Annex H

Odour Patrol Results



ALS Technichem (HK) Pty Ltd
11/F, Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung, N.T., Hong Kong
1+852 2610 1044 F+852 2610 2021

CERTIFICATE OF ANALYSIS

CLIENT:

Oscar Bioenergy Joint

WORK ORDER:

HK2107360

Venture

CONTACT:

Mr Terence Chan

ADDRESS:

No. 5, Sham Fung Road,

LABORATORY:

Hong Kong

Siu Ho Wan, Lantau Island,

SUB-BATCH:

^

NT, Hong Kong

DATE RECEIVED:

8th February, 2021 24th February, 2021

DATE OF ISSUE:

F

PROJECT: SITE: Stack Gas Sampling - CHP2 O·Park1, Siu Ho Wan, Lantau SAMPLE TYPE: NO. OF SAMPLES: Air 1

Island

PO: ---

COMMENTS

One (1) stack gas sample for CHP-2 was collected by ALS Technichem (HK) staff on 8th February, 2021 at the O-Park1 (Organic Resources Recovery Centre) in Lantau Island.

Sampling information (Project name, Sample ID) is provided by client.

The sample(s) was analysed and reported on as received basis.

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Richard Fi

Managing Director - Apng Kong

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Work Order No.: HK2107360

1. Summary of Work

This document is the final report for the stack gas sampling and testing event for Oscar Bioenergy Joint Venture in Siu Ho Wan, North Lantau Island.

Sampling Date: 8th February 2021 Location of Stack: ORRC1, Siu Ho Wan

No. of Stack: 1

Name of Stack: CHP-2

Methods for Stack Sampling and Analysis:

Parameter	Method Reference	Sampling Time (minutes)
Volatile Organic Compounds (VOCs)[1]	US EPA Method 18	60
Non-Methane Volatile Organic Compounds (NMCOCs)[1]	US EPA Method 18	60

Note:

[1]: Results expressed as carbon

2. Sampling Summary

Volatile Organic Compounds (VOCs)

Sample gas was collected by using a stainless steel sampling probe, from the centroid of the stack, into the Tedlar bag by passive sampling technique.

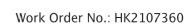
The measurement of total volatile organic compounds (VOCs) content in the sample was conducted in references to BS EN 12619. VOCs content was determined by measuring the methane and non-methane volatile organic compounds of the sample by Gas Chromatograph-Flame Ionisation Detector (GC-FID).

VOCs was reported as the sum of methane and non-methane organics content in the sample.

3. Sampling Period and Stack Parameter

Test Parameter	Sampling Period
Volatile Organic Compounds (VOCs)	8 February 2021 11:00 - 12:00

Stack Parameter	Unit	Concentration
Oxygen	%	11.2





Parameter	Unit	Reporting Limit	Result [1] [2]
Gaseous & vaporous organic substances (VOCs)	mg/m³	0.7	847
Methane (CH ₄)	mg/m³	0.5	841
Non-Methane Organic Carbon (NMOC)	mg/m³	0.2	6.0

Note:
[1] Results expressed as dry, at 0°C temperature, 101.325 kPa pressure and 6% O₂ content conditions.
[2] Results expressed as carbon.

Annex H1

Odour Patrol Result for July 2021



PROIECT:

SITE:

ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street Kwai Chung, N.T., Hong Kong <u>T</u> +852 2610 1044 <u>F</u> +852 2610 2021

CERTIFICATE OF ANALYSIS

OSCAR BIOENERGY JOINT VENTURE CLIENT:

CONTACT: MR TERENCE CHAN

ADDRESS: NO. 5. SHAM FUNG ROAD, SIU HO

WAN, NORTH LANTAU ISLAND, NT,

HONG KONG

ODOUR PATROL FOR THE

ORGANIC RESOURCES RECOVERY CENTRE PHASE 1 IN SIU HO WAN

ORGANIC RESOURCES RECOVERY

CENTRE PHASE 1 (O-PARK 1)

WORK ORDER:

LABORATORY:

SUB-BATCH:

9th IULY, 2021 DATE OF PATROL:

16th JULY, 2021

HK2127934

HONG KONG

DATE OF ISSUE: SAMPLE TYPE:

ODOUR PATROL

NO. OF LOCATIONS:

COMMENTS

Odour Patrol was conducted by ALS Technichem (HK) Pty Ltd staff during 10:00 -10:20 and 16:42 - 16:59.

Sampling information (Project name, Sample ID) is provided by client.

