Monitoring Event	2 <sup>nd</sup> Monitoring Event	3 <sup>rd</sup> Monitoring Event	4 <sup>th</sup> Monitoring Event
Monitoring Dates	November 2019	February 2020	May 2020	August 2020



### 2. Odour Impact Monitoring

### 2.1 Methodology

The H<sub>2</sub>S analyzer, type Jerome 631-X, was used for the impact monitoring. Grab air sample was drawn by built-in suction pump of the analyzer and passed through a gold film sensor. The electrical resistance of the gold film changes according to the change in mass of hydrogen sulphide in the gas sample.

The details of the equipment used for odour impact monitoring is presented in Table 2.1

Table 2.1 Equipment for Baseline Odour Monitoring

Equipment	Manufacturer / Model	Serial Number	Sensor Number	Calibration Date	Next Calibration Date
Gold Film Hydrogen Sulphide Analyzer	JEROME X631 0003	2966	19-8-23-S4AS	17 October 2019	16 October 2020

### 2.2 Sampling Duration

A 15-min integrated gaseous H<sub>2</sub>S sample was collected every 3 hours for a period of 24 hours at monitoring locations, in which five readings were recorded at every monitoring station during each 3-hour session. Maximum and minimum H<sub>2</sub>S levels for each monitoring station were recorded.

### 2.3 Monitoring Locations

H<sub>2</sub>S measurements was taken at the sources and outside the premises of the identified ASRs as shown in **Table 2.2** and **Appendix A** show the descriptions and locations of the H<sub>2</sub>S monitoring stations.

Monitoring Station	Monitoring Location	Description
A1 <sup>1</sup>	Planned Secondary School	ASR
A2 <sup>1</sup>	Planned Primary School	ASR
A5 <sup>1</sup>	Road connecting to TMA54SPS	ASR
SPS <sup>1</sup>	Exhausted vent pipe of TMA54SP	Source

Table 2.2 Monitoring Locations

Note: <sup>1</sup> 1<sup>st</sup> phase odour impact monitoring.

According to the EM&A Manual, the monitoring was taken at a height of predicted worst level of the receivers in the EIA (10 m ground level). Photos showing the monitoring setup are included in **Appendix B**.

### 2.4 Quality Assurance / Quality Control

In order to ensure the analyzer is functioning properly, manual sensor regeneration and zero adjustment were performed before each set of odour monitoring.

Calibration of the analyzer is conducted every year at the laboratory of the manufacturer. The calibration certificates for the analyzers are shown in **Appendix F**.



### 3. Monitoring Results

### 3.1 Weather Conditions and Other Factors

The third monitoring event for the odour impact monitoring for TMA54SPS was conducted from 27 May 2020 (approx. 11:00 am) to 28 May 2020 (approx. 10:59 am).

The weather was mainly fine and wind was mainly mild to moderate during the monitoring event. An anemometer was used for measuring wind speed and wind direction presented in the site record in **Appendix D**. Meteorological conditions of 27 May 2020 and 28 May 2020 obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station are shown in **Appendix G**. Meteorological data was obtained as reference information for the analysis of the exceedance event.

No significant odour sources from the project site were observed during the impact monitoring period.

### 3.2 Monitoring Results

The monitoring results are summarised in **Table 3.1**. Details of monitoring data are shown in **Appendix C** (24-hour average, maximum and minimum H<sub>2</sub>S concentration), **Appendix D** (site record) and **Appendix E** (data logger record).

Monitoring Station	Monitoring Location	24-hour Average H <sub>2</sub> S Concentration (ppb)
A1 <sup>1</sup>	Planned Secondary School	2.7
A2 <sup>1</sup>	Planned Primary School	2.4
A5 <sup>1</sup>	Road connecting to TMA54SPS	2.9
SPS	Exhausted vent pipe of TMA54SP	2.5

Table 3.1 Summary of Monitoring Results

Note: <sup>1</sup> Air Sensitive Receiver.

### 4. Odour Complaint

There were no complaints received in relation to the environmental impact during the reporting period.

### 5. Conclusion and Recommendations

The third monitoring event for the odour impact monitoring was carried out from 27 May 2020 to 28 May 2020.

Odour impact monitoring of hydrogen sulphide (H<sub>2</sub>S) was conducted at four monitoring stations including three Air Sensitive Receivers around TMA54SPS and at source. Exceedance of Action and Limit level at A1 and A5 were recorded. Exceedance of Action level at A2 was recorded.

At A1, it is observed that 3 out of the 8 sampling events throughout the 24-hours monitoring period, the H<sub>2</sub>S concentration at A1 is higher than at source. Also, at Sample 2, 3 and 5, the H<sub>2</sub>S



concentration at A1 is 23-45.8% higher than at source. Under the above obervations, it is considered that the source is not the major contributor to H<sub>2</sub>S concentration at A1 during sample 2, 3 and 5, and thus the exceedance at A1 is not project related.

At A2, it is observed that 3 out of the 8 sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A2 is higher than at source. Also, at Sample 2 and 3, the  $H_2S$  concentration at A2 is 19 - 20% higher than at source. Under the above observations, it is considered that the source is not the major contributor to  $H_2S$  concentration at A2 during sample 2 and 3, and thus the exceedance at A2 is not project related.

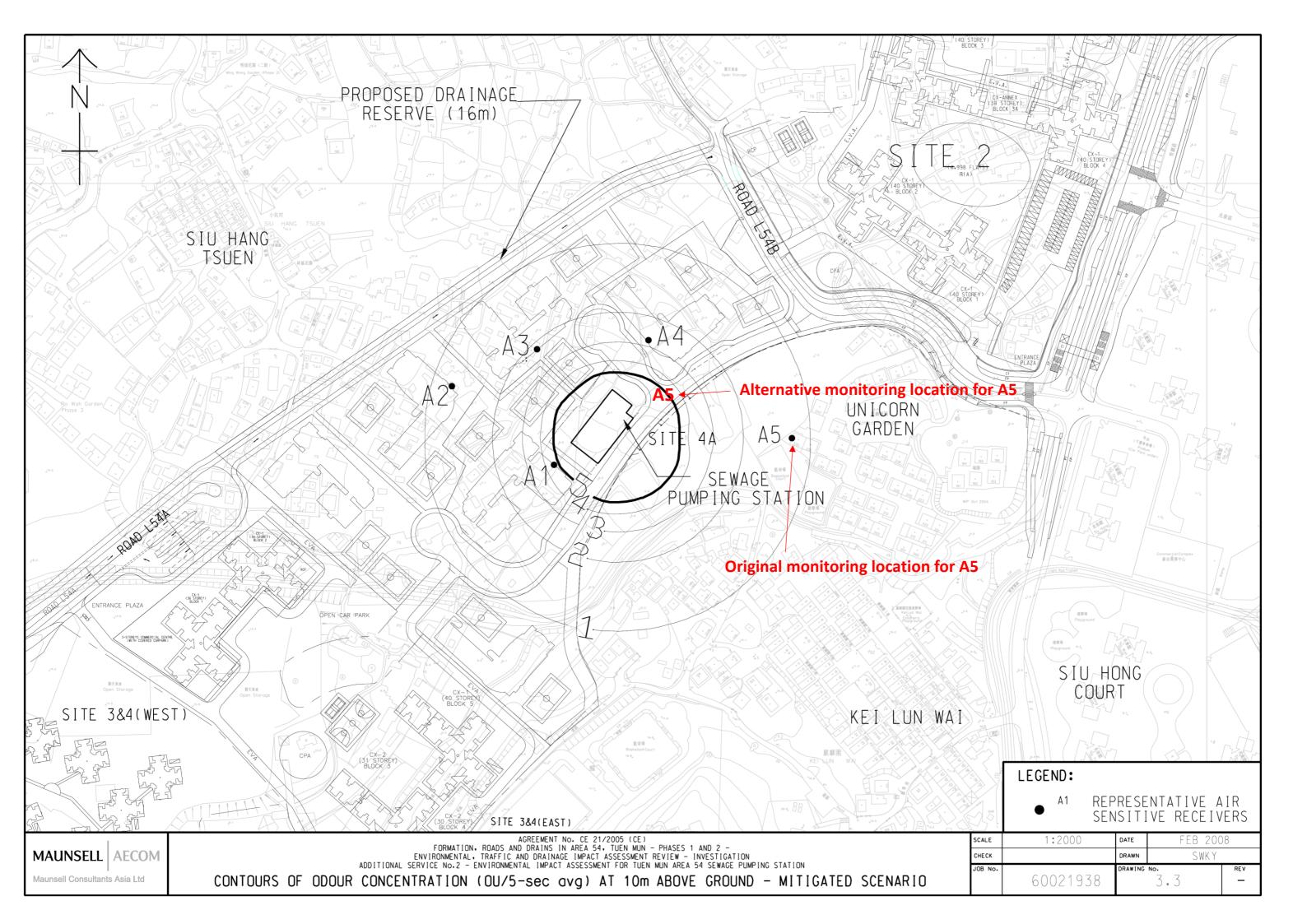
At A5, it is observed that over half of the sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A5 is higher than at source. Also, at Sample 1, 2, 3 and 6, the  $H_2S$  concentration at A2 is 10-43% higher than at source. Under the above observations, it is considered that the source is not the major contributor to  $H_2S$  concentration at A5 during Sample 1, 2, 3 and 6, and thus the exceedance at A5 is not project related.



## **Appendix A**

**Monitoring Station** 







## **Appendix B**

Photographs of Monitoring

Stations





A1







A5



Source



# **Appendix C**

**Monitoring Results** 



						S Concentrati			
Monitoring	Time	15	3 <sup>rd</sup> Even	t for Phase O	ne Odour Im	pact Monitori	ing (27 – 28 M	/lay 2020)	
Station	Interval	15-minute integrated average	24-hour average	Maximum	Minimum	Action Level	Exceedance	Limit Level	Exceedance
	1100-1400	2.6							
	1400-1700	4.0							
	1700-2000	4.8		4.0			Y	2.5	Y
A1	2000-2300	2.2	2.7		1.6	2.5			
AI	2300-0200	2.6	2.1	4.8		2.5	ř	2.5	T
	0200-0500	2.0							
	0500-0800	1.6							
	0800-1100	2.0							
	1100-1400	3.2	2.4	3.2					
	1400-1700	3.0							
	1700-2000	3.2							
A2	2000-2300	2.2			1.6	2.3	Y	2.5	N
,	2300-0200	2.2			1.0	2.5	I	2.5	IN
	0200-0500	1.6							
	0500-0800	2.2							
	0800-1100	1.6							
	1100-1400	4.0				2.5	Y		
	1400-1700	4.2						2.5	Y
	1700-2000	3.6							
A5	2000-2300	2.8	2.9	4.2	1.8				
AJ	2300-0200	2.2	2.5	4.2	1.0	2.5		2.5	
	0200-0500	2.4							
	0500-0800	2.2							
	0800-1100	1.8							
	1100-1400	3.6							
	1400-1700	2.4							
	1700-2000	2.6							
SPS	2000-2300	2.8	2.5	3.6	2.0	N/A	N/A	N/A	N/A
515	2300-0200	2.0	2.5	5.0	2.0	11/7	11/7	11/17	11/7
	0200-0500	2.0							
	0500-0800	2.2							
	0800-1100	2.2							



## **Appendix D**

Site Record



		r.	General I	nformation						
Monitoring		/	A							
Date		2	27/5/2020							
Weath	er		Cloudy							
			Monitori	ng Results						
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)					
Sample 1	Start:	1150			0.004 10.003,0.002					
	Stop:	1205	/		0,002 10.002					
Sample 2	Start:	1431			0.004, 0,004, 0.004					
	Stop:	1446			0,004,0,004					
Sample 3	Start:	1735	O. Juls		0.094, 0.004, 0.005					
	Stop:	1750		.SF	0.005,0.006					
Sample 4	Start:	2035			0.002, 0.002, 0.002					
	Stop:	2050		/	0.002,0.003					
Sample 5	Start:	2330			0,002,0,002,0.00}					
	Stop:	2345			0.003 1 0.003					
Sample 6	Start:	0231			0,001,0,002,0,002					
	Stop:	02 46	-	-	0,003, 0,002					
Sample 7	Start:	0535			0,00110,001/0,002					
	Stop:	0550			6 1002 101002					
Sample 8	Start:	0825			0.002,0,0002,000					
	Stop:	0840			0.002,0,000, 0.00 0.002,0002					
her Observatio	ons				i i i i i i i i i i i i i i i i i i i					

Recorded by:

Name & Designation

<u>Signature</u>

Ting Chan To Not Vincent Lu EC Tan

Date 2815/2020

28/5/2020 fugro

Checked by:

			General In	formation		
Monitoring S	Station	AZ	2			
Date	2	27/5	120	,20		
Weathe	er	Cl	on dy			
			Monitorii	ng Results		
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)	
Sample 1	Start:	1120	0.7	Ŧ	0.004,0.004,0,003	
	Stop:	1135	0,2	Ł	0.002 10.003	
Sample 2	Start:	14:00	_		0,002 10,003	
	Stop:	1415	/	/	0.002,0.003	
Sample 3	Start:	7:00	a 11. 1	C	0.005,0.003,0.003	
	Stop:	7:15	O. Unly		0.002,0.002,002	
Sample 4	Start: 20	0:00			0.002,0.002,0.002	
	Stop: 2	015	/	/	0.002,0.003	
Sample 5	Start: 23	:00	~ >	11-	0.002,0.002,0.002	
	Stop: 2	315	0.3	NE	0,003 , 0,002	
Sample 6	Start: 🧷	2:00	(	NIG	0,001,0.002,0.001	
	Stop: (	n2 15	a 6	NE	0.002, 0.002	
Sample 7	Start: 0	00			0,00210,003,0,002	
	Stop:	0519			0,002/0,002	
Sample 8	Start: 08	, au			0.002,0002	
	Stop: o	8 15	/		0.001,0.001,0.002	
Other Observati	ons					
		<u>Name &amp; Desi</u>	gnation	<u>Signa</u>	ture Date	
Recorded by:		Ting Cha	T,	14	1 78/5/2010	
Checked by:		Vincent Lu		10	28/5/2020	



Checked by:

			General In	formation			
Monitoring	Station		5				
Date		-	27/5	12020			
Weath	er		Cloudy				
			Monitorir	ng Results	1		
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)		
Sample 1	Start:	233			0.004,0.004,00003		
	Stop: /	248		/	0,003,0.004		
Sample 2	Start:	1510	0.345	7-	0.003,0,003,0,002		
Bampio 2	Stop:	1525	6	>	0,002, 0,002		
Sample 3	Start:	1819			0.002,0002,0,00		
Sample S	Stop:	1834		/	0.003, 0.003		
Sample 4	Start:	2120			0,004, 0,003, 0,00)		
Sample 4	Stop:	2135	0	Ø	8,002,0002		
Sampla 5	Start:	0013			0.00210,00210,0002		
Sample 5	Stop:	0028			0.002 / 0.002		
Samplo 6	Start:	0317			0.002,0.002,0.002		
Sample 6	Stop:	0332	/	/	0.002,0.002		
Sample 7	Start:	0640			0.003,0.002,0.002		
Sample 7	Stop:	0655	/		0,002, 0,00L		
Sample 0	Start:	905			0,002,0,003,0,002		
Sample 8	Stop:	0920	/	/	0,002,0,002		
Other Observat	tions						

Recorded by:

Name & Designation

<u>Signature</u>

The

Date NB / 5 /2000

28/5/2020

Checked by:

Ting Ohm To Vincent Lu EC

Monitoring	Station	AS							
Date			27/5/2020						
Weath	er		Cloudy						
				ng Results					
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)				
Sample 1	Start: Stop:	12 30	0.3	SE	0.005,0.004,0.004				
Sample 2	Start: Stop:	1450	O ibat	: 5	0.003,0.004 0.005 0.005,0.005 0.003,0.003				
Sample 3	Start: Stop:	1759 1814	0.4mls	2	0.003, 0,003, 0.002 0.005, 0,005				
Sample 4	Start: Stop:	22200	Ø	Q⁄	0:003,0:003,0:007				
Sample 5	Start: Stop:	2355 0010	d	0	0,002,0.003,0,002				
Sample 6	Start: Stop:	0255 0310		/	0.003,0.003,0.002 0.002,0.002				
Sample 7	Start: Stop:	0620		/	0.002,0.001,0.003				
Sample 8	Start: Stop:	08 46		/	0,002,0,003 0,002,0,003 0,001,0,003				
her Observat	ions								

Recorded by:

Name & Designation Tity Chan T.

