

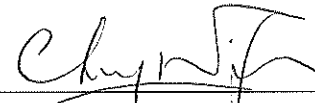
Leader and JEC Joint Venture

**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
March 2015**

(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

CINOTECH CONSULTANTS LTD

Room 1710, Technology Park,
18 On Lai Street,

Shatin, NT, Hong Kong

Tel: (852) 2151 2083 Fax: (852) 3107 1388

Email: info@cinotech.com.hk



Our ref SFB/AFK/TK/bw/T261332/22.01/L-0898
T 2828 5757
E Anne.Kerr@mottmac.com.hk
Your ref -

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

20 April 2015
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 March 2015 (no. 39)

I refer to the revised Monthly EM&A Report for March 2015 (version 1.0) submitted by ET on 20 April 2015 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
Mr. Kelvin Cheung / Mr. Patrick Wong
Dr. Priscilla Choy

Fax: 2370 4377
By email
By email

TATABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	1
Introduction.....	1
Environmental Monitoring Works.....	1
Air Quality and Noise.....	1
Environmental Licenses and Permits.....	2
Environmental Mitigation Implementation Schedule.....	2
Key Information in the Reporting Month.....	3
Summary of Complaints and Prosecutions.....	3
Future Key Issues:	3
1. INTRODUCTION.....	5
Background.....	5
Project Organizations.....	5
Construction Programme.....	6
Summary of EM&A Requirements	6
2. AIR QUALITY.....	7
Monitoring Requirements.....	7
Monitoring Locations	7
Monitoring Equipment.....	7
Monitoring Parameters, Frequency and Duration.....	7
Monitoring Methodology and QA/QC Procedure	8
Monitoring Methodology and QA/QC Procedure	8
Results and Observations.....	10
3 NOISE	11
Monitoring Requirements.....	11
Monitoring Locations	11
Monitoring Equipment.....	11
Monitoring Parameters, Frequency and Duration.....	11
Monitoring Methodology and QA/QC Procedures.....	12
Maintenance and Calibration.....	12
Results and Observations.....	13
4 ENVIRONMENTAL AUDIT.....	14
Site Audits	14
Review of Environmental Monitoring Procedures	14
Status of Environmental Licensing and Permitting	14
Status of Waste Management	15
Implementation Status of Event Action Plans	16
Summary of Complaints and Prosecutions.....	16
5. FUTURE KEY ISSUES.....	17
Key Issues for the Coming Month.....	17
Monitoring Schedule for the Next Month.....	17
Construction Program for the Next Month.....	17
6. CONCLUSIONS AND RECOMMENDATIONS.....	18
Conclusions.....	18
Recommendations.....	18

LIST OF TABLES

Table I	Summary Table for Non-compliance Recorded in the Reporting Month
Table II	Summary Table for Key Information in the Reporting Month
Table 1.1	Key Project Contacts
Table 2.1	Locations for Air Quality Monitoring
Table 2.2	Air Quality Monitoring Equipment
Table 2.3	Impact Dust Monitoring Parameters, Frequency and Duration
Table 2.4	Summary of 1-hour and 24-hour TSP Monitoring Result in Reporting Month
Table 3.1	Locations for Noise Monitoring Stations
Table 3.2	Noise Monitoring Equipment
Table 3.3	Noise Monitoring Parameters, Frequency and Duration
Table 3.4	Summary the Noise Monitoring Results in Reporting Month
Table 4.1	Summary of Environmental Licensing and Permit Status
Table 4.2	Observations and Recommendations of Site Audit

LIST OF FIGURES

Figure 1	General Location Plan of the Project and Locations of Air Quality and Noise Monitoring Stations
Figure 2	ET Organization Chart

LIST OF APPENDICES

A	Action and Limit Levels for Air Quality and Noise
B	Copies of Calibration Certificates
C	Environmental Monitoring Schedule
D	Meteorological Data on monitoring dates
E	Air Quality Monitoring Results and Graphical Presentations
F	Noise Monitoring Results and Graphical Presentations
G	Summary of Exceedance
H	Site Audit Summary
I	Summary of Amount of Waste Generated
J	Event Action Plans
K	Environmental Mitigation Implementation Schedule (EMIS)
L	Complaint Log
M	Construction Programme

ABBREVIATION AND ACRONYM

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

EXECUTIVE SUMMARY

Introduction

1. This is the 39th 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 March 2015.
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, Construction of dry/wet well;
 - Aberdeen PTW – Plant operation, Construction for the FSGT structure, Flume channel and chamber construction;
 - Sandy Bay PTW – Odour pipe/drawpit/ducting construction, Construction of staircase; and
 - Cyberport PTW– Installation of fine screen, Installation of DO unit, Chamber construction.

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. 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	1	Dark smoke emission	After complaint received, the Contractor has taken initiative to prevent dark smoke emission to the nearby residents by implementation of mitigation measures, which includes removing the sheet piling machine that had generated the dark smoke emission on 31 st March 2015; and properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced).	The situation to be kept in view.	---
Status of submissions under EP	1	Environmental Monitoring and Audit Monthly Report – February 2015	Submitted to EPD on 11 March 2015	No comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

14. There was no environmental prosecution or notification of summons received, however, there was one complaint received from Environmental Protection Department in the reporting month. And three complaints were already received since the Project commencement. The Complaint Log is presented in **Appendix L**.

Future Key Issues:

15. Major site activities for the coming two months include:
- Wah Fu PTW: FSGT structure construction, Plant operation, Chamber construction;
 - Aberdeen PTW: Construction of FSGT structure, E&M equipment installation, Plant operation, Chamber, seawater pipe and rising main no.2 construction;
 - Ap Lei Chau PTW: Plant operation, Construction of FSGT structure & tie in pit pipe laying;
 - Sandy Bay PTW: Staircase construction, Odour pipe construction; and
 - Cyberport PTW: Installation of DO unit, Pipeline & chamber construction.

16. 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 9th 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 39th monthly EM&A report summarizing the EM&A works conducted for the Project in March 2015.

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. Vincent Y.K. Wong	Senior Engineer 2	2159 3406
Ove Arup & Partners Hong Kong Ltd	Engineer’s Representative	Mr. Ted Tang	Principal Resident Engineer	2370-4311
	Coordinator	Ms. Natalie Kwok	Resident Engineer	6794 8844
Cinotech	Environmental	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, Construction of dry/wet well;
- Aberdeen PTW – Plant operation, Construction for the FSGT structure, Flume channel and chamber construction;
- Sandy Bay PTW – Odour pipe/drawpit/ducting construction, Construction of staircase; and
- Cyberport PTW– Installation of fine screen, Installation of DO unit, Chamber construction.

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 March 2015. 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 ⁽¹⁾	DC/2009/24	The Arcade, Cyberport
CM_WF1a ⁽¹⁾		Wah Ming House, Wah Fu Estate
CM_AB1b ⁽²⁾		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: Relocation of the air quality monitoring station was verified by IEC on 23 October 2014 and approved by EPD on 5 December 2014.

Monitoring Equipment

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

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
HVS Samplers	GMWS 2310 HVS, Model GS-2310-105	2
	Tisch Environmental, Inc.; Model no. TE-5170	1
Laser Dust Meter	Sibata; Model no. LD-3B	4
Calibrator	Tisch Environmental, Inc.; Model no. TE-5025A	1

Monitoring Parameters, Frequency and Duration

- 2.4 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedules could be found in Appendix G in the monthly report for the Contract DC/2007/24.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedure

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

Monitoring Methodology and QA/QC Procedure

1-hour TSP Monitoring

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 SENSL.ADJ and press it
- Push Start/Stop switch once
- Return the knob to the position MEASURE slowly
- Push the timer set switch to set measuring time
- Remove the cap and make a measurement

Maintenance/Calibration

2.7 The following maintenance/calibration was required for the direct dust meters:

- Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

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

Operating/Analytical Procedures

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

- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The sampler was more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- 2.10 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/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 2.4** summarizes the monitoring results at CM_CB1a, CM_WF1a and CM_AB1b in the reporting month.

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

Air Quality Monitoring Station	Average $\mu\text{g}/\text{m}^3$	Range $\mu\text{g}/\text{m}^3$	Action Level $\mu\text{g}/\text{m}^3$	Limit Level $\mu\text{g}/\text{m}^3$
1 hour TSP				
CM_CB1a	151	108-210	280	500
CM_WF1a	152	106-218	285	
CM_AB1b	160	104-253	283	
24 hours TSP				
CM_CB1a	65	38-95	178	260
CM_WF1a	53	42-68	185	
CM_AB1b	112	60-143	174	

- 2.22 The detailed monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results could be referred to **Appendix E**.
- 2.23 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**.
- 2.24 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**.
- 2.25 The identified dust sources at the monitoring stations were mainly from operation of mobile crane, hand held breaker, road traffic, sea traffic.

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 ⁽¹⁾ (Cyberport PTW)	DC/2009/24	Aegean Terrace
M7a ⁽¹⁾ (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 Integrating Sound Level Meter was used for noise monitoring. The meter is a Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) and also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.2** summarizes the noise monitoring equipment being used. Copies of the calibration certificates for the sound level meter and calibrator are attached in **Appendix B**. The details of the equipment used in the impact noise monitoring programme of M5 could be referred to Section 4.2 of the monthly report of Contact No. DC/2007/24.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVAN 955	1
	SVAN 957	3
Calibrator	SV30A	3
	B&K 4231	1

Monitoring Parameters, Frequency and Duration

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

Monitoring Stations	Parameter	Period	Frequency
M5 M6a M7a M8 M9	$L_{eq}(30 \text{ min.})$ 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 3.4** summarizes the monitoring results at M5, M6a, M7a, M8 and M9 in reporting month.

Table 3.4 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 min.)	Limit Level, dB(A) L _{eq} (30 min.)
M5	61-69	75.0
M6a	41-56 ⁽¹⁾	
M7a	56-65	
M8	62-68	
M9	51-58	

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 hand held breaker, excavator, lifting, excavating, polishing, 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 6, 13, 20 and 27 March 2015. 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 were 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		
Water Discharge License				
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	
Notification of Works Under APCO				
334694	6/9/2011	N/A	All PTWs	N/A
Registered Chemical Waste Producer				
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	
Special Waste Admission Ticket				
12014	24/2/2015	23/5/2015	Location: Ap Lei Chau	Valid
12015	24/2/2015	23/5/2015	Location: Aberdeen PTW	Valid
12012	24/2/2015	23/5/2015	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
Water Quality	150306-R02	Properly clear the slurry water at Wah Fu-PTW to prevent the water overflow the public access road.	The slurry water was cleared at Wah Fu-PTW.
	150313-R03	The bunding should be provided to prevent the muddy water runoff to the public sewer at Abd-PTW.	The dusty material near the public sewer was cleared and the muddy water was not observed at Abd-PTW.
	150320-R01	Properly clear the stagnant water at Wah Fu-PTW.	Please refer to 150327-R01.
	150327-R01	Properly clear the stagnant water regularly at Wah Fu-PTW and Abd-PTW.	The excavators at Abd-PTW were removed and not observed.
Air Quality	150306-R03	The dusty material should be covered by the impervious material at Wah Fu-PTW.	The dusty material was removed and not observed at Wah Fu-PTW.
	150313-R02	Properly clear the dusty materials at ALC-PTW and Abd-PTW.	The dusty materials were cleared at ALC-PTW and Abd-PTW.
	150327-R03	The broken sand bags should be cleared properly and replaced with the new sand bags at Abd-PTW.	The broken sand bags were cleared and replaced with the new sand bags at Abd-PTW.

Waste/ Chemical Management	150306-001	The oil leakage was observed from the excavator at Abd-PTW. The Contractor was reminded to provide the maintenance and keep it in a good condition.	The oil leakage was not observed from the excavator at Abd-PTW. The maintenance was provided by the Contractor.
	150306-R04	Properly clear the muddy substance at Abd-PTW.	The muddy substance was cleared at Abd-PTW.
	150313-001	The oil leakage was observed from the excavators at Abd-PTW. The Contractor was reminded to provide the maintenance and keep them in a good condition.	The excavators at Abd-PTW were removed and not observed.
	150327-R02	Properly clear the oil stain at ALC-PTW.	The oil stain was cleared at ALC-PTW.
Noise	--	--	--
Landscape and Visual	--	--	--
Permit/ Licenses	--	--	--

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, however, there was one complaint received from Environmental Protection Department in the reporting month. And 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 were received, however, one complaint received from Environmental Protection Department 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 bunding to prevent the muddy water runoff on site; and
- To avoid accumulation of stagnant/ slurry water on site.