NOTES

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The results related only to the items tested. All pages of this report have been checked and approved for release.

Managing Director

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Summary of Work

The odour patrol was conducted during daytime and evening time.

2. **Odour Patrol**

Odour patrolling is a process to make use of the calibrated olfactory senses (i.e. the nasal sense) of the patrol members to evaluate the odour and its intensity during a patrol exercise at the site.

The patrol work was conducted by two odour patrol team members from ALS Technichem (HK) Pty Ltd during each time session. All members are free from any respiratory diseases during patrol day. None of the members has been working or living in the area of the vicinity of the inspection zone.

The patrol team was required to move slowly from one to the other monitoring locations and use their olfactory senses to detect odour at each location.

The location of odour sources and the areas to be affected by the odour nuisance were identified as much as possible.

During the patrolling, the meteorological and surrounding information were recorded:

- the prevailing weather condition;
- the wind direction;
- the wind speed:
- location where odour is spotted;
- possible source of odour;
- perceived intensity of the odour;
- duration of odour: and
- characteristics of the odour detected.

The perceived intensity is to be divided into 5 levels which are ranked in an ascending order as follows:

0	Not detected	No odour perceives or an odour so weak that it cannot be easily characterised or described
1	Slight	Identifiable odour, slight
2	Moderate	Identifiable odour, moderate
3	Strong	Identifiable odour, strong
4	Extreme	Severe odour

The odour patrol location was shown in Appendix 1.

Work Order: HK2127934



Odour Patrol Result: 3. 3.1

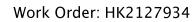
Daytime:

ocation	Panellist	ther	Time	Т	RH	WS	D ree)	Odour	Duration of	ion of Direction	On-Site O	bservation
Loca	Pane	Weather	Time	(°C)	(%)	(m/s)	WD (Degree)	Intensity	Odour	from Source	Odour Characteristics	Potential Odour Source
8	1	Sunny	10:00	32.5	66.8	0.1	329	0	NA	NA	NA	NA
0	2	Sullily	10.00	32.3	00.6	0.1	329	0	I NA	INA I	NA	INA
7	1	Cunny	10.02	33.8	62.0	0.0		1	Continuous	NA	Refuse smell	Pre-treatment
'	2	Sunny	10:02	33.0	02.0	0.0		1	Continuous	IVA	Keruse silieli	Hall
	1	C	10.00	24.2	C1 0	0.0		1	Cambinus	NIA	Diama	Biogas Tank
2	2	Sunny	10:06	34.3	61.8	0.0		1	Continuous	NA	Biogas	Valve Holder
3	1	C	10.07	22.0	57.6	0.8	350	1	Cambinus	Dannenia	Diama	Biogas Tank
3	2	Sunny	10:07	32.9	37.0	0.8	359	1	Continuous	Downwind	Biogas	Valve Holder
_	1	Cummu	10.14	21.0	61.2	0.0		1	lesto recitto est	NIA	Crassycome	Nearby
5	2	Sunny	10:14	31.9	61.2	0.0	-	1	Intermittent	NA	Grassy smell	Vegetation



tion	Panellist	T RH WS	WD (Degree)	Odour	Duration of	Direction from	On-Site Observation					
Location	Pane	Weather	Time	(°C)	(%)	(m/s)	M M	Intensity	Odour	Source	Odour Characteristics	Potential Odour Source
6	1	Sunny	10:10	32.1	57.6	0.0		0	NA	NA	NA	NA
	2 3011119 10.10 32.1 3	3710	0.0		0							
9	1	Suppy	10:17	30.9	61.2	1.2	344	0	NA	NA	NA	NA
9	2	Sunny	10.17	30.9	01.2	1.2	344	0	INA	NA	INA	IVA
10	1	Suppy 10:20 22	22.0	41.5			0	NA	NA	NA	NA	
10	10 Sunny 10:	10.20	22.8	41.5	_	-	1	Intermittent	NA	Minor refuse smell	Stair No. 9	

Remark: T: A Air Temperature; Relative Humidity; Wind Speed; Wind Direction. RH: WS: WD:





3.2 Evening time:

tion	Illist	ther	-	Т	BII (0/)	WS	D ree)	Odour	Duration of	Direction from	On-Site O	bservation
Location	Panellist	Weather	Time	(°C)	RH (%)	(m/s)	WD (Degree)	Intensity	Odour	Source	Odour Characteristics	Potential Odour Source
8	1	Sunny	16:42	31.1	73.0	1.2	291	0	NA	NA	NA	NA
0	2	Sullily	10.42	31.1	73.0	1.2	291	0	IVA	NA	NA 	IVA
7	1	Sunny	16:44	31.4	66.9	1.1	334	1	Continuous	Upwind	Refuse smell	Pre-treatment
,	2 3unny	10.44	31.4	00.9	1.1	774	1	Continuous	Opwilla	Refuse siller	Hall	
2	1	Sunny	16:47	31.9	66.6	0.9	049	0	NA	NA	NA	NA
2	2	Sullily	10.47	51.9	00.0	0.9	049	0	IVA	NA	IVA	IVA
3	1	Sunny	16:48	32.3	64.8	0.0		0	NA	NA	NA	NA
3	2	Sullily	10.46	32.3	04.6	0.0	I	0	INA	NA	NA	IVA
	1	Cuppi	16.54	31.9	61.5	0.0		0	NA	NA	NA	NA
5	2	Sunny	16:54	31.9	01.3	0.0		1	Intermittent	NA	Grassy smell	Nearby Vegetation



Location	Panellist	Weather	Time	Т	RH	WS	WD (Degree)	Odour	our Duration of	of Direction	On-Site Observation	
Loca	Pane	Wea	Time	(°C)	(%)	(m/s)	W (Deg	Intensity	Odour	from Source	Odour Characteristics	Potential Odour Source
6	1	Sunny	16:50	32.3	64.8	1.0	115	1	Intermittent	Side wind	Refuse smell	Back of the Pre- treatment Hall
0	2	Sullily	10.50	32.3	04.0	1.0	113	0	NA	NA	NA	NA
9	1	Cuppy	16:57	33.4	68.3	0.0		0	NIA	NA	NA	NA
9	2	Sunny	10.57	33.4	00.3	0.0		0	NA	NA	IVA	INA
10	1	Suppl	16.50	25.2	45.6			0	NIA	NA	NIA	NA
10	0 Sunny	16:59	23.2	43.0	_	_	0	NA	NA	NA	NA	

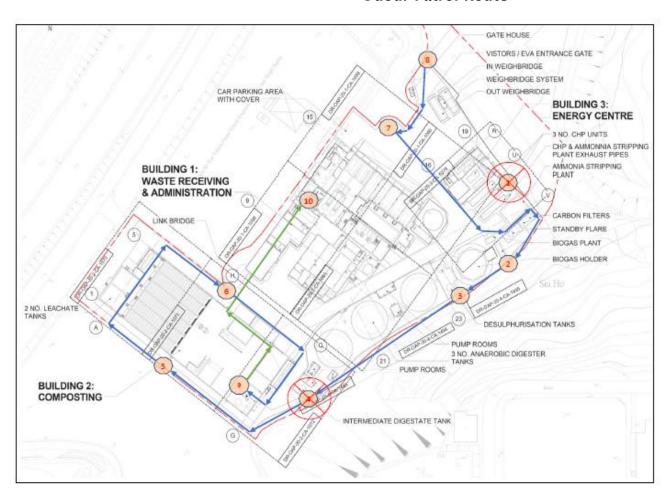
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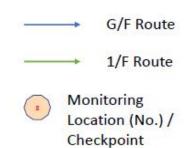
T: Air Temperature; RH: Relative Humidity; WS: Wind Speed; WD: Wind Direction.