**Signature** Vincent Lu EC 121

Date 28/517000

28/5/2020

fugro

Checked by:

## **Appendix E**

Data Logger Record



Site Name Address:		n Area 54 SPS n Area 54 SPS	Sample Location: Technician: Instrument: Comment: Date/Time: Alarm Setpoint:		31-X, SN 2966 -2020 12:12am	Page 1 of 6
		DATE/TIME		RESULT	(npm)	
1	五月-27-2020	11:20:46a	m 0.004		(PP)	
	五月-27-2020	11:23: 46a				
3	五月-27-2020	11:26: 46a		A2		
4	五月-27-2020	11:29: 46a	m 0.002			
5	五月-27-2020	11:32: 46a	m 0.003			
6	五月-27-2020	11:50:33a	m /III	]	End Of Session	
7	五月-27-2020	11:50:33a	m 0.004			
8	五月 <b>-27-2020</b>	11:53:33a	m 0.003			
9	五月 <b>-27-2020</b>	11:56:33a	m 0.002	A1		
10	五月-27-2020	11:59:33a	m 0.002			
11	五月 <b>-27-2020</b>	12:02:33pt	m 0.002			
12	五月 <b>-27-2020</b>	12:15:07p	m /III		End Of Session	
13	五月 <b>-27-2020</b>	12:18:07pi	m 0.005			
14	五月 <b>-27-2020</b>	12:21:07pi	m 0.004			
15	五月 <b>-27-2020</b>	12:24:07pi	m 0.004	A5		
16	五月 <b>-27-2020</b>	12:27:07pi	m 0.003			
17	五月 <b>-27-2020</b>	12:30:07pi	m 0.004			
18	五月 <b>-27-2020</b>	12:33:31p	m /III		End Of Session	
19	五月 <b>-27-2020</b>	12:33:31p	m 0.004			
20	五月 <b>-27-2020</b>	12:36:31p	m 0.004			
21	五月 <b>-27-2020</b>	12:39:31p	m 0.003	Sourc	е	
22	五月-27-2020	12:42:31pt	m 0.003			
23	五月-27-2020	12:45:31pi	m 0.004			
24	五月-27-2020	02:00:44pi	m /III		End Of Session	
25	五月 <b>-27-2020</b>	02:00:44pi	m 0.004			
24	五月 <b>-27-2020</b>	02:03:44pi	m 0.003			
25	五月-27-2020	02:06:44pi	m 0.003	A2		
28	五月 <b>-27-2020</b>	02:09:44pi	m 0.002			
29	五月 <b>-27-2020</b>	02:12:44pi	m 0.003			
30	五月 <b>-27-2020</b>	02:31:13p	m /III		End Of Session	
	五月-27-2020	02:31:13p				
32	五月-27-2020	02:34:13pi				
33	五月-27-2020	02:37:13p		A1		
	五月-27-2020	02:40:13p				
	五月 <b>-27-2020</b>	02:43:13pi				
36	五月 <b>-27-2020</b>	02:50:22pi	m /III		End Of Session	

Site Name Address:	: Tuen Mun Area Tuen Mun Area	54 SPS Techn Instru Comn Date/1	ment: nent:	Inlet 631-1, 631-2 五月-28-20 <b>0 (ppm)</b>	X, SN 2966 20 12:12am	Page 2 of 6
		/TIME		RESULT (pp	m)	Fage 2 01 0
37	五月-27-2020	02:50:22pm	0.005		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	五月-27-2020	02:53:22pm	0.005			
	五月-27-2020	02:56:22pm	0.005	A5		
	五月-27-2020	02:59:22pm	0.003			
	五月-27-2020	03:02:22pm	0.003			
	五月-27-2020	03:10:39pm	////		End Of Session	
	五月-27-2020	03:10:39pm	0.003			
	五月-27-2020	03:13:39pm	0.003			
45	五月-27-2020	03:16:39pm	0.002	Source		
46	五月-27-2020	03:19:39pm	0.002			
47	五月-27-2020	03:22:39pm	0.002			
48	五月-27-2020	05:00:28pm	/111		End Of Session	
49	五月-27-2020	05:00:28pm	0.005			
50	五月 <b>-27-2020</b>	05:03:28pm	0.003			
51	五月 <b>-27-2020</b>	05:06:28pm	0.003	A2		
52	五月 <b>-27-2020</b>	05:09:28pm	0.003			
53	五月 <b>-27-2020</b>	05:12:28pm	0.002			
54	五月-27-2020	05:35:44pm	/111		End Of Session	
55	五月-27-2020	05:35:44pm	0.004			
56	五月 <b>-27-2020</b>	05:38:44pm	0.004			
57	五月-27-2020	05:41:44pm	0.005	A1		
58	五月-27-2020	05:44:44pm	0.005			
59	五月 <b>-27-2020</b>	05:47:44pm	0.006			
60	五月 <b>-27-2020</b>	05:59:24pm	/111		End Of Session	
61	五月 <b>-27-2020</b>	05:59:24pm	0.003			
62	五月-27-2020	06:02:24pm	0.003			
63	五月-27-2020	06:05:24pm	0.002	A5		
64	五月-27-2020	06:08:24pm	0.005			
65	五月-27-2020	06:11:24pm	0.005			
66	五月-27-2020	06:19:06pm	/111		End Of Session	
67	五月-27-2020	06:19:06pm	0.002			
68	五月-27-2020	06:22:06pm	0.002			
69	五月-27-2020	06:25:06pm	0.003	Source		
70	五月-27-2020	06:28:06pm	0.003			
71	五月-27-2020	06:31:06pm	0.003			
72	五月-27-2020	08:00:29pm	/111		End Of Session	

Site N Addre		Tuen Mun A Tuen Mun A		Sample Location: Technician: Instrument: Comment: Date/Time: Alarm Setpoint:			-X, SN 2966 020 12:12am	Page 3 of 6
		D	ATE/TIME			RESULT (pj	pm)	
73	五月	-27-2020	08:00:29p	om 0.002	2 _			
74	五月	-27-2020	08:03:29p	om 0.002	2			
75	五月	-27-2020	08:06:29p	om 0.002	2	A2		
76	五月	-27-2020	08:09:29p	om 0.002	2			
77	五月	-27-2020	08:12:29p	om 0.00;	3			
78	五月	-27-2020	08:35:41p	om /III			End Of Session	
79	五月	-27-2020	08:35:41p	om 0.002	2			
80	五月	-27-2020	08:38:41p	om 0.002	2			
81	五月	-27-2020	08:41:41p	om 0.002	2	A1		
82	五月	-27-2020	08:44:41p	om 0.002	2			
83	五月	-27-2020	08:47:41p	om 0.003	3			
84	五月	-27-2020	09:00:24p	om /III	_		End Of Session	
85	五月	-27-2020	09:00:24p	om 0.003	3			
86	五月	-27-2020	09:03:24p	om 0.003	3			
87	五月	-27-2020	09:06:24p	om 0.003	3	A5		
88	五月	-27-2020	09:09:24p	om 0.003	3			
89	五月	-27-2020	09:12:24p	om 0.002	2			
90	五月	-27-2020	09:20:07p	om /III			End Of Session	
91	五月	-27-2020	09:20:07p	om 0.004	4			
92	五月	-27-2020	09:23:07p	om 0.003	3			
93	五月	-27-2020	09:26:07p	om 0.003	3	Source		
94	五月	-27-2020	09:29:07p	om 0.002	2			
95	五月	-27-2020	09:32:07p	om 0.002	2			
96	五月	-27-2020	11:00:09p	om /III		_	End Of Session	
97	五月	-27-2020	11:00:09p	om 0.002	2			
98	五月	-27-2020	11:03:09p	om 0.002	2			
99	五月	-27-2020	11:06:09p	om 0.002	2	A2		
100	五月	-27-2020	11:09:09p	om 0.003	3			
101	五月	-27-2020	11:12:09p	om 0.002	2 _			
102	五月	-27-2020	11:30:57p	om /III			End Of Session	
103	五月	-27-2020	11:30:57p	om 0.002	2			
104	五月	-27-2020	11:33:57p	om 0.002	2			
105	五月	-27-2020	11:36:57p	om 0.003	3	A1		
106	五月	-27-2020	11:39:57p	om 0.003	3			
107	五月	-27-2020	11:42:57p	om 0.003	3 _			
108	五月	-27-2020	11:55:04p	om /III	_		End Of Session	

Site Na Addres			Area 54 SPS Area 54 SPS	Sample Location: Technician: Instrument: Comment: Date/Time: Alarm Setpoint:			-X, SN 2966 020 12:12am	D	age 4 of 6
					-		)	Po	ige 4 01 0
400			DATE/TIME			RESULT (p	pm)		
109		27-2020	11:55:04p						
110		27-2020	11:58:04p						
111		28-2020	00:01:04a			A5			
112		28-2020	00:04:04a						
113		28-2020	00:07:04a				End Of Secsion		
114		28-2020	00:13:42a			٦	End Of Session		
115		28-2020	00:13:42a						
116		28-2020	00:16:42a			Courses			
117		28-2020	00:19:42a			Source			
118		28-2020	00:22:42a						
119		28-2020	00:25:42a		·				
120		28-2020	02:00:05a			٦	End Of Session		
121		28-2020	02:00:05a						
122		28-2020	02:03:05a						
123		28-2020	02:06:05a			A2			
124		28-2020	02:09:05a						
125		28-2020	02:12:05a		·				
126		28-2020	02:31:31a			7	End Of Session		
127		28-2020	02:31:31a						
128		28-2020	02:34:31a						
129		28-2020	02:37:31a			A1			
130		28-2020	02:40:31a						
131		28-2020	02:43:31a						
132		28-2020	02:55:53a			7	End Of Session		
133		28-2020	02:55:53a						
134		28-2020	02:58:53a						
135		28-2020	03:01:53a			A5			
136		28-2020	03:04:53a						
137		28-2020	03:07:53a		·				
138		28-2020	03:17:38a			7	End Of Session		
139		28-2020	03:17:38a						
140		28-2020	03:20:38a						
141		28-2020	03:23:38a			Source			
142		28-2020	03:26:38a						
143		28-2020	03:29:38a		·				
144	五月-	28-2020	05:00:21a	ım /III		_	End Of Session		

Site Nar Address		SPS Techni Instrum Commo Date/Ti	nent: ent:		X, SN 2966 )20 12:12am	Page 5 of 6
						Page 5 01 0
	DATE/TI			RESULT (pp	om)	
145	五月-28-2020	05:00:21am	0.002			
146	五月-28-2020	05:03:21am	0.003			
147	五月-28-2020	05:06:21am	0.002	A2		
148	五月-28-2020	05:09:21am	0.002			
149	五月-28-2020	05:12:21am	0.002			
150	五月-28-2020	05:35:06am	/111		End Of Session	
151	五月-28-2020	05:35:06am	0.001			
152	五月-28-2020	05:38:06am	0.001			
153	五月-28-2020	05:41:06am	0.002	A1		
154	五月-28-2020	05:44:06am	0.002			
155	五月-28-2020	05:47:06am	0.002			
156	五月-28-2020	06:20:09am	/111		End Of Session	
157	五月-28-2020	06:20:09am	0.002			
158	五月-28-2020	06:23:09am	0.001			
159	五月-28-2020	06:26:09am	0.003	A5		
160	五月-28-2020	06:29:09am	0.002			
161	五月-28-2020	06:32:09am	0.003			
162	五月-28-2020	06:40:14am	/111		End Of Session	
163	五月-28-2020	06:40:14am	0.003			
164	五月-28-2020	06:43:14am	0.002			
165	五月-28-2020	06:46:14am	0.002	Source		
166	五月-28-2020	06:49:14am	0.002			
167	五月-28-2020	06:52:14am	0.002			
168	五月-28-2020	08:00:06am	/111		End Of Session	
169	五月-28-2020	08:00:06am	0.002			
170	五月-28-2020	08:03:06am	0.002			
171	五月-28-2020	08:06:06am	0.001	A2		
172	五月-28-2020	08:09:06am	0.001			
173	五月-28-2020	08:12:06am	0.002			
174	五月-28-2020	08:25:30am	/111		End Of Session	
175	五月-28-2020	08:25:30am	0.002			
176	五月-28-2020	08:28:30am	0.002			
177	五月-28-2020	08:31:30am	0.002	A1		
178	五月-28-2020	08:34:30am	0.002			
179	五月-28-2020	08:37:30am	0.002			
180	五月-28-2020	08:46:51am	/111		End Of Session	

Site Nan Address			ent: nt: ne:	Inlet 631-1, 631-X, SN 2966 五月-28-2020 12:12am <b>0 (ppm)</b>	Page 6 of 6
	DATE	/TIME		RESULT (ppm)	
181	五月 <b>-28-2020</b>	08:46:51am	0.002		
182	五月 <b>-28-2020</b>	08:49:51am	0.002		
183	五月 <b>-28-2020</b>	08:52:51am	0.003	A5	
184	五月 <b>-28-2020</b>	08:55:51am	0.001		
185	五月 <b>-28-2020</b>	08:58:51am	0.001		
186	五月-28-2020	09:05:19am	/111	End Of Session	
187	五月-28-2020	09:05:19am	0.002		
188	五月-28-2020	09:08:19am	0.003		
189	五月-28-2020	09:11:19am	0.002	Source	
190	五月-28-2020	09:14:19am	0.002		
191	五月-28-2020	09:17:19am	0.002		
		Readings: Minimum: Maximum: Average: SD:	160 0.001 0.006 0.00263 0.001		

## **Appendix F**

**Calibration Certificates** 





#### **Certification of Instrument Calibration**

Guyline (Asia) Ltd Rm 1611, Eastern Harbour Centre Quarry Bay,

This is to certify that the Jerome X631 0003 Gold Film Hydrogen Sulfide Analyzer, Serial Number 2966, with Sensor Number 19-8-23-S4AS, was calibrated with standard units traceable to NIST.

Calibration Status as Received:			Out of Calibration			
		Actual		Calibr	ation Gas	Allowable Range
Incoming:	Range 1 RSD %	0.094 11.33	ppm H2S	0.500	ppm H2S	+/- 6% <5%
Outgoing:	Range 1 RSD %	0.518 2.11	ppm H2S	0.500	ppm H2S	+/- 6% <5%

Calibration Status as Left:

ft: In Calibration

Estimated Uncertainty of Calibration System: 2.8%

Calibration Date: 17-Oct-2019

Recalibration Date: 16-Oct-2020

Temperature °F: 70.60

% Relative Humidity: 32.90

Jackie Kreitlow Approved By:

Title: Jackie Kreitlow - Quality Control

Equipment Used:

H2S Calibration Standard: CC-75664 NIST#: 1467976 Calibration Date: 25-Sep-2018 Calibration Date Due: 25-Sep-2021

Mass Flow Controller B: 124604 NIST#: 215457 Calibration Date: 13-Dec-2018 Calibration Date Due: 13-Dec-2019

Mass Flow Controller D: 124602 NIST#: 215454 Calibration Date: 13-Dec-2018 Calibration Date Due: 13-Dec-2019

Digital Multimeter: <u>74620505</u> NIST#: <u>7003079</u> Calibration Date: <u>05-Apr-2019</u> Calibration Date Due: <u>05-Apr-2020</u>

Flowmeter: <u>US04I26032</u> NIST#: <u>1813</u>; <u>1817</u>; <u>1796</u> Calibration Date: <u>12-Aug-2019</u> Calibration Date Due: <u>12-Aug-2020</u>

Calibration Procedure Used: 730-0032

AMETEK Brookfield certifies that the above listed instrument meets or exceeds all published specifications and has been calibrated using standards whose accuracy are traceable to the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY within the limitations of the Institute's calibration services, or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of self-calibration techniques.

Disclaimer: Any unauthorized adjustments, removal or breaking of QC seals, or other customer modifications on your Jerome Analyzer WILL VOID this factory calibration. Because any of the above acts could affect the calibration and readings of the instrument, their certification will no longer be valid and, further, AMETEK Brookfield WILL NOT be responsible for any liabilities created as a result of using the instrument after such adjustments, seal removal, or modifications.

As long as a functional test is within range, according to the procedure outlined in the Operator's Manual, the instrument is performing correctly.

This document shall not be reproduced, except in full, without the written approval of AMETEK Brookfield.

