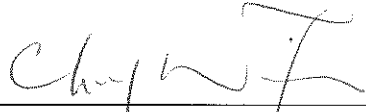


# Leader and JEC Joint Venture

**Contract No. DC/2009/23**  
**HATS Stage 2A – Upgrading of**  
**Preliminary Treatment Works at**  
**North Point, Wan Chai East and Central**

**Monthly Environmental**  
**Monitoring and Audit Report**  
**June 2016**

**(Version 1.0)**

Certified By	 <hr/> <b>(Environmental Team Leader)</b>
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REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

**CINOTECH CONSULTANTS LTD**

Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong  
Tel: (852) 2151 2083 Fax: (852) 3107 1388  
Email: [info@cinotech.com.hk](mailto:info@cinotech.com.hk)

CE/Harbour Area Treatment Scheme  
Drainage Services Department  
Sewage Services Branch  
Harbour Area Treatment Scheme Division  
5/F, Western Magistracy  
2A Pokfulam Road, Hong Kong

Attn: Mr. Danny Tang

**Agreement No. CE 8/2009(EP) Harbour Area Treatment Scheme Stage 2A  
Independent Environmental Checker for Construction Phase – Investigation**

**Our Reference**  
GCB/AFK/DC/bw/  
T261332/22.01/L-1070

**Contract No. DC/2009/23 – Upgrading of Preliminary Treatment Works at  
North Point, Wan Chai East and Central**

20/F AIA Kowloon Tower  
Landmark East  
100 How Ming Street  
Kwun Tong  
Kowloon  
Hong Kong

**Condition 4.4 – Monthly EM&A Report for June 2016 (no. 65)**

14 July 2016

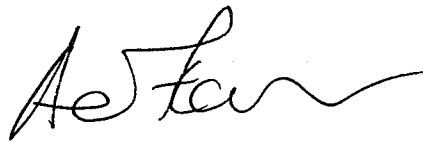
**By Post**

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

Dear Sir,

I refer to the revised Monthly EM&A Report for June 2016 (version 1.0) submitted by ETL on 14 July 2106 via email. In accordance with Condition 4.4 of Environmental Permit No. EP-322/2008/G, I hereby verify the captioned Monthly EM&A Report.

Yours faithfully  
for MOTT MACDONALD HONG KONG LIMITED



Dr. Anne Kerr  
Independent Environmental Checker  
T +852 2828 5757  
anne.kerr@mottmac.com

c.c.

Ove Arup & Partners HK Ltd.  
Leader & JEC JV  
Cinotech Consultants Ltd.

Mr. Ted Y F Tang  
Mr. Vincent Chan  
Dr Priscilla Choy

Fax: 2370 4377  
By email  
By email

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## ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HATS 2A	Harbour Area Treatment Scheme Stage 2A
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan

---

## EXECUTIVE SUMMARY

### Introduction

1. This is the 65<sup>th</sup> Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract No. DC/2009/23 “HATS Stage 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central” (The Project) which documents the key information of EM&A and environmental monitoring works by Contract DC/2009/23 HATS Stage 2A with the Environmental Permit (Permit No. EP-322/2008/G) for June 2016.
2. The site activities undertaken for in the reporting month included:
  - Wan Chai East PTW:
    - Construction of road and drainage;
    - Construction of curtain wall;
    - Construction of boundary wall.
  - North Point PTW
    - Operation and maintain of the new FSGT Building;
    - Construction of Grit Handling Room;
    - Laying of Twin DN400 D.I. Pipes;
    - Construction of seawater pumping station.
  - Central PTW
    - Operation and maintain of the new FSGT Building;
    - Construction of curtain wall;
    - Installation of Splash Arrestor and FRP cover inside the FSGT building;
    - Installation of multi-part cover to flume channel;
    - External wall finishing work;
    - Construction of boundary wall.

### Environmental Monitoring Works

3. The environmental monitoring works of the Project was conducted by the ET for the Contract: DC/2009/23 under HATS 2A with the Environmental Permit (Permit No. EP-322/2008/G) and in accordance with the EM&A Manual. The monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
4. Since the monitoring of air quality monitoring station at Chan's Creative School (AM1), Hong Kong & Islands Regional Office, WSD (AM2), Wan Chai East PTW (AM3), a location next to Sheung Wan Fire Station (AM4\_2); and noise monitoring station at Chan's Creative School (NM1), Hyde Building (NM2) and Goldfield Building (NM3) were handed over to Contract No. DC/2009/23 from Contract No. DC/2007/23 in October 2015. The air quality and noise monitoring stations were set up by Cinotech Consultants Limited (ET for Contract No. DC/2009/23 for HATS 2A) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from October 2015. The environmental monitoring schedule for the next reporting month is shown in **Appendix B**.
5. Summary of the non-compliance of the reporting month is tabulated in **Table I**.

**Table I Summary Table for Non-compliance Recorded in the Reporting Month**

Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
AM1	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM2	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM3	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM4_2	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
NM1	Noise	0	3	0	0	N/A
NM2	Noise	0	5	0	0	N/A
NM3	Noise	0	0	0	0	N/A

Note: Since the site area where air monitoring station AM4 was located had to be returned to DSD for another Works Contract, AM4 was relocated to AM4\_2 on 24 September 2012.

#### *1-hour TSP Monitoring*

6. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### *24-hour TSP Monitoring*

7. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### *Construction Noise*

8. All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded, while three non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM1; and five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 5<sup>th</sup>, 13<sup>th</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM2. Details of the exceedance could be referred to **Appendix G & H**.

#### **Environmental Licenses and Permits**

9. Licenses/Permits granted to the Project include the Environmental Permit (EP) and Registered as a Chemical Waste Producer for North Point, Wan Chai East and Central PTWs sites; water discharge licenses of North Point, Wan Chai East and Central PTWs; also the Construction Noise Permits for construction works at Wan Chai East PTW and Central PTW.

#### **Environmental Mitigation Implementation Schedule**

10. According to the EIA Report Section 3.74, 4.56, 6.384, 9.154 and 13.44, air quality, noise,

water quality, waste management and landscape and visual would be the key environmental issues and mitigation measures shall be implemented during the construction phase. Details of the implementation of mitigation measures are provided in the **Appendix L**.

### Key Information in the Reporting Month

11. Summary of key information in the reporting month is tabulated in **Table II**.

**Table II Summary Table for Key Information in the Reporting Month**

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP	1	Monthly Environmental Monitoring and Audit Report for May 2016	Submitted to EPD on 14 June 2016	No Comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

### Summary of Complaints and Prosecutions

12. No environmentally related summons, prosecutions or complaints were received for the Project in the reporting month.
13. There were no environmentally related summons, prosecutions or complaints were received since the commencement of the Project. The Complaint Log is presented in **Appendix M**.

### Future Key Issues

14. Major site activities for the coming two months include:

#### Wan Chai East PTW:

- Construction of road and drainage;
- Construction of curtain wall;
- Construction of boundary wall.

#### North Point PTW

- Operation and maintain of the new FSGT Building;
- Construction of Grit Handling Room;
- Laying of Twin DN400 D.I. Pipes;
- Construction of seawater pumping station.

#### Central PTW

- Operation and maintain of the new FSGT Building;
- Construction of curtain wall;
- Installation of Splash Arrestor and FRP cover inside the FSGT building;
- Installation of multi-part cover to flume channel;
- External wall finishing work;



- Construction of boundary wall.
15. The environmental concerns in coming months are mainly surface runoff and waste water control in the wet season. Other concerns including noise generated from construction works; dust emission due to strong wind erosion and vehicle movements, and inappropriate storage of construction equipments within the tree protective zones.

## 1. INTRODUCTION

### Background

- 1.1 The Project ‘HATS Stage 2A - Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central with Contract No: DC/2009/23’ mainly comprises the following major works:
- Decommissioning, demolition and removal of existing structures and buildings, including the associated E&M works;
  - Relocation of sewers, control room, workshop equipment and the associated E&M works; and
  - Construction of new buildings and structures.
- 1.2 The general location plan of the Project is shown in **Figure 1A** to **1C**.
- 1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project (Register No. : AEIAR-121/2008). The environmental permit: (Permit No. EP-322/2008/G) which was issued on 9<sup>th</sup> May 2014 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.4 Leader and JEC Joint Venture (hereafter called the LJJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/23 “Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central”. The date of commencement of construction of the Project is on 14<sup>th</sup> February 2011.
- 1.5 Cinotech Consultants Limited was commissioned by LJJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP.
- 1.6 This is the 65<sup>th</sup> monthly EM&A report summarizing the EM&A works conducted for the Project in June 2016.

### Project Organizations

- 1.7 The contacts of the Project are shown in **Table 1.1** and the organization chart of ET for Contract is shown in **Figure 2**.

**Table 1.1 Key Project Contacts**

Party	Role	Name	Position	Phone No.
Drainage Services Department	Project Proponent	Mr. Vincent Y.K. Wong	Senior Engineer 2	2159 3406
Ove Arup & Partners Hong Kong Ltd	Engineer’s Representative	Mr. Ted Tang	Principal Resident Engineer	2370-4311
	Coordinator	Ms. Natalie Kwok	Resident Engineer	6794 8844
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Ms. Janet Wai	Project Coordinator & Audit Team Leader	2151 2078

Party	Role	Name	Position	Phone No.
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	28285757
Leader and JEC Joint Venture	Contractor	Mr. Kelvin Cheung	Site Agent	9650 9410
		Mr. Lawrence Lam	Environmental Officer	9650 9410

## Construction Programme

1.8 The site activities undertaken in the reporting month included:

### Wan Chai East PTW:

- Construction of road and drainage;
- Construction of curtain wall;
- Construction of boundary wall.

### North Point PTW

- Operation and maintain of the new FSGT Building;
- Construction of Grit Handling Room;
- Laying of Twin DN400 D.I. Pipes;
- Construction of seawater pumping station.

### Central PTW

- Operation and maintain of the new FSGT Building;
- Construction of curtain wall;
- Installation of Splash Arrestor and FRP cover inside the FSGT building;
- Installation of multi-part cover to flume channel;
- External wall finishing work;
- Construction of boundary wall.

## Summary of EM&A Requirements

1.9 The EM&A programme requires construction phase monitoring for air quality and construction noise, landscape and visual and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

1.10 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.

1.11 This report presents the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project in June 2016. For the methodology and QA/QC procedures of the monitoring parameters, please refer to the **Section 2.5 & 3.5** of this report.

## 2. AIR QUALITY

### Monitoring Requirements

- 2.1 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

### Monitoring Locations

- 2.2 Four designated monitoring stations, AM1, AM2, AM3 and AM4\_2 were selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1A** to **1C**.

**Table 2.1 Locations for Air Quality Monitoring**

Monitoring Station	Monitored by	Location of Measurement
AM1	DC/2009/23	Chan's Creative School
AM2		Hong Kong & Islands Regional Office, WSD
AM3		Wan Chai East PTW
AM4_2		A Location next to Sheung Wan Fire Station

Note: Since the site area where air monitoring station AM4 was located had to be returned to DSD for another Works Contract, AM4 was relocated to AM4\_2 on 24 September 2012.

### Monitoring Equipment

- 2.3 Both 1-hour TSP monitoring and continuous 24-hour TSP impact air quality monitoring were performed and complied with the specifications stipulated in the approved EM&A Manual. **Table 2.2** summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates are provided in **Appendix C** of this report.

**Table 2.2 Air Quality Monitoring Equipment**

Equipment	Model and Make	Quantity
HVS Samplers	GMWS 2310 HVS, Model GS-2310-105	1
	Tisch Environmental, Inc.; Model no. TE-5170	3
Laser Dust Meter	Sibata; Model no. LD-3	1
	Sibata; Model no. LD-3B	4
	Hal Technology; Model no. Hal-HPC300	3
Calibrator	Tisch Environmental, Inc.; Model no. TE-5025A	1

### Monitoring Parameters, Frequency and Duration

- 2.4 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting period is shown in **Appendix B**.

**Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration**

Monitoring Station	Parameter	Period	Frequency
All monitoring locations	1-hour TSP	0700-1900 hrs	3 times/ every 6 days
	24-hour TSP	0000-2400 hrs	once in every 6 days

### Monitoring Methodology and QA/QC Procedure

- 2.5 Weather data was recorded during the monitoring period and is shown in **Appendix D**. The data was obtained from the Meteorological Observations from Hong Kong Observatory Station. The general weather conditions (i.e. sunny, cloudy or rainy) were recorded by the field staff's observation on the monitoring day.

#### Monitoring Methodology and QA/QC Procedure

##### *1-hour TSP Monitoring*

*(Equipment: Sibata; Model no. LD-3 & LD-3B)*

#### Measuring Procedures

- 2.6 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:
- Pull up the air sampling inlet cover
  - Change the Mode 0 to BG with once
  - Push Start/Stop switch once
  - Turn the knob to SENSI.ADJ and press it
  - Push Start/Stop switch once
  - Return the knob to the position MEASURE slowly
  - Push the timer set switch to set measuring time
  - Remove the cap and make a measurement

#### Maintenance/Calibration

- 2.7 The following maintenance/calibration was required for the direct dust meters:
- Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

##### *24-hour TSP Monitoring*

#### Instrumentation

- 2.8 High volume (HVS) samplers (Model no. TE-5170 and GS-2310-105) completed with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

#### Operating/Analytical Procedures

2.9 Operating/analytical procedures for the operation of HVS were as follows:

- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
  - No two samplers were placed less than 2 meters apart.
  - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
  - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
  - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
  - No furnaces or incineration flues were nearby.
  - Airflow around the sampler was unrestricted.
  - The sampler was more than 20 meters from the drip line.
  - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- 2.10 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m<sup>3</sup>/min. and 1.4 m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.11 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 µm diameter.
- 2.12 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.13 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.14 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.15 The shelter lid was closed and secured with the aluminum strip.
- 2.16 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17 After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.
- 2.18 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

- 2.19 The following maintenance/calibration was required for the HVS:
- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- 2.22 High volume samplers were calibrated at bi-monthly intervals using Calibration Kit (Tisch Environmental, Inc.; Model no. TE-5025A) throughout all stages of the air quality monitoring.

**Results and Observations**

2.23 **Table 2.4** summarizes the monitoring results at AM1, AM2, AM3 and AM4\_2 in reporting month.

**Table 2.4 Summary of 1-hour and 24-hour TSP Monitoring Result in Reporting Month**

Air Quality Monitoring Station	Average $\mu\text{g}/\text{m}^3$	Range $\mu\text{g}/\text{m}^3$	Action Level $\mu\text{g}/\text{m}^3$	Limit Level $\mu\text{g}/\text{m}^3$
1 hour TSP				
AM1	72	22 - 117	340	500
AM2	84	26 - 149	352	
AM3	78	24 - 116	355	
AM4_2	85	26 - 119	393	
24 hours TSP				
AM1	34	26 - 41	185	260
AM2	58	43 - 75	182	
AM3	68	54 - 79	181	
AM4_2	130	120 - 149	211	

Note: Since the site area where air monitoring station AM4 was located had to be returned to DSD for another Works Contract, AM4 was relocated to AM4\_2 on 24 September 2012.

- 2.24 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.
- 2.25 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.
- 2.26 The detailed monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results could be referred to **Appendix E** of this report.
- 2.27 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from loading of material, vehicles movement and construction works in site.

### 3 NOISE

#### Monitoring Requirements

3.1 Three noise monitoring stations, namely NM1, NM2 and NM3 were designated in the EM&A Manual for impact monitoring. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

#### Monitoring Locations

3.2 Noise monitoring was conducted at three designated monitoring stations as listed in **Table 3.1**, which are also depicted in **Figure 1A to 1C**

**Table 3.1 Location of Noise Monitoring Stations**

Monitoring Station	Monitored By	Location of Measurement
NM1	DC/2009/23	Chan's Creative School
NM2		Hyde Building
NM3		Goldfield Building

#### Monitoring Equipment

3.3 Integrating Sound Level Meter was used for noise monitoring. The meter is a Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level ( $L_{eq}$ ) and percentile sound pressure level ( $L_x$ ) and also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.2** summarizes the noise monitoring equipments. Copies of calibration certificates are provided in **Appendix C** of this report.

**Table 3.2 Noise Monitoring Equipment**

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVAN 955	2
	SVAN 957	4
	BSWA 801	1
Calibrator	SV30A	2
	B&K 4231	2

#### Monitoring Parameters, Frequency and Duration

3.4 Table 3.3 summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix B**.

**Table 3.3 Noise Monitoring Parameters, Frequency and Duration**

Monitoring Stations	Parameter	Period	Frequency
---------------------	-----------	--------	-----------



NM1 NM2	$L_{eq}(30 \text{ min.})$ dB(A)	0700-1900 hrs. on weekdays	Once per week
	$L_{eq}(5 \text{ min.})$ dB(A)	Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)	
NM3	$L_{eq}(30 \text{ min.})$ dB(A)	0700-1900 hrs. on weekdays	

**Monitoring Methodology and QA/QC Procedures**

- The Sound Level Meter was generally set on a tripod at a height of 1.2 m above the ground, depending to the actual monitoring condition.
- For free field measurement (if any), the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - time measurement : 30 minutes / 5 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the  $L_{eq}$ ,  $L_{90}$  and  $L_{10}$  were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

**Results and Observations**

3.5 **Table 3.4** summarizes the daytime noise monitoring results at NM1, NM2 and NM3 in reporting month.

**Table 3.4 Summary of Daytime Noise Monitoring Results in Reporting Month**

For the time period 0700-1900 hrs. on weekdays		
Monitoring Station	Range, dB(A) $L_{eq}(30 \text{ min.})$	Limit Level ,dB(A) $L_{eq}(30 \text{ min.})$
NM1	64 - 70	70.0 */69.0**
NM2	68 - 72	75.0
NM3	69 - 75	

\* 70 dB(A) was adopted as the Limit Level during school normal teaching period in the reporting period.

\*\* 69 dB(A) was adopted as the Limit Level during the examination period at NM1 because of the Baseline Monitoring Report, the average LAeq,30min measured at NM1 between 0700 and 1900 hours is 69.0 dB(A), exceeded the Limit Level of daytime construction noise during the examination periods (65 dB(A)).

3.6 **Table 3.5** summarizes the restricted hours noise monitoring results at NM1 and NM2 in reporting month.

**Table 3.5 Summary of Restricted Hours Noise Monitoring Results in Reporting Month**

Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)		
Monitoring Station	Range, dB(A) L <sub>eq</sub> (5 min.)	Limit Level ,dB(A) L <sub>eq</sub> (5 min.)
NM1	68 - 71	70.0 *
NM2	69 - 72	70.0 *

Note: No class was held at the school during all the measurement period

\* 70dB (A) was adopted as the Limit Level during restricted hours in the reporting period.

3.7 The construction noise monitoring at the designated locations was conducted by the ET of Contract DC/2009/23 as scheduled in the reporting month.

3.8 Excavation works were conducted during day time at North Point PTW. No construction work was conducted during the restricted hours under the Project in the reporting month.

3.9 All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded, while three non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM1; and five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 5<sup>th</sup>, 13<sup>th</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM2. Details of the exceedance could be referred to **Appendix G & H**.

3.10 The detailed monitoring data and graphical presentations of noise monitoring results could be referred to **Appendix F** of this report.

3.11 The major noise sources identified at the designated noise monitoring stations were traffic noise and construction activities.

## **4 ENVIRONMENTAL AUDIT**

### **Site Audits**

- 4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 4.2 Environmental site audits were conducted on 1<sup>st</sup>, 8<sup>th</sup>, 15<sup>th</sup>, 23<sup>rd</sup> and 27<sup>th</sup> June 2016. No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.
- 4.4 The summaries of site audits are attached in **Appendix I**.

### **Review of Environmental Monitoring Procedures**

- 4.5 The monitoring works were conducted by the monitoring team of Contract DC/2009/23. The monitoring procedures were reviewed by its ET.

### **Status of Environmental Licensing and Permitting**

- 4.6 All permits/licenses obtained for the Contract DC/2009/23 are summarized in **Table 4.1**.

**Table 4.1 Summary of Environmental Licensing and Permit Status for Contract DC/2009/23**

Ref. No.	Valid Period		Details	Status
	From	To		
<b>Water Discharge License</b>				
WT000944 3-2011	22/6/2011	30/6/2016	Location: Aberdeen	Valid
WT000164 39-2013	2/7/2013	31/5/2016	Location: North Point PTW	Expiry and renewal in process
WT000164 65-2013	21/6/2013	30/4/2016	Location: Wan Chai East PTW	
WT000164 62-2013	2/7/2013	30/4/2016	Location: Central PTW	
<b>Registered Chemical Waste Producer</b>				
5213-153- L2743-01	15/2/2011	N/A	Location: North Point PTW	Valid
5213-115- L2737-01	26/1/2011	N/A	Location: Wan Chai East PTW	
5213-134- L2745-01	16/2/2011	N/A	Location: Central PTW	
<b>Construction Noise Permit</b>				
GW- RS0516-13	29/5/2013	28/11/2013	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS0906-13	23/8/2013	22/11/2013	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS1387-13	5/12/2013	21/5/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS0424-14	5/5/2014	5/7/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry

Ref. No.	Valid Period		Details	Status
	From	To		
			Kong	
GW- RS0643-14	3/7/2014	30/9/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Wan Chai East Preliminary Treatment Works, Wan Chai, Hong Kong	Expiry
GW- RS1078-14	10/10/2014	9/4/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Wan Chai East Preliminary Treatment Works, Wan Chai, Hong Kong	Expiry
GW- RS0179-15	25/2/2015	23/5/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Central Preliminary Treatment Works, Western Fire Services Street, Hong Kong	Expiry
GW- RS0484-15	8/5/2015	3/8/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Wan Chai East Preliminary Treatment Works, Wan Chai, Hong Kong	Expiry
GW- RS0567-15	26/5/2015	23/11/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Central Preliminary Treatment Works, Western Fire Services Street, Hong Kong	Expiry
Special Waste Admission Ticket				
13031	24/5/2016	23/11/2016	Location: Central PTW	Valid
13032	24/5/2016	23/11/2016	Location: North Point PTW	Valid

### Status of Waste Management

- 4.7 The amount of wastes generated by the activities of the Project in the reporting month is shown in **Appendix J**.

### Implementation Status of Environmental Mitigation Measures

- 4.8 Details of the implementation of mitigation measures are provided in the **Appendix L**.
- 4.9 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations and recommendations for the Projects are summarized in **Table 4.2**.

**Table 4.2 Observations and Recommendations of Site Audit**

Parameters	Date/Ref. Number	Observations	Follow Up Action
<b>Water Quality</b>	160526-002	The Contractor should ensure the wastewater treatment facility is properly functioned for wastewater treatment at Central-PTW.	Please refer to 160601-001.
	160601-001	The Contractor should ensure the wastewater treatment facility is properly functioned for wastewater treatment at Central-PTW.	Please refer to 160608-001.
	160608-001	The Contractor should ensure the wastewater treatment facility is properly functioned for wastewater treatment at Central-PTW.	The wastewater treatment facility is properly functioned now for wastewater treatment at Central-PTW.
<b>Air Quality</b>	--	--	--
<b>Waste/ Chemical Management</b>	160623-001	Oil/ Chemical containers should be provided with drip trays at Central-PTW.	Oil/ Chemical containers were removed and not observed at Central-PTW.
<b>Noise</b>	--	--	--
<b>Landscape and Visual</b>	--	--	--
<b>Permit/ Licenses</b>	--	--	--

### Implementation Status of Event Action Plans

- 4.10 The Event Action Plans for air quality and noise are presented in **Appendix K**.

#### 1-hr TSP

- 4.11 No Action/Limit Level exceedance was recorded.

#### 24-hr TSP

- 4.12 No Action/Limit Level exceedance was recorded.

#### Construction Noise

- 4.13 No Action Level exceedance was recorded, while three non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM1; and five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 5<sup>th</sup>, 13<sup>th</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM2. Details of the exceedance could be referred to **Appendix G & H**.

### Landscape and Visual

4.14 No non-compliance was recorded.

### **Summary of Complaints and Prosecutions**

4.15 No environmentally related summons, prosecutions or complaints were received for the Project in the reporting month.

4.16 There were no environmentally related summons, prosecutions or complaints were received since the commencement of the Project. The Complaint Log is presented in **Appendix M**.

## 5. FUTURE KEY ISSUES

### Key Issues for the Coming Month

5.1 Key environmental issues in the coming month include:

- Generation of dust from stockpiles of excavated and dusty materials, unpaved site area and vehicle movement, roadwork, excavation works and loading and unloading dusty materials on-site;
- Noise from operation of equipment and machinery on-site;
- Provision well maintenance on the storage facilities of chemicals/fuel and chemical waste/waste oil on-site;
- Ponding water generated in pre-drillings;
- Drainage system should be well designed and maintained to prevent flooding and silty water getting into the public area during and after rainstorm;
- Silty surface runoff generated from the site area; and
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities.

### Monitoring Schedule for the Next Month

5.2 The tentative environmental monitoring schedules for the next month are shown in **Appendix B**.

5.3 Construction Activities for the Next Two Months:

#### Wan Chai East PTW:

- Construction of road and drainage;
- Construction of curtain wall;
- Construction of boundary wall.

#### North Point PTW

- Operation and maintain of the new FSGT Building;
- Construction of Grit Handling Room;
- Laying of Twin DN400 D.I. Pipes;
- Construction of seawater pumping station.

#### Central PTW

- Operation and maintain of the new FSGT Building;
- Construction of curtain wall;
- Installation of Splash Arrestor and FRP cover inside the FSGT building;
- Installation of multi-part cover to flume channel;
- External wall finishing work;
- Construction of boundary wall.

5.4 The tentative construction program is provided in **Appendix N**.



## 6. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- 6.1 Environmental monitoring and audit works were performed in the reporting month and all monitoring results were checked and reviewed.

#### 1-hour TSP Monitoring

- 6.2 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### 24-hour TSP Monitoring

- 6.3 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### Construction Noise Monitoring

- 6.4 All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded, while three non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM1; and five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 5<sup>th</sup>, 13<sup>th</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM2. Details of the exceedance could be referred to **Appendix G & H**.

#### Environmental Audit

- 6.5 Environmental site audits were conducted as weekly basis in the reporting month. No non-compliance was recorded.

#### Complaint and Prosecution

- 6.6 No environmentally related summons, prosecutions or complaints were received in the reporting month.

### **Recommendations for the coming reporting month:**

- 6.7 According to the environmental audit performed in the reporting month, the following recommendations were made for coming reporting month:

#### *Water Quality Impact*

- To ensure the wastewater treatment facility is properly functioned for wastewater treatment before discharging out.

#### *Noise Impact*

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- To space out noisy equipment and position the equipment as far away as possible from

sensitive receivers;

- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location;
- To provide adequate lubricant on mechanical equipments to reduce frictional noise;
- To ensure the doors of the air compressors are closed; and
- To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance.

*Waste/Chemical Management*

- To provide the drip tray for oil/chemical containers to prevent the oil/chemical spillage in the site.

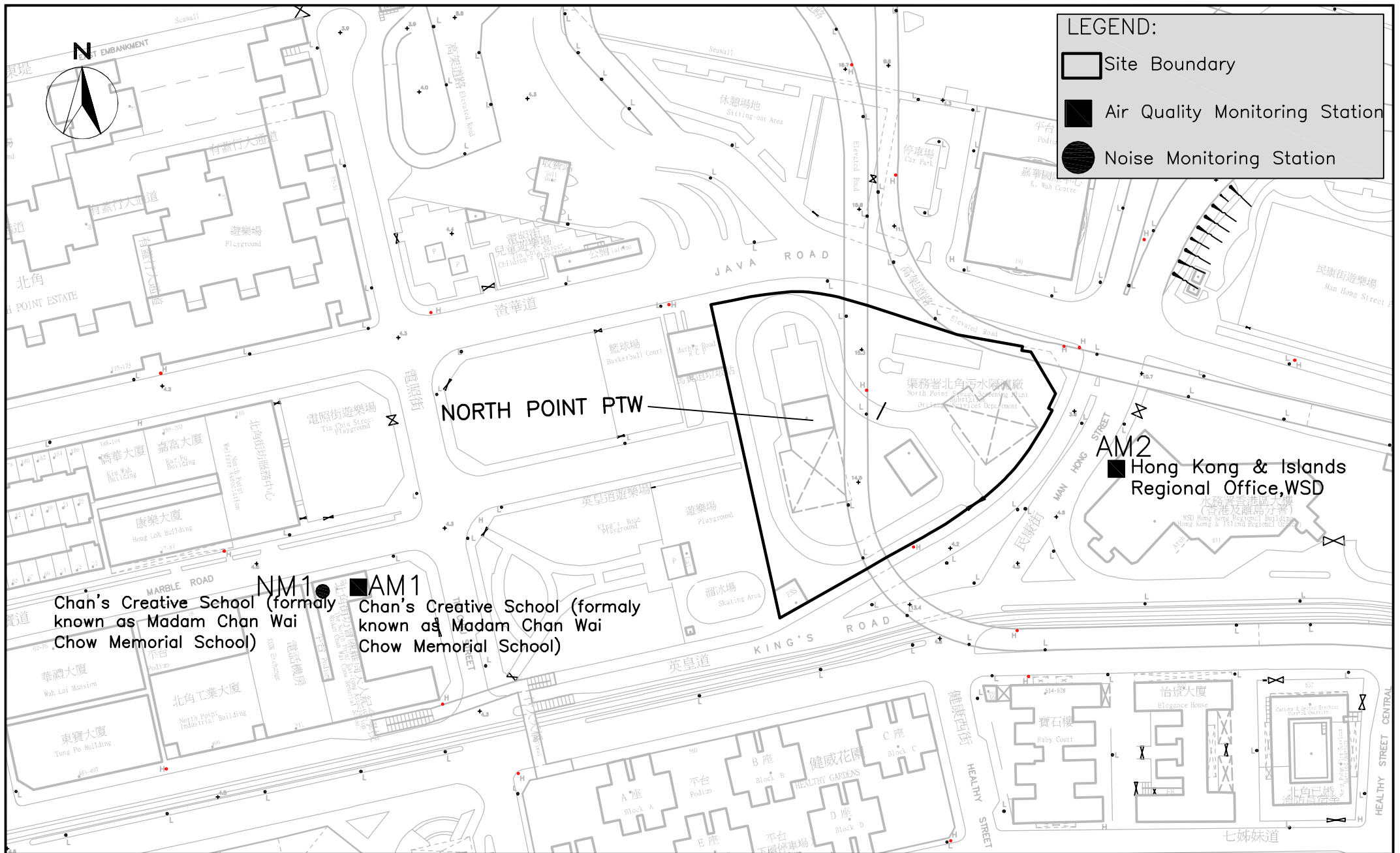
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## FIGURES

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**LEGEND:**

- Site Boundary
- Air Quality Monitoring Station
- Noise Monitoring Station

**NM1**  **AM1**  
 Chan's Creative School (formally known as Madam Chan Wai Chow Memorial School)

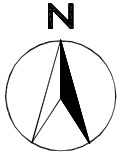
**AM2**  Hong Kong & Islands Regional Office, WSD

**NORTH POINT PTW**



Contract No. DC/2009/23 – Harbour Area Treatment Stage 2A  
 – Upgrading of Preliminary Treatment Works at North Point,  
 Wan Chai East and Central  
**Impact Air Quality & Noise Monitoring Stations (North Point)**

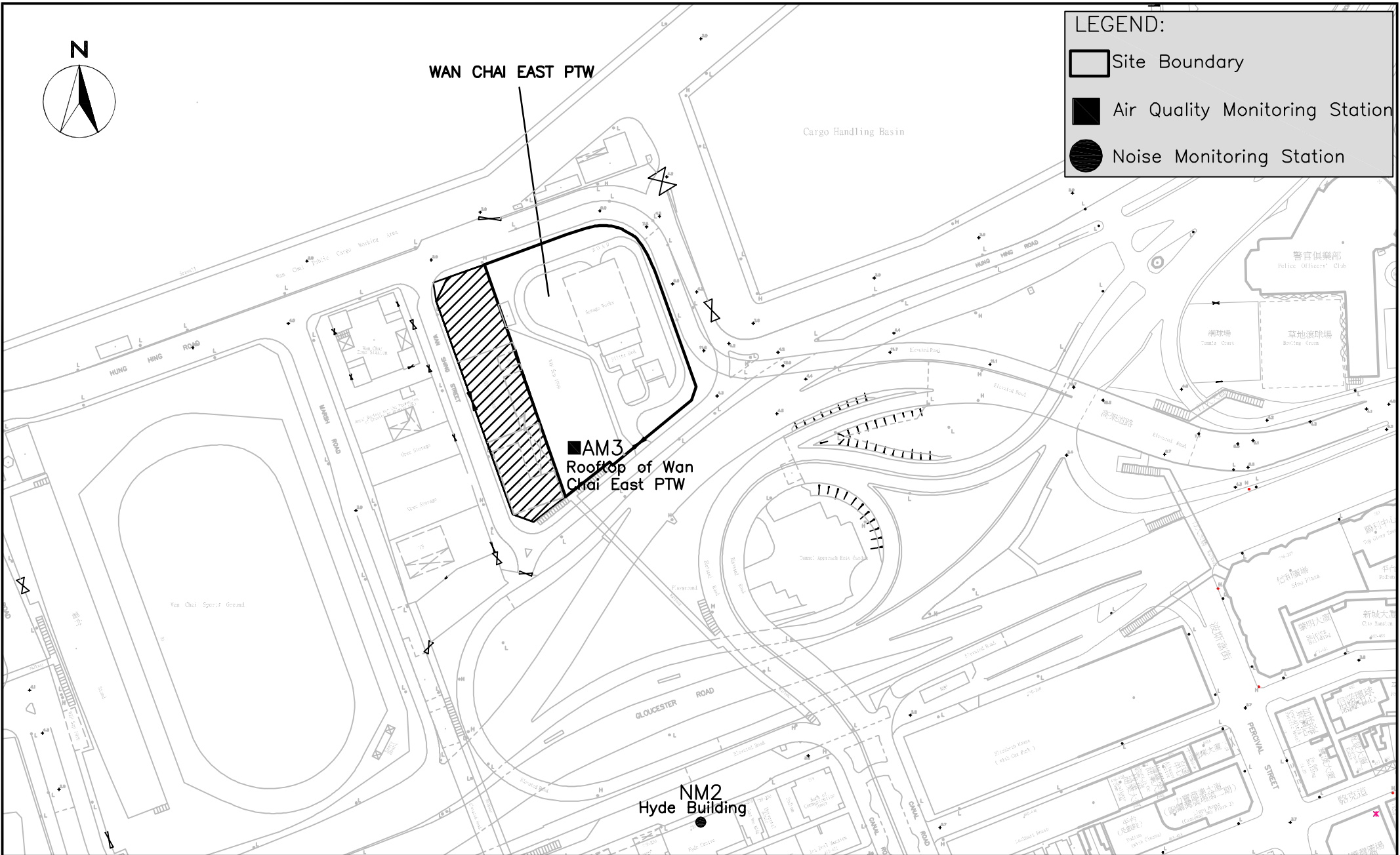
SCALE	N.T.S	DATE	11 MAR 2011	
CHECK	GL	DRAWN	TW	
PROJECT NO.	MA11003	FIGURE NO.	1A	REV —