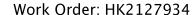


APPENDIX 1

Odour Patrol Route



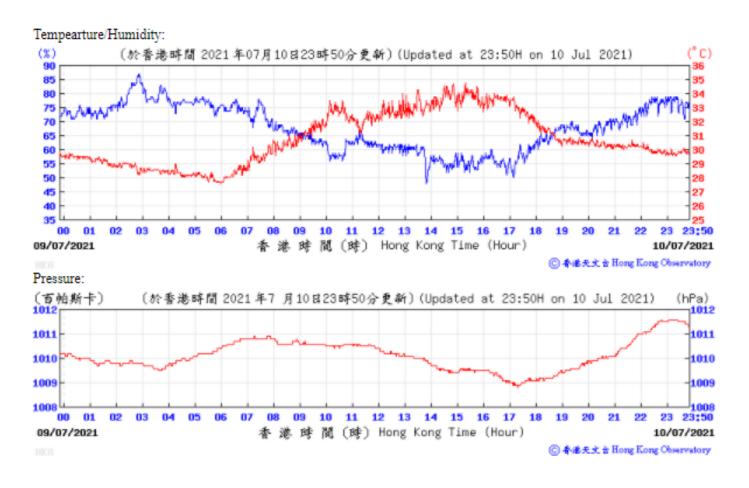






APPENDIX 2

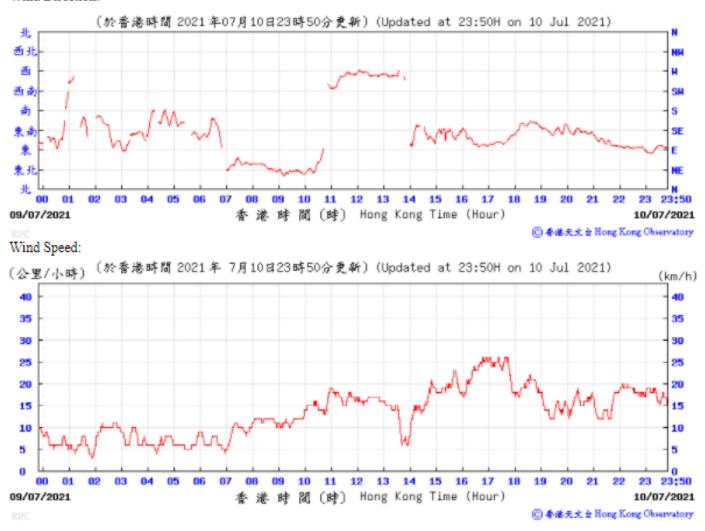
Extract of Meteorological Observations from Hong Kong Airport Observatory Station







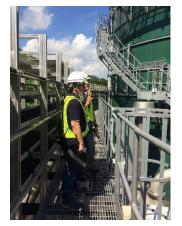
Wind Direction:





APPENDIX 3

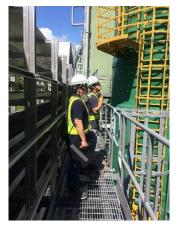
A3.1 Odour Patrol at Different Locations - Daytime



Location: 2



Location: 7



Location: 3



Location: 8



Location: 5



Location: 9



Location: 6



Location: 10





A3.2 Odour Patrol at Different Locations - Evening time



Location: 2



Location: 7



Location: 3



Location: 8



Location: 5



Location: 9



Location: 6



Location: 10

Annex H2

Odour Patrol Result for August 2021



ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street Kwai Chung, N.T., Hong Kong T+852 2610 1044 F+852 2610 2021

CERTIFICATE OF ANALYSIS

CLIENT: CONTACT: OSCAR BIOENERGY JOINT VENTURE

ADDRESS:

MR TERENCE CHAN

NO. 5. SHAM FUNG ROAD, SIU HO

WAN, NORTH LANTAU ISLAND, NT,

HONG KONG

PROJECT:

ODOUR PATROL FOR THE

ORGANIC RESOURCES RECOVERY CENTRE PHASE 1 IN SIU HO WAN

SITE:

ORGANIC RESOURCES RECOVERY

CENTRE PHASE 1 (O-PARK 1)

WORK ORDER:

LABORATORY:

SUB-BATCH:

HONG KONG

DATE OF PATROL: 9th AUGUST. 2021

19th AUGUST, 2021

HK2132340

DATE OF ISSUE:

SAMPLE TYPE:

LOCATIONS:

ODOUR PATROL

NO. OF

COMMENTS

Odour Patrol was conducted by ALS Technichem (HK) Pty Ltd staff during 09:49 -10:05 and 15:35 - 15:51.

Sampling information (Project name, Sample ID) is provided by client.

NOTES

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Managing Director Hong Kong

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Summary of Work

The odour patrol was conducted during daytime and evening time.

2. **Odour Patrol**

Odour patrolling is a process to make use of the calibrated olfactory senses (i.e. the nasal sense) of the patrol members to evaluate the odour and its intensity during a patrol exercise at the site.

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The location of odour sources and the areas to be affected by the odour nuisance were identified as much as possible.

During the patrolling, the meteorological and surrounding information were recorded:

- the prevailing weather condition;
- the wind direction;
- the wind speed:
- location where odour is spotted;
- possible source of odour;
- perceived intensity of the odour;
- duration of odour: and
- characteristics of the odour detected.

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0	Not detected	No odour perceives or an odour so weak that it cannot be easily characterised or described
1	Slight	Identifiable odour, slight
2	Moderate	Identifiable odour, moderate
3	Strong	Identifiable odour, strong
4	Extreme	Severe odour

The odour patrol location was shown in Appendix 1.