RMA# 2694299

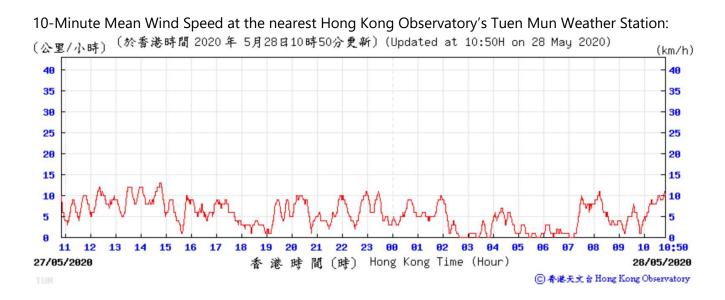
Date Approved: 18-Oct-2019

## **Appendix G**

### **Meteorological Conditions**



10-Minute Mean Wind Direction at the nearest Hong Kong Observatory's Tuen Mun Weather Station: 十分鐘平均風向及風速 10-minute mean wind ľ I IΙ Γ VRB VRB ۲ VRB VRB VRE VRB 3 09 10 28/05/2020 15 19 20 21 22 23 00 01 02 16 17 18 03 05 06 08 13 14 04 07 27 05. 香 港時間(時) Hong Kong Time (Hour) ⑥ 香港天文 含 Hong Kong Observatory



Date	Time	Weather Parameters			
Date	line	Temperature	Wind Direction	Wind Speed (km/hour	
	1100	29	SE	4.0	
	1200	29	SE	5.0	
	1300	30	SW	9.0	
	1400	30	SE	12.0	
	1500	29	SW	5.0	
	1600	30	NW	9.0	
27 May 2020	1700	29	NW	9.0	
5	1800	29		3.0	
	1900	28		1.0	
	2000	27	NE	5.0	
	2100	27	NE	5.0	
	2200	27	NE	10.0	
	2300	26	NE	10.0	
	2400	26	NE	4.0	
	0100	26	NE	5.0	
	0200	26	NE	9.0	
	0300	25		1.0	
	0400	26	NE	5.0	
20.14 2020	0500	26		1.0	
28 May 2020	0600	26		1.0	
	0700	26		0.0	
	0800	27	SE	8.0	
	0900	28		4.0	
	1000	28		5.0	

#### Meteorological conditions during the third operation phase odour impact monitoring





#### PRESS WEATHER NO. 075 - HOURLY READINGS

HOURLY READINGS

AT 11 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 4. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING WAS ISSUED AT 11:05 A.M. IT WILL REMAIN EFFECTIVE UNTIL 1:00 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER NEW TERRITORIES.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

	•	
KING'S PARK		DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	31	DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN	29	DEGREES;
TSEUNG KWAN O	30	DEGREES;
SAI KUNG	31	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	29	DEGREES;
TSING YI	29	DEGREES;
SHEK KONG	29	DEGREES;
TSUEN WAN HO KOON	27	DEGREES;
TSUEN WAN SHING MUN VALLEY	29	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	31	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	31	DEGREES;
STANLEY	28	DEGREES;
KWUN TONG	30	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	28	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK	31	DEGREES.

BETWEEN 9:45 AND 10:45 A.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

TAI PO	0	TO 6 MM;
TSUEN WAN	0	TO 2 MM;
YUEN LONG	0	TO 2 MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 11:06 HKT ON 27.05.2020



#### PRESS WEATHER NO. 081 - HOURLY READINGS

HOURLY READINGS

AT NOON AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 83 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 1:00 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER NEW TERRITORIES.

THE AIR TEMPERATURES AT ( KING'S PARK	OTHER PLACES W 29 DEGREES	
WONG CHUK HANG	29 DEGREES	;
TA KWU LING	30 DEGREES	•
LAU FAU SHAN	29 DEGREES	•
TAI PO	28 DEGREES	•
SHA TIN	29 DEGREES	;
TUEN MUN	29 DEGREES	;
TSEUNG KWAN O	29 DEGREES	;
SAI KUNG	29 DEGREES	;
CHEUNG CHAU	28 DEGREES	;
CHEK LAP KOK	28 DEGREES	;
TSING YI	27 DEGREES	;
SHEK KONG	31 DEGREES	;
TSUEN WAN HO KOON	27 DEGREES	;
TSUEN WAN SHING MUN VALLE	EY 28 DEGREES	;
HONG KONG PARK	29 DEGREES	;
SHAU KEI WAN	28 DEGREES	;
KOWLOON CITY	29 DEGREES	;
HAPPY VALLEY	29 DEGREES	;
WONG TAI SIN	29 DEGREES	;
STANLEY	28 DEGREES	;
KWUN TONG	29 DEGREES	;
SHAM SHUI PO	27 DEGREES	;
KAI TAK RUNWAY PARK	28 DEGREES	;
YUEN LONG PARK	31 DEGREES	;
TAI MEI TUK	29 DEGREES	•

BETWEEN 10:45 AND 11:45 A.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE: NORTH DISTRICT 0 TO 12 MM; TAI PO 0 TO 9 MM; YUEN LONG 0 TO 7 MM; SAI KUNG 0 TO 3 MM; SHA TIN 0 TO 1 MM.

0.1 MILLIMETRE OF RAINFALL WAS RECORDED AT THE HONG KONG OBSERVATORY BETWEEN MIDNIGHT LAST NIGHT AND MIDDAY TODAY. DISPATCHED BY HONG KONG OBSERVATORY AT 12:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 093 - HOURLY READINGS

HOURLY READINGS

AT 1 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 4. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 3:00 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER NEW TERRITORIES.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

	•	DECEDERC
KING'S PARK		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING	30	DEGREES;
LAU FAU SHAN	30	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN	30	DEGREES;
TSEUNG KWAN O	30	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	29	DEGREES;
SHEK KONG	31	DEGREES;
TSUEN WAN HO KOON	27	DEGREES;
TSUEN WAN SHING MUN VALLEY	29	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	30	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	30	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	30	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	31	DEGREES;
TAI MEI TUK	29	DEGREES.

BETWEEN 11:45 A.M. AND 12:45 P.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

TAI PO	0	TO	5	MM;
NORTH DISTRICT	0	TO	4	MM;
SAI KUNG	0	TO	1	MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 13:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 101 - HOURLY READINGS

HOURLY READINGS

AT 2 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 6. THE INTENSITY OF UV RADIATION WAS HIGH.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	30	DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	29	DEGREES;
SHA TIN	31	DEGREES;
TUEN MUN	30	DEGREES;
TSEUNG KWAN O	30	DEGREES;
SAI KUNG	30	DEGREES;
CHEUNG CHAU	29	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	30	DEGREES;
SHEK KONG	31	DEGREES;
TSUEN WAN HO KOON	28	DEGREES;
TSUEN WAN SHING MUN VALLEY	30	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	31	DEGREES;
HAPPY VALLEY	31	DEGREES;
WONG TAI SIN	31	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	30	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	32	DEGREES;
TAI MEI TUK	31	DEGREES.

BETWEEN 12:45 AND 1:45 P.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

NORTH DISTRICT 0 TO 6 MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 14:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 109 - HOURLY READINGS

HOUKLI KLADINUS

AT 3 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 79 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 4:30 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER HONG KONG.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	30	DEGREES;
LAU FAU SHAN	30	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	31	DEGREES;
TUEN MUN	29	DEGREES;
TSEUNG KWAN O	31	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	31	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	30	DEGREES;
SHEK KONG	31	DEGREES;
TSUEN WAN HO KOON	29	DEGREES;
TSUEN WAN SHING MUN VALLEY	30	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	31	DEGREES;
WONG TAI SIN	30	DEGREES;
STANLEY	30	DEGREES;
KWUN TONG	30	DEGREES;
SHAM SHUI PO		DEGREES;
KAI TAK RUNWAY PARK		DEGREES;
YUEN LONG PARK	31	DEGREES;
TAI MEI TUK	28	DEGREES.
	-0	

BETWEEN 1:45 AND 2:45 P.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

TAI PO0 TO 10 MM;ISLANDS DISTRICT0 TO 9 MM;NORTH DISTRICT0 TO 6 MM;YUEN LONG0 TO 1 MM.DISPATCHED BY HONG KONG OBSERVATORY AT 15:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 117 - HOURLY READINGS

HOURLY READINGS

AT 4 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 74 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 4. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 5:30 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER NEW TERRITORIES EAST.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG	30	DEGREES;
TA KWU LING	30	DEGREES;
LAU FAU SHAN	30	DEGREES;
TAI PO	29	DEGREES;
SHA TIN	31	DEGREES;
TUEN MUN	30	DEGREES;
TSEUNG KWAN O	31	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	31	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	29	DEGREES;
SHEK KONG	30	DEGREES;
TSUEN WAN HO KOON	29	DEGREES;
TSUEN WAN SHING MUN VALLEY	31	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	31	DEGREES;
KOWLOON CITY	31	DEGREES;
HAPPY VALLEY	31	DEGREES;
WONG TAI SIN	31	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	32	DEGREES;
SHAM SHUI PO	30	DEGREES;
KAI TAK RUNWAY PARK	32	DEGREES;
YUEN LONG PARK	31	DEGREES;
TAI MEI TUK	28	DEGREES.

BETWEEN 2:45 AND 3:45 P.M., LIGHTNING WAS DETECTED WITHIN NEW TERRITORIES EAST. THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

NORTH DISTRICT	0	TO	6	MM;
TAI PO	0	TO	2	MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 16:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 129 - HOURLY READINGS

HOURLY READINGS

AT 5 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 75 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 5:30 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER NEW TERRITORIES EAST.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

	•	DEGDEEG
KING'S PARK		DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	27	DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	28	DEGREES;
TUEN MUN	29	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	30	DEGREES;
CHEK LAP KOK	29	DEGREES;
TSING YI	29	DEGREES;
SHEK KONG	30	DEGREES;
TSUEN WAN HO KOON	28	DEGREES;
TSUEN WAN SHING MUN VALLEY	30	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	30	DEGREES;
HAPPY VALLEY	31	DEGREES;
WONG TAI SIN	31	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	31	DEGREES;
YUEN LONG PARK	31	DEGREES;
TAI MEI TUK	27	DEGREES.

BETWEEN 3:45 AND 4:45 P.M., LIGHTNING WAS DETECTED WITHIN NEW TERRITORIES EAST. THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

NORTH	DISTRICT	0	TO	3	MM;
TSUEN	WAN	0	TO	3	MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 17:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 137 - HOURLY READINGS

HOURLY READINGS

AT 6 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 76 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.4. THE INTENSITY OF UV RADIATION WAS LOW.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	27	DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	//	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	29	DEGREES;
TSEUNG KWAN O	//	DEGREES;
SAI KUNG	28	DEGREES;
CHEUNG CHAU	29	DEGREES;
CHEK LAP KOK	29	DEGREES;
TSING YI	29	DEGREES;
SHEK KONG	29	DEGREES;
TSUEN WAN HO KOON	//	DEGREES;
TSUEN WAN SHING MUN VALLEY	29	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	//	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	30	DEGREES;
STANLEY	28	DEGREES;
KWUN TONG	29	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	30	DEGREES;
TAI MEI TUK	27	DEGREES.

BETWEEN 4:45 AND 5:45 P.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

NORTH DISTRICT	0	TO	4	MM;
SHA TIN	0	TO	1	MM;
YUEN LONG	0	TO	1	MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 18:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 145 - HOURLY READINGS

AT 7 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 28 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 83 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	28	DEGREES;
WONG CHUK HANG	28	DEGREES;
TA KWU LING	27	DEGREES;
LAU FAU SHAN	28	DEGREES;
TAI PO	27	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	27	DEGREES;
SAI KUNG	28	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	29	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	28	DEGREES;
TSUEN WAN HO KOON	27	DEGREES;
TSUEN WAN SHING MUN VALLEY	28	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	27	DEGREES;
KOWLOON CITY	28	DEGREES;
HAPPY VALLEY	29	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	28	DEGREES;
KWUN TONG	28	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	29	DEGREES;
TAI MEI TUK	26	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 19:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 151 - HOURLY READINGS

AT 8 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 83 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	28	DEGREES;
WONG CHUK HANG	28	DEGREES;
TA KWU LING	26	DEGREES;
LAU FAU SHAN	27	DEGREES;
TAI PO	27	DEGREES;
SHA TIN	28	DEGREES;
TUEN MUN	27	DEGREES;
TSEUNG KWAN O	27	DEGREES;
SAI KUNG	28	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	29	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	28	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	28	DEGREES;
SHAU KEI WAN	27	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	29	DEGREES;
WONG TAI SIN	28	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	27	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	28	DEGREES;
YUEN LONG PARK	27	DEGREES;
TAI MEI TUK	26	DEGREES.

BETWEEN 6:45 AND 7:45 P.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

YUEN LONG	0 TO 9 MM;
SHA TIN	0 TO 4 MM;
KWAI TSING	0 TO 1 MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 20:02 HKT ON 27.05.2020





#### PRESS WEATHER NO. 159 - HOURLY READINGS

AT 9 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 28 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 85 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	28	DEGREES;
WONG CHUK HANG	28	DEGREES;
TA KWU LING	26	DEGREES;
LAU FAU SHAN	26	DEGREES;
TAI PO	27	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	27	DEGREES;
TSEUNG KWAN O	27	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	26	DEGREES;
CHEK LAP KOK	28	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	28	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	28	DEGREES;
SHAU KEI WAN	27	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	28	DEGREES;
WONG TAI SIN	28	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	27	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	28	DEGREES;
YUEN LONG PARK	27	DEGREES;
TAI MEI TUK	26	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 21:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 165 - HOURLY READINGS

HOURLY READINGS

AT 10 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 28 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 85 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	27	DEGREES;
WONG CHUK HANG	28	DEGREES;
TA KWU LING	26	DEGREES;
LAU FAU SHAN	26	DEGREES;
TAI PO	27	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	27	DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	26	DEGREES;
CHEK LAP KOK	28	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	28	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	27	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	27	DEGREES;
TAI MEI TUK	26	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 22:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 169 - HOURLY READINGS

HOURLY READINGS

AT 11 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 28 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 86 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	27	DEGREES;
WONG CHUK HANG	28	DEGREES;
TA KWU LING	26	DEGREES;
LAU FAU SHAN	26	DEGREES;
TAI PO	27	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	26	DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	26	DEGREES;
CHEK LAP KOK	28	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	27	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	28	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	27	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	28	DEGREES;
YUEN LONG PARK	26	DEGREES;
TAI MEI TUK	26	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 23:02 HKT ON 27.05.2020



#### PRESS WEATHER NO. 004 - HOURLY READINGS

AT MIDNIGHT AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 28 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 86 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KINGLO DADK	07	DECDEEC
KING'S PARK		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	27	DEGREES;
TAI PO	26	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	26	DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	26	DEGREES;
CHEK LAP KOK	28	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	26	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	27	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	28	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	27	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK		DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 00:02 HKT ON 28.05.2020



#### PRESS WEATHER NO. 010 - HOURLY READINGS

HOUKLI KLADINUS

AT 1 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 28 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 86 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	27	DEGREES;
WONG CHUK HANG	27	DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	26	DEGREES;
TAI PO	26	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	26	DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	26	DEGREES;
CHEK LAP KOK	28	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	27	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	28	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	27	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	26	DEGREES;
TAI MEI TUK	26	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 01:02 HKT ON 28.05.2020



#### PRESS WEATHER NO. 014 - HOURLY READINGS

AT 2 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 27 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 85 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	27	DEGREES;
WONG CHUK HANG	27	DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	25	DEGREES;
TAI PO	25	DEGREES;
SHA TIN	26	DEGREES;
TUEN MUN	26	DEGREES;
TSEUNG KWAN O	25	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	25	DEGREES;
CHEK LAP KOK	27	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	26	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	27	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	27	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	26	DEGREES;
TAI MEI TUK	25	DEGREES.

