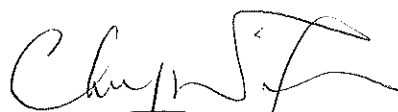


# Leader and JEC Joint Venture

**Contract No. DC/2009/24  
HATS Stage 2A – Upgrading of  
Preliminary Treatment Works at  
Sandy Bay, Cyberport,  
Wah Fu, Aberdeen and Ap Lei Chau**

**Monthly Environmental  
Monitoring and Audit Report  
October 2014**

**(Version 1.0)**

Certified By   
(Environmental Team Leader)

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

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CE/Harbour Area Treatment Scheme  
Drainage Services Department  
Sewage Services Branch  
Harbour Area Treatment Scheme Division  
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13 November 2014  
By Post

**Attn: Mr. Danny Tang**

Dear Sir,

**Agreement No. CE 8/2009(EP)**  
**Harbour Area Treatment Scheme (HATS) Stage 2A**  
**Independent Environmental Checker for Construction Phase – Investigation**  
**Contract No. DC/2009/24**  
**Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau**  
**Condition 4.4 – Submission of Monthly EM&A Report for October 2014 (no. 34)**

I refer to the revised Monthly EM&A Report for October 2014 (version 1.0) submitted by ET on 12 November 2014 via email. Pursuant to 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 F Kerr  
Independent Environmental Checker

c.c. Ove Arup & Partners HK Ltd.  
Leader - JEC Joint Venture  
Cinotech Consultants Ltd.

Mr. Ted Y F Tang  
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Fax: 2370 4377  
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

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## EXECUTIVE SUMMARY

### Introduction

1. This is the 34<sup>th</sup> Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract No. DC/2009/24 “HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau” (The Project) which documents the key information of EM&A of Contract No. DC/2009/24 and environmental monitoring results from Contract DC/2007/24 and DC/2009/24 HATS Stage 2A with same Environmental Permit (Permit No. EP-322/2008/G) for October 2014.
2. The site activities undertaken for in the reporting month included:
  - Wah Fu PTW – Plant operation, Construction for the FSGT structure;
  - Ap Lei Chau PTW – Plant operation, FSGT building construction;
  - Aberdeen PTW – Plant operation, Construction for the FSGT structure, Flume channel and chamber construction;
  - Sandy Bay PTW – Reinstatement works for tiles, Construction of staircase; and
  - Cyberport PTW– Installation of fine screen, Installation of DO unit.

### Environmental Monitoring Works

3. The environmental monitoring works of the Project was conducted by the ET for the Contract: DC/2007/24 and DC/2009/24 under HATS 2A with same Environmental Permit 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.

### Air Quality and Noise

4. Since the monitoring of air quality monitoring station at Wah Ming House, Wah Fu Estate (CM\_WF1a) and noise monitoring station at Aegean Terrace (M6a), Wah Ming House (M7a) and Wah Ling House (M8) was handed over to Contract No. DC/2009/24 from Contract No. DC/2007/24 in July 2014. The noise monitoring station at Mei Chun Court, South Horizons (M9) was handed over to Contract No. DC/2009/24 from Contract No. DC/2008/09 on 28 July 2014. The air quality and noise monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from July 2014. The environmental monitoring schedule for the reporting month is shown in **Appendix C**.
5. Hence, the monitoring of air quality monitoring station at The Arcade, Cyberport (CM\_CB1a), The Hong Kong Ice and Cold Storage (CM\_AB1a) was handed over to Contract No. DC/2009/24 from Contract No. DC/2007/24 in August 2014. The air quality monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from August 2014. The environmental monitoring schedule for the reporting month is shown in **Appendix C**.
6. However, the air quality monitoring at CM\_AB1a had been rejected and could not be continued, the proposed location (CM\_AB1b – Works Site Boundary of Aberdeen PTW) was approved by

ER on 22 July 2014. The air quality monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from August 2014. The environmental monitoring schedule for the reporting month is shown in **Appendix C**. The location of CM\_AB1b is shown in **Figure 1c**.

7. 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	
CM_CB1a	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
CM_WF1a	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
CM_AB1b	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
M5	Noise (Day Time)	0	0	0	0	N/A
M6a		0	0	0	0	N/A
M7a		0	0	0	0	N/A
M8		0	0	0	0	N/A
M9		0	0	0	0	N/A

*1-hour TSP Monitoring*

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

*24-hour TSP Monitoring*

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

*Construction Noise*

10. All construction noise monitoring was conducted as scheduled in the reporting. No Action/Limit Level exceedance was recorded.

**Environmental Licenses and Permits**

11. Licenses/Permits granted to the Project include the Environmental Permit (EP), Notification of Works under APCO, Water Discharge Licences and Registered as a Chemical Waste Producer for Sandy Bay, Cyberport, Ap Lei Chau, Aberdeen, Wah Fu PTWs sites.

**Environmental Mitigation Implementation Schedule**

12. 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 K**.

### Key Information in the Reporting Month

13. 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	Environmental Monitoring and Audit Monthly Report – September 2014	Submitted to EPD on 15 October 2014	No comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

### Summary of Complaints and Prosecutions

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

15. There was no environmental prosecution or notification of summons received while three complaints were already received since the Project commencement. The Complaint Log is presented in **Appendix K**.

### Future Key Issues:

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

- Wah Fu PTW: FSGT structure construction, Plant operation;
- Aberdeen PTW: Construction of FSGT structure, E&M equipment installation, Plant operation, Flume channel and chamber construction;
- Ap Lei Chau PTW: Plant operation, Construction of FSGT structure, Excavation for wet/dry well;
- Sandy Bay PTW: Staircase construction, Odour pipe/ drawpit/ ducting construction; and
- Cyberport PTW: Installation of fine screen, Installation of DO unit, Trial pit excavation.

17. The environmental concerns in coming months are mainly on chemicals storage, surface run off, spillage of wastewater during rainstorm and dust generated from the construction works.



## 1. INTRODUCTION

### Background

- 1.1 The Project ‘HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau’ with Contract No: DC/2009/24 mainly comprises the following major works:
- The construction of screens, grit traps, deodourisation rooms, workshop and administration buildings, and modification of existing inlet pumping stations at the preliminary treatment works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau.
- 1.2 The general location plan of the Project is shown in **Figure 1**.
- 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/2009/24 “Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau”.
- 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 The construction works at Wah Fu PTW and Ap Lei Chau PTW were commenced in the January 2012.
- 1.7 The construction phase of EM&A programme of the Project commenced in January 2012.
- 1.8 This is the 34<sup>th</sup> monthly EM&A report summarizing the EM&A works conducted for the Project in October 2014.

### Project Organizations

- 1.9 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. P. K. Kwok	Senior Engineer 2	2159 3403
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	Dr. Priscilla Choy	ET Leader	2151 2089

Party	Role	Name	Position	Phone No.
	Team	Ms. Janet Wai	Project Coordinator & Audit Team Leader	2151 2078
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Leader and JEC Joint Venture	Contractor	Mr. Kelvin Cheung	Site Agent	9656 8865
		Mr. Patrick Wong	Environmental Officer	9019 7270

### Construction Programme

1.10 The site activities undertaken in the reporting month included:

- Wah Fu PTW – Plant operation, Construction for the FSGT structure;
- Ap Lei Chau PTW – Plant operation, FSGT building construction;
- Aberdeen PTW – Plant operation, Construction for the FSGT structure, Flume channel and chamber construction;
- Sandy Bay PTW – Reinstatement works for tiles, Construction of staircase; and
- Cyberport PTW– Installation of fine screen, Installation of DO unit.

### Summary of EM&A Requirements

1.11 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.

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

1.13 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 October 2014. For the methodology and QA/QC procedures of the monitoring parameters, please refer to the Section 2 and 3 of this report and the monthly report for the Contract DC/2007/24.

## 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 Three designated monitoring stations, CM\_CB1a, CM\_WF1a and CM\_AB1b were selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations and the responsible ET who is carrying out the impact air quality monitoring. The monitoring locations which are also depicted in **Figure 1**.

**Table 2.1 Locations for Air Quality Monitoring**

Monitoring Station	Monitored by	Location of Measurement
CM_CB1a <sup>(1)(2)</sup>	DC/2009/24	The Arcade, Cyberport
CM_WF1a <sup>(1)</sup>	DC/2009/24	Wah Ming House, Wah Fu Estate
CM_AB1b <sup>(3)</sup>	DC/2009/24	Works Site Boundary of Aberdeen PTW

Remarks:

1: Refer to the monthly report of DC/2007/24, revision to the original monitoring location in EM&A Manual was made and was verified by IEC on 19 November 2009 and subsequently approved by EPD on 27 November 2009.

2: The air quality monitoring station was handed over to this project starting from August 2014 and the air quality monitoring was carried out by the ET of this project from August 2014.

3: Relocation of the air quality monitoring station was verified by IEC on 15 July 2014 and approved by ER on 22 July 2014.

### Monitoring Equipment

- 2.3 The details of the equipment used in the impact air monitoring programme could be referred to Section 4.2 of the monthly report of Contact No. DC/2007/24.

### Monitoring Parameters, Frequency and Duration

- 2.4 **Table 2.2** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedules could be found in Appendix G in the monthly report for the Contract DC/2007/24.

**Table 2.2 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*

#### 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-2310105-1) 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.

2.20 High volume samplers were calibrated at bi-monthly intervals using Calibration Kit (Thermo Andersen; Model no. G25A) throughout all stages of the air quality monitoring.

**Results and Observations**

2.21 **Table 2.3** summarizes the monitoring results at CM\_CM1a, CM\_WF1a and CM\_AB1a in the reporting month.

**Table 2.3 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				
CM_CB1a	168	87-271	280	500
CM_WF1a	167	72-258	285	
CM_AB1b	161	75-252	283	
24 hours TSP				
CM_CB1a	58	40-82	178	260
CM_WF1a	83	47-122	185	
CM_AB1b	87	64-148	174	

- 2.22 The details of exceedances in the reporting month are presented in the **Section 6**.
- 2.23 The detailed monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results could be referred to **Appendix E**.
- 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 identified dust sources at the monitoring stations were mainly from operation of mobile crane, excavator, sawing, road traffic, welding.

**3 NOISE**

**Monitoring Requirements**

3.1 Five noise monitoring stations, namely M5, M6a, M7a, M8 and M9 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 five designated monitoring stations as listed in **Table 3.1**.

**Table 3.1 Location of Noise Monitoring Stations**

Monitoring Station	Monitored By	Location of Measurement
M5 (Sandy Bay PTW)	DC/2007/24	Chuk Lam Ming Tong
M6a <sup>(1)</sup> (Cyberport PTW)	DC/2009/24	Aegean Terrace
M7a <sup>(1)</sup> (Wah Fu PTW)		Wah Ming House
M8 (Aberdeen PTW)		Wah Lai House
M9 (Ap Lei Chau PTW)		Mei Chun Court, South Horizons

Remark 1: Refer to the monthly report of DC/2007/24, revision to the original monitoring location in EM&A Manual was made and was verified by IEC on 19 November 2009 and subsequently approved by EPD on 27 November 2009.

**Monitoring Equipment**

3.3 The details of the equipment used in the impact noise monitoring programme could be referred to Section 4.2 of the monthly report of Contact No. DC/2007/24 and Section 3.5 of the monthly report of this project.

**Monitoring Parameters, Frequency and Duration**

3.4 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedules could be found in Appendix G in the monthly report for the Contract DC/2007/24 and Appendix C in the monthly report for this project.

3.5 As advised by the Contractor, no construction work under this project was conducted during the restricted hours in reporting month.

**Table 3.2 Noise Monitoring Parameters, Frequency and Duration**

Monitoring Stations	Parameter	Period	Frequency
M5 M6a M7a M8 M9	L <sub>eq</sub> (30 min.) dB(A)	0700-1900 hrs. on normal weekdays	Once per week

M5 M6a M7a M8 M9	$L_{eq}(5 \text{ min.})$ dB(A)	During restricted hours	Weekly monitoring to be conducted during the construction works
------------------------------	-----------------------------------	-------------------------	---

**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.

3.6 The monitoring methodology and QA/QC procedure of M5 could be referring to the monthly reports for Contract DC/2007/24.

**Maintenance and Calibration**

3.7 The microphone head of the sound level meter and calibrator was cleaned with soft cloth regularly. The meters were sent to the supplier to check and calibrate on a yearly interval.

**Results and Observations**

3.8 **Table 3.3** summarizes the monitoring results at M5, M6a, M7a, M8 and M9 in reporting month.

**Table 3.3 Summary the 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) $L_{eq}(30 \text{ min.})$
M5	62-65	75.0
M6a	44-57 <sup>(1)</sup>	



M7a	52-58	
M8	55-67	
M9	52-56	

Remark: (1) Free-field measurement, +3dB correction.

- 3.9 The construction noise monitoring at the designated locations was conducted by the ET of Contract: DC/2007/24 and this project as scheduled in the reporting month. The monitoring results and graphical presentation are provided in Appendix H and I of the monthly report for Contract DC/2007/24 and Appendix E of the monthly report for this project.
- 3.10 No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.
- 3.11 The major noise sources identified at the designated noise monitoring stations were from operation of mobile crane, crane truck, welding, lifting, road traffic noise.

**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 3, 10, 17, 24 and 31 October 2014. 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 mitigation measures for Air Quality, Noise, Water Quality, Waste Management, Landscape and Visual 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 H**.

**Review of Environmental Monitoring Procedures**

- 4.5 The monitoring works conducted by the monitoring team of Contract DC/2007/24 and this project. The monitoring procedures were reviewed by their ETs.

**Status of Environmental Licensing and Permitting**

- 4.6 All permits/licenses obtained for the Contract DC/2009/24 are summarized in **Table 4.1**.

**Table 4.1 Summary of Environmental Licensing and Permit Status for Contract DC/2009/24**

Permit Number	Valid Period		Details	Status
	From	To		
<b>Water Discharge License</b>				
WT000116 29-2012	N/A	31/1/2017	Location: Sandy Bay PTW	Valid
WT000116 33-2012	N/A	31/1/2017	Location: Cyber Port PTW	
WT000116 32-2012	N/A	31/1/2017	Location: Ap Lei Chau	
WT000162 42-2013	N/A	31/3/2017	Location: Aberdeen PTW	
WT000168 37-2013	N/A	31/8/2018	Location: Wah Fu PTW	
WT000116 27-2012	N/A	31/1/2017	Location: Wah Fu PTW	Expiry
<b>Notification of Works Under APCO</b>				
334694	6/9/2011	N/A	All PTWs	N/A
<b>Registered Chemical Waste Producer</b>				
5218-171- L2783-01	14/12/2011	N/A	Location: Sandy Bay PTW	Valid

5218-171-L2783-02	30/12/2011	N/A	Location: Cyber Port PTW	
5218-174-L2783-03	30/12/2011	N/A	Location: Ap Lei Chau	
5218-173-L2783-04	30/12/2011	N/A	Location: Aberdeen PTW	
5218-172-L2783-05	30/12/2011	N/A	Location: Wah Fu PTW	
<b>Special Waste Admission Ticket</b>				
11587	24/8/2014	23/11/2014	Location: Ap Lei Chau	Valid
11588	24/8/2014	23/11/2014	Location: Aberdeen PTW	Valid
11585	24/8/2014	23/11/2014	Location: Wah Fu 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 I**.

### Implementation Status of Environmental Mitigation Measures

4.8 Details of the implementation of mitigation measures are provided in the **Appendix K**.

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	Ref. Number	Observations	Follow Up Action
<b>Water Quality</b>	140926-O01	The muddy water was overflowed near the site exit of Wah Fu-PTW. The Contractor was reminded to provide the bunding to prevent the muddy water overflowing to the access road.	Please refer to 141003-R02.
	140926-R03	The stagnant water in the wetsep should be cleared regularly at Wah Fu-PTW.	Please refer to 141003-R04.
	140926-R06	The bunding should be provided and enhanced to prevent the muddy water runoff to the access road at ALC-PTW and Abd-PTW.	Please refer to 141003-R02.
	141003-R02	The bunding should be provided and enhanced to prevent the muddy water runoff to the access road at all PTWs.	Please refer to 141010-R06.

	141003-R04	The stagnant water in the wetsep should be cleared regularly at Wah Fu-PTW.	Please refer to 141010-R03.
	141010-O01	The sediment tank should be provided with adequate capacity for wastewater treatment before discharging out at ALC-PTW.	The sediment tank was provided with adequate capacity for wastewater treatment before discharging out at ALC-PTW.
	141010-O02	The sediment tank was suspected the water leakage at Abd-PTW. The Contractor was reminded to provide the maintenance of the sediment tank and keep it in a good condition.	The maintenance of the sediment tank was provided by the Contractor at Abd-PTW.
	141010-R03	The stagnant water in the WetSep and the sediment tank should be cleared regularly at Wah Fu-PTW and Abd-PTW.	The stagnant water in the WetSep and the sediment tank was cleared at Wah Fu-PTW and Abd-PTW.
	141010-R04	Properly clear the stagnant water at ALC-PTW.	The stagnant water was cleared at ALC-PTW.
	141010-R06	The bunding should be provided to prevent the muddy water overflowing to the access road at ALC-PTW.	The bunding was provided by the Contractor at ALC-PTW.
	141017-R01	Properly clear the stagnant water at Abd-PTW.	The stagnant water was cleared at Abd-PTW.
	141024-R03	The bunding should be provided to prevent the muddy water overflowing to the access road at Abd-PTW.	The bunding was provided by the Contractor at Abd-PTW.
	141031-R02	Properly clear the stagnant water at Abd-PTW.	The stagnant water was cleared at Abd-PTW.
<b>Air Quality</b>	140926-R02	Properly clear the broken sand bags and dusty materials at Wah Fu-PTW and ALC-PTW.	Please refer to 141003-R03.
	141003-R03	Properly clear the broken sand bags at ALC-PTW.	The broken sand bags were cleared at ALC-PTW.
	141010-R05	The dusty materials should be cleared and covered by impervious materials at Wah Fu-PTW.	The dusty materials were cleared at Wah Fu-PTW.
	141010-R08	The mixing activities should be done in the proper enclosure area at Abd-PTW.	The mixing activities were not observed at Abd-PTW.
	141017-R02	Properly clear the dusty materials at Abd-PTW and ALC-PTW.	Please refer to 141024-R01.
	141024-R01	Properly clear the dusty materials at Abd-PTW.	The dusty materials was cleared at Abd-PTW.
	141031-R01	Properly clear the debris and dusty materials at ALC-PTW.	The follow up action will be reported during site inspections in November 2014.

<b>Waste/ Chemical Management</b>	141003- O01	The oil leakage was observed from the excavator at ALC-PTW. The Contractor was reminded to keep it in a good condition and clear the oil stain properly.	The oil leakage was not observed from the excavator at ALC-PTW. The drip tray was provided for the excavator by the Contractor.
	141010- R07	Properly sort out the construction wastes at Wah Fu-PTW.	The construction wastes were sorted out at Wah Fu-PTW.
	141024- R02	The chemical containers should be provided with the drip tray at Wah Fu-PTW.	The chemical containers were cleared and not observed at Wah Fu-PTW.
<b>Noise</b>	--	--	--
<b>Landscape and Visual</b>	140926- R04	The fence should be provided for the existing tree at Wah Fu-PTW.	Please refer to 141003-R05.
	140926- R05	The maintenance of the existing tree should be provided at Wah Fu-PTW.	Please refer to 141003-R06.
	141003- R05	The fence should be provided for the existing tree at Wah Fu-PTW.	The fence was provided for the existing tree at Wah Fu-PTW.
	141003- R06	The maintenance of the existing tree should be provided at Wah Fu-PTW.	The maintenance of the existing tree was provided by the Contractor at Wah Fu-PTW.
<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 J**.

#### 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/Limit Level exceedance was recorded.

#### Landscape and Visual

4.14 No non-compliance was recorded.

### Summary of Complaints and Prosecutions

4.15 There was no environmental prosecution or notification of summons received while three complaints were already received since the Project commencement. The Complaint Log is presented in **Appendix L**.

## 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, roadworks, excavation works and loading and unloading dusty materials on-site;
- Noise nuisance 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;
- Maintenance of de-silting facilities and drainage system such as U-channels;
- Blockage of U-channel by accumulated silt;
- Ponding water generated in pre-drillings;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- 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 could be found in the Appendix G and Appendix C of the monthly report of Contracts DC/2007/24 and this report respectively.

### Construction Program for the Next Month

5.3 The tentative construction program is provided in **Appendix M**.

## 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/Limit Level exceedance was recorded.

#### 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

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

#### *Water Impact*

- To provide the maintenance of the sediment tank and WetSep regularly and make sure the WetSep is desilted regularly;
- To provide the bunding to prevent the muddy/ slurry water overflow; and
- To avoid accumulation of stagnant / ponding water on site.

#### *Air Quality*

- To remain good site practice on handling excavated or dusty material for dust suppression (e.g. stockpiles of material shall be covered by tarpaulin);
- To provide the proper enclosure area for mixing activities; and

- To spray water to prevent the dust emission during dust-generation activities.

*Waste/Chemical Management*

- To provide the maintenance of PME to prevent the oil leakage;
- To sort out the construction wastes properly on the site; and
- To provide proper and sufficient storage area or drip trays for oil/ chemical containers on site.

*Landscape and Visual*

- To provide the fence for protection of the existing tree; and
- To provide the maintenance of the existing tree.



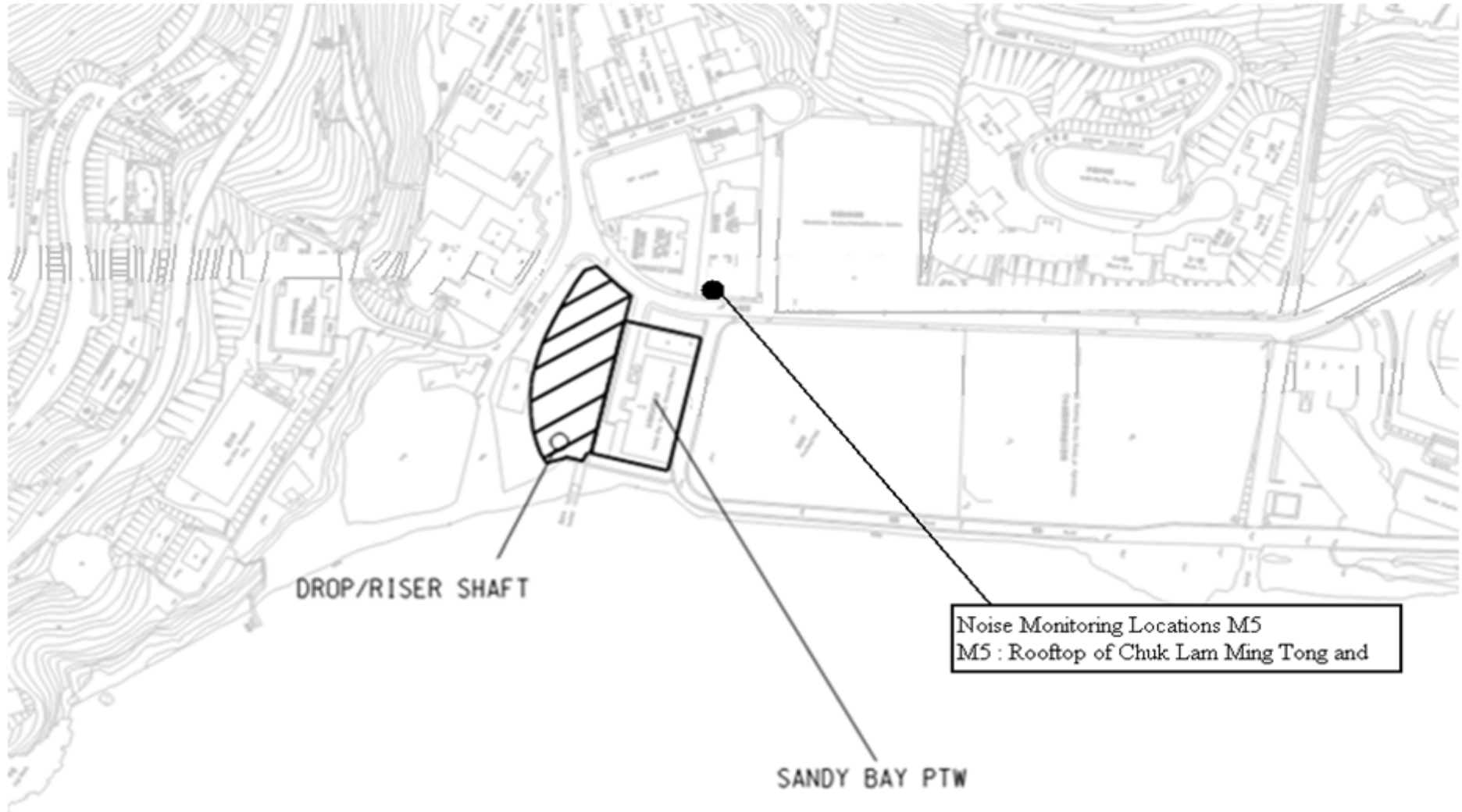
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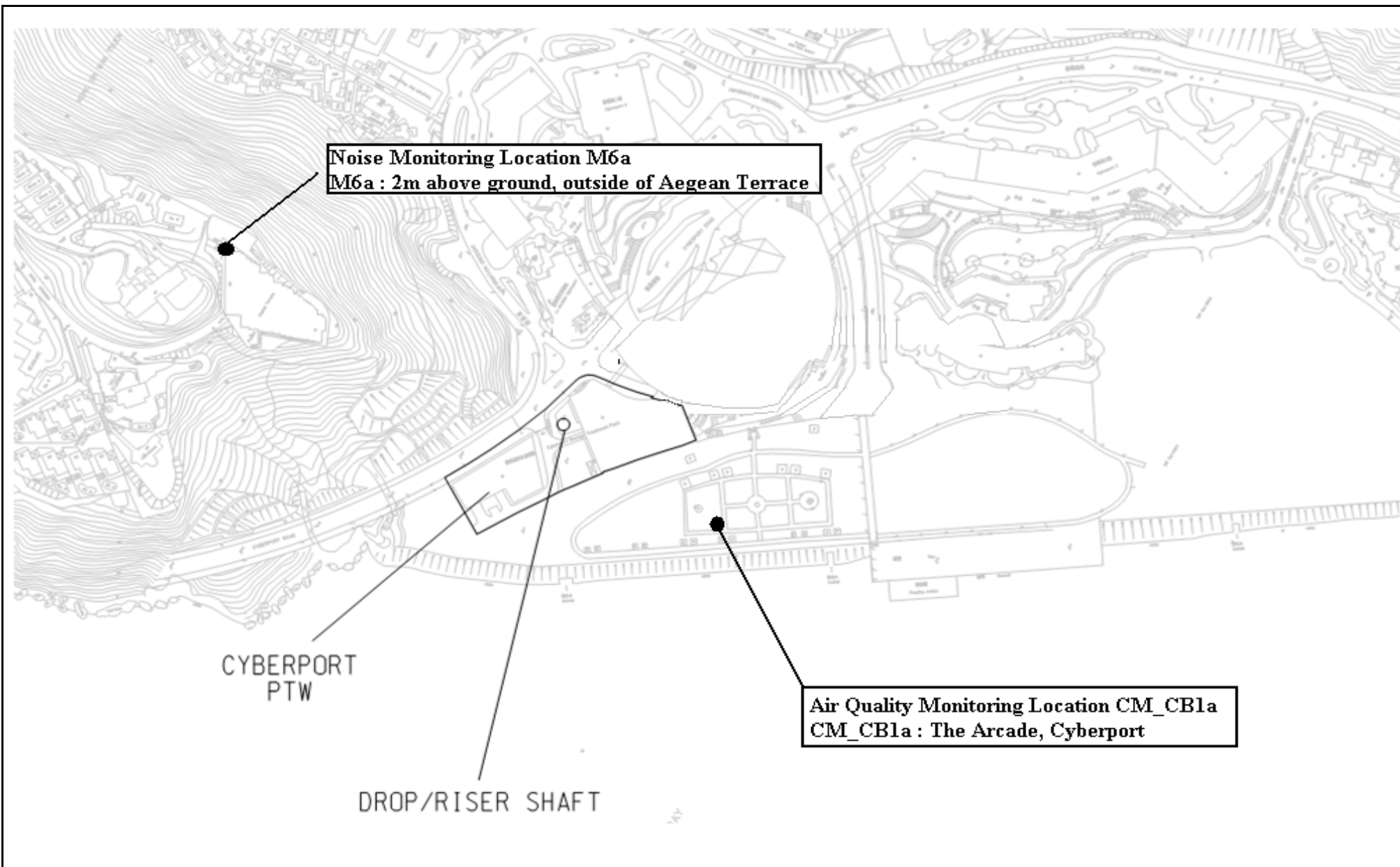
## FIGURES