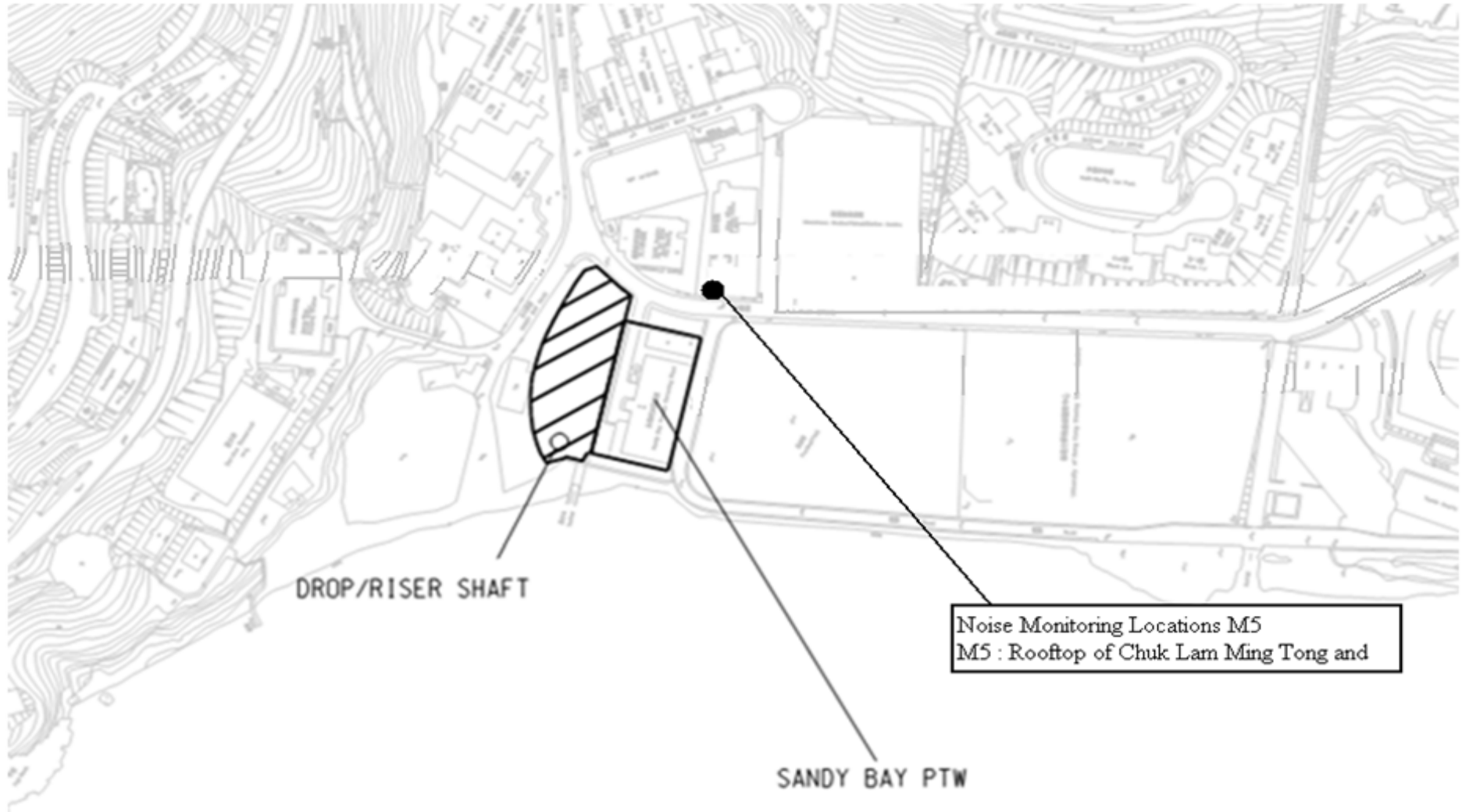
Air Quality

- To remain good site practice on handling excavated or dusty material for dust suppression (e.g. stockpiles of material shall be covered by tarpaulin); and
- To replace the broken sand bags to prevent the dust emission.

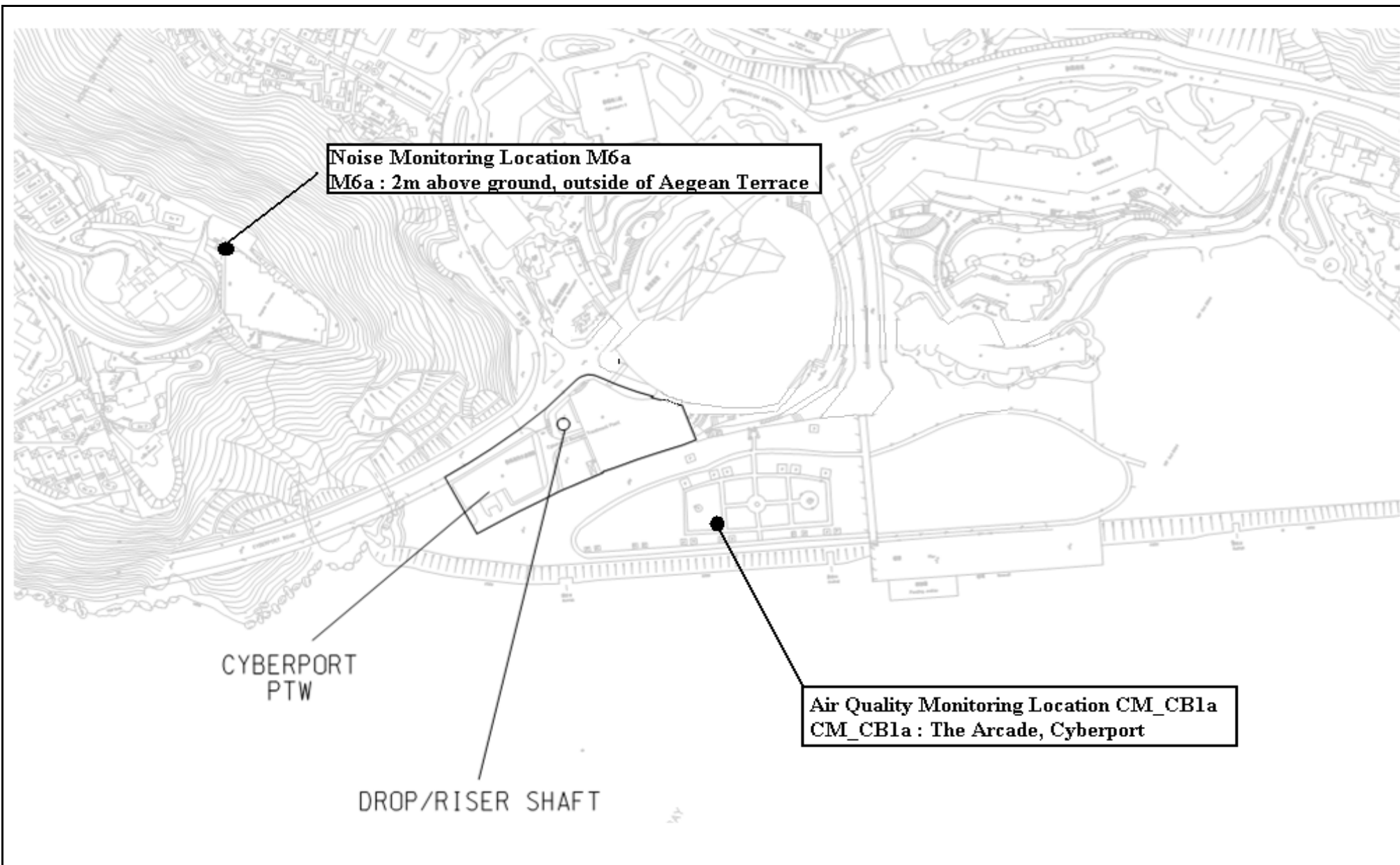
Waste/Chemical Management

- To provide the maintenance of the PME to prevent the oil leakage; and
- To avoid accumulation of the muddy substance on site/ in the drainage outlet.