BETWEEN 0:45 AND 1:45 A.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

TAI PO	0 TO 1 MM;
TSUEN WAN	0 TO 1 MM;
YUEN LONG	0 TO 1 MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 02:02 HKT ON 28.05.2020





#### PRESS WEATHER NO. 018 - HOURLY READINGS

HOURLY READINGS

AT 3 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 27 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 84 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	27	DEGREES;
WONG CHUK HANG	26	DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	25	DEGREES;
TAI PO	25	DEGREES;
SHA TIN	25	DEGREES;
TUEN MUN	25	DEGREES;
TSEUNG KWAN O	25	DEGREES;
SAI KUNG	26	DEGREES;
CHEUNG CHAU	25	DEGREES;
CHEK LAP KOK	27	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	25	DEGREES;
TSUEN WAN HO KOON	24	DEGREES;
TSUEN WAN SHING MUN VALLEY	25	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	26	DEGREES;
HAPPY VALLEY	26	DEGREES;
WONG TAI SIN	26	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	26	DEGREES;
SHAM SHUI PO	26	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	25	DEGREES;
TAI MEI TUK	25	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 03:02 HKT ON 28.05.2020



#### PRESS WEATHER NO. 024 - HOURLY READINGS

AT 4 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 27 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 84 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	27	DEGREES;
WONG CHUK HANG	27	DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	25	DEGREES;
TAI PO	25	DEGREES;
SHA TIN	26	DEGREES;
TUEN MUN	26	DEGREES;
TSEUNG KWAN O	25	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	25	DEGREES;
CHEK LAP KOK	27	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	25	DEGREES;
TSUEN WAN HO KOON	24	DEGREES;
TSUEN WAN SHING MUN VALLEY	25	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	26	DEGREES;
HAPPY VALLEY	27	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	26	DEGREES;
KWUN TONG	26	DEGREES;
SHAM SHUI PO	26	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	25	DEGREES;
YUEN LONG PARK TAI MEI TUK		

DISPATCHED BY HONG KONG OBSERVATORY AT 04:02 HKT ON 28.05.2020



#### PRESS WEATHER NO. 028 - HOURLY READINGS

AT 5 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 27 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 87 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK		DEGREES;
WONG CHUK HANG	27	DEGREES;
TA KWU LING	25	DEGREES;
LAU FAU SHAN	25	DEGREES;
TAI PO	25	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN		DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	25	DEGREES;
CHEK LAP KOK	27	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	25	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	26	DEGREES;
HAPPY VALLEY	27	DEGREES;
WONG TAI SIN	26	DEGREES;
STANLEY	26	DEGREES;
KWUN TONG	26	DEGREES;
SHAM SHUI PO	26	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK	26	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 05:02 HKT ON 28.05.2020



#### PRESS WEATHER NO. 038 - HOURLY READINGS

AT 6 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 27 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 88 PER CENT.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK		DEGREES;
WONG CHUK HANG	27	DEGREES;
TA KWU LING	26	DEGREES;
LAU FAU SHAN	25	DEGREES;
TAI PO	26	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	26	DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	25	DEGREES;
CHEK LAP KOK	27	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	25	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	26	DEGREES;
HAPPY VALLEY	27	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	26	DEGREES;
KWUN TONG	26	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	25	DEGREES;
TAI MEI TUK	26	DEGREES.

BETWEEN 4:45 AND 5:45 A.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

SOUTHERN DISTRICT 0 TO 1 MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 06:02 HKT ON 28.05.2020



#### PRESS WEATHER NO. 044 - HOURLY READINGS

AT 7 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 27 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 93 PER

THE AIR TEMPERATURES AT OTHER PLACES WERE:

CENT.

KINGLO DADK	26	DECDEEC
KING'S PARK		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN	26	DEGREES;
TAI PO	26	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	26	DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	26	DEGREES;
CHEUNG CHAU	26	DEGREES;
CHEK LAP KOK	27	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	26	DEGREES;
TSUEN WAN HO KOON	25	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	26	DEGREES;
HAPPY VALLEY	27	DEGREES;
WONG TAI SIN	26	DEGREES;
STANLEY	26	DEGREES;
KWUN TONG	26	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	26	DEGREES;
TAI MEI TUK	26	DEGREES.

BETWEEN 5:45 AND 6:45 A.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

EASTERN DISTRICT	0	TO	1	MM;
SAI KUNG	0	TO	1	MM;
KWUN TONG	0	TO	1	MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 07:02 HKT ON 28.05.2020





#### PRESS WEATHER NO. 050 - HOURLY READINGS

HOURLY READINGS

AT 8 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 27 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 90 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.3. THE INTENSITY OF UV RADIATION WAS LOW.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	26	DEGREES;
WONG CHUK HANG	27	DEGREES;
TA KWU LING	27	DEGREES;
LAU FAU SHAN	27	DEGREES;
TAI PO	26	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	27	DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	28	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	27	DEGREES;
WONG TAI SIN	26	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	26	DEGREES;
SHAM SHUI PO	27	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	27	DEGREES;
TAI MEI TUK	26	DEGREES.

BETWEEN 6:45 AND 7:45 A.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

WONG TAI SIN	0	TO 2	MM;
SAI KUNG	0	TO 1	MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 08:02 HKT ON 28.05.2020



#### PRESS WEATHER NO. 058 - HOURLY READINGS

HOURLY READINGS

AT 9 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 28 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 86 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 2. THE INTENSITY OF UV RADIATION WAS LOW.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	28	DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	27	DEGREES;
LAU FAU SHAN	27	DEGREES;
TAI PO	26	DEGREES;
SHA TIN	27	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	26	DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	29	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	29	DEGREES;
TSUEN WAN HO KOON	27	DEGREES;
TSUEN WAN SHING MUN VALLEY	28	DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	26	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	29	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	26	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	28	DEGREES;
TAI MEI TUK	27	DEGREES.

BETWEEN MIDNIGHT AND 9 A.M. THE MINIMUM TEMPERATURE WAS 26.7 DEGREES CELSIUS AT THE HONG KONG OBSERVATORY.

DISPATCHED BY HONG KONG OBSERVATORY AT 09:02 HKT ON 28.05.2020





#### PRESS WEATHER NO. 066 - HOURLY READINGS

HOURLY READINGS

AT 10 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 28 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 85 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	28	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
TAT PO		,
		DEGREES;
SHA TIN	27	,
TUEN MUN		DEGREES;
TSEUNG KWAN O		DEGREES;
SAI KUNG	27	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	28	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	29	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY		DEGREES;
HONG KONG PARK	27	DEGREES;
SHAU KEI WAN	27	DEGREES;
KOWLOON CITY	27	DEGREES;
HAPPY VALLEY	28	DEGREES;
WONG TAI SIN	27	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	27	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	27	DEGREES;
YUEN LONG PARK	29	DEGREES;
TAI MEI TUK	26	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 10:02 HKT ON 28.05.2020





# 4<sup>th</sup> Impact Odour Monitoring



# Fourth Operation Phase Odour Impact Monitoring Report

Impact Odour Monitoring -  $H_2S$  Measurement for Tuen Mun Area 54 Sewage Pumping Station | Hong Kong

0118/19/ED/0442 01 | 11 September 2020 For review Mott Macdonald Hong Kong Limited

## **Document Control**

## **Document Information**

Project Title	Impact Odour Monitoring - Hydrogen Sulphide Measurement for Tuen Mun Area 54 Sewage Pumping Station	
Document Title Fourth Operation Phase Odour Impact Monitoring Report		
Fugro Project No.	0118/19	
Fugro Document No.	nent No. 0118/19/ED/0442	
Issue Number	01	
Issue Status	For review	
Fugro Legal Entity	Fugro Technical Services Limited	
Issuing Office Address	Room 723-726, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong	

## **Client Information**

Client	Mott Macdonald Hong Kong Limited		
Client Address 3/F, Mapletree Bay Point, 348 Kwun Tong Road, Kowloon, Hong Kong			
Client Contact 2828 5697			
Client Facsimile	2827 1823		

## **Revision History**

Issue	Date	Status	Comments on Content	Prepared By	Checked By	Approved By
01	04 September 2020	For Review	Awaiting client comments	VL	LMK	AC

## **Project Team**

Initials	Name	Role
AC	Arthur Cheng	Project Manager
LMK	Lui Mang Kwok	Senior Environmental Consultant
VL	Vincent Lu	Environmental Consultant





## **Executive Summary**

Fugro Technical Services Limited (FTS) has been appointed by Mott MacDonald Hong Kong Limited, the Project Environmental Team (ET) of Tuen Mun Area 54 Sewage Pumping Station (TMA54SPS) to undertake the operation phase impact odour monitoring for the project.

This is the fourth monitoring report for the Odour Impact Monitoring of TMA54SPS, prepared by Fugro Technical Services Limited for submission to Mott MacDonald Hong Kong Limited.

This report presents the results obtained from the fourth operation phase impact odour monitoring carried out from 02 September 2020 to 03 September 2020 during the operation of TMA54SPS.

Exceedance of Action and Limit level at A5 were recorded. Exceedance of Action level at A2 was recorded.

In this reporting period, there were no records of odour complaint received.



i

## Contents

#### **Executive Summary**

	-	
1.	Introduction	1
1.1	Background	1
1.2	Project Description	1
1.3	Monitoring Arrangement	2
2.	Odour Impact Monitoring	4
2.1	Methodology	4
2.2	Sampling Duration	4
2.3	Monitoring Locations	4
2.4	Quality Assurance / Quality Control	4
3.	Monitoring Results	5
3.1	Weather Conditions and Other Factors	5
3.2	Monitoring Results	5
4.	Odour Complaint	5
5.	Conclusion and Recommendations	5
-		

# Appendices

Monitoring Station
Photographs of Monitoring Stations
Monitoring Results
Site Record
Data Logger Record
Calibration Certificates
Meteorological Conditions

# **Tables in the Main Text**

Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)	3
Table 1.2 Tentative Monitoring Programme	3
Table 2.1 Equipment for Baseline Odour Monitoring	4
Table 2.2 Monitoring Locations	4
Table 3.1 Summary of Monitoring Results	5



## Abbreviations

ASRs	Air Sensitive Receivers
DSD	Drainage Services Department
LandsD	Lands Department
ET	Environmental Team
EM&A	Environmental Monitoring and Audit
H <sub>2</sub> S	Hydrogen Sulphide
ММНК	Mott MacDonald Hong Kong Limited
FTS	Fugro Technical Services Limited
TMA54SPS	Tuen Mun Area 54 Sewage Pumping Station
OU	Odour Unit



## 1. Introduction

### 1.1 Background

To cope with a shortfall in flat supply and a rise in housing demand, Tuen Mun Area 54 was identified by the Government as one of the areas having the potential for housing development. Thus, the New Territories West Development Office of Territory Development Department completed the "Planning and Development Study of Potential Housing Site in Area 54, Tuen Mun" in 1999. The Study put forward proposals on housing types, development parameters and planning layouts and assessed the development impacts on transport network, infrastructural capacities and environmental quality.

According to the Review of Tuen Mun and Tsing Yi Sewerage Master Plans, a new sewage pumping station is needed to convey sewage collected from Tuen Mun Area 54 to existing trunk sewers at Ming Kum Road. Other than Tuen Mun Area 54, TMA54SPS will also collect sewage from four recognized villages within Area 54 including Tsz Tin Tsuen, Po Tong Ha, Kei Lun Wai and Siu Hang Tsuen, and the proposed Tuen Mun North Sewage Pumping Station in Area 52. TMA54SPS has a capacity of about 90,000m<sup>3</sup> per day; the design average dry weather flow is approximately 0.32m<sup>3</sup>/s.

TMA54SPS is located in the central part of Site 4A of Tuen Mun Area 54, north of Kei Lun Wai, south of Tsz Tin Tsuen and west of Site 2 of Tuen Mun Area 54. Site 4A is zoned "Government, Institution or Community" on the Tuen Mun Outline Zoning Plan No. S/TM/22 and is reserved for school development. **Appendix A** shows the location of TMA54SPS. Construction work for TMA54SPS is substantially completed and commissioning is anticipated in February 2018.

TMA54SPS is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449). A study of Environmental Impact Assessment (EIA) has been carried out to evaluate the environmental impacts associated with the project. An EIA Report and an Environmental Monitoring and Audit (EM&A) Manual were approved by the Environmental Protection Department (EPD) on 12 November 2008. An Environmental Permit (EP) No. EP-381/2009 was issued on 4 January 2010 for TMA54SPS to the Civil Engineering and Development Department as the Permit Holder. The EP stipulates that an EM&A programme is required to ensure mitigation measures recommended in the EIA Report and the EM&A Manual are implemented during the construction and operation of TMA54SPS.

### 1.2 Project Description

FTS was commissioned to carry out operation phase odour impact monitoring for Mott MacDonald Hong Kong Limited for the project of TMA54SPS.

The EIA study of TMA54SPS has identified odour emissions from the sewage pumping station as the main potential air quality impact. To reduce odour emissions from the operation of TMA54SPS, it is recommended in the EIA Report that wet wells and screen chambers, the main



sources of odour, should be enclosed in a building structure. A deodorizing unit should also be installed; in order to treat vented air before it would be discharged into the atmosphere.

Furthermore, odour monitoring is required as per the EM&A Manual prior to and during the initial operation of TMA54SPS. The purpose of the odour impact monitoring is to indicate whether the odour concentration would be higher or lower than the baseline condition.

#### 1.3 Monitoring Arrangement

According to the EM&A Manual, gaseous hydrogen sulphide (H<sub>2</sub>S) is one of the main components of odour emissions. Ambient H<sub>2</sub>S concentration can serve as a surrogate indicator for sewage odours as it can be readily monitored at the Air Sensitive Receivers (ASRs).

The odour impact monitoring shall be conducted in the first year upon commissioning of TMA54SPS. Odour Impact Monitoring would be conducted every three months for the first year of operation for TMA54SPS. However, due to some major technical issues (e.g. review of H<sub>2</sub>S measurement method, monitoring locations and level of measurement, etc), the commencement of the impact odour monitoring was deferred from March 2018 to October 2019. In addition, as discussed between DSD and EPD, measurement results from the impact odour monitoring with that obtained in the baseline odour monitoring without any adjustments / air modelling applied. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation of the TMA54SPS, the odour monitoring will be extended until the odour concentration at the ASR in consecutive 2 times are below the limit levels (once for 3 months). Action and Limit Levels for Air Quality in operation phase are given in **Table 1.1**.

As regards the locations of odour monitoring stations, it is noticed that there are 3 odour monitoring stations selected in the EM&A Manual (i.e. A3-A5) are currently located in private lots which are not accessible for the ET to conduct the impact odour monitoring at a height of 10m above ground level, while the remaining 2 stations (i.e. A1 and A2) fall within CEDD's construction sites (i.e. Government land). As the monitoring station "A5" which falls within the boundary of private open car park, alternative location of odour monitoring station for A5 was proposed. It is noted that the sites on both sides of the road connecting to TMA54SPS are all private land lots, expect that TMA54SPS and the road itself are on government land. The odour monitoring station "A5" should be relocated to somewhere on the road connecting to TMA54SPS. In addition, according to the contours of odour concentrations at 10m above ground, the original location of A5 is within 1 OU zone which is the furthest measurement point from TMA54SPS. As a prudent approach in determine the alternative location of odour monitoring station for A5, the new A5 is situated on the road connecting to TMA54SPS at a location within 4 OU zone which is close to TMA54SPS. In view of the land resumption programme, the impact odour monitoring will be spilt into two phases. The 1<sup>st</sup> phase will include the odour monitoring at the locations A1, A2 and new A5.

Regarding the above requirements, a monitoring programme is shown in Table 1.2.



Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)

Parameter	ASR	Action Level (ppb)	Limit Level (ppb)	
	A1	2.5	2.5	
	A2	2.3	2.5	
	A5	2.5	2.5	
odour - received through		Any incidence of odour complaint received through the Odour Complaint Register	Two or more complaints through the Odour Complaint Register within three months	

Note: Odour complaints are to be handled in accordance with the complaint registration system as mentioned in Section 2.26-2.29 of the EM&A Manual

#### Table 1.2 Monitoring Programme

For 1<sup>st</sup> phase impact odour monitoring at A1, A2 and new A5:

	1 <sup>st</sup> Monitoring Event	2 <sup>nd</sup> Monitoring Event	3 <sup>rd</sup> Monitoring Event	4 <sup>th</sup> Monitoring Event
Monitoring Dates	November 2019	February 2020	May 2020	September 2020*

Note: The fourth monitoring event was postponed to September 2020 due to the adverse weather.



# 2. Odour Impact Monitoring

### 2.1 Methodology

The H<sub>2</sub>S analyzer, type Jerome 631-X, was used for the impact monitoring. Grab air sample was drawn by built-in suction pump of the analyzer and passed through a gold film sensor. The electrical resistance of the gold film changes according to the change in mass of hydrogen sulphide in the gas sample.

The details of the equipment used for odour impact monitoring is presented in Table 2.1

		-			
Equipment	Manufacturer / Model	Serial Number	Sensor Number	Calibration Date	Next Calibration Date
Gold Film Hydrogen Sulphide Analyzer	JEROME X631 0003	2966	19-8-23-S4AS	17 October 2019	16 October 2020

Table 2.1 Equipment for Impact Odour Monitoring

#### 2.2 Sampling Duration

A 15-min integrated gaseous H<sub>2</sub>S sample was collected every 3 hours for a period of 24 hours at monitoring locations, in which five readings were recorded at every monitoring station during each 3-hour session. Maximum and minimum H<sub>2</sub>S levels for each monitoring station were recorded.

#### 2.3 Monitoring Locations

H<sub>2</sub>S measurements was taken at the sources and outside the premises of the identified ASRs as shown in **Table 2.2** and **Appendix A** show the descriptions and locations of the H<sub>2</sub>S monitoring stations.