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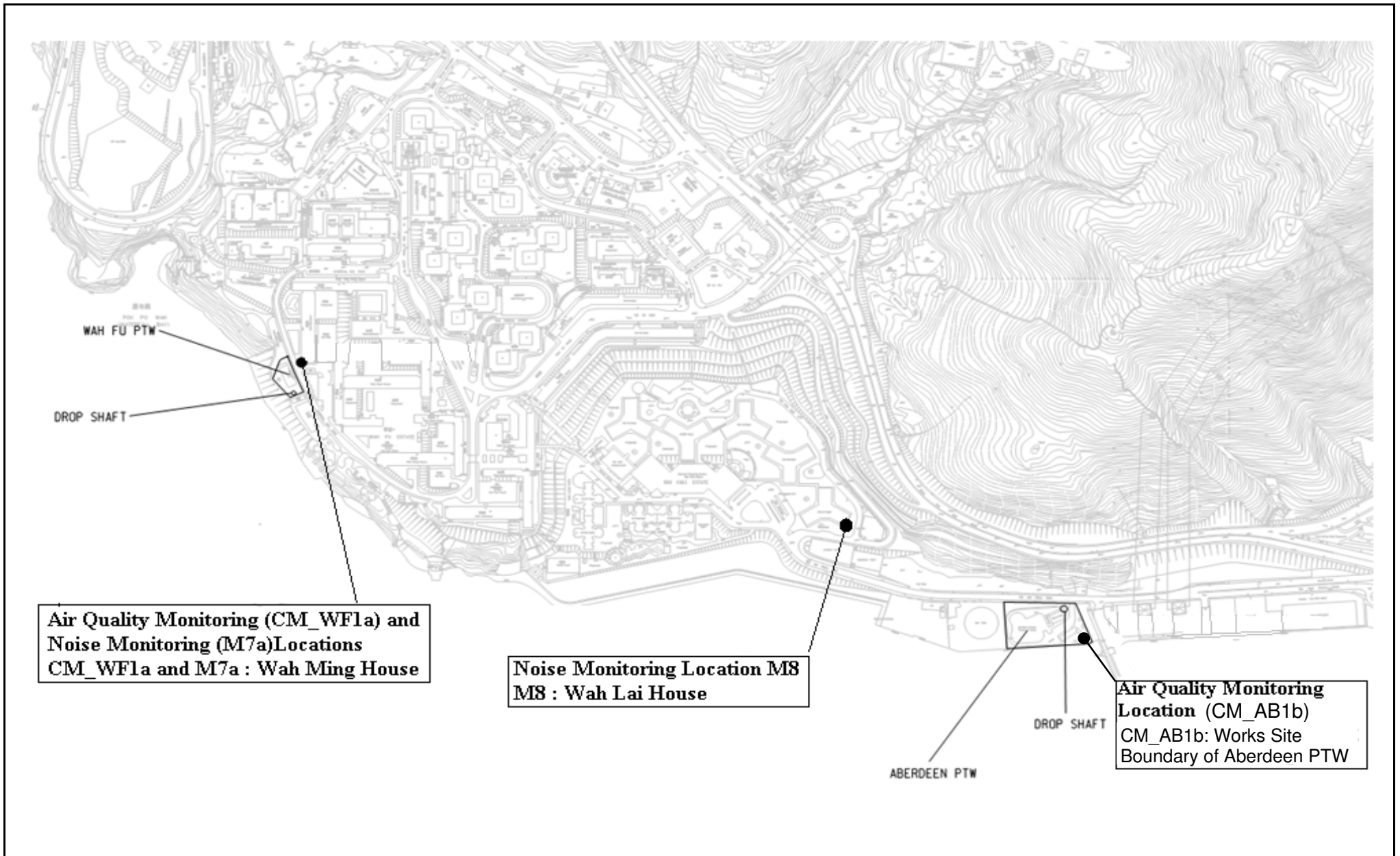
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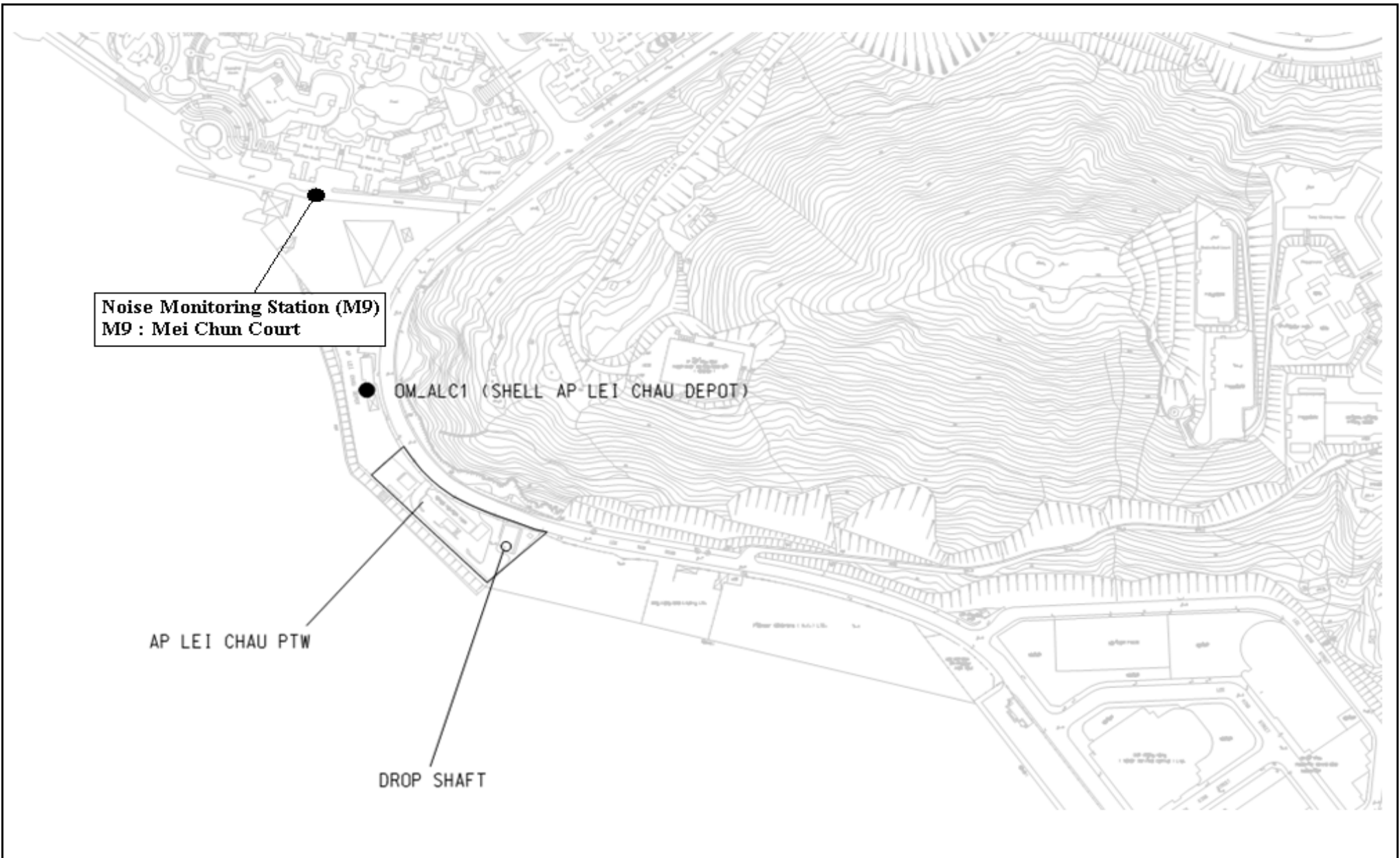
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	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	General Location Plan of Sandy Bay PTW and Locations of Noise Monitoring Stations	Date	Figure	
		01/2012	1a	



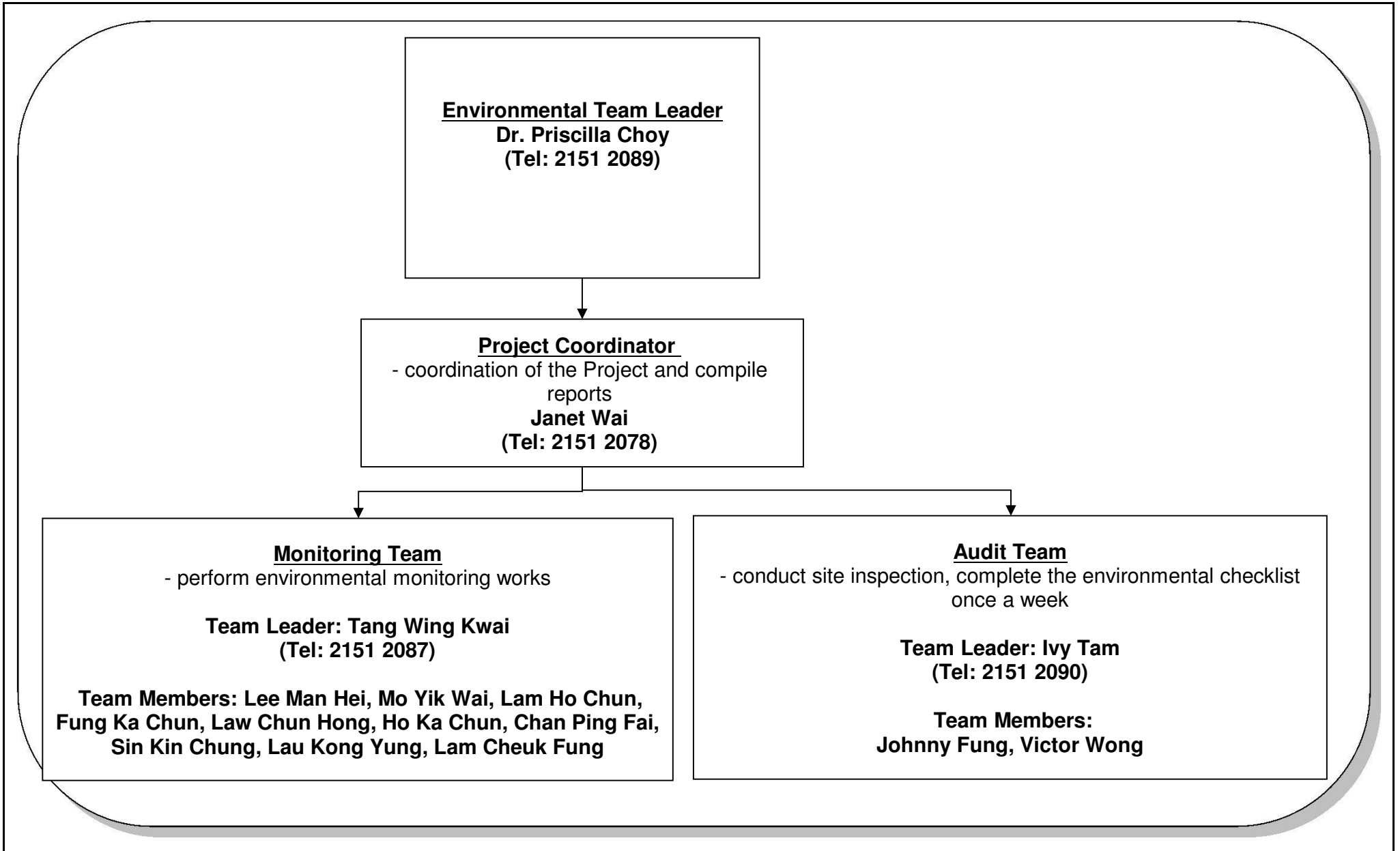
Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	General Location Plan of Cyberport PTW and Locations of Air Quality and Noise Monitoring Stations	Date	Figure	
		01/2012	1B	



Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	Location of Wah Fu and Aberdeen PTW and Locations of Air Quality and Noise Monitoring Locations	Date	Figure	
		07/2014	1C	



Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	Locations of AP LEI CHAU PTW and the Noise Monitoring Location	Date	Figure	
		1/2012	1D	



Title	Contract No. DC/2009/24	Scale	N.T.S	Project No.	MA11060	CINOTECH
	HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	Date	Jul-13	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
CM_CB1a	280	178	500	260
CM_WF1a	285	185		
CM_AB1b	283	174		

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

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
M5 M6a M7a M8 M9	0700-1900 hours on normal weekdays	When one documented complaint is received	75 <sup>(1)</sup>

Remark: 1: 70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.



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**APPENDIX B  
COPIES OF CALIBRATION  
CERTIFICATES**

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# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA11060/69/0002

Station CM\_WF1a - Wah Ming House Operator: WK  
 Date: 2-Sep-14 Next Due Date: 1-Nov-14  
 Equipment No.: A-01-69 Serial No. 3222

Ambient Condition			
Temperature, Ta (K)	303.3	Pressure, Pa (mmHg)	761.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 oil	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	9.8	3.11	53.61	6.5	2.53
2	8.3	2.86	49.39	5.4	2.31
3	6.7	2.57	44.46	4.4	2.08
4	4.5	2.10	36.58	3.1	1.75
5	2.9	1.69	29.52	1.8	1.33

**By Linear Regression of Y on X**

Slope, mw = 0.0485 Intercept, bw = -0.0718  
 Correlation coefficient\* = 0.9982

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

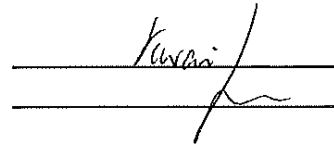
**Set Point Calculation**

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) = 4.12

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

Conducted by: WK Tang Signature:  Date: 21/9/14  
 Checked by: AZ Signature: \_\_\_\_\_ Date: 2 September 2014

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

CINOTECH

File No. MA11060/38/0001

Station CM AB1b - Works Site Boundary of Aberdeen PTW Operator: WK  
 Date: 5-Aug-14 Next Due Date: 4-Oct-14  
 Equipment No.: A-01-38 Serial No. 1402

Ambient Condition			
Temperature, Ta (K)	302	Pressure, Pa (mmHg)	754.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 oil	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	11.0	3.28	56.61	5.9	2.40
2	9.1	2.99	51.56	4.9	2.19
3	7.2	2.66	45.95	3.8	1.93
4	4.2	2.03	35.28	2.4	1.53
5	2.6	1.60	27.93	1.5	1.21

By Linear Regression of Y on X

Slope, mw = 0.0411 Intercept, bw = 0.0663

Correlation coefficient\* = 0.9994

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

### Set Point Calculation

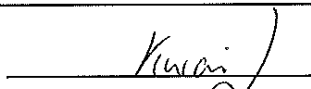
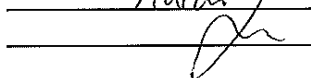
From the TSP Field Calibration Curve, take Qstd = 43 CFM

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) = 3.44

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

Conducted by: Wk Tang Signature:  Date: 5 Aug 2014  
 Checked by: WV Signature:  Date: 5 August 2014

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

CINOTECH

File No. MA11060/38/0002

Station CM AB1b - Works Site Boundary of Aberdeen PTW Operator: WK  
 Date: 6-Oct-14 Next Due Date: 5-Dec-14  
 Equipment No.: A-01-38 Serial No. 1402

Ambient Condition			
Temperature, Ta (K)	300.8	Pressure, Pa (mmHg)	757.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 oil	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	10.8	3.27	56.53	5.9	2.41
2	9.3	3.03	52.49	4.8	2.18
3	7.1	2.65	45.92	3.9	1.96
4	4.4	2.08	36.24	2.4	1.54
5	2.5	1.57	27.42	1.5	1.22

By Linear Regression of Y on X

Slope, mw = 0.0405 Intercept, bw : 0.0918

Correlation coefficient\* = 0.9982

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.40

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

Conducted by: Wk Tang Signature: Kwai

Date: 6/10/14

Checked by: Wk Signature: \_\_\_\_\_

Date: 6 October 2014

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

**CINOTECH**

File No. MA11060/36/0001

Station CM CB1a - The Arcade, Cyberport Operator: WK  
 Date: 5-Aug-14 Next Due Date: 4-Oct-14  
 Equipment No.: A-01-36 Serial No. 1224

Ambient Condition			
Temperature, Ta (K)	302.8	Pressure, Pa (mmHg)	754.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 oil	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	11.8	3.39	58.51	6.6	2.54
2	9.2	3.00	51.76	5.4	2.30
3	7.0	2.61	45.25	4.0	1.98
4	4.5	2.10	36.43	2.6	1.59
5	2.9	1.68	29.40	1.6	1.25

By Linear Regression of Y on X

Slope, mw = 0.0446 Intercept, bw = -0.0450  
 Correlation coefficient\* = 0.9990

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.60

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

Conducted by: Wk Tang Signature: Kwai  
 Checked by: Ar Signature: \_\_\_\_\_

Date: 5 Aug 2014  
 Date: 5 August 2014

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

**CINOTECH**

File No. MA11060/36/0002

Station CM CB1a - The Arcade, Cyberport Operator: WK  
 Date: 6-Oct-14 Next Due Date: 5-Dec-14  
 Equipment No.: A-01-36 Serial No. 1224

Ambient Condition			
Temperature, Ta (K)	301.5	Pressure, Pa (mmHg)	763.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 oil	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	11.2	3.33	57.72	6.3	2.50
2	9.3	3.04	52.64	5.4	2.32
3	7.2	2.67	46.37	4.1	2.02
4	4.6	2.14	37.15	2.7	1.64
5	2.9	1.70	29.58	1.8	1.34

By Linear Regression of Y on X

Slope, mw = 0.0419 Intercept, bw = 0.0897  
 Correlation coefficient\* = 0.9996

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.60

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

Conducted by: Wk Tang Signature: [Signature]  
 Checked by: LL Signature: [Signature]

Date: 6/10/14  
 Date: 6 October 2014

## TEST REPORT

Description Calibration Orifice  
Serial No. 0993  
Model No. TE-5025A  
Date 27 September 2014

Manufacturer TISCH  
Temperature, Ta (K) 299  
Pressure, Pa (mmHg) 761.8  
Equipment No.: A-04-04

Plate	Diff.Vol (m <sup>3</sup> )	Diff.Time (min)	Diff.Hg (mm)	Diff.H <sub>2</sub> O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

### DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

Y axis=  $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$

Qstd Slope ( m ) = 2.05398  
Intercept ( b ) = -0.02487  
Coefficient ( r ) = 0.99996

Va	(X axis) Qa	(Y axis)
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0.9829	1.3883	1.7720

Y axis=  $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$

Qa Slope ( m ) = 1.28617  
Intercept ( b ) = -0.01559  
Coefficient ( r ) = 0.99996

### CALCULATIONS

$V_{std} = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/760](298/\text{Ta})$   
 $Q_{std} = V_{std}/\text{Time}$   
 $V_a = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/\text{Pa}]$   
 $Q_a = V_a/\text{Time}$

For subsequent flow rate calculations:

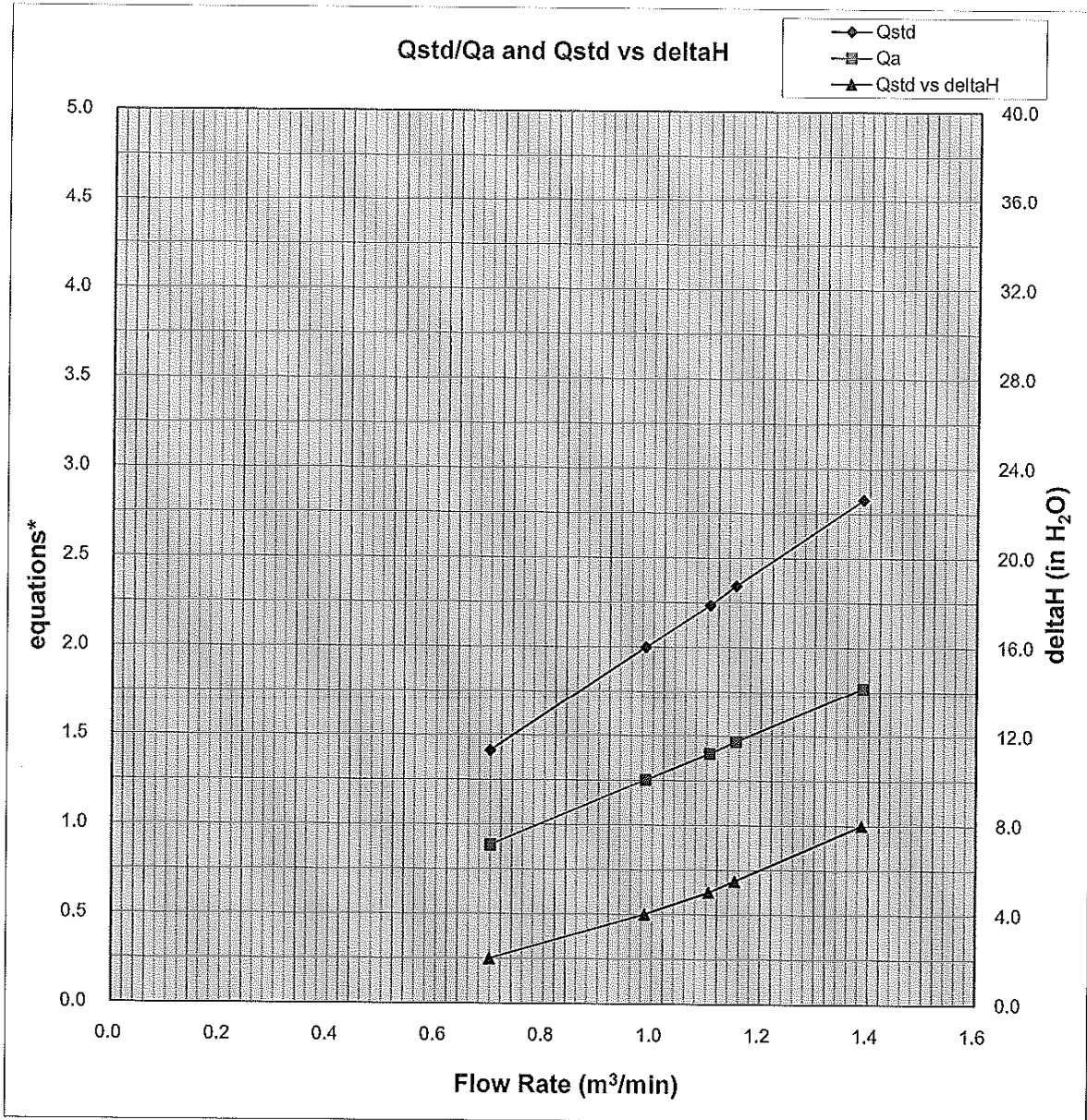
$Q_{std} = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))]-b\}$   
 $Q_a = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Ta}/\text{Pa}))]-b\}$