Work Order: HK2132340



Odour Patrol Result:

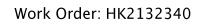
3. 3.1 Daytime:

Location	Panellist	ther	Times	Т	RH WS S S S S S S S S S S S S S S S S S S		Odour	Duration of	Direction	On-Site O	bservation	
Loca	Pane	Weather	Time	(°C)	(%)	(m/s)	W (Deg	Intensity	Odour	from Source	Odour Characteristics	Potential Odour Source
8	1	Cloudy	09:49	29.7	80.5	0.8	285	1	Continuous	Side wind	Refuse smell	Loading Bay /Pre-treatment
	2	2 ′	03.43	23.7	00.5	0.0	203	1	Continuous	Side Willd	Refuse silleli	Hall
7	1	Claudy	00.51	21.0	80.7	0.4	133	1	Continuous	Side wind	Refuse smell	Pre-treatment
'	Cloudy 09:51 31.0 80	80.7	0.4	133	1	Continuous	Side Willa	Keluse silleli	Hall			
2	1	Claudy	00.54	30.7	85.7	1.0	114	1	Continuous	ام منبر ما	Diagos	Biogas Tank
2	2	Cloudy	09:54	30.7	85.7	1.9	114	1	Continuous	Upwind	Biogas	Valve Holder
2	1	Classides	00.50	20.2	90.0	0.4	122	0	NIA	NIA	NIA	NA
3	2	Cloudy	09:56	30.3	86.6	0.4	132	0	NA	NA	NA	NA
_	1	Clauder	00.50	20.6	96.6	0.0		1	Continuo	NIA	Crace v crace!!	Nearby
5	2	Cloudy	09:58	30.6	86.6	0.0		1	Continuous	NA	Grassy smell	Vegetation



tion	ation ellist	ther	Times	т	RH	WS	WD (Degree)	Odour	Duration of	Direction from	On-Site Observation	
Location	Pane	Weather	Time	(°C)	(%)	(m/s)	M M	Intensity	Odour	Source	Odour Characteristics	Potential Odour Source
6	1	Cloudy	10:01	29.9	88.0	1.3	122	0	NA	NA	NA	NA
	2	C. Curary	10.01 29.9 88	00.0	2.3		0					
9	1	Cloudy	10:03	29.8	89.7	1.8	243	0	NA	NA	NA	NA
9	2	Cloudy	10.03	29.0	69.7	1.0	243	0	INA	NA	NA	IVA
10	1	Claudy	10.05	22.0	77.0			0	NA	NA	NA	NA
10	2	Cloudy	10:05	23.8	77.0	_	ı	0	NA	NA	NA	NA

Remark: T: A Air Temperature; Relative Humidity; Wind Speed; Wind Direction. RH: WS: WD:





3.2 Evening time:

Location	Panellist	ther	Time	T (°C)	RH (%)	WS (m/s)	WD (Degree)	Odour Intensity	Duration of Odour	Direction from Source	On-Site Observation	
		Weather									Odour Characteristics	Potential Odour Source
8	1	Cloudy	15:35	30.1	81.0	0.5	312	1	Intermittent	Side wind	Refuse smell	Pre-treatment Hall
	2							1				
7	1	Cloudy	15:37	31.2	80.5	1.0	101	1	Continuous	Side wind	Refuse smell	Pre-treatment Hall
	2							1				
2	1	Cloudy	15:40	31.4	82.2	0.5	112	1	Continuous	Upwind	Biogas	Biogas Tank Valve Holder
	2							1				
3	1	Cloudy	15:42	31.2	82.5	0.4	121	0	- NA	NA	NA	NA
	2							0				
5	1	Cloudy	15:45	30.6	85.0	0.0		0	- NA	NA	NA	NA
	2							0				



tion	llist	ther	T:	т	RH	WS	WD (Degree)	Odour	Duration of	Direction from Source	On-Site Observation	
Location	Panellist	Weather	Time	(°C)	(%)	(m/s)	W (Deg	Intensity	Odour		Odour Characteristics	Potential Odour Source
6	1	Cloudy	15:47	30.9	81.0	1.1	130	0	- NA	NA	NA	NA
	2							0				
9	1	- Cloudy	15:49	30.5	85.6	0.5	237	0	NA	NA	NA	NA
9	2							0				
10	1	Cloudy	15:51	24.9	69.9	-	-	0	- NA	NA	NA	NA
10	2							0				