Monitoring Station	Monitoring Location	Description
A1 <sup>1</sup>	Planned Secondary School	ASR
A2 <sup>1</sup>	Planned Primary School	ASR
A5 <sup>1</sup>	Road connecting to TMA54SPS	ASR
SPS <sup>1</sup>	Exhausted vent pipe of TMA54SP	Source

Table 2.2 Monitoring Locations

Note: <sup>1</sup>1<sup>st</sup> phase odour impact monitoring.

According to the EM&A Manual, the monitoring was taken at a height of predicted worst level of the receivers in the EIA (10 m ground level). Photos showing the monitoring setup are included in **Appendix B**.

### 2.4 Quality Assurance / Quality Control

In order to ensure the analyzer is functioning properly, manual sensor regeneration and zero adjustment were performed before each set of odour monitoring.

Calibration of the analyzer is conducted every year at the laboratory of the manufacturer. The calibration certificates for the analyzers are shown in **Appendix F**.



## 3. Monitoring Results

### 3.1 Weather Conditions and Other Factors

The fourth monitoring event for the odour impact monitoring for TMA54SPS was conducted from 02 September 2020 (approx. 11:00 am) to 03 September 2020 (approx. 10:59 am).

The weather was mainly fine and wind was mainly mild during the monitoring event. An anemometer was used for measuring wind speed and wind direction presented in the site record in **Appendix D**. Meteorological conditions of 02 September 2020 and 03 September 2020 obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station are shown in **Appendix G**. Meteorological data was obtained as reference information for the analysis of the exceedance event.

No significant odour sources from the project site were observed during the impact monitoring period.

### 3.2 Monitoring Results

The monitoring results are summarised in **Table 3.1**. Details of monitoring data are shown in **Appendix C** (24-hour average, maximum and minimum H<sub>2</sub>S concentration), **Appendix D** (site record) and **Appendix E** (data logger record).

Monitoring Station	Monitoring Location	24-hour Average H <sub>2</sub> S Concentration (ppb)
A1 <sup>1</sup>	Planned Secondary School	2.4
A2 <sup>1</sup>	Planned Primary School	2.4
A5 <sup>1</sup>	Road connecting to TMA54SPS	2.8
SPS	Exhausted vent pipe of TMA54SP	2.7

Table 3.1 Summary of Monitoring Results

Note: <sup>1</sup> Air Sensitive Receiver.

## 4. Odour Complaint

There were no complaints received in relation to the environmental impact during the reporting period.

## 5. Conclusion and Recommendations

The fourth monitoring event for the odour impact monitoring was carried out from 02 September 2020 to 03 September 2020.

Odour impact monitoring of hydrogen sulphide (H<sub>2</sub>S) was conducted at four monitoring stations including three Air Sensitive Receivers around TMA54SPS and at source. Exceedance of Action and Limit level at A5 were recorded. Exceedance of Action level at A2 was recorded.

At A2, it is observed that 2 out of the 8 sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A2 is higher than at source. At Sample 2 and 3, the  $H_2S$  concentration at A2 is 14 – 17% higher than at source. Under the above observations, it is



considered that the source is not the major contributor to H<sub>2</sub>S concentration at A2 during sample 2 and 3, and thus the exceedance at A2 is not project related.

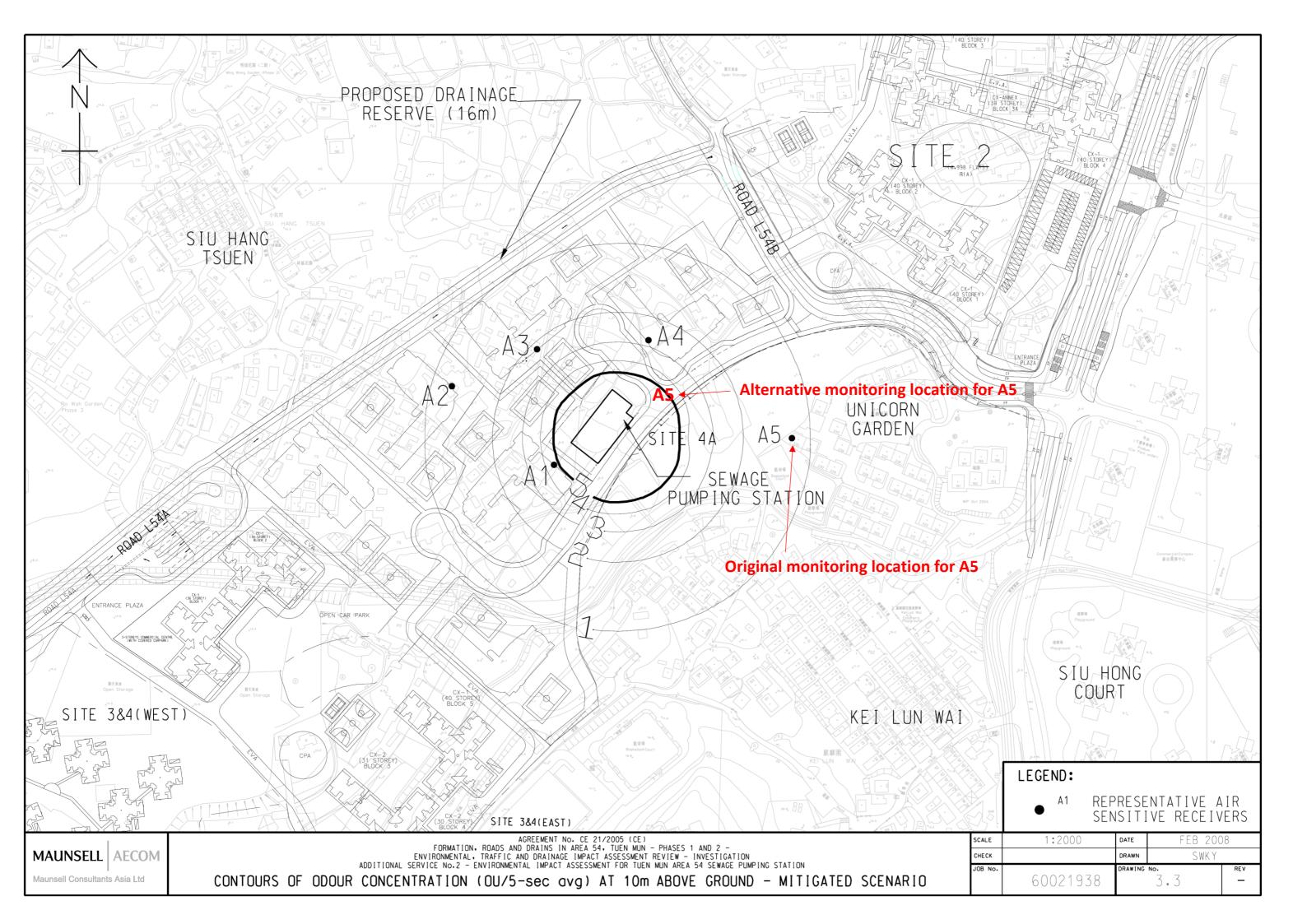
At A5, it is observed that 2 out of the 8 sampling events throughout the 24-hours monitoring period, the  $H_2S$  concentration at A5 is higher than at source. At Sample 2 and 3, the  $H_2S$  concentration at A5 is 17-57% higher than at source. Under the above observations, it is considered that the source is not the major contributor to  $H_2S$  concentration at A5 during Sample 2 and 3, and thus the exceedance at A5 is not project related.



# **Appendix A**

**Monitoring Station** 







# **Appendix B**

Photographs of Monitoring

Stations





A1







A5



Source



# **Appendix C**

**Monitoring Results** 



		24-hour Average H <sub>2</sub> S Concentration (ppb)							
Monitoring	Time	4 <sup>th</sup> Event for Phase One Odour Impact Monitoring (02 – 03 September 2020							
Station	Interval	15-minute integrated average	24-hour average	Maximum	Minimum	Action Level	Exceedance	Limit Level	Exceedance
	1100-1400	3.4	2.4				Ν	2.5	Ν
-	1400-1700	2.6		3.4	1.4	2.5			
	1700-2000	3.4							
	2000-2300	2.0							
A1	2300-0200	2.4		5.4	1.4	2.5	IN	2.5	
	0200-0500	2.2							
	0500-0800	1.4							
	0800-1100	1.4							
	1100-1400	2.2						2.5	Ν
	1400-1700	2.8			2.0	2.3	Y		
	1700-2000	2.4							
A2	2000-2300	2.0	2.4	2.8					
AZ	2300-0200	2.2	2.4					2.5	IN
	0200-0500	2.4							
	0500-0800	2.4							
	0800-1100	2.6							
	1100-1400	2.8			1.6	2.5	Y	2.5	Y
	1400-1700	5.6	2.8						
	1700-2000	2.4							
45	2000-2300	2.6		5.6					
A5	2300-0200	2.4							
	0200-0500	2.4							
	0500-0800	1.6							
	0800-1100	2.4							
	1100-1400	2.8					N/A		
	1400-1700	2.4							
	1700-2000	2.0							
CDC	2000-2300	2.8	2.7	2.4	2.0	N/A		N/A	N1/A
SPS	2300-0200	2.4		3.4	2.0				N/A
	0200-0500	2.4							
	0500-0800	3.0							
	0800-1100	3.4							



# **Appendix D**

Site Record



Monitoring	Station		General I	nformation			
Monitoring Station Date		<u> </u>					
		2/9/2020					
Weath	er		F-	ine			
			Monitori	ng Results			
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)		
Sample 1	Start:	1200			0,004,0.004,0.00		
Sumple 1	Stop:	1215		/	0,093,0,092		
Sample 2	Start:	1430	0.4		0,002,0,003,0,00		
Sumple 2	Stop:	445	G	NW			
Sample 3	Start:	1735		/1 /	0,002,0002,00		
Sumple S	Stop:	1750	0,2	NW			
Sample 4	Start:	2040			0,02,002,002,0002		
Sumple 4	Stop:	2055	/	/	0,002,0002		
Sample 5	Start:	2330		1	0,003,0,003,01002		
Sumple S	Stop:	2345	(		6, acz , d, coz		
Sample 6	Start:	0230	/	/	0.002, 0.003,01006		
Sumple 0	Stop:	0) 45	/		0.002, 0,0c2		
Sample 7	Start:	0530			0.002/0.002/0.00		
Sumple /	Stop:	0548	/	/	Crack Oreal		
Sample 8	Start:	0830			A		
	Stop:	0845	/	/	0,001,0001,002		
ner Observati	ons						

# Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

Recorded by:

(v) [sa

Checked by:

th Vintend Lu EC

<u>Signature</u>

<u>Date</u> 2 ( 9/2020 4 / 4 / 2020

fugro

			General In	formation	
Monitoring	Station		A	2	
Date		2/	9/2	020	
Weath	er	1		zige	
		4	Monitori	ng Results	
Sample No		Time	Wind Speed	Wind Direction	Level(ppm)
Sampla 1	Start:	1130			0,002,0,002
Sample 1	Stop: (	145	0	01	0,003,0,002,0,002
Sample 2	Start:	400			0,004,0,003,0,002
Sample 2	Stop:	215	0	Ø	0,002, 0,007
Sample 3	Start:	700			0,002, 0,002 0,003, 0,003, 0,002
Sample 5	Stop:	715		/	0,002, 0,002
Sample 4	Start: 7	100			0,002 Ld.0.2,0,00)
Sumple 4	Stop: 2	015			0,002,0,002
Sample 5	Start: 🧎	800			0,002,0,000,0000
	Stop: 2	315	$\left( \right)$	/	
Sample 6	Start: 02	00			0,002,0002,0.003
	Stop: 0	215	/	/	0,003, 0,co2
Sample 7	Start: Ø	00			0,002,0,002,0.
		0515		_	0,002,0,007
Sample 8	Start: 🔿	800			0,002 10.002 10.00
		815	-		0.003 0.007
her Observati	ions	,			
		Name & Des	ignation	Signa	ture <u>Date</u>
corded by:		Ting	Tw	$\sim$	2/9/2020
ecked by:		View		- 1	2 ( ) 2 - 2

## Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

;

incens Lu EL

an

414/2020 **Fugro** 

			General Ir	nformation				
<b>Monitoring Station</b>		AL						
Date		2/9/2020						
Weath	er			Fine	-			
Monitoring Results								
Sample No		Time		Wind Direction	Level(ppm)			
Sample 1	Start: Stop:	1230	0.6	A16/	0,004,0,002,0,002			
Sample 2	Stop. Start:	1455		100	0,004,0,002 0,005,0.005,0,0006			
Sample 2	Stop:	1510	/	<				
Sample 3	Start:	1755	/		0,005,0,007			
	Stop: Start:	1810			0,002,0.002			
Sample 4	Stop:	2120	/	/	0,002,0,0,0,2,003 0,003, 0,007			
Sample 5	Start:	2355		- /	Q1002, 01002,000			
	Stop:	20010			0,003,0,003			
Sample 6	Start:	0300	/		0,002,0,002,0002			
•	Stop:	03/5			0,00310,003			
Sample 7	Start:	0555			C.002 / 0.002 10,002			
	Stop:	0610	/	_	0,001 0,001			
Sample 8	Start:	0850	/		0.003, 0.001 10,000			
) ther Observat	Stop:	0905		-	0.003,0.093			
		Name & Desi		Signa				
ecorded by:		Tiy a	>)	$\sim$	2/9/2020			
hecked by:		Vincent L	n EC	Ta	7 414/2020			

## Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

0

e

4/4/ 2020 **TUGRO** 

	General Information									
Monitoring	Monitoring Station		8							
Date		2/9/2020								
Weath	ner			Fine						
	Monitoring Results									
Sample No		Time		Wind Direction	Level(ppm)					
Sample 1	Start:	250		,	0,003, 0,003,0,002					
	Stop:	305	/	/	0,003,0,003,0,002					
Sample 2	Start: /	510	-	2	0,003,0,003,0,002					
	Stop:	221	/	/	0,002, 0,002					
Sample 3	Start:	1820			0,002,0,002,0,002					
	Stop: (	835		_	0,002,0,002					
Sample 4	Start:	2130		/	0,00210,004,0,°02					
	Stop:	2145		/	0,003,0,002					
Sample 5	Cton	Po 20	/	/	0,002 10,002 0,00					
	Stop: <u>C</u> Start:				0,003,010.3					
Sample 6		0525	/		0.003,0003,000					
	Stop: ( Start:	540			0,092,0,002					
Sample 7		0620		/	0,003,0,003					
	Stop: Start:	0651		/	6,003,0.003 10,003					
Sample 8		6710		/	6,005,0,004,0,004					
Other Observat		c125			0,002,0,002					
	ň.									
		Name & Desig		Signat						
Recorded by:	/	ting (	(v)	N	2/9/2020					
Checked by:	2	Vincent L	n El	to	T 2/9/2020 7 4/9/2020					

UGRO

# Air Quality (H<sub>2</sub>S) Monitoring Data Record Sheet

# **Appendix E**

Data Logger Record



Site Name: Address:		Area 54 SPS Area 54 SPS	Techni Instrum Comme Date/Ti	nent: ent:		1-X, SN 2966 2020 11:50am	Page 1 of 6
						(1999)	
1 +	1月 <b>-02-2020</b>	DATE/TIME	:21am	0.002	RESULT	(ppm)	
	1月-02-2020 1月-02-2020		:21am	0.002			
	七月-02-2020		:21am	0.002	A2		
	七月-02-2020		:21am	0.002			
,	七月-02-2020		:21am	0.002			
	九月-02-2020		:17pm	/111	]	End Of Session	
	1月-02-2020		17pm	0.004			
	1月-02-2020		17pm	0.004			
	1月 <b>-02-2020</b>	12:06	17pm	0.004	A1		
<b>10</b> <i>†</i>	1月 <b>-02-2020</b>	12:09	:17pm	0.003			
<b>11</b> <i>†</i>	九月-02-2020	12:12	:17pm	0.002			
<b>12</b> <i>†</i>	九月-02-2020	12:30	:04pm	/111	]	End Of Session	
<b>13</b> <i>†</i>	1月-02-2020	12:30	:04pm	0.004			
<b>14</b> <i>†</i>	1月 <b>-02-2020</b>	12:33	:04pm	0.002			
<b>15</b> <i>†</i>	1月 <b>-02-2020</b>	12:36	:04pm	0.002	A5		
<b>16</b> <i>†</i>	1月 <b>-02-2020</b>	12:39	:04pm	0.004			
<b>17</b> <i>†</i>	1月-02-2020	12:42	:04pm	0.002			
<b>18</b> <i>†</i>	九月-02-2020	12:50	:31pm	/111		End Of Session	
<b>19</b> <i>†</i>	九月-02-2020	12:50	:31pm	0.003			
<b>20</b> <i>f</i>	1月 <b>-02-2020</b>	12:53	:31pm	0.003			
<b>21</b> <i>†</i>	1月 <b>-02-2020</b>	12:56	:31pm	0.002	Source		
<b>22</b> <i>f</i>	1月 <b>-02-2020</b>	12:59	:31pm	0.003			
<b>23</b> <i>†</i>	1月 <b>-02-2020</b>	01:02	:31pm	0.003			
<b>24</b> <i>†</i>	九月 <b>-02-2020</b>	02:00	:51pm	/111	_	End Of Session	
<b>25</b> <i>†</i>	1月-02-2020	02:00	:51pm	0.004			
<b>24</b> <i>†</i>	1月-02-2020	02:03	:51pm	0.003			
<b>25</b> <i>†</i>	1月 <b>-02-2020</b>	02:06	:51pm	0.003	A2		
<b>28</b> <i>†</i>	1月 <b>-02-2020</b>	02:09	:51pm	0.002			
<b>29</b> <i>†</i>	1月 <b>-02-2020</b>	02:12	:51pm	0.002			
<b>30</b> <i>†</i>	九月-02-2020	02:30	:55pm	/111		End Of Session	
<b>31</b> <i>†</i>	1月 <b>-02-2020</b>	02:30	:55pm	0.003			
<b>32</b> <i>†</i>	1月 <b>-02-2020</b>	02:33	:55pm	0.003			
<b>33</b> <i>†</i>	1月 <b>-02-2020</b>	02:36	:55pm	0.003	A1		
<b>34</b> <i>†</i>	1月 <b>-02-2020</b>	02:39	:55pm	0.002			
<b>35</b> <i>†</i>	1月 <b>-02-2020</b>	02:42	:55pm	0.002			
<b>36</b> 1	九月-02-2020	02:55	:26pm	/111		End Of Session	