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



**PATRICK TSE**  
Laboratory Manager

**TEST REPORT**



Y-axis equations:

Qstd series:  $\text{SQRT}[\Delta H(\text{Pa}/\text{Pstd})(\text{Tstd}/\text{Ta})]$

Qa series:  $\text{SQRT}[\Delta H(\text{Ta}/\text{Pa})]$



**TEST REPORT**

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

Test Report No.:	C/140905/2
Date of Issue:	2014-09-08
Date Received:	2014-09-05
Date Tested:	2014-09-05
Date Completed:	2014-09-08
Next Due Date:	2014-11-07

**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	: 63%

**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)	0.0031
-------------------------	--------

\*\*\*\*\*

*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/140815/1
Date of Issue:	2014-08-18
Date Received:	2014-08-15
Date Tested:	2014-08-15
Date Completed:	2014-08-18
Next Due Date:	2014-10-17

**ATTN:** Mr. WK Tang

Page: 1 of 1

**Certificate of Calibration**

**Item for Calibration:**

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 954253
Sensitivity (K) 1 CPM	: 0.001 mg/m <sup>3</sup>
Sen. Adjustment Scale Setting	: 772 CPM
Equipment No.	: A-02-05

**Test Conditions:**

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64%

**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)	0.0030
-------------------------	--------

\*\*\*\*\*

*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/140630/1
Date of Issue:	2014-09-01
Date Received:	2014-08-29
Date Tested:	2014-08-29
Date Completed:	2014-09-01
Next Due Date:	2014-10-31

**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.	: 095039
Sensitivity (K) 1 CPM	: 0.001 mg/m <sup>3</sup>
Sen. Adjustment Scale Setting	: 764 CPM
Equipment No.	: A-02-08

**Test Conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 65%

**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)	0.0032
-------------------------	--------

\*\*\*\*\*

*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/140630/2
Date of Issue:	2014-09-01
Date Received:	2014-08-29
Date Tested:	2014-08-29
Date Completed:	2014-09-01
Next Due Date:	2014-10-31

**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.	: 095050
Sensitivity (K) 1 CPM	: 0.001 mg/m <sup>3</sup>
Sen. Adjustment Scale Setting	: 577 CPM
Equipment No.	: A-02-09

**Test Conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 65%

**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)	0.0032
-------------------------	--------

\*\*\*\*\*

*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/140630/3
Date of Issue:	2014-09-01
Date Received:	2014-08-29
Date Tested:	2014-08-29
Date Completed:	2014-09-01
Next Due Date:	2014-10-31

**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	: 22 degree Celsius
Relative Humidity	: 65%

**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)	0.0031
-------------------------	--------

\*\*\*\*\*

*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/140822/3
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

**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 Temperatre	: 22 degree Celsius
Relative Humidity	: 55%

**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/140822/1
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

**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	: 55%

**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

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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/131129/1
Date of Issue:	2013-11-30
Date Received:	2013-11-29
Date Tested:	2013-11-29
Date Completed:	2013-11-30
Next Due Date:	2014-11-29

**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.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

**Test conditions:**

Room Temperature	: 19 degree Celsius
Relative Humidity	: 57%

**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/131108/1
Date of Issue:	2013-11-09
Date Received:	2013-11-08
Date Tested:	2013-11-08
Date Completed:	2013-11-09
Next Due Date:	2014-11-08

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

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Project No.	: C13
Equipment No.	: N-02-01

### Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 52 %

### 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/140822/2
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

**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	: 20 degree Celsius
Relative Humidity	: 64%

**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/141003/3
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

**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	: 22 degree Celsius
Relative Humidity	: 56%

### Methodology:

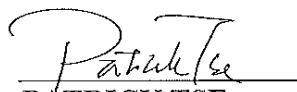
The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### 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 C  
ENVIRONMENTAL MONITORING  
SCHEDULE**

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**Contract No. DC/2009/24**

**HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau  
Impact Air Quality and Noise Monitoring for October 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Oct	2-Oct	3-Oct	4-Oct
					24 hrs TSP (CM_AB1b, CB1a & WF1a)	
5-Oct	6-Oct	7-Oct	8-Oct	9-Oct	10-Oct	11-Oct
	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)	
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct
			24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)		
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct
		24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			
26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	
	24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)				

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

**Air Quality Monitoring Station (1 hr TSP & 24 hr TSP)**

CM\_CB1a - The Arcade, Cyberport

CM\_WF1a - Wah Ming House

CM\_AB1b - Works Site Boundary of Aberdeen PTW

**Noise Monitoring Station**

M6a - Aegean Terrace

M7a - Wah Ming House

M8 - Wah Lai House

M9 - Mei Chun Court

**Contract No. DC/2009/24**

**HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau  
Tentative Impact Air Quality and Noise Monitoring for November 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Nov
						24 hrs TSP (CM_AB1b, CB1a & WF1a)
<b>2-Nov</b>	3-Nov	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov
	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a)	
<b>9-Nov</b>	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov
			24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)		
<b>16-Nov</b>	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
		24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			
<b>23-Nov</b>	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov
	24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			24 hrs TSP (CM_AB1b, CB1a & WF1a)	
<b>30-Nov</b>						

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

**Air Quality Monitoring Station (1 hr TSP & 24 hr TSP)**

CM\_CB1a - The Arcade, Cyberport

CM\_WF1a - Wah Ming House

CM\_AB1b - Works Site Boundary of Aberdeen PTW

**Noise Monitoring Station**

M6a - Aegean Terrace

M7a - Wah Ming House

M8 - Wah Lai House

M9 - Mei Chun Court

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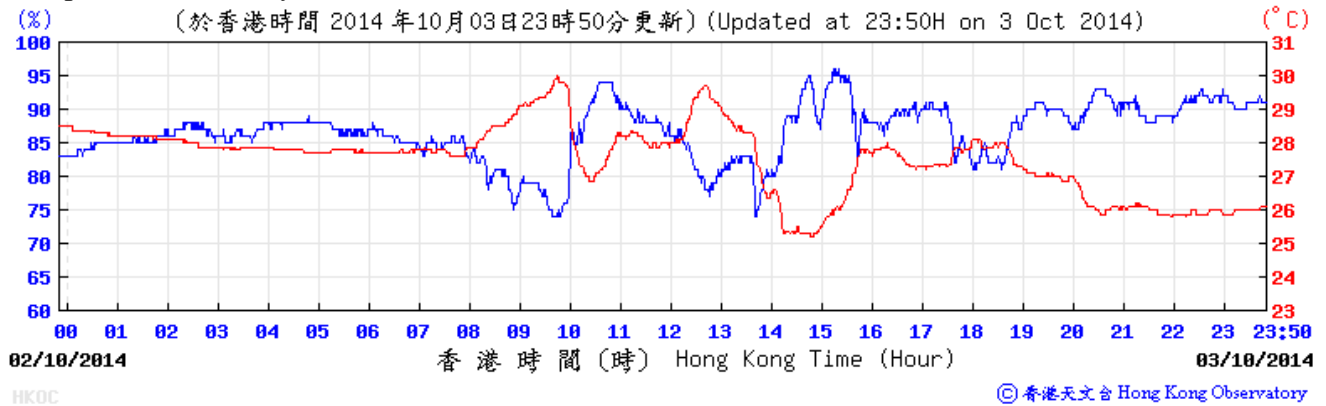
**APPENDIX D  
METEOROLOGICAL DATA ON  
MONITORING DATES**

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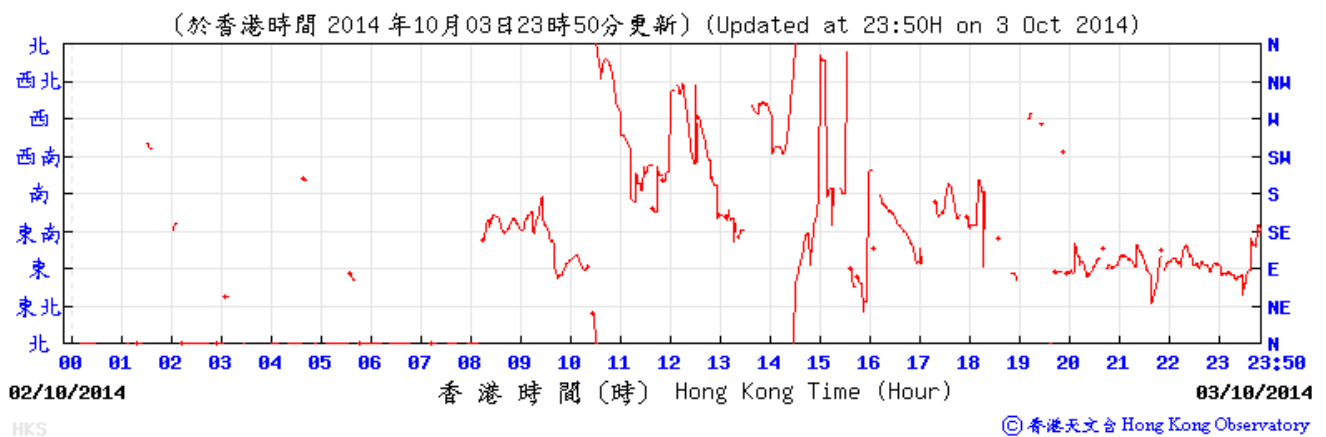
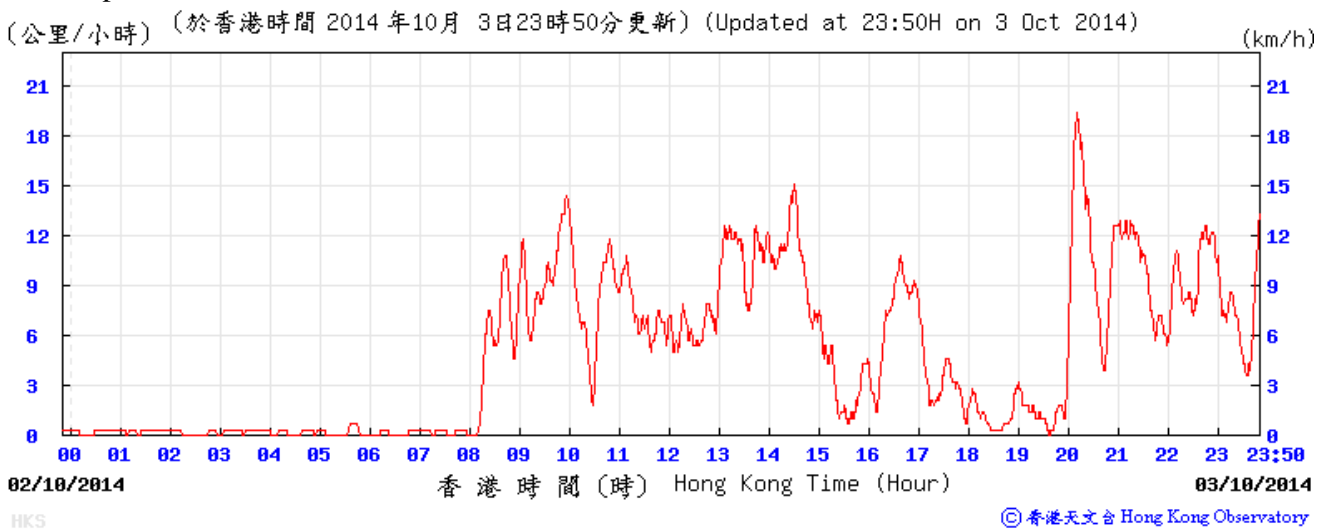
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## Appendix D Meteorological Data Recorded from HKO Station (3 October 2014) (Source: [www.hko.gov.hk](http://www.hko.gov.hk))

### Temperature/Humidity:



### Wind Speed and Direction:

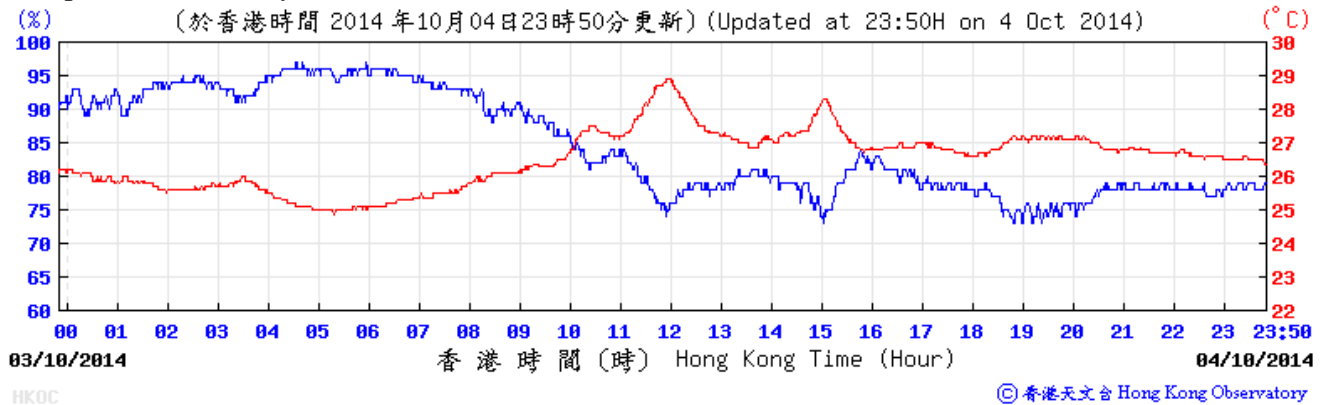




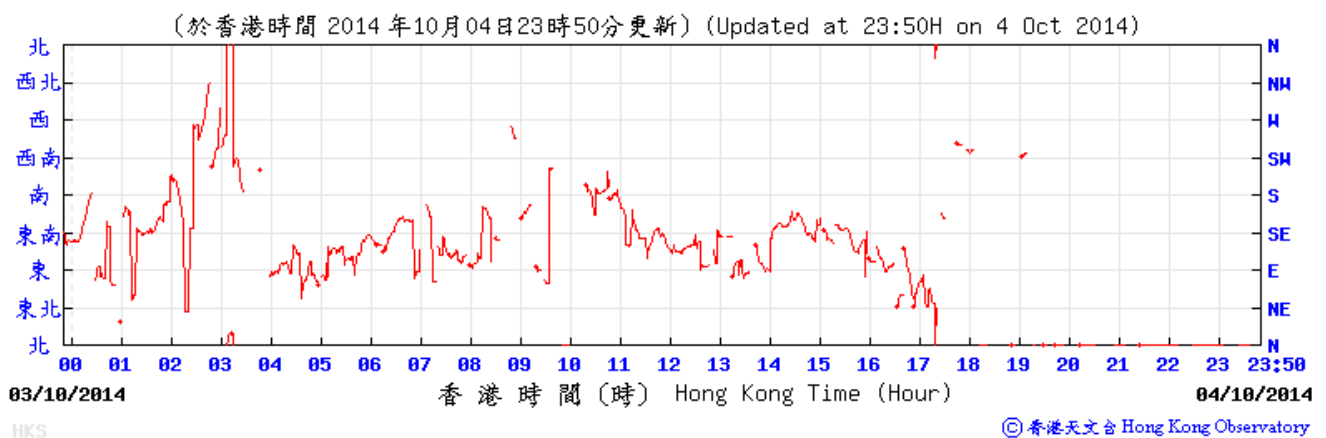
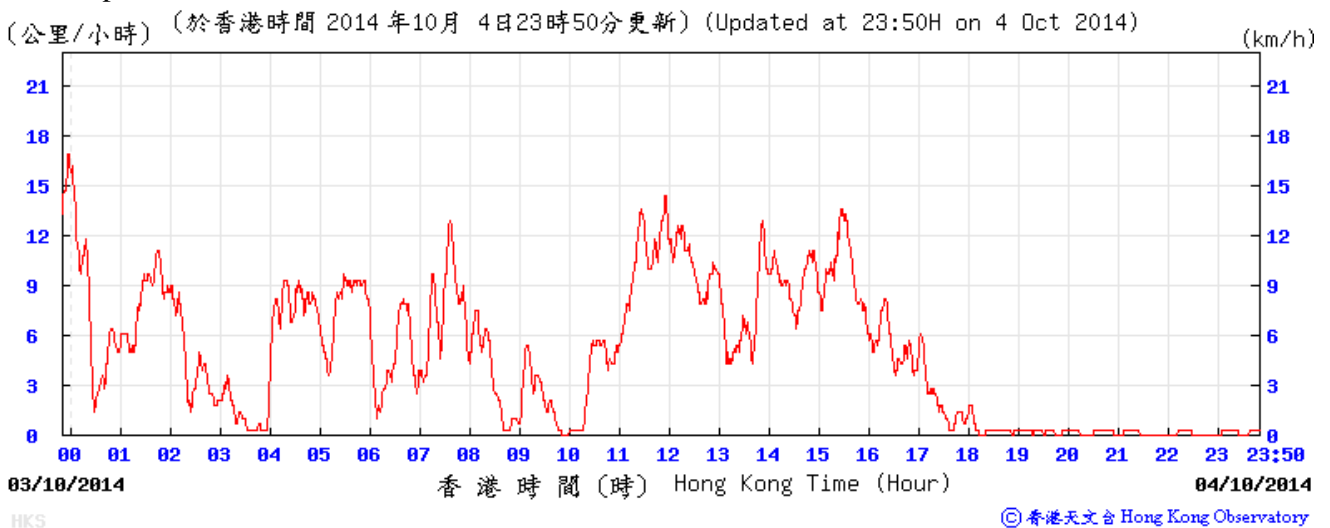
### Meteorological Data Recorded from HKO Station (4 October 2014)

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

#### Temperature/Humidity:



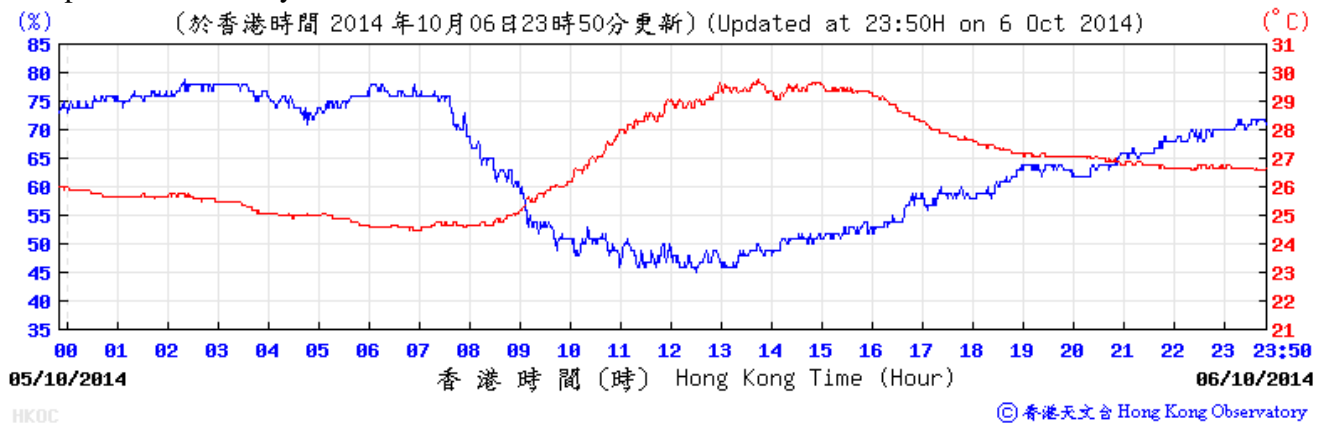
#### Wind Speed and Direction:



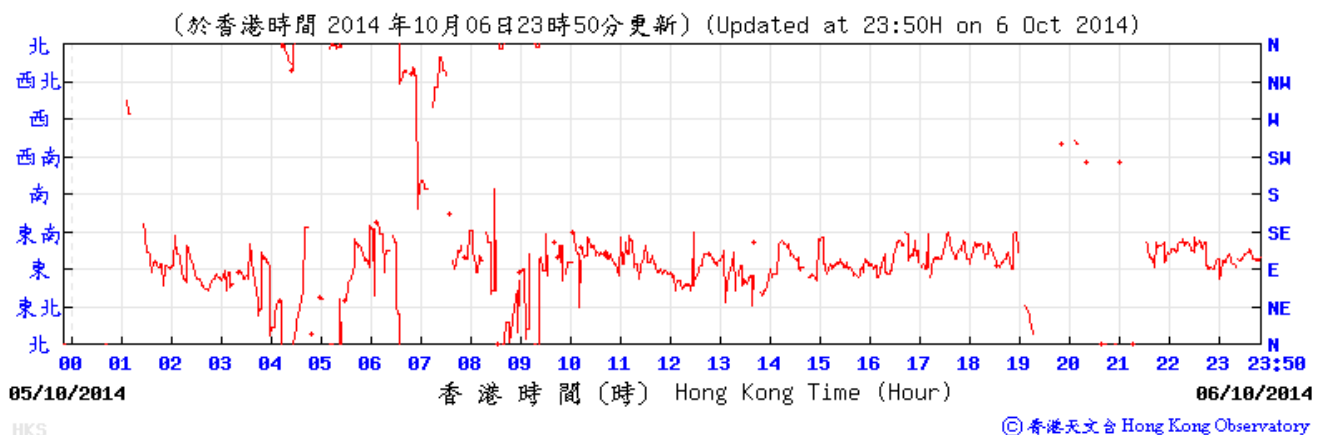
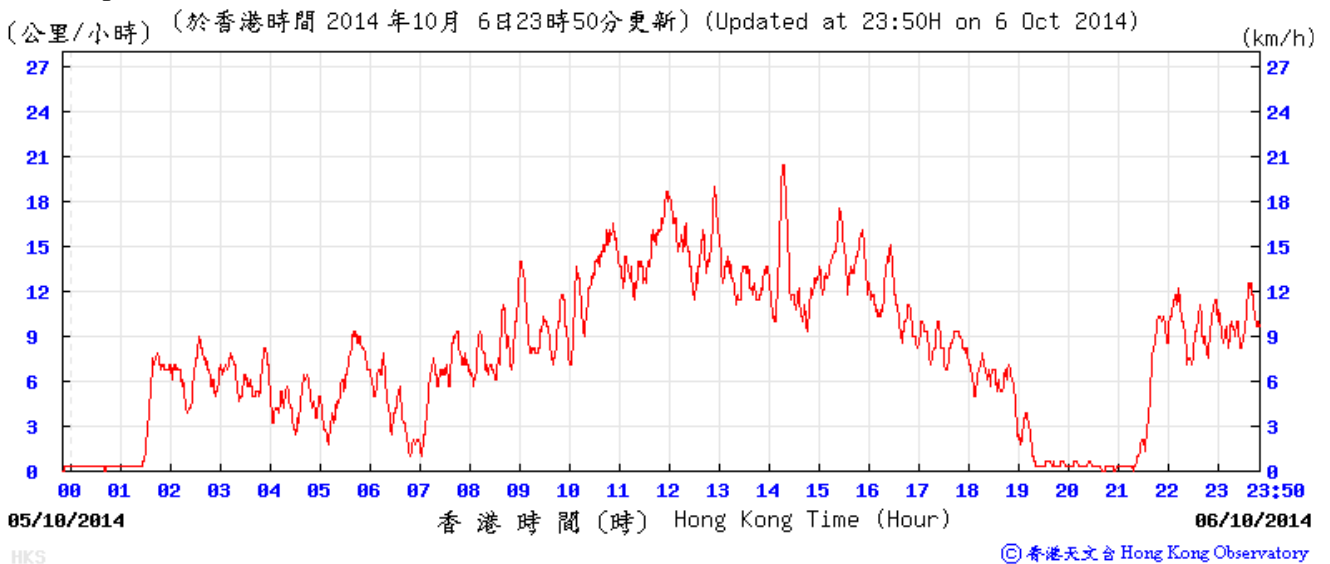
### Meteorological Data Recorded from HKO Station (6 October 2014)