WAN CHAI EAST PTW

**LEGEND:**

- Site Boundary
- Air Quality Monitoring Station
- Noise Monitoring Station

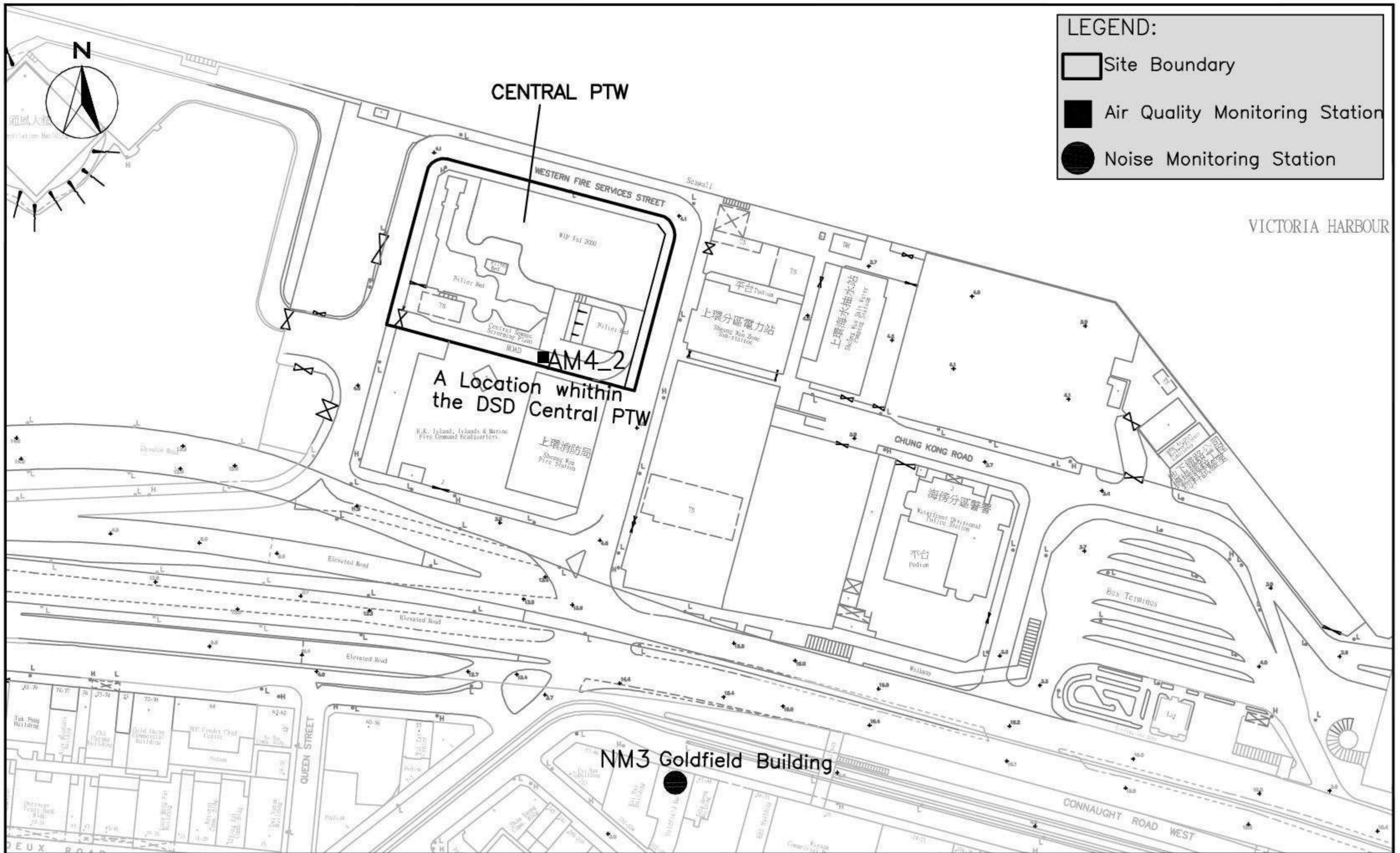


Contract No. DC/2009/23 – Harbour Area Treatment Stage 2A  
 – Upgrading of Preliminary Treatment Works at North Point,  
 Wan Chai East and Central

**Impact Air Quality & Noise Monitoring Stations (Wan Chai East)**



SCALE	N.T.S	DATE	11 MAR 2011	
CHECK	GL	DRAWN	TW	
PROJECT NO.	MA11003	FIGURE NO.	1B	REV —

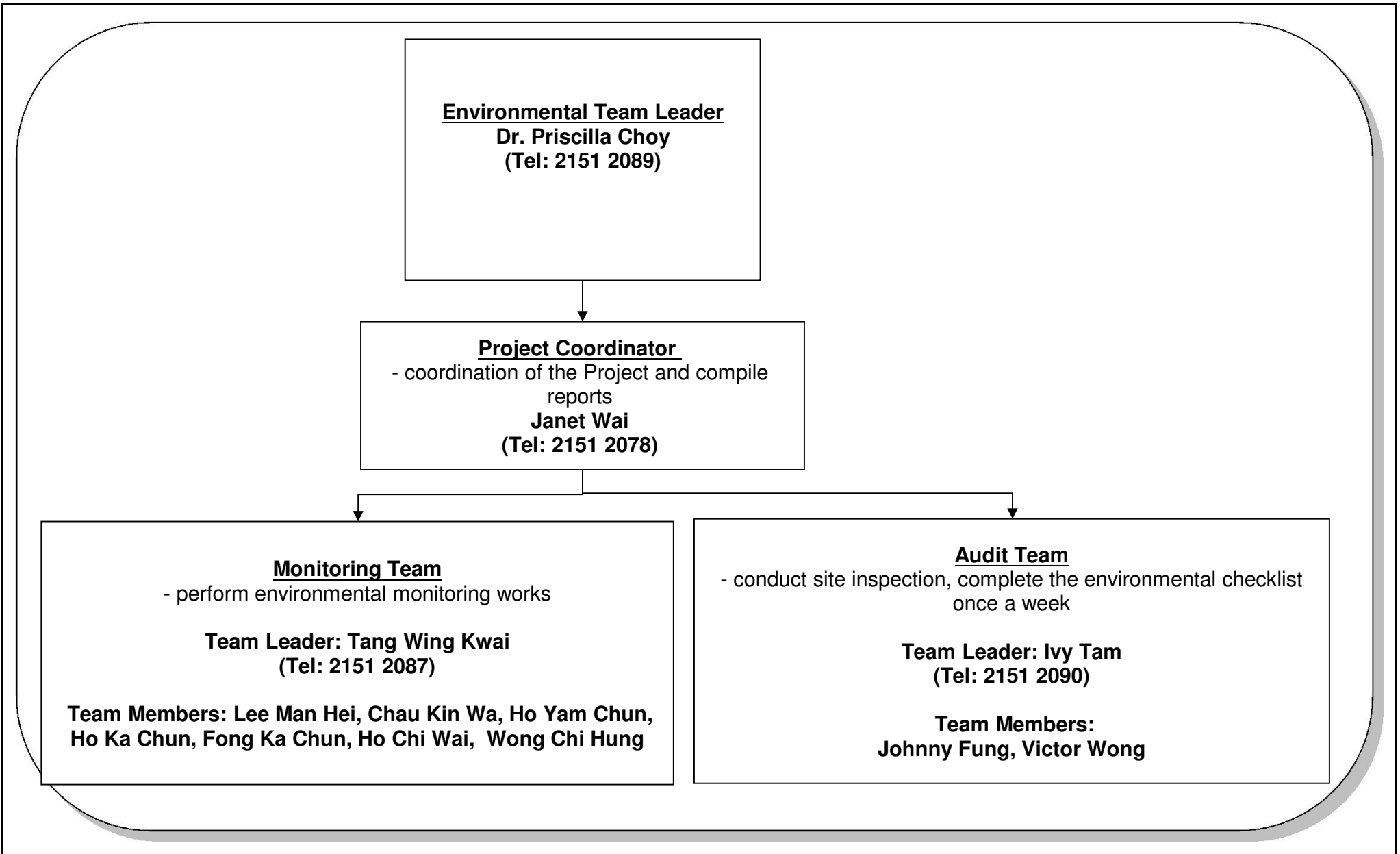


Contract No. DC/2009/23 – Harbour Area Treatment Stage 2A  
 – Upgrading of Preliminary Treatment Works at North Point,  
 Wan Chai East and Central

**Impact Air Quality & Noise Monitoring Stations (Central)**



SCALE	N.T.S	DATE	11 MAR 2011
CHECK	GL	DRAWN	TW
PROJECT NO.	MA11003	FIGURE NO.	1C
		REV	—



Title	Contract No. DC/2009/23	Scale	N.T.S	Project No.	MA11003	CINOTECH
	HATS Stage 2A – Upgrading of Preliminary Treatment Works at North Point, Wanchai East and Central	Date	Mar-15	Figure	2	
ET's Organization Chart						

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**APPENDIX A  
ACTION AND LIMIT LEVELS FOR AIR  
QUALITY AND NOISE**

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## Appendix A Action and Limit Levels

**Table A-1 Action and Limit Levels for 1-Hour TSP and 24-Hour TSP**

Monitoring Stations	Action Level ( $\mu\text{g}/\text{m}^3$ )		Limit Level ( $\mu\text{g}/\text{m}^3$ )	
	1-hour	24-hour	1-hour	24-hour
AM1	340	185	500	260
AM2	352	182		
AM3	355	181		
AM4_2	393	211		

**Table A-2 Action and Limit Level for Construction Noise**

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM1	0700-1900 hours on normal weekdays	When one documented complaint is received	70 */69**
	Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)		70 ***
NM2	0700-1900 hours on normal weekdays		75
	Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)		70 ***
NM3	0700-1900 hours on normal weekdays		75

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

\* 70 dB(A) was adopted as the Limit Level during school normal teaching period in the reporting period.

\*\* 69 dB(A) was adopted as the Limit Level during the examination period at NM1 because of the Baseline Monitoring Report, the average LAeq,30min measured at NM1 between 0700 and 1900 hours is 69.0 dB(A), exceeded the Limit Level of daytime construction noise during the examination periods (65 dB(A)).

\*\*\* 70 dB(A) was adopted as the Limit Level during restricted hours in the reporting period

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**APPENDIX B  
ENVIRONMENTAL MONITORING  
SCHEDULES**

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**Contract No. DC/2009/23**  
**Upgrading of PTWs at North Point, Wan Chai East and Central**  
**Impact Air Quality and Noise Monitoring for June 2016**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jun	2-Jun	3-Jun	4-Jun
			1 hr TSP (AM1, AM2, AM3 & AM4_2) Noise (NM1 & NM2) (Daytime & Evening time) Noise (NM3)(Daytime)			
<b>5-Jun</b>	6-Jun	7-Jun	8-Jun	<b>9-Jun</b>	10-Jun	11-Jun
Noise (NM1 & NM2) (during daytime on sundays/public holidays)	24 hrs TSP (AM1, AM2, AM3 & AM4_2)	1 hr TSP (AM1, AM2, AM3 & AM4_2) Noise (NM1, NM2 & NM3) (Daytime)			24 hrs TSP (AM1, AM2, AM3 & AM4_2)	
<b>12-Jun</b>	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun	18-Jun
	1 hr TSP (AM1, AM2, AM3 & AM4_2) Noise (NM1 & NM2) (Daytime & Evening time) Noise (NM3)(Daytime)		24 hrs TSP (AM1, AM2, AM3 & AM4_2)	1 hr TSP (AM1, AM2, AM3 & AM4_2)		
<b>19-Jun</b>	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun
Noise (NM1 & NM2) (during daytime on sundays/public holidays)		24 hrs TSP (AM1, AM2, AM3 & AM4_2)	1 hr TSP (AM1, AM2, AM3 & AM4_2) Noise (NM1, NM2 & NM3) (Daytime)			
<b>26-Jun</b>	27-Jun	28-Jun	29-Jun	30-Jun		
	24hr-TSP (AM1, AM2 & AM3)	1 hr TSP (AM1, AM2, AM3 & AM4_2) 24hr-TSP (AM4_2)* Noise (NM1 & NM2) (Daytime & Evening time) Noise (NM3)(Daytime)				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

\* Remark: Due to the interruption of power supply of Air Quality Monitoring Station (AM4\_2) at Central on 27 June 2016, the 24hrs-TSP monitoring was rescheduled and conducted on 28 June 2016.

**Air Quality Monitoring Station**

AM1 - Works site boundary of DC/2009/23  
 AM2 - Hong Kong & Islands Regional Office, WSD  
 AM3 - Wan Chai East PTW  
 AM4\_2 - A Location within the DSD Central PTW

**Noise Monitoring Station**

NM1 - Chan's Creative School  
 NM2 - Hyde Building  
 NM3 - Goldfield Building

**Contract No. DC/2009/23  
Upgrading of PTWs at North Point, Wan Chai East and Central  
Tentative Impact Air Quality and Noise Monitoring for July 2016**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					<b>1-Jul</b>	<b>2-Jul</b>
						24 hrs TSP (AM1, AM2, AM3 & AM4_2)
<b>3-Jul</b>	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul
Noise (NM1 & NM2) (during daytime on sundays/public holidays)	1 hr TSP (AM1, AM2, AM3 & AM4_2) Noise (NM1, NM2 & NM3) (Daytime)			24 hrs TSP (AM1, AM2, AM3 & AM4_2)	1 hr TSP (AM1, AM2, AM3 & AM4_2)	
<b>10-Jul</b>	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
			24 hrs TSP (AM1, AM2, AM3 & AM4_2)	1 hr TSP (AM1, AM2, AM3 & AM4_2) Noise (NM1 & NM2) (Daytime & Evening time) Noise (NM3)(Daytime)		
<b>17-Jul</b>	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul
Noise (NM1 & NM2) (during daytime on sundays/public holidays)		24 hrs TSP (AM1, AM2, AM3 & AM4_2)	1 hr TSP (AM1, AM2, AM3 & AM4_2) Noise (NM1, NM2 & NM3) (Daytime)			
<b>24-Jul</b>	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul
	24 hrs TSP (AM1, AM2, AM3 & AM4_2)	1 hr TSP (AM1, AM2, AM3 & AM4_2) Noise (NM1 & NM2) (Daytime & Evening time) Noise (NM3)(Daytime)			24 hrs TSP (AM1, AM2, AM3 & AM4_2)	
<b>31-Jul</b>						
Noise (NM1 & NM2) (during daytime on sundays/public holidays)						

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

**Air Quality Monitoring Station**

AM1 - Works site boundary of DC/2009/23  
AM2 - Hong Kong & Islands Regional Office, WSD  
AM3 - Wan Chai East PTW  
AM4\_2 - A Location within the DSD Central PTW

**Noise Monitoring Station**

NM1 - Chan's Creative School  
NM2 - Hyde Building  
NM3 - Goldfield Building

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**APPENDIX C  
COPIES OF CALIBRATION  
CERTIFICATES**

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# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA11003/46/0005

Station: AMI - Chan's Creative School Operator: WK  
 Date: 26-May-16 Next Due Date: 25-Jul-16  
 Equipment No.: A-01-46 Serial No. 1315

Ambient Condition			
Temperature, Ta (K)	299.7	Pressure, Pa (mmHg)	768.6

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.4	3.39	57.48	7.6	2.76
2	9.8	3.14	53.35	6.8	2.61
3	7.2	2.69	45.85	4.9	2.22
4	5.0	2.24	38.35	3.3	1.82
5	3.3	1.82	31.32	2.1	1.45

**By Linear Regression of Y on X**

Slope, mw = 0.0509 Intercept, bw = -0.1315  
 Correlation coefficient\* = 0.9991

\*If Correlation Coefficient < 0.990, check and recalibrate.

**Set Point Calculation**

From the TSP Field Calibration Curve, take Qstd = 43 CFM  
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.22

Remarks: \_\_\_\_\_

Conducted by: Wk. Tang Signature: [Signature]  
 Checked by: [Signature] Signature: \_\_\_\_\_

Date: 26/5/16  
 Date: 26 May 2016

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA11003/44/0005

Station: AM2 - Hong Kong & Islands Regional Office, WSD Operator: WK  
 Date: 26-May-16 Next Due Date: 25-Jul-16  
 Equipment No.: A-01-44 Serial No. 1316

Ambient Condition			
Temperature, Ta (K)	299.1	Pressure, Pa (mmHg)	767.9

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.3	3.37	57.26	7.9	2.82
2	9.1	3.03	51.47	6.1	2.48
3	7.8	2.80	47.72	5.2	2.29
4	5.0	2.24	38.37	3.4	1.85
5	3.1	1.77	30.40	2.0	1.42

**By Linear Regression of Y on X**

Slope, mw = 0.0512 Intercept, bw = -0.1339  
 Correlation coefficient\* = 0.9992

\*If Correlation Coefficient < 0.990, check and recalibrate.

**Set Point Calculation**

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.24

Remarks: \_\_\_\_\_

Conducted by: Wk Tang Signature: Kwan  
 Checked by: Wk Signature: \_\_\_\_\_

Date: 26/5/16  
 Date: 26 May 2016

# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA11003/48/0005

Station: AM3 - Wan Chai East PTW Operator: WK  
 Date: 26-May-16 Next Due Date: 25-Jul-16  
 Equipment No.: A-01-48 Serial No. 1792

Ambient Condition			
Temperature, Ta (K)	299	Pressure, Pa (mmHg)	768.5

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler						
Calibration Point	Orifice			HVS		
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Y-axis
1	11.7	3.43	58.28	7.6	2.77	
2	9.6	3.11	52.87	6.1	2.48	
3	7.8	2.80	47.74	5.0	2.24	
4	5.1	2.27	38.77	3.3	1.82	
5	3.3	1.82	31.35	2.0	1.42	

By Linear Regression of Y on X

Slope, mw = 0.0493 Intercept, bw = -0.1116  
 Correlation coefficient\* = 0.9995

\*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation	
From the TSP Field Calibration Curve, take Qstd = 43 CFM	
From the Regression Equation, the "Y" value according to	
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$	
Therefore, Set Point; W = (mw x Qstd + bw) <sup>2</sup> x (760 / Pa) x (Ta / 298) =	<u>4.00</u>

Remarks: \_\_\_\_\_

Conducted by: Wah Tang Signature: [Signature] Date: 26/5/16  
 Checked by: [Signature] Signature: [Signature] Date: 26 May 2016



# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA11003/15/0004

Station: AM4 2 - A location within the DSD Central PTW Operator: WK  
 Date: 29-Mar-16 Next Due Date: 28-May-16  
 Equipment No.: A-01-15 Serial No. 10576

Ambient Condition			
Temperature, Ta (K)	291.6	Pressure, Pa (mmHg)	769.2

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.49	59.28	7.9	2.86
2	9.6	3.15	53.55	6.5	2.59
3	7.5	2.79	47.43	5.2	2.32
4	5.1	2.30	39.26	3.4	1.88
5	3.4	1.88	32.21	2.2	1.51

**By Linear Regression of Y on X**  
 Slope, mw = 0.0501 Intercept, bw = -0.0901  
 Correlation coefficient\* = 0.9993  
 \*If Correlation Coefficient < 0.990, check and recalibrate.

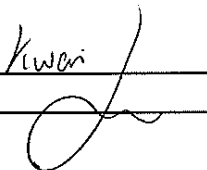
**Set Point Calculation**

From the TSP Field Calibration Curve, take Qstd = 43 CFM  
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.12

Remarks: \_\_\_\_\_

Conducted by: Wk Tang Signature:  Date: 29/3/16  
 Checked by: AV Signature: \_\_\_\_\_ Date: 29 March 2016

# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA11003/15/0005

Station: AM4\_2 - A location within the DSD Central PTW Operator: WK  
 Date: 26-May-16 Next Due Date: 25-Jul-16  
 Equipment No.: A-01-15 Serial No. 10576

Ambient Condition			
Temperature, Ta (K)	299.6	Pressure, Pa (mmHg)	767.8

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	11.7	3.43	58.20	8.1	2.85
2	9.2	3.04	51.70	6.3	2.52
3	7.6	2.76	47.07	5.3	2.31
4	5.2	2.29	39.08	3.3	1.82
5	3.3	1.82	31.31	2.1	1.45

**By Linear Regression of Y on X**

Slope, mw = 0.0527 Intercept, bw = -0.2080  
 Correlation coefficient\* = 0.9991

\*If Correlation Coefficient < 0.990, check and recalibrate.

**Set Point Calculation**

From the TSP Field Calibration Curve, take Qstd = 43 CFM

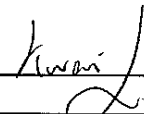
From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = (mw x Qstd + bw)<sup>2</sup> x (760 / Pa) x (Ta / 298) = 4.22

Remarks: \_\_\_\_\_

Conducted by: Wk Tang  
 Checked by: lv

Signature:   
 Signature: \_\_\_\_\_

Date: 26/5/16  
 Date: 26 May 2016



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE  
 VILLAGE OF CLEVELAND, OH  
 45002  
 513.467.9000  
 877.263.7610 TOLL FREE  
 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 04, 2016 Rootmeter S/N 0438320 Ta (K) - 295  
 Operator Tisch Orifice I.D. - 2896 Pa (mm) - 755.65

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4340	3.2	2.00
2	NA	NA	1.00	1.0250	6.4	4.00
3	NA	NA	1.00	0.9150	7.9	5.00
4	NA	NA	1.00	0.8770	8.7	5.50
5	NA	NA	1.00	0.7210	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0001	0.6974	1.4173	0.9957	0.6944	0.8836
0.9959	0.9716	2.0044	0.9915	0.9674	1.2496
0.9938	1.0861	2.2410	0.9894	1.0814	1.3971
0.9928	1.1320	2.3503	0.9885	1.1271	1.4653
0.9875	1.3696	2.8346	0.9831	1.3636	1.7672
Qstd slope (m) = 2.11176			Qa slope (m) = 1.32235		
intercept (b) = -0.05079			intercept (b) = -0.03166		
coefficient (r) = 0.99982			coefficient (r) = 0.99982		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)  
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]  
 Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760)(298/Ta))] - b }  
 Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b }

**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160506/1
Date of Issue:	2016-05-09
Date Received:	2016-05-06
Date Tested:	2016-05-06
Date Completed:	2016-05-09
Next Due Date:	2016-07-05

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3
Serial No.	: 251634
Sensitivity (K) 1 CPM	: 0.001 mg/m <sup>3</sup>
Sen. Adjustment Scale Setting	: 550 CPM
Equipment No.	: A-02-01

**Test Conditions:**

Room Temperature	: 23 degree Celsius
Relative Humidity	: 60 %

**Test Specifications & Methodology:**


1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	0.0034
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*  
For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160506/2
Date of Issue:	2016-05-09
Date Received:	2016-05-06
Date Tested:	2016-05-06
Date Completed:	2016-05-09
Next Due Date:	2016-07-05

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 853944
Sensitivity (K) 1 CPM	: 0.001 mg/m <sup>3</sup>
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

**Test Conditions:**

Room Temperature	: 23 degree Celsius
Relative Humidity	: 60 %

**Test Specifications & Methodology:**

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	0.0036
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**

Laboratory Manager

**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160506/3
Date of Issue:	2016-05-09
Date Received:	2016-05-06
Date Tested:	2016-05-06
Date Completed:	2016-05-09
Next Due Date:	2016-07-05

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description : Laser Dust Monitor  
 Manufacturer : Sibata  
 Model No. : LD-3B  
 Serial No. : 014750  
 Sensitivity (K) 1 CPM : 0.001 mg/m<sup>3</sup>  
 Sen. Adjustment Scale Setting : 790 CPM  
 Equipment No. : A-02-06

**Test Conditions:**

Room Temperature : 23 degree Celsius  
 Relative Humidity : 60 %

**Test Specifications & Methodology:**

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	0.0033
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*  
 For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
 Laboratory Manager

**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160506/4
Date of Issue:	2016-05-09
Date Received:	2016-05-06
Date Tested:	2016-05-06
Date Completed:	2016-05-09
Next Due Date:	2016-07-05

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description : Laser Dust Monitor  
 Manufacturer : Sibata  
 Model No. : LD-3B  
 Serial No. : 541146  
 Sensitivity (K) 1 CPM : 0.001 mg/m<sup>3</sup>  
 Sen. Adjustment Scale Setting : 625 CPM  
 Equipment No. : A-02-07

**Test Conditions:**

Room Temperature : 23 degree Celsius  
 Relative Humidity : 60 %

**Test Specifications & Methodology:**

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	0.0035
-------------------------	--------

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*PREPARED AND CHECKED BY:*  
 For and On Behalf of **WELLAB Ltd.**

  
 \_\_\_\_\_  
**PATRICK TSE**  
 Laboratory Manager

**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160422/3
Date of Issue:	2016-04-25
Date Received:	2016-04-22
Date Tested:	2016-04-22
Date Completed:	2016-04-25
Next Due Date:	2016-06-24

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m <sup>3</sup>
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

**Test Conditions:**

Room Temperature	: 24 degree Celsius
Relative Humidity	: 56 %

**Test Specifications & Methodology:**

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	0.0034
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
Laboratory Manager



**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160624/1
Date of Issue:	2016-06-27
Date Received:	2016-06-24
Date Tested:	2016-06-24
Date Completed:	2016-06-27
Next Due Date:	2016-08-26

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m <sup>3</sup>
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

**Test Conditions:**

Room Temperature	: 23 degree Celsius
Relative Humidity	: 58 %

**Test Specifications & Methodology:**

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	0.0036
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**

Laboratory Manager

**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160408/1
Date of Issue:	2016-04-11
Date Received:	2016-04-08
Date Tested:	2016-04-08
Date Completed:	2016-04-11
Next Due Date:	2016-06-10

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description : Handheld Particle Counter  
 Manufacturer : Hal Technology  
 Model No. : Hal-HPC300  
 Serial No. : 3020408  
 Flow rate : 0.1 cfm  
 Zero Count Test : 0 count per 5 minutes  
 Equipment No. : A-26-01

**Test Conditions:**

Room Temperature : 23 degree Celsius  
 Relative Humidity : 57 %

**Test Specifications & Methodology:**

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	1.044
-------------------------	-------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**

Laboratory Manager

**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160408/3
Date of Issue:	2016-04-11
Date Received:	2016-04-08
Date Tested:	2016-04-08
Date Completed:	2016-04-11
Next Due Date:	2016-06-10

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description : Handheld Particle Counter  
 Manufacturer : Hal Technology  
 Model No. : Hal-HPC300  
 Serial No. : 3020410  
 Flow rate : 0.1 cfm  
 Zero Count Test : 0 count per 5 minutes  
 Equipment No. : A-26-03

**Test Conditions:**

Room Temperature : 23 degree Celsius  
 Relative Humidity : 57 %

**Test Specifications & Methodology:**

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	1.148
-------------------------	-------

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*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/160408/4
Date of Issue:	2016-04-11
Date Received:	2016-04-08
Date Tested:	2016-04-08
Date Completed:	2016-04-11
Next Due Date:	2016-06-10

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

<b>Certificate of Calibration</b>
-----------------------------------

**Item for Calibration:**

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020411
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-04

**Test Conditions:**

Room Temperature	: 23 degree Celsius
Relative Humidity	: 57 %

**Test Specifications & Methodology:**

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

**Results:**

Correlation Factor (CF)	1.191
-------------------------	-------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*  
For and On Behalf of **WELLAB Ltd.**

  
\_\_\_\_\_  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/150918/1
Date of Issue:	2015-09-21
Date Received:	2015-09-18
Date Tested:	2015-09-18
Date Completed:	2015-09-21
Next Due Date:	2016-09-20

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12553
Microphone No.	: 35222
Equipment No.	: N-08-02

**Test conditions:**

Room Temperature	: 25 degree Celsius
Relative Humidity	: 58%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/150918/2
Date of Issue:	2015-09-21
Date Received:	2015-09-18
Date Tested:	2015-09-18
Date Completed:	2015-09-21
Next Due Date:	2016-09-20

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12563
Microphone No.	: 34377
Equipment No.	: N-08-03

**Test conditions:**

Room Temperature	: 25 degree Celsius
Relative Humidity	: 58%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/150828/1
Date of Issue:	2015-08-31
Date Received:	2015-08-28
Date Tested:	2015-08-28
Date Completed:	2015-08-31
Next Due Date:	2016-08-30

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

**Test conditions:**

Room Temperature	: 24 degree Celsius
Relative Humidity	: 58%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/150821/3
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21459
Microphone No.	: 43676
Equipment No.	: N-08-08

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 54%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
Laboratory Manager



## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/150821/1
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 54%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/151127/1
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29

**ATTN:** Mr. W.K. Tang

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### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

**Test conditions:**

Room Temperature	: 24 degree Celsius
Relative Humidity	: 62%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
Laboratory Manager

### TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/151215-3
Date of Issue:	2015-12-18
Date Received:	2015-12-15
Date Tested:	2015-12-15
Date Completed:	2015-12-18
Next Due Date:	2016-12-17

**ATTN:** Mr. W. K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35927
Equipment No.	: N-13-03

**Test conditions:**

Room Temperature	: 23 degree Celsius
Relative Humidity	: 56%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/151003/1
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

### Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 57%

### Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/151003/2
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

### Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 57%

### Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/151106/1
Date of Issue:	2015-11-07
Date Received:	2015-11-06
Date Tested:	2015-11-06
Date Completed:	2015-11-07
Next Due Date:	2016-11-06

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Equipment No.	: N-02-01

### Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 56 %

### Methodology:

The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/N/150821/4
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 54%