Site Name: Address:	Tuen Mun Area 54 SPS Tuen Mun Area 54 SPS	Sample Loca Technician: Instrument: Comment: Date/Time: Alarm Setpo		Inlet 631-1, 631-X, SN 2966 九月-04-2020 11:50am <b>0 (ppm)</b>	
	DATE/TIME			RESULT (ppm)	
37 九月	∃-02-2020	02:55:26pm	0.005		
38 九月	∃-02-2020	02:58:26pm	0.005		
39 九月	∃-02-2020	03:01:26pm	0.006	A5	
40 九月	∃-02-2020	03:04:26pm	0.005		
41 九月	∃-02-2020	03:07:26pm	0.007		
42 九月	∃-02-2020	03:20:47pm	/111	End Of Session	
43 九月	∃-02-2020	03:20:47pm	0.003		
44 九月	∃-02-2020	03:23:47pm	0.003		
45 九月	∃-02-2020	03:26:47pm	0.002	Source	
46 九月	∃-02-2020	03:29:47pm	0.002		
47 九月	∃-02-2020	03:32:47pm	0.002		
48 九月	∃-02-2020	05:00:33pm	/111	End Of Session	
49 九月	∃-02-2020	05:00:33pm	0.003		
50 九月	∃-02-2020	05:03:33pm	0.003		
51 九月	∃-02-2020	05:06:33pm	0.002	A2	
52 九月	∃-02-2020	05:09:33pm	0.002		
53 九月	∃-02-2020	05:12:33pm	0.002		
54 九月	∃-02-2020	05:35:16pm	/111	End Of Session	
55 九月	∃-02-2020	05:35:16pm	0.003		
56 九月	∃-02-2020	05:38:16pm	0.002		
57 九月	∃-02-2020	05:41:16pm	0.004	A1	
58 九月	∃-02-2020	05:44:16pm	0.004		
59 九月	∃-02-2020	05:47:16pm	0.004		
60 九月	∃-02-2020	05:55:46pm	/111	End Of Session	
61 九月	∃-02-2020	05:55:46pm	0.003		
62 九月	∃-02-2020	05:58:46pm	0.003		
63 九月	∃-02-2020	06:01:46pm	0.002	A5	
64 九月	∃-02-2020	06:04:46pm	0.002		
65 九月	∃-02-2020	06:07:46pm	0.002		
66 九月	∃-02-2020	06:20:45pm	/111	End Of Session	
67 九月	∃-02-2020	06:20:45pm	0.002		
68 九月	∃-02-2020	06:23:45pm	0.002		
69 九月	∃-02-2020	06:26:45pm	0.002	Source	
70 九月	∃-02-2020	06:29:45pm	0.002		
71 九月	∃-02-2020	06:32:45pm	0.002		
72 九月	∃-02-2020	08:00:13pm	/111	End Of Session	

Page 2 of 6

Site Nam Address:		54 SPS Technic Instrum Comme Date/Tir	ent: nt:		I-X, SN 2966 2020 11:50am
	DAT	re/time		RESULT (	(ppm)
73	九月 <b>-02-2020</b>	08:00:13pm	0.002		
74	九月 <b>-02-2020</b>	08:03:13pm	0.002		
75	九月 <b>-02-2020</b>	08:06:13pm	0.002	A2	
76	九月 <b>-02-2020</b>	08:09:13pm	0.002		
77	九月 <b>-02-2020</b>	08:12:13pm	0.002		
78	九月 <b>-02-2020</b>	08:40:07pm	/111		End Of Session
79	九月 <b>-02-2020</b>	08:40:07pm	0.002	]	
80	九月 <b>-02-2020</b>	08:43:07pm	0.002		
81	九月 <b>-02-2020</b>	08:46:07pm	0.002	A1	
82	九月 <b>-02-2020</b>	08:49:07pm	0.002		
83	九月 <b>-02-2020</b>	08:52:07pm	0.002		
84	九月 <b>-02-2020</b>	09:05:11pm	/111	_	End Of Session
85	九月 <b>-02-2020</b>	09:05:11pm	0.002		
86	九月 <b>-02-2020</b>	09:08:11pm	0.002		
87	九月 <b>-02-2020</b>	09:11:11pm	0.003	A5	
88	九月 <b>-02-2020</b>	09:14:11pm	0.003		
89	九月 <b>-02-2020</b>	09:17:11pm	0.003		
90	九月 <b>-02-2020</b>	09:30:04pm	/111		End Of Session
91	九月 <b>-02-2020</b>	09:30:04pm	0.002		
92	九月 <b>-02-2020</b>	09:33:04pm	0.004		
93	九月 <b>-02-2020</b>	09:36:04pm	0.002	Source	
94	九月 <b>-02-2020</b>	09:39:04pm	0.003		
95	九月 <b>-02-2020</b>	09:42:04pm	0.003		
96	九月 <b>-02-2020</b>	11:00:06pm	/111	_	End Of Session
97	九月 <b>-02-2020</b>	11:00:06pm	0.002		
98	九月 <b>-02-2020</b>	11:03:06pm	0.002		
99	九月 <b>-02-2020</b>	11:06:06pm	0.002	A2	
100	九月 <b>-02-2020</b>	11:09:06pm	0.002		
101	九月 <b>-02-2020</b>	11:12:06pm	0.003		
102	九月 <b>-02-2020</b>	11:30:29pm	/111	_	End Of Session
103	九月 <b>-02-2020</b>	11:30:29pm	0.003		
104	九月 <b>-02-2020</b>	11:33:29pm	0.003		
105	九月 <b>-02-2020</b>	11:36:29pm	0.002	A1	
106	九月 <b>-02-2020</b>	11:39:29pm	0.002		
107	九月 <b>-02-2020</b>	11:42:29pm	0.002		
108	九月 <b>-02-2020</b>	11:55:25pm	/111	_	End Of Session

Page 3 of 6

Site Nam Address		•	1: 1:	Inlet 631-1, 631- 九月-04-20 <b>0 (ppm)</b>	X, SN 2966 )20 11:50am	
				,		Page 4 of 6
	DA	TE/TIME		RESULT (p	opm)	
109	九月 <b>-02-2020</b>	11:55:25pm	0.002			
110	九月 <b>-02-2020</b>	11:58:25pm	0.002			
111	九月 <b>-03-2020</b>	00:01:25am	0.002	A5		
112	九月 <b>-03-2020</b>	00:04:25am	0.003			
113	九月 <b>-03-2020</b>	00:07:25am	0.003			
114	九月 <b>-03-2020</b>	00:20:31am	/111		End Of Session	
115	九月 <b>-03-2020</b>	00:20:31am	0.002			
116	九月 <b>-03-2020</b>	00:23:31am	0.002			
117	九月 <b>-03-2020</b>	00:26:31am	0.002	Source		
118	九月 <b>-03-2020</b>	00:29:31am	0.003			
119	九月 <b>-03-2020</b>	00:32:31am	0.003			
120	九月 <b>-03-2020</b>	02:00:11am	/111		End Of Session	
121	九月 <b>-03-2020</b>	02:00:11am	0.002			
122	九月 <b>-03-2020</b>	02:03:11am	0.002			
123	九月 <b>-03-2020</b>	02:06:11am	0.003	A2		
124	九月 <b>-03-2020</b>	02:09:11am	0.003			
125	九月 <b>-03-2020</b>	02:12:11am	0.002			
126	九月 <b>-03-2020</b>	02:30:39am	/111		End Of Session	
127	九月 <b>-03-2020</b>	02:30:39am	0.002			
128	九月 <b>-03-2020</b>	02:33:39am	0.003			
129	九月 <b>-03-2020</b>	02:36:39am	0.002	A1		
130	九月 <b>-03-2020</b>	02:39:39am	0.002			
131	九月 <b>-03-2020</b>	02:42:39am	0.002			
132	九月 <b>-03-2020</b>	03:00:44am	/111		End Of Session	
133	九月 <b>-03-2020</b>	03:00:44am	0.002			
134	九月 <b>-03-2020</b>	03:03:44am	0.002			
135	九月 <b>-03-2020</b>	03:06:44am	0.002	A5		
136	九月 <b>-03-2020</b>	03:09:44am	0.003			
137	九月 <b>-03-2020</b>	03:12:44am	0.003			
138	九月 <b>-03-2020</b>	03:25:27am	/111		End Of Session	
139	九月 <b>-03-2020</b>	03:25:27am	0.003			
140	九月 <b>-03-2020</b>	03:28:27am	0.003			
141	九月 <b>-03-2020</b>	03:31:27am	0.002	Source		
142	九月 <b>-03-2020</b>	03:34:27am	0.002			
143	九月 <b>-03-2020</b>	03:37:27am	0.002			
144	九月 <b>-03-2020</b>	05:00:35am	/111		End Of Session	

Site Name Address:			Area 54 SPS Area 54 SPS		Sample I Technici Instrume Commen Date/Tim Alarm Se	ian: ent: nt: ne:	:			1-X, SN 2966 2020 11:50am	F
			DATE/TIME					F	RESULT	(ppm)	
145	九月	-03-2020		05:00:35	am	0.	002				
146	九月	-03-2020		05:03:35	am	0.	002				
147	九月	-03-2020		05:06:35	am	0.	002		A2		
148	九月	-03-2020		05:09:35	am	0.	003				
149	九月	-03-2020		05:12:35	am	0.	003				
150	九月	-03-2020		05:30:03	am		/111			End Of Session	
151	九月	-03-2020		05:30:03	am	0.	002				
152	九月	-03-2020		05:33:03	am	0.	002				
153	九月	-03-2020		05:36:03	am	0.	001		A1		
154	九月	-03-2020		05:39:03	am	0.	001				
155	九月	-03-2020		05:42:03	am	0.	001				
156	九月	-03-2020		05:55:23	lam		/111			End Of Session	
157	九月	-03-2020		05:55:23	am	0.	002				
158	九月	-03-2020		05:58:23	am	0.	002				
159	九月	-03-2020		06:01:23	am	0.	002		A5		
160	九月	-03-2020		06:04:23	am	0.	001				
161	九月	-03-2020		06:07:23	am	0.	001				
162	九月	-03-2020		06:20:09	am		/111			End Of Session	
163	九月	-03-2020		06:20:09	am	0.	003				
164	九月	-03-2020		06:23:09	am	0.	003				
165	九月	-03-2020		06:26:09	am	0.	003		Source		
166	九月	-03-2020		06:29:09	am	0.	003				
167	九月	-03-2020		06:32:09	am	0.	003				
168	九月	-03-2020		08:00:26	am		/111			End Of Session	
169	九月	-03-2020		08:00:26	am	0.	002				
170	九月	-03-2020		08:03:26	am	0.	002				
171	九月	-03-2020		08:06:26	am	0.	003		A2		
172	九月	-03-2020		08:09:26	am	0.	003				
173	九月	-03-2020		08:12:26	am	0.	003				
174	九月	-03-2020		08:30:38	am		/111			End Of Session	
175	九月	-03-2020		08:30:38	am	0.	002				
176	九月	-03-2020		08:33:38	am	0.	002				
177	九月	-03-2020		08:36:38	am	0.	001		A1		
178	九月	-03-2020		08:39:38	am	0.	001				
179	九月	-03-2020		08:42:38	am	0.	001				
180	九月	-03-2020		08:50:11	am		/111			End Of Session	

Page 5 of 6

Site Nam Address			e Location:	Inlet	
Address	. Tuen Mun A	Instrur Comm	ment:	631-1, 631-X, SN 2966	
		Date/T	ïme:	九月-04-2020 11:50am	
		Alarm	Setpoint:	0 (ppm)	Page 6 of 6
		DATE/TIME	-	RESULT (ppm)	
181	九月-03-2020	08:50:11am	0.003		
182	九月-03-2020	08:53:11am	0.001		
183	九月-03-2020	08:56:11am	0.002	A5	
184	九月 <b>-03-2020</b>	08:59:11am	0.003		
185	九月 <b>-03-2020</b>	09:02:11am	0.003		
186	九月-03-2020	09:10:26am	/111	End Of Session	
187	九月 <b>-03-2020</b>	09:10:26am	0.005		
188	九月-03-2020	09:13:26am	0.004		
189	九月 <b>-03-2020</b>	09:16:26am	0.004	Source	
190	九月-03-2020	09:19:26am	0.002		
191	九月 <b>-03-2020</b>	09:22:26am	0.002		
		Readings: Minimum: Maximum: Average: SD:	160 0.001 0.007 0.00254 0.00093		

# **Appendix F**

**Calibration Certificates** 





#### **Certification of Instrument Calibration**

Guyline (Asia) Ltd Rm 1611, Eastern Harbour Centre Quarry Bay,

This is to certify that the Jerome X631 0003 Gold Film Hydrogen Sulfide Analyzer, Serial Number 2966, with Sensor Number 19-8-23-S4AS, was calibrated with standard units traceable to NIST.

Calibration Status as Received:			Out of Calibration				
Actual			Calibration Gas		ation Gas	Allowable Range	
Incoming:	Range 1 RSD %	0.094 11.33	ppm H2S	0.500	ppm H2S	+/- 6% <5%	
Outgoing:	Range 1 RSD %	0.518 2.11	ppm H2S	0.500	ppm H2S	+/- 6% <5%	

Calibration Status as Left:

ft: In Calibration

Estimated Uncertainty of Calibration System: 2.8%

Calibration Date: 17-Oct-2019

Recalibration Date: 16-Oct-2020

Temperature °F: 70.60

% Relative Humidity: 32.90

Jackie Kreitlow Approved By:

Title: Jackie Kreitlow - Quality Control

Equipment Used:

H2S Calibration Standard: CC-75664 NIST#: 1467976 Calibration Date: 25-Sep-2018 Calibration Date Due: 25-Sep-2021

Mass Flow Controller B: 124604 NIST#: 215457 Calibration Date: 13-Dec-2018 Calibration Date Due: 13-Dec-2019

Mass Flow Controller D: 124602 NIST#: 215454 Calibration Date: 13-Dec-2018 Calibration Date Due: 13-Dec-2019

Digital Multimeter: <u>74620505</u> NIST#: <u>7003079</u> Calibration Date: <u>05-Apr-2019</u> Calibration Date Due: <u>05-Apr-2020</u>

Flowmeter: <u>US04I26032</u> NIST#: <u>1813</u>; <u>1817</u>; <u>1796</u> Calibration Date: <u>12-Aug-2019</u> Calibration Date Due: <u>12-Aug-2020</u>

Calibration Procedure Used: 730-0032

AMETEK Brookfield certifies that the above listed instrument meets or exceeds all published specifications and has been calibrated using standards whose accuracy are traceable to the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY within the limitations of the Institute's calibration services, or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of self-calibration techniques.

Disclaimer: Any unauthorized adjustments, removal or breaking of QC seals, or other customer modifications on your Jerome Analyzer WILL VOID this factory calibration. Because any of the above acts could affect the calibration and readings of the instrument, their certification will no longer be valid and, further, AMETEK Brookfield WILL NOT be responsible for any liabilities created as a result of using the instrument after such adjustments, seal removal, or modifications.