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

#### Temperature/Humidity:



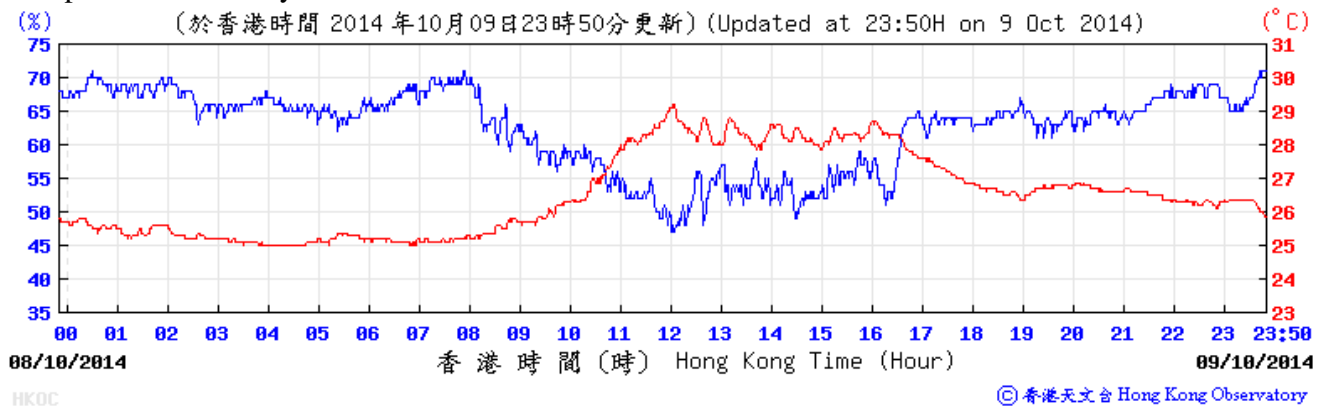
#### Wind Speed and Direction:



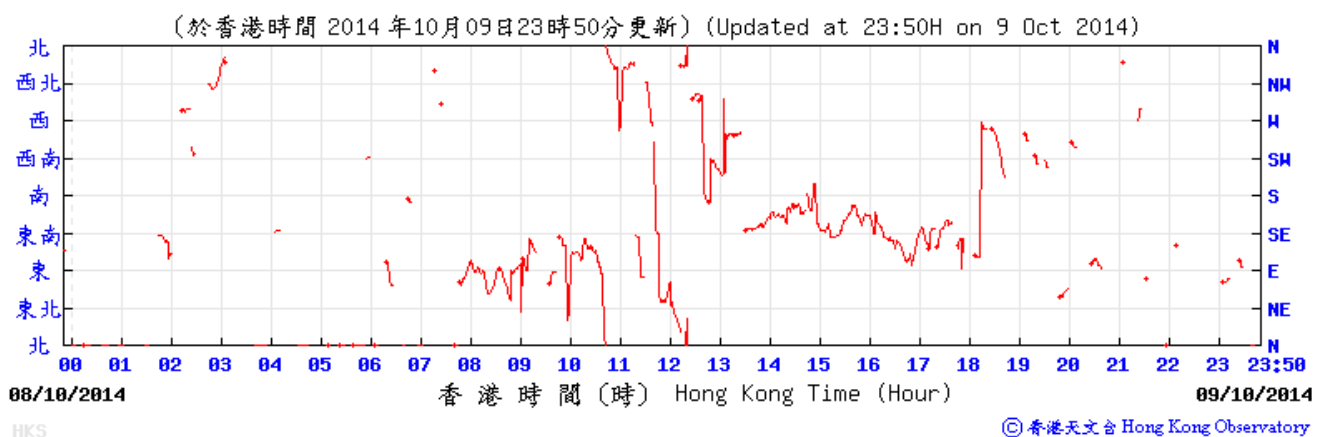
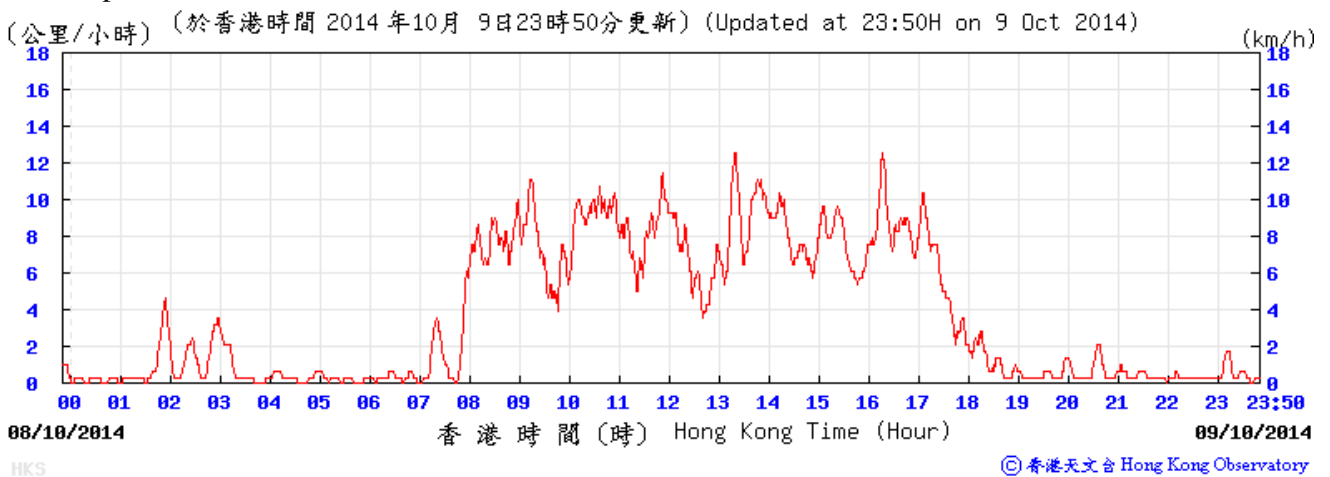
### Meteorological Data Recorded from HKO Station (9 October 2014)

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

#### Temperature/Humidity:



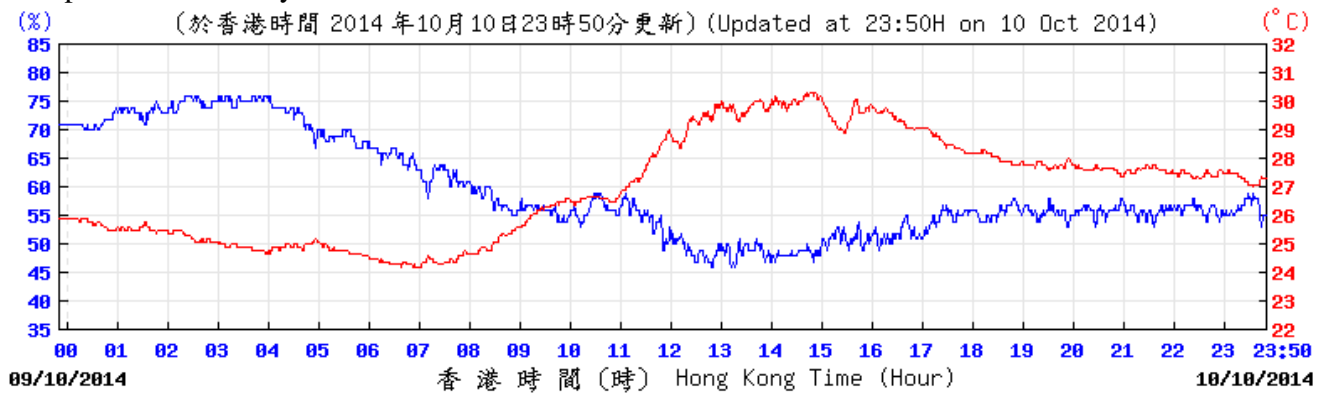
#### Wind Speed and Direction:



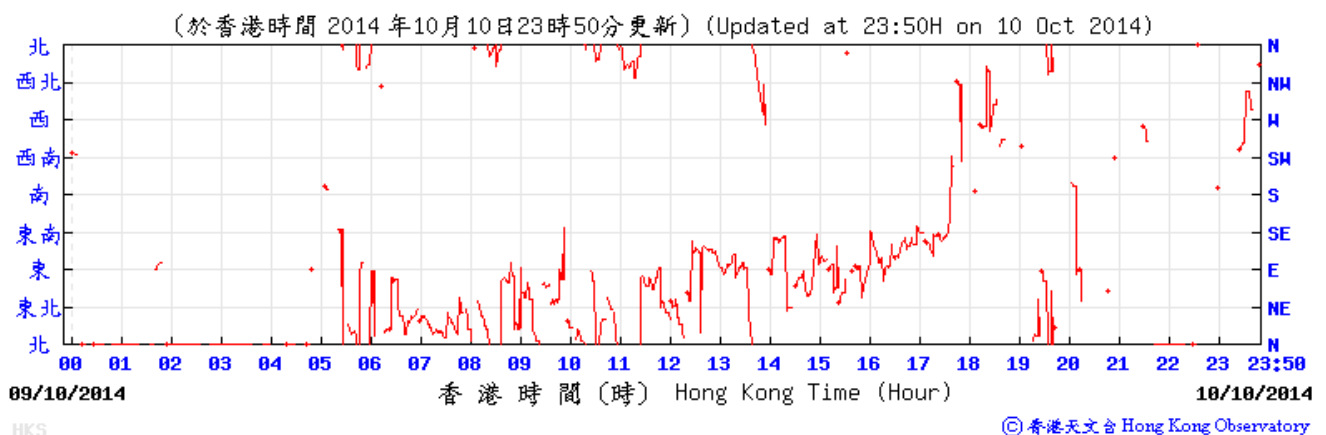
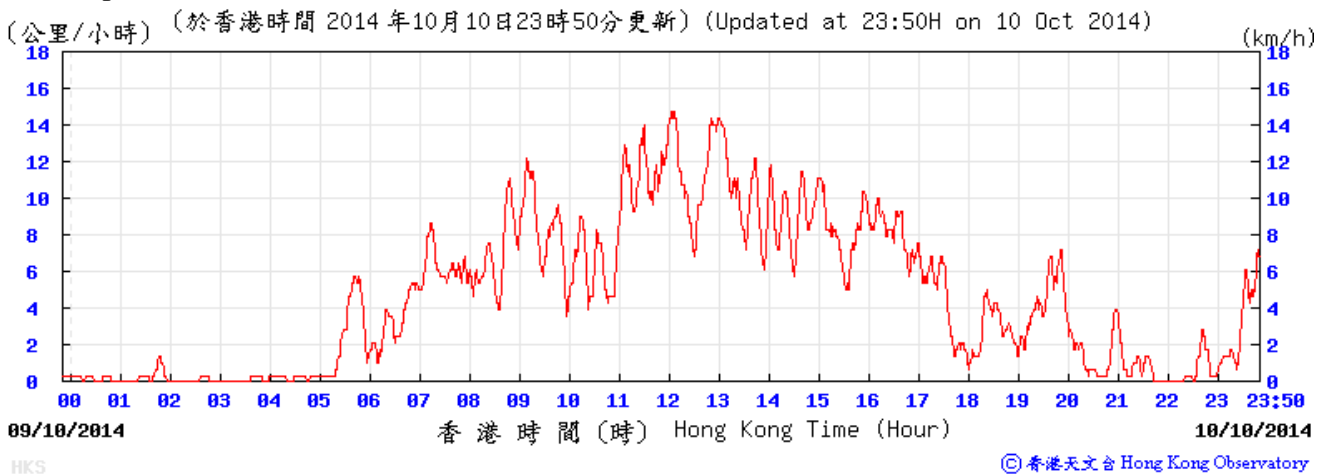
### Meteorological Data Recorded from HKO Station (10 October 2014)

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

#### Temperature/Humidity:



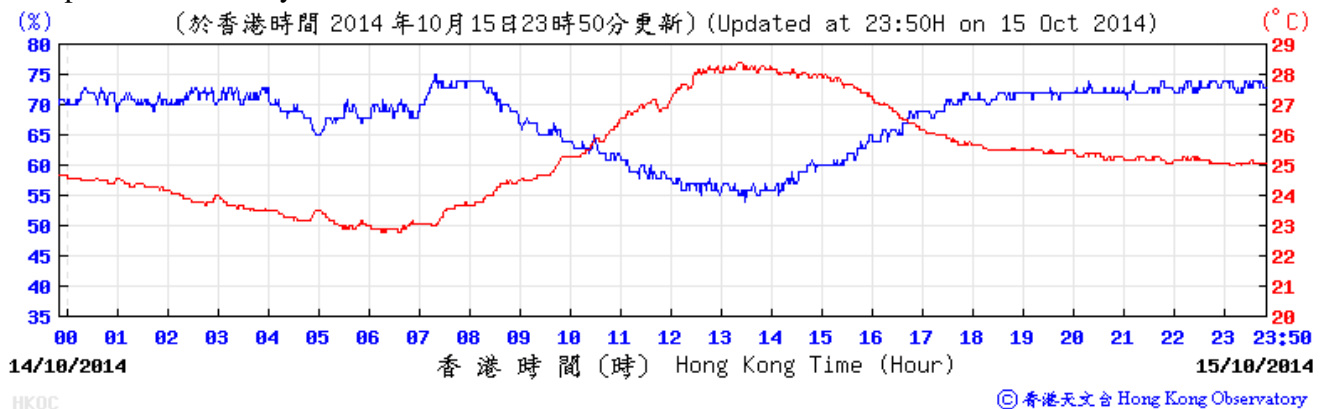
#### Wind Speed and Direction:



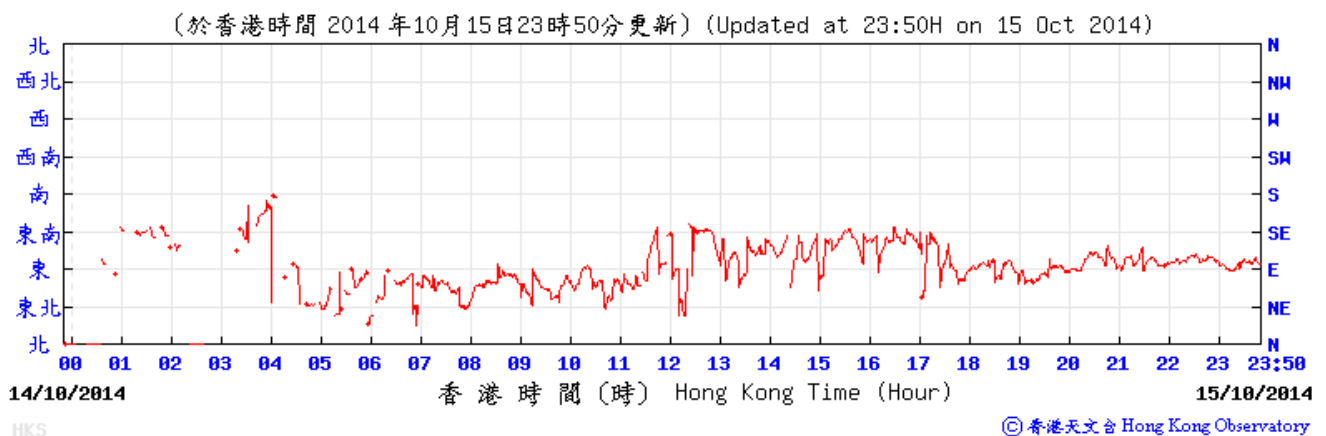
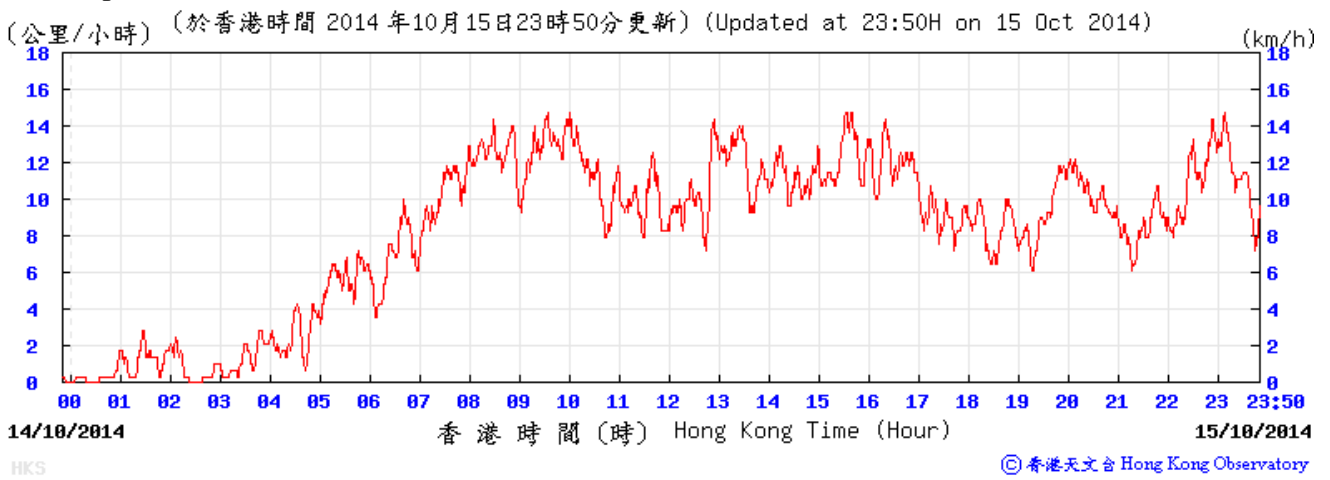
### Meteorological Data Recorded from HKO Station (15 October 2014)

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

#### Temperature/Humidity:



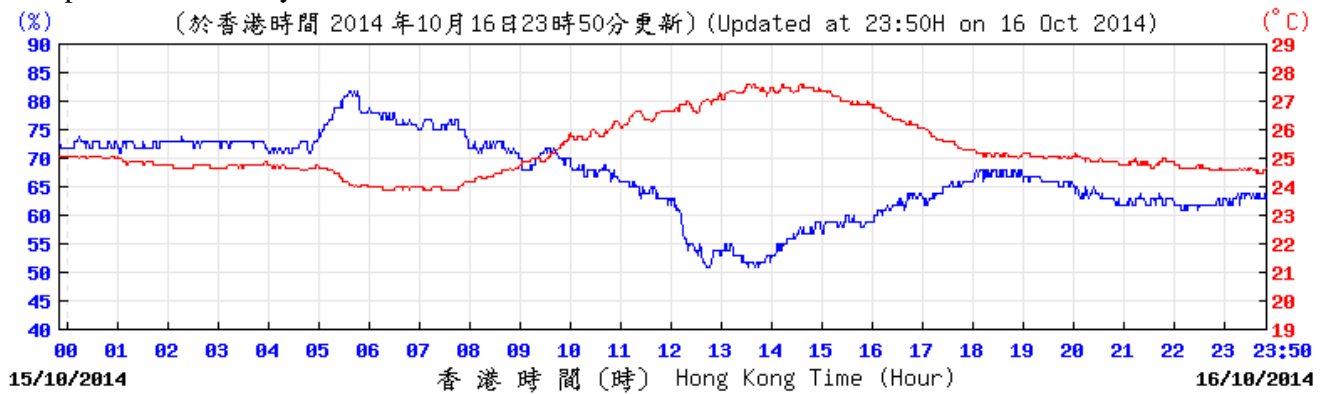
#### Wind Speed and Direction:



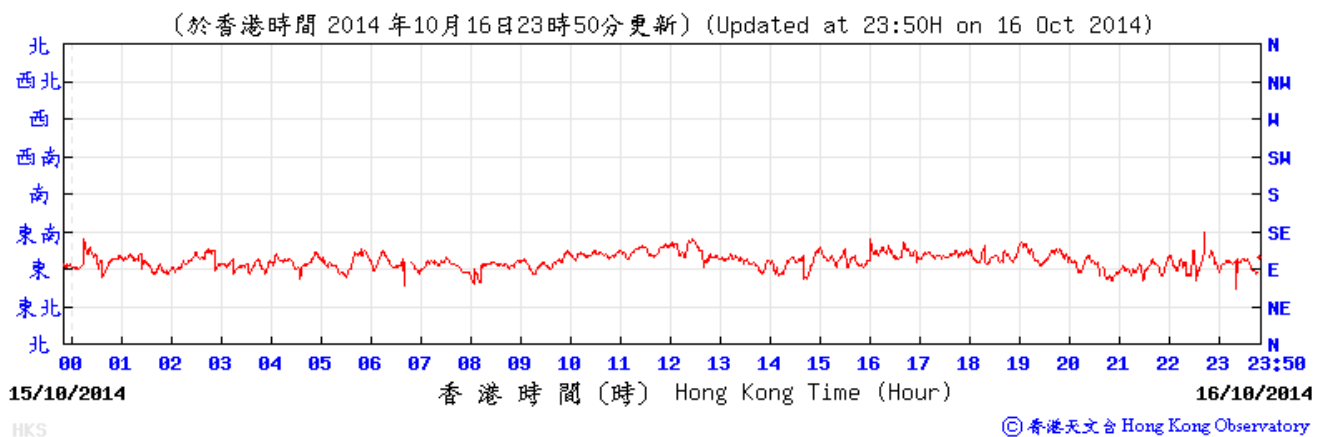
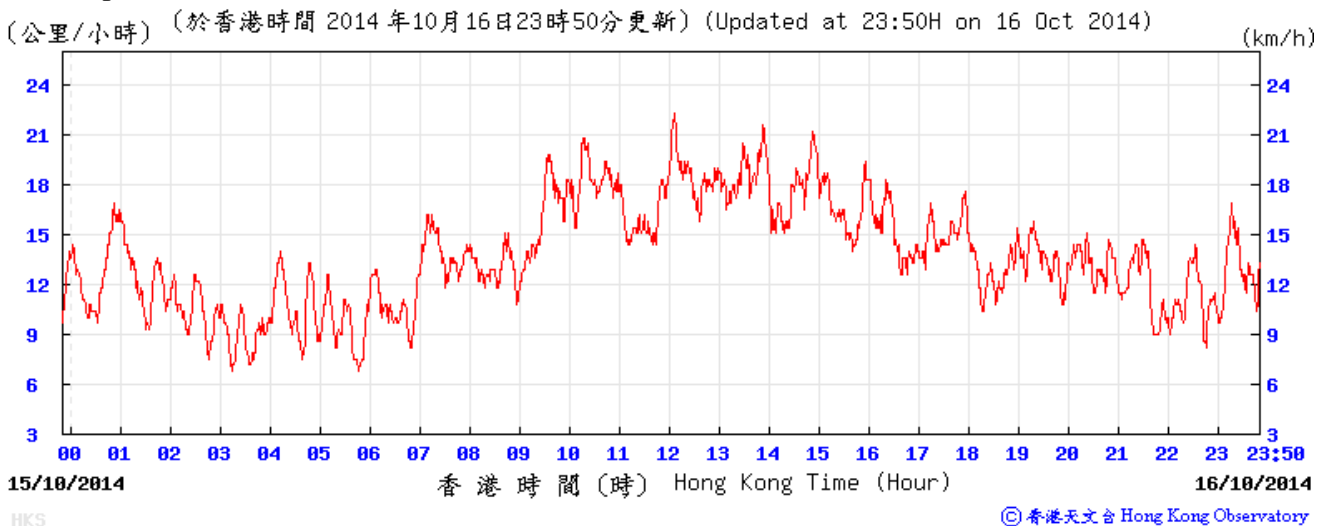
### Meteorological Data Recorded from HKO Station (16 October 2014)

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

#### Temperature/Humidity:



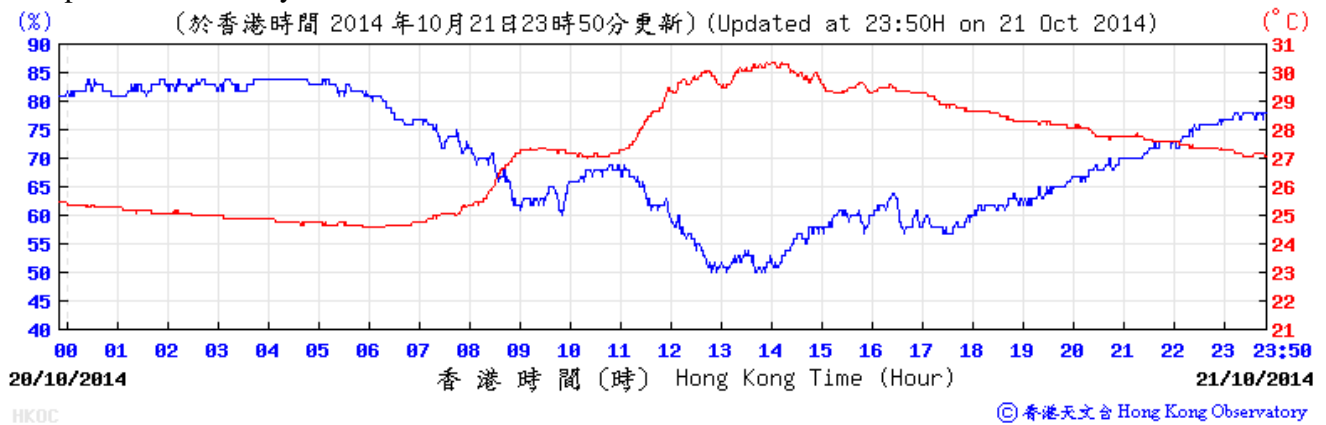
#### Wind Speed and Direction:



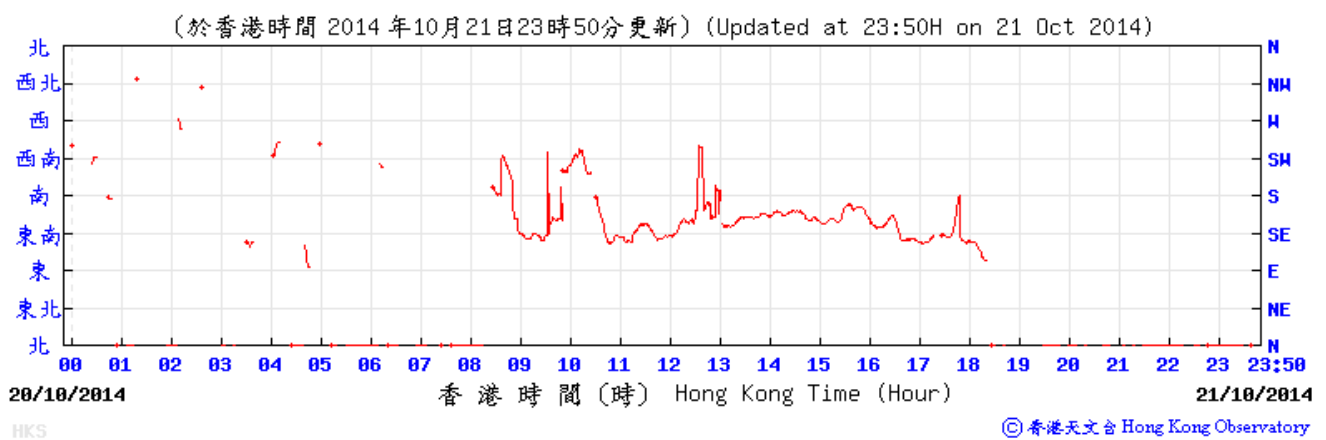
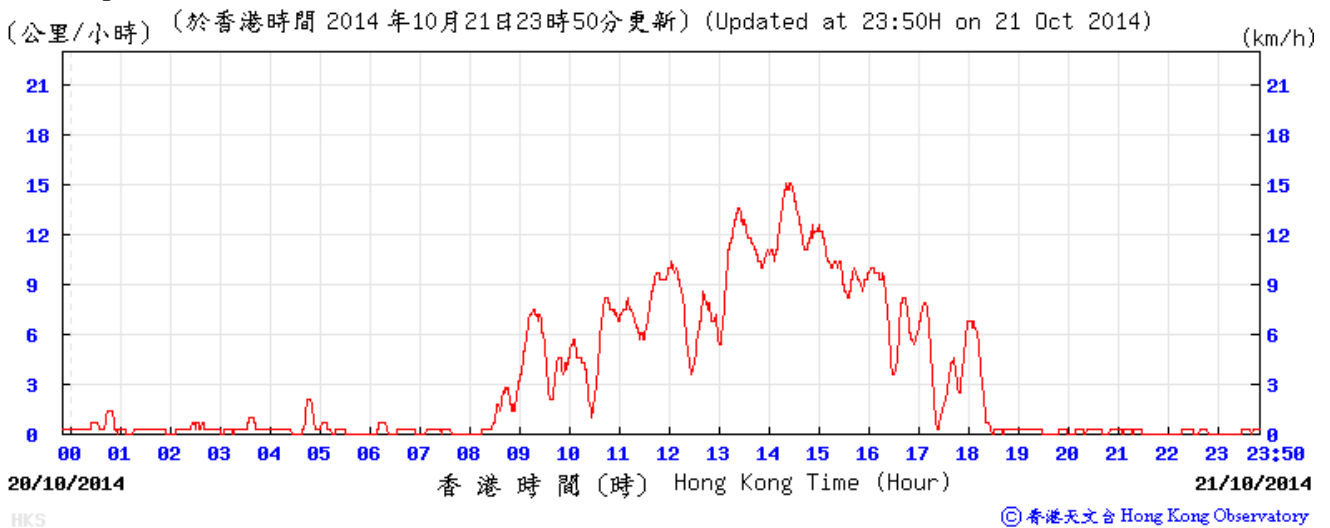
### Meteorological Data Recorded from HKO Station (21 October 2014)

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

#### Temperature/Humidity:



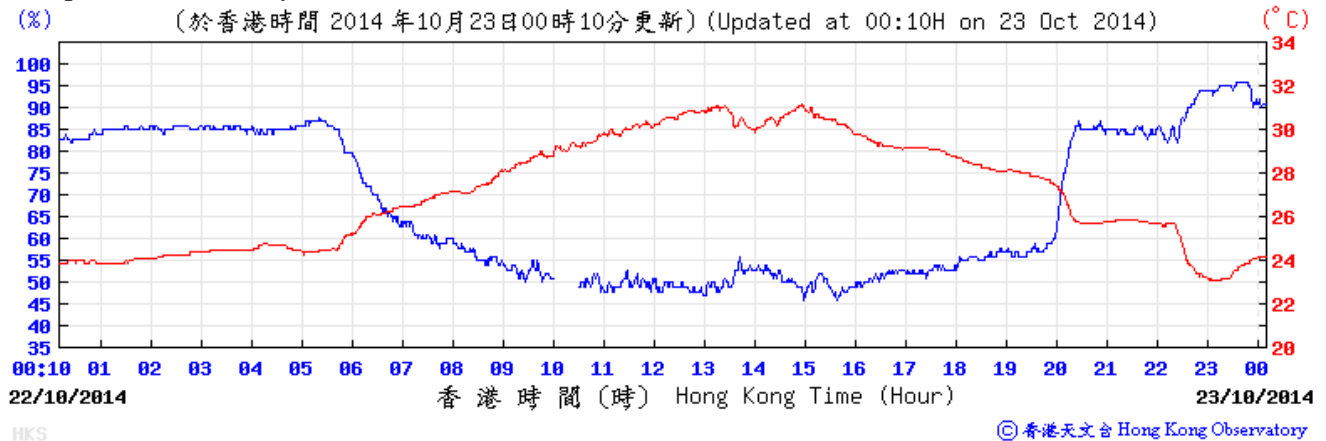
#### Wind Speed and Direction:



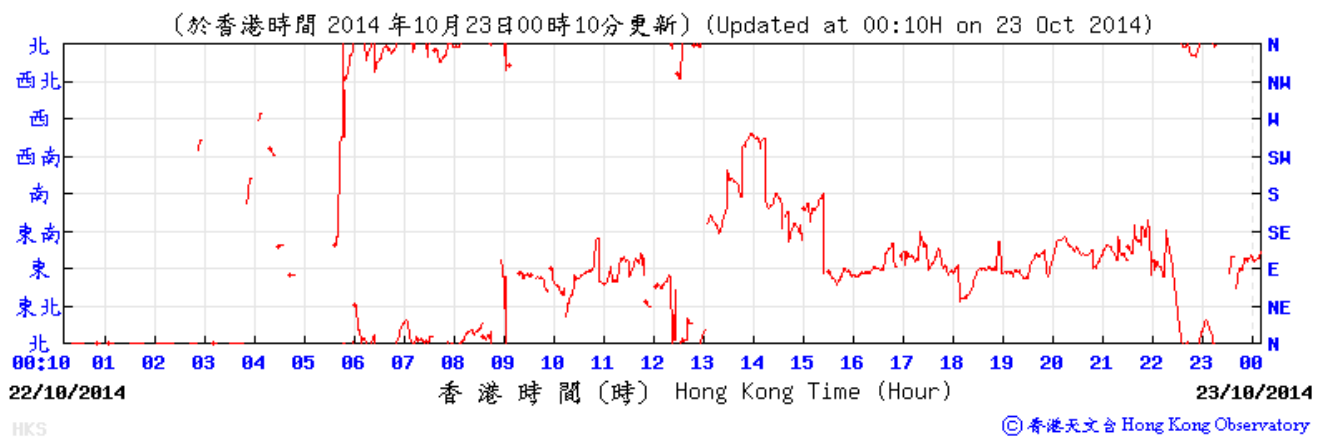
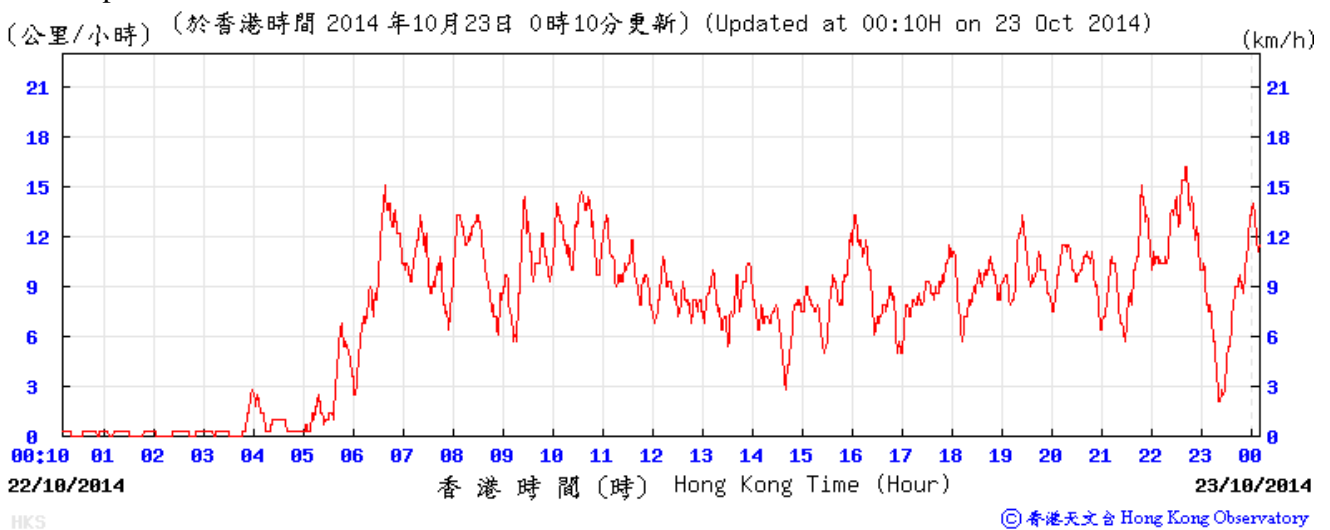
### Meteorological Data Recorded from HKO Station (22 October 2014)

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

#### Temperature/Humidity:



#### Wind Speed and Direction:

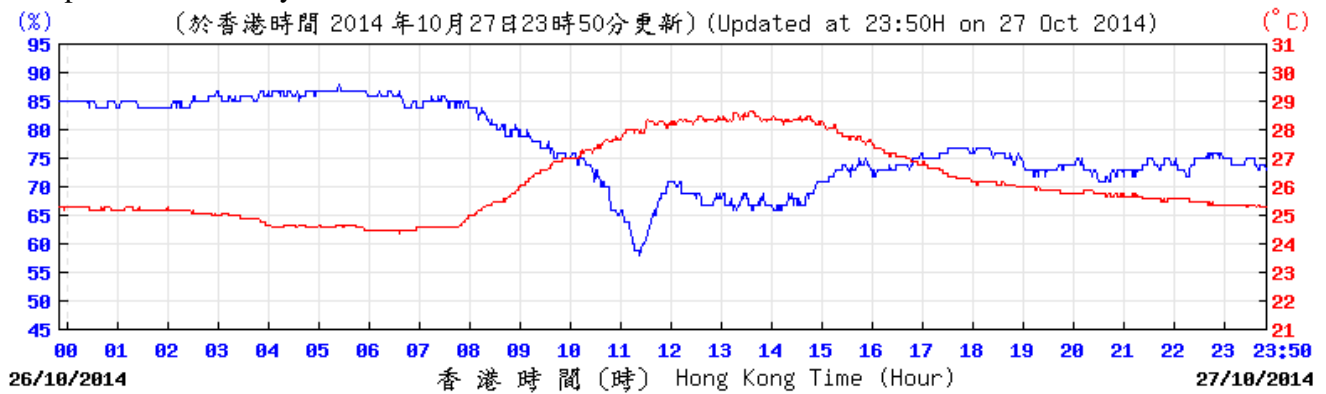




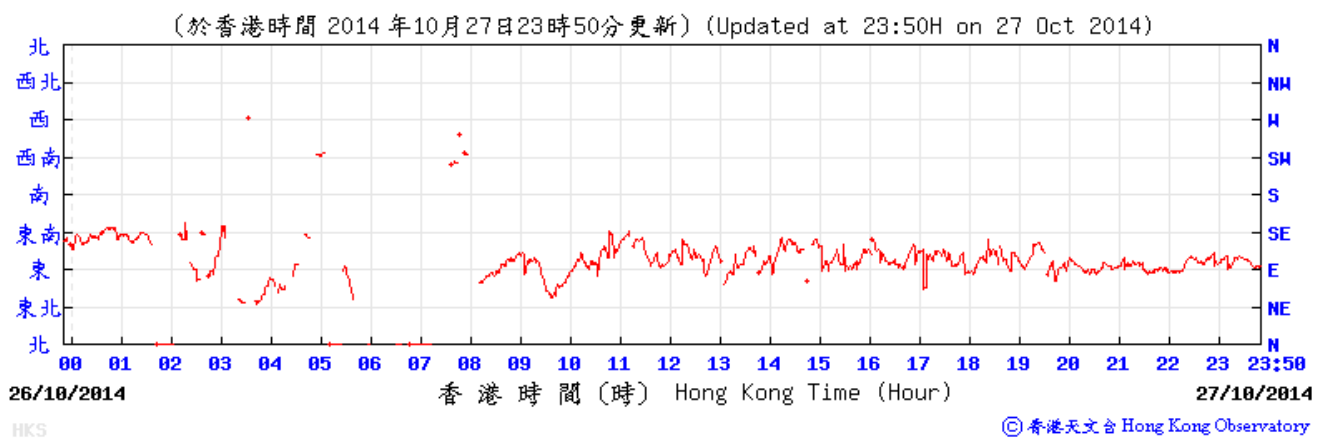
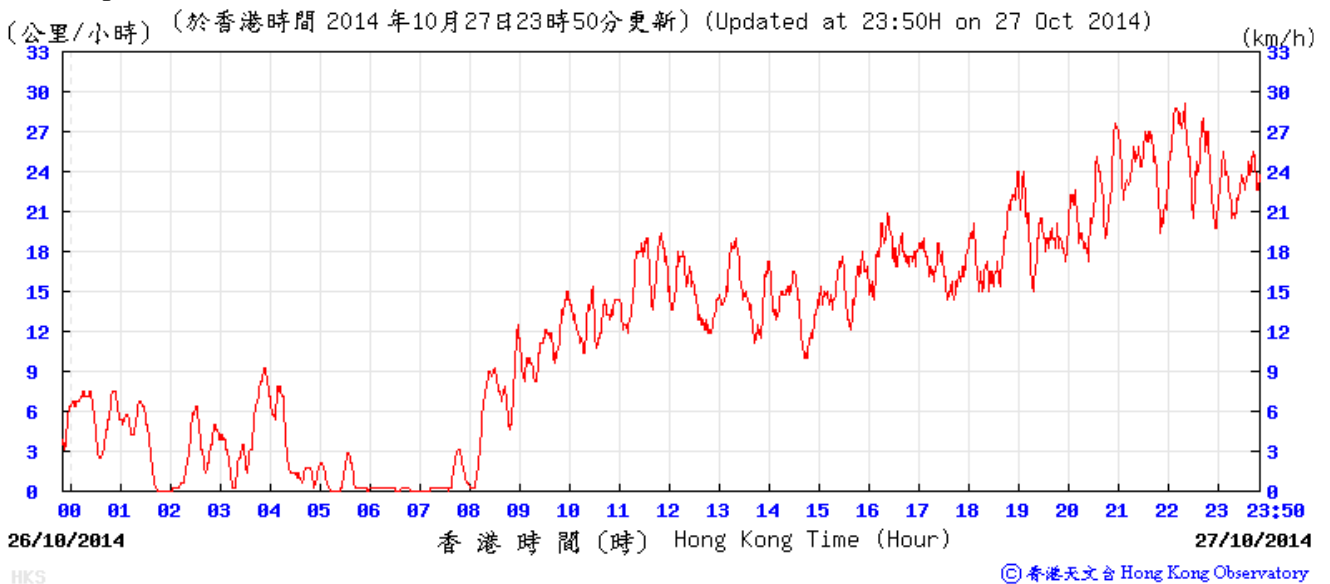
### Meteorological Data Recorded from HKO Station (27 October 2014)

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

#### Temperature/Humidity:



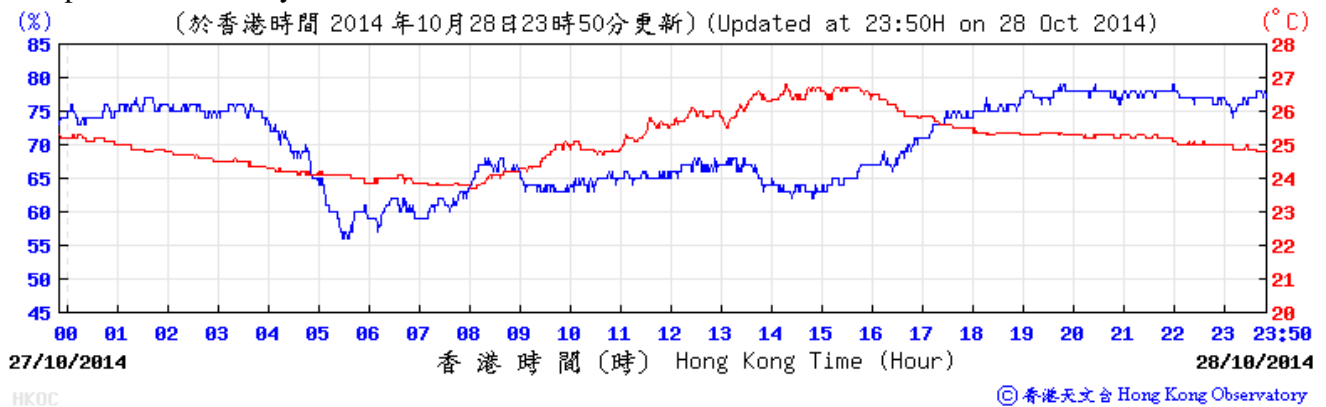
#### Wind Speed and Direction:



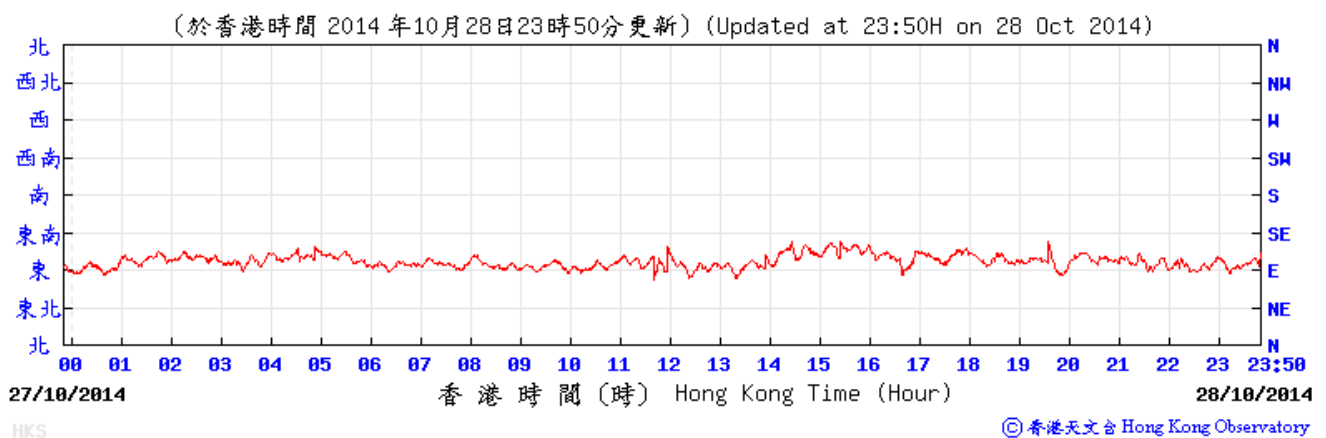
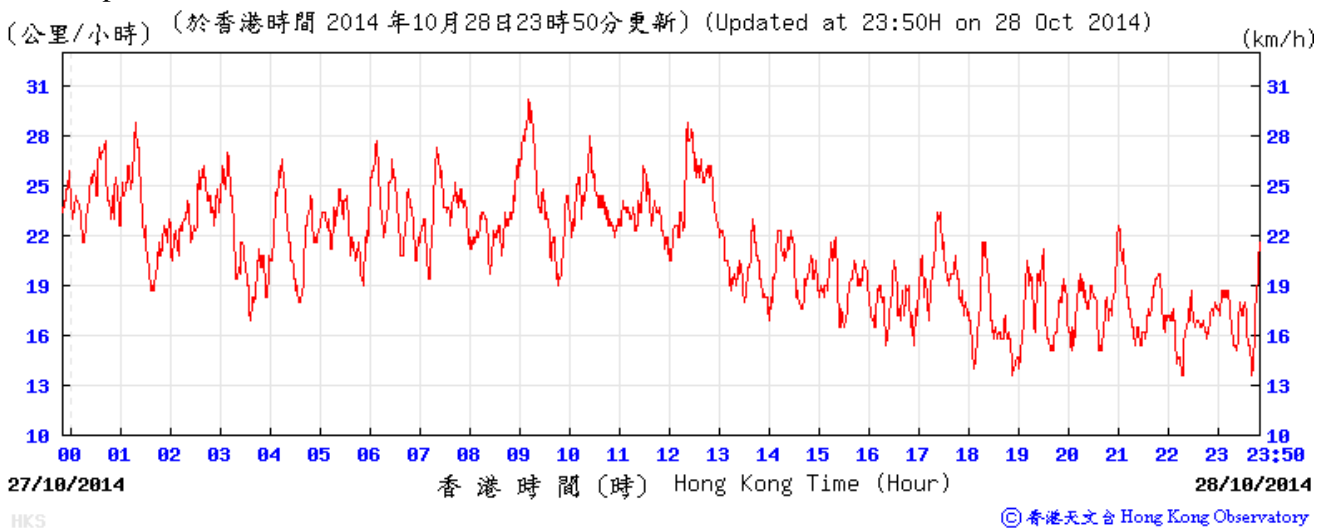
### Meteorological Data Recorded from HKO Station (28 October 2014)

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

#### Temperature/Humidity:



#### Wind Speed and Direction:



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**APPENDIX E  
AIR QUALITY MONITORING RESULTS  
AND GRAPHICAL PRESENTATIONS**

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## Appendix E - 1-hour TSP Monitoring Results

Location CM_WF1a - Wah Ming House (Roof)			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
6-Oct-14	8:45	Sunny	107.9
6-Oct-14	9:45	Sunny	127.7
6-Oct-14	10:45	Sunny	133.4
10-Oct-14	8:58	Sunny	78.6
10-Oct-14	9:58	Sunny	81.4
10-Oct-14	10:58	Sunny	72.0
16-Oct-14	8:20	Sunny	237.2
16-Oct-14	9:20	Sunny	258.1
16-Oct-14	10:20	Sunny	229.2
22-Oct-14	8:36	Sunny	195.8
22-Oct-14	9:36	Sunny	207.6
22-Oct-14	10:36	Sunny	207.0
28-Oct-14	9:00	Sunny	182.4
28-Oct-14	10:00	Sunny	191.4
28-Oct-14	11:00	Sunny	193.0
Average			166.8
Maximum			258.1
Minimum			72.0

Location CM_AB1b - Works Site Boundary of Aberdeen PTW			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
6-Oct-14	8:20	Sunny	130.1
6-Oct-14	9:20	Sunny	126.5
6-Oct-14	10:20	Sunny	138.0
10-Oct-14	8:30	Sunny	75.0
10-Oct-14	9:30	Sunny	83.6
10-Oct-14	10:30	Sunny	77.0
16-Oct-14	8:38	Sunny	251.6
16-Oct-14	9:38	Sunny	234.7
16-Oct-14	10:38	Sunny	243.9
22-Oct-14	8:58	Sunny	152.3
22-Oct-14	9:58	Sunny	161.1
22-Oct-14	10:58	Sunny	156.2
28-Oct-14	8:50	Sunny	200.6
28-Oct-14	9:50	Sunny	189.0
28-Oct-14	10:50	Sunny	192.3
Average			160.8
Maximum			251.6
Minimum			75.0

## Appendix E - 1-hour TSP Monitoring Results

Location CM_CB1a - The Arcade, Cyberport			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
6-Oct-14	13:06	Sunny	104.2
6-Oct-14	14:06	Sunny	110.3
6-Oct-14	15:06	Sunny	119.5
10-Oct-14	13:02	Sunny	101.3
10-Oct-14	14:02	Sunny	86.9
10-Oct-14	15:02	Sunny	90.9
16-Oct-14	13:05	Sunny	258.0
16-Oct-14	14:05	Sunny	241.4
16-Oct-14	15:05	Sunny	271.4
22-Oct-14	13:06	Sunny	205.4
22-Oct-14	14:06	Sunny	199.6
22-Oct-14	15:06	Sunny	196.4
28-Oct-14	13:20	Sunny	177.1
28-Oct-14	14:20	Sunny	180.2
28-Oct-14	15:20	Sunny	178.4
		Average	168.1
		Maximum	271.4
		Minimum	86.9