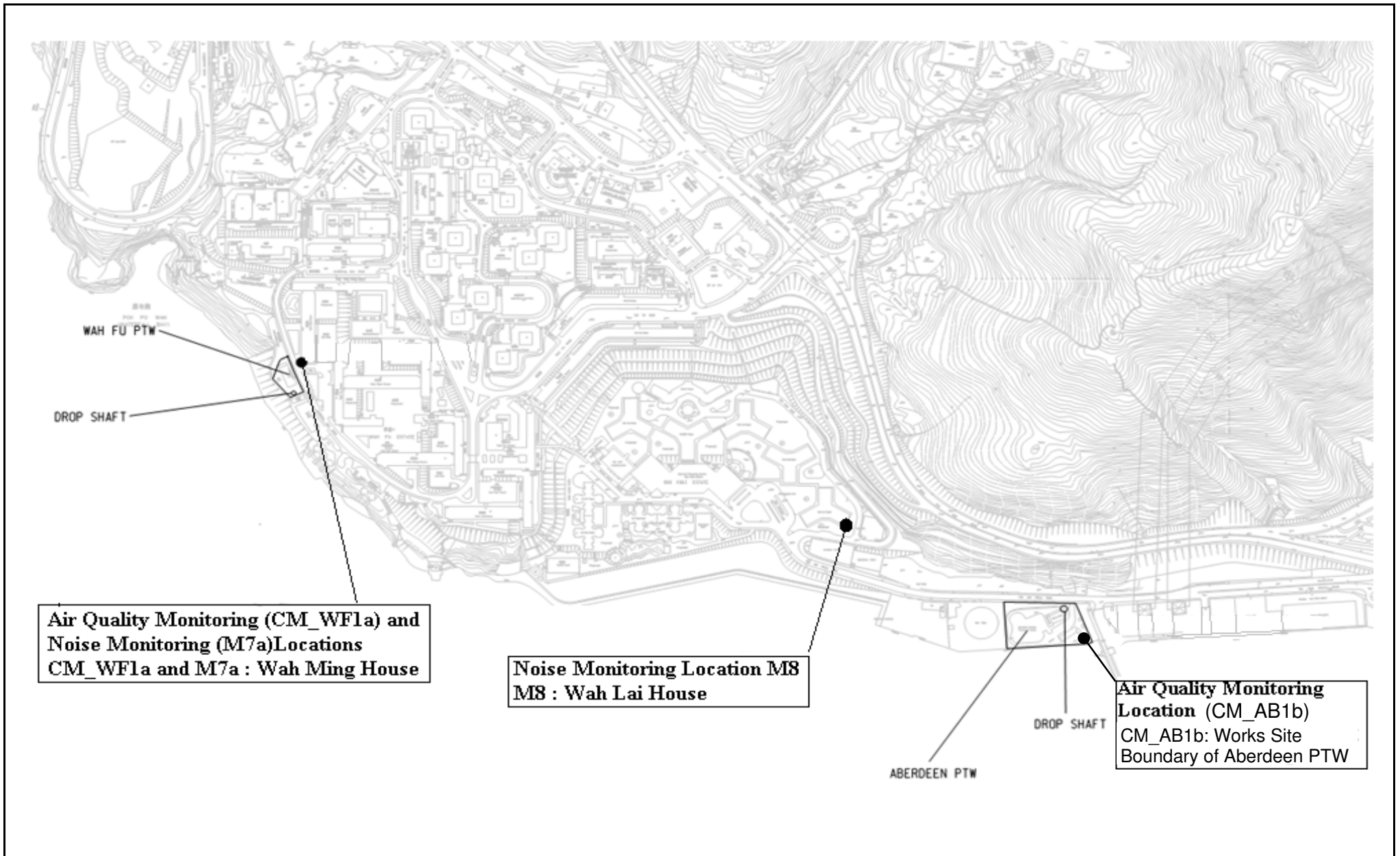
FIGURES



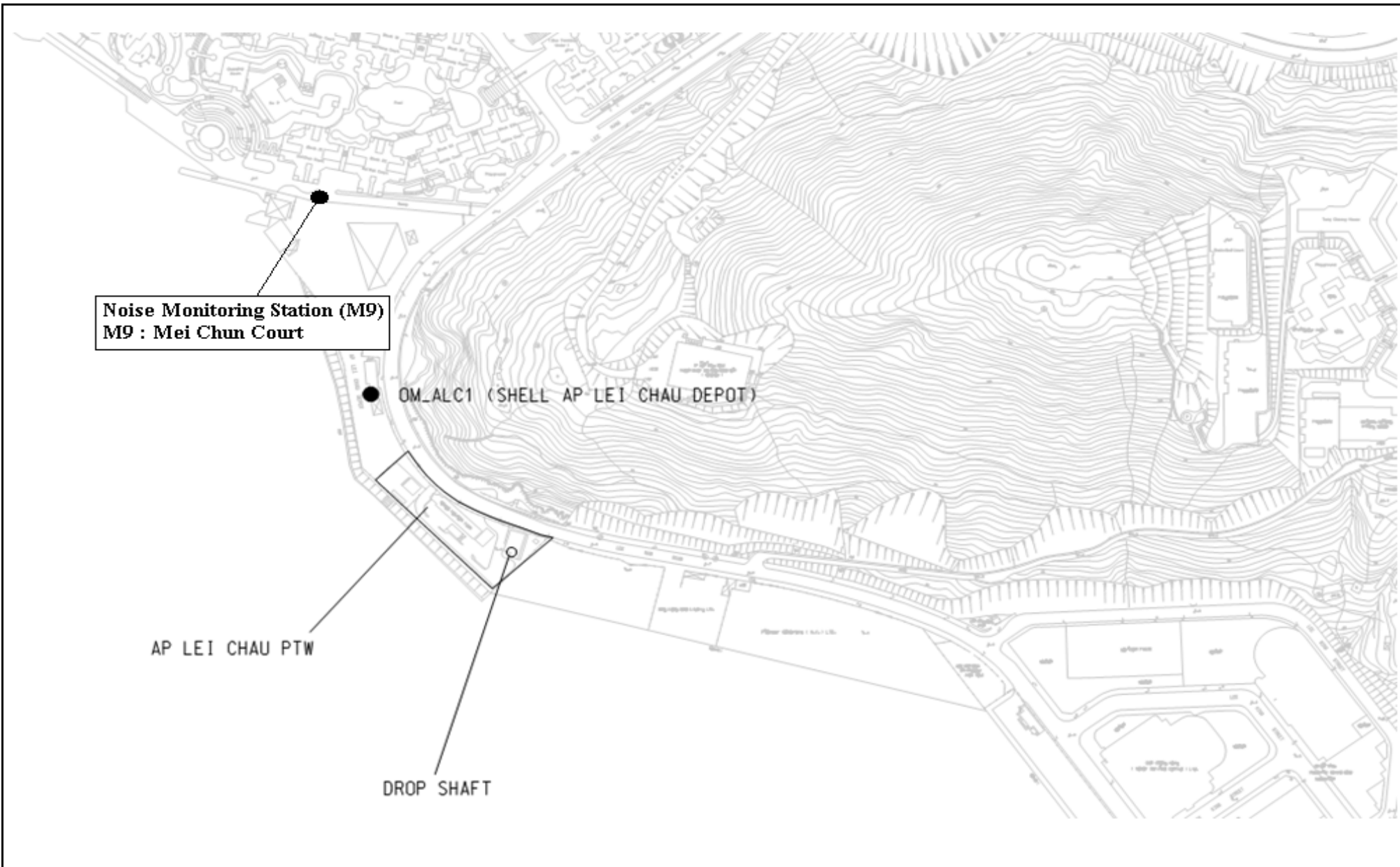
Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	General Location Plan of Sandy Bay PTW and Locations of Noise Monitoring Stations	Date	Figure	
		01/2012	1a	



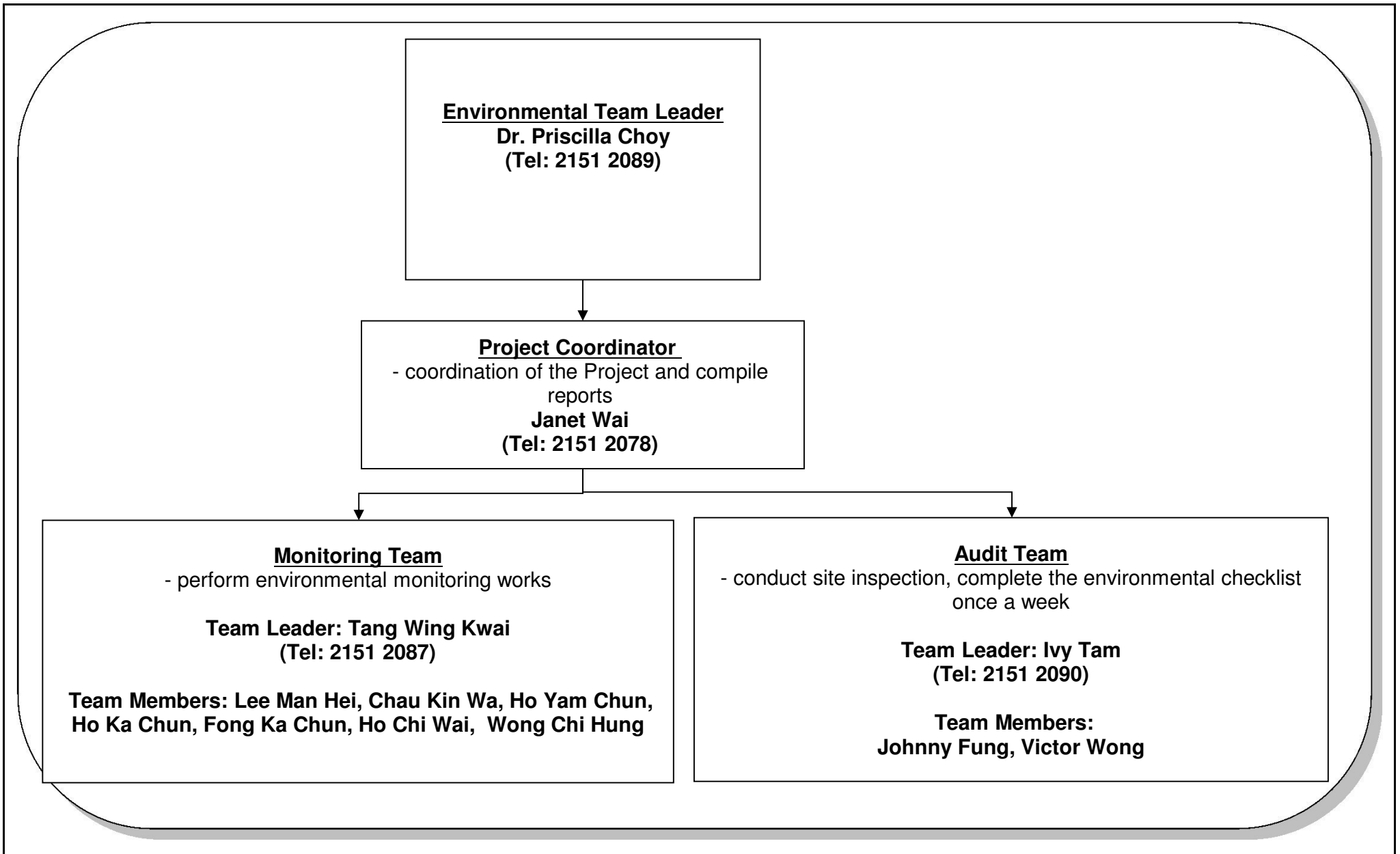
Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	General Location Plan of Cyberport PTW and Locations of Air Quality and Noise Monitoring Stations	Date	Figure	
		01/2012	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 HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau ET's Organization Chart	Scale	N.T.S	Project No.	MA11060	CINOTECH
		Date	Mar-15	Figure	2	

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

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 ⁽¹⁾

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

**APPENDIX B
COPIES OF CALIBRATION
CERTIFICATES**

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/69/0005

Station CM_WF1a - Wah Ming House Operator: WK
 Date: 24-Feb-15 Next Due Date: 23-Apr-15
 Equipment No.: A-01-69 Serial No. 3222

Ambient Condition			
Temperature, Ta (K)	292.2	Pressure, Pa (mmHg)	762.7

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	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	10.8	3.32	57.55	6.7	2.62
2	8.9	3.02	52.29	5.4	2.35
3	6.8	2.64	45.76	4.3	2.10
4	5.0	2.26	39.30	3.2	1.81
5	3.3	1.84	32.00	2.1	1.47

By Linear Regression of Y on X

Slope, mw = 0.0444 Intercept, bw : 0.0536
 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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.76

Remarks: _____

Conducted by: Wk Tang Signature: [Signature] Date: 4/2/15
 Checked by: [Signature] Signature: _____ Date: 4 February 2015

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/38/0004

Station CM AB1b - Works Site Boundary of Aberdeen PTW Operator: WK
 Date: 4-Feb-15 Next Due Date: 3-Apr-15
 Equipment No.: A-01-38 Serial No. 1402

Ambient Condition			
Temperature, Ta (K)	288.7	Pressure, Pa (mmHg)	771

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	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.9	3.53	61.08	6.2	2.55
2	9.3	3.12	54.05	4.8	2.24
3	7.1	2.73	47.28	3.7	1.97
4	4.6	2.19	38.14	2.4	1.59
5	2.9	1.74	30.37	1.6	1.29

By Linear Regression of Y on X

Slope, mw = 0.0409 Intercept, bw : 0.0391
 Correlation coefficient* = 0.9997

*If Correlation Coefficient < 0.990, check and recalibrate.

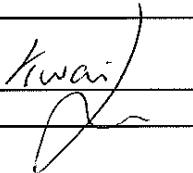
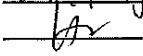
Set Point Calculation

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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.09

Remarks: _____

Conducted by: Wk Tang Signature: 
 Checked by:  Signature: _____

Date: 4/2/15
 Date: 4 February 2015

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/36/0004

Station CM CB1a - The Arcade, Cyberport Operator: WK
 Date: 4-Feb-15 Next Due Date: 3-Apr-15
 Equipment No.: A-01-36 Serial No. 1224

Ambient Condition			
Temperature, Ta (K)	288.3	Pressure, Pa (mmHg)	771.6

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	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.5	3.47	60.12	6.7	2.65
2	9.8	3.21	55.53	5.6	2.42
3	7.4	2.79	48.31	4.3	2.12
4	4.8	2.24	38.99	2.9	1.74
5	3.1	1.80	31.42	1.8	1.37

By Linear Regression of Y on X

Slope, mw = 0.0437 Intercept, bw = 0.0171
 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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.42

Remarks: _____

Conducted by: Wk Tang Signature: Kwai
 Checked by: Ar Signature: _____

Date: 4/2/15
 Date: 4 February 2015

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 ³)	Diff.Time (min)	Diff.Hg (mm)	Diff.H ₂ 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:

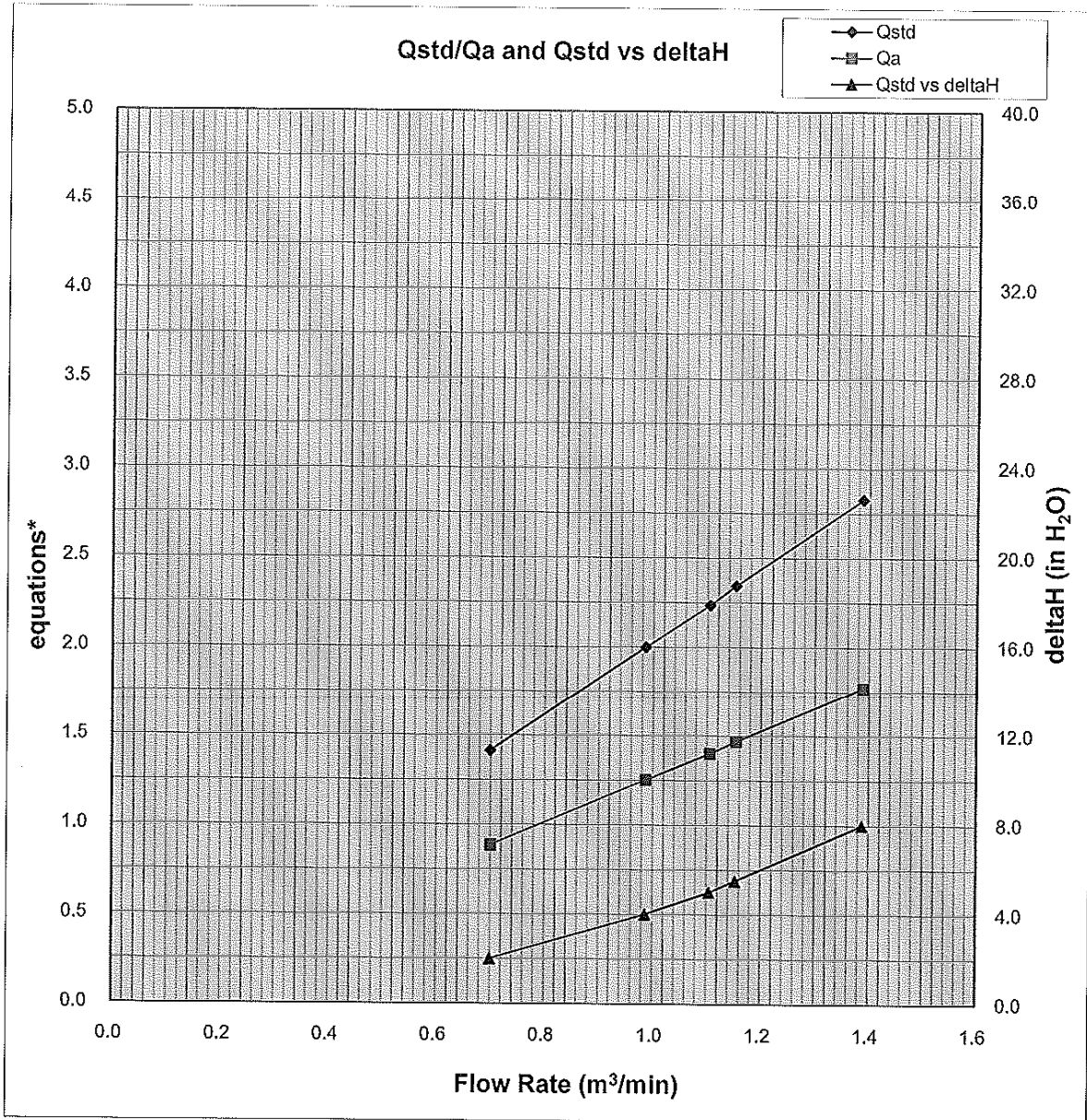
$Q_{std} = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))] - b\}$
 $Q_a = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Ta}/\text{Pa}))] - b\}$