As long as a functional test is within range, according to the procedure outlined in the Operator's Manual, the instrument is performing correctly.

This document shall not be reproduced, except in full, without the written approval of AMETEK Brookfield.

RMA# 2694299

Date Approved: 18-Oct-2019

# **Appendix G**

# **Meteorological Conditions**



10-Minute Mean Wind Direction at the nearest Hong Kong Observatory's Tuen Mun Weather Station: 十分鐘平均風向及風速 10-minute mean wind VŖ VŖE VŖ 8 Δ 03/09/2020 02/09/2020 香 港 時 閬 (時) Hong Kong Time (Hour) (C) 香港天文 含 Hong Kong Observatory TUN

10-Minute Mean Wind Speed at the nearest Hong Kong Observatory's Tuen Mun Weather Station: (於香港時間 2020 年 9月 3日10時50分更新) (Updated at 10:50H on 3 Sep 2020) (公里/小時) (km/h) ЛA n 10 10:50 02/09/2020 港時間 (時) Hong Kong Time (Hour) 03/09/2020 香 ⓒ 春港天文 含 Hong Kong Observatory



Date	Time	Weather Parameters					
Date	Time	Temperature	Wind Direction	Wind Speed (km/hour			
	1100	33	NW	6.0			
_	1200	34	SE	6.0			
	1300	33		6.0			
	1400	34	NW	12.0			
	1500	33	NW	10.0			
	1600	32		6.0			
 02 September 2020	1700	30	SE	8.0			
	1800	30	SE	8.0			
	1900	29	SE	6.0			
	2000	29	SE	6.0			
-	2100	29		0.0			
	2200	28	SE	4.0			
	2300	28	SE	1.0			
	2400	28	SE	1.0			
	0100	28		1.0			
	0200	28		1.0			
	0300	28		1.0			
	0400	27		1.0			
	0500	27		0.0			
03 September 2020 —	0600	27		1.0			
_	0700	28		0.0			
_	0800	29	NE	2.0			
_	0900	31		1.0			
-	1000	33	NW	4.0			

#### Meteorological conditions during the fourth operation phase odour impact monitoring





#### PRESS WEATHER NO. 074 - HOURLY READINGS

AT 11 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 31 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 71 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 6. THE INTENSITY OF UV RADIATION WAS HIGH.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	32	DEGREES;
WONG CHUK HANG	32	DEGREES;
TA KWU LING	33	DEGREES;
LAU FAU SHAN	31	DEGREES;
TAI PO	32	DEGREES;
SHA TIN	34	DEGREES;
TUEN MUN	33	DEGREES;
TSEUNG KWAN O	34	DEGREES;
SAI KUNG	33	DEGREES;
CHEUNG CHAU	31	DEGREES;
CHEK LAP KOK	32	DEGREES;
TSING YI	31	DEGREES;
SHEK KONG	33	DEGREES;
TSUEN WAN HO KOON	31	DEGREES;
TSUEN WAN SHING MUN VALLEY	33	DEGREES;
HONG KONG PARK	33	DEGREES;
SHAU KEI WAN	33	DEGREES;
KOWLOON CITY	33	DEGREES;
HAPPY VALLEY	35	DEGREES;
WONG TAI SIN	33	DEGREES;
STANLEY	32	DEGREES;
KWUN TONG	34	DEGREES;
SHAM SHUI PO	33	DEGREES;
KAI TAK RUNWAY PARK	33	DEGREES;
YUEN LONG PARK	34	DEGREES;
TAI MEI TUK	35	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 11:02 HKT ON 02.09.2020





#### PRESS WEATHER NO. 080 - HOURLY READINGS

HOURLY READINGS

AT NOON AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 32 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 69 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 7. THE INTENSITY OF UV RADIATION WAS HIGH.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

WONG CHUK HANG33 DEGREES;TA KWU LING34 DEGREES;LAU FAU SHAN32 DEGREES;TAI PO32 DEGREES;SHA TIN34 DEGREES;TUEN MUN34 DEGREES;SAI KUNG34 DEGREES;CHEUNG CHAU33 DEGREES;CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
LAU FAU SHAN32 DEGREES;TAI PO32 DEGREES;SHA TIN34 DEGREES;TUEN MUN34 DEGREES;TSEUNG KWAN O34 DEGREES;SAI KUNG34 DEGREES;CHEUNG CHAU33 DEGREES;CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
TAI PO32 DEGREES;SHA TIN34 DEGREES;TUEN MUN34 DEGREES;TSEUNG KWAN O34 DEGREES;SAI KUNG34 DEGREES;CHEUNG CHAU33 DEGREES;CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
SHA TIN34 DEGREES;TUEN MUN34 DEGREES;TSEUNG KWAN O34 DEGREES;SAI KUNG34 DEGREES;CHEUNG CHAU33 DEGREES;CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
TUEN MUN34 DEGREES;TSEUNG KWAN O34 DEGREES;SAI KUNG34 DEGREES;CHEUNG CHAU33 DEGREES;CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
TSEUNG KWAN O34 DEGREES;SAI KUNG34 DEGREES;CHEUNG CHAU33 DEGREES;CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
SAI KUNG34 DEGREES;CHEUNG CHAU33 DEGREES;CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
CHEUNG CHAU33 DEGREES;CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
CHEK LAP KOK33 DEGREES;TSING YI32 DEGREES;
TSING YI 32 DEGREES;
SHEK KONG 34 DEGREES;
TSUEN WAN HO KOON 31 DEGREES;
TSUEN WAN SHING MUN VALLEY 33 DEGREES;
HONG KONG PARK 33 DEGREES;
SHAU KEI WAN 35 DEGREES;
KOWLOON CITY 34 DEGREES;
HAPPY VALLEY 35 DEGREES;
WONG TAI SIN 35 DEGREES;
STANLEY 32 DEGREES;
KWUN TONG 34 DEGREES;
SHAM SHUI PO 34 DEGREES;
KAI TAK RUNWAY PARK 33 DEGREES;
YUEN LONG PARK 35 DEGREES;
TAI MEI TUK 35 DEGREES.

NO RAINFALL WAS RECORDED AT THE HONG KONG OBSERVATORY BETWEEN MIDNIGHT LAST NIGHT AND MIDDAY TODAY.

DISPATCHED BY HONG KONG OBSERVATORY AT 12:02 HKT ON 02.09.2020



#### PRESS WEATHER NO. 088 - HOURLY READINGS

HOURLY READINGS

AT 1 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 33 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 67 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 8. THE INTENSITY OF UV RADIATION WAS VERY HIGH.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	33	DEGREES;
WONG CHUK HANG	33	DEGREES;
TA KWU LING	35	DEGREES;
LAU FAU SHAN	32	DEGREES;
TAI PO	33	DEGREES;
SHA TIN	35	DEGREES;
TUEN MUN	33	DEGREES;
TSEUNG KWAN O	34	DEGREES;
SAI KUNG	34	DEGREES;
CHEUNG CHAU	34	DEGREES;
CHEK LAP KOK	34	DEGREES;
TSING YI	33	DEGREES;
SHEK KONG	34	DEGREES;
TSUEN WAN HO KOON	31	DEGREES;
TSUEN WAN SHING MUN VALLEY	33	DEGREES;
HONG KONG PARK	34	DEGREES;
SHAU KEI WAN	33	DEGREES;
KOWLOON CITY	35	DEGREES;
HAPPY VALLEY	35	DEGREES;
WONG TAI SIN	34	DEGREES;
STANLEY	32	DEGREES;
KWUN TONG	35	DEGREES;
SHAM SHUI PO	35	DEGREES;
KAI TAK RUNWAY PARK	33	DEGREES;
YUEN LONG PARK	35	DEGREES;
TAI MEI TUK	35	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 13:02 HKT ON 02.09.2020





#### PRESS WEATHER NO. 096 - HOURLY READINGS

AT 2 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 34 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 62 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 6. THE INTENSITY OF UV RADIATION WAS HIGH.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 3:00 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER HONG KONG.

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	33	DEGREES;
WONG CHUK HANG	33	DEGREES;
TA KWU LING	26	DEGREES;
LAU FAU SHAN	33	DEGREES;
TAI PO	31	DEGREES;
SHA TIN	35	DEGREES;
TUEN MUN	34	DEGREES;
TSEUNG KWAN O	34	DEGREES;
SAI KUNG	33	DEGREES;
CHEUNG CHAU	33	DEGREES;
CHEK LAP KOK	34	DEGREES;
TSING YI	34	DEGREES;
SHEK KONG	35	DEGREES;
TSUEN WAN HO KOON	31	DEGREES;
TSUEN WAN SHING MUN VALLEY	33	DEGREES;
HONG KONG PARK	33	DEGREES;
SHAU KEI WAN	33	DEGREES;
KOWLOON CITY	33	DEGREES;
HAPPY VALLEY	34	DEGREES;
WONG TAI SIN	35	DEGREES;
STANLEY	32	DEGREES;
KWUN TONG	35	DEGREES;
SHAM SHUI PO	34	DEGREES;
KAI TAK RUNWAY PARK	34	DEGREES;
YUEN LONG PARK	36	DEGREES;
TAI MEI TUK	32	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 14:02 HKT ON 02.09.2020



#### PRESS WEATHER NO. 104 - HOURLY READINGS

AT 3 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 32 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 67 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 5:00 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER HONG KONG.

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	30	DEGREES;
WONG CHUK HANG	33	DEGREES;
TA KWU LING	29	DEGREES;
LAU FAU SHAN	33	DEGREES;
TAI PO	30	DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN	33	DEGREES;
TSEUNG KWAN O	27	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	33	DEGREES;
CHEK LAP KOK	34	DEGREES;
TSING YI	29	DEGREES;
SHEK KONG	34	DEGREES;
TSUEN WAN HO KOON	30	DEGREES;
TSUEN WAN SHING MUN VALLEY	30	DEGREES;
HONG KONG PARK	32	DEGREES;
SHAU KEI WAN	31	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	34	DEGREES;
WONG TAI SIN	28	DEGREES;
STANLEY	33	DEGREES;
KWUN TONG	28	DEGREES;
SHAM SHUI PO	26	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	35	DEGREES;
TAI MEI TUK	28	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 15:02 HKT ON 02.09.2020



#### PRESS WEATHER NO. 108 - HOURLY READINGS

AT 4 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.9. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 5:00 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER HONG KONG.

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

WINGLO DIDY	•	DEGDEEG
KING'S PARK		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING	30	DEGREES;
LAU FAU SHAN	28	DEGREES;
TAI PO	29	DEGREES;
SHA TIN	31	DEGREES;
TUEN MUN	32	DEGREES;
TSEUNG KWAN O	28	DEGREES;
SAI KUNG	30	DEGREES;
CHEUNG CHAU	33	DEGREES;
CHEK LAP KOK	33	DEGREES;
TSING YI	29	DEGREES;
SHEK KONG	32	DEGREES;
TSUEN WAN HO KOON	28	DEGREES;
TSUEN WAN SHING MUN VALLEY	30	DEGREES;
HONG KONG PARK	30	DEGREES;
SHAU KEI WAN	28	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	29	DEGREES;
WONG TAI SIN	28	DEGREES;
STANLEY	27	DEGREES;
KWUN TONG	29	DEGREES;
SHAM SHUI PO	//	DEGREES;
KAI TAK RUNWAY PARK	28	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK		DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 16:02 HKT ON 02.09.2020



#### PRESS WEATHER NO. 126 - HOURLY READINGS

AT 5 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 70 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.4. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE THUNDERSTORM WARNING HAS BEEN ISSUED. IT WILL REMAIN EFFECTIVE UNTIL 6:30 P.M. TODAY. ISOLATED THUNDERSTORMS ARE EXPECTED TO OCCUR OVER HONG KONG. THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	31	DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	30	DEGREES;
SHA TIN	31	DEGREES;
TUEN MUN	30	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	30	DEGREES;
CHEUNG CHAU	31	DEGREES;
CHEK LAP KOK	32	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	31	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	30	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	28	DEGREES;
KWUN TONG	30	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	31	DEGREES;
TAI MEI TUK	30	DEGREES.

BETWEEN 3:45 AND 4:45 P.M., LIGHTNING WAS DETECTED OVER ALL REGIONS. THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

DISPATCHED BY HONG KONG OBSERVATORY AT 17:02 HKT ON 02.09.2020



#### PRESS WEATHER NO. 136 - HOURLY READINGS

AT 6 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 31 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 69 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

VINCED DODY	20	DECDEEC
KING'S PARK		DEGREES;
WONG CHUK HANG	30	DEGREES;
TA KWU LING	31	DEGREES;
LAU FAU SHAN	30	DEGREES;
TAI PO	30	DEGREES;
SHA TIN	31	DEGREES;
TUEN MUN	30	DEGREES;
TSEUNG KWAN O	28	DEGREES;
SAI KUNG	30	DEGREES;
CHEUNG CHAU	30	DEGREES;
CHEK LAP KOK	32	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	31	DEGREES;
TSUEN WAN HO KOON	27	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	30	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	30	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	30	DEGREES;
YUEN LONG PARK	31	DEGREES;
TAI MEI TUK	29	DEGREES.

BETWEEN 4:45 AND 5:45 P.M., LIGHTNING WAS DETECTED WITHIN LANTAU, HONG KONG AND KOWLOON. THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

ISLANDS DISTRICT

0 TO 1 MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 18:02 HKT ON 02.09.2020



#### PRESS WEATHER NO. 144 - HOURLY READINGS

AT 7 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 31 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 73 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	30	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN	30	DEGREES;
TAI PO	29	DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN	29	DEGREES;
TSEUNG KWAN O	28	DEGREES;
SAI KUNG	30	DEGREES;
CHEUNG CHAU	29	DEGREES;
CHEK LAP KOK	31	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	30	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	30	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	30	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	31	DEGREES;
TAI MEI TUK	29	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 19:02 HKT ON 02.09.2020





#### PRESS WEATHER NO. 150 - HOURLY READINGS

HOURLY READINGS

AT 8 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 31 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 77 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	30	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN	30	DEGREES;
TAI PO	29	DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN	29	DEGREES;
TSEUNG KWAN O	28	DEGREES;
SAI KUNG	30	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	31	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	29	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	30	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	30	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	32	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	30	DEGREES;
TAI MEI TUK	29	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 20:02 HKT ON 02.09.2020





#### PRESS WEATHER NO. 156 - HOURLY READINGS

AT 9 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 81 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	30	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
TAI PO		DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN		DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	31	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	29	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	30	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	32	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	30	DEGREES;
TAI MEI TUK	29	DEGREES.

BETWEEN 7:45 AND 8:45 P.M., THE RAINFALL RECORDED IN VARIOUS REGIONS WERE:

NORTH DISTRICT 0 TO 1 MM.