## Appendix E - 24-hour TSP Monitoring Results

### Location CM\_WF1a - Wah Ming House

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				
3-Oct-14	9:00	Sunny	303.3	3.2038	3.2853	0.0815	1536.2	1560.2	24.0	1.21	1.21	1.21	1746.7	46.7	140901/059
9-Oct-14	9:00	Sunny	298.8	3.2234	3.3523	0.1289	1560.2	1584.2	24.0	1.22	1.22	1.22	1761.4	73.2	140902/056
15-Oct-14	9:00	Sunny	303.9	3.2439	3.4556	0.2117	1584.2	1608.2	24.0	1.21	1.21	1.21	1742.1	121.5	140502/006
21-Oct-14	9:00	Sunny	300.1	3.1335	3.2812	0.1477	1608.2	1632.2	24.0	1.22	1.22	1.22	1761.4	83.9	140903/054
27-Oct-14	9:00	Sunny	299.2	3.2582	3.4192	0.1610	1632.2	1656.2	24.0	1.23	1.23	1.23	1764.4	91.3	140903/058
													Min	46.7	
													Max	121.5	
													Average	83.3	

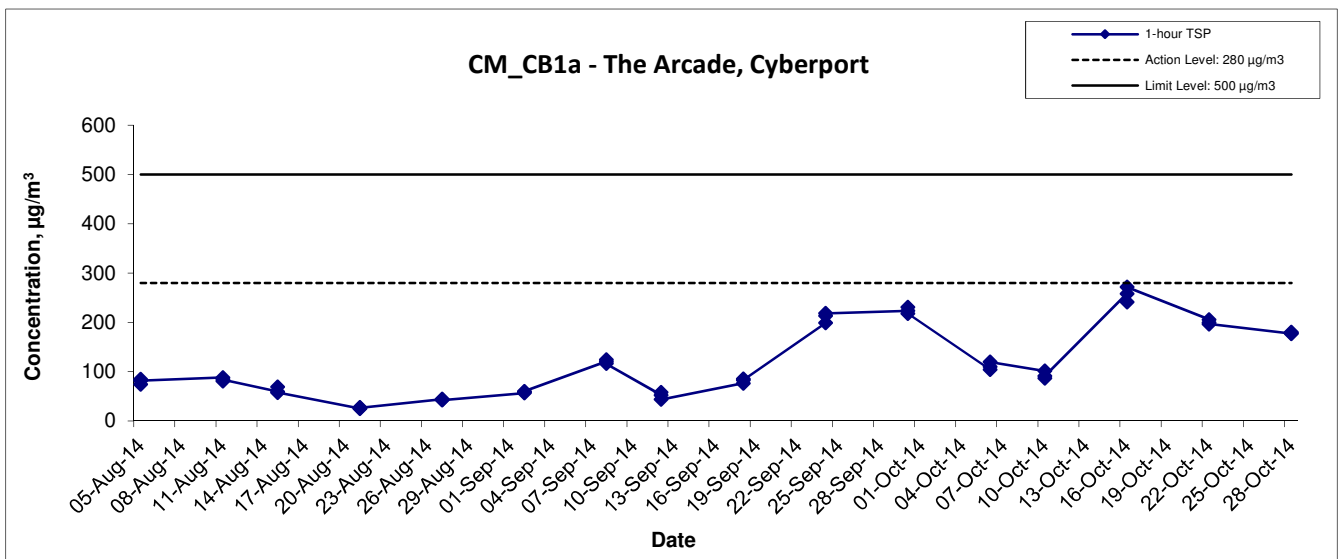
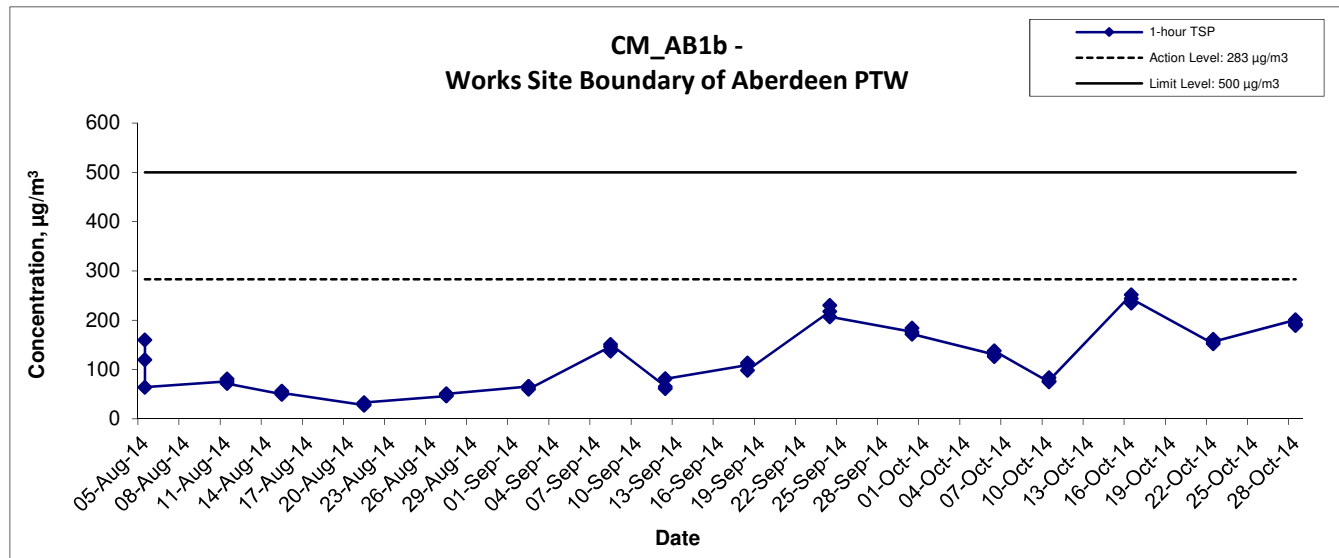
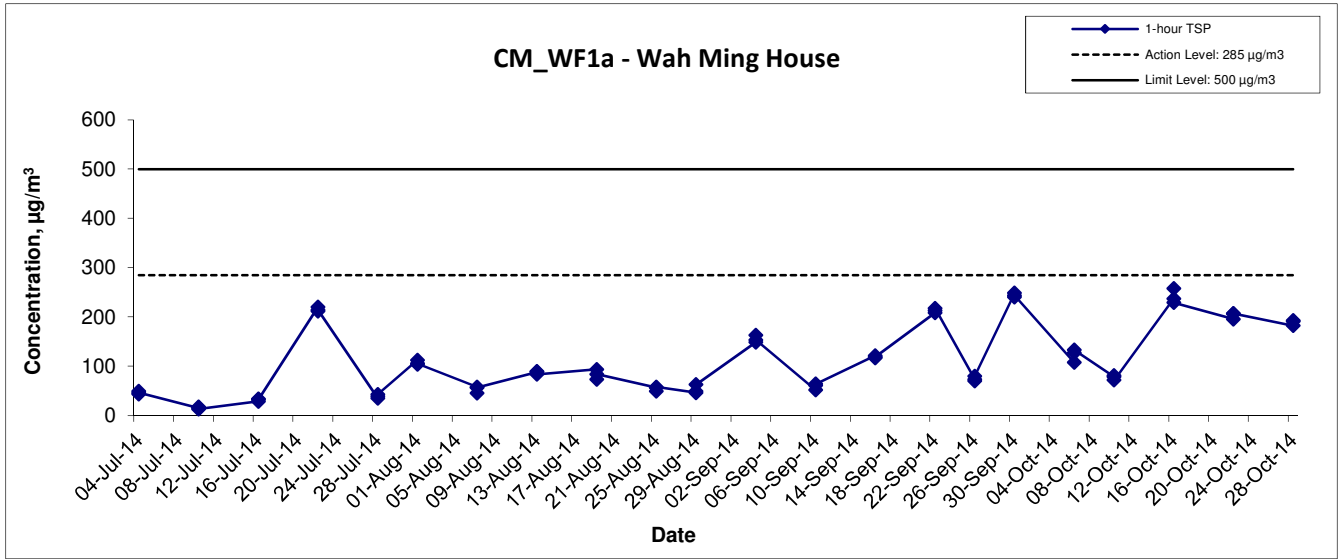
### Location CM\_AB1b - Works Site Boundary of Aberdeen PTW

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				
3-Oct-14	9:00	Sunny	303.8	3.1588	3.2779	0.1191	2771.1	2795.1	24.0	1.21	1.21	1.21	1744.6	68.3	140901/057
9-Oct-14	9:00	Sunny	299.4	3.2130	3.3686	0.1556	2795.1	2819.1	24.0	1.22	1.22	1.22	1760.4	88.4	140902/055
15-Oct-14	9:00	Sunny	303.6	3.2886	3.5464	0.2578	2819.1	2843.1	24.0	1.21	1.21	1.21	1742.7	147.9	140502/010
21-Oct-14	9:00	Sunny	300.3	3.1751	3.2886	0.1135	2843.1	2867.1	24.0	1.22	1.22	1.22	1762.6	64.4	140903/053
27-Oct-14	9:00	Sunny	299.4	3.2274	3.3410	0.1136	2867.1	2891.1	24.0	1.23	1.23	1.23	1765.8	64.3	140903/059
													Min	64.3	
													Max	147.9	
													Average	86.7	

### Location CM\_CB1a - The Arcade, Cyberport

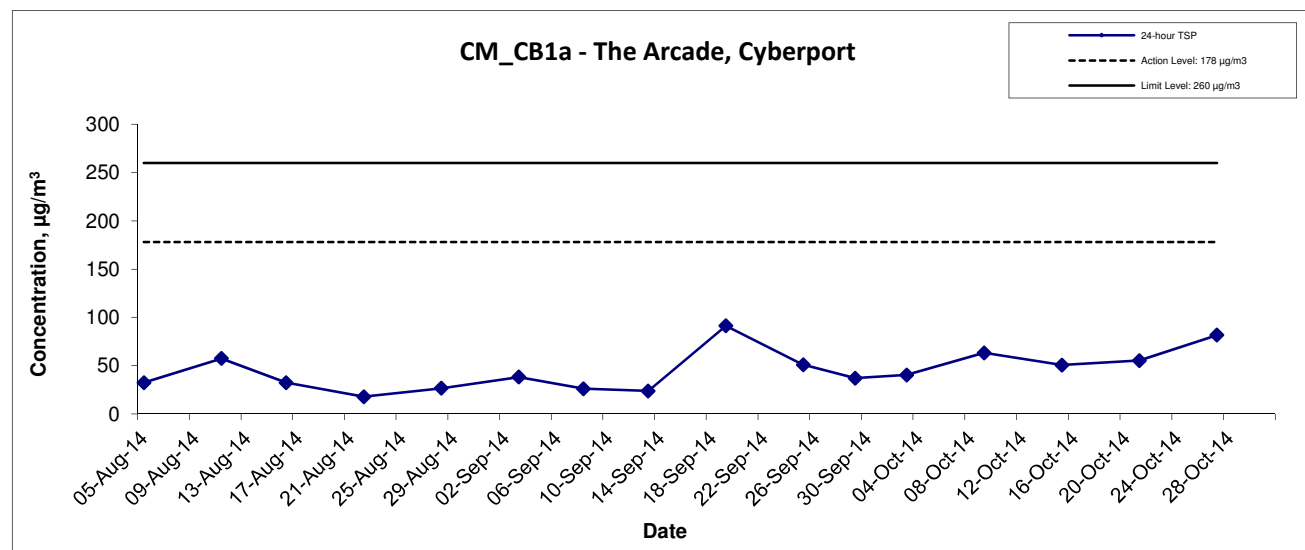
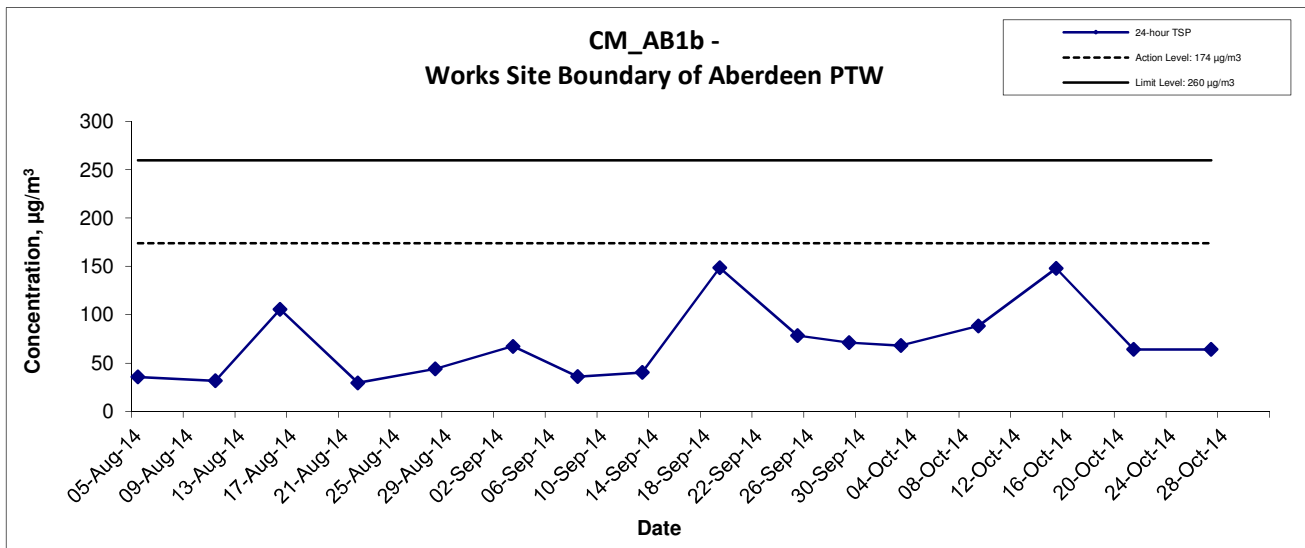
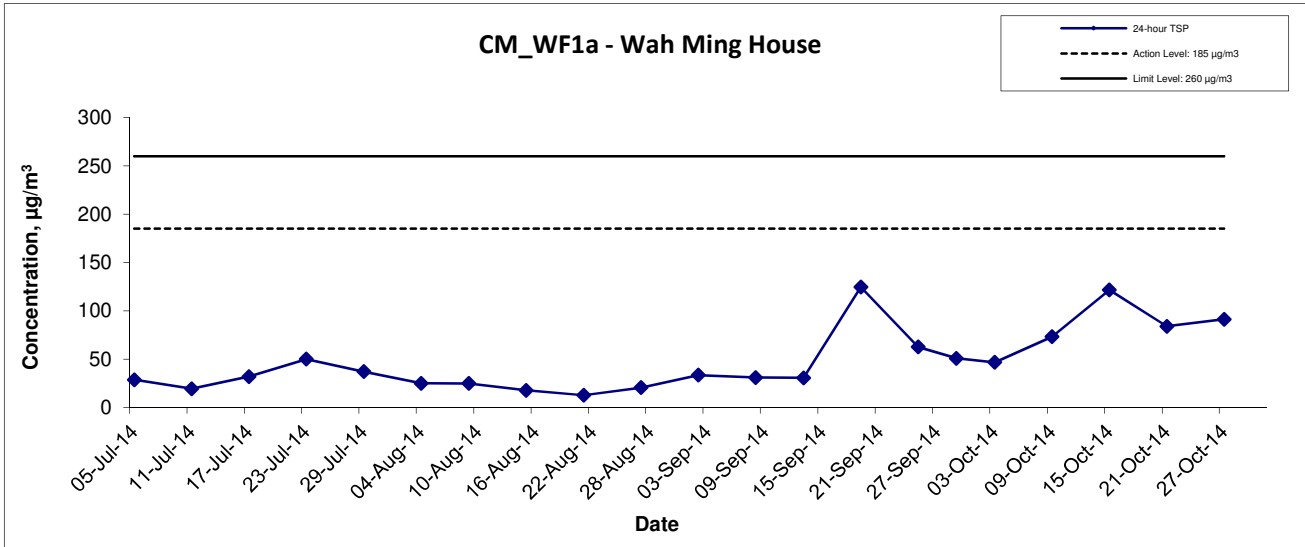
Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
3-Oct-14	9:00	Sunny	303.7	3.1885	3.2594	0.0709	937.9	961.9	24.0	1.22	1.22	1.22	1757.8	40.3	140901/058
9-Oct-14	9:00	Sunny	299.2	3.2195	3.3308	0.1113	961.9	985.9	24.0	1.22	1.22	1.22	1756.5	63.4	140902/057
15-Oct-14	9:00	Sunny	303.5	3.2262	3.3143	0.0881	985.9	1009.9	24.0	1.21	1.21	1.21	1738.5	50.7	140502/007
21-Oct-14	9:00	Sunny	300.7	3.1278	3.2249	0.0971	1009.9	1033.9	24.0	1.22	1.22	1.22	1756.4	55.3	140903/055
27-Oct-14	9:00	Sunny	299.8	3.2477	3.3913	0.1436	1033.9	1057.9	24.0	1.22	1.22	1.22	1758.8	81.6	140902/072
													Min	40.3	
													Max	81.6	
													Average	58.3	

### 1-hr TSP Concentration Levels



Title	Contract No. DC/2009/24	Scale	Project	CINOTECH
	HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	Graphical Presentation of 1-hour TSP Monitoring Results	Date	Appendix	
		Oct 14	E	

### 24-hr TSP Concentration Levels



<b>Title</b> Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau Graphical Presentation of 24-hour TSP Monitoring Results	<b>Scale</b> N.T.S	<b>Project No.</b> MA11060	
	<b>Date</b> Oct 14	<b>Appendix</b> 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 M6a (Cyberport PTW) Outside of Aegean Terrace							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
6-Oct-14	13:28	Sunny	52.0	53.4	47.8	57.3	52.0 Measured $\leq$ Baseline
10-Oct-14	13:10	Sunny	57.5	58.2	55.7		44.0
16-Oct-14	10:16	Sunny	53.1	55.3	50.9		53.1 Measured $\leq$ Baseline
22-Oct-14	13:34	Sunny	56.7	58.9	54.0		56.7 Measured $\leq$ Baseline
28-Oct-14	15:15	Sunny	52.7	54.9	49.2		52.7 Measured $\leq$ Baseline

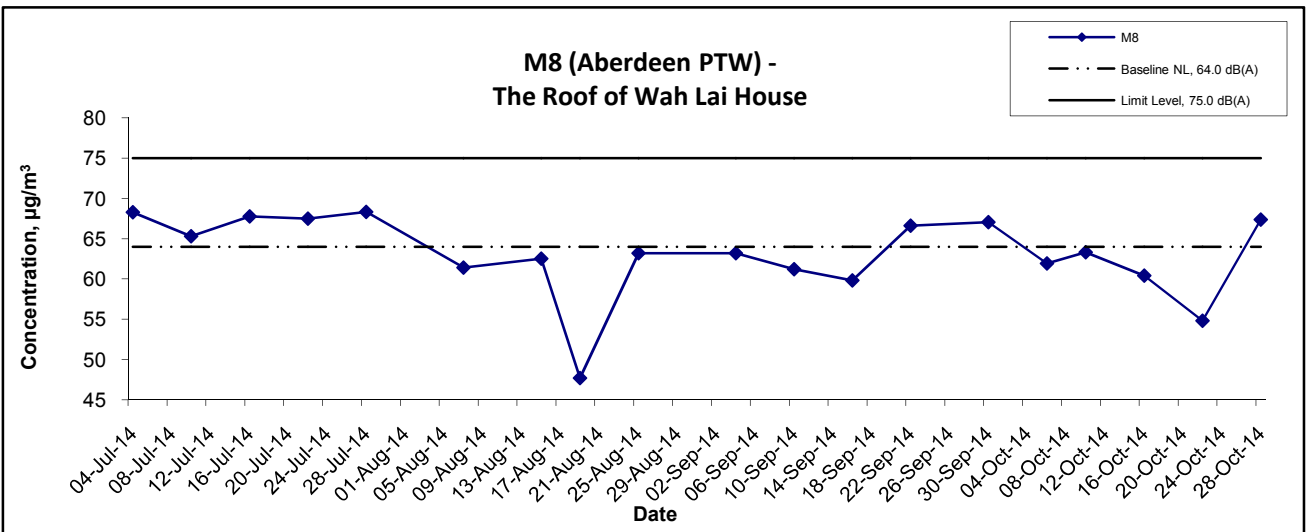
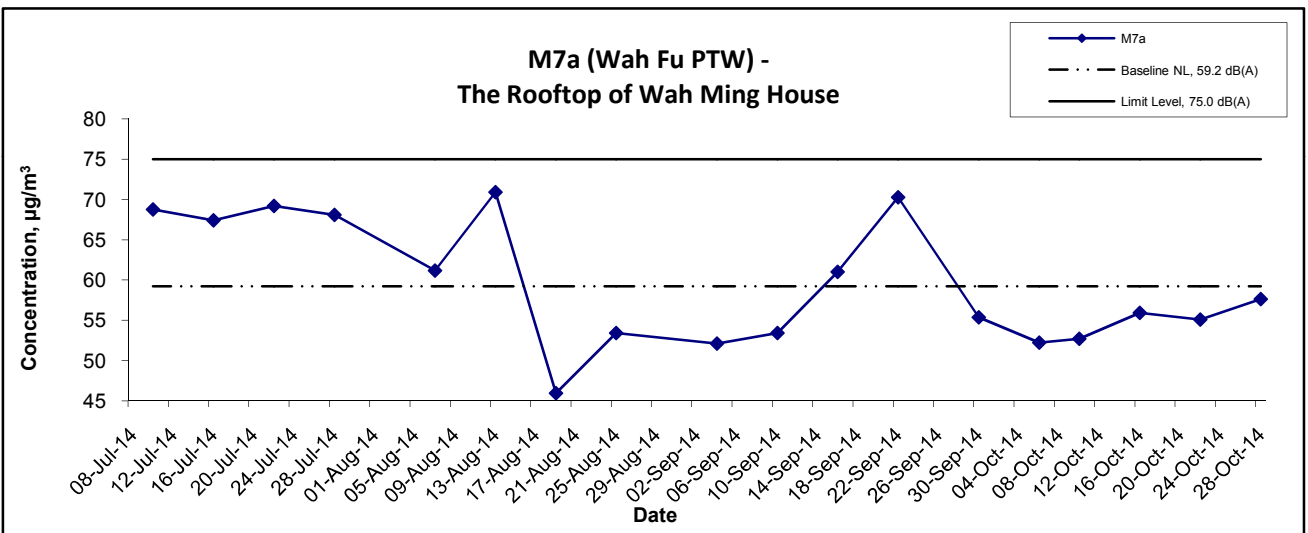
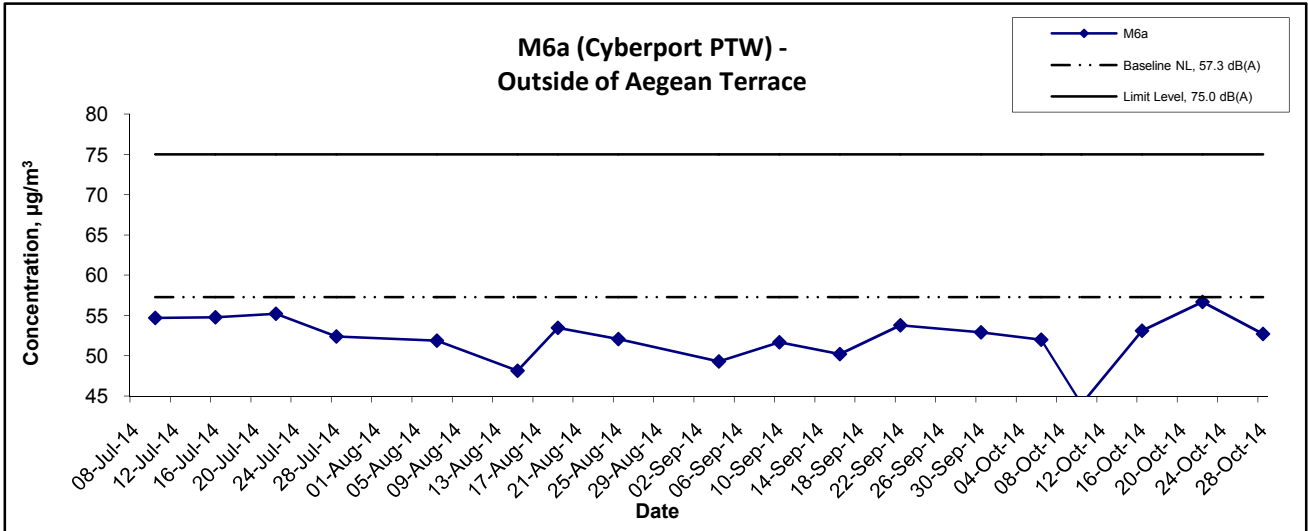
Location M7a (Wah Fu PTW) The rooftop of Wah Ming House							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
6-Oct-14	08:56	Sunny	52.2	54.6	50.2	59.2	52.2 Measured $\leq$ Baseline
10-Oct-14	09:07	Sunny	52.7	53.8	50.5		52.7 Measured $\leq$ Baseline
16-Oct-14	08:25	Sunny	55.9	58.1	52.8		55.9 Measured $\leq$ Baseline
22-Oct-14	08:40	Sunny	55.1	57.2	52.2		55.1 Measured $\leq$ Baseline
28-Oct-14	10:35	Sunny	61.5	62.9	59.8		57.6