**Methodology:**

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

**Results:**

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
Laboratory Manager

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**APPENDIX D  
METEOROLOGICAL DATA ON  
MONITORING DATES**

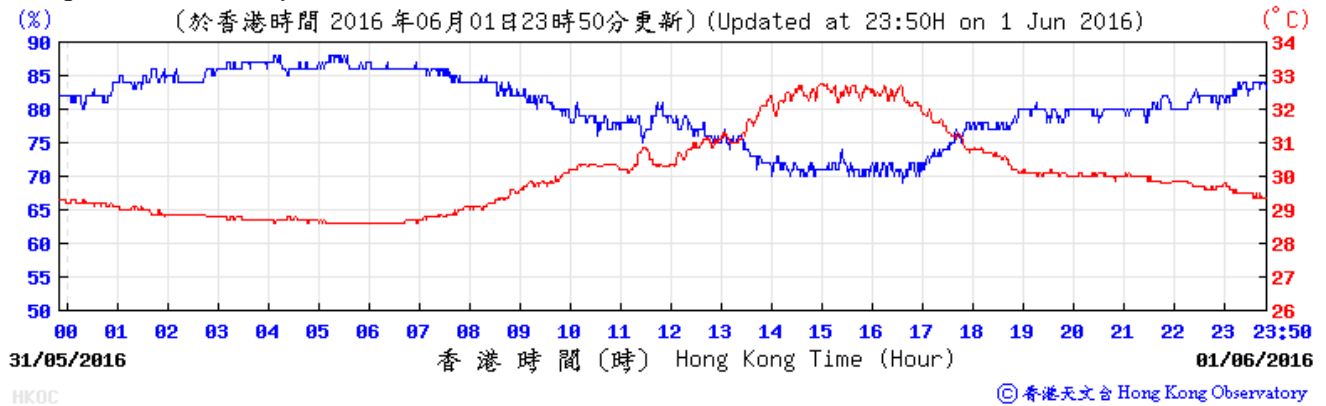
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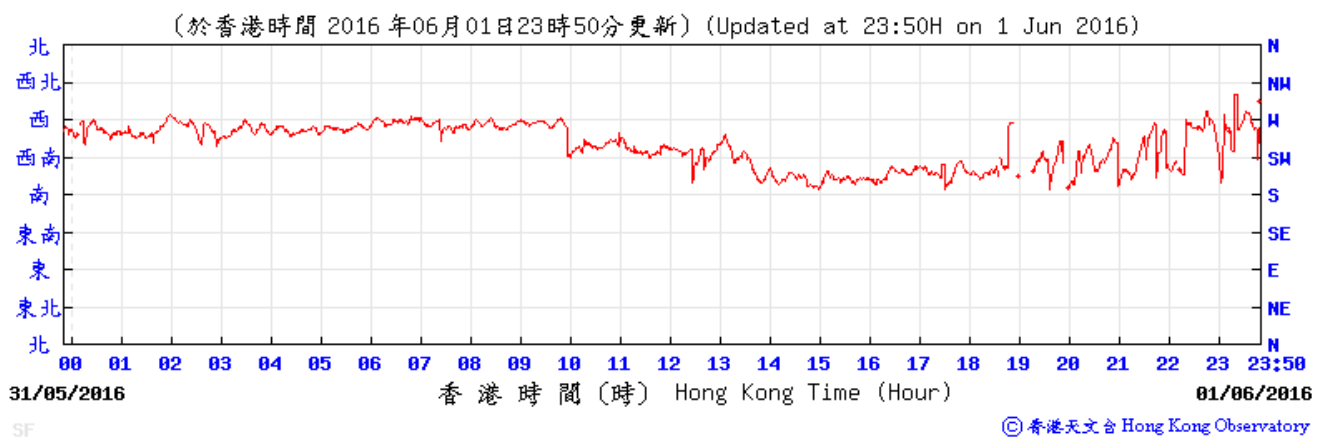
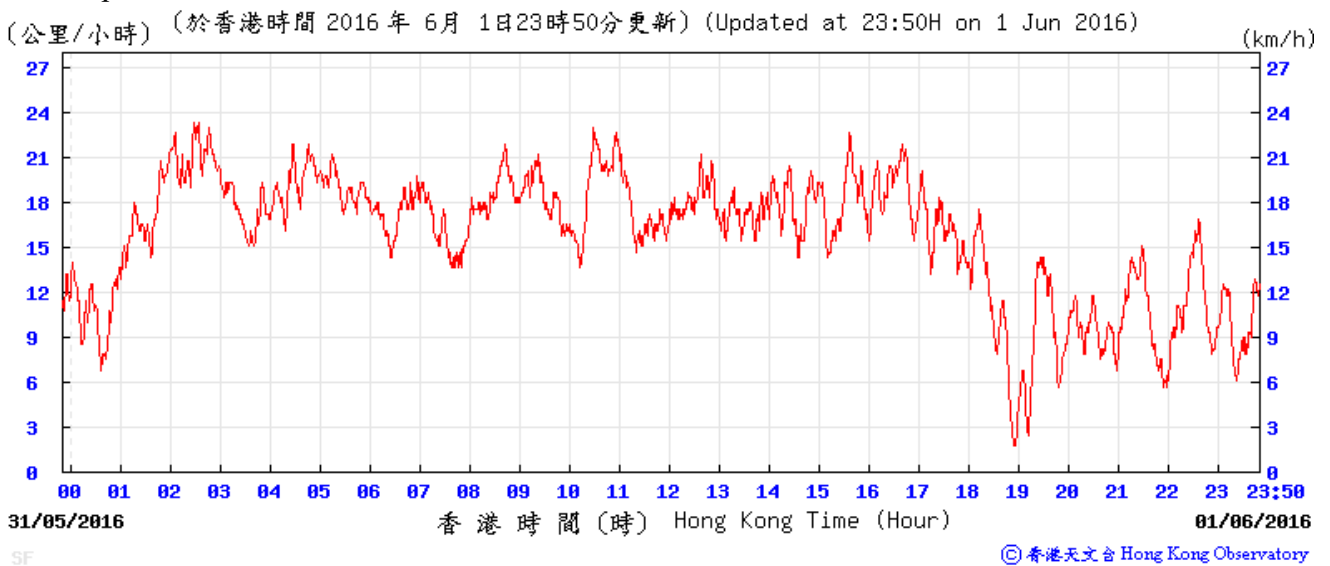


**Appendix D**  
**Meteorological Data Recorded from HKO Station (1 June 2016)**  
 (Source: [www.hko.gov.hk](http://www.hko.gov.hk))

Temperature/Humidity:



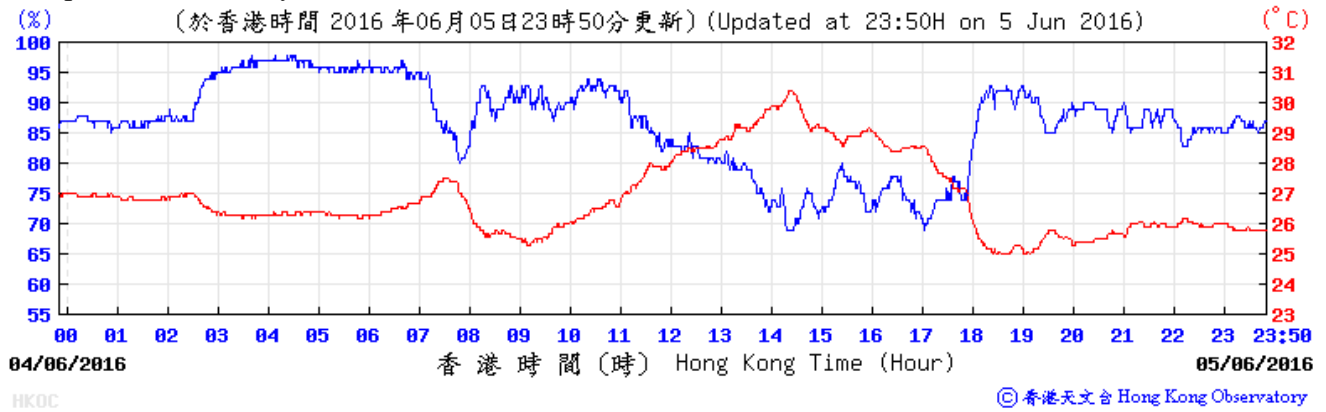
Wind Speed and Direction:



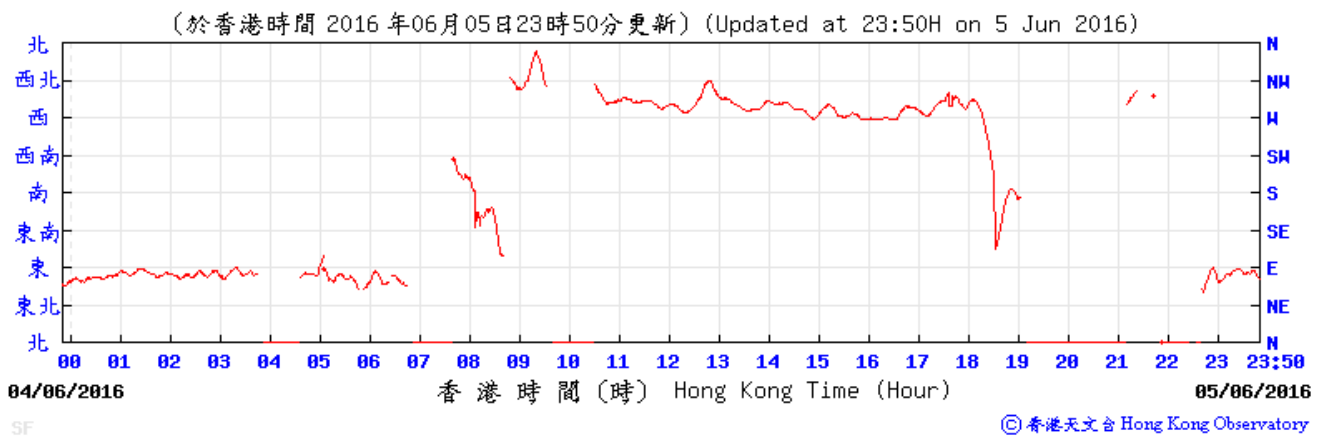
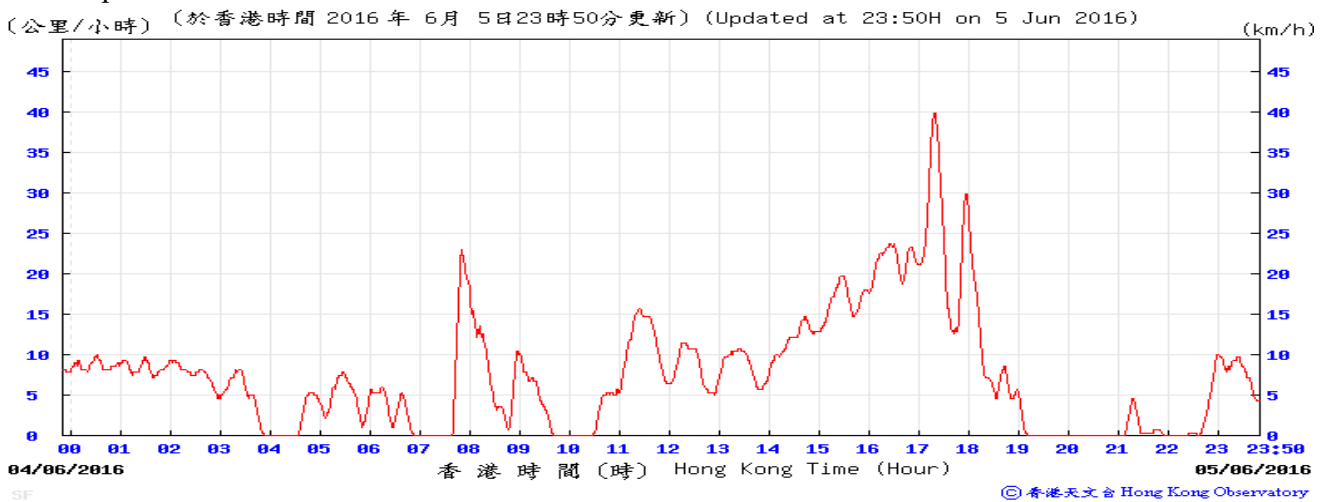
### Meteorological Data Recorded from HKO Station (5 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:

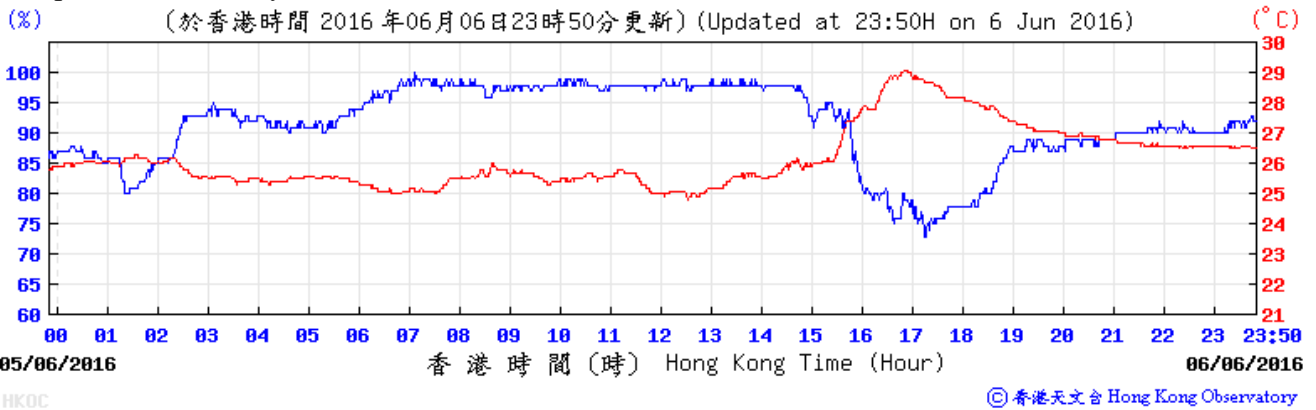


#### Wind Speed and Direction:

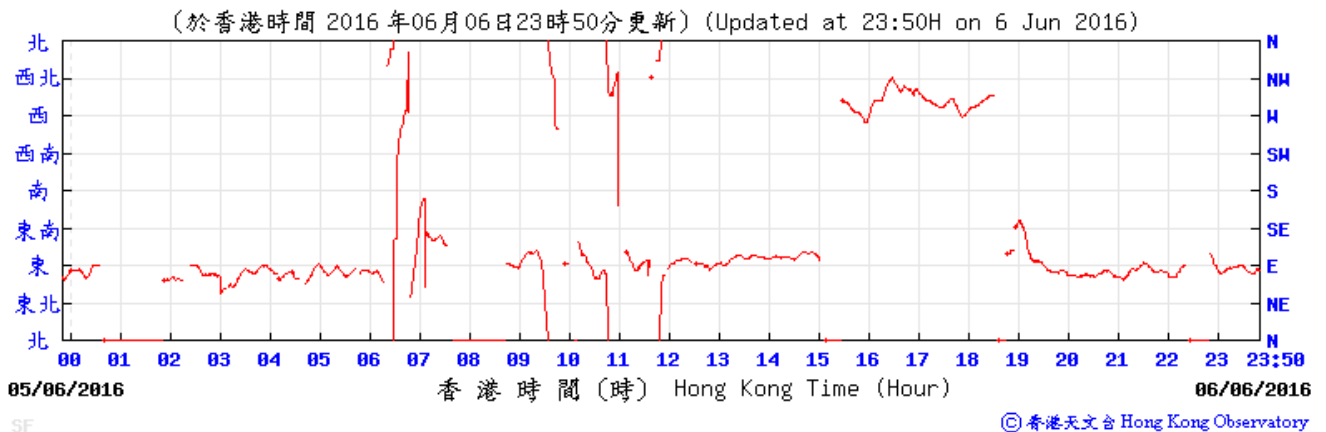
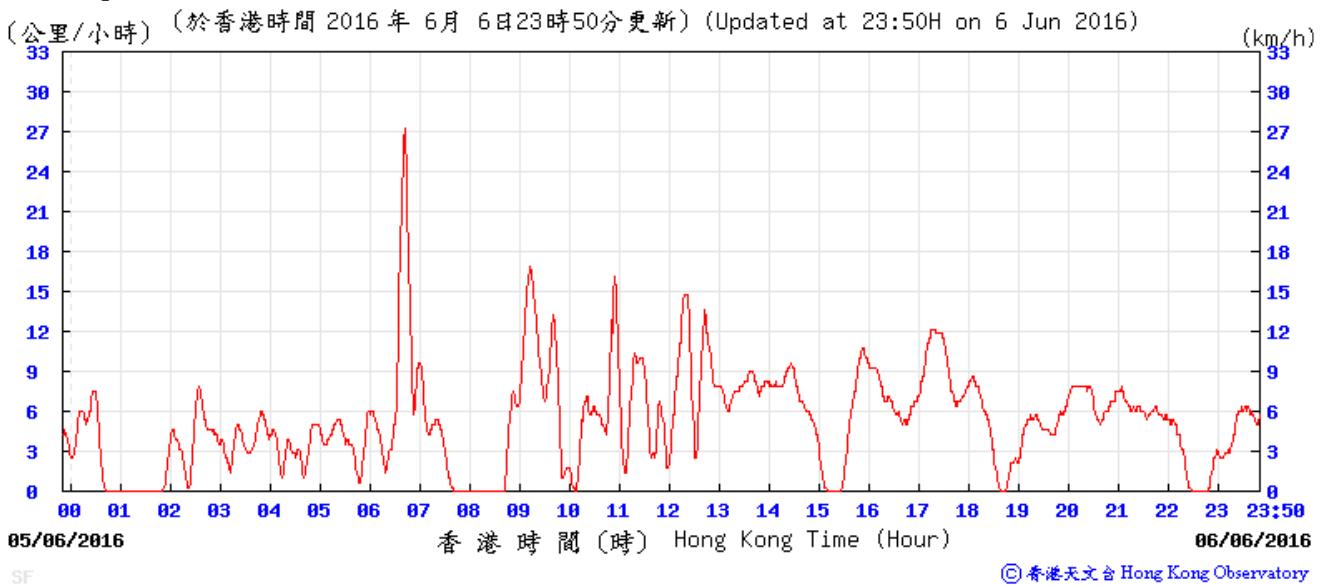


### Meteorological Data Recorded from HKO Station (6 June 2016) (Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



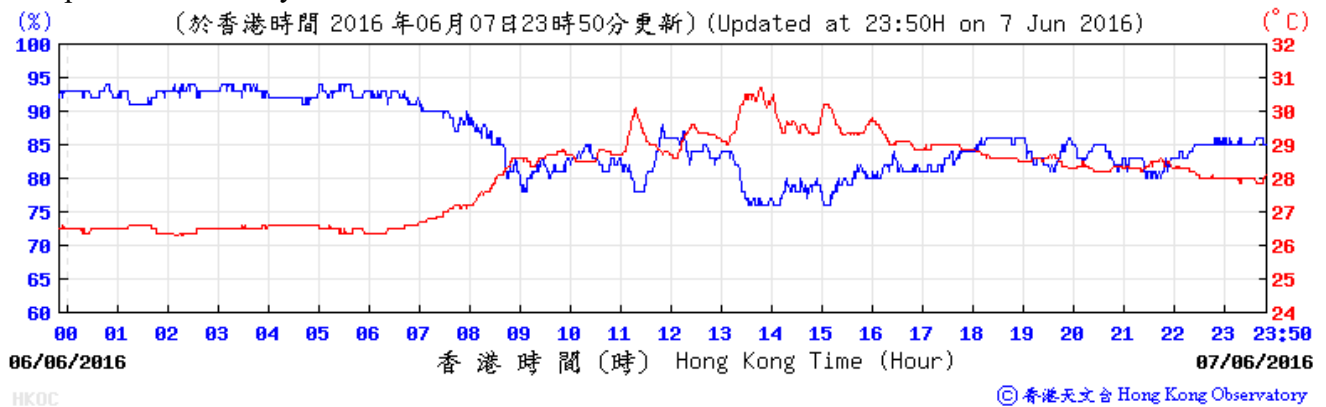
#### Wind Speed and Direction:



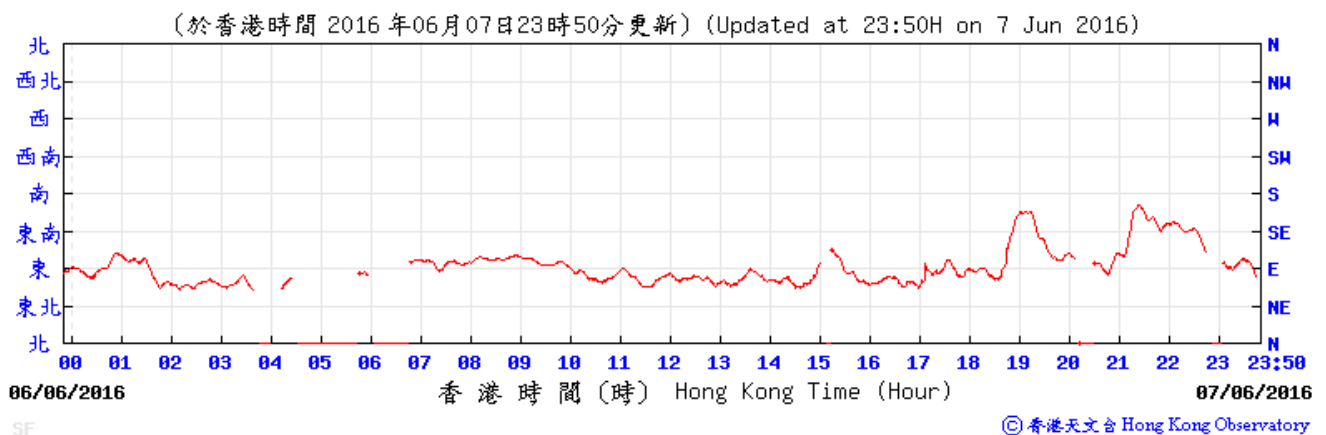
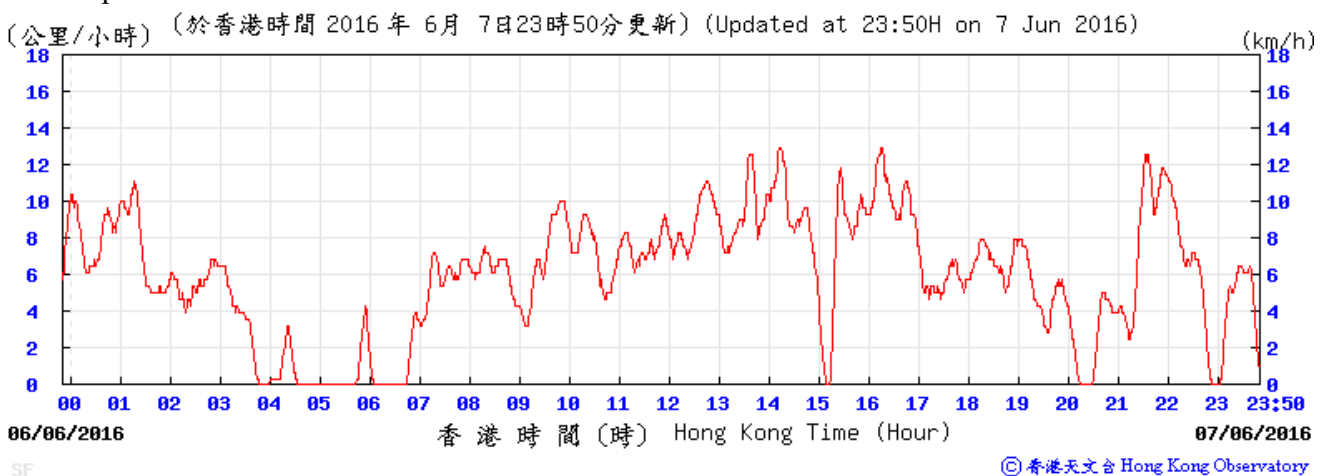
### Meteorological Data Recorded from HKO Station (7 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



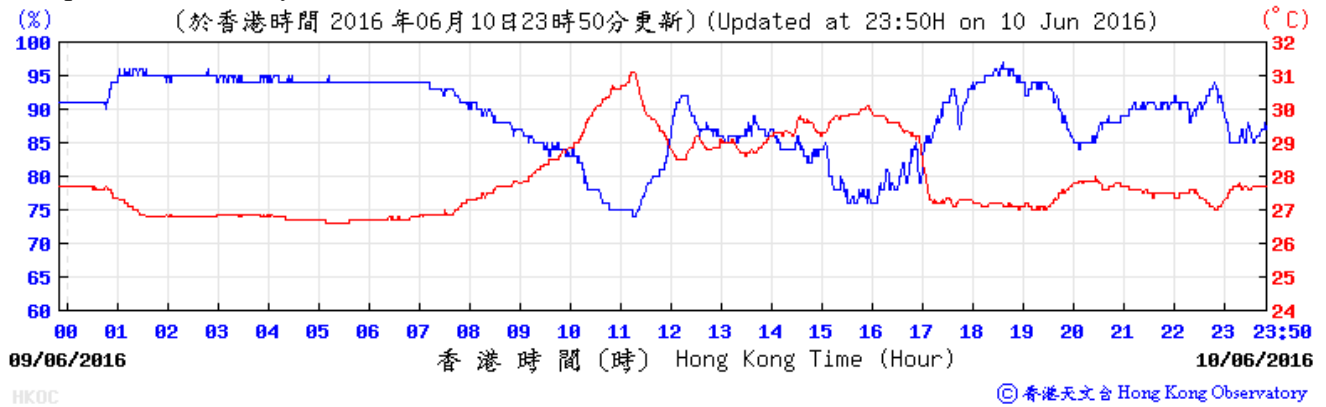
#### Wind Speed and Direction:



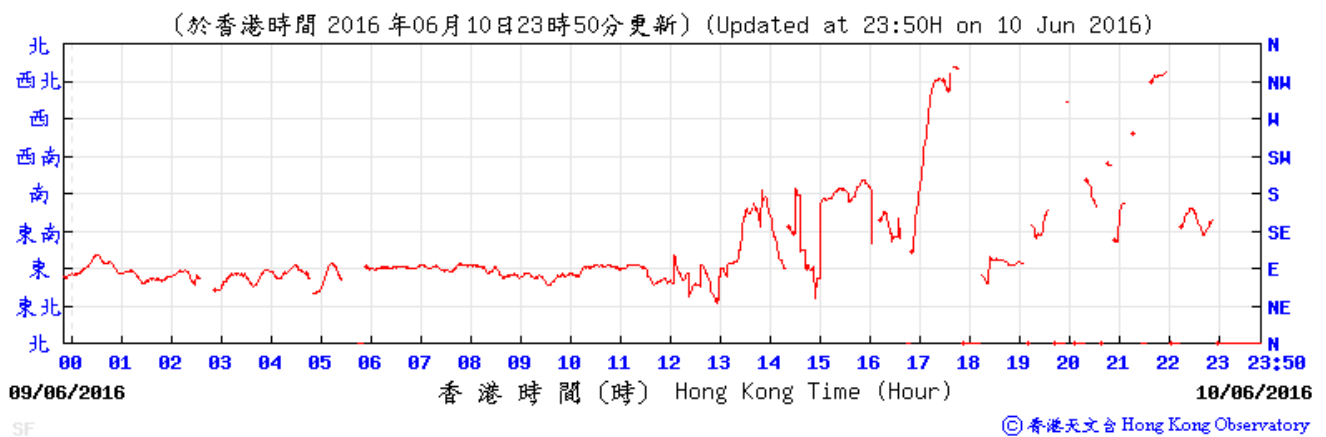
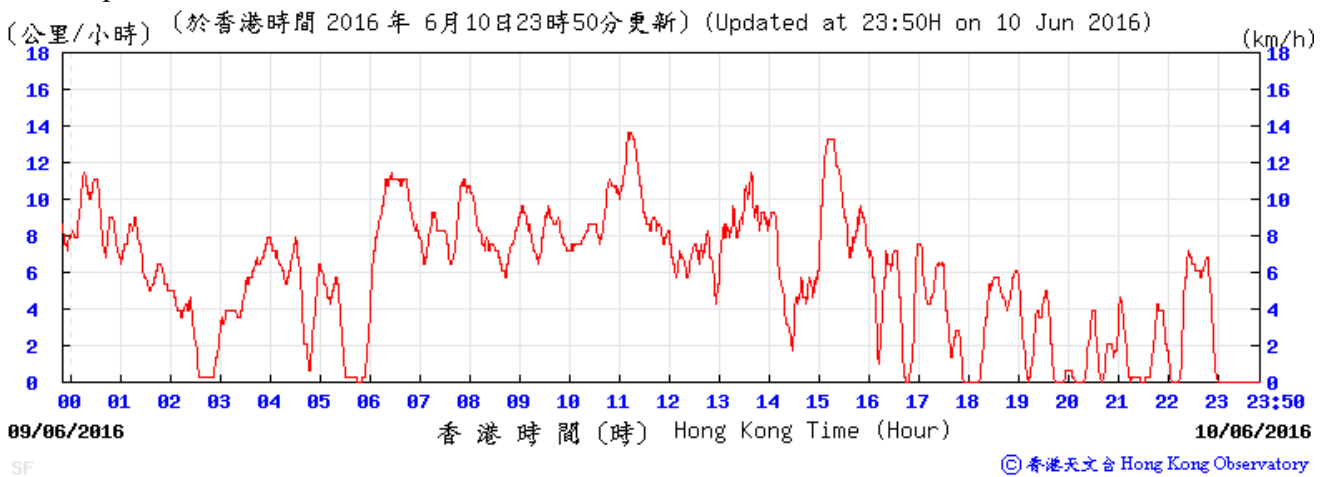
### Meteorological Data Recorded from HKO Station (10 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



#### Wind Speed and Direction:



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**Meteorological Data Recorded from HKO Station (11 June 2016)**

**(Source: [www.hko.gov.hk](http://www.hko.gov.hk))**

Temperature/Humidity:

Not available from the online website.

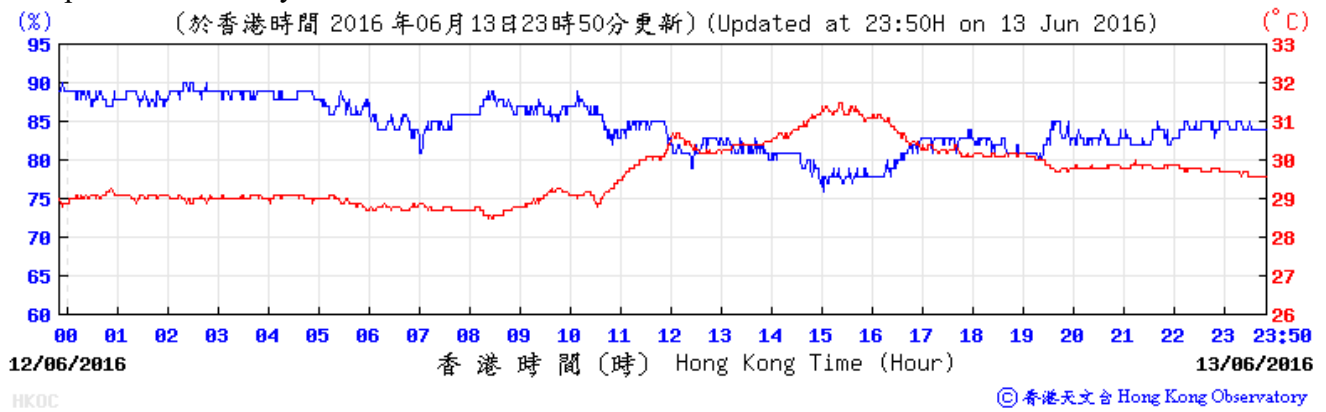
Wind Speed and Direction:

Not available from the online website.