DISPATCHED BY HONG KONG OBSERVATORY AT 21:02 HKT ON 02.09.2020



#### PRESS WEATHER NO. 164 - HOURLY READINGS

HOURLY READINGS

AT 10 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 83 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	20	DECDEEC.
		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
TAI PO	29	DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	31	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	28	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	32	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	30	DEGREES;
TAI MEI TUK	29	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 22:02 HKT ON 02.09.2020





#### PRESS WEATHER NO. 168 - HOURLY READINGS

HOURLY READINGS

AT 11 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 82 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	30	DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	27	DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	29	DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	31	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	28	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	30	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	29	DEGREES;
TAI MEI TUK	29	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 23:02 HKT ON 02.09.2020





#### PRESS WEATHER NO. 004 - HOURLY READINGS

AT MIDNIGHT AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 81 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	20	DECDEEC.
		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
TAI PO	29	DEGREES;
SHA TIN	30	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	28	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	27	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	29	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	29	DEGREES;
TAI MEI TUK	29	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 00:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 010 - HOURLY READINGS

AT 1 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 83 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	30	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	29	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	//	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	29	DEGREES;
TAI MEI TUK	29	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 01:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 014 - HOURLY READINGS

AT 2 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 85 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING	26	DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	29	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	28	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	28	DEGREES;
TAI MEI TUK	28	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 02:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 018 - HOURLY READINGS

HOURLY READINGS

AT 3 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 86 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	28	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	28	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	28	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	29	DEGREES;
WONG TAI SIN	28	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	28	DEGREES;
YUEN LONG PARK	28	DEGREES;
TAI MEI TUK	28	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 03:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 026 - HOURLY READINGS

AT 4 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 86 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN	28	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	28	DEGREES;
TUEN MUN	27	DEGREES;
TSEUNG KWAN O	28	DEGREES;
SAI KUNG	28	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	29	DEGREES;
TSING YI	27	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	28	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	28	DEGREES;
WONG TAI SIN	28	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	27	DEGREES;
TAI MEI TUK	28	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 04:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 030 - HOURLY READINGS

AT 5 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 86 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	29	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING	26	DEGREES;
LAU FAU SHAN	28	DEGREES;
TAI PO	28	DEGREES;
SHA TIN	28	DEGREES;
TUEN MUN	27	DEGREES;
TSEUNG KWAN O	28	DEGREES;
SAI KUNG	28	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	28	DEGREES;
SHAU KEI WAN	30	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	28	DEGREES;
WONG TAI SIN	28	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	28	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	27	DEGREES;
TAI MEI TUK	28	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 05:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 042 - HOURLY READINGS

AT 6 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 84 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	20	DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
		-
TAI PO		DEGREES;
SHA TIN		DEGREES;
TUEN MUN		DEGREES;
TSEUNG KWAN O		DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	27	DEGREES;
CHEK LAP KOK	29	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	26	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	28	DEGREES;
SHAU KEI WAN		DEGREES;
KOWLOON CITY		DEGREES;
HAPPY VALLEY		DEGREES;
WONG TAI SIN		DEGREES;
STANLEY		DEGREES;
KWUN TONG		DEGREES;
SHAM SHUI PO		DEGREES;
KAI TAK RUNWAY PARK		
		DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK	28	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 06:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 052 - HOURLY READINGS

AT 7 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 29 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 84 PER CENT.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	20	DECDEEC.
		DEGREES;
WONG CHUK HANG		DEGREES;
TA KWU LING		DEGREES;
LAU FAU SHAN		DEGREES;
TAI PO	28	DEGREES;
SHA TIN	29	DEGREES;
TUEN MUN	28	DEGREES;
TSEUNG KWAN O	29	DEGREES;
SAI KUNG	29	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	30	DEGREES;
TSING YI	28	DEGREES;
SHEK KONG	27	DEGREES;
TSUEN WAN HO KOON	27	DEGREES;
TSUEN WAN SHING MUN VALLEY	26	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	29	DEGREES;
KOWLOON CITY	29	DEGREES;
HAPPY VALLEY	29	DEGREES;
WONG TAI SIN	29	DEGREES;
STANLEY	28	DEGREES;
KWUN TONG	31	DEGREES;
SHAM SHUI PO	29	DEGREES;
KAI TAK RUNWAY PARK	29	DEGREES;
YUEN LONG PARK	28	DEGREES;
TAI MEI TUK	29	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 07:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 060 - HOURLY READINGS

AT 8 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 85 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.4. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	30	DEGREES;
WONG CHUK HANG	29	DEGREES;
TA KWU LING	28	DEGREES;
LAU FAU SHAN	29	DEGREES;
TAI PO	29	DEGREES;
SHA TIN	31	DEGREES;
TUEN MUN	29	DEGREES;
TSEUNG KWAN O	30	DEGREES;
SAI KUNG	31	DEGREES;
CHEUNG CHAU	28	DEGREES;
CHEK LAP KOK	31	DEGREES;
TSING YI	29	DEGREES;
SHEK KONG	29	DEGREES;
TSUEN WAN HO KOON	27	DEGREES;
TSUEN WAN SHING MUN VALLEY	28	DEGREES;
HONG KONG PARK	29	DEGREES;
SHAU KEI WAN	31	DEGREES;
KOWLOON CITY	31	DEGREES;
HAPPY VALLEY	30	DEGREES;
WONG TAI SIN	31	DEGREES;
STANLEY	29	DEGREES;
KWUN TONG	32	DEGREES;
SHAM SHUI PO	30	DEGREES;
KAI TAK RUNWAY PARK	30	DEGREES;
YUEN LONG PARK	30	DEGREES;
TAI MEI TUK	30	DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 08:02 HKT ON 03.09.2020





#### PRESS WEATHER NO. 066 - HOURLY READINGS

AT 9 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 30 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 83 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	30	DEGREES;
WONG CHUK HANG	32	DEGREES;
TA KWU LING	30	DEGREES;
LAU FAU SHAN	30	DEGREES;
TAI PO	30	DEGREES;
SHA TIN	32	DEGREES;
TUEN MUN	31	DEGREES;
TSEUNG KWAN O	32	DEGREES;
SAI KUNG	33	DEGREES;
CHEUNG CHAU	30	DEGREES;
CHEK LAP KOK	32	DEGREES;
TSING YI	31	DEGREES;
SHEK KONG	31	DEGREES;
TSUEN WAN HO KOON	30	DEGREES;
TSUEN WAN SHING MUN VALLEY	30	DEGREES;
HONG KONG PARK	31	DEGREES;
SHAU KEI WAN	32	DEGREES;
KOWLOON CITY	32	DEGREES;
HAPPY VALLEY	32	DEGREES;
WONG TAI SIN	33	DEGREES;
STANLEY	31	DEGREES;
KWUN TONG	34	DEGREES;
SHAM SHUI PO	32	DEGREES;
KAI TAK RUNWAY PARK	31	DEGREES;
YUEN LONG PARK	33	DEGREES;
TAI MEI TUK	31	DEGREES.

BETWEEN MIDNIGHT AND 9 A.M. THE MINIMUM TEMPERATURE WAS 29.2 DEGREES CELSIUS AT THE HONG KONG OBSERVATORY.

DISPATCHED BY HONG KONG OBSERVATORY AT 09:02 HKT ON 03.09.2020



#### PRESS WEATHER NO. 076 - HOURLY READINGS

HOURLY READINGS

AT 10 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 31 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 75 PER CENT. DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE VERY HOT WEATHER WARNING IS NOW IN FORCE. THE PUBLIC SHOULD BEWARE OF HEATSTROKE AND DRINK MORE WATER.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	31	DEGREES;
WONG CHUK HANG	32	DEGREES;
TA KWU LING	32	DEGREES;
LAU FAU SHAN	31	DEGREES;
TAI PO	31	DEGREES;
SHA TIN	34	DEGREES;
TUEN MUN	33	DEGREES;
TSEUNG KWAN O	34	DEGREES;
SAI KUNG	33	DEGREES;
CHEUNG CHAU	31	DEGREES;
CHEK LAP KOK	33	DEGREES;
TSING YI	32	DEGREES;
SHEK KONG	32	DEGREES;
TSUEN WAN HO KOON	30	DEGREES;
TSUEN WAN SHING MUN VALLEY	33	DEGREES;
HONG KONG PARK	32	DEGREES;
SHAU KEI WAN	34	DEGREES;
KOWLOON CITY	32	DEGREES;
HAPPY VALLEY	34	DEGREES;
WONG TAI SIN	34	DEGREES;
STANLEY	31	DEGREES;
KWUN TONG	34	DEGREES;
SHAM SHUI PO	34	DEGREES;
KAI TAK RUNWAY PARK	33	DEGREES;
YUEN LONG PARK		DEGREES;
TAI MEI TUK		DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 10:02 HKT ON 03.09.2020





# 2<sup>nd</sup> Impact Odour Monitoring

Project	Tuen Mun Area 54 Sewage Pumping Station
Date	From 18 Feb 2020 (11am) to 19 Feb 2020 (10:59am), Total 24hrs
Time	From 18 Feb 2020 (11am) to 19 Feb 2020 (10:59am), Total 24hrs
Monitoring Location	A2 (Planned Primary School)
Parameter	Odour (H <sub>2</sub> S concentration)
Action & Limit Levels	Action Level: 2.3 ppb Limit Level: 2.5 ppb
Measured Level	24-hr average H <sub>2</sub> S conc.: 2.6 ppb
Possible reason for Action or Limit Level Non- compliance	<ol> <li>At A2, it is observed that half of the sampling events throughout the 24-hrs monitoring period, the H<sub>2</sub>S conc. at A2 is higher than at source.</li> <li>Also, at Sample 3 &amp; 4, the H<sub>2</sub>S conc. at A2 is 31-44% higher than at source.</li> <li>Under the above observations, it is considered that the source is not the major contributor to H<sub>2</sub>S conc. at A2 during sample 3 &amp; 4, and thus the exceedance at A2 is not project related.</li> </ol>
Actions taken / to be taken	Since the exceedance at A2 is not project related, therefore, no remedial actions is recommended.
Remarks / Other Observations	<ol> <li>Refer to the site observation at A2 during the monitoring period, no significant H<sub>2</sub>S source was identified.</li> <li>Detailed monitoring data will be presented in the Second Operation Phase Odour Impact Monitoring Report and to be deposit to EPD for record.</li> </ol>

Prepared by:

Thomas CHAN

Designation:

Signature:

Environmental Team Leader (ETL) the

Date:

24 Feb 2020

# 3<sup>rd</sup> Impact Odour Monitoring

Project	Tuen Mun Area 54 Sewage Pumping Station
Date	From 27 May 2020 (11am) to 28 May 2020 (10:59am), Total 24hrs
Time	From 27 May 2020 (11am) to 28 May 2020 (10:59am), Total 24hrs
Monitoring Location	A1 (Planned Primary School)
Parameter	Odour (H <sub>2</sub> S concentration)
Action & Limit Levels	Action Level: 2.5 ppb Limit Level: 2.5 ppb
Measured Level	24-hr average H <sub>2</sub> S conc.: 2.7 ppb
Possible reason for Action or Limit Level Non- compliance	<ol> <li>At A1, it is observed that 3 of the 8 sampling events throughout the 24-hrs monitoring period, the H<sub>2</sub>S conc. at A1 is higher than at source.</li> <li>Also, at Sample 2, 3 &amp; 5, the H<sub>2</sub>S conc. at A1 is 23-45.8% higher than at source.</li> <li>Under the above observations, it is considered that the source is not the major contributor to H<sub>2</sub>S conc. at A1 during sample 2, 3 &amp; 5, and thus the exceedance at A1 is not project related.</li> </ol>
Actions taken / to be taken	Since the exceedance at A1 is not project related, therefore, no remedial actions is recommended.
Remarks / Other Observations	1. Refer to the site observation at A1 during the monitoring period, no significant $H_2S$ source was identified. 2. Detailed monitoring data will be presented in the Third Operation Phase Odour Impact Monitoring Report and to be deposit to EPD for record.

Prepared by:

Thomas CHAN

Designation:

Signature:

Alio

Environmental Team Leader (ETL)

Date:

4 June 2020

Project	Tuen Mun Area 54 Sewage Pumping Station
Date	From 27 May 2020 (11am) to 28 May 2020 (10:59am), Total 24hrs
Time	From 27 May 2020 (11am) to 28 May 2020 (10:59am), Total 24hrs
Monitoring Location	A2 (Planned Primary School )
Parameter	Odour (H <sub>2</sub> S concentration)
Action & Limit Levels	Action Level: 2.3 ppb Limit Level: 2.5 ppb
Measured Level	24-hr average H <sub>2</sub> S conc.: 2.4 ppb
Possible reason for Action or Limit Level Non- compliance	1. At A2, it is observed that 3 out of the 8 sampling events throughout the 24-hrs monitoring period, the $H_2S$ conc. at A2 is higher than at source. 2. Also, at Sample 2 & 3, the $H_2S$ conc. at A2 is 19 - 20% higher than at source. 3. Under the above observations, it is considered that the source is not the major contributor to $H_2S$ conc. at A2 during sample 2 & 3, and thus the exceedance at A2 is not project related.
Actions taken / to be taken	Since the exceedance at A2 is not project related, therefore, no remedial actions is recommended.
Remarks / Other Observations	1. Refer to the site observation at A2 during the monitoring period, no significant $H_2S$ source was identified. 2. Detailed monitoring data will be presented in the Third Operation Phase Odour Impact Monitoring Report and to be deposit to EPD for record.

Prepared by:

Thomas CHAN

Designation:

Signature:

Min Cl. \_\_\_\_

Environmental Team Leader (ETL)

Date:

4 June 2020

Project	Tuen Mun Area 54 Sewage Pumping Station
Date	From 27 May 2020 (11am) to 28 May 2020 (10:59am), Total 24hrs
Time	From 27 May 2020 (11am) to 28 May 2020 (10:59am), Total 24hrs
Monitoring Location	A5 (Road connecting to TMA54SPS)
Parameter	Odour (H <sub>2</sub> S concentration)
Action & Limit Levels	Action Level: 2.5 ppb Limit Level: 2.5 ppb
Measured Level	24-hr average H <sub>2</sub> S conc.: 2.9 ppb
Possible reason for Action or Limit Level Non- compliance	<ol> <li>At A5, it is observed that over half of the sampling events throughout the 24-hrs monitoring period, the H<sub>2</sub>S conc. at A5 is higher than at source.</li> <li>Also, at Sample 1, 2, 3 &amp; 6, the H<sub>2</sub>S conc. at A2 is 10 - 43% higher than at source.</li> <li>Under the above observations, it is considered that the source is not the major contributor to H<sub>2</sub>S conc. at A5 during sample 1, 2, 3 &amp; 6, and thus the exceedance at A5 is not project related.</li> </ol>
Actions taken / to be taken	Since the exceedance at A5 is not project related, therefore, no remedial actions is recommended.
Remarks / Other Observations	1. Refer to the site observation at A5 during the monitoring period, no significant $H_2S$ source was identified. 2. Detailed monitoring data will be presented in the Third Operation Phase Odour Impact Monitoring Report and to be deposit to EPD for record.

Prepared by:

Thomas CHAN

Designation:

Signature:

Environmental Team Leader (ETL) Mo

Date:

4 June 2020

# 4<sup>th</sup> Impact Odour Monitoring

Project	Tuen Mun Area 54 Sewage Pumping Station
Date	From 2 September 2020 (11am) to 3 September 2020 (10:59am), Total 24hrs
Time	From 2 September 2020 (11am) to 3 September 2020 (10:59am), Total 24hrs
Monitoring Location	A2 (Planned Primary School )
Parameter	Odour (H <sub>2</sub> S concentration)
Action & Limit Levels	Action Level: 2.3 ppb Limit Level: 2.5 ppb
Measured Level	24-hr average H <sub>2</sub> S conc.: 2.4 ppb
Possible reason for Action or Limit Level Non- compliance	<ol> <li>At A2, it is observed that 2 out of the 8 sampling events throughout the 24-hrs monitoring period, the H<sub>2</sub>S conc. at A2 is higher than at source.</li> <li>Also, at Sample 2 &amp; 3, the H<sub>2</sub>S conc. at A2 is 14 - 17% higher than at source.</li> <li>Under the above observations, it is considered that the source is not the major contributor to H<sub>2</sub>S conc. at A2 during sample 2 &amp; 3, and thus the exceedance at A2 is not project related.</li> </ol>
Actions taken / to be taken	Since the exceedance at A2 is not project related, therefore, no remedial actions is recommended.
Remarks / Other Observations	<ol> <li>Refer to the site observation at A2 during the monitoring period, no significant H<sub>2</sub>S source was identified.</li> <li>Detailed monitoring data will be presented in the Fourth Operation Phase Odour Impact Monitoring Report and to be deposit to EPD for record.</li> </ol>

Prepared by:

Thomas CHAN

Designation:

Environmental Team Leader (ETL)

Signature:

li

Date:

9 September 2020

Project	Tuen Mun Area 54 Sewage Pumping Station
Date	From 2 September 2020 (11am) to 3 September 2020 (10:59am), Total 24hrs
Time	From 2 September 2020 (11am) to 3 September 2020 (10:59am), Total 24hrs
Monitoring Location	A5 (Road connecting to TMA54SPS )
Parameter	Odour (H <sub>2</sub> S concentration)
Action & Limit Levels	Action Level: 2.5 ppb Limit Level: 2.5 ppb
Measured Level	24-hr average H <sub>2</sub> S conc.: 2.8 ppb
Possible reason for Action or Limit Level Non- compliance	1. At A5, it is observed that 2 of the sampling events throughout the 24-hrs monitoring period, the $H_2S$ conc. at A5 is higher than at source. 2. Also, at Sample 2 & 3, the $H_2S$ conc. at A5 is 17 - 57% higher than at source. 3. Under the above observations, it is considered that the source is not the major contributor to $H_2S$ conc. at A5 during sample 2 & 3, and thus the exceedance at A5 is not project related.
Actions taken / to be taken	Since the exceedance at A5 is not project related, therefore, no remedial actions is recommended.
Remarks / Other Observations	<ol> <li>Refer to the site observation at A5 during the monitoring period, no significant H<sub>2</sub>S source was identified.</li> <li>Detailed monitoring data will be presented in the Fourth Operation Phase Odour Impact Monitoring Report and to be deposit to EPD for record.</li> </ol>

Prepared by:

Thomas CHAN

Designation:

Environmental Team Leader (ETL)

Signature:

Min

Date:

9 September 2020



mottmac.hk