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

Patrick Tse

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/150228/2
Date of Issue:	2015-03-02
Date Received:	2015-02-28
Date Tested:	2015-02-28
Date Completed:	2015-03-02
Next Due Date:	2015-05-01

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 ³
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

Test Conditions:

Room Temperature	: 22 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)	0.0031
-------------------------	--------

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/150228/3
Date of Issue:	2015-03-02
Date Received:	2015-02-28
Date Tested:	2015-02-28
Date Completed:	2015-03-02
Next Due Date:	2015-05-01

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 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/141231/2
Date of Issue:	2015-03-02
Date Received:	2015-02-27
Date Tested:	2015-02-27
Date Completed:	2015-03-02
Next Due Date:	2015-05-01

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/m³
 Sen. Adjustment Scale Setting : 577 CPM
 Equipment No. : A-02-09

Test Conditions:

Room Temperature : 23 degree Celsius
 Relative Humidity : 61%


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/141231/3
Date of Issue:	2015-03-02
Date Received:	2015-02-27
Date Tested:	2015-02-27
Date Completed:	2015-03-02
Next Due Date:	2015-05-01

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/m³
 Sen. Adjustment Scale Setting : 551 CPM
 Equipment No. : A-02-10

Test Conditions:

Room Temperature : 23 degree Celsius
 Relative Humidity : 61%

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/140919/1
Date of Issue:	2014-09-21
Date Received:	2014-09-19
Date Tested:	2014-09-21
Date Completed:	2014-09-21
Next Due Date:	2015-09-20

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperature	: 23 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/140829/1
Date of Issue:	2014-09-01
Date Received:	2014-08-29
Date Tested:	2014-08-29
Date Completed:	2014-09-01
Next Due Date:	2015-08-31

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 60%

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/140822/3
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 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

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/141129/3
Date of Issue:	2014-12-01
Date Received:	2014-11-29
Date Tested:	2014-11-29
Date Completed:	2014-12-01
Next Due Date:	2015-11-30

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23851
Microphone No.	: 48532
Equipment No.	: N-08-12

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

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/141101/1
Date of Issue:	2014-11-03
Date Received:	2014-11-01
Date Tested:	2014-11-01
Date Completed:	2014-11-03
Next Due Date:	2015-11-02

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 10965
Equipment No.	: N-09-02

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 55%

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/141003/2
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.	: 24791
Equipment No.	: N-09-04

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

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

TEST REPORT

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

Test Report No.:	C/N/141107/1
Date of Issue:	2014-11-08
Date Received:	2014-11-07
Date Tested:	2014-11-07
Date Completed:	2014-11-08
Next Due Date:	2015-11-07

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

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

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 53 %

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

**APPENDIX C
ENVIRONMENTAL MONITORING
SCHEDULE**

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 March 2015**

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

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 April 2015

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

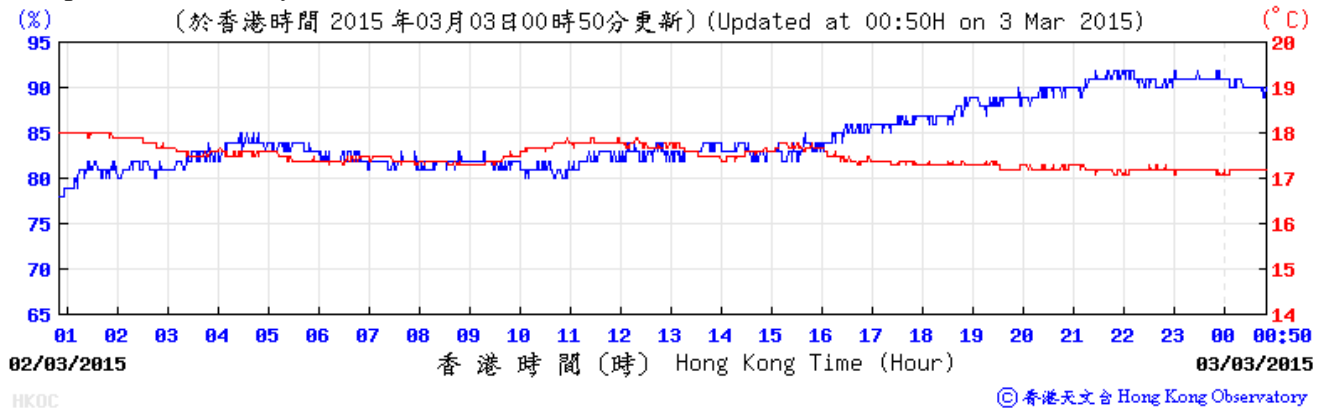
Noise Monitoring Station

M6a - Aegean Terrace
 M7a - Wah Ming House
 M8 - Wah Lai House
 M9 - Mei Chun Court

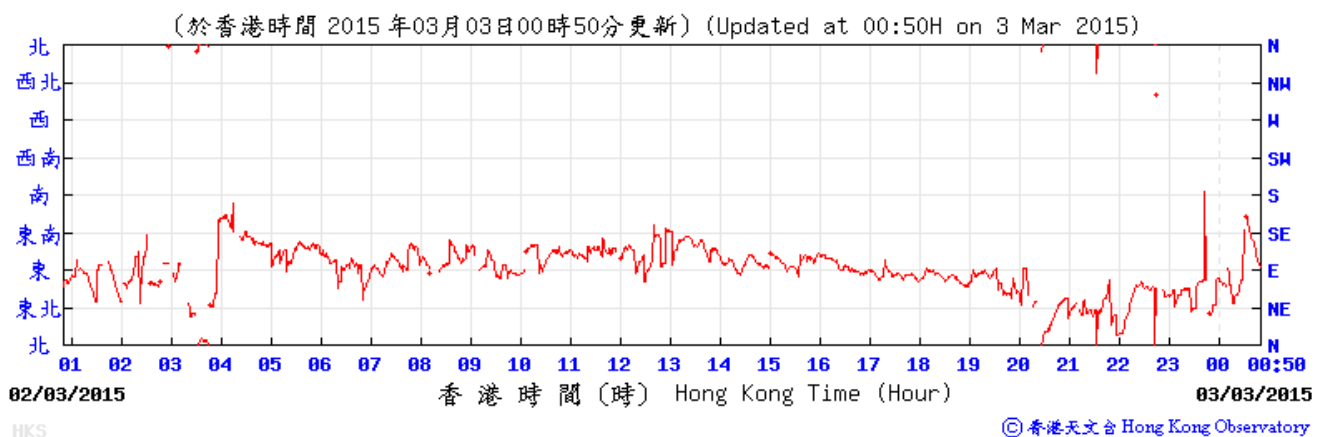
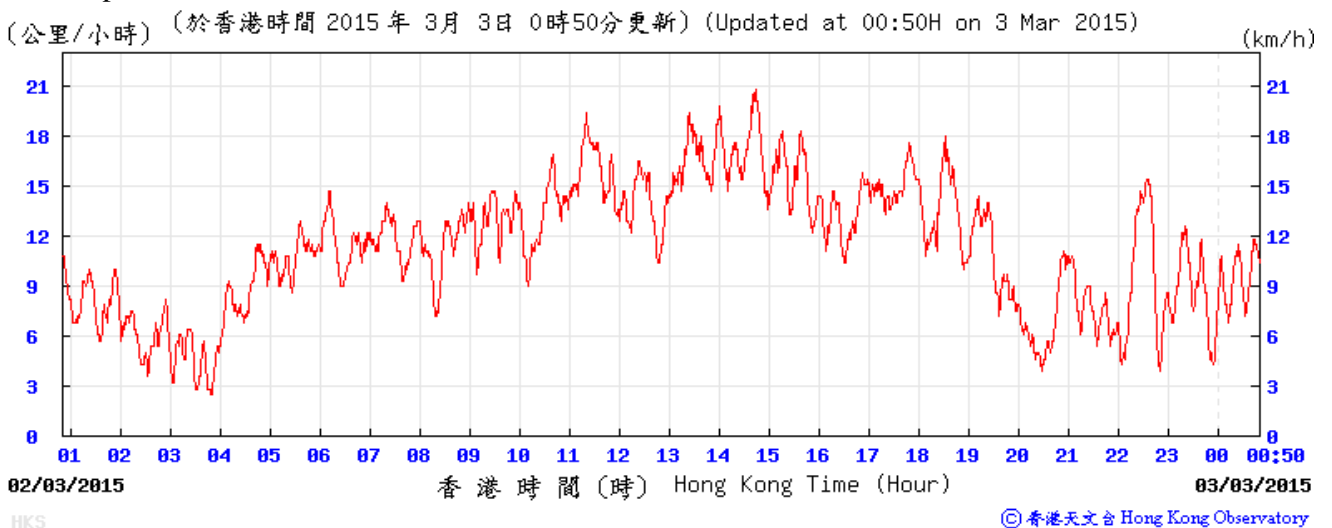
**APPENDIX D
METEOROLOGICAL DATA ON
MONITORING DATES**

Appendix D Meteorological Data Recorded from HKO Station (2 March 2015) (Source: www.hko.gov.hk)

Temperature/Humidity:



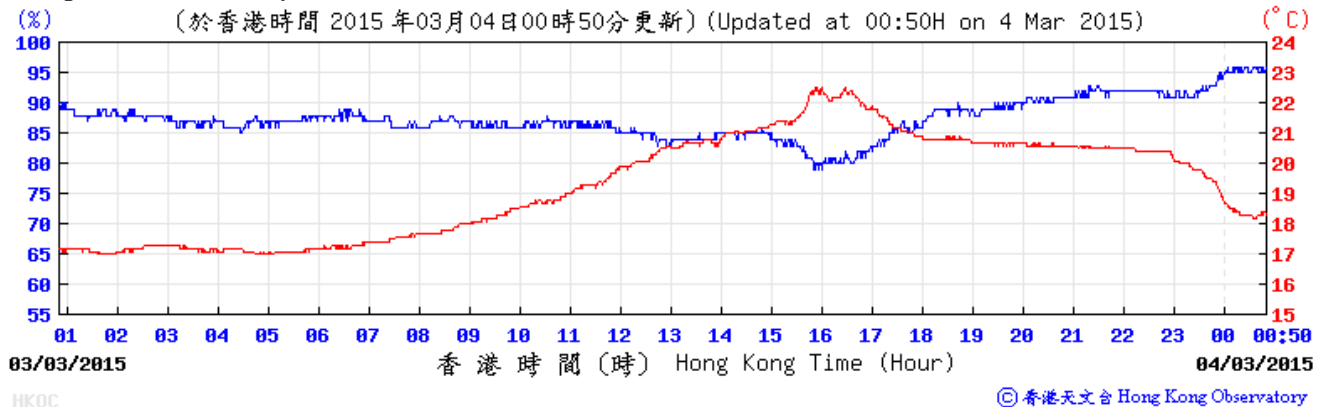
Wind Speed and Direction:



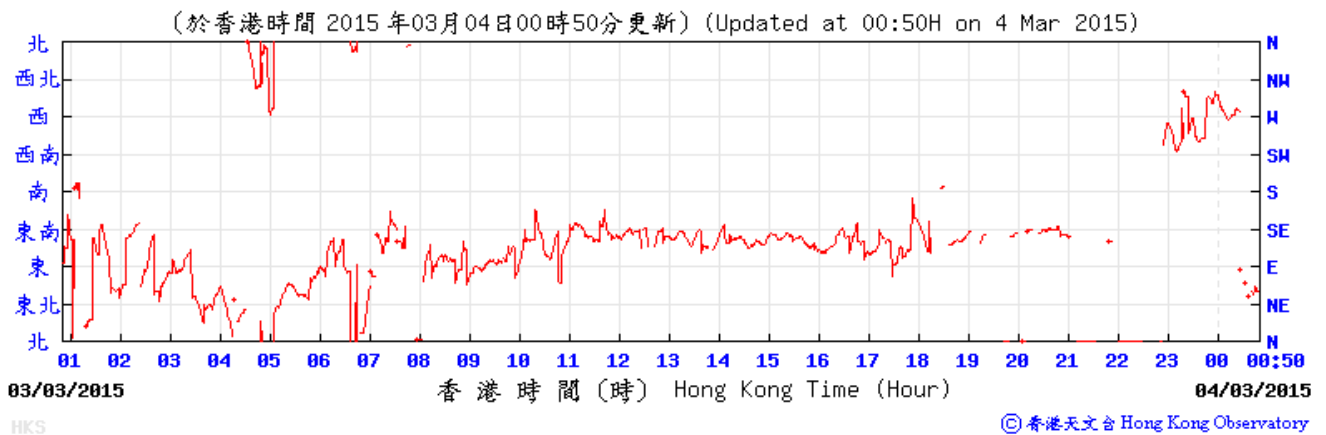
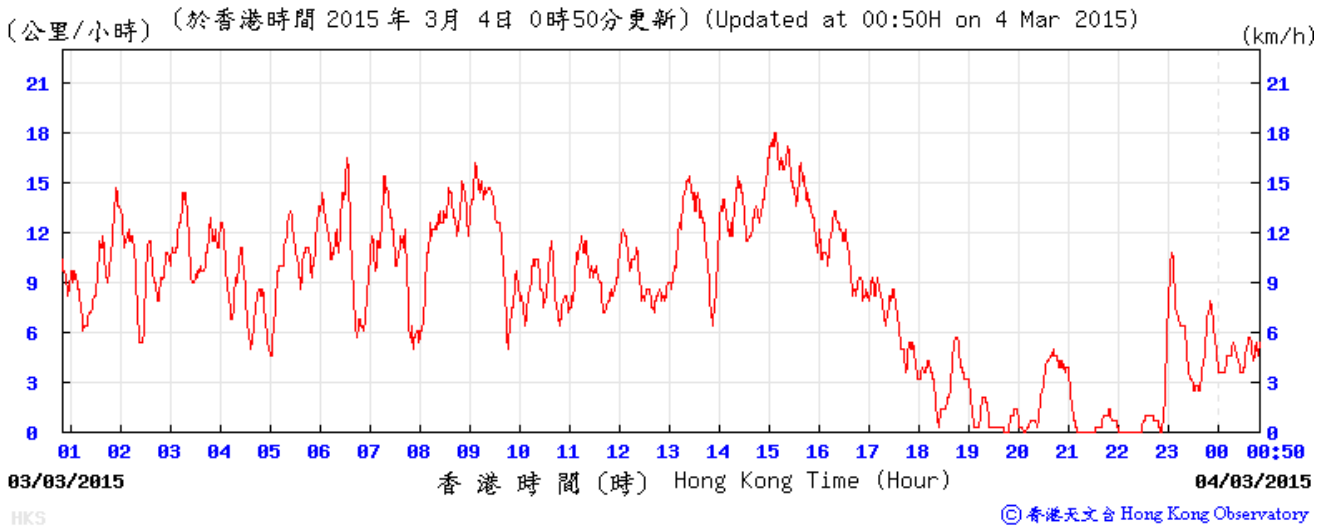
Meteorological Data Recorded from HKO Station (3 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



Wind Speed and Direction:

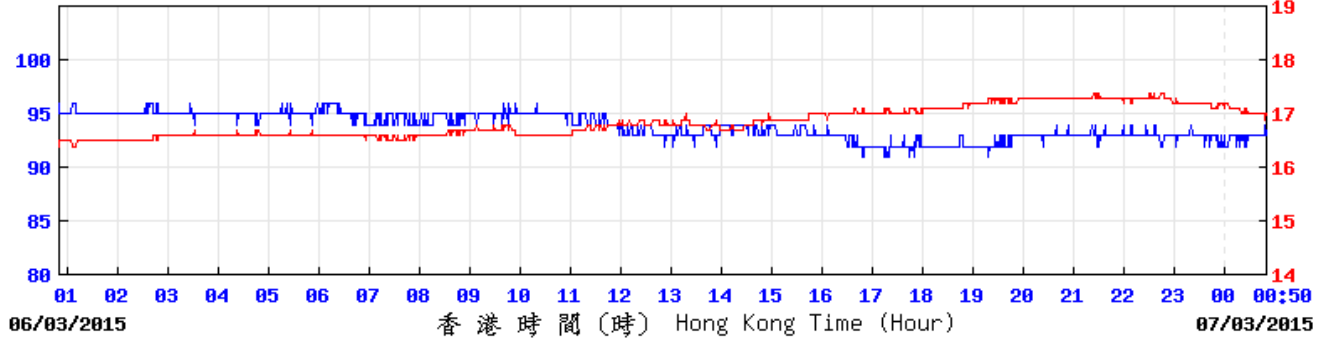


Meteorological Data Recorded from HKO Station (6 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:

(%) (於香港時間 2015 年03月07日00時50分更新) (Updated at 00:50H on 7 Mar 2015) (°C)

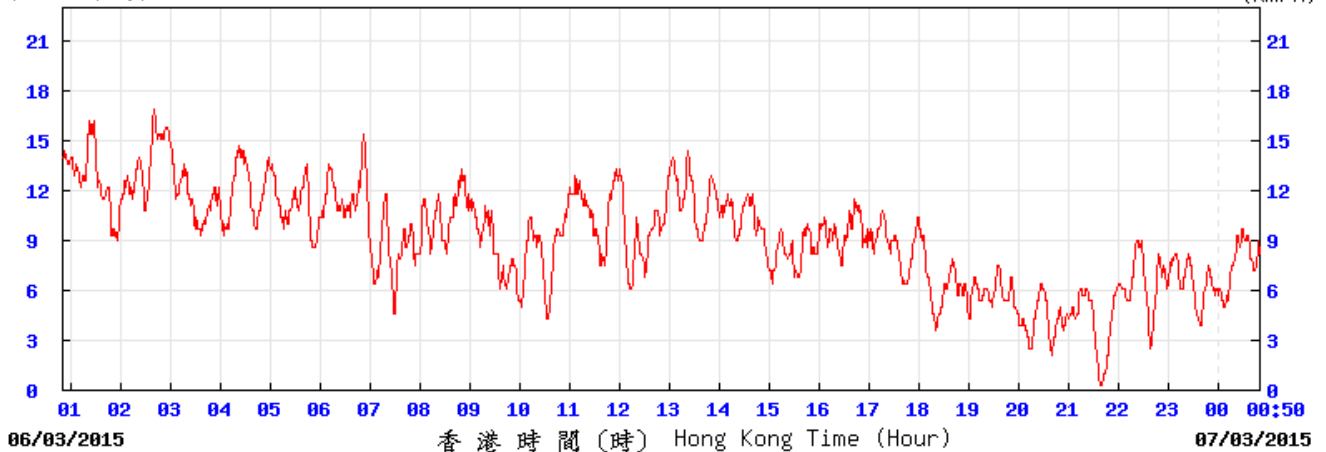


HK0C

© 香港天文台 Hong Kong Observatory

Wind Speed and Direction:

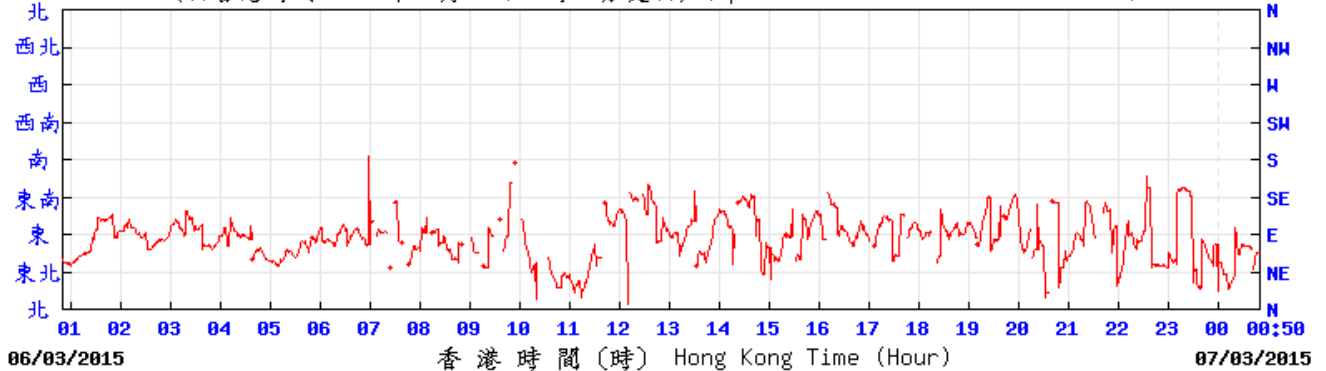
(公里/小時) (於香港時間 2015 年 3 月 7 日 0 時 50 分更新) (Updated at 00:50H on 7 Mar 2015) (km/h)



HKS

© 香港天文台 Hong Kong Observatory

(於香港時間 2015 年03月07日00時50分更新) (Updated at 00:50H on 7 Mar 2015)