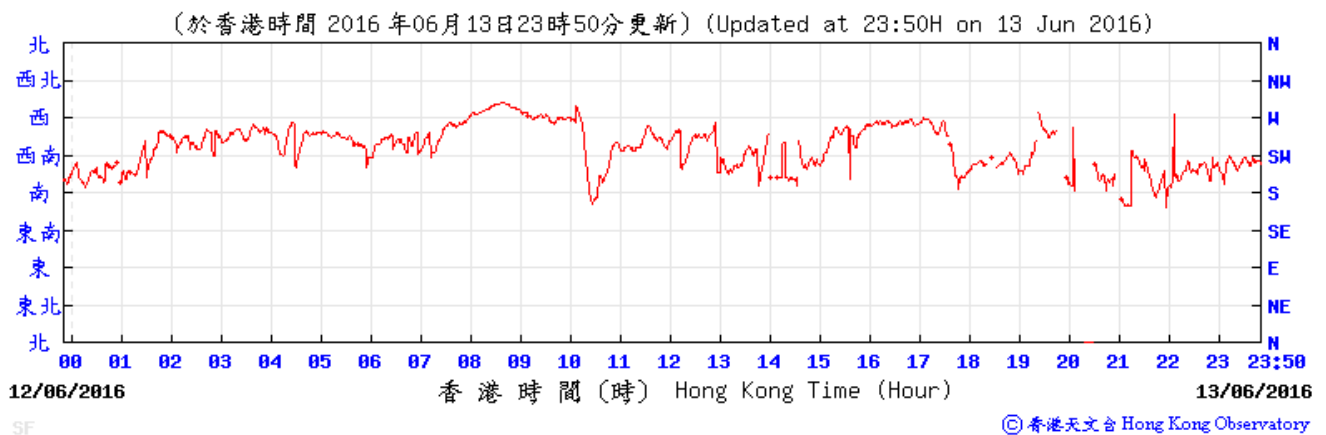
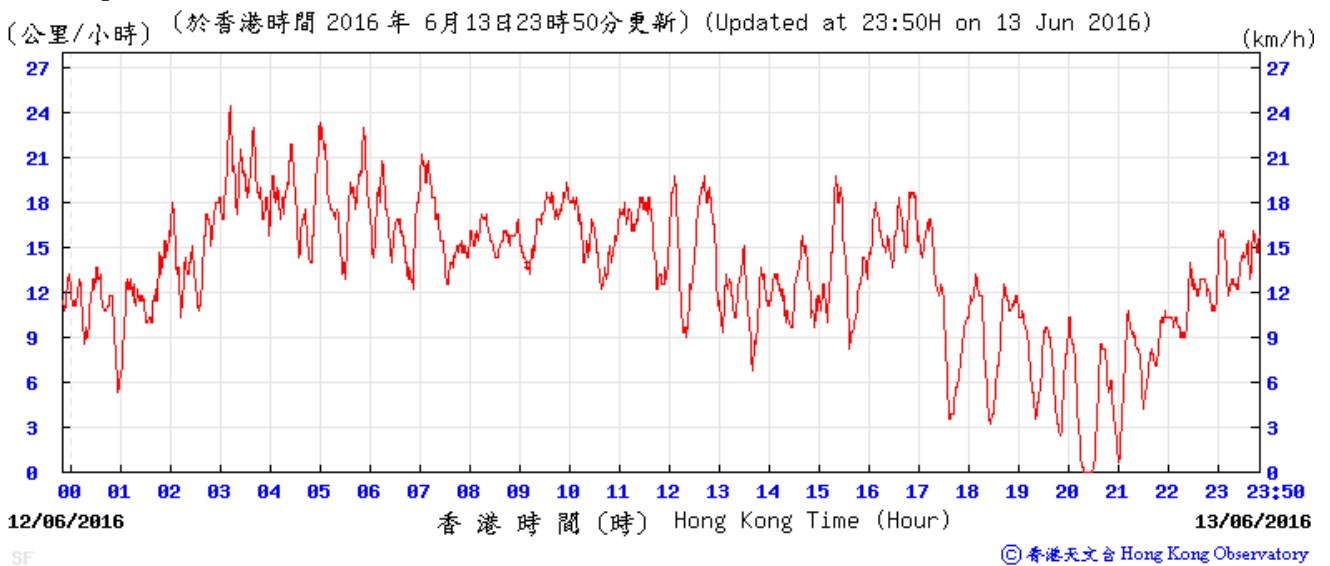
### Meteorological Data Recorded from HKO Station (13 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



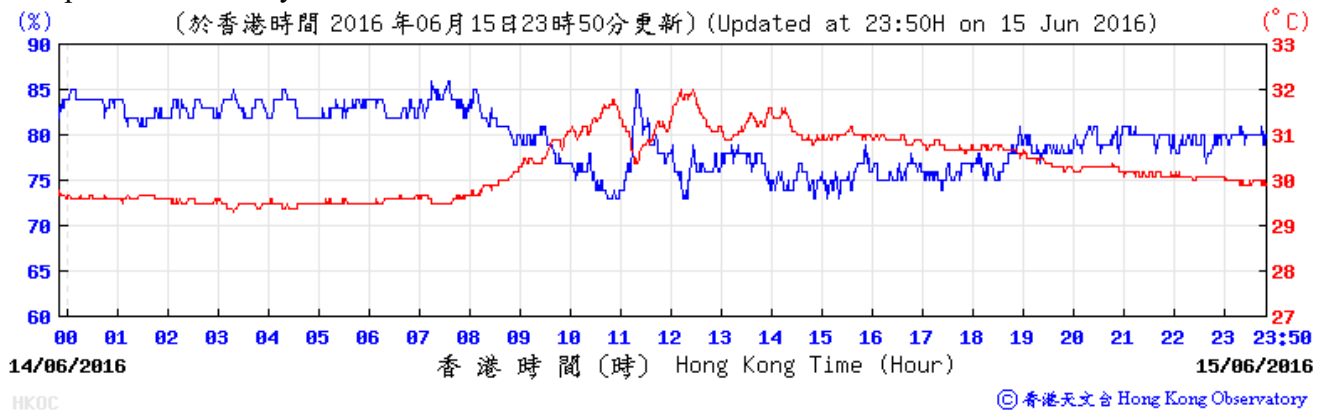
#### Wind Speed and Direction:



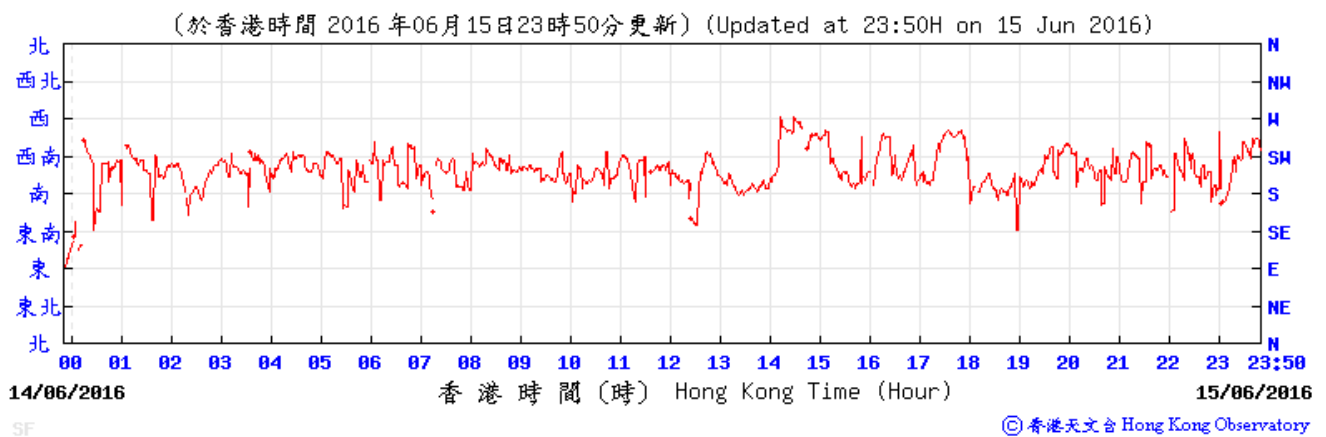
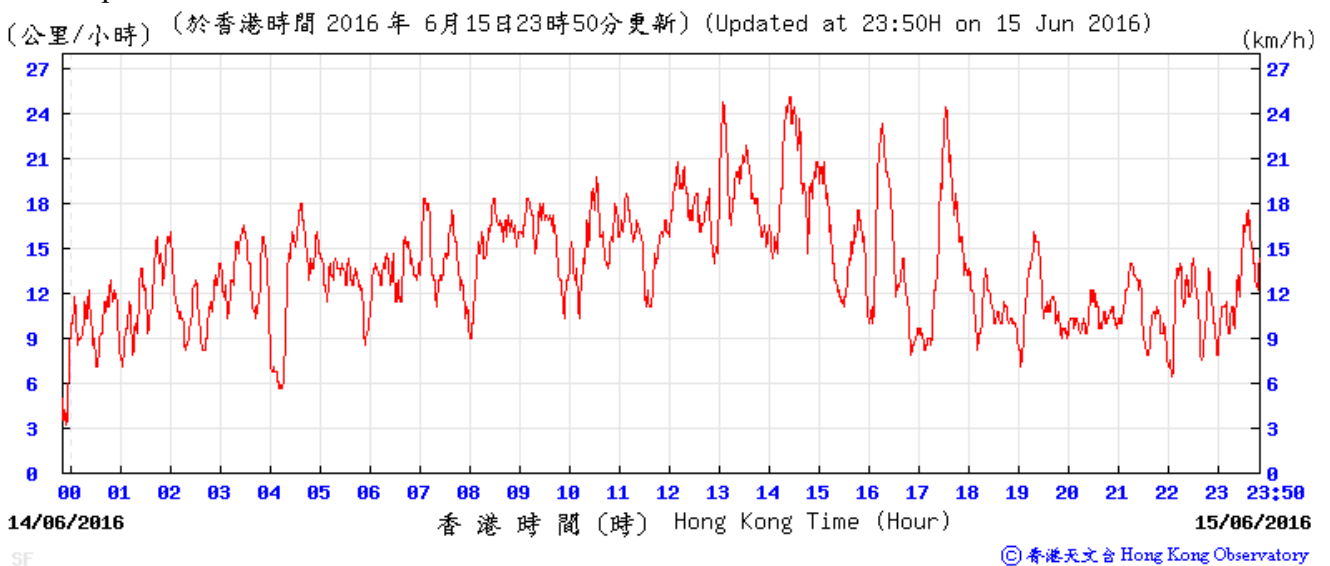
### Meteorological Data Recorded from HKO Station (15 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



#### Wind Speed and Direction:

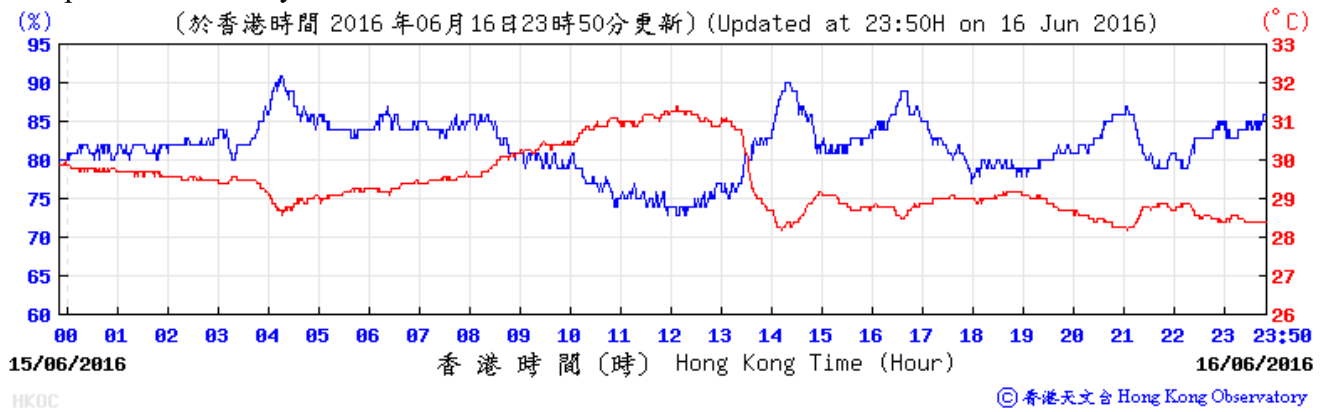




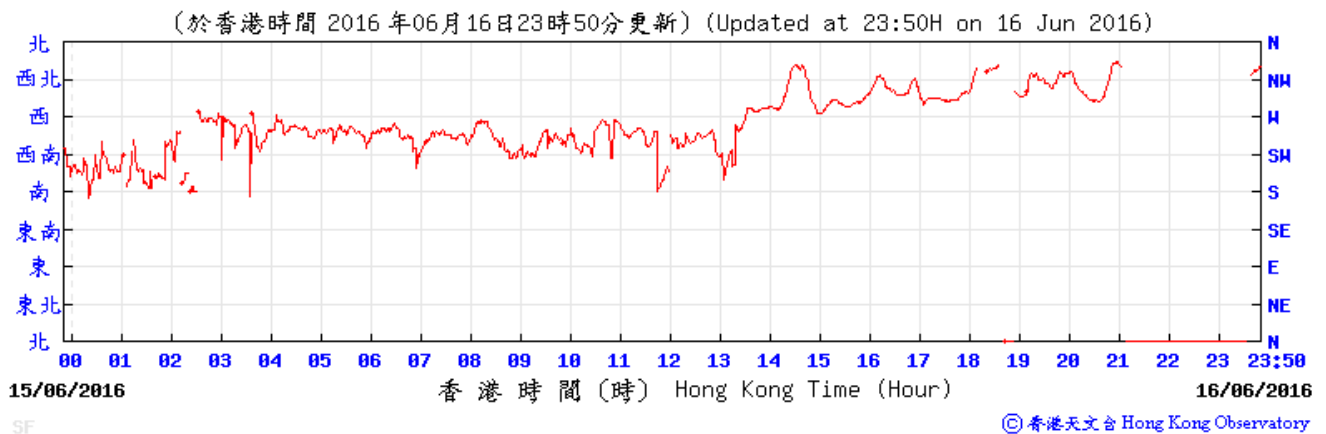
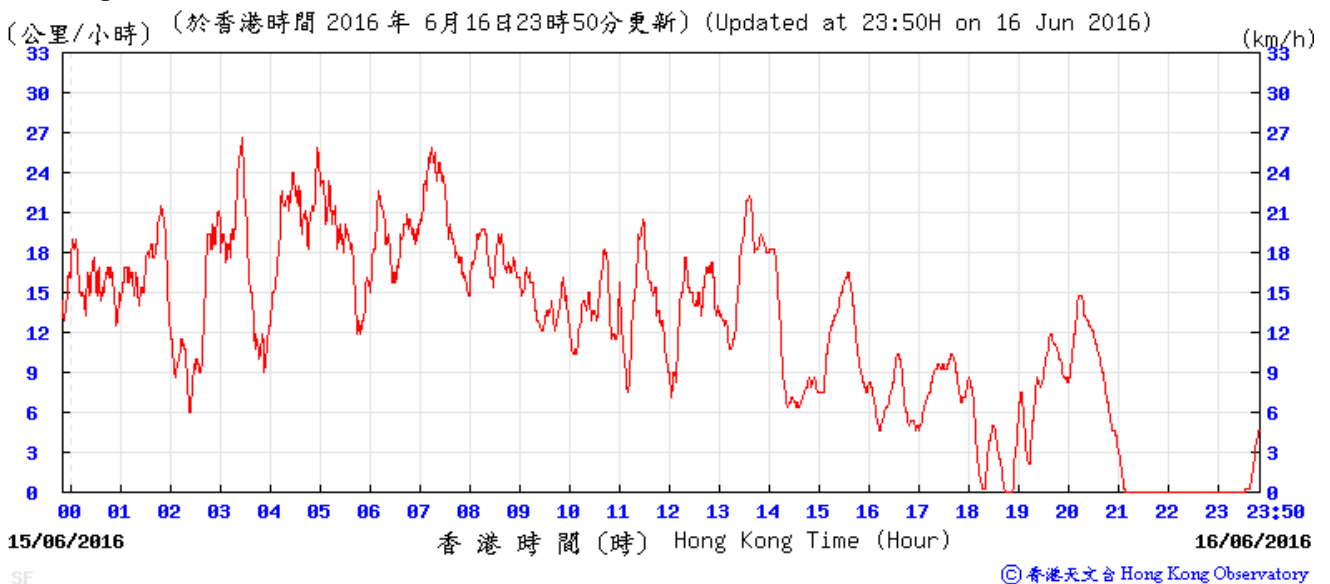
### Meteorological Data Recorded from HKO Station (16 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



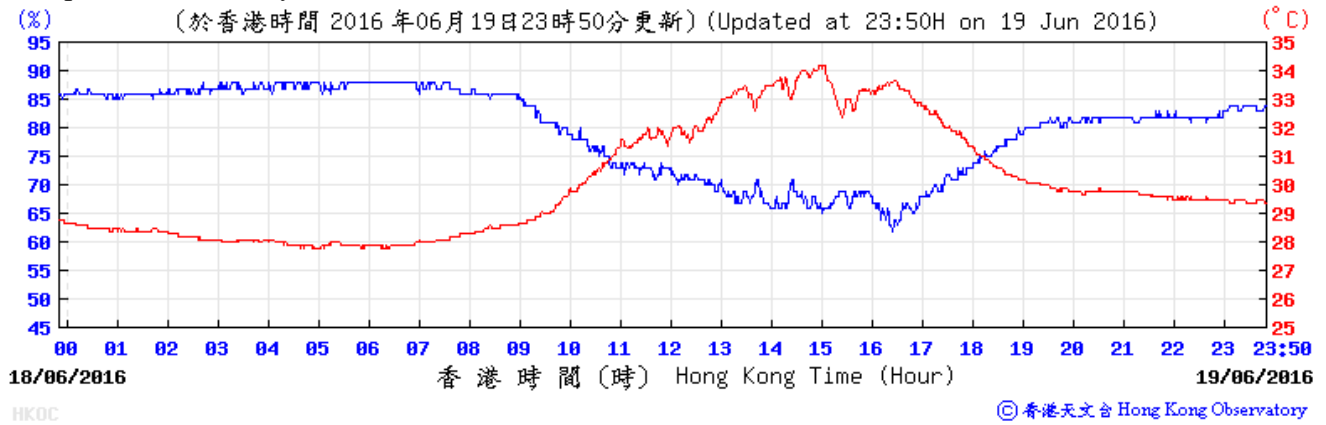
#### Wind Speed and Direction:



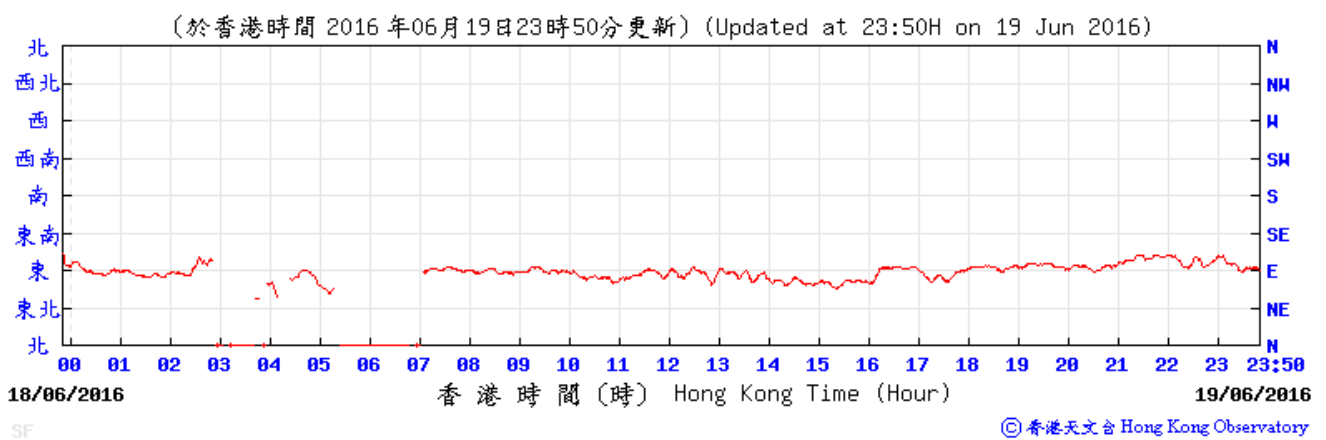
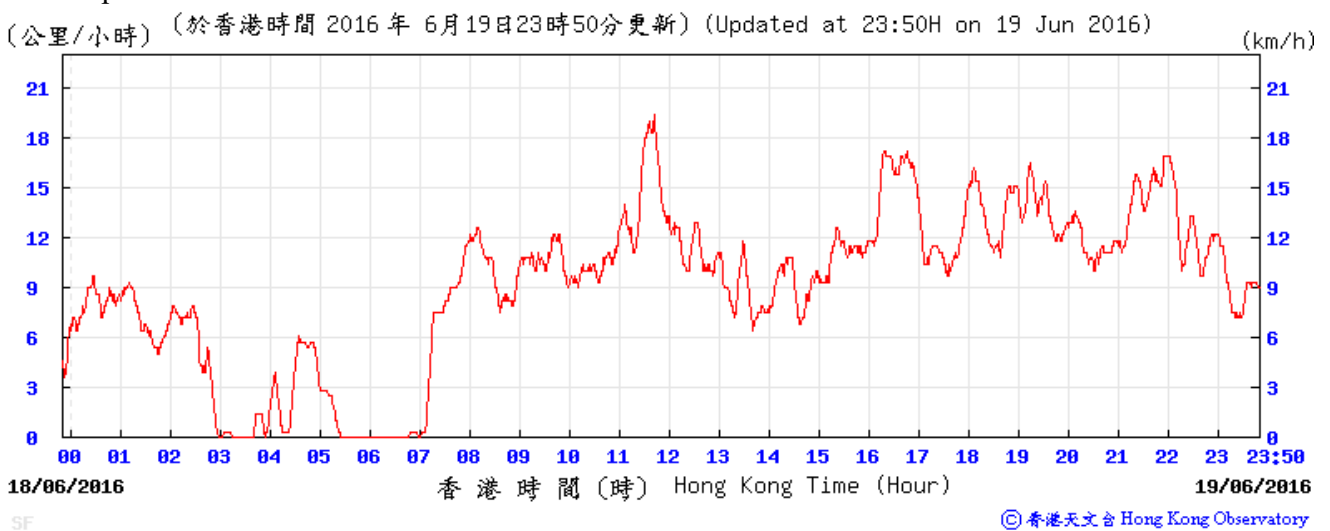
### Meteorological Data Recorded from HKO Station (19 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



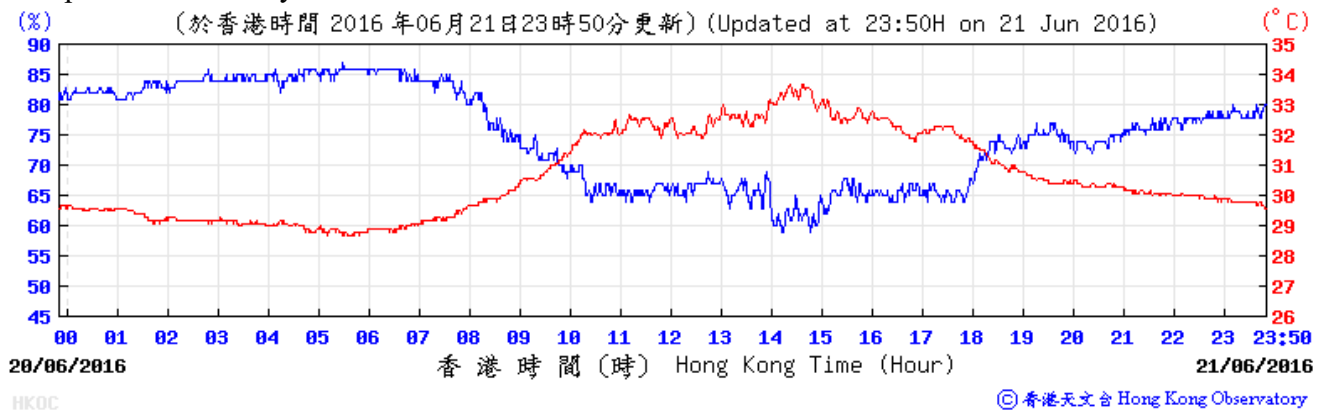
#### Wind Speed and Direction:



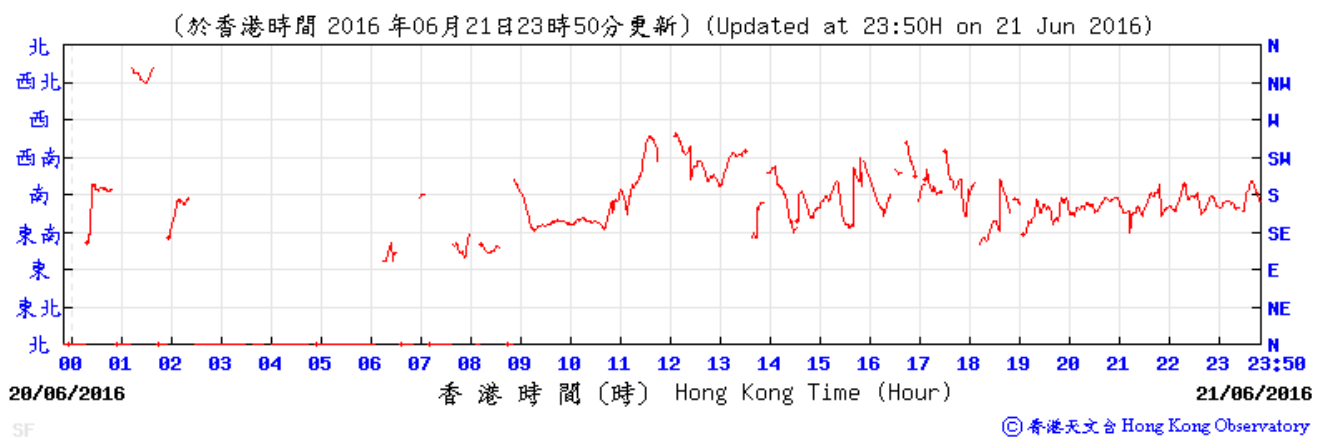
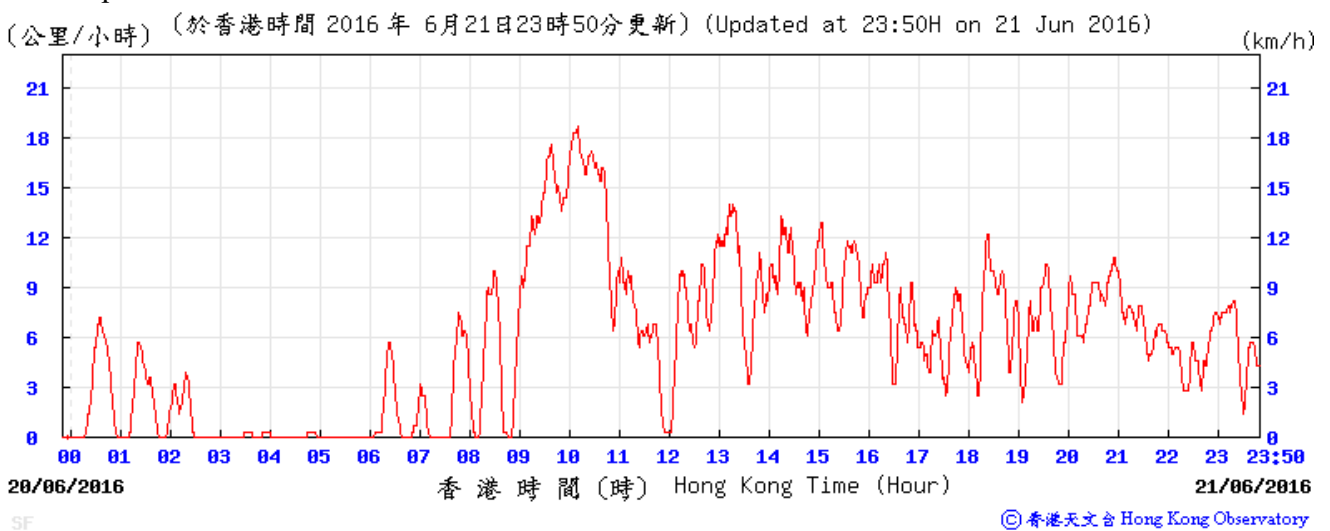
### Meteorological Data Recorded from HKO Station (21 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



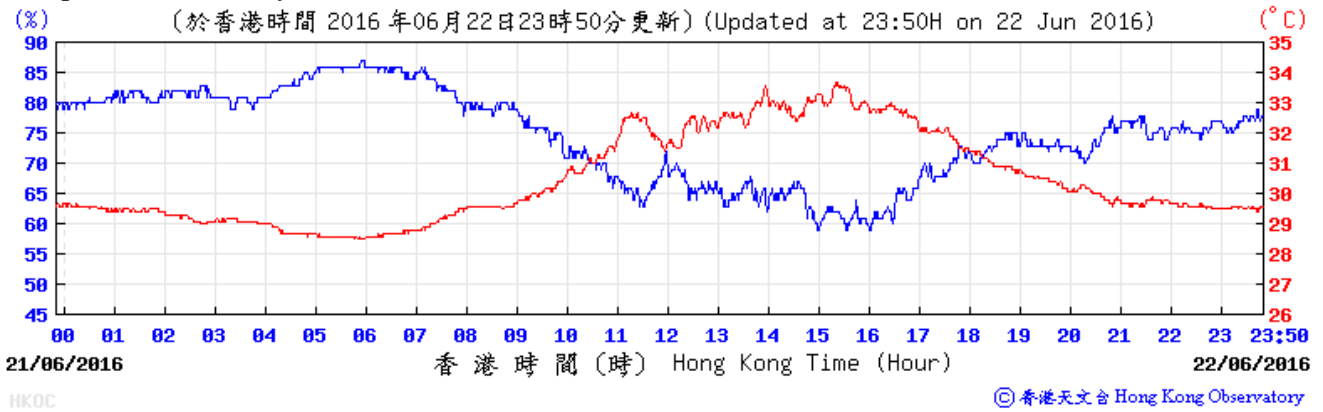
#### Wind Speed and Direction:



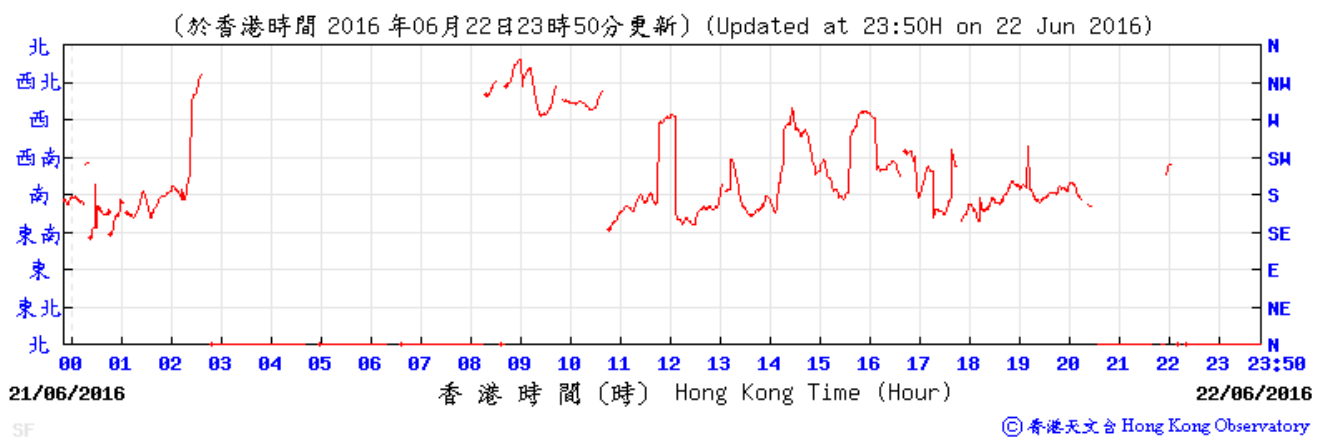
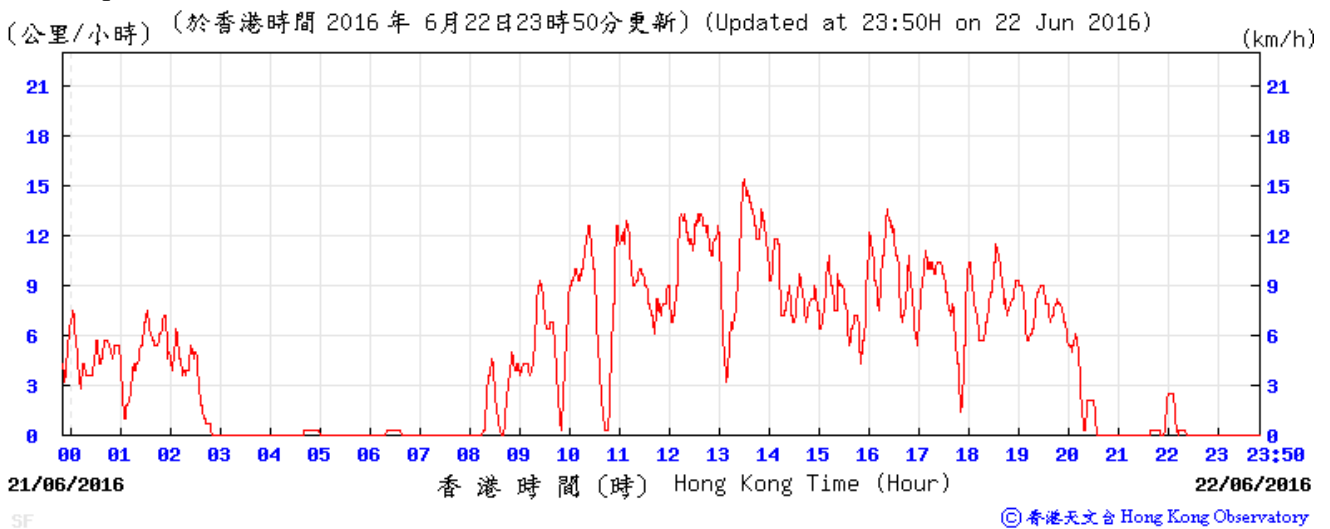
**Meteorological Data Recorded from HKO Station (22 June 2016)**

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

Temperature/Humidity:



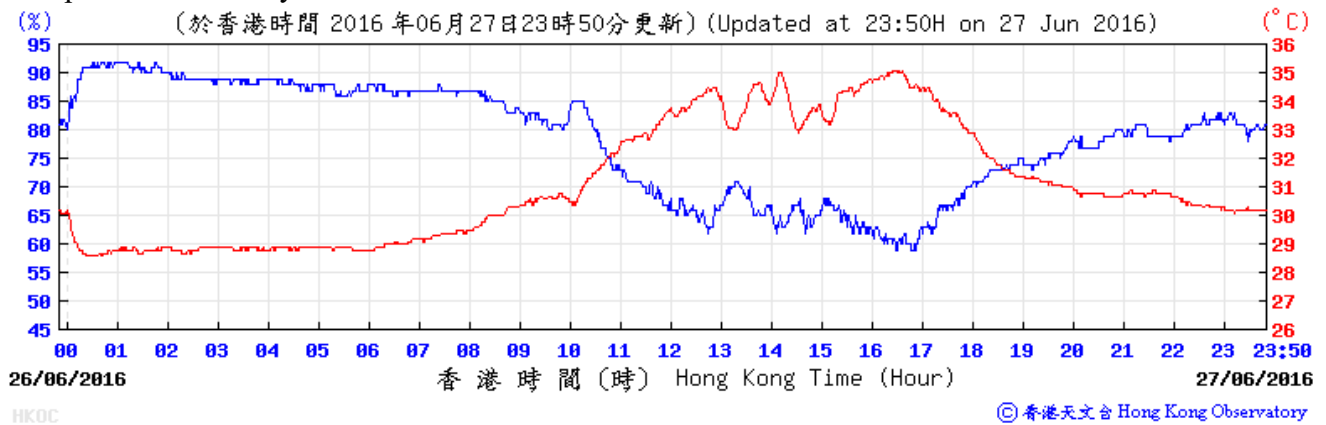
Wind Speed and Direction:



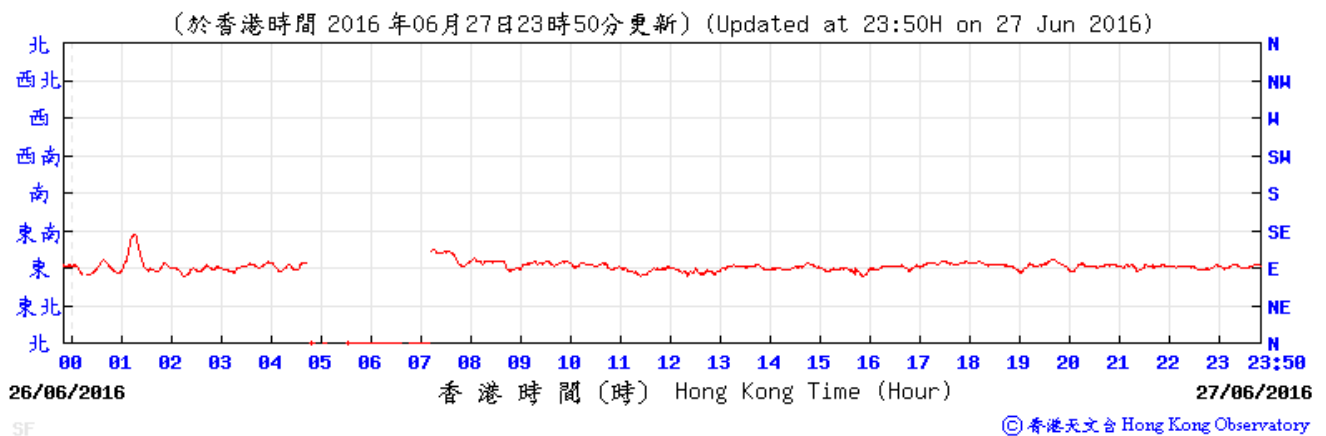
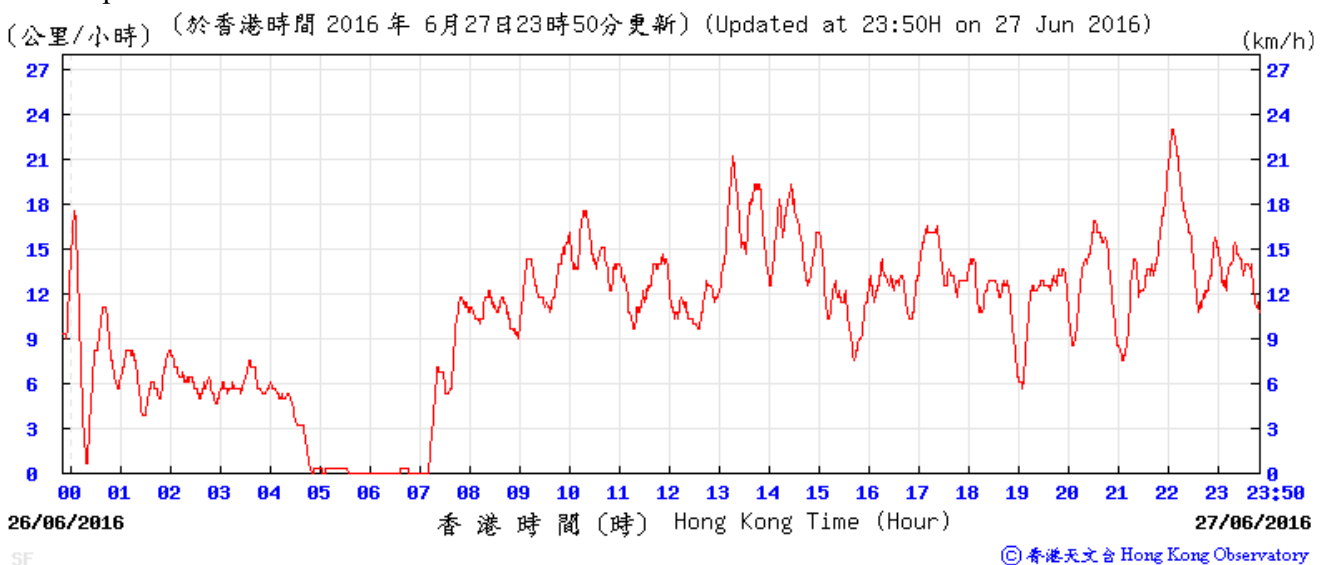
### Meteorological Data Recorded from HKO Station (27 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



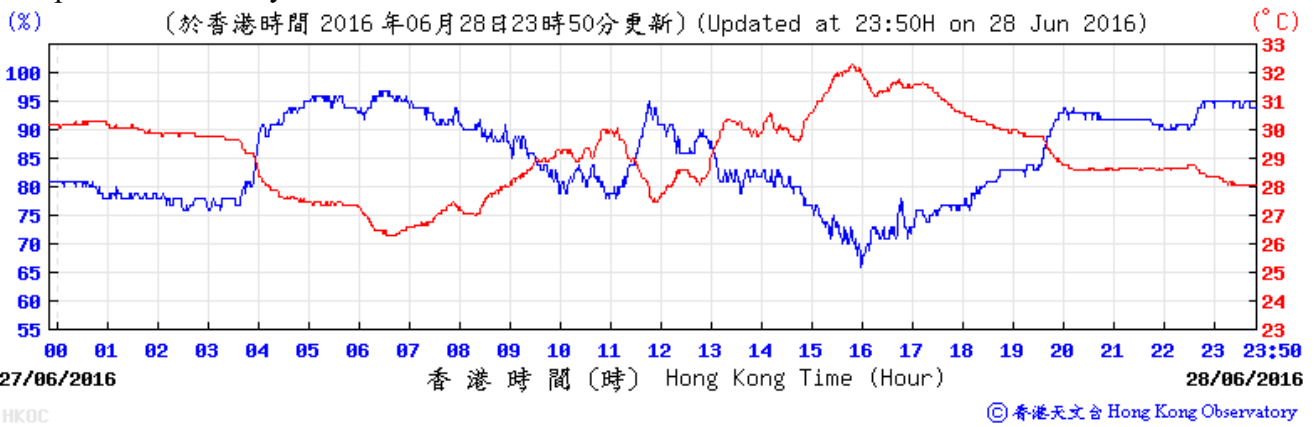
#### Wind Speed and Direction:



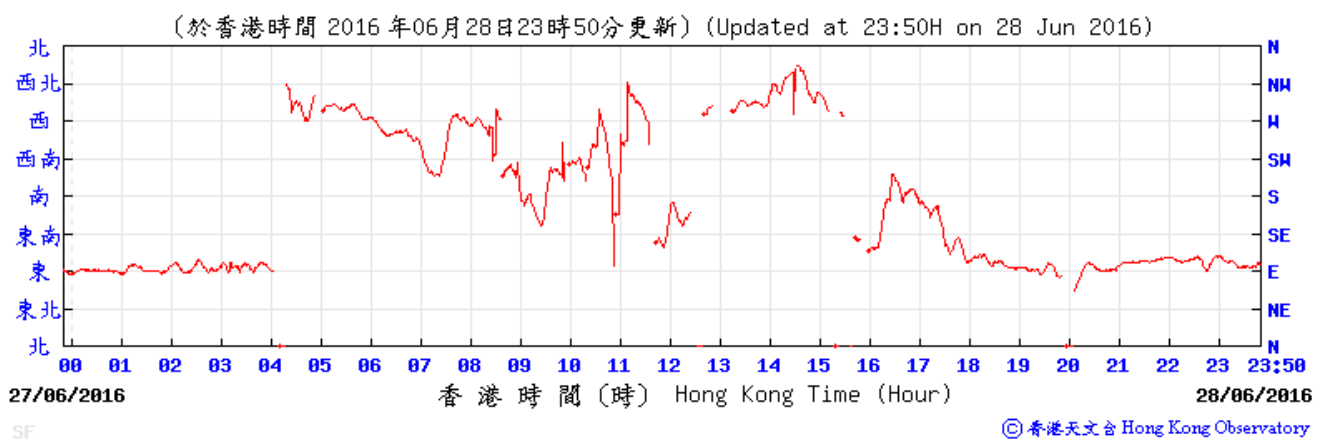
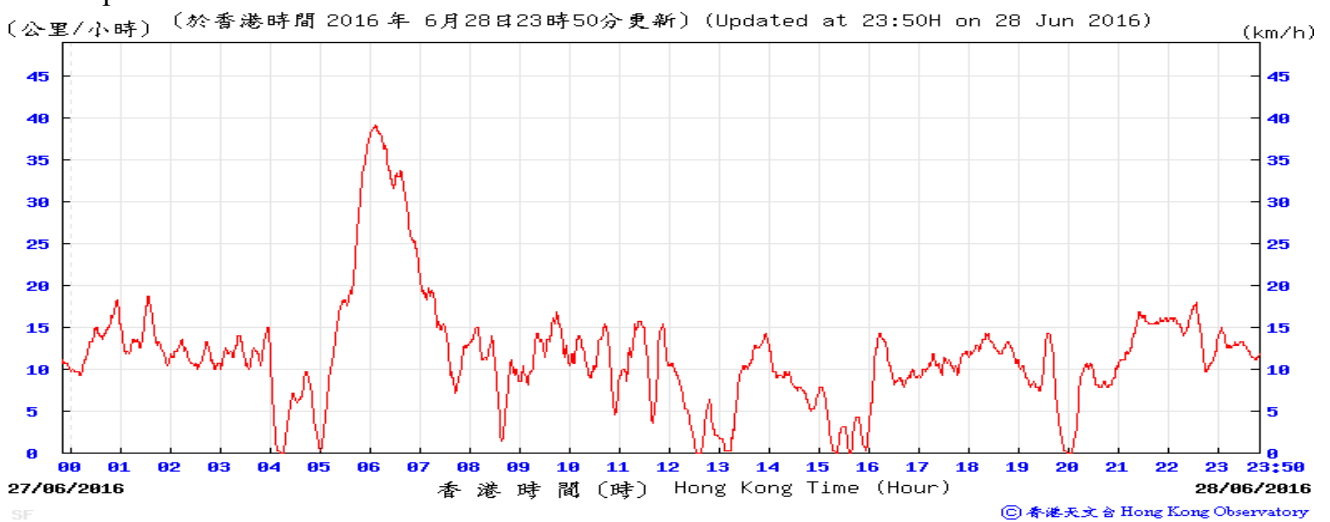
### Meteorological Data Recorded from HKO Station (28 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



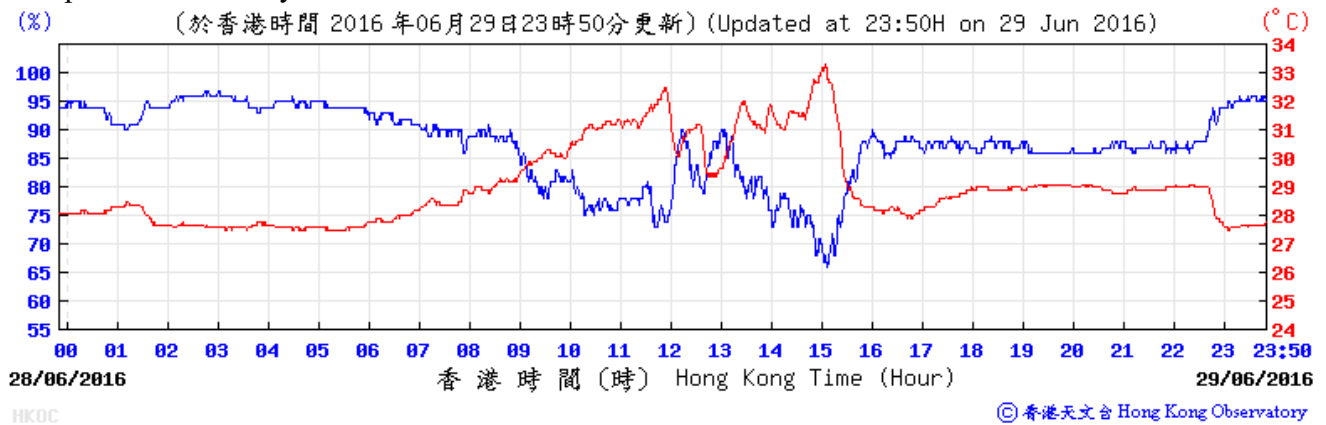
#### Wind Speed and Direction:



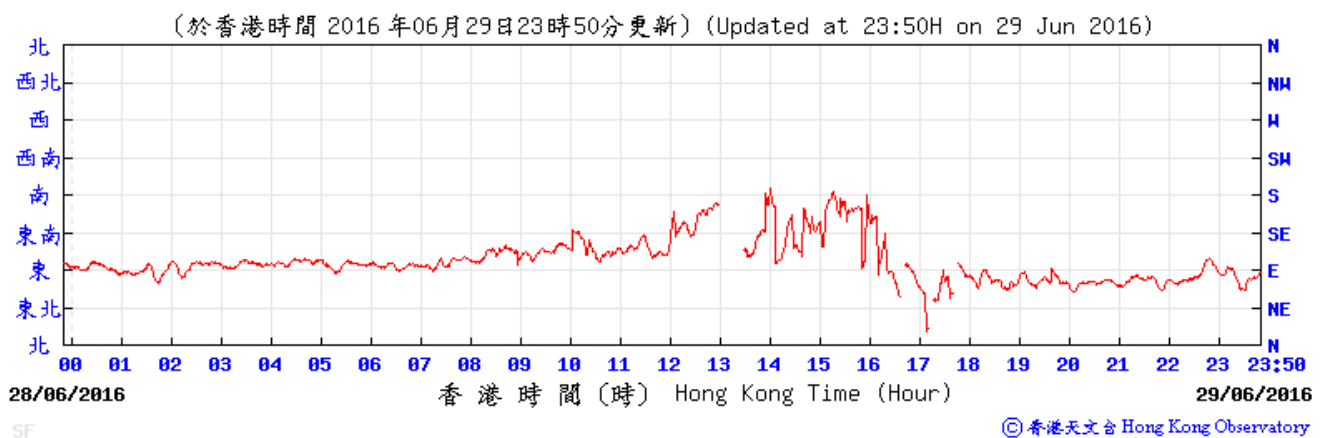
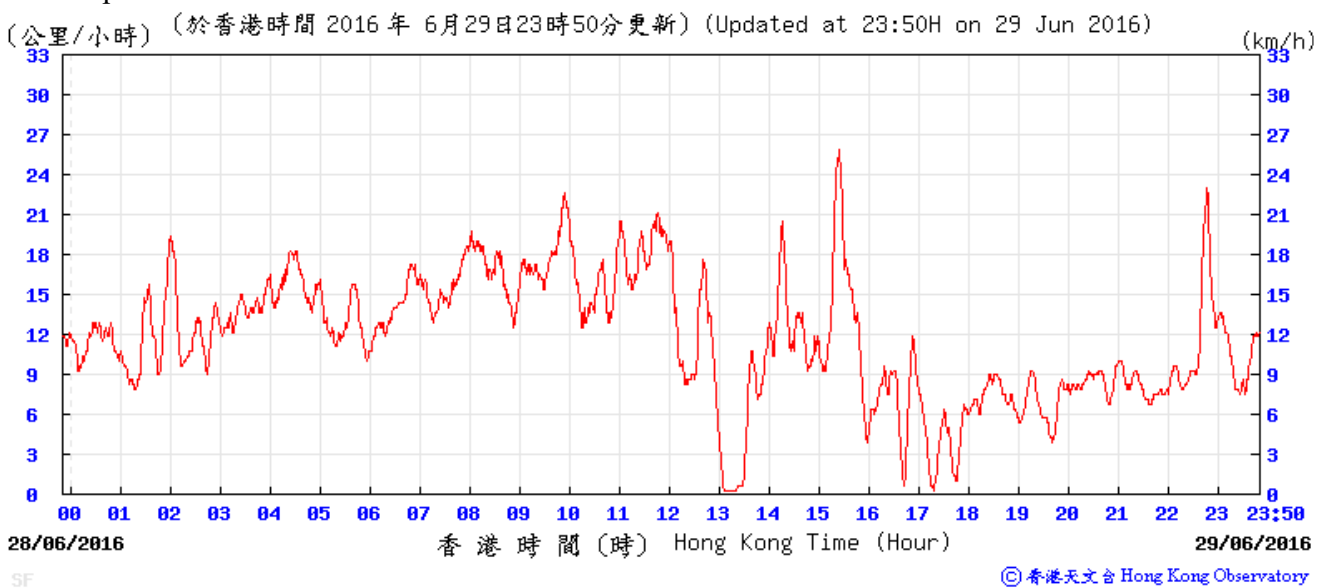
### Meteorological Data Recorded from HKO Station (29 June 2016)

(Source: [www.hko.gov.hk](http://www.hko.gov.hk))

#### Temperature/Humidity:



#### Wind Speed and Direction:



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**APPENDIX E  
1-HOUR AND 24-HOUR TSP  
MONITORING RESULTS AND  
GRAPHICAL PRESENTATIONS**

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## Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Chan's Creative School			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
1-Jun-16	13:00	Sunny	70.0
1-Jun-16	14:00	Sunny	65.0
1-Jun-16	15:00	Sunny	67.7
7-Jun-16	9:00	Fine	21.9
7-Jun-16	10:00	Fine	29.2
7-Jun-16	11:00	Fine	26.1
13-Jun-16	8:35	Cloudy	80.4
13-Jun-16	9:35	Cloudy	83.7
13-Jun-16	10:35	Cloudy	84.7
16-Jun-16	9:00	Fine	105.6
16-Jun-16	10:00	Fine	117.3
16-Jun-16	11:00	Fine	115.4
22-Jun-16	9:00	Sunny	52.5
22-Jun-16	10:00	Sunny	56.1
22-Jun-16	11:00	Sunny	54.2
28-Jun-16	13:00	Cloudy	87.8
28-Jun-16	14:00	Cloudy	84.1
28-Jun-16	15:00	Cloudy	85.1
		Average	71.5
		Maximum	117.3
		Minimum	21.9

Location AM2 - Hong Kong & Islands Regional Office, WSD			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
1-Jun-16	9:00	Sunny	104.8
1-Jun-16	10:00	Sunny	65.6
1-Jun-16	11:00	Sunny	83.1
7-Jun-16	9:15	Fine	26.2
7-Jun-16	10:15	Fine	36.9
7-Jun-16	11:15	Fine	33.3
13-Jun-16	9:00	Cloudy	80.1
13-Jun-16	10:00	Cloudy	82.4
13-Jun-16	11:00	Cloudy	83.0
16-Jun-16	9:00	Fine	148.8
16-Jun-16	10:00	Fine	147.2
16-Jun-16	11:00	Fine	146.6
22-Jun-16	13:00	Sunny	72.2
22-Jun-16	14:00	Sunny	71.5
22-Jun-16	15:00	Sunny	70.3
28-Jun-16	9:00	Cloudy	81.5
28-Jun-16	10:00	Cloudy	84.7
28-Jun-16	11:00	Cloudy	84.4
		Average	83.5
		Maximum	148.8
		Minimum	26.2

## Appendix E - 1-hour TSP Monitoring Results

Location AM3 - Wan Chai East PTW			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
1-Jun-16	13:00	Fine	115.7
1-Jun-16	14:00	Fine	107.4
1-Jun-16	15:00	Fine	108.7
7-Jun-16	13:00	Fine	28.7
7-Jun-16	14:00	Fine	31.0
7-Jun-16	15:00	Fine	24.1
13-Jun-16	13:00	Cloudy	76.3
13-Jun-16	14:00	Cloudy	72.7
13-Jun-16	15:00	Cloudy	73.9
16-Jun-16	13:00	Cloudy	113.2
16-Jun-16	14:00	Cloudy	112.0
16-Jun-16	15:00	Cloudy	112.1
22-Jun-16	13:00	Cloudy	69.5
22-Jun-16	14:00	Cloudy	64.4
22-Jun-16	15:00	Cloudy	65.7
28-Jun-16	13:00	Cloudy	72.3
28-Jun-16	14:00	Cloudy	84.9
28-Jun-16	15:00	Cloudy	76.4
		Average	78.3
		Maximum	115.7
		Minimum	24.1

Location AM4_2 - A Location next to Sheung Wan Fire Station			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
1-Jun-16	9:00	Cloudy	98.8
1-Jun-16	10:00	Cloudy	105.7
1-Jun-16	11:00	Cloudy	109.5
7-Jun-16	13:20	Fine	31.3
7-Jun-16	14:20	Fine	33.4
7-Jun-16	15:20	Fine	26.1
13-Jun-16	13:00	Cloudy	87.7
13-Jun-16	14:00	Cloudy	84.8
13-Jun-16	15:00	Cloudy	87.1
16-Jun-16	13:00	Cloudy	117.5
16-Jun-16	14:00	Cloudy	116.5
16-Jun-16	15:00	Cloudy	118.6
22-Jun-16	9:00	Sunny	66.9
22-Jun-16	10:00	Sunny	70.2
22-Jun-16	11:00	Sunny	70.8
28-Jun-16	9:00	Cloudy	102.9
28-Jun-16	10:00	Cloudy	94.7
28-Jun-16	11:00	Cloudy	105.1
		Average	84.9
		Maximum	118.6
		Minimum	26.1

## Appendix E - 24-hour TSP Monitoring Results

### Location AM1 - Chan's Creative School

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
6-Jun-16	9:00	Cloudy	298.2	3.3082	3.3569	0.0487	384.0	408.0	24.0	1.21	1.21	1.21	1743.9	27.9	160501/097
10-Jun-16	9:00	Cloudy	300.5	3.3140	3.3736	0.0596	408.0	432.0	24.0	1.21	1.21	1.21	1736.3	34.3	160503/025
15-Jun-16	9:00	Cloudy	304.1	3.3086	3.3780	0.0694	432.0	456.0	24.0	1.20	1.20	1.20	1725.9	40.2	160503/073
21-Jun-16	14:30	Cloudy	305.7	3.3088	3.3788	0.0700	456.0	480.0	24.0	1.20	1.20	1.20	1723.7	40.6	160601/073
27-Jun-16	9:00	Sunny	303.4	3.4238	3.4695	0.0457	480.0	504.0	24.0	1.20	1.20	1.20	1729.8	26.4	160601/091
													Min	26.4	
													Max	40.6	
													Average	33.9	

### Location AM2 - Hong Kong & Islands Regional Office, WSD

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
6-Jun-16	9:00	Cloudy	297.7	3.3245	3.4331	0.1086	10665.9	10689.9	24.0	1.21	1.21	1.21	1737.8	62.5	160501/096
10-Jun-16	9:00	Cloudy	301.2	3.3100	3.4093	0.0993	10689.9	10713.9	24.0	1.20	1.20	1.20	1725.5	57.5	160503/026
15-Jun-16	9:00	Cloudy	303.7	3.2782	3.4074	0.1292	10713.9	10737.9	24.0	1.19	1.19	1.19	1719.4	75.1	160503/072
21-Jun-16	9:00	Cloudy	302.4	3.3061	3.3797	0.0736	10737.9	10761.9	24.0	1.20	1.20	1.20	1725.4	42.7	160503/084
27-Jun-16	9:00	Sunny	303.5	3.3391	3.4288	0.0897	10761.9	10785.9	24.0	1.20	1.20	1.20	1721.7	52.1	160601/031
													Min	42.7	
													Max	75.1	
													Average	58.0	

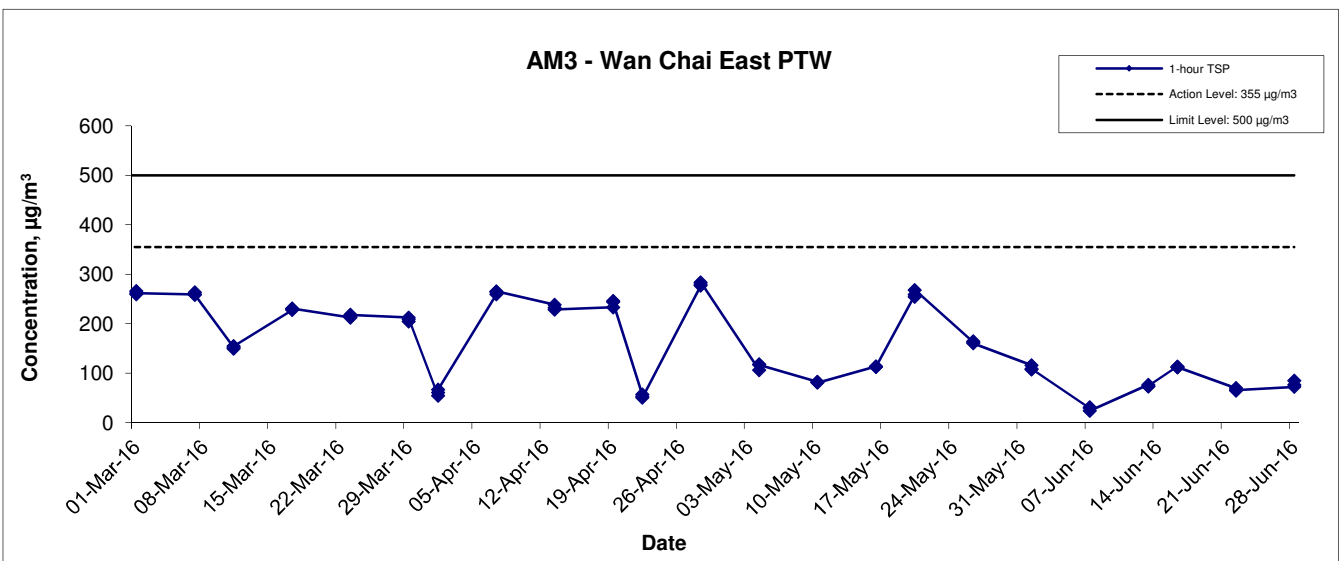
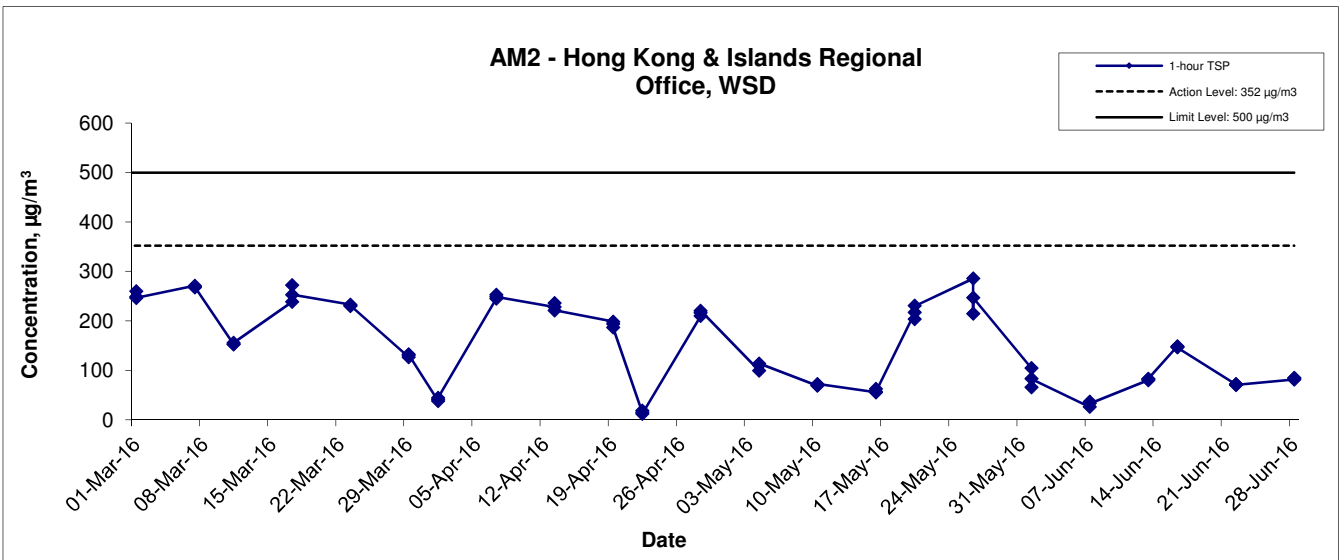
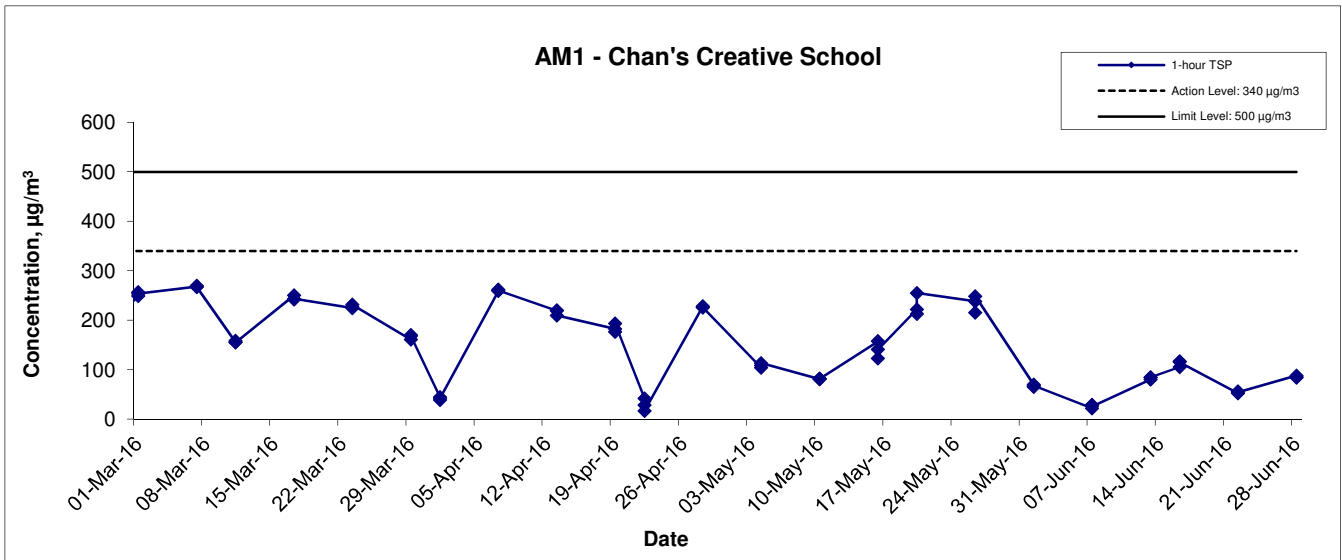
### Location AM3 - Wan Chai East PTW

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
6-Jun-16	9:00	Cloudy	297.6	3.2679	3.3992	0.1313	6965.7	6989.7	24.0	1.21	1.21	1.21	1745.3	75.2	160501/058
10-Jun-16	9:00	Cloudy	300.5	3.2395	3.3559	0.1164	6989.7	7013.7	24.0	1.21	1.21	1.21	1735.7	67.1	160501/008
15-Jun-16	9:00	Cloudy	303.6	3.3134	3.4502	0.1368	7013.7	7037.7	24.0	1.20	1.20	1.20	1726.9	79.2	160503/074
21-Jun-16	9:00	Cloudy	302.8	3.2665	3.3601	0.0936	7037.7	7061.7	24.0	1.20	1.20	1.20	1731.2	54.1	160503/085
27-Jun-16	9:00	Sunny	302.7	3.3363	3.4490	0.1127	7061.7	7085.7	24.0	1.20	1.20	1.20	1730.4	65.1	160601/029
													Min	54.1	
													Max	79.2	
													Average	68.1	

### Location AM4\_2 - A Location next to Sheung Wan Fire Station

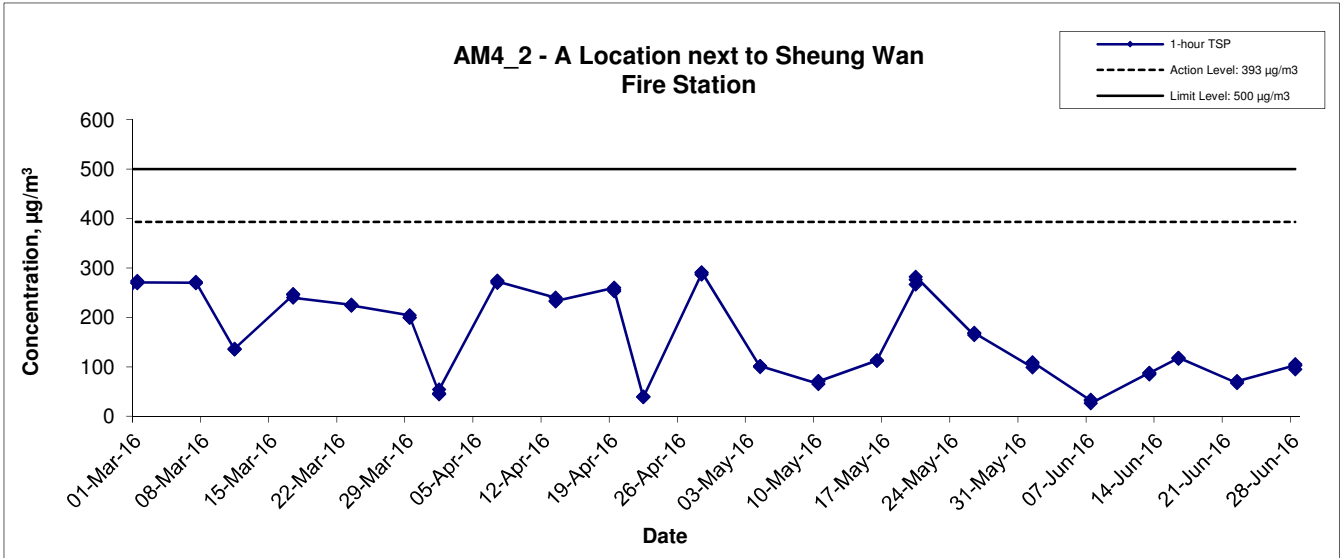
Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
6-Jun-16	9:00	Cloudy	297.5	3.3028	3.5212	0.2184	10674.0	10698.0	24.0	1.21	1.21	1.21	1746.1	125.1	160501/060
10-Jun-16	9:00	Cloudy	301.4	3.2335	3.4419	0.2084	10698.0	10722.0	24.0	1.20	1.20	1.20	1733.7	120.2	160501/009
15-Jun-16	9:00	Cloudy	303.4	3.3807	3.6377	0.2570	10722.0	10746.0	24.0	1.20	1.20	1.20	1728.1	148.7	160503/086
21-Jun-16	9:00	Cloudy	302.7	3.3391	3.5520	0.2129	10746.0	10770.0	24.0	1.20	1.20	1.20	1732.5	122.9	160601/074
28-Jun-16	11:15	Sunny	301.5	3.3776	3.6107	0.2331	10770.3	10794.3	24.0	1.20	1.20	1.20	1733.1	134.5	160602/042
													Min	120.2	
													Max	148.7	
													Average	130.3	