Location M8 (Aberdeen PTW) The rooftop of Wah Lai House							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
6-Oct-14	09:43	Sunny	61.9	63.5	59.4	64.0	61.9 Measured $\leq$ Baseline
10-Oct-14	10:04	Sunny	63.3	64.5	61.8		63.3 Measured $\leq$ Baseline
16-Oct-14	09:15	Sunny	60.4	63.4	57.8		60.4 Measured $\leq$ Baseline
22-Oct-14	09:30	Sunny	54.8	55.9	50.2		54.8 Measured $\leq$ Baseline
28-Oct-14	13:50	Sunny	69.0	70.3	67.8		67.3

Location M9 (Ap Lei Chau PTW) The Podium of Mei Chun Court, South Horizons							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
6-Oct-14	11:17	Sunny	55.6	58.9	52.3	56.5	55.6 Measured $\leq$ Baseline
10-Oct-14	10:45	Sunny	52.8	54.8	50.8		52.8 Measured $\leq$ Baseline
16-Oct-14	11:27	Sunny	54.3	56.8	50.9		54.3 Measured $\leq$ Baseline
22-Oct-14	11:15	Sunny	55.6	57.9	54.3		55.6 Measured $\leq$ Baseline
28-Oct-14	09:20	Sunny	51.8	53.4	48.2		51.8 Measured $\leq$ Baseline

## Noise Levels

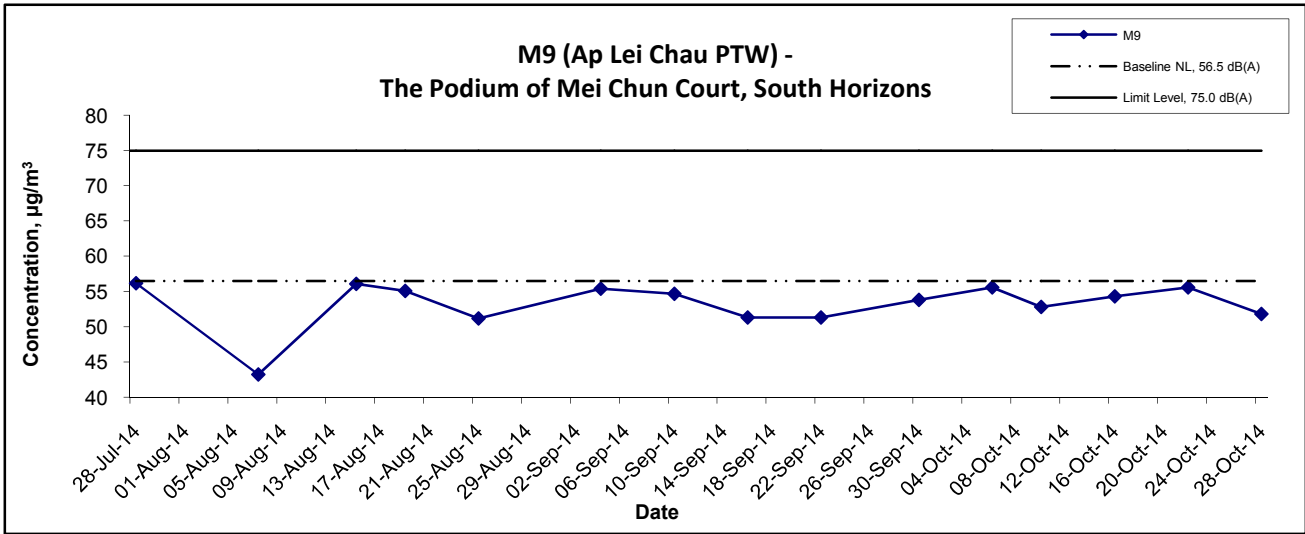
(0700-1900 hrs on Normal Weekdays)



Title Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Abredeen and Ap Lei Chau Graphical Presentation of Noise Monitoring Result	Scale N.T.S Date Oct 14	Project No. MA11060 Appendix F	<h1 style="font-size: 2em; margin: 0;">CINOTECH</h1>
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## Noise Levels

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



Title Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Abredeen and Ap Lei Chau Graphical Presentation of Noise Monitoring Result	Scale N.T.S	Project No. MA11060	<b>CINOTECH</b>
	Date Oct 14	Appendix F	

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**APPENDIX G  
SUMMARY OF EXCEEDANCE**

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## **APPENDIX G – SUMMARY OF EXCEEDANCE**

**Reporting Month:** October 2014

- a) Exceedance Report for 1-hr TSP (0)**
- b) Exceedance Report for 24-hr TSP (0)**
- c) Exceedance Report for Construction Noise on normal week days (0)**

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**APPENDIX H  
SITE AUDIT SUMMARY**

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Contract No: DC/2009/24

HATS 2A - Upgrading of PTWs at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau

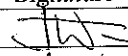

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141003
Date	3 October 2014 (Friday)
Time	09:30 – 11:00

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

Ref. No.	Remarks/Observations	Related Item No.
141003-R02	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"> <li>The bunding should be provided and enhanced to prevent the muddy water runoff to the access road at all PTWs.</li> </ul>	A 2
141003-R04	<ul style="list-style-type: none"> <li>The stagnant water in the wetsep should be cleared regularly at Wah Fu-PTW.</li> </ul>	A 11
141003-R05	<p><b>Part B - Landscape and Visual</b></p> <ul style="list-style-type: none"> <li>The fence should be provided for the existing tree at Wah Fu-PTW</li> </ul>	B 2
141003-R06	<ul style="list-style-type: none"> <li>The maintenance of the existing tree should be provided at Wah Fu-PTW.</li> </ul>	B 1
141003-R03	<p><b>Part C - Air Quality</b></p> <ul style="list-style-type: none"> <li>Properly clear the broken sand bags at ALC-PTW.</li> </ul>	C 6
141003-001	<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>The oil leakage was observed from the excavator at ALC-PTW. The Contractor was reminded to keep it in a good condition and clear the oil stain properly.</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>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit sessions: On previous audit session (Ref. No. 140926), outstanding items 140926-001, 140926-R02, 140926-R03, 140926-R04, 140926-R05 &amp; 140926-R06 are required to be followed up and remarked as 141003-R02, 141003-R03, 141003-R04, 141003-R05, 141003-R06 &amp; 141003-R02 which will be reviewed in the next weekly site inspection (Ref. no. 141010).</li> </ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul>	E 7i

	Name	Signature	Date
Recorded by	Janet Wai		3 October 2014
Checked by	Ivy Tam		3 October 2014



Contract No: DC/2009/24

**HATS 2A - Upgrading of PTWs at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau**

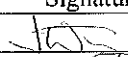

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141010
Date	10 October 2014 (Friday)
Time	09:30 – 11:15

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

Ref. No.	Remarks/Observations	Related Item No.
141010-O01	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"> <li>The sediment tank should be provided with adequate capacity for wastewater treatment before discharging out at ALC-PTW.</li> </ul>	A 5iii
141010-O02	<ul style="list-style-type: none"> <li>The sediment tank was suspected the water leakage at Abd-PTW. The Contractor was reminded to provide the maintenance of the sediment tank and keep it in a good condition.</li> </ul>	A 5ii
141010-R03	<ul style="list-style-type: none"> <li>The stagnant water in the WetSep and the sediment tank should be cleared regularly at Wah Fu-PTW and Abd-PTW.</li> </ul>	A 11
141010-R04	<ul style="list-style-type: none"> <li>Properly clear the stagnant water at ALC-PTW.</li> </ul>	A11
141010-R06	<ul style="list-style-type: none"> <li>The bunding should be provided to prevent the muddy water overflowing to the access road at ALC-PTW.</li> </ul>	A 2
	<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>	
141010-R05	<ul style="list-style-type: none"> <li>The dusty materials should be cleared and covered by impervious materials at Wah Fu-PTW.</li> </ul>	C 6
141010-R08	<ul style="list-style-type: none"> <li>The mixing activities should be done in the proper enclosure area at Abd-PTW.</li> </ul>	C 10
	<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>	
141010-R07	<ul style="list-style-type: none"> <li>Properly sort out the construction wastes at Wah Fu-PTW.</li> </ul>	E 4ii
	<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>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit sessions: On previous audit session (Ref. No. 141003), outstanding items 141003-R02 &amp; 141003-R04 are required to be followed up and remarked as 141010-R06 &amp; 141010-R03 which will be reviewed in the next weekly site inspection (Ref. no. 141017).</li> </ul>	
	<p><b>Remark:</b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul>	

	Name	Signature	Date
Recorded by	Janet Wai		10 October 2014
Checked by	Dr. Priscilla Choy		10 October 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141017
Date	17 October 2014 (Friday)
Time	14:30 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
141017-R01	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"> <li>Properly clear the stagnant water at Abd-PTW.</li> </ul>	A 11
141017-R02	<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>Properly clear the dusty materials at Abd-PTW and ALC-PTW.</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>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit sessions: On previous audit session (Ref. No. 141010), all environmental deficiencies were improved by the Contractor.</li> </ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul>	C 6

	Name	Signature	Date
Recorded by	Janet Wai		17 October 2014
Checked by	Dr. Priscilla Choy		17 October 2014

Contract No: DC/2009/24

**HATS 2A - Upgrading of PTWs at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau**

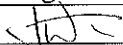

**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	141024
Date	24 October 2014 (Friday)
Time	09:30 – 11:15

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

Ref. No.	Remarks/Observations	Related Item No.
141024-R03	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"> <li>The bunding should be provided to prevent the muddy water overflowing to the access road at Abd-PTW.</li> </ul>	A 2
141024-R01	<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>Properly clear the dusty materials at Abd-PTW.</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>	C 6
141024-R02	<p><b>Part E –Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>The chemical containers should be provided with the drip tray at Wah Fu-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>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit sessions: On previous audit session (Ref. No. 141017), outstanding item 141017-R02 is required to be followed up and remarked as 141024-R01 which will be reviewed in the next weekly site inspection (Ref. No. 141031).</li> </ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul>	E 7ii

	Name	Signature	Date
Recorded by	Janet Wai		24 October 2014
Checked by	Dr. Priscilla Choy		24 October 2014

Contract No: DC/2009/24

**HATS 2A - Upgrading of PTWs at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau**

**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	141031
Date	31 October 2014 (Friday)
Time	09:30 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
141031-R02	<p><b>Part A - Water Quality</b></p> <ul style="list-style-type: none"> <li>Properly clear the stagnant water at Abd-PTW.</li> </ul>	A 11
141031-R01	<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>Properly clear the debris and dusty materials at ALC-PTW.</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>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit sessions: On previous audit session (Ref. No. 141024), all environmental deficiencies were improved by the Contractor.</li> </ul> <p><b>Remark:</b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul>	C 6

	Name	Signature	Date
Recorded by	Janet Wai		31 October 2014
Checked by	Dr. Priscilla Choy		31 October 2014

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**APPENDIX I  
SUMMARY OF AMOUNT OF WASTE  
GENERATED**

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Name of Department: DSD

Name of Contract : Harbour Area Treatment Scheme Stage 2A – Upgrading of Preliminary Treatment Works  
at Sandy Bay, Cyberport, Wah Fu, Ap Lei Chau and Aberdeen

Contract No. : DC/2009/24

**APPENDIX I MONTHLY SUMMARY WASTE FLOW TABLE FOR 2014 (YEAR)**

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and 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	Special Waste
	[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 '000ton]
Year2012	1.002910	0.000000	0.000000	0.000000	1.002910	0.000000	6.680000	0.070000	0.070000	0.100000	0.014000	2.406456
Year2013	4.264035	0.000000	0.000000	0.000000	4.264035	0.000000	10.750000	0.000000	0.000000	0.350000	0.064890	2.232710
JAN	0.433305	0	0	0	0.433305	0	0	0	0	0.06	0.00796	0.2032
FEB	0.040615	0	0	0	0.040615	0	0	0	0	0	0.00334	0.16182
MAR	1.061525	0	0	0	1.061525	0	0	0	0	0	0.00929	0.17807
APR	0.368995	0	0	0	0.368995	0	0	0	0	0	0.00434	0.15738
MAY	0.31617	0	0	0	0.316170	0	0	0	0	0	0.00862	0.15547
JUNE	0.07655	0	0	0	0.07655	0	0	0	0	0.39	0.01304	0.14019
SUB-TOTAL	2.297160	0.000000	0.000000	0.000000	2.297160	0.000000	0.000000	0.000000	0.000000	0.450000	0.046590	0.996130
JULY	0.039665	0	0	0	0.039665	0	0	0	0	0	0.01133	0.15237
AUG	0.3106	0	0	0	0.3106	0	0	0	0	0	0.01921	0.13892
SEPT	1.07455	0	0	0	1.07455	0	0	0	0	0	0.00943	0.1656
OCT	0.10015	0	0	0	0.10015	0	0	0	0	0	0.02241	0.13192
NOV	0											
DEC	0											
TOTAL	9.089070	0.000000	0.000000	0.000000	9.089070	0.000000	17.430000	0.070000	0.070000	0.900000	0.187860	6.224106

Forecast of Total Quantities of C&D materials to be Generated from the Contracts *											
Total Quantity Generated	Hard Rock and Broken	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	Special Waste
[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 '000ton]
19.77	1.544	1.73	0	16.496	0	30	1	1	4	0.956	9.6

- Notes :
- (1) The performance targets are given in PS Clause 6(14).
  - (2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.
  - (3) 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 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 5(4)(b) refers).  
[Delete Note (4) and the table above on the forecast, where inapplicable].
  - \* (4) 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 1.0 tonnes/m<sup>3</sup>
  - (5) Conversion factors for reporting purpose:  
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>  
broken concrete and bitumen = 2.5 tonnes/m<sup>3</sup>  
C&D Waste = 1.0 tonnes/m<sup>3</sup>  
bentonite slurry = 2.8 tonnes/m<sup>3</sup>  
Paper = 800kg/m<sup>3</sup>  
Chemical = 800kg/m<sup>3</sup>  
Special waste = 1.2 tonnes/m<sup>3</sup>

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**APPENDIX J**  
**EVENT ACTION PLANS**

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**APPENDIX J – Event / Action Plans**

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

<b>EVENT</b>	<b>ACTION</b>			
	<b>ET</b>	<b>IEC</b>	<b>ER</b>	<b>CONTRACTOR</b>
<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 K  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

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**APPENDIX K 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	<p>Skip hoist for material transport should be totally enclosed by impervious sheeting.</p> <p>Vehicle washing facilities should be provided at every vehicle exit point.</p> <p>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.</p> <p>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.</p> <p>Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</p> <p>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.</p> <p>Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</p> <p>Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</p> <p>Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.</p> <p>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.</p> <p>Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</p>	All construction sites	<p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>#</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>*</p>
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 the storm culvert or sea.</li> </ul>	All construction sites	^



EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
<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 minimize 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.		^
	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 aluminum 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 minimize 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.		^
	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.		^
	Provision of sufficient waste disposal points and regular collection of waste.		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	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 L  
COMPLAINT LOG**

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**APPENDIX L – COMPLAINT LOG**

Reporting Month: October 2014

**Cumulative complaints received:**

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
CIR#1_121228	DSD's Preliminary Treatment Work (PTW) at Ap Lei Chau	28 <sup>th</sup> December 2012	The residents of South Horizons and Ap Lei Chau Estate complained about the noise generated from our construction site at Ap Lei Chau PTW. The ETL of the Project was informed of the complaint through the e-mail on 31 <sup>st</sup> December 2012 and initiated the complaint investigation procedures. According to the information provided by the Contractor, major construction activities that contributed to the noise at Ap Lei Chau during the time of complaint include: general site works and safety works; maintenance and handling of plants; and drilling works for pipe pile wall.	<p>There was no exceedance report received from Contract DC/2008/09 at noise monitoring stations M9 for Ap Lei Chau PTW in December 2012.</p> <p>Resident site staff also revealed that rock excavation works and other construction activities were being carried out at nearby construction sites on 29 &amp; 31 December 2012.</p> <p>After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below:</p> <ul style="list-style-type: none"> <li>• Adopting a relatively low-noise construction method – small drilling rig to install the pipe piles;</li> <li>• Equipping noise reducing jacket on the small drilling rig.</li> </ul> <p>The Contractor was recommended to continue the following mitigation measures in order to minimize the potential construction noise nuisance to the nearby community:</p> <ul style="list-style-type: none"> <li>• To adopt movable noise barrier;</li> <li>• To use silenced equipment where practicable;</li> <li>• To avoid concurrent uses of noisy equipment near the sensitive area;</li> <li>• To ensure the equipment are maintaining in good operation condition; and</li> <li>• To turned off any idle equipment on site.</li> </ul>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
CIR#2_130809	DSD's Preliminary Treatment Work (PTW) at Wah Fu	9 <sup>th</sup> August 2013	<p>One anonymous complainant complained about the noise generated from Contract DC/2009/24 construction site at Wah Fu PTW. The ETL of the Contract was informed of the complaint through the e-mail on 12<sup>th</sup> August 2013 and initiated the complaint investigation procedures.</p> <p>According to the information provided by the Contractor, major construction activities that contributed to the noise at Wah Fu during the time of complaint include: pipe pile wall construction.</p>	<p>There was no exceedance report received from Contract DC/2007/24 at noise monitoring stations M7a for Wah Fu PTW in August 2013.</p> <p>After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below:</p> <ul style="list-style-type: none"> <li>• Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced);</li> <li>• To install movable noise absorption screen located close to the operating PME/noisy works (noise sources);</li> <li>• To enclose or wrap the breaking tip with sound insulating materials to reduce the noise.</li> </ul> <p>According to the complaint, the Contractor had enhanced the movable noise barrier by increasing the height of the noise barrier and adding the upper sloped section which could further reduce the noise generated from construction works in Wah Fu PTW.</p>	Closed
CIR#3_131119	DSD's Preliminary Treatment Work (PTW) at Wah Fu	19 <sup>th</sup> November 2013	<p>One anonymous complainant complained about the noise generated from Contract DC/2009/24 construction site at Wah Fu PTW. The ETL of the Contract was informed of the complaint through the e-mail on 29<sup>th</sup> November 2013 and initiated the complaint investigation procedures.</p> <p>According to the information provided by the Contractor, major construction activities that contributed to the noise at Wah Fu</p>	<p>There was no exceedance report received from Contract DC/2007/24 at noise monitoring stations M7a for Wah Fu PTW in November 2013.</p> <p>After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below:</p> <ul style="list-style-type: none"> <li>• Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced);</li> <li>• To install the erected noise absorption screen located close to the operating PME/noisy works (noise sources).</li> </ul> <p>According to the site diary, the Contractor had provided the sound insulating materials to enclose and wrap the breaking tip which could further reduce the noise generated from</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			during the time of complaint include: pipe pile wall construction, grout curtain construction and ELS in progress.	construction works in Wah Fu PTW.	

**Remarks:** No environmental complaint was received in October 2014.



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**APPENDIX M**  
**CONSTRUCTION PROGRAMME**

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Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	October 2014					November 2014				December 2014				January 2015			
						22	29	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12
<b>DSD - HATSS2 Upgrading of PTW (DC/2009/24)</b>																						
<b>Particulars</b>																						
<b>Key Dates</b>																						
Commencement / Completion																						
24GEN00020	Time for Completion of Project	0%	1309	31-Aug-11 A	15-Apr-17																	
<b>Portion of the Site (MILESTONE)</b>																						
<b>Sandy Bay PTW</b>																						
Possession / Vacation of Portions																						
24MSBY00025	Vacation Date_SBY-T1 (30 days after H/O of ALC-T2)	0%	0		31-Oct-14	Vacation Date_SBY-T1 (30 days after H/O of ALC-T2), Vacation Date_SBY-T1 (30 days after H/O of ALC-T2)																
<b>Cyberport PTW</b>																						
Possession / Vacation of Portions																						
24MCPT00010	H/O Date_CP-1 (1035 days after start)	0%	0	24-Oct-14		H/O Date_CP-1 (1035 days after start)																
<b>Wah Fu PTW</b>																						
Possession / Vacation of Portions																						
24MWFU00030	H/O Date_WF-2 (914 days after start)	0%	0	24-Oct-14		H/O Date_WF-2 (914 days after start)																
<b>Civil &amp; Geo. Submission</b>																						
<b>Contractor's Design, Submission / Approval &amp; Procurement</b>																						
<b>Technical Information &amp; Drawings</b>																						
<b>Cyberport</b>																						
<b>Major Technical Data / Civil Works Design</b>																						
24DCPT00294	Review / Resubmit of Design for Flume Channels	0%	28	28-Jul-13 A	02-Nov-14	Review / Resubmit of Design for Flume Channels																
24DCPT00295	Approval of Design for Flume Channels	0%	14	03-Nov-14	16-Nov-14	Approval of Design for Flume Channels																
24DCPT00346	Prepare / Submission of Design for permanent concrete plinth for new deodorization unit	0%	30	01-Mar-14 A	25-Oct-14	Prepare / Submission of Design for permanent concrete plinth for new deodorization unit																
24DCPT00347	Review / Approval of ICE Design for permanent concrete plinth for new deodorization unit	0%	14	26-Oct-14	08-Nov-14	Review / Approval of ICE Design for permanent concrete plinth for new deodorization unit																
24DCPT00348	Comments / Approval of Design for permanent concrete plinth for new deodorization unit	0%	14	09-Nov-14	22-Nov-14	Comments / Approval of Design for permanent concrete plinth for new deodorization unit																
24DCPT00349	Review / Resubmit of Design for permanent concrete plinth for new deodorization unit	0%	14	23-Nov-14	06-Dec-14	Review / Resubmit of Design for permanent concrete plinth for new deodorization unit																
24DCPT00350	Approval of Design for permanent concrete plinth for new deodorization unit	0%	7	07-Dec-14	13-Dec-14	Approval of Design for permanent concrete plinth for new deodorization unit																
<b>Method Statement</b>																						
24DCPT02160	Prepare / Submission of Method Statement for Trench, Chambers and Channels	0%	60	23-Feb-14 A	31-Oct-14	Prepare / Submission of Method Statement for Trench, Chambers and Channels																
24DCPT02170	Comments / Approval of Method Statement for Trench, Chambers and Channels	0%	28	24-Oct-14	20-Nov-14	Comments / Approval of Method Statement for Trench, Chambers and Channels																
24DCPT02180	Review / Resubmit of Method Statement for Trench, Chambers and Channels	0%	14	21-Nov-14	04-Dec-14	Review / Resubmit of Method Statement for Trench, Chambers and Channels																
24DCPT02190	Approval of Method Statement for Trench, Chambers and Channels	0%	14	05-Dec-14	18-Dec-14	Approval of Method Statement for Trench, Chambers and Channels																
<b>Order / Manufacturing / Shipment / Delivery</b>																						
24DCPT02370	Delivery of 700Ø DI Pipe, valves and accessories	0%	21	13-Jun-14 A	02-Nov-14	Delivery of 700Ø DI Pipe, valves and accessories																
<b>Wah Fu</b>																						
<b>Major Technical Data / Civil Works Design</b>																						
24DWFU00190	Approval of RC Design (Fine Screen & Grit Trap Building)	50%	14	18-Jul-12 A	30-Oct-14	Approval of RC Design (Fine Screen & Grit Trap Building)																
24DWFU00200	Prepare / Submission of Design for Finishing Works (Fine Screen & Grit Trap Building)	0%	40	01-Jun-14 A	05-Nov-14	Prepare / Submission of Design for Finishing Works (Fine Screen & Grit Trap Building)																
24DWFU00210	Review / Approval of ICE for Design of Finishing Works (Fine Screen & Grit Trap Building)	0%	20	06-Nov-14	25-Nov-14	Review / Approval of ICE for Design of Finishing Works (Fine Screen & Grit Trap Building)																
24DWFU00220	Comments / Approval of Design for Finishing Works (Fine Screen & Grit Trap Building)	0%	28	26-Nov-14	23-Dec-14	Comments / Approval of Design for Finishing Works (Fine Screen & Grit Trap Building)																
24DWFU00230	Review / Resubmit of Design for Finishing Works (Fine Screen & Grit Trap Building)	0%	28	24-Dec-14	20-Jan-15	Review / Resubmit of Design for Finishing Works (Fine Screen & Grit Trap Building)																

Start Date: 25-Jun-11  
 Finish Date: 15-Apr-18  
 Date Date: 23-Oct-14  
 Run Date: 04-Nov-14

- Primary Baseline
- Actual Work
- Critical Remaining Work
- ◆ Baseline Milestone
- Current Bar Labels
- ◆ Milestone

HATSS2A Contract No. DC/2009/24

**3 MONTHS ROLLING PROGRAMME**

**OCTOBER 2014**

DETAILED WORKS PROGRAMME - DC/2009/24			
Date	Revision	Checked	Approved
30-Mar-12	DWP - REVISION 0		
14-Dec-12	DWP - REVISION 2		
17-Jun-14	DWP - REVISION 3 (S5, 6 & 7)		
23-Oct-14	UDWP - REVISION 3		





Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	October 2014					November 2014					December 2014					January 2015				
						22	29	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	
24PCPT01070	Manufacturing of Stoplog	100%	140	26-Jan-14 A	22-Nov-14																				
24PCPT01080	Packaging / Delivery of Stoplog	0%	30	23-Nov-14	22-Dec-14																				
24PCPT01100	Manufacturing of Deodorization System	100%	160	11-Mar-13 A	09-Oct-14 A																				
24PCPT01105	FAT of Deodorization System	0%	30	10-Oct-14 A	29-Oct-14																				
24PCPT01110	Packaging / Delivery of Deodorization System	0%	30	30-Oct-14	28-Nov-14																				
24PCPT01130	Manufacturing of Control Panel	0%	100	24-Aug-14 A	04-Feb-15																				
24PCPT01245	Manufacturing of Miscellaneous E&M Items	60%	90	08-Mar-14 A	25-Nov-14																				
24PCPT01246	Packaging / Delivery of Miscellaneous E&M Items	0%	30	26-Nov-14	25-Dec-14																				
<b>Wah Fu</b>																									
<b>Major Technical Data / E&amp;M Works Design</b>																									
24DWFU04080	Prepare / Submit to ICE the Electrical Protection Equipment Calculation	0%	20	24-Oct-14	12-Nov-14																				
24DWFU04090	Review / Approval of ICE and Submitted to Client the Electrical Protection Equipment Calculation	0%	12	13-Nov-14	24-Nov-14																				
24DWFU04100	Comments / Approval of Electrical Protection Equipment Calculation	0%	28	25-Nov-14	22-Dec-14																				
24DWFU04110	Review / Resubmit of Electrical Protection Equipment Calculation	0%	15	23-Dec-14	06-Jan-15																				
24DWFU04120	Approval of Electrical Protection Equipment Calculation	0%	15	07-Jan-15	21-Jan-15																				
24DWFU04160	Review / Resubmit of Control Philosophy	100%	15	08-Feb-12 A	23-Sep-14 A																				
24DWFU04170	Approval of Control Philosophy	0%	15	08-May-12 A	30-Oct-14																				
24DWFU04180	Prepare / Submit to ICE the DCS Detail Design	100%	20	19-Sep-14 A	08-Oct-14 A																				
24DWFU04190	Review / Approval of ICE and Submitted to Client the DCS Detail Design	100%	12	27-Sep-14 A	08-Oct-14 A																				
24DWFU04200	Comments / Approval of DCS Detail Design	0%	28	09-Oct-14 A	27-Nov-14																				
24DWFU04210	Review / Resubmit of DCS Detail Design	0%	15	28-Nov-14	12-Dec-14																				
24DWFU04220	Approval of DCS Detail Design	0%	15	13-Dec-14	27-Dec-14																				
24DWFU04228	Review / Resubmit of Design Drawing for New MCC (Switchboard)	100%	15	22-Sep-12 A	24-Oct-14																				
24DWFU04229	Approval of Design Drawing for New MCC (Switchboard)	0%	15	12-Dec-12 A	30-Oct-14																				
<b>Equipment Submission/Approval</b>																									
24DWFU03822	Comments / Approval of Miscellaneous E&M Items	100%	30	11-Sep-14 A	10-Oct-14 A																				
24DWFU03823	Review / Resubmit of Miscellaneous E&M Items	100%	10	11-Oct-14 A	20-Oct-14 A																				
24DWFU03824	Approval of Miscellaneous E&M Items	0%	10	21-Oct-14 A	09-Nov-14																				
<b>Order / Manufacturing / Shipment / Delivery</b>																									
24PWFU01190	Manufacturing of Coarse Screen	100%	145	08-May-13 A	30-Sep-14 A																				
24PWFU01200	Packaging / Delivery of Coarse Screen	0%	30	01-Oct-14 A	29-Nov-14																				
24PWFU01225	FAT of Fine Screen	100%	90	03-Jul-14 A	30-Sep-14 A																				
24PWFU01230	Packaging / Delivery of Fine Screen	0%	30	01-Oct-14 A	29-Nov-14																				
24PWFU01232	Manufacturing of Fine Screen Conveyor	0%	145	13-Jun-14 A	01-Feb-15																				
24PWFU01280	Manufacturing of Grit Removal Facilities	100%	175	22-Jul-13 A	30-Sep-14 A																				
24PWFU01290	Packaging / Delivery of Grit Removal Facilities	0%	30	01-Oct-14 A	29-Nov-14																				
24PWFU01340	Manufacturing of Penstock	100%	140	13-May-14 A	29-Sep-14 A																				
24PWFU01350	Packaging / Delivery of Penstock	0%	30	30-Sep-14 A	22-Nov-14																				
24PWFU01370	Manufacturing of Stoplog	0%	140	13-Jun-14 A	27-Jan-15																				
24PWFU01405	FAT of Deodorization System	100%	90	23-Jun-14 A	30-Sep-14 A																				
24PWFU01410	Packaging / Delivery of Deodorization System	0%	30	01-Oct-14 A	22-Nov-14																				
24PWFU01430	Manufacturing of MCC (Switchboard) Panel	0%	190	21-Jun-13 A	15-Nov-14																				
24PWFU01440	FAT for MCC (Switchboard) Panel	0%	10	16-Nov-14	25-Nov-14																				
24PWFU01450	Packaging / Delivery of MCC (Switchboard) Panel	0%	30	26-Nov-14	25-Dec-14																				
24PWFU01460	Placing of Order on Control Panel	0%	10	24-Oct-14*	02-Nov-14																				
24PWFU01470	Manufacturing of Control Panel	0%	50	03-Nov-14	22-Dec-14																				













Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	October 2014					November 2014				December 2014				January 2015				
						22	29	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19
24WFO03564	Cable tray installation for grit and screenings handling area	0%	14	20-Jan-15	04-Feb-15																		
24WFO03570	Cable tray installation for lighting	0%	21	20-Jan-15	12-Feb-15																		
24WFO03587	Cable tray installation for activated carbon filter	0%	5	20-Jan-15	24-Jan-15																		
<b>HVAC System (Deodorization / Air Conditioning / Ventilation)</b>																							
24WFO02706	Installation of new deodorization system	0%	20	20-Jan-15	11-Feb-15																		
<b>Control and Monitoring Services incl. Instrumentation</b>																							
24WFO02812	Cable tray installation for monitoring and control system	0%	14	20-Jan-15	04-Feb-15																		
<b>Fire Protection / Detection System</b>																							
24WFO02862	Fire services cable tray installation at generator room	0%	3	20-Jan-15	22-Jan-15																		
<b>Plumbing Services</b>																							
24WFO03890	Installation of FRP water tank	0%	14	27-Dec-14	13-Jan-15																		
24WFO03900	Installation of water booster pump	0%	14	14-Jan-15	29-Jan-15																		
<b>Flume Channels, Chambers and Manhole incl. U/G Utility Works</b>																							
<b>U/G Utility Works</b>																							
24WFO02300A10	Installation of 225 U channel sewerage around FS & GT bldg.	0%	30	20-Jan-15	26-Feb-15																		
<b>Completion of Works in Section 4</b>																							
<b>Submission of Manuals</b>																							
24WFO4060	Preparation / Submission of draft O&M manual	0%	90	20-Jan-15	19-Apr-15																		
<b>Aberdeen PTW</b>																							
<b>Key Dates</b>																							
<b>Time of Completion</b>																							
24ABN00300	Time for Completion of Section 5	0%	1179	31-Aug-11 A	27-Feb-16																		
24ABN00300A	Completion of Works at Section 5 as per contract	0%	0		21-Nov-14*																		
24ABN00300B	Extension of Time Order No.1 - Claim No. PTN/001 - 001 and 002 (Inclement Weather from April to May 2012)	0%	5	22-Nov-14	26-Nov-14																		
24ABN00300C	Extension of Time Order No.2 - Claim No. PTN/001 - 003 and 004 (Inclement Weather from June to July 2012)	0%	9	27-Nov-14	05-Dec-14																		
24ABN00300D	Extension of Time Order No.3 - Claim No. PTN/001 - 005, 006 and 007 (Inclement Weather from August to October 2012)	0%	1	05-Dec-14	05-Dec-14																		
24ABN00300E	Extension of Time Order No.4 - Claim No. PTN/001 - 008 and 009 (Inclement Weather from November to December 2012)	0%	4	06-Dec-14	09-Dec-14																		
24ABN00300F	Extension of Time Order No. 5 - Claim Nos. PTS/001 - 010 and 011 (Inclement Weather in March 2013 and April 2013)	0%	3	10-Dec-14	12-Dec-14																		
24ABN00300G	Extension of Time Order No. 6 - Claim Nos PTS/001 - 012 and 013 (Inclement Weather from May to July 2013)	0%	22	12-Dec-14	02-Jan-15																		
24ABN00300H	EOT No. 7 - Claim Nos PTS/001-014 and 013 (Inclement Weather from Aug 2013) and Reassessment (Apr-Jul13)	0%	8	03-Jan-15	10-Jan-15																		
24ABN00300I	Extension of Time Order No. 8 - Claim No. PTS/001 - 015 (Inclement Weather in September 2013)	0%	5	10-Jan-15	15-Jan-15																		
24ABN00301	Revised Completion Date for Section 5 with EoT awarded	0%	0		15-Jan-15																		
24ABN00302	Claim for Additional Extension of Time - under review	0%	409	15-Jan-15	27-Feb-16																		
24ABN00310	Time for Completion of Section 6	0%	1309	31-Aug-11 A	01-Apr-17																		
<b>Interface and Liaison</b>																							
<b>Interface with ST2/DSD</b>																							
24MABN00190	Coordinate with DSD/ST2 regarding design requirement for Temp. Office at ABN	0%	60	24-May-14 A	22-Dec-14																		
<b>Works for Section 5</b>																							
<b>FS &amp; GT Bldg - Fine Screen and Inlet Chamber (Stage 1)</b>																							
<b>Civil Works</b>																							
<b>Temporary Works / Demolition Works</b>																							
24ABN00710A21A	Foundation and Base slab for the temp. office for DSD/ST2	0%	6	05-Jan-15	10-Jan-15																		
24ABN00710A21B	Installation of Structure (incl. enclosure)	0%	12	12-Jan-15	24-Jan-15																		
<b>FS &amp; GT Bldg - Grit Trap No. 1 and FC-1 Chamber (Stage 2)</b>																							
<b>Civil Works</b>																							
<b>RC Structural Works for Grit Trap No. 1</b>																							

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	October 2014					November 2014					December 2014					January 2015				
						22	29	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	
24ABN00775B90	Formworks for top slab of grit trap no. 1 and chambers	0%	18	13-Sep-14 A	15-Nov-14	Formworks for top slab of grit trap no. 1 and chambers																			
24ABN00775C10	Rebarworks for top slab of grit trap no. 1 and chambers	0%	18	14-Oct-14 A	06-Dec-14	Rebarworks for top slab of grit trap no. 1 and chambers																			
24ABN00775C20	Concrete for top slab of grit trap no. 1 and chambers	0%	1	08-Dec-14	08-Dec-14	Concrete for top slab of grit trap no. 1 and chambers																			
<b>RC Works for FC-1 Chamber</b>																									
24ABN00745A45	Installation of 1800Ø pipe from FC-1 to FC-2	20%	30	14-Jul-14 A	27-Nov-14	Installation of 1800Ø pipe from FC-1 to FC-2																			
24ABN00745A47	Installation of permanent 1800Ø dia pipe from FC-1 to FC-3	0%	15	28-Nov-14	15-Dec-14	Installation of permanent 1800Ø dia pipe from FC-1 to FC-3																			
24ABN00745A60	Rebarworks for wall of chamber FC-1	100%	15	14-Jul-14 A	10-Oct-14 A	Rebarworks for wall of chamber FC-1																			
24ABN00745A70	Concrete for wall of chamber FC-1	100%	6	11-Oct-14 A	11-Oct-14 A	Concrete for wall of chamber FC-1																			
24ABN00745C42	Modification of works on FC-3 chamber (connection of 1800Ø pipe)	0%	30	16-Dec-14	22-Jan-15	Modification																			
<b>Electrical and Mechanical Works</b>																									
<b>Mechanical Works</b>																									
24ABN03370	Installation of stoplog no. 3 (fine screen outlet chamber)	0%	10	09-Dec-14	19-Dec-14	Installation of stoplog no. 3 (fine screen outlet chamber)																			
24ABN03400	Installation of penstock no. 15 (grit trap no. 1 outlet)	0%	10	20-Dec-14	03-Jan-15	Installation of penstock no. 15 (grit trap no. 1 outlet)																			
24ABN03420	Installation of penstock no. 17 (flow chamber outlet)	0%	10	05-Jan-15	15-Jan-15	Installation of penstock no.																			
24ABN03690	Installation of penstock no. 10 (flow distribution chamber inlet near grit trap no. 1)	0%	12	16-Jan-15	29-Jan-15	Installation of penstock no. 10 (flow distribution chamber inlet near grit trap no. 1)																			
24ABN03720	Installation of grit trap no. 1	0%	30	09-Dec-14	15-Jan-15	Installation of grit trap no. 1																			
24ABN03730	Installation of grit classifier no. 1	0%	7	16-Jan-15	23-Jan-15	Installation																			
24ABN03851	Installation of penstock no. 17 (flow chamber outlet)	0%	15	21-Nov-14	08-Dec-14	Installation of penstock no. 17 (flow chamber outlet)																			
<b>Electrical Works</b>																									
24ABN03478	Replacement / upgrading of motor starter and panel cover in existing switchboard (grit trap 1 & classifier 1)	0%	6	09-Dec-14	15-Dec-14	Replacement / upgrading of motor starter and panel cover in existing switchboard (grit trap 1 & classifier 1)																			
24ABN03479	Replacement / upgrading the power, control & indication circuitry in existing switchboard (for penstock)	0%	9	16-Dec-14	27-Dec-14	Replacement / upgrading the power, control & indication circuitry in e																			
24ABN03480	Removal of existing aged cables	0%	7	29-Dec-14	06-Jan-15	Removal of existing aged cables																			
24ABN03481	Installation of additional cable tray	0%	14	29-Dec-14	14-Jan-15	Installation of additional cable																			
24ABN03482	Cable laying for the new grit trap no. 1 and penstock	0%	12	07-Jan-15	20-Jan-15	Cable laying for t																			
24ABN03483	Megger test in cables for the new grit trap no. 1 and penstocks	0%	12	21-Jan-15	03-Feb-15	Megger test in cables for the new grit trap no. 1 and penstocks																			
<b>FS &amp; GT Bldg - Flume Channels and Chambers (Stage 4)</b>																									
<b>Interface between Civil / ABWF / E&amp;M Works</b>																									
24MABN00310	Completion of flume channel wall in preparation for the installation of stoplog and penstock (stage 2)	0%	0		23-Oct-14	Completion of flume channel wall in preparation for the installation of stoplog and penstock (stage 2)																			
24MABN00320	Completion of E&M works at flume channel and chambers (stage 2)	0%	0		21-Jan-15	Completion of																			
<b>Civil Works</b>																									
<b>RC Works for FC-2 Chamber</b>																									
24ABN02270A30	Formworks for base slab of FC-2 chamber	0%	4	24-Oct-14	28-Oct-14	Formworks for base slab of FC-2 chamber																			
24ABN02270A40	Rebarworks for base slab of FC-2 chamber	0%	6	29-Oct-14	04-Nov-14	Rebarworks for base slab of FC-2 chamber																			
24ABN02270A50	Concrete for base slab of FC-2 chamber	0%	1	05-Nov-14	05-Nov-14	Concrete for base slab of FC-2 chamber																			
24ABN02270A55	Installation of 1800Ø pipe from FC-2 to FC-1 including connections	0%	15	06-Nov-14	22-Nov-14	Installation of 1800Ø pipe from FC-2 to FC-1 including connections																			
24ABN02270A60	Formworks for wall of FC-2 chamber	0%	9	24-Nov-14	03-Dec-14	Formworks for wall of FC-2 chamber																			
24ABN02270A70	Rebarworks for wall of FC-2 chamber	0%	4	04-Dec-14	08-Dec-14	Rebarworks for wall of FC-2 chamber																			
24ABN02270A80	Concrete for wall of FC-2 chamber	0%	1	09-Dec-14	09-Dec-14	Concrete for wall of FC-2 chamber																			
24ABN02270A90	Installation of air tight multi-part cover	0%	4	10-Dec-14	13-Dec-14	Installation of air tight multi-part cover																			
<b>RC Works for Flume Channel (1st stage)</b>																									
24ABN02260B10	Concrete for top slab of flume channels	100%	1	23-Sep-14 A	23-Sep-14 A	Concrete for top slab of flume channels																			
24ABN02260B20	Waterproofing on flume channels	0%	3	24-Oct-14	27-Oct-14	Waterproofing on flume channels																			
24ABN02260B30	Backfilling works on flume channels	0%	3	28-Oct-14	30-Oct-14	Backfilling works on flume channels																			
<b>RC Works for Flume Channel (2nd stage)</b>																									
24ABN02260C30	Concrete for base slab of flume channels	100%	1	23-Sep-14 A	23-Sep-14 A	Concrete for base slab of flume channels																			
24ABN02260C40	Formworks for wall of flume channels	0%	8	24-Oct-14	01-Nov-14	Formworks for wall of flume channels																			





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						22	29	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	
<b>Remaining Half of Initial Treatment Facilities</b>																									
24ALC00730C10	Pipe pile walls installation including grouting works	100%	60	02-Jul-14 A	30-Sep-14 A	Pipe pile walls installation including grouting works																			
24ALC00730C11	Excavation for initial treatment plant GL 6-7 / G-J	0%	20	15-Sep-14 A	12-Nov-14	Excavation for initial treatment plant GL 6-7 / G-J																			
24ALC00730C12	Formworks for pile cap of wet well at GL 6-7 / G-J	0%	12	13-Nov-14	26-Nov-14	Formworks for pile cap of wet well at GL 6-7 / G-J																			
24ALC00730C13	Rebarworks for pile cap of wet well at GL 6-7 / G-J	0%	12	20-Nov-14	03-Dec-14	Rebarworks for pile cap of wet well at GL 6-7 / G-J																			
24ALC00730C14	Concrete for pile cap of wet well at GL 6-7 / G-J	0%	1	04-Dec-14	04-Dec-14	Concrete for pile cap of wet well at GL 6-7 / G-J																			
24ALC00730C15	Formworks for U/G wall of wet well at GL between 6-7 / G-J	0%	21	05-Dec-14	31-Dec-14	Formworks for U/G wall of wet well at GL between 6-7 / G-J																			
24ALC00730C16	Rebarworks for U/G wall of wet well at GL between 6-7 / G-J	0%	18	12-Dec-14	05-Jan-15	Rebarworks for U/G wall of wet well at GL between 6-7 / G-J																			
24ALC00730C17	Concrete for U/G wall of wet well at GL between 6-7 / G-J	0%	1	06-Jan-15	06-Jan-15	Concrete for U/G wall of wet well at GL between 6-7 / G-J																			
<b>RC Structural Works</b>																									
<b>1st Half of Initial Treatment Facilities</b>																									
24ALC00740A10	Formworks for column of grit trap and fine screen area at GL 1-4 / G-J	0%	11	04-Aug-14 A	05-Nov-14	Formworks for column of grit trap and fine screen area at GL 1-4 / G-J																			
24ALC00740A20	Rebarworks for column of grit trap and fine screen area at GL 1-4 / G-J	0%	6	11-Aug-14 A	05-Nov-14	Rebarworks for column of grit trap and fine screen area at GL 1-4 / G-J																			
24ALC00740A30	Concrete for column of grit trap and fine screen area at GL 1-4 / G-J	0%	2	06-Nov-14	07-Nov-14	Concrete for column of grit trap and fine screen area at GL 1-4 / G-J																			
24ALC00740A40	Formworks for floor beam and slab of screening compactor area at GL 1-4 / G-J elev. 6.15	0%	14	08-Nov-14	24-Nov-14	Formworks for floor beam and slab of screening compactor area at GL 1-4 / G-J elev. 6.15																			
24ALC00740A50	Rebarworks for floor beam and slab of screening compactor area at GL 1-4 / G-J elev. 6.15	0%	7	17-Nov-14	24-Nov-14	Rebarworks for floor beam and slab of screening compactor area at GL 1-4 / G-J elev. 6.15																			
24ALC00740A60	Concrete for floor beam and slab of screening compactor area at GL 1-4 / G-J elev. 6.15	0%	2	21-Nov-14	22-Nov-14	Concrete for floor beam and slab of screening compactor area at GL 1-4 / G-J elev. 6.15																			
24ALC00740A70	Formworks for wall at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / G-J	0%	24	04-Aug-14 A	20-Nov-14	Formworks for wall at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / G-J																			
24ALC00740A80	Rebarworks for wall at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / G-J	0%	10	11-Aug-14 A	20-Nov-14	Rebarworks for wall at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / G-J																			
24ALC00740A90	Concrete for wall at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / G-J	0%	2	21-Nov-14	22-Nov-14	Concrete for wall at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / G-J																			
24ALC00740B10	Formworks for roof beam and slab of grit trap and fine screen area at GL 1-4 / G-J elev. 13.65	0%	24	24-Nov-14	20-Dec-14	Formworks for roof beam and slab of grit trap and fine screen area at GL 1-4 / G-J elev. 13.65																			
24ALC00740B20	Rebarworks for roof beam and slab of grit trap and fine screen area at GL 1-4 / G-J elev. 13.65	0%	8	12-Dec-14	20-Dec-14	Rebarworks for roof beam and slab of grit trap and fine screen area at GL 1-4 / G-J elev. 13.65																			
24ALC00740B30	Concrete for roof beam and slab of grit trap and fine screen area at GL 1-4 / G-J elev. 13.65	0%	6	22-Dec-14	30-Dec-14	Concrete for roof beam and slab of grit trap and fine screen area at GL 1-4 / G-J elev. 13.65																			
<b>Remaining Half of Initial Treatment Facilities</b>																									
24ALC00740C10	Formworks for column & wall at GL 4-7/G-J	0%	12	07-Jan-15	20-Jan-15	Formworks for column & wall at GL 4-7/G-J																			
24ALC00740C11	Rebarworks for column & wall at GL 4-7/G-J	0%	12	21-Jan-15	03-Feb-15	Rebarworks for column & wall at GL 4-7/G-J																			
<b>Permanent Flume Channels</b>																									
24ALC00852A20	Backfilling works up to level for base slab of flume channel	0%	8	07-Jan-15	15-Jan-15	Backfilling works up to level																			
<b>Modification of Outfall Chamber</b>																									
24ALC00900	Diverted the flow from Fine Screen Building to LHS of measuring flume channel	0%	2	24-Oct-14	25-Oct-14	Diverted the flow from Fine Screen Building to LHS of measuring flume channel																			
24ALC00901	Fabricate steel tank with Ø800 mm steel pipe	0%	12	07-Nov-14	20-Nov-14	Fabricate steel tank with Ø800 mm steel pipe																			
24ALC00902	Install the steel tank with Ø800mm steel pipe into RHS measuring flume channel and Ø900mm submarine outfall	0%	4	21-Nov-14	25-Nov-14	Install the steel tank with Ø800mm steel pipe into RHS measuring flume channel and Ø900mm submarine outfall																			
24ALC00903	Seal up between Ø800mm pipe and Ø900mm pipe measuring flume channel and steel tank	0%	2	26-Nov-14	27-Nov-14	Seal up between Ø800mm pipe and Ø900mm pipe measuring flume channel and steel tank																			
24ALC00904	Driving sheet pile for the existing terminal manhole	0%	6	26-Nov-14	02-Dec-14	Driving sheet pile for the existing terminal manhole																			
24ALC00905	Demolition and excavation for the terminal manhole by saw cutting method up to 500mm underneath 1st layer waling	0%	4	03-Dec-14	06-Dec-14	Demolition and excavation for the terminal manhole by saw cutting method up to 500mm underneath 1st layer waling																			
24ALC00906	Installation of 1st layer waling & strutting	0%	6	08-Dec-14	13-Dec-14	Installation of 1st layer waling & strutting																			
24ALC00907	Demolition and excavation for the terminal manhole by saw cutting method up to 500mm underneath 2nd layer waling	0%	4	15-Dec-14	18-Dec-14	Demolition and excavation for the terminal manhole by saw cutting method up to 500mm underneath 2nd layer waling																			
24ALC00908	Installation of 2nd layer waling & strutting	0%	6	19-Dec-14	27-Dec-14	Installation of 2nd layer waling & strutting																			
24ALC00909	Demolition and excavation for the terminal manhole by saw cutting method up to formation level	0%	4	29-Dec-14	02-Jan-15	Demolition and excavation for the terminal manhole by saw cutting method up to formation level																			
24ALC00910	Laying blind layer	0%	1	03-Jan-15	03-Jan-15	Laying blind layer																			
24ALC00911	Construct base slab and wall of new manhole up to 2nd layer waling	0%	6	05-Jan-15	10-Jan-15	Construct base slab and wall of new manhole up to 2nd layer waling																			
24ALC00912	Backfill around manhole up to 2nd layer waling	0%	1	12-Jan-15	12-Jan-15	Backfill around manhole up to 2nd layer waling																			
24ALC00913	Remove 2nd layer waling and strut	0%	1	13-Jan-15	13-Jan-15	Remove 2nd layer waling and strut																			
24ALC00914	Construct wall up to 1st layer waling of new manhole	0%	6	14-Jan-15	20-Jan-15	Construct wall up to 1st layer waling of new manhole																			
24ALC00915	Backfill and remove waling for 1st layer	0%	1	21-Jan-15	21-Jan-15	Backfill and remove waling for 1st layer																			
<b>Finishing Works (Internal and External)</b>																									