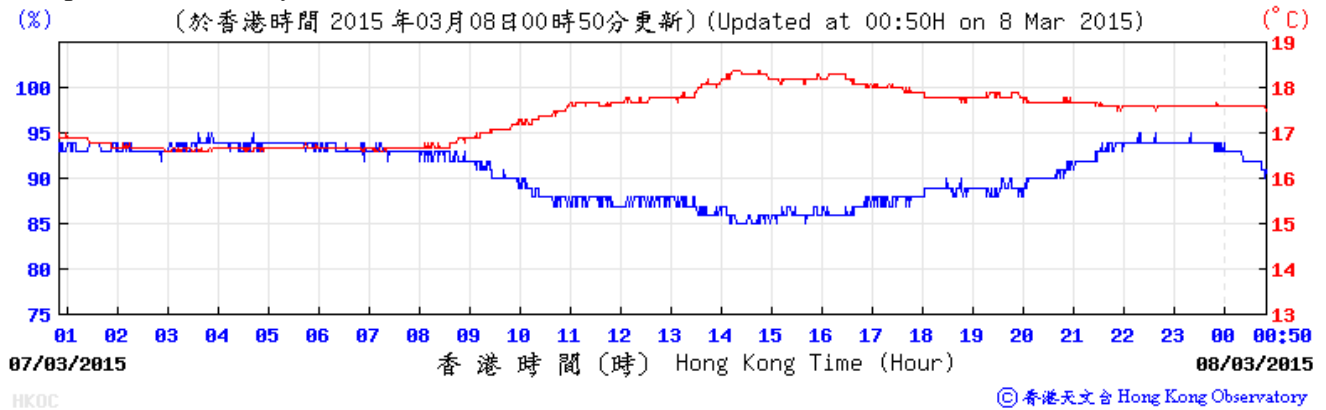
HKS

© 香港天文台 Hong Kong Observatory

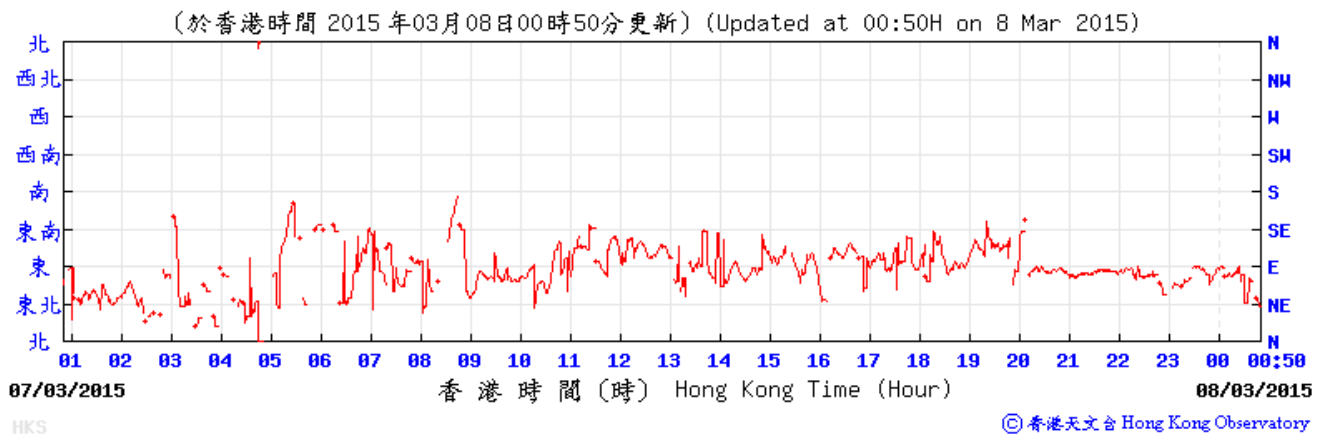
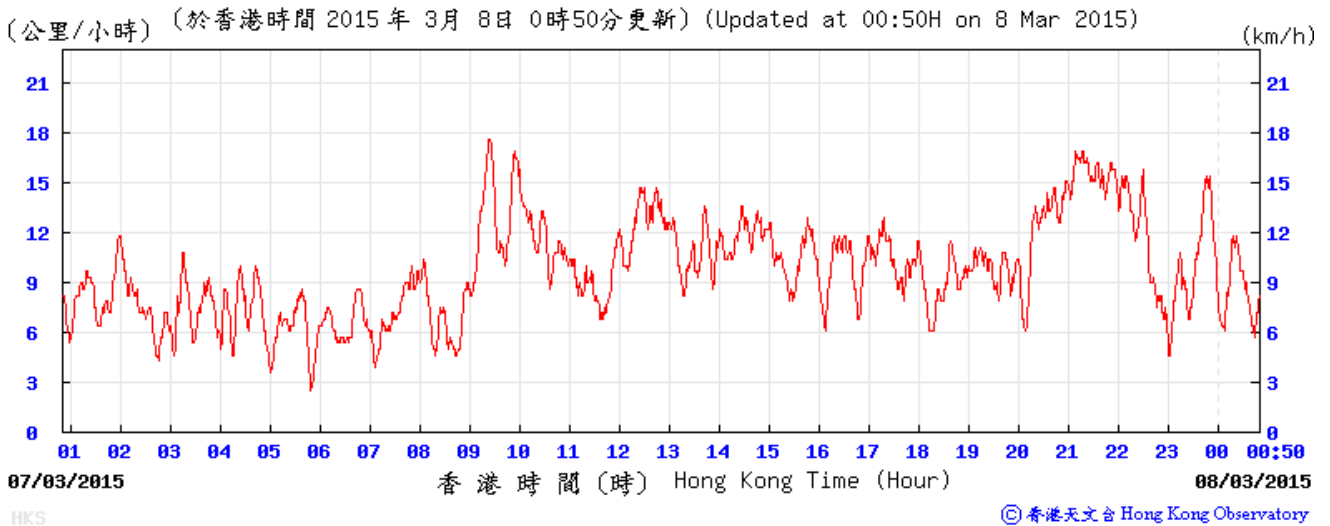
Meteorological Data Recorded from HKO Station (7 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



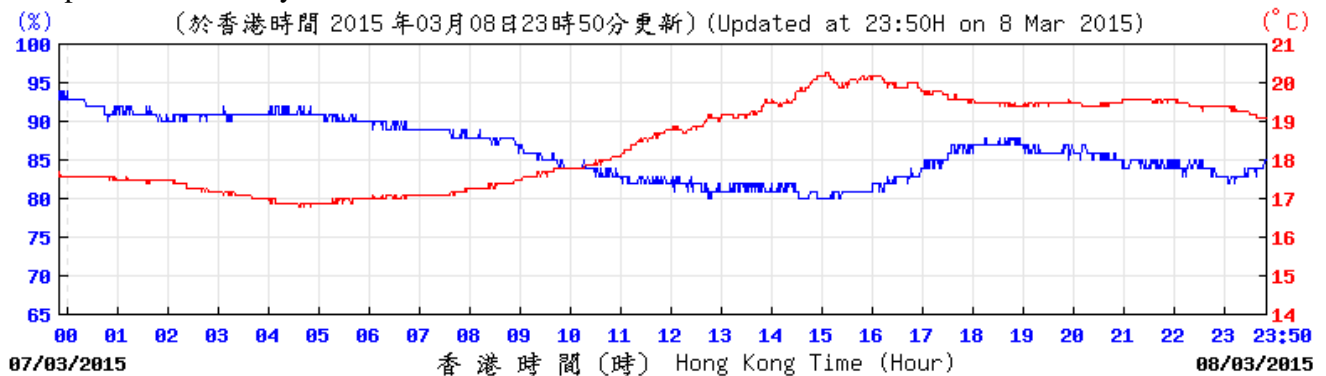
Wind Speed and Direction:



Meteorological Data Recorded from HKO Station (8 March 2015)

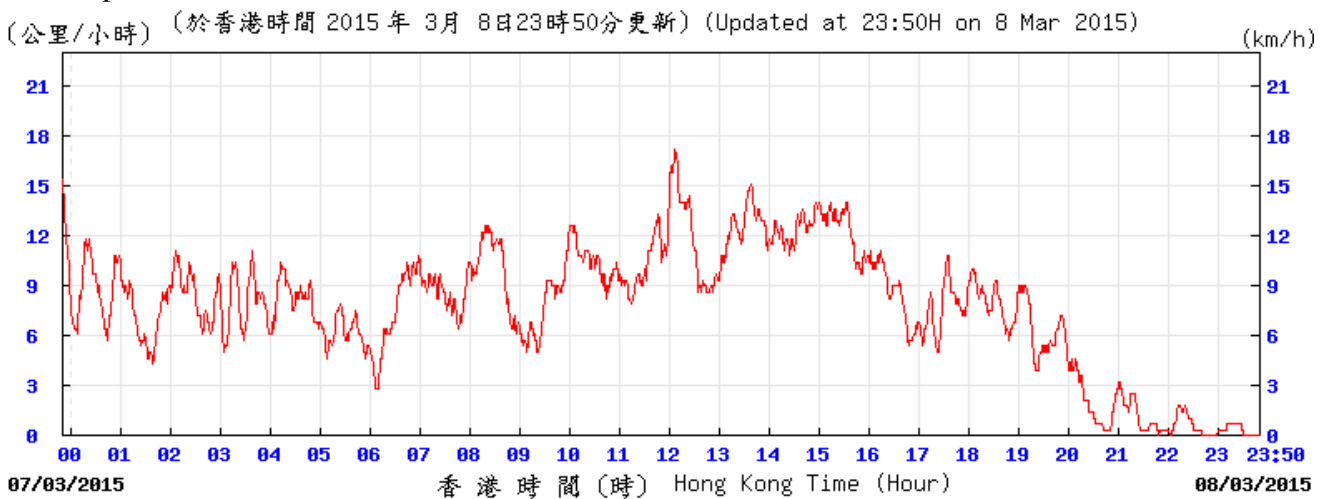
(Source: www.hko.gov.hk)

Temperature/Humidity:

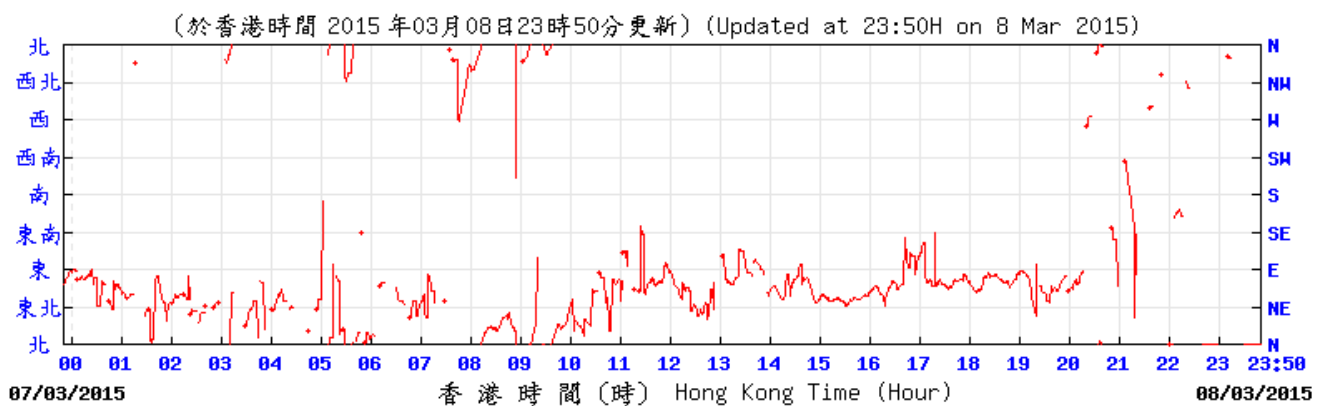


© 香港天文台 Hong Kong Observatory

Wind Speed and Direction:



© 香港天文台 Hong Kong Observatory

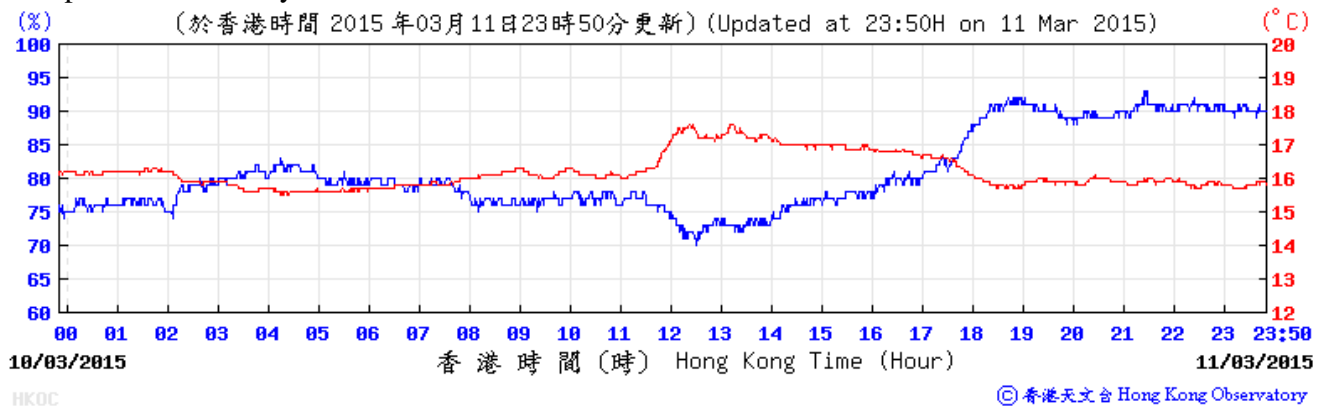


© 香港天文台 Hong Kong Observatory

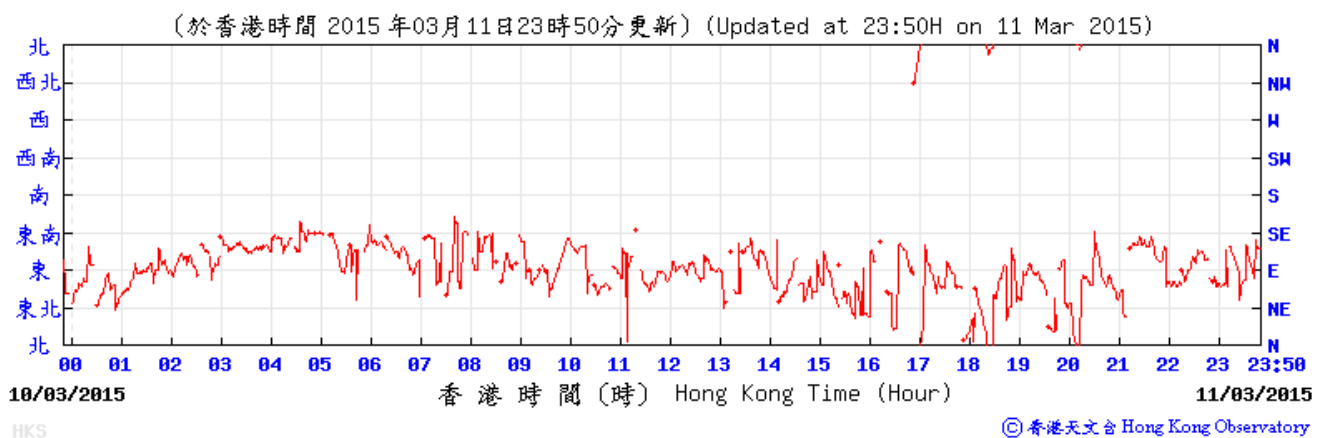
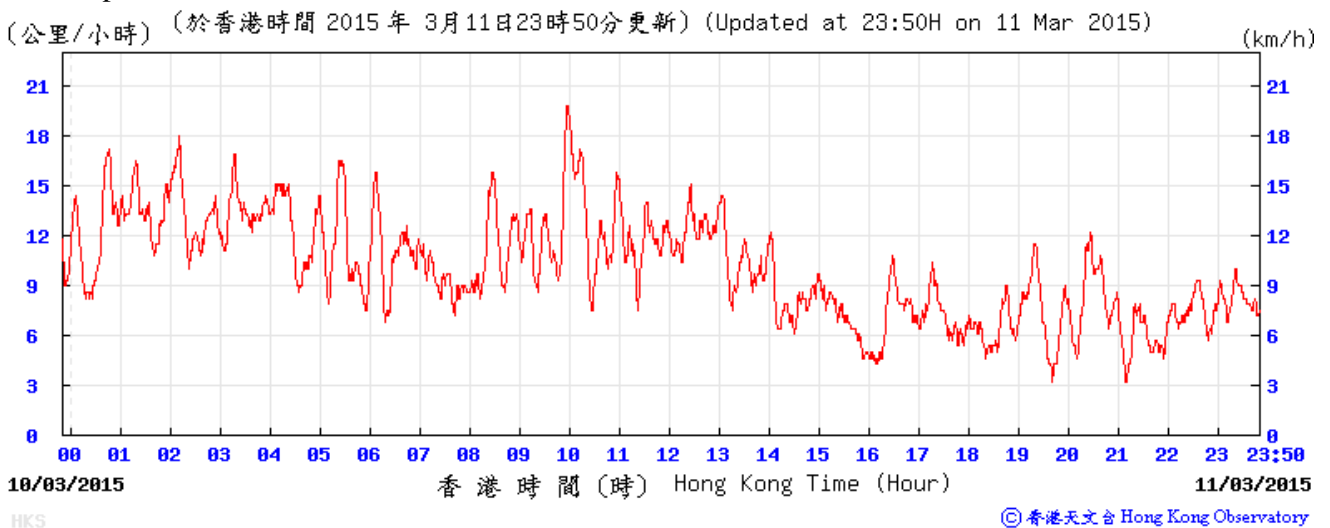
Meteorological Data Recorded from HKO Station (11 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