### 1-hr TSP Concentration Levels



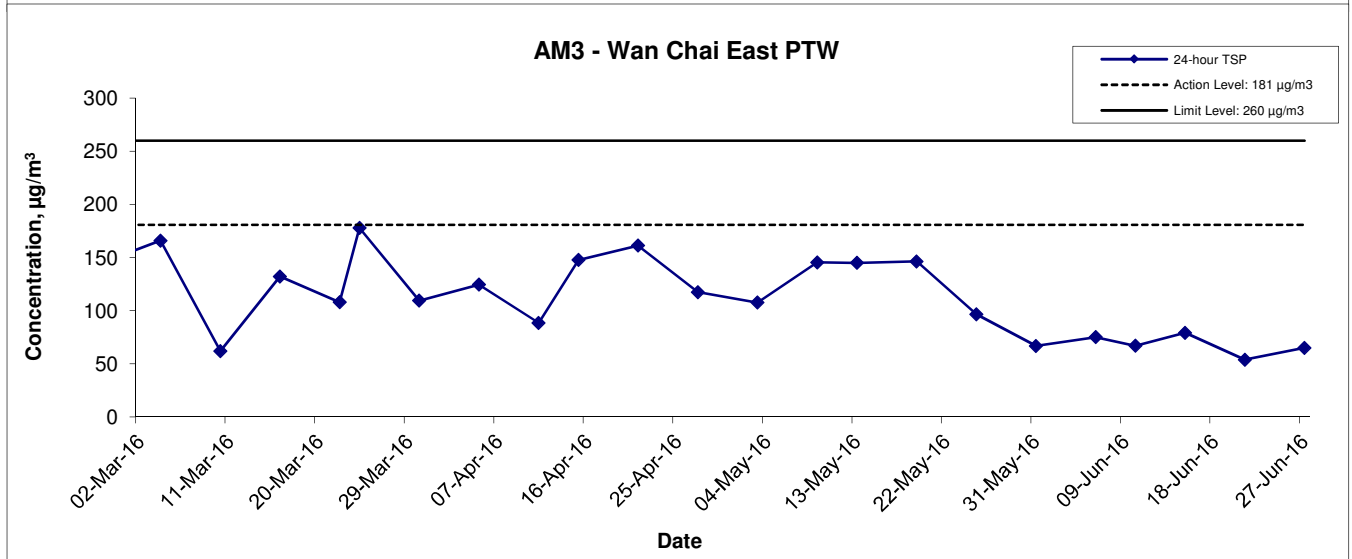
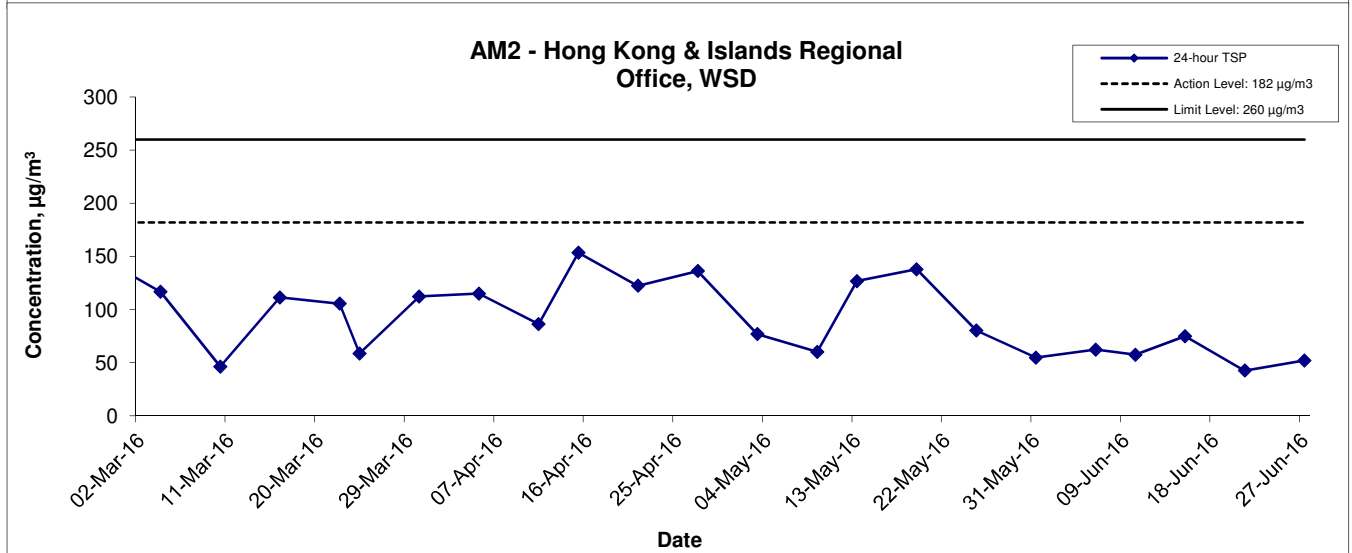
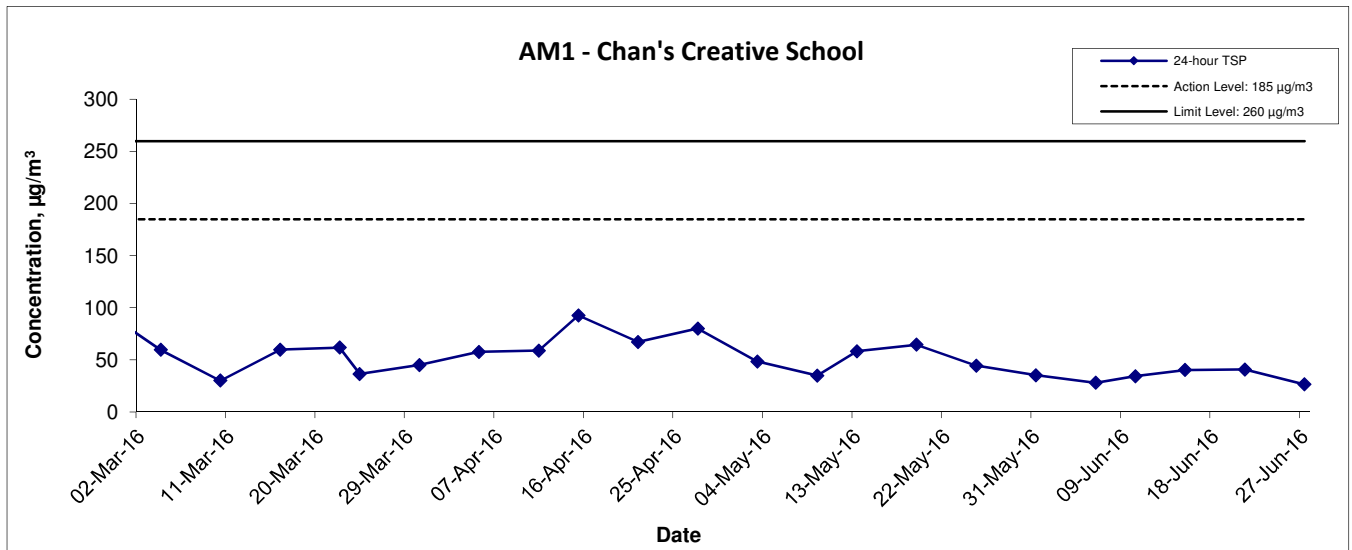
Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11003	
	Date Jun 16	Appendix E	

### 1-hr TSP Concentration Levels



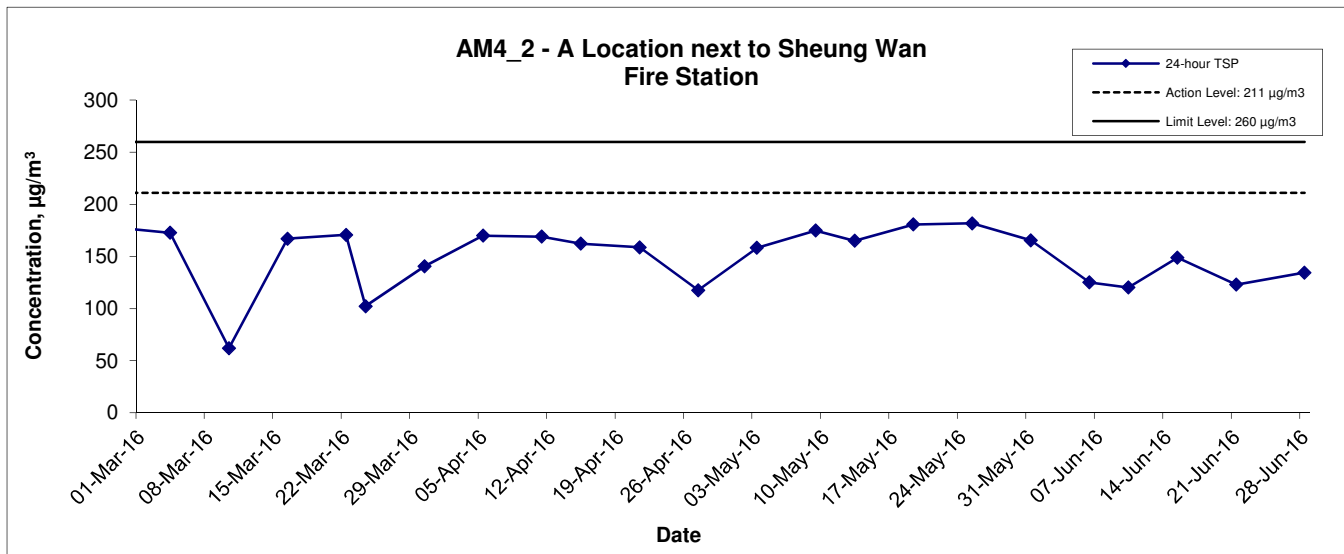
Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11003	<b>CINOTECH</b>
	Date Jun 16	Appendix E	

## 24-hr TSP Concentration Levels



Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11003	
	Date Jun 16	Appendix E	

### 24-hr TSP Concentration Levels



Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11003	
	Date Jun 16	Appendix E	

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**APPENDIX F  
NOISE MONITORING RESULTS AND  
GRAPHICAL PRESENTATIONS**

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## Appendix F - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location NM1 - Chan's Creative School					
Date	Time	Weather	Unit: dB (A) (30-min)		
			Measured Noise Level		
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
1-Jun-16	16:30	Sunny	69.6	71.2	65.9
7-Jun-16	9:00	Fine	63.6	65.2	61.7
13-Jun-16	8:40	Cloudy	66.5	67.6	64.8
22-Jun-16	11:30	Sunny	67.3	69.1	63.2
28-Jun-16	15:00	Cloudy	69.2	70.6	67.3

Location NM2 - Hyde Building					
Date	Time	Weather	Unit: dB (A) (30-min)		
			Measured Noise Level		
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
1-Jun-16	13:20	Cloudy	71.9	73.2	70.3
7-Jun-16	9:50	Fine	67.7	70.2	66.1
13-Jun-16	13:40	Cloudy	71.3	75.4	69.1
22-Jun-16	13:30	Sunny	70.6	71.7	69.3
28-Jun-16	13:30	Cloudy	71.6	72.4	70.2

Location NM3 - Goldfield Building					
Date	Time	Weather	Unit: dB (A) (30-min)		
			Measured Noise Level		
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
1-Jun-16	10:15	Cloudy	74.9	76.3	73.3
7-Jun-16	10:30	Fine	68.8	70.8	65.3
13-Jun-16	14:15	Cloudy	71.4	74.8	68.3
22-Jun-16	9:30	Sunny	74.9	75.8	72.5
28-Jun-16	9:30	Cloudy	74.2	75.6	72.3

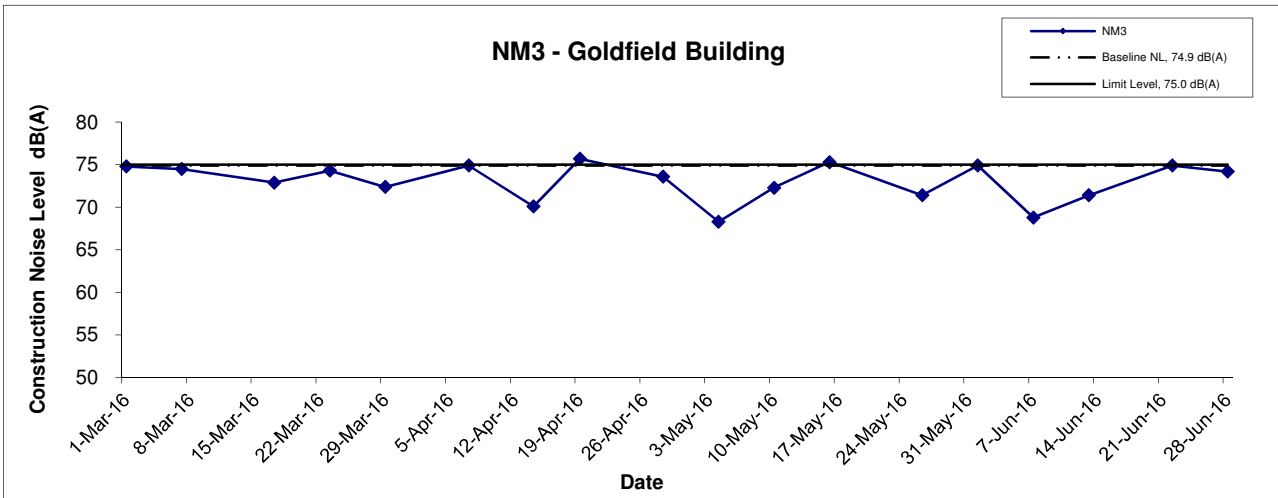
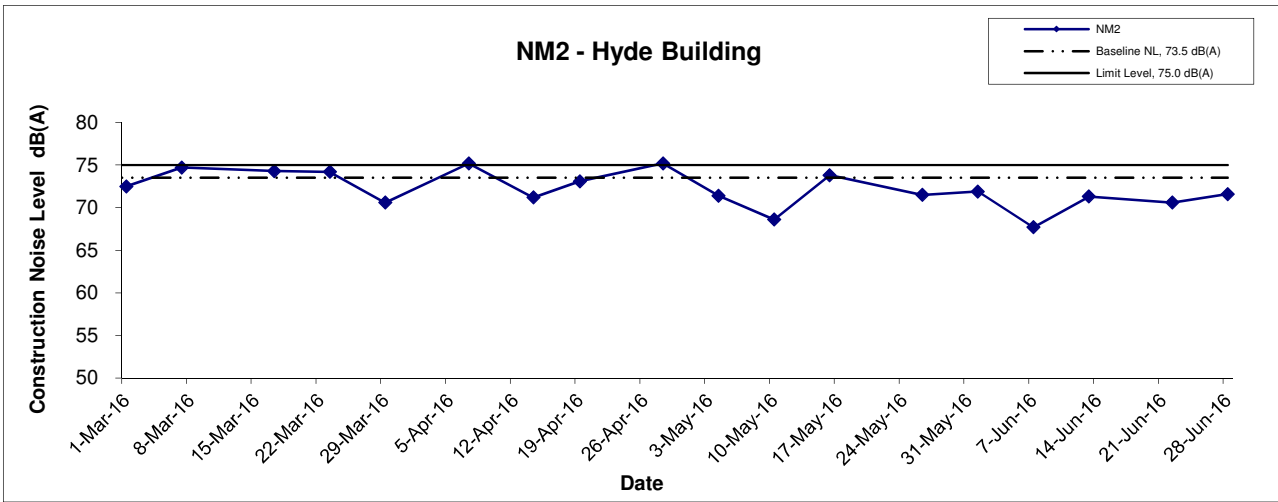
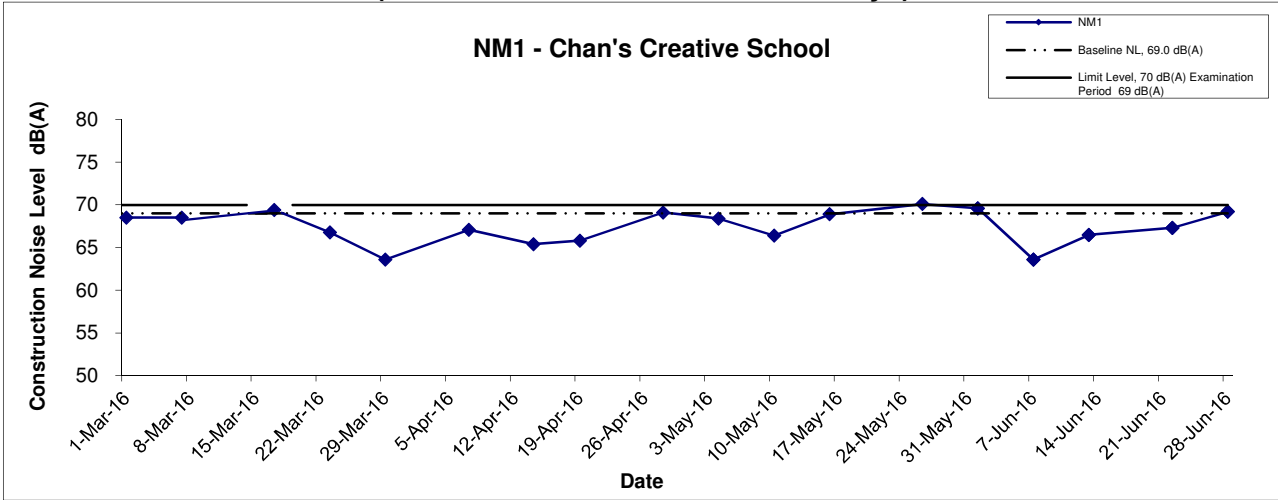
(Restricted Hours - 07:00 to 23:00 holidays & 19:00 to 23:00 on all other days )

Location NM1 - Chan's Creative School					
Date	Time	Weather	dB (A) (5-min)		
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
1-Jun-16	19:00	Fine	69.0	72.2	61.4
	19:05		70.6	73.5	61.5
	19:10		68.8	71.4	63.4
5-Jun-16	13:00	Cloudy	68.7	70.2	66.5
	13:05		69.1	70.6	66.8
	13:10		70.0	71.2	67.3
13-Jun-16	19:00	Cloudy	68.3	70.5	62.5
	19:05		68.6	70.7	62.9
	19:10		68.9	71.2	63.3
19-Jun-16	14:00	Sunny	68.6	70.5	66.2
	14:05		70.3	71.4	66.8
	14:10		69.5	71.3	66.4
28-Jun-16	19:30	Cloudy	70.4	72.8	65.8
	19:35		68.6	70.8	65.3
	19:40		70.1	72.9	65.6

Location NM2 - Hyde Building					
Date	Time	Weather	dB (A) (5-min)		
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
1-Jun-16	20:00	Fine	71.1	71.9	70.1
	20:05		70.9	71.8	70.0
	20:10		71.5	72.3	70.3
5-Jun-16	14:00	Cloudy	69.4	72.6	67.3
	14:05		70.8	72.9	68.1
	14:10		71.3	73.2	69.1
13-Jun-16	19:45	Cloudy	72.3	75.7	69.4
	19:50		72.4	75.8	70.1
	19:55		72.4	75.9	70.0
19-Jun-16	13:00	Sunny	71.4	73.6	68.3
	13:05		71.5	73.9	68.5
	13:10		70.4	72.3	67.6
28-Jun-16	20:45	Cloudy	69.6	72.5	62.4
	20:50		70.4	72.4	65.8
	20:55		70.8	71.8	65.4

## Noise Levels

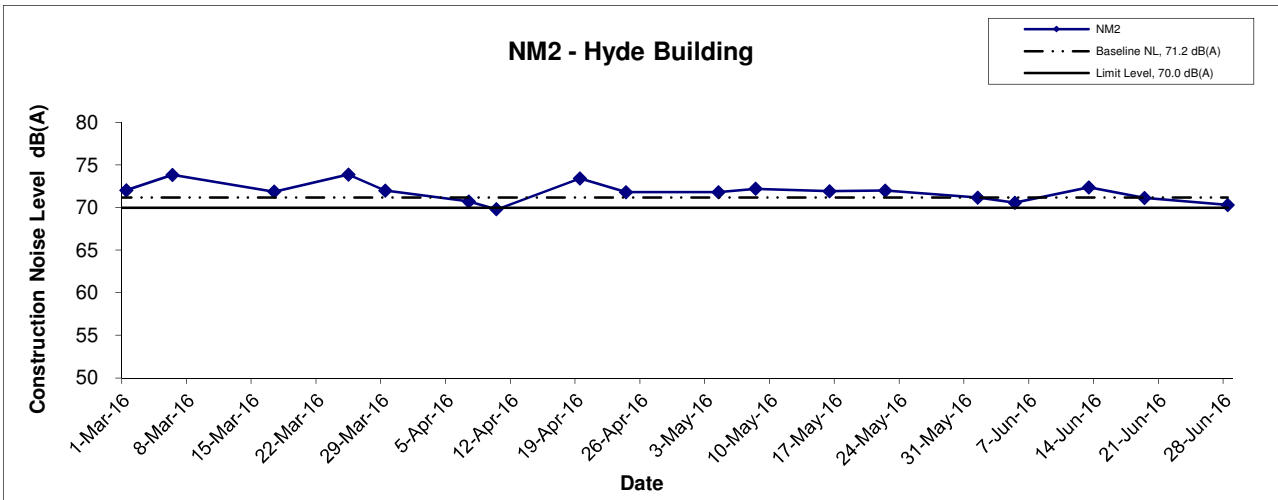
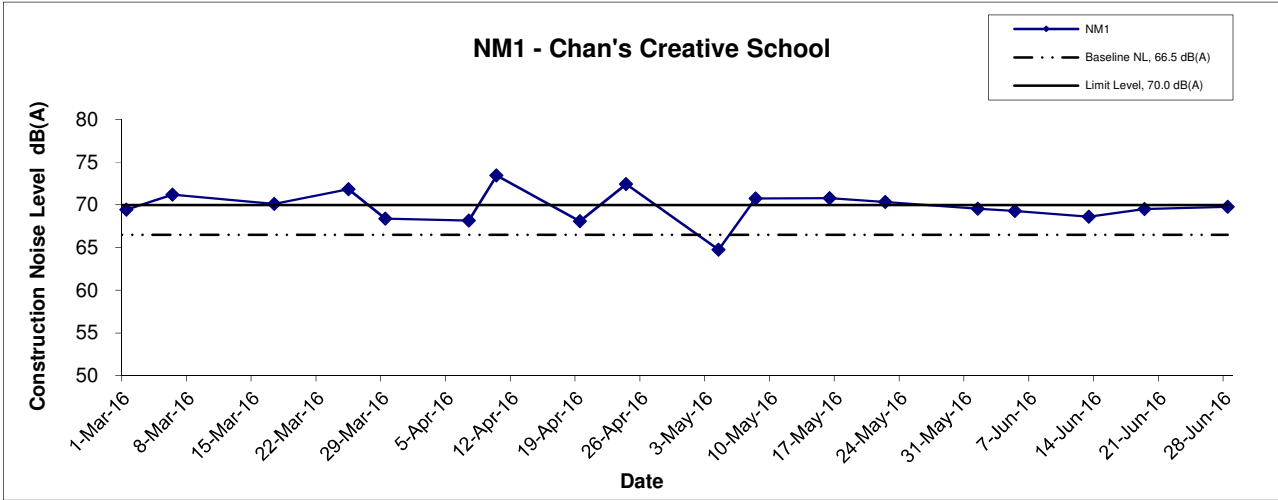
**(0700-1900 hrs on Normal Weekdays)**



Title Contract No. DC/2009/23 HATS 2A – Upgrading Works at North Point, Wan Chai East and Central  Graphical Presentation of Noise Monitoring Result	Scale N.T.S	Project No. MA11003	
	Date Jun 16	Appendix F	

## Noise Levels

**(Restricted Hours - 07:00 - 23:00 holidays & 19:00 - 23:00 on all other days )**



Title Contract No. DC/2009/23 HATS 2A – Upgrading Works at North Point, Wan Chai East and Central  Graphical Presentation of Noise Monitoring Result	Scale	N.T.S	Project No.	MA11003	CINOTECH
	Date	Jun 16	Appendix	F	

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**APPENDIX G**  
**SUMMARY OF EXCEEDANCE**

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**APPENDIX G – SUMMARY OF EXCEEDANCE****Reporting Month:** June 2016

- a) Exceedance Report for 1-hr TSP (NIL)**
- b) Exceedance Report for 24-hr TSP (NIL)**
- c) Exceedance Report for Construction Noise (8)**

No Action Level exceedance was recorded, while three non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM1; and five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1<sup>st</sup>, 5<sup>th</sup>, 13<sup>th</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 by the ET of this Project at NM2.

According to the information provided by the Contractor, no construction works were carried out during the restricted hours period on 1<sup>st</sup>, 19<sup>th</sup> & 28<sup>th</sup> June 2016 at North Point Preliminary Treatment Works under DC/2009/23 and on 1<sup>st</sup>, 5<sup>th</sup>, 13<sup>th</sup>, 19<sup>th</sup> & 28<sup>th</sup> June at Wan Chai East Preliminary Treatment Works under DC/2009/23.

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**APPENDIX H  
SUMMARY OF EXCEEDANCE REPORT**

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**Contract No. DC/2009/23 – HATS Stage 2A**

**Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central**

Report No. 160601\_noise\_NM1\_RN

**Date of Measurement:** 1<sup>st</sup> June 2016

**Time of Measurement:** 19:00 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM1	Construction Noise	69.0	When one documented complaint is received	70.0*	Limit
		70.6			
		68.8			

\* 70dB (A) was adopted as the Limit Level during restricted hours in June 2016.

**Remarks**

(a) Statement of exceedance(s)

Construction noise measured at NM1(North Point PTW) - Pedestrian walkway adjacent to Chan's Creative School boundary along Tin Chiu Street exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

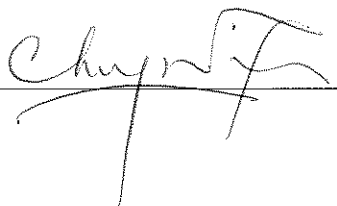
- 1) During the continuous measurements, the major noise source was the traffic noise.
- 2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
- 3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 1<sup>st</sup> June 2016 is well within the range of baseline noise levels (61.7 – 73.0dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: \_\_\_\_\_



Date: \_\_\_\_\_ 7 June 2016 \_\_\_\_\_

**Contract No. DC/2009/23 – HATS Stage 2A**

**Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central**  
Report No. 160601\_noise\_NM2\_RN

**Date of Measurement:** 1<sup>st</sup> June 2016

**Time of Measurement:** 20:00 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM2	Construction Noise	71.1	When one documented complaint is received	70.0*	Limit
		70.9			
		71.5			

\* 70dB (A) was adopted as the Limit Level during restricted hours in June 2016.

**Remarks**

(a) Statement of exceedance(s)

Construction noise measured at NM2(Wan Chai East PTW) - The roof of Hyde Building exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

- 1) During the continuous measurements, the major noise source was the traffic noise.
- 2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
- 3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 1<sup>st</sup> June 2016 is well within the range of baseline noise levels (68.6 – 76.8dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: \_\_\_\_\_



Date: \_\_\_\_\_ 7 June 2016 \_\_\_\_\_



**Contract No. DC/2009/23 – HATS Stage 2A**

**Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central**

Report No. 160605\_noise\_NM2\_RN

Date of Measurement: 5<sup>th</sup> June 2016

Time of Measurement: 14:00 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM2	Construction Noise	69.4	When one documented complaint is received	70.0*	Limit
		70.8			
		71.3			

\* 70dB (A) was adopted as the Limit Level during restricted hours in June 2016.

**Remarks**

(a) Statement of exceedance(s)

Construction noise measured at NM2(Wan Chai East PTW) - The roof of Hyde Building exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

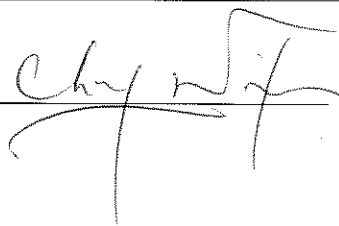
- 1) During the continuous measurements, the major noise source was the traffic noise.
- 2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
- 3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 5<sup>th</sup> June 2016 is well within the range of baseline noise levels (68.6 – 76.8dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: \_\_\_\_\_



Date: \_\_\_\_\_

8 July 2016

**Contract No. DC/2009/23 – HATS Stage 2A**

**Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central**

Report No. 160613\_noise\_NM2\_RN

Date of Measurement: 13<sup>th</sup> June 2016

Time of Measurement: 19:45 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM2	Construction Noise	72.3	When one documented complaint is received	70.0*	Limit
		72.4			
		72.4			

\* 70dB (A) was adopted as the Limit Level during restricted hours in June 2016.

**Remarks**

(a) Statement of exceedance(s)

Construction noise measured at NM2(Wan Chai East PTW) - The roof of Hyde Building exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

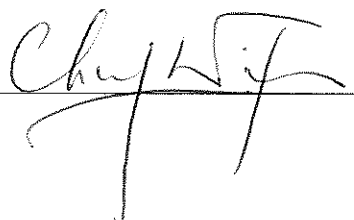
The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

- 1) During the continuous measurements, the major noise source was the traffic noise.
- 2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
- 3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 13<sup>th</sup> June 2016 is well within the range of baseline noise levels (68.6 – 76.8dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: 

Date: 15 June 2016

**Contract No. DC/2009/23 – HATS Stage 2A**

**Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central**

Report No. 160619\_noise\_NM1\_RN

Date of Measurement: 19<sup>th</sup> June 2016

Time of Measurement: 14:00 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM1	Construction Noise	68.6	When one documented complaint is received	70.0*	Limit
		70.3			
		69.5			

\* 70dB (A) was adopted as the Limit Level during restricted hours in June 2016.

**Remarks**

(a) Statement of exceedance(s)

Construction noise measured at NM1(North Point PTW) - Pedestrian walkway adjacent to Chan's Creative School boundary along Tin Chiu Street exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

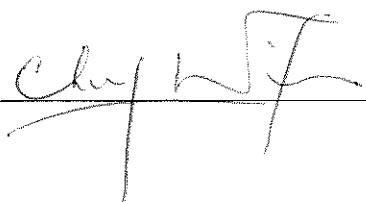
- 1) During the continuous measurements, the major noise source was the traffic noise.
- 2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
- 3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 19<sup>th</sup> June 2016 is well within the range of baseline noise levels (61.7 – 73.0dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: \_\_\_\_\_



Date: \_\_\_\_\_

11 July 2016

**Contract No. DC/2009/23 – HATS Stage 2A**

**Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central**

Report No. 160619\_noise\_NM2\_RN

**Date of Measurement:** 19<sup>th</sup> June 2016

**Time of Measurement:** 13:00 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM2	Construction Noise	71.4	When one documented complaint is received	70.0*	Limit
		71.5			
		70.4			

\* 70dB (A) was adopted as the Limit Level during restricted hours in June 2016.

**Remarks**

**(a) Statement of exceedance(s)**

Construction noise measured at NM2(Wan Chai East PTW) - The roof of Hyde Building exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

**(b) Cause of exceedance(s)**

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

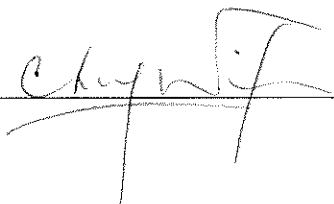
- 1) During the continuous measurements, the major noise source was the traffic noise.
- 2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
- 3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 19<sup>th</sup> June 2016 is well within the range of baseline noise levels (68.6 – 76.8dB(A)).

Therefore, the exceedance was considered to be non-project related.

**(c) Conclusions and Recommendations:**

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: \_\_\_\_\_



Date: \_\_\_\_\_ 11 July 2016 \_\_\_\_\_

**Contract No. DC/2009/23 – HATS Stage 2A**

**Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central**

Report No. 160628\_noise\_NM1\_RN

Date of Measurement: 28<sup>th</sup> June 2016

Time of Measurement: 19:30 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM1	Construction Noise	70.4	When one documented complaint is received	70.0*	Limit
		68.6			
		70.1			

\* 70dB (A) was adopted as the Limit Level during restricted hours in June 2016.

**Remarks**

(a) Statement of exceedance(s)

Construction noise measured at NM1(North Point PTW) - Pedestrian walkway adjacent to Chan's Creative School boundary along Tin Chiu Street exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

- 1) During the continuous measurements, the major noise source was the traffic noise.
- 2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
- 3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 28<sup>th</sup> June 2016 is well within the range of baseline noise levels (61.7 – 73.0dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: \_\_\_\_\_

Date: \_\_\_\_\_ 30 June 2016 \_\_\_\_\_

**Contract No. DC/2009/23 – HATS Stage 2A**

**Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central**

Report No. I60628\_noise\_NM2\_RN

Date of Measurement: 28<sup>th</sup> June 2016

Time of Measurement: 20:45 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM2	Construction Noise	69.6	When one documented complaint is received	70.0*	Limit
		70.4			
		70.8			

\* 70dB (A) was adopted as the Limit Level during restricted hours in June 2016.