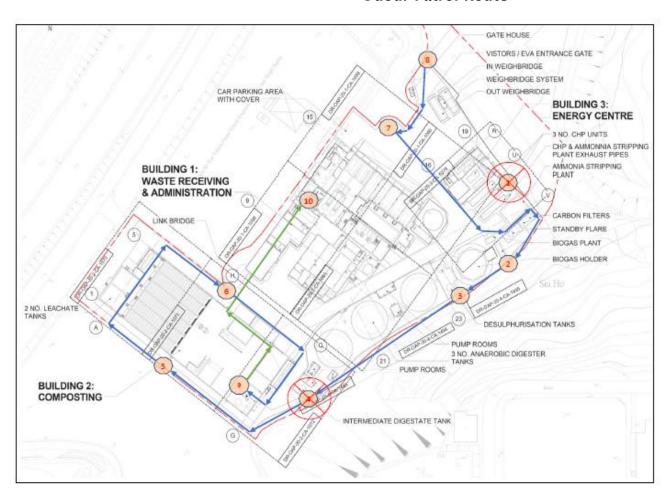
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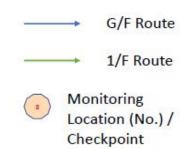
T: Air Temperature; RH: Relative Humidity; WS: Wind Speed; WD: Wind Direction.

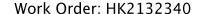


APPENDIX 1

Odour Patrol Route



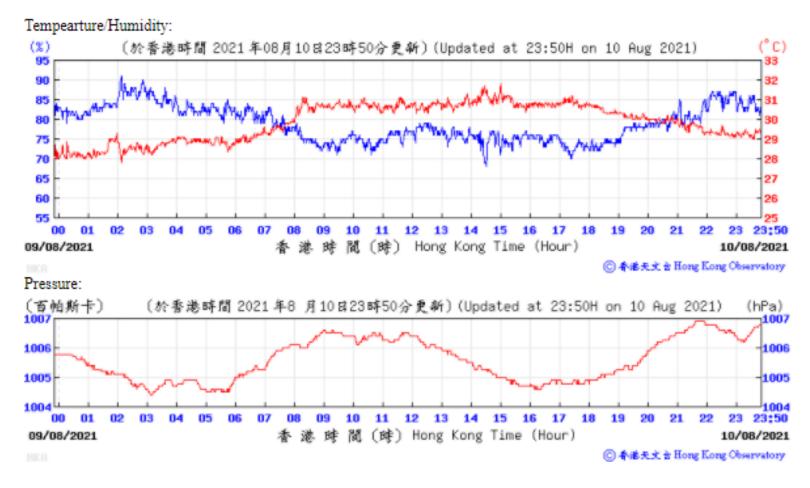


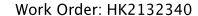




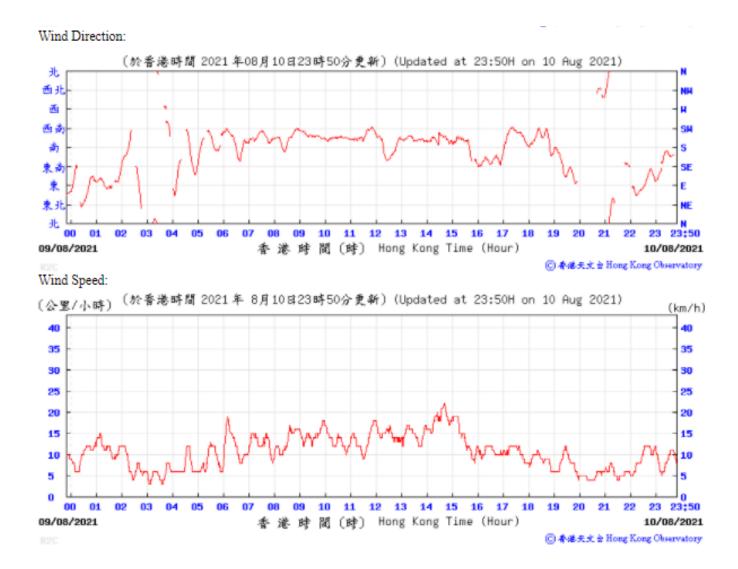
APPENDIX 2

Extract of Meteorological Observations from Hong Kong Airport Observatory Station













APPENDIX 3

A3.1 Odour Patrol at Different Locations - Daytime



Location: 2



Location: 7



Location: 3



Location: 8



Location: 5



Location: 9

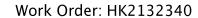


Location: 6



Location: 10

Page 10 of 11





A3.2 Odour Patrol at Different Locations - Evening time



Location: 2



Location: 7



Location: 3



Location: 8



Location: 5



Location: 9



Location: 6



Location: 10