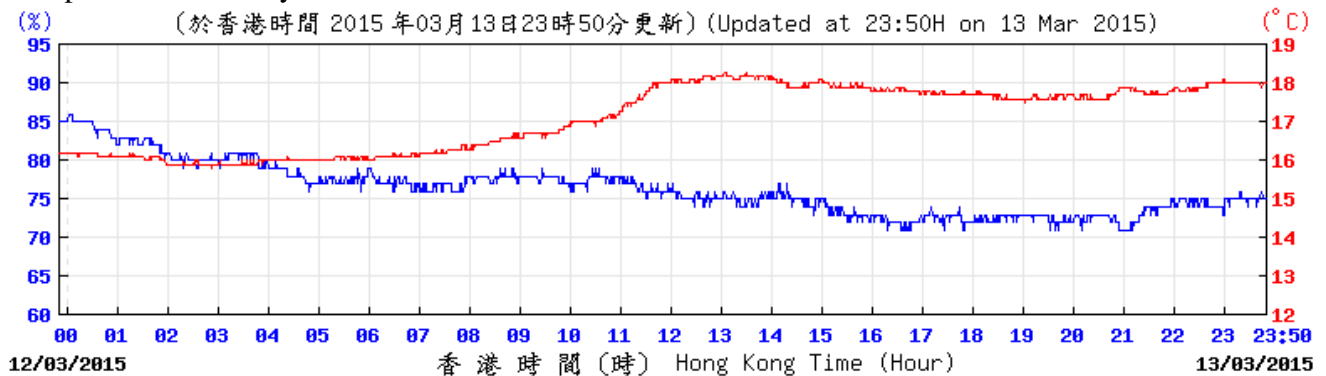
Wind Speed and Direction:



Meteorological Data Recorded from HKO Station (13 March 2015)

(Source: www.hko.gov.hk)

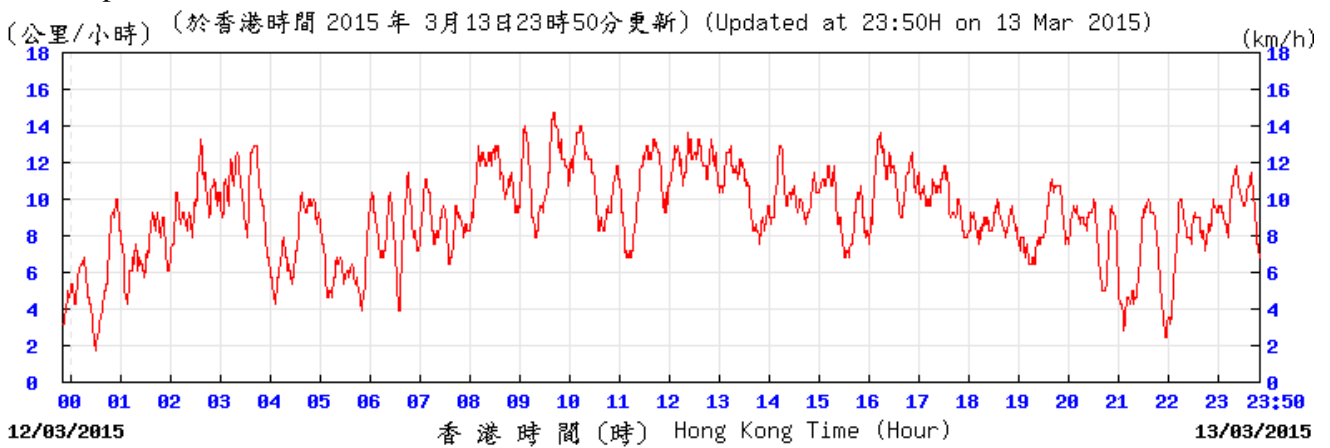
Temperature/Humidity:



HK0C

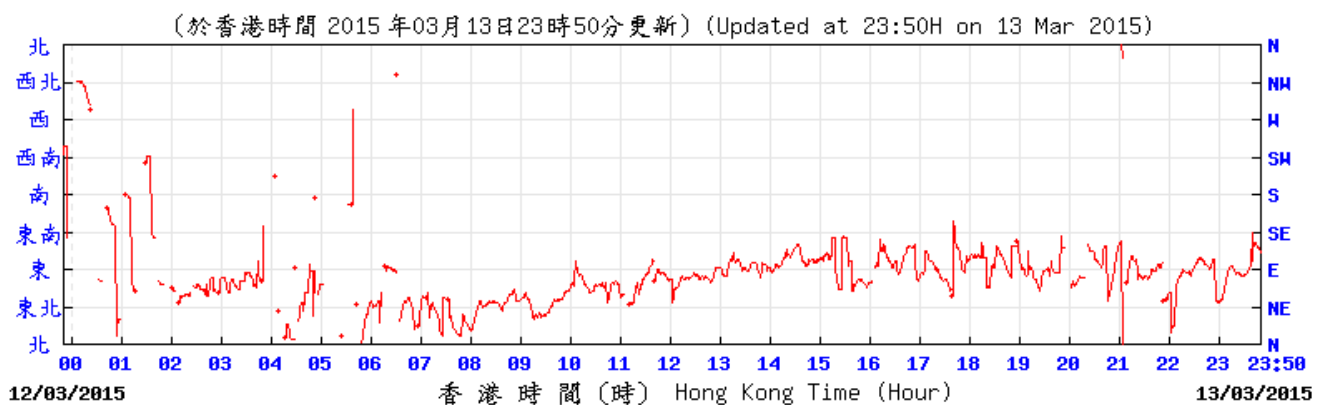
© 香港天文台 Hong Kong Observatory

Wind Speed and Direction:



HKS

© 香港天文台 Hong Kong Observatory



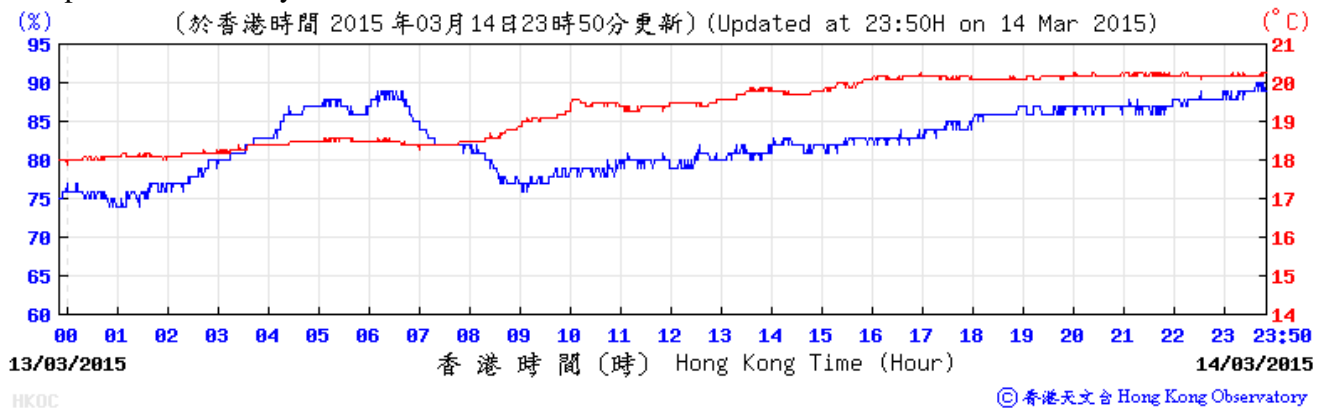
HKS

© 香港天文台 Hong Kong Observatory

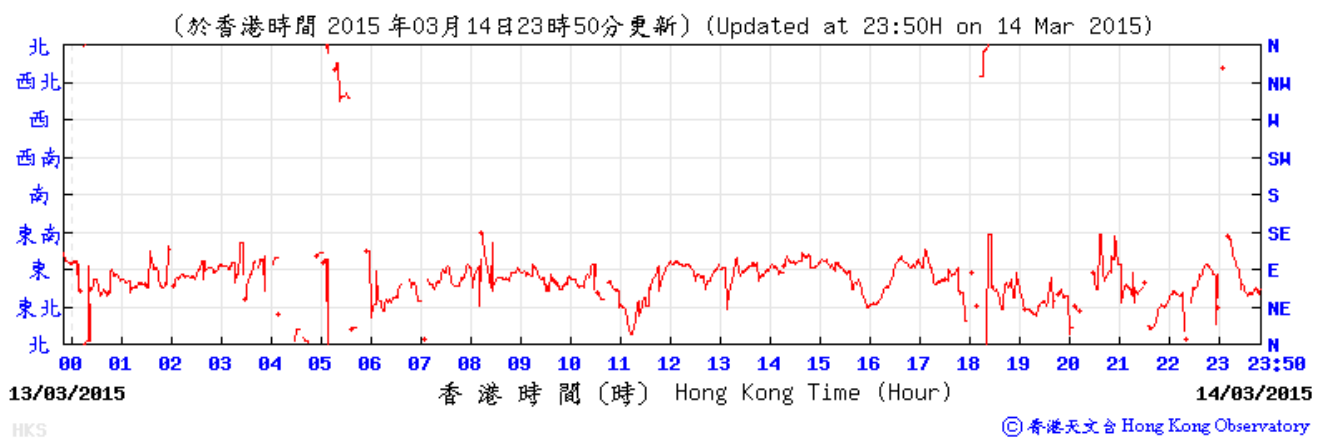
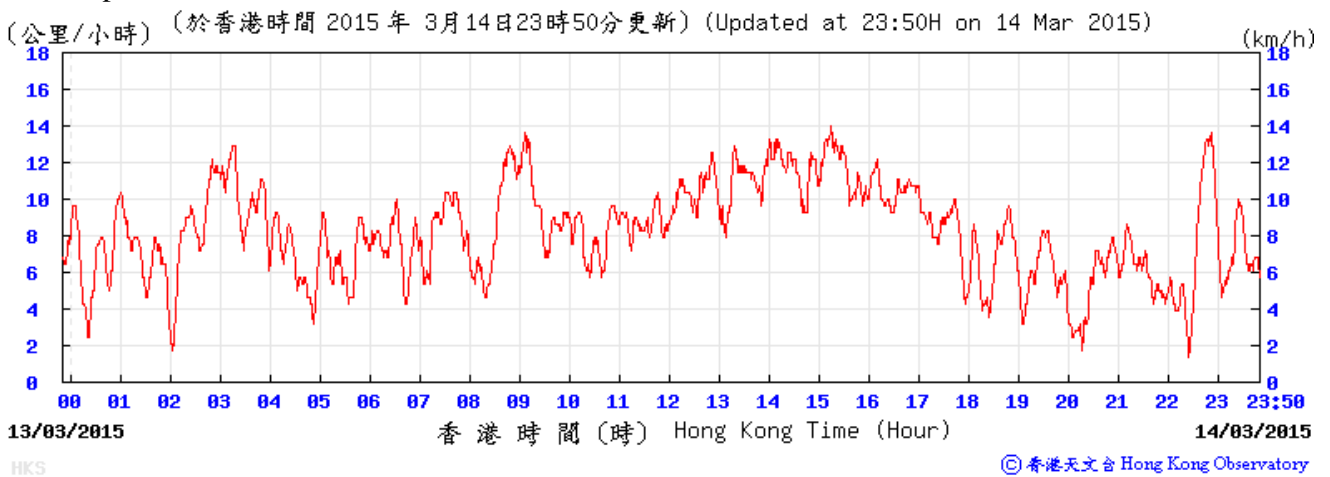
Meteorological Data Recorded from HKO Station (14 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