**Remarks**

(a) Statement of exceedance(s)

Construction noise measured at NM2(Wan Chai East PTW) - The roof of Hyde Building exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

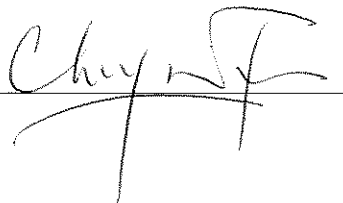
- 1) During the continuous measurements, the major noise source was the traffic noise.
- 2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
- 3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 28<sup>th</sup> June 2016 is well within the range of baseline noise levels (68.6 – 76.8dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: \_\_\_\_\_



Date: \_\_\_\_\_

30 June 2016

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**APPENDIX I  
SITE AUDIT SUMMARY**

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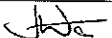
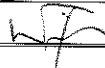
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160601
Date	1 June 2016 (Wednesday)
Time	09:30 – 12:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160601-O01	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"> <li>The Contractor should ensure the wastewater treatment facility is properly functioned for wastewater treatment at Central-PTW.</li> </ul> <p><b>Part B – Landscape and Visual</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part C - Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D – Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part E –Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part F - Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Follow up:</b></p> <ul style="list-style-type: none"> <li>For previous audit session (Ref. No. 160526), outstanding item 160526-O02 is required to be followed up and remarked as 160601-O01 which will be reviewed in the next weekly site inspection (Ref. No. 160608).</li> </ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"> <li>--</li> </ul>	A 5ii

	Name	Signature	Date
Recorded by	Janet Wai		1 June 2016
Checked by	Dr. Priscilla Choy		1 June 2016



Contract No: DC/2009/23

**HATS 2A - Upgrading of PTWs at North Point, Wan Chai East and Central**

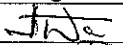
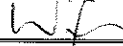
**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	160608
Date	8 June 2016 (Wednesday)
Time	09:30 – 11:20

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160608-001	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"><li>The Contractor should ensure the wastewater treatment facility is properly functioned for wastewater treatment at Central-PTW.</li></ul> <p><b>Part B – Landscape and Visual</b></p> <ul style="list-style-type: none"><li>No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part C - Air Quality</b></p> <ul style="list-style-type: none"><li>No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part D – Noise</b></p> <ul style="list-style-type: none"><li>No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part E –Waste / Chemical Management</b></p> <ul style="list-style-type: none"><li>No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part F - Permit / Licenses</b></p> <ul style="list-style-type: none"><li>No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Follow up:</b></p> <ul style="list-style-type: none"><li>For previous audit session (Ref. No. 160601), outstanding item 160601-001 is required to be followed up and remarked as 160608-001 which will be reviewed in the next weekly site inspection (Ref. No. 160615).</li></ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"><li>--</li></ul>	A 5ii

	Name	Signature	Date
Recorded by	Janet Wai		8 June 2016
Checked by	Dr. Priscilla Choy		8 June 2016

Contract No: DC/2009/23

**HATS 2A - Upgrading of PTWs at North Point, Wan Chai East and Central**

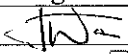
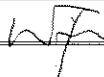
**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	160615
Date	15 June 2016 (Wednesday)
Time	09:30 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part B – Landscape and Visual</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part C - Air Quality</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part D – Noise</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part E –Waste / Chemical Management</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part F - Permit / Licenses</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Follow up:</b></p> <ul style="list-style-type: none"><li>• For previous audit session (Ref. No. 160608), all environmental deficiencies were improved by the Contractor.</li></ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"><li>• ---</li></ul>	

	Name	Signature	Date
Recorded by	Janet Wai		15 June 2016
Checked by	Dr. Priscilla Choy		15 June 2016



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160623
Date	23 June 2016 (Thursday)
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160623-001	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part B – Landscape and Visual</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part C - Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D – Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part E –Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>Oil/ Chemical containers should be provide with drip trays at Central-PTW.</li> </ul> <p><b>Part F - Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Follow up:</b></p> <ul style="list-style-type: none"> <li>For previous audit session (Ref. No. 160615), all environmental deficiencies were improved by the Contractor.</li> </ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"> <li>--</li> </ul>	E 7ii

	Name	Signature	Date
Recorded by	Carrie Leung		23 June 2016
Checked by	Dr. Priscilla Choy		23 June 2016

Contract No: DC/2009/23

**HATS 2A - Upgrading of PTWs at North Point, Wan Chai East and Central**

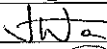

**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	160627
Date	27 June 2016 (Monday)
Time	09:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part B – Landscape and Visual</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part C - Air Quality</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part D – Noise</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part E –Waste / Chemical Management</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Part F - Permit / Licenses</b></p> <ul style="list-style-type: none"><li>• No environmental deficiency was identified during the site inspection.</li></ul> <p><b>Follow up:</b></p> <ul style="list-style-type: none"><li>• For previous audit session (Ref. No. 160623), all environmental deficiencies were improved by the Contractor.</li></ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"><li>• --</li></ul>	

	Name	Signature	Date
Recorded by	Janet Wai		27 June 2016
Checked by	Dr. Priscilla Choy		27 June 2016

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**APPENDIX J  
SUMMARY OF AMOUNT OF WASTE  
GENERATED**

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APPENDIX J MONTHLY SUMMARY WASTE FLOW TABLE FOR June (2016)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					Special Waste			
	Total Quantity Generated	Broken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Screening (CPTW)	Grit (CPTW)	Screening (NPPTW)	Grit (NPPTW)
	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	
Year 2015	24.063	0.000	0.000	0.000	24.063	0.000	72.810	5.557	0.708	1.030	1.485	2.615	1.697	1.022	0.604
JAN	0.205	0.000	0.000	0.000	0.205	0.000	0.000	0.150	0.010	0.000	0.030	0.071	0.030	0.045	0.028
FEB	0.054	0.000	0.000	0.000	0.054	0.000	0.000	0.150	0.010	0.000	0.010	0.075	0.035	0.040	0.026
MAR	0.234	0.000	0.000	0.000	0.234	0.000	0.000	0.150	0.020	0.000	0.071	0.086	0.037	0.046	0.028
APR	0.281	0.000	0.000	0.000	0.281	0.000	0.000	0.160	0.020	0.000	0.043	0.081	0.053	0.047	0.033
MAY	0.158	0.000	0.000	0.000	0.158	0.000	0.000	0.160	0.020	0.000	0.034	0.057	0.121	0.046	0.085
JUN	0.032	0.000	0.000	0.000	0.032	0.000	0.000	0.160	0.020	0.000	0.048	0.056	0.101	0.041	0.080
SUB-TOTAL	25.027	0.000	0.000	0.000	25.027	0.000	72.810	6.487	0.808	1.030	1.721	3.041	2.074	1.287	0.884
JUL															
AUG															
SEP															
OCT															
NOV															
DEC															
TOTAL	25.027	0.000	0.000	0.000	25.027	0.000	72.810	6.487	0.808	1.030	1.721	3.041	2.074	1.287	0.884

Forecast of Total Quantities of C&D materials to be Generated from the Contracts *											Special Waste		Special Waste	
Total Quantity Generated	Broken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Screening (CPTW)	Grit (CPTW)	Screening (NPPTW)	Grit (NPPTW)
[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	
25.3	0.04	0.03	0.03	25.1	0.1	100	8	1	3	3.5	4.5	3	1.5	1

- Notes :
- The performance targets are given in PS Clause 6(14).
  - The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the site.
  - Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.
  - The contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where to total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m<sup>3</sup>. (PS Clause 25.25S (6)(b) refers).  
[Delete Note (4) and the table above on the forecast, where inapplicable].
  - The assumed density (kg/m<sup>3</sup>) for both C&D material and general refuse.  
C&D material 2000kg/m<sup>3</sup>  
General refuse 500kg/m<sup>3</sup>
  - Conversion factors for reporting purpose:  

broken concrete and bitumen = 2.4 tonnes/m <sup>3</sup>	in-situ: rock = 2.5 tonnes/m <sup>3</sup> ; soil = 2.0 tonnes/m <sup>3</sup>	excavated: rock = 2.0 tonnes/m <sup>3</sup> ; soil = 1.8 tonnes/m <sup>3</sup>	Special Waste (Grit) = 1.2 tonnes/m <sup>3</sup>
	C&D Waste = 0.9 tonnes/m <sup>3</sup>	bentonite slurry = 2.8 tonnes/m <sup>3</sup>	Special Waste (Screening) = 0.31 tonnes/m <sup>3</sup>

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**APPENDIX K  
EVENT ACTION PLANS**

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**APPENDIX K – Event / Action Plans**

**Table K-1 Event / Action Plan For Air Quality**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring			
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

**Table J-2 Event / Action Plan For Construction Noise**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> <li>1. Notify ER, IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the IEC and Contractor on remedial measures required;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC and ER;</li> <li>2. Implement noise mitigation proposals</li> </ol>
Limit Level being exceeded	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurements to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contractor's working procedures;</li> <li>6. Discuss with the IEC, Contractor and ER on remedial measures required;</li> <li>7. Assess effectiveness of</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Submit further proposal if problem still not under control;</li> <li>5. Stop the relevant portion of works as instructed by</li> </ol>

<b>EVENT</b>	<b>ACTION</b>			
	<b>ET</b>	<b>IEC</b>	<b>ER</b>	<b>CONTRACTOR</b>
	Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring		until the exceedance is abated	the ER until the exceedance is abated

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**APPENDIX L  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

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**APPENDIX L IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)**

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Location of the measure</b>	<b>Implementation Status</b>
<b>A</b>	<b>Air Quality</b>		
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	^
	Vehicle washing facilities should be provided at every vehicle exit point.		^
	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.		^
	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.		^
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		^
	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.		^
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.		^
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		^
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^
	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.		^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	^	
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
<b>B</b>	<b>Airborne Noise</b>		
4.56– 4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.		^
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^
<b>C</b>	<b>Water Quality</b>		
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^
6.376	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		*
6.377	Accidental Spillage of Chemicals  Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General)		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	Regulation should be observed and complied with for control of chemical wastes.		
6.378	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		^
6.379	<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> <li>• Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>• Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>• Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>		^
6.380	<p>Construction Works in Close Proximity of Storm Drains or Seafront</p> <p>To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable.</p> <ul style="list-style-type: none"> <li>• The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment.</li> <li>• Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works.</li> <li>• Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.</li> <li>• Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.</li> <li>• Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.</li> <li>• Proper shoring may need to be erected in order to prevent soil/mud from slipping into</li> </ul>	All construction sites	^



EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	the storm culvert or sea.		
<b>D</b>	<b>Waste Management</b>		
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites	^
9.109	All waste materials should be segregated into categories covering: <ul style="list-style-type: none"> <li>• excavated materials suitable for reuse on-site;</li> <li>• excavated materials suitable for public filling facilities;</li> <li>• remaining C&amp;D waste for landfill;</li> <li>• chemical waste; and</li> <li>• general refuse for landfill.</li> </ul>	All construction sites	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals;	All construction sites	^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.		^
	Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.		*
9.115	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	All construction sites	^
	Training of site personnel in proper waste management and chemical waste handling procedures.		^
9.115	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	Provision of sufficient waste disposal points and regular collection of waste.		^
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.		^
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage"	All construction sites	N/A
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		^
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		^
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		N/A

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Location of the measure</b>	<b>Implementation Status</b>
<b>E</b>	<b>Terrestrial Ecology</b>		
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	N/A
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		^
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^
<b>F</b>	<b>Landscape and Visual</b>		
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^
	Existing trees to be retained on site should be carefully protected during construction.		^
	Trees unavoidably affected by the works should be transplanted where practical.		^
	Compensatory tree planting should be provided to compensate for felled trees.		^
	Control of night-time lighting.		^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.	All construction sites	N/A
<b>G</b>	<b>Marine Ecology</b>		
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	*
<b>H</b>	<b>Hazard to Life</b>		
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^

Remarks:	^ Compliance of mitigation measure;
	N/A Not Applicable;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	# Recommendation was made during site audit and to be improved / rectified by the contractor.
	X Non-compliance of mitigation measure;
	• Non-compliance but rectified by the contractor;

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**APPENDIX M  
COMPLAINT LOG**

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**APPENDIX M – COMPLAINT LOG**

**Reporting Month:** June 2016

<b>Log Ref.</b>	<b>Location</b>	<b>Received Date</b>	<b>Details of Complaint</b>	<b>Investigation/Mitigation Action</b>	<b>Status</b>
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

**Remarks:** No environmental complaint was received in the reporting month.

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**APPENDIX N**  
**CONSTRUCTION PROGRAMME**

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DSD - HATSS2 Upgrading of PTW (DC/2009/23)		LEADER - JEC JV						Start Date : 30-Dec-10; Finish Date : 29-Oct-14																				
		Clause 16 Programme for DC/2009/23 -Rev2						Data Date : 06-Jan-11; Run Date : 07-May-11																				
Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011				2012				2013				2014				2015				2016
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
<b>DSD - HATSS2 Upgrading of PTW (DC/2009/23)</b>																												
<b>Particulars</b>																												
<b>Key Dates</b>																												
Commencement / Completion																												
FGN0010	Contract Award	0	0	30-Dec-10 A		06-Jan-11		◆ Contract Award																				
FGN0030	Date of Commencement of Contract	0	0	06-Jan-11		06-Jan-11		◆ Date of Commencement of Contract																				
FGN0040	Time for Completion for Project	1393	0	06-Jan-11		29-Oct-14		◆ Time for Completion for Project																				
FGN0050	Date of Completion of the Works	0	0			29-Oct-14		◆ Date of Completion of the Works																				
<b>Portion of the Site</b>																												
<b>North Point</b>																												
Possession / Vacation of Portions																												
FNP0010	H/O Date_NP-1 (135 days after start)	0	0	20-May-11		20-May-11		◆ H/O Date_NP-1 (135 days after start)																				
FNP0020	Vacation Date_NP-1 (on Sec. 1 completed)	0	0			01-Jun-13		◆ Vacation Date_NP-1 (on Sec. 1 completed)																				
FNP0030	H/O Date_NP-2 (135 days after start)	0	29	20-May-11		18-Jun-11		◆ H/O Date_NP-2 (135 days after start)																				
FNP0040	Vacation Date_NP-2 (on Sec. 3 completed)	0	0			14-Oct-14		◆ Vacation Date_NP-2 (on Sec. 3 completed)																				
FNP0050	H/O Date_NP-3 (after Sec. 1 completed)	0	0	02-Jun-13		02-Jun-13		◆ H/O Date_NP-3 (after Sec. 1 completed)																				
FNP0060	Vacation Date_NP-3 (on Sec. 3 completed)	0	0			14-Oct-14		◆ Vacation Date_NP-3 (on Sec. 3 completed)																				
<b>Wan Chai East</b>																												
Possession / Vacation of Portions																												
FWC0010	H/O Date_WCE-1 (135 days after start)	0	0	20-May-11		20-May-11		◆ H/O Date_WCE-1 (135 days after start)																				
FWC0020	Vacation Date_WCE-1 (on Sec. 5 completed)	0	0			23-Nov-13		◆ Vacation Date_WCE-1 (on Sec. 5 completed)																				
FWC0030	H/O Date_WCE-2 (135 days after start)	0	0	20-May-11		20-May-11		◆ H/O Date_WCE-2 (135 days after start)																				
FWC0040	Vacation Date_WCE-2 (on Sec. 4ii completed)	0	0			14-Nov-11		◆ Vacation Date_WCE-2 (on Sec. 4ii completed)																				
FWC0050	H/O Date_WCE-2 (after complete Sec. 5-iv)	0	0	27-Jul-13		27-Jul-13		◆ H/O Date_WCE-2 (after complete Sec. 5-iv)																				
FWC0060	Vacation Date_WCE-2 (on Sec. 5 completed)	0	0			23-Nov-13		◆ Vacation Date_WCE-2 (on Sec. 5 completed)																				
FWC0070	H/O Date_WCE-3 (135 days after start)	0	59	20-May-11		18-Jul-11		◆ H/O Date_WCE-3 (135 days after start)																				
FWC0080	Vacation Date_WCE-3 (on Sec. 5 completed)	0	0			23-Nov-13		◆ Vacation Date_WCE-3 (on Sec. 5 completed)																				
FWC0090	H/O Date_WCE-4 (135 days after start)	0	59	20-May-11		18-Jul-11		◆ H/O Date_WCE-4 (135 days after start)																				
FWC0100	Vacation Date_WCE-4 (on Sec. 5 completed)	0	0			23-Nov-13		◆ Vacation Date_WCE-4 (on Sec. 5 completed)																				
FWC0110	H/O Date_WCE-T1 (135 days after start)	0	205	20-May-11		11-Dec-11		◆ H/O Date_WCE-T1 (135 days after start)																				
FWC0120	Vacation Date_WCE-T1 (on Sec. 6 completed)	0	0			22-May-14		◆ Vacation Date_WCE-T1 (on Sec. 6 completed)																				
FWC0130	H/O Date_WCE-T2 (135 days after start)	0	205	20-May-11		11-Dec-11		◆ H/O Date_WCE-T2 (135 days after start)																				
FWC0140	Vacation Date_WCE-T2 (on Sec. 6 completed)	0	0			22-May-14		◆ Vacation Date_WCE-T2 (on Sec. 6 completed)																				
<b>Central</b>																												
Possession / Vacation of Portions																												
FCT00110	H/O Date_CTL-1 (45 days after start)	0	0	19-Feb-11		19-Feb-11		◆ H/O Date_CTL-1 (45 days after start)																				
FCT00120	Vacation Date_CTL-1 (on Sec. 9 completed)	0	0			25-May-14		◆ Vacation Date_CTL-1 (on Sec. 9 completed)																				
FCT00130	H/O Date_CTL-2 (45 days after start)	0	50	19-Feb-11		10-Apr-11		◆ H/O Date_CTL-2 (45 days after start)																				
FCT00140	Vacation Date_CTL-2 (on Sec. 9 completed)	0	0			25-May-14		◆ Vacation Date_CTL-2 (on Sec. 9 completed)																				
FCT00150	H/O Date_CTL-3 (after Sec. 8 completed)	0	0	22-Mar-13		22-Mar-13		◆ H/O Date_CTL-3 (after Sec. 8 completed)																				
FCT00160	Vacation Date_CTL-3 (on Sec.10 completed)	0	0			29-Oct-14		◆ Vacation Date_CTL-3 (on Sec.10 completed)																				
FCT00170	H/O Date_CTL-T	0	806	06-Jan-11		22-Mar-13		◆ H/O Date_CTL-T																				
FCT00180	Vacation Date_CTL-T (on Sec.10 completed)	0	0			29-Oct-14		◆ Vacation Date_CTL-T (on Sec.10 completed)																				
<b>Management Plans and Programmes</b>																												
<b>Contractor's Design, Submission / Approval</b>																												
Particulars																												
FGN0200	Prepare/Submit Clause 16 Programme	60	11	06-Jan-11	06-Mar-11	17-Jan-11	17-Mar-11	Prepare/Submit Clause 16 Programme																				
FGN0210	Comment/Approval of Clause 16 Programme	30	41	07-Mar-11	05-Apr-11	17-Apr-11	16-May-11	Comment/Approval of Clause 16 Programme																				
FGN0220	Prepare/Submit Detailed Works Programme	60	11	07-Mar-11	05-May-11	18-Mar-11	16-May-11	Prepare/Submit Detailed Works Programme																				
FGN0230	Comments/Approval of Detailed Works Programme	30	11	06-May-11	04-Jun-11	17-May-11	15-Jun-11	Comments/Approval of Detailed Works Programme																				
FGN0250	Prepare/Submit Safety Plan	14	159	06-Jan-11	19-Jan-11	14-Jun-11	27-Jun-11	Prepare/Submit Safety Plan																				
FGN0260	Comments/Approval of Safety Plan	60	159	20-Jan-11	28-Mar-11	28-Jun-11	26-Aug-11	Comments/Approval of Safety Plan																				
FGN0300	Prepare/Submit Environmental Manag. Plan	21	152	06-Jan-11	26-Jan-11	07-Jun-11	27-Jun-11	Prepare/Submit Environmental Manag. Plan																				
FGN0310	Comments/Approval of Environmental Manag. Plan	60	152	27-Jan-11	27-Mar-11	28-Jun-11	26-Aug-11	Comments/Approval of Environmental Manag. Plan																				
FGN0330	Prepare / Submit Subcontractor Management Plan	30	143	06-Jan-11	04-Feb-11	29-May-11	27-Jun-11	Prepare / Submit Subcontractor Management Plan																				
FGN0340	Comments/Approval of Subcontractor Manag. Plan	60	143	05-Feb-11	05-Apr-11	28-Jun-11	26-Aug-11	Comments/Approval of Subcontractor Manag. Plan																				
FGN0400	Prepare / Submit Interface Management Plan	55	43	06-Jan-11	01-Mar-11	18-Feb-11	13-Apr-11	Prepare / Submit Interface Management Plan																				
FGN0410	Comments / Approval of Interface Management Plan	45	43	02-Mar-11	15-Apr-11	14-Apr-11	28-May-11	Comments / Approval of Interface Management Plan																				
FGN0420	Submit Detailed Interface Documents	60	43	16-Apr-11	14-Jun-11	29-May-11	27-Jul-11	Submit Detailed Interface Documents																				
FGN0430	Approval of Detailed Interface Documents	30	43	15-Jun-11	14-Jul-11	28-Jul-11	26-Aug-11	Approval of Detailed Interface Documents																				
FGN0440	Prepare/Submit Env. Baseline Monitoring report	60	71	19-Feb-11	19-Apr-11	01-May-11	29-Jun-11	Prepare/Submit Env. Baseline Monitoring report																				
FGN0445	Comments/Approval Env. Baseline Report	28	71	20-Apr-11	17-May-11	30-Jun-11	27-Jul-11	Comments/Approval Env. Baseline Report																				
FGN0448	Review/submit Construction Noise Permit	28	129	04-Apr-11	01-May-11	11-Aug-11	07-Sep-11	Review/submit Construction Noise Permit																				
FGN0449	Comments/Approval of Construction Noise Permit	28	129	02-May-11	29-May-11	08-Sep-11	05-Oct-11	Comments/Approval of Construction Noise Permit																				
<b>Technical Information &amp; Drawings</b>																												
FGN0450	Prepare/Submit initial record for Central PTW	14	50	19-Feb-11	04-Mar-11	10-Apr-11	23-Apr-11	Prepare/Submit initial record for Central PTW																				
FGN0455	Prepare/Submit Tree Survey Report Pt. I	14	50	19-Feb-11	04-Mar-11	10-Apr-11	23-Apr-11	Prepare/Submit Tree Survey Report Pt. I																				
FGN0460	Prepare/Submit initial record for remaining area	14	50	20-May-11	02-Jun-11	09-Jul-11	22-Jul-11	Prepare/Submit initial record for remaining area																				
FGN0465	Prepare/Submit Tree Survey Report Pt. II	14	13	20-May-11	02-Jun-11	02-Jun-11	15-Jun-11	Prepare/Submit Tree Survey Report Pt. II																				
<b>Civil &amp; Geo. Submission</b>																												
<b>Contractor's Design, Submission and Approval</b>																												

■ Actual Work    ■ Critical Remaining Work  
■ Remaining Work    ◆ Milestone



Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011 2012 2013 2014 2015 2016																											
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
<b>Technical Information &amp; Drawings</b>																																			
FGN0600	Prepare / Submit Major Method Statement	60	14	06-Jan-11	06-Mar-11	20-Jan-11	20-Mar-11	█ Prepare / Submit Major Method Statement																											
FGN0610	Comments / Approval of Method Statement	28	14	07-Mar-11	03-Apr-11	21-Mar-11	17-Apr-11	█ Comments / Approval of Method Statement																											
FGN0611	Review / Resubmit of Method Statement	14	47	04-Apr-11	17-Apr-11	21-May-11	03-Jun-11	█ Review / Resubmit of Method Statement																											
FGN0612	Approval of Method Statement	14	47	18-Apr-11	01-May-11	04-Jun-11	17-Jun-11	█ Approval of Method Statement																											
FGN0620	Prepare/Submit Pre-cond.svrvey Ex. Bldgs. Pt.I	28	50	05-Mar-11	01-Apr-11	24-Apr-11	21-May-11	█ Prepare/Submit Pre-cond.svrvey Ex. Bldgs. Pt.I																											
FGN0625	Comments/Approval Pre-cond. EX. Bldgs. Pt.I	28	50	02-Apr-11	29-Apr-11	22-May-11	18-Jun-11	█ Comments/Approval Pre-cond. EX. Bldgs. Pt.I																											
FGN0630	Prepare/Submit Pre-cond.svrvey Ex. Bldgs. Pt.II	28	7	20-May-11	16-Jun-11	27-May-11	23-Jun-11	█ Prepare/Submit Pre-cond.svrvey Ex. Bldgs. Pt.II																											
FGN0635	Comment/Approval Pre-cond.svrvey Ex. Bldgs. Pt.II	28	7	17-Jun-11	14-Jul-11	24-Jun-11	21-Jul-11	█ Comment/Approval Pre-cond.svrvey Ex. Bldgs. Pt.II																											
FGN0640	Prepare/Submit Geo. baseline Monitoring Plan Pt.I	21	71	19-Feb-11	11-Mar-11	01-May-11	21-May-11	█ Prepare/Submit Geo. baseline Monitoring Plan Pt.I																											
FGN0645	Comments/Approval Geo. Baseline Monit. Plan Pt.I	28	71	12-Mar-11	08-Apr-11	22-May-11	18-Jun-11	█ Comments/Approval Geo. Baseline Monit. Plan Pt.I																											
FGN0650	Prepare/Submit Geo. Baseline Monit. Plan Pt.II	21	0	20-May-11	09-Jun-11	20-May-11	09-Jun-11	█ Prepare/Submit Geo. Baseline Monit. Plan Pt.II																											
FGN0655	Comments/Approval Geo. Baseline Monit. Plan Pt.II	28	0	10-Jun-11	07-Jul-11	10-Jun-11	07-Jul-11	█ Comments/Approval Geo. Baseline Monit. Plan Pt.II																											
FGN0700	Prepare / Submit Temp. Works Proposal	28	95	07-Mar-11	03-Apr-11	10-Jun-11	07-Jul-11	█ Prepare / Submit Temp. Works Proposal																											
FGN0750	Comments / Approval of Temp. Works Proposal	28	95	04-Apr-11	01-May-11	08-Jul-11	04-Aug-11	█ Comments / Approval of Temp. Works Proposal																											
FGN0900	Prepare/Submit Tech. Data, Civil Wks Design	60	0	06-Jan-11	06-Mar-11	06-Mar-11	06-Mar-11	█ Prepare/Submit Tech. Data, Civil Wks Design																											
FGN0950	Comments on Tech. Data, Civil Wks Design	28	0	07-Mar-11	03-Apr-11	07-Mar-11	03-Apr-11	█ Comments on Tech. Data, Civil Wks Design																											
FGN1000	Review Resubmit Tech. Data, Civil Wks Design	14	0	04-Apr-11	17-Apr-11	04-Apr-11	17-Apr-11	█ Review Resubmit Tech. Data, Civil Wks Design																											
FGN1050	Approval of Tech. Data, Civil Wks Design	14	0	18-Apr-11	01-May-11	18-Apr-11	01-May-11	█ Approval of Tech. Data, Civil Wks Design																											
<b>Electrical &amp; Mechanical Submission</b>																																			
<b>Contractor's Design, Submission and Approval</b>																																			
<b>Technical Information &amp; Drawings</b>																																			
FGN1100	Prepare / Submit Major Method Statement	60	50	06-Jan-11	06-Mar-11	25-Feb-11	25-Apr-11	█ Prepare / Submit Major Method Statement																											
FGN1150	Comments / Approval of Major Method Statement	28	50	07-Mar-11	03-Apr-11	26-Apr-11	23-May-11	█ Comments / Approval of Major Method Statement																											
FGN1200	Prepare/Submit Major Tech. Data, Shop/Bldr's Wks Drwgs	60	50	04-Apr-11	02-Jun-11	24-May-11	22-Jul-11	█ Prepare/Submit Major Tech. Data, Shop/Bldr's Wks Drwgs																											
FGN1250	Comments on Major Tech. Data, Shop/Bldr's Wks Drwgs	28	50	03-Jun-11	30-Jun-11	23-Jul-11	19-Aug-11	█ Comments on Major Tech. Data, Shop/Bldr's Wks Drwgs																											
FGN1300	Review Resubmit Major Tech. Data, Shop/Bldr's Wks Drwg	14	117	01-Jul-11	14-Jul-11	26-Oct-11	08-Nov-11	█ Review Resubmit Major Tech. Data, Shop/Bldr's Wks Drwg																											
FGN1350	Approval of Major Tech. Data, Shop/Bldr's Wks Drwgs	14	117	15-Jul-11	28-Jul-11	09-Nov-11	22-Nov-11	█ Approval of Major Tech. Data, Shop/Bldr's Wks Drwgs																											
<b>Equipment Catalogue and Samples</b>																																			
FGN1400	Prepare & Submit Equipment Catalogue for Fine Screen	60	1	06-Jan-11	06-Mar-11	07-Jan-11	07-Mar-11	█ Prepare & Submit Equipment Catalogue for Fine Screen																											
FGN1410	Comment/Approval of Equipment Catalogue for Fine Screen	28	1	07-Mar-11	03-Apr-11	08-Mar-11	04-Apr-11	█ Comment/Approval of Equipment Catalogue for Fine Screen																											
FGN1420	Review & Resubmit Equipment Catalogue for Fine Screen	30	1	04-Apr-11	03-May-11	05-Apr-11	04-May-11	█ Review & Resubmit Equipment Catalogue for Fine Screen																											
FGN1430	Approval of Equipment Catalogue for Fine Screen	28	1	04-May-11	31-May-11	05-May-11	01-Jun-11	█ Approval of Equipment Catalogue for Fine Screen																											
FGN1440	Prepare & Submit Equipment Catalogue for Fine Screen Comp...	60	1	06-Jan-11	06-Mar-11	07-Jan-11	07-Mar-11	█ Prepare & Submit Equipment Catalogue for Fine Screen Compactor																											
FGN1450	Comment/Approval of Equipment Catalogue for Fine Screen Co...	28	1	07-Mar-11	03-Apr-11	08-Mar-11	04-Apr-11	█ Comment/Approval of Equipment Catalogue for Fine Screen Compactor																											
FGN1460	Review & Resubmit Equipment Catalogue for Fine Screen Com...	30	1	04-Apr-11	03-May-11	05-Apr-11	04-May-11	█ Review & Resubmit Equipment Catalogue for Fine Screen Compactor																											
FGN1470	Approval of Equipment Catalogue for Fine Screen Compactor	28	1	04-May-11	31-May-11	05-May-11	01-Jun-11	█ Approval of Equipment Catalogue for Fine Screen Compactor																											
FGN1480	Prepare & Submit Equipment Catalogue for Grit Trap	60	1	06-Jan-11	06-Mar-11	07-Jan-11	07-Mar-11	█ Prepare & Submit Equipment Catalogue for Grit Trap																											
FGN1490	Comment/Approval of Equipment Catalogue for Grit Trap	28	1	07-Mar-11	03-Apr-11	08-Mar-11	04-Apr-11	█ Comment/Approval of Equipment Catalogue for Grit Trap																											
FGN1500	Review & Resubmit Equipment Catalogue for Grit Trap	30	1	04-Apr-11	03-May-11	05-Apr-11	04-May-11	█ Review & Resubmit Equipment Catalogue for Grit Trap																											
FGN1510	Approval of Equipment Catalogue for Grit Trap	28	1	04-May-11	31-May-11	05-May-11	01-Jun-11	█ Approval of Equipment Catalogue for Grit Trap																											
FGN1520	Prepare & Submit Equipment Catalogue for Grit Classifier	60	1	06-Jan-11	06-Mar-11	07-Jan-11	07-Mar-11	█ Prepare & Submit Equipment Catalogue for Grit Classifier																											
FGN1530	Comment/Approval of Equipment Catalogue for Grit Classifier	28	1	07-Mar-11	03-Apr-11	08-Mar-11	04-Apr-11	█ Comment/Approval of Equipment Catalogue for Grit Classifier																											
FGN1540	Review & Resubmit Equipment Catalogue for Grit Classifier	30	1	04-Apr-11	03-May-11	05-Apr-11	04-May-11	█ Review & Resubmit Equipment Catalogue for Grit Classifier																											
FGN1550	Approval of Equipment Catalogue for Grit Classifier	28	1	04-May-11	31-May-11	05-May-11	01-Jun-11	█ Approval of Equipment Catalogue for Grit Classifier																											
FGN1560	Prepare & Submit Equipment Catalogue for Electrical Equipment	60	13	06-Jan-11	06-Mar-11	19-Jan-11	19-Mar-11	█ Prepare & Submit Equipment Catalogue for Electrical Equipment																											
FGN1570	Comment/Approval of Equipment Catalogue for Electrical Equipm...	28	13	07-Mar-11	03-Apr-11	20-Mar-11	16-Apr-11	█ Comment/Approval of Equipment Catalogue for Electrical Equipment																											
FGN1580	Review & Resubmit Equipment Catalogue for Electrical Equipm...	30	13	04-Apr-11	03-May-11	17-Apr-11	16-May-11	█ Review & Resubmit Equipment Catalogue for Electrical Equipment																											
FGN1590	Approval of Equipment Catalogue for Electrical Equipment	28	13	04-May-11	31-May-11	17-May-11	13-Jun-11	█ Approval of Equipment Catalogue for Electrical Equipment																											
FGN1600	Prepare & Submit Equipment Catalogue for Control & Instrume...	60	39	06-Jan-11	06-Mar-11	14-Feb-11	14-Apr-11	█ Prepare & Submit Equipment Catalogue for Control & Instrument Equipment																											
FGN1610	Comment/Approval of Equipment Catalogue for Control & Instrum...	28	39	07-Mar-11	03-Apr-11	15-Apr-11	12-May-11	█ Comment/Approval of Equipment Catalogue for Control & Instrument Equipment																											
FGN1620	Review & Resubmit Equipment Catalogue for Control & Instrum...	30	39	04-Apr-11	03-May-11	13-May-11	11-Jun-11	█ Review & Resubmit Equipment Catalogue for Control & Instrument Equipment																											
FGN1630	Approval of Equipment Catalogue for Control & Instrument Equi...	28	39	04-May-11	31-May-11	12-Jun-11	09-Jul-11	█ Approval of Equipment Catalogue for Control & Instrument Equipment																											
FGN1640	Prepare & Submit Equipment Catalogue for BS Equipment	60	33	06-Jan-11	06-Mar-11	08-Feb-11	08-Apr-11	█ Prepare & Submit Equipment Catalogue for BS Equipment																											
FGN1650	Comment/Approval of Equipment Catalogue for BS Equipment	28	33	07-Mar-11	03-Apr-11	09-Apr-11	06-May-11	█ Comment/Approval of Equipment Catalogue for BS Equipment																											
FGN1660	Review & Resubmit Equipment Catalogue for BS Equipment	30	33	04-Apr-11	03-May-11	07-May-11	05-Jun-11	█ Review & Resubmit Equipment Catalogue for BS Equipment																											
FGN1670	Approval of Equipment Catalogue for BS Equipment	28	33	04-May-11	31-May-11	06-Jun-11	03-Jul-11	█ Approval of Equipment Catalogue for BS Equipment																											
FGN1680	Prepare & Submit Equipment Catalogue for Pumps	60	137	06-Jan-11	06-Mar-11	23-May-11	21-Jul-11	█ Prepare & Submit Equipment Catalogue for Pumps																											
FGN1690	Approval of Equipment Catalogue for Pumps	28	137	07-Mar-11	03-Apr-11	22-Jul-11	18-Aug-11	█ Approval of Equipment Catalogue for Pumps																											
<b>North Point PTW</b>																																			
<b>Key Dates</b>																																			
<b>Time for Completion</b>																																			
FGN0070	Time for Completion of Section 1	878	0	06-Jan-11	01-Jun-13	06-Jan-11	01-Jun-13	█ Time for Completion of Section 1																											
FGN0080	Time for Completion of Section 2	1168	0	06-Jan-11	18-Mar-14	06-Jan-11	18-Mar-14	█ Time for Completion of Section 2																											
FGN0090	Time for Completion of Section 3	1378	0	06-Jan-11	14-Oct-14	06-Jan-11	14-Oct-14	█ Time for Completion of Section 3																											
<b>Procurement</b>																																			
<b>Order / Manufacturing / Shipment / Delivery</b>																																			
FGN1800	Ordering of Piling Material	45	117	29-Jul-11	11-Sep-11	23-Nov-11	06-Jan-12	█ Ordering of Piling Material																											
FGN2000	Ordering of Mechanical Equipment	7	61	01-Jun-11	07-Jun-11	01-Aug-11	07-Aug-11	█ Ordering of Mechanical Equipment																											
FGN2050	Manufacture/Shipmnet of Fine Screen	200	101	06-Oct-11	22-Apr-12	15-Jan-12	01-Aug-12	█ Manufacture/Shipmnet of Fine Screen																											
FGN2100	Manufacture/Shipmnet of Fine Screening Conveyor	210	64	06-Oct-11	02-May-12	09-Dec-11	05-Jul-12	█ Manufacture/Shipmnet of Fine Screening Conveyor																											

█ Actual Work █ Critical Remaining Work  
 █ Remaining Work ◆ ◆ Milestone









Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011 2012 2013 2014 2015 2016																											
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
<b>Civil Works Material Delivery on Site</b>																																			
FWC00500	Ordering of Temp. Workshop Material	7	0	02-May-11	08-May-11	02-May-11	08-May-11	■ Ordering of Temp. Workshop Material																											
FWC00550	Manufacturing / Shipment of Temp. Workshop	60	0	09-May-11	07-Jul-11	09-May-11	07-Jul-11	■ Manufacturing / Shipment of Temp. Workshop																											
FWC00600	Temp. Workshop Material Delivery on Site	10	0	08-Jul-11	17-Jul-11	08-Jul-11	17-Jul-11	■ Temp. Workshop Material Delivery on Site																											
<b>Civil Works</b>																																			
<b>Site Clearance &amp; Prep. Works</b>																																			
FWC01100	Construct Temp. Workshop, General Store	60	0	18-Jul-11	15-Sep-11	18-Jul-11	15-Sep-11	■ Construct Temp. Workshop, General Store																											
FWC01150	Construct Temp. D.G. Store	30	0	18-Jul-11	16-Aug-11	18-Jul-11	16-Aug-11	■ Construct Temp. D.G. Store																											
<b>Demolition Works</b>																																			
FWC01450	Demolish Extg. Workshop, General & D.G. Store	60	0	20-Nov-11	18-Jan-12	20-Nov-11	18-Jan-12	■ Demolish Extg. Workshop, General & D.G. Store																											
<b>Building Service Works</b>																																			
FWC01200	Modify Extg. Office to new control room	180	0	20-May-11	15-Nov-11	20-May-11	15-Nov-11	■ Modify Extg. Office to new control room																											
FWC01205	Lay new cable trench for new control room	30	0	17-Sep-11	16-Oct-11	17-Sep-11	16-Oct-11	■ Lay new cable trench for new control room																											
FWC01210	Modify Ex. of f.pantry, locker rm. to new WSoft	90	0	19-Jul-11	16-Oct-11	19-Jul-11	16-Oct-11	■ Modify Ex. of f.pantry, locker rm. to new WSoft																											
FWC01220	Modify & install new staircase to G/F	90	0	19-Jul-11	16-Oct-11	19-Jul-11	16-Oct-11	■ Modify & install new staircase to G/F																											
<b>Transplantation, landscape works</b>																																			
FWC01050	2nos. Tree Transplant	28	31	20-May-11	16-Jun-11	20-Jun-11	17-Jul-11	■ 2nos. Tree Transplant																											
<b>E&amp;M Installation</b>																																			
FWC01500	Temporary Relocation of Workshop	60	0	16-Sep-11	14-Nov-11	16-Sep-11	14-Nov-11	■ Temporary Relocation of Workshop																											
FWC01550	Temporary Relocation of D.G. Store	60	0	21-Sep-11	19-Nov-11	21-Sep-11	19-Nov-11	■ Temporary Relocation of D.G. Store																											
FWC01600	Relocate Existing Control Rm. to Modified Ctrl Rm	70	0	17-Oct-11	25-Dec-11	17-Oct-11	25-Dec-11	■ Relocate Existing Control Rm. to Modified Ctrl Rm																											
<b>Testing and Commissioning</b>																																			
FWC01650	T&C of Relocated Control System	34	0	26-Dec-11	28-Jan-12	26-Dec-11	28-Jan-12	■ T&C of Relocated Control System																											
FWC01700	Completion of the Works of Sec. 4(ii)	0	0		14-Nov-11		14-Nov-11	◆ Completion of the Works of Sec. 4(ii)																											
FWC01800	Completion of the Works of Sec. 4	0	0		28-Jan-12		28-Jan-12	◆ Completion of the Works of Sec. 4																											
<b>Works for Section 5</b>																																			
<b>Wan Chai East</b>																																			
<b>Possession / Vacation of Portions</b>																																			
FWC01860	Second Possession WCE-2	0	0	27-Jul-13		27-Jul-13		◆ Second Possession WCE-2																											
<b>Statutory Submission / Approval / Inspection</b>																																			
FWC02300	Application of D.G. Store License	0	0	29-Jan-12		29-Jan-12		◆ Application of D.G. Store License																											
FWC02350	Approval of D.G. Store License	30	0	29-Jan-12	27-Feb-12	29-Jan-12	27-Feb-12	■ Approval of D.G. Store License																											
FWC02400	Application of D.G. Store Inspection	0	101	29-Jun-13		08-Oct-13		◆ Application of D.G. Store Inspection																											
FWC02450	D.G. Store Inspection by FSD	35	101	01-Jul-13	04-Aug-13	10-Oct-13	13-Nov-13	■ D.G. Store Inspection by FSD																											
FWC02500	Obtain D.G. Store Licence	0	101		14-Aug-13		23-Nov-13	◆ Obtain D.G. Store Licence																											
FWC02600	Submit F314 (as-built) & F501	0	46	23-Aug-13		08-Oct-13		◆ Submit F314 (as-built) & F501																											
FWC02650	FSD Inspection	35	46	25-Aug-13	28-Sep-13	10-Oct-13	13-Nov-13	■ FSD Inspection																											
FWC02700	Issuance of F.S. Certificate	0	46		08-Oct-13		23-Nov-13	◆ Issuance of F.S. Certificate																											
<b>Civil Works</b>																																			
<b>Site Clearance &amp; Prep. Works</b>																																			
FWC10100	Complete Demolish of Extg. Workshop, D.G. Store	0	0		18-Jan-12		18-Jan-12	◆ Complete Demolish of Extg. Workshop, D.G. Store																											
FWC10120	Site Utilities Supply	60	124	20-May-11	18-Jul-11	21-Sep-11	19-Nov-11	■ Site Utilities Supply																											
<b>Demolition Works</b>																																			
FWC10400	Demolition of Temp. Workshop & D.G. Store	21	0	06-Jul-13	26-Jul-13	06-Jul-13	26-Jul-13	■ Demolition of Temp. Workshop & D.G. Store																											
FWC10410	Install Instrumentation Monitoring Pts.	28	167	08-Jul-11	04-Aug-11	22-Dec-11	18-Jan-12	■ Install Instrumentation Monitoring Pts.																											
<b>Site Investigation</b>																																			
FWC10110	12 nos. Pre-drill holes	60	0	20-Nov-11	18-Jan-12	20-Nov-11	18-Jan-12	■ 12 nos. Pre-drill holes																											
<b>Foundation Works</b>																																			
FWC10150	24nos. socket H-piles	96	0	19-Jan-12	23-Apr-12	19-Jan-12	23-Apr-12	■ 24nos. socket H-piles																											
FWC10160	ELS for pile cap for New Admin. Bldg	28	0	24-Apr-12	21-May-12	24-Apr-12	21-May-12	■ ELS for pile cap for New Admin. Bldg																											
FWC10170	Construct pile cap for New Admin. Bldg.	48	0	22-May-12	08-Jul-12	22-May-12	08-Jul-12	■ Construct pile cap for New Admin. Bldg.																											
<b>RC / Structural Works</b>																																			
FWC10200	Construct New Admin. Bldg. Workshop & DG Store	48	0	09-Jul-12	25-Aug-12	09-Jul-12	25-Aug-12	■ Construct New Admin. Bldg. Workshop & DG Store																											
FWC10210	Construct columns & walls for new Admin. Bldg.,	48	0	19-Aug-12	05-Oct-12	19-Aug-12	05-Oct-12	■ Construct columns & walls for new Admin. Bldg.,																											
FWC10220	Construct roof slab for new Admin. Bldg.	48	0	06-Oct-12	22-Nov-12	06-Oct-12	22-Nov-12	■ Construct roof slab for new Admin. Bldg.																											
<b>Building Service Works</b>																																			
FWC10300	Fitting Out Electrical Works for New Ad.Bldg.	30	0	23-Nov-12	22-Dec-12	23-Nov-12	22-Dec-12	■ Fitting Out Electrical Works for New Ad.Bldg.																											
FWC10320	Fitting Out Mech. Works for New Ad.Bldg.	30	0	14-Dec-12	12-Jan-13	14-Dec-12	12-Jan-13	■ Fitting Out Mech. Works for New Ad.Bldg.																											
FWC10330	Fitting Out Works for New Workshop	30	0	13-Jan-13	11-Feb-13	13-Jan-13	11-Feb-13	■ Fitting Out Works for New Workshop																											
FWC10350	Construct Cable Pits & Ducting inside Bldg.	21	0	12-Feb-13	04-Mar-13	12-Feb-13	04-Mar-13	■ Construct Cable Pits & Ducting inside Bldg.																											
FWC10360	Construct Drains, cable& Ducting at roof slab	21	0	05-Mar-13	25-Mar-13	05-Mar-13	25-Mar-13	■ Construct Drains, cable& Ducting at roof slab																											
<b>Architectural Works</b>																																			
FWC10250	Int'l Finishes for new Bldg.	30	0	26-Mar-13	24-Apr-13	26-Mar-13	24-Apr-13	■ Int'l Finishes for new Bldg.																											
FWC10260	Installation windows, louvre, windows & doors	28	7	25-Apr-13	22-May-13	02-May-13	29-May-13	■ Installation windows, louvre, windows & doors																											
<b>E&amp;M Installation</b>																																			
FWC21150	Relocate Control System, T&C	85	0	12-Apr-13	05-Jul-13	12-Apr-13	05-Jul-13	■ Relocate Control System, T&C																											
FWC21200	Relocate D.G. Store	30	7	30-May-13	28-Jun-13	06-Jun-13	05-Jul-13	■ Relocate D.G. Store																											
FWC21300	Relocate Workshop Facilities	75	4	18-Apr-13	01-Jul-13	22-Apr-13	05-Jul-13	■ Relocate Workshop Facilities																											
FWC21350	Completion of the Works for Section 5 (iv)	0	0		26-Jul-13		26-Jul-13	◆ Completion of the Works for Section 5 (iv)																											
<b>Electrical Installation</b>																																			
FWC10450	Modify Extg. Flow Distribution Chamber	30	0	27-Jul-13	25-Aug-13	27-Jul-13	25-Aug-13	■ Modify Extg. Flow Distribution Chamber																											
FWC10460	Modify Ex. Connection chamber incl. E&M works	30	0	27-Jul-13	25-Aug-13	27-Jul-13	25-Aug-13	■ Modify Ex. Connection chamber incl. E&M works																											
FWC10500	Install E&M Equipment in Flume Channels	45	0	26-Aug-13	09-Oct-13	26-Aug-13	09-Oct-13	■ Install E&M Equipment in Flume Channels																											

■ Actual Work ■ Critical Remaining Work  
 ■ Remaining Work ◆ Milestone

Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011 2012 2013 2014 2015 2016																											
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
<b>Building Service Installation</b>																																			
FWC23250	Install Building Services	60	46	25-Apr-13	23-Jun-13	10-Jun-13	08-Aug-13	█ Install Building Services																											
FWC23300	Install F.S. System	60	46	24-Jun-13	22-Aug-13	09-Aug-13	07-Oct-13	█ Install F.S. System																											
<b>Testing and Commissioning</b>																																			
FWC23350	Testing & Commissioning	45	0	10-Oct-13	23-Nov-13	10-Oct-13	23-Nov-13	█ Testing & Commissioning																											
FWC23400	Completion of the Works of Section 5	0	0		23-Nov-13		23-Nov-13	◆ Completion of the Works of Section 5																											
<b>Works for Section 6</b>																																			
<b>Wan Chai East</b>																																			
<b>Possession / Vacation of Portions</b>																																			
FWC30110	ST2 approval for working in Area WCE-5	0	338	05-Aug-11		08-Jul-12		◆ ST2 approval for working in Area WCE-5																											
<b>Civil Works Material Delivery on Site</b>																																			
FWC32100	Ordering of Building Materials	14	209	02-May-11	15-May-11	27-Nov-11	10-Dec-11	█ Ordering of Building Materials																											
FWC32150	Manufacturing & Delivery of Building Materials	210	205	20-May-11	15-Dec-11	11-Dec-11	07-Jul-12	█ Manufacturing & Delivery of Building Materials																											
<b>E&amp;M Equipment / Material Delivery on Site</b>																																			
FWC33100	Sewage Pumps Delivery on Site	10	371	07-Jul-12	16-Jul-12	13-Jul-13	22-Jul-13	█ Sewage Pumps Delivery on Site																											
FWC33150	Pipes & Valves Delivery on Site	14	127	04-Mar-12	17-Mar-12	09-Jul-12	22-Jul-12	█ Pipes & Valves Delivery on Site																											
FWC33200	Electrical Equipment Delivery on Site	7	59	01-Aug-12	07-Aug-12	29-Sep-12	05-Oct-12	█ Electrical Equipment Delivery on Site																											
FWC33250	Deodorization Equipment Delivery on Site	10	191	04-Jan-12	13-Jan-12	13-Jul-12	22-Jul-12	█ Deodorization Equipment Delivery on Site																											
FWC33300	Control & monitoring Equipment Delivery on Site	14	97	29-Nov-12	12-Dec-12	06-Mar-13	19-Mar-13	█ Control & monitoring Equipment Delivery on Site																											
<b>Civil Works</b>																																			
<b>RC Structural Works</b>																																			
FWC33310	Modify existing boundary wall	70	219	10-Mar-13	18-May-13	15-Oct-13	23-Dec-13	█ Modify existing boundary wall																											
<b>Transplantation, landscape works</b>																																			
FWC33320	Planting and landscape works	90	30	24-Nov-13	21-Feb-14	24-Dec-13	23-Mar-14	█ Planting and landscape works																											
<b>Modification of Existing Fine Screen Grit Trap / Pumping Station Building</b>																																			
FWC35100	Demolition works for existing Roof Landscape & Advertising Sign	90	205	16-Dec-11	14-Mar-12	08-Jul-12	05-Oct-12	█ Demolition works for existing Roof Landscape & Advertising Sign																											
FWC35110	Removal of Existing Pipes and Ladders	60	219	15-Mar-12	13-May-12	20-Oct-12	18-Dec-12	█ Removal of Existing Pipes and Ladders																											
FWC35120	External Finishing Works	300	219	14-May-12	09-Mar-13	19-Dec-12	14-Oct-13	█ External Finishing Works																											
<b>Mechanical Installation</b>																																			
FWC50100	Install Sewage Pumps(phase 1)	50	202	02-Jan-13*	20-Feb-13	23-Jul-13	10-Sep-13	█ Install Sewage Pumps(phase 1)																											
FWC50105	Install Pipes, Valves & Accessories (phase1)	50	202	02-Jan-13	20-Feb-13	23-Jul-13	10-Sep-13	█ Install Pipes, Valves & Accessories (phase1)																											
FWC50110	Install Sewage Pumps(phase2)	50	0	01-Oct-13*	19-Nov-13	01-Oct-13	19-Nov-13	█ Install Sewage Pumps(phase2)																											
FWC50115	Install Pipes, Valves & Accessories (phase2)	50	0	01-Oct-13	19-Nov-13	01-Oct-13	19-Nov-13	█ Install Pipes, Valves & Accessories (phase2)																											
FWC50120	Install Sewage Pumps(phase3)	50	0	10-Dec-13	28-Jan-14	10-Dec-13	28-Jan-14	█ Install Sewage Pumps(phase3)																											
FWC50125	Install Pipes, Valves & Accessories(phase3)	50	0	10-Dec-13	28-Jan-14	10-Dec-13	28-Jan-14	█ Install Pipes, Valves & Accessories(phase3)																											
FWC50200	Lay new Deodorization pipeline/ducting	120	127	18-Mar-12	15-Jul-12	23-Jul-12	19-Nov-12	█ Lay new Deodorization pipeline/ducting																											
FWC50210	Install new Deodorization equipments	60	127	16-Jul-12	13-Sep-12	20-Nov-12	18-Jan-13	█ Install new Deodorization equipments																											
FWC50220	Connect the new Deod. system to PTW	30	127	14-Sep-12	13-Oct-12	19-Jan-13	17-Feb-13	█ Connect the new Deod. system to PTW																											
FWC50230	Removal of existing Deod. system	30	127	14-Oct-12	12-Nov-12	18-Feb-13	19-Mar-13	█ Removal of existing Deod. system																											
<b>Electrical Installation</b>																																			
FWC50106	Electrical Modification on pumps (phase 1)	50	202	02-Jan-13	20-Feb-13	23-Jul-13	10-Sep-13	█ Electrical Modification on pumps (phase 1)																											
FWC50116	Electrical Modification on pumps (phase 2)	50	0	01-Oct-13	19-Nov-13	01-Oct-13	19-Nov-13	█ Electrical Modification on pumps (phase 2)																											
FWC50126	Electrical Modification on pumps (phase 3)	50	0	10-Dec-13	28-Jan-14	10-Dec-13	28-Jan-14	█ Electrical Modification on pumps (phase 3)																											
FWC51100	Install LV Switchboard	90	59	08-Aug-12	05-Nov-12	06-Oct-12	03-Jan-13	█ Install LV Switchboard																											
FWC51200	Install MCBs	75	59	06-Nov-12	19-Jan-13	04-Jan-13	19-Mar-13	█ Install MCBs																											
FWC51500	Laying Power Cables (Including Termination)	60	74	17-Sep-13	15-Nov-13	30-Nov-13	28-Jan-14	█ Laying Power Cables (Including Termination)																											
<b>Control and Monitoring System</b>																																			
FWC52100	Install Control & Monitoring System	120	59	20-Jan-13	19-May-13	20-Mar-13	17-Jul-13	█ Install Control & Monitoring System																											
<b>Building Services Installation</b>																																			
FWC53100	Install Building Services	120	59	20-May-13	16-Sep-13	18-Jul-13	14-Nov-13	█ Install Building Services																											
<b>Testing and Commissioning</b>																																			
FWC55000	T&C for Pump (Phase 1)	20	202	21-Feb-13	12-Mar-13	11-Sep-13	30-Sep-13	█ T&C for Pump (Phase 1)																											
FWC55010	T&C for Pump (Phase 2)	20	0	20-Nov-13	09-Dec-13	20-Nov-13	09-Dec-13	█ T&C for Pump (Phase 2)																											
FWC55020	T&C for Pump (Phase 3)	20	0	29-Jan-14	17-Feb-14	29-Jan-14	17-Feb-14	█ T&C for Pump (Phase 3)																											
FWC55100	T&C of Building Services and E&M Equipment	30	0	29-Jan-14	27-Feb-14	29-Jan-14	27-Feb-14	█ T&C of Building Services and E&M Equipment																											
FWC55110	Final T&C of Wan Chai East PTW	54	0	29-Jan-14	23-Mar-14	29-Jan-14	23-Mar-14	█ Final T&C of Wan Chai East PTW																											
FWC55115	Submission of Draft O&M Manuals for Wan Chai East	0	0	19-Apr-12*		18-Apr-12		◆ Submission of Draft O&M Manuals for Wan Chai East																											
FWC55116	Submission of Updated Draft O&M Manuals for Wan Chai East	0	0	21-Nov-12*		21-Nov-12		◆ Submission of Updated Draft O&M Manuals for Wan Chai East																											
FWC55120	Modified O&M Manuals for Wan Chai East	60	24	28-Feb-14	28-Apr-14	24-Mar-14	22-May-14	█ Modified O&M Manuals for Wan Chai East																											
FWC55125	Submission of Modified Draft O&M Manuals for Wan Chai East	0	24		28-Apr-14		22-May-14	◆ Submission of Modified Draft O&M Manuals for Wan Chai East																											
FWC55130	As-Built Drawings for Wan Chai East	60	24	28-Feb-14	28-Apr-14	24-Mar-14	22-May-14	█ As-Built Drawings for Wan Chai East																											
FWC55140	FSD submission, application and inspection for Wan Chai East	60	0	24-Mar-14	22-May-14	24-Mar-14	22-May-14	█ FSD submission, application and inspection for Wan Chai East																											
FWC55150	Completion of the Works of Section 6	0	0		22-May-14		22-May-14	◆ Completion of the Works of Section 6																											
<b>Water Supply from WSD for Wan Chai East PTW</b>																																			
<b>Key Dates</b>																																			
FWC60000	Application for Water Connection	60	59	17-Sep-13	15-Nov-13	15-Nov-13	13-Jan-14	█ Application for Water Connection																											
FWC60010	Inspection from representative of WSD	1	59	16-Nov-13	16-Nov-13	14-Jan-14	14-Jan-14	█ Inspection from representative of WSD																											
FWC60020	Release of Completion Certificate by WSD	7	59	17-Nov-13	23-Nov-13	15-Jan-14	21-Jan-14	█ Release of Completion Certificate by WSD																											
FWC60030	Installation of Water Meter and Main line connection	7	59	24-Nov-13	30-Nov-13	22-Jan-14	28-Jan-14	█ Installation of Water Meter and Main line connection																											
<b>Works for Section 7</b>																																			
<b>Central</b>																																			
<b>Possession / Vacation of Portions</b>																																			
FCT00250	ST2 approval for working in Area CTL-4	0	431	29-Jul-11		02-Oct-12		◆ ST2 approval for working in Area CTL-4																											

█ Actual Work █ Critical Remaining Work  
 █ Remaining Work ◆ Milestone





Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011 2012 2013 2014 2015 2016																			
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
<b>Electrical and Mechanical Works</b>																											
FCT10050	Provision of Deod. facility to temp. Sr.&Grit	30	0	15-Oct-11	13-Nov-11	15-Oct-11	13-Nov-11	■ Provision of Deod. facility to temp. Sr.&Grit																			
<b>Other Works</b>																											
FCT07850	Provision of Deod. Facilities to F.S. Bldg.	160	0	13-Sep-12	19-Feb-13	13-Sep-12	19-Feb-13	■ Provision of Deod. Facilities to F.S. Bldg.																			
FCT10100	Install Fine Screen in F.S.Bldg.	160	0	13-Sep-12	19-Feb-13	13-Sep-12	19-Feb-13	■ Install Fine Screen in F.S.Bldg.																			
FCT10110	Install compactor equip. in F.S. Bldg.	160	0	13-Sep-12	19-Feb-13	13-Sep-12	19-Feb-13	■ Install compactor equip. in F.S. Bldg.																			
FCT10120	Install grit removal & conveyor in F.S. Bldg.	160	0	13-Sep-12	19-Feb-13	13-Sep-12	19-Feb-13	■ Install grit removal & conveyor in F.S. Bldg.																			
<b>Electrical Installation</b>																											
FCT11110	Electrical Installation	120	0	23-Oct-12	19-Feb-13	23-Oct-12	19-Feb-13	■ Electrical Installation																			
<b>Control and Monitoring System</b>																											
FCT12100	Install Monitoring & Control System	120	0	23-Oct-12	19-Feb-13	23-Oct-12	19-Feb-13	■ Install Monitoring & Control System																			
<b>Building Service Installation</b>																											
FCT13100	Building Services Installation	60	617	22-Dec-12	19-Feb-13	31-Aug-14	29-Oct-14	■ Building Services Installation																			
<b>Testing and Commissioning</b>																											
FCT14100	T&C of Fine Screen & Grit Trap System	30	0	20-Feb-13	21-Mar-13	20-Feb-13	21-Mar-13	■ T&C of Fine Screen & Grit Trap System																			
FCT14150	Completion of the Works of Section 8	0	0		21-Mar-13		21-Mar-13	◆ Completion of the Works of Section 8																			
<b>Works for Section 9</b>																											
<b>Central</b>																											
<b>Possession / Vacation of Portions</b>																											
FCT16150	Possession of Works Area CTL-3	0	0	22-Mar-13		22-Mar-13		◆ Possession of Works Area CTL-3																			
<b>E&amp;M Equipment / Material Delivery on Site</b>																											
FCT19100	PTW Equipment Delivery on Site	14	64	25-Sep-13	08-Oct-13	28-Nov-13	11-Dec-13	■ PTW Equipment Delivery on Site																			
FCT19150	Pipes & Valves Delivery on Site	10	83	26-Aug-13	04-Sep-13	17-Nov-13	26-Nov-13	■ Pipes & Valves Delivery on Site																			
FCT19200	Electrical Equipment Delivery on Site	10	98	25-Sep-13	04-Oct-13	01-Jan-14	10-Jan-14	■ Electrical Equipment Delivery on Site																			
FCT19250	Control & monitoring Equipment Delivery on Site	14	49	25-Oct-13	07-Nov-13	13-Dec-13	26-Dec-13	■ Control & monitoring Equipment Delivery on Site																			
<b>CTL-3 Demolition / Modification Works</b>																											
<b>Site Investigation</b>																											
FCT20460	5 nos. of Pre-drill holes	20	0	10-May-13	29-May-13	10-May-13	29-May-13	■ 5 nos. of Pre-drill holes																			
<b>Other Works</b>																											
FCT20400	Dismantle Extg. PTW Sys. in Portion CTL-3	35	0	22-Mar-13	25-Apr-13	22-Mar-13	25-Apr-13	■ Dismantle Extg. PTW Sys. in Portion CTL-3																			
FCT20450	Excavate & removal Extg. Structure in CTL-3	14	0	26-Apr-13	09-May-13	26-Apr-13	09-May-13	■ Excavate & removal Extg. Structure in CTL-3																			
<b>Temp. Works for Screening &amp; Grit Handling</b>																											
FCT21300	Demolish Temp. Screening Facilities in CTL-1	45	24	22-Mar-13	05-May-13	15-Apr-13	29-May-13	■ Demolish Temp. Screening Facilities in CTL-1																			
<b>Civil Works</b>																											
<b>Foundation Works</b>																											
FCT21500	Remaining 8 Nos. Piling works in CTL-3	30	0	30-May-13	28-Jun-13	30-May-13	28-Jun-13	■ Remaining 8 Nos. Piling works in CTL-3																			
FCT21700	ELS for pile cap for remaining S&G.Bldg.	14	0	29-Jun-13	12-Jul-13	29-Jun-13	12-Jul-13	■ ELS for pile cap for remaining S&G.Bldg.																			
FCT21710	Construct pile cap for remaining S&G.Bldg.	28	0	13-Jul-13	09-Aug-13	13-Jul-13	09-Aug-13	■ Construct pile cap for remaining S&G.Bldg.																			
<b>Other Works</b>																											
FCT21800	Construct remaining base slab - S & G Bldg.	30	0	10-Aug-13	08-Sep-13	10-Aug-13	08-Sep-13	■ Construct remaining base slab - S & G Bldg.																			
FCT21810	Construct remaining columns/walls - S&G Bldg.	30	0	09-Sep-13	08-Oct-13	09-Sep-13	08-Oct-13	■ Construct remaining columns/walls - S&G Bldg.																			
FCT21820	Construct remaining roof - F & G Bldg.	35	0	09-Oct-13	12-Nov-13	09-Oct-13	12-Nov-13	■ Construct remaining roof - F & G Bldg.																			
FCT30100	Int'l Finishes for E&M Rooms, Works Area	25	0	13-Nov-13	07-Dec-13	13-Nov-13	07-Dec-13	■ Int'l Finishes for E&M Rooms, Works Area																			
FCT30500	Ext'l Finishes for Fine Screen Bldg.	110	84	13-Nov-13	02-Mar-14	05-Feb-14	25-May-14	■ Ext'l Finishes for Fine Screen Bldg.																			
<b>Mechanical Installation</b>																											
FCT32100	Install PTW Equip't for Fine Screen Bldg.	105	4	08-Dec-13	22-Mar-14	12-Dec-13	26-Mar-14	■ Install PTW Equip't for Fine Screen Bldg.																			
FCT32200	Pipework for PTW System	120	0	27-Nov-13	26-Mar-14	27-Nov-13	26-Mar-14	■ Pipework for PTW System																			
<b>Electrical Installation</b>																											
FCT33100	Installation of Electrical System	75	34	08-Dec-13	20-Feb-14	11-Jan-14	26-Mar-14	■ Installation of Electrical System																			
<b>Control and Monitoring System</b>																											
FCT34100	Modify Monitoring & Control Sys. for Sec. 8 & 9	60	49	08-Dec-13	05-Feb-14	26-Jan-14	26-Mar-14	■ Modify Monitoring & Control Sys. for Sec. 8 & 9																			
FCT34200	Install Monitoring & Control System	60	19	08-Dec-13	05-Feb-14	27-Dec-13	24-Feb-14	■ Install Monitoring & Control System																			
FCT34300	T&C of Monitoring and Control System	30	19	06-Feb-14	07-Mar-14	25-Feb-14	26-Mar-14	■ T&C of Monitoring and Control System																			
<b>Building Services Installation</b>																											
FCT35100	Building Services Installation	60	19	08-Dec-13	05-Feb-14	27-Dec-13	24-Feb-14	■ Building Services Installation																			
<b>Testing and Commissioning</b>																											
FCT36100	T&C for PTW System	60	0	27-Mar-14	25-May-14	27-Mar-14	25-May-14	■ T&C for PTW System																			
FCT36110	FSD Submission, application and inspection for Fine Screen Bldg.	60	0	27-Mar-14	25-May-14	27-Mar-14	25-May-14	■ FSD Submission, application and inspection for Fine Screen Bldg.																			
FCT36200	Completion of the Works of Section 9	0	0		25-May-14		25-May-14	◆ Completion of the Works of Section 9																			
<b>Works for Section 10</b>																											
<b>Central</b>																											
<b>Possession / Vacation of Portions</b>																											
FCT40200	Possession of Works Area CTL-3	0	0	22-Mar-13		22-Mar-13		◆ Possession of Works Area CTL-3																			
<b>Statutory Submission / Approval / Inspections</b>																											
FCT40550	Submit F314(as-built) & F501 for FS Inspection	0	127		18-May-14		22-Sep-14	◆ Submit F314(as-built) & F501 for FS Inspection																			
FCT40600	F.S. Inspection	35	127	21-May-14	24-Jun-14	25-Sep-14	29-Oct-14	■ F.S. Inspection																			
FCT40650	Issuance of F.S. Certificate	0	127		24-Jun-14		29-Oct-14	◆ Issuance of F.S. Certificate																			
FCT40700	Application of D.G. Store License	0	109	10-May-13		27-Aug-13		◆ Application of D.G. Store License																			
FCT40710	Approval of D.G. Store License	30	109	10-May-13	08-Jun-13	27-Aug-13	25-Sep-13	■ Approval of D.G. Store License																			
FCT40800	Application of D.G. Store Inspection	0	32	29-May-14		30-Jun-14		◆ Application of D.G. Store Inspection																			
FCT40850	D.G. Store Inspection by FSD	35	32	31-May-14	04-Jul-14	02-Jul-14	05-Aug-14	■ D.G. Store Inspection by FSD																			
FCT40900	Obtain D.G. Store Licence	0	32		04-Jul-14		05-Aug-14	◆ Obtain D.G. Store Licence																			
<b>E&amp;M Equipment / Material Delivery on Site</b>																											

■ Actual Work ■ Critical Remaining Work  
 ■ Remaining Work ◆ Milestone