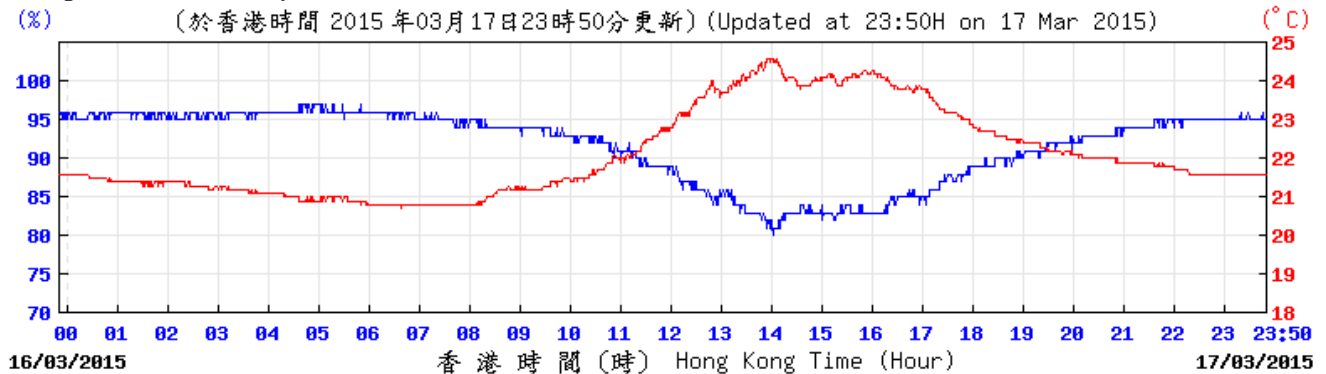
Wind Speed and Direction:



Meteorological Data Recorded from HKO Station (17 March 2015)

(Source: www.hko.gov.hk)

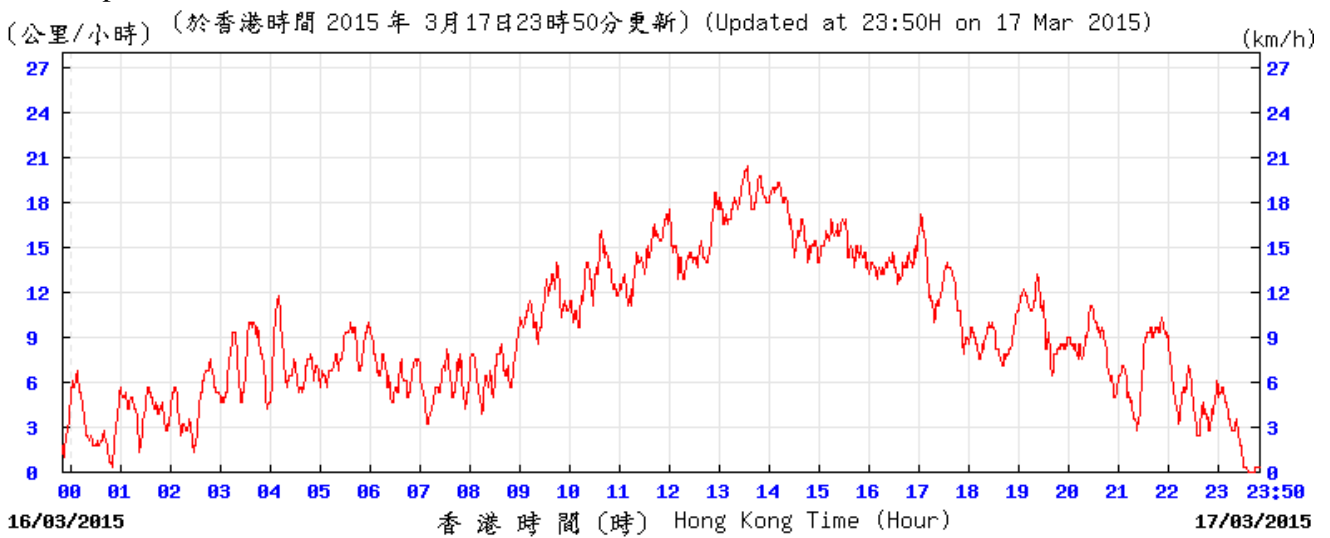
Temperature/Humidity:



HK0C

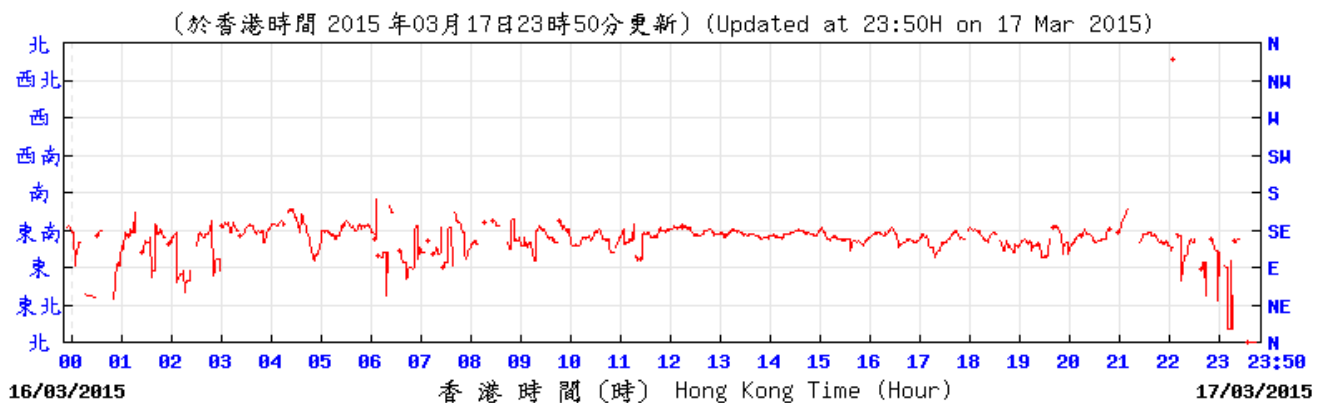
© 香港天文台 Hong Kong Observatory

Wind Speed and Direction:



HKS

© 香港天文台 Hong Kong Observatory



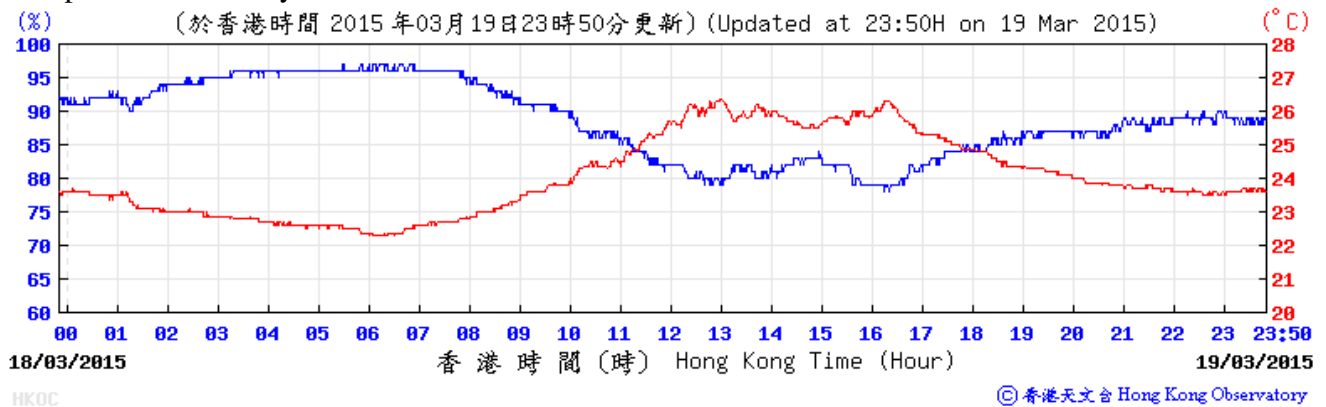
HKS

© 香港天文台 Hong Kong Observatory

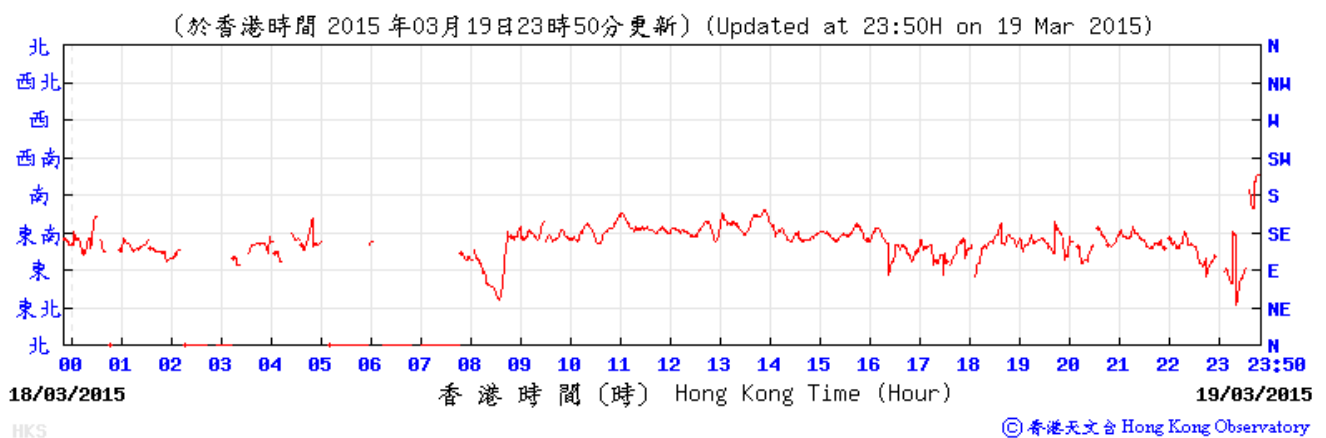
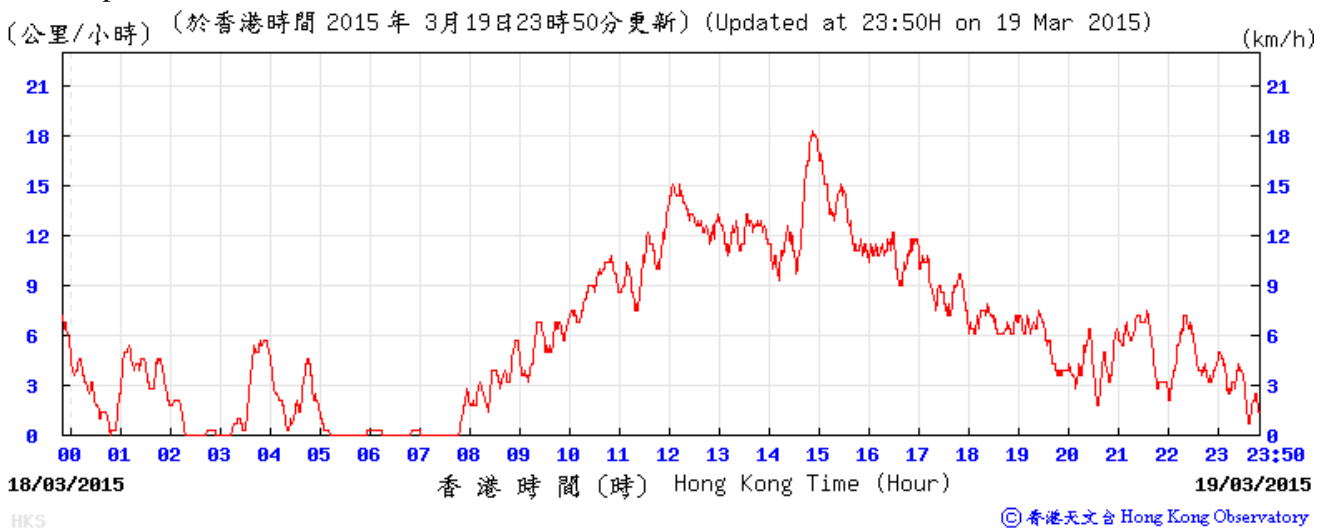
Meteorological Data Recorded from HKO Station (19 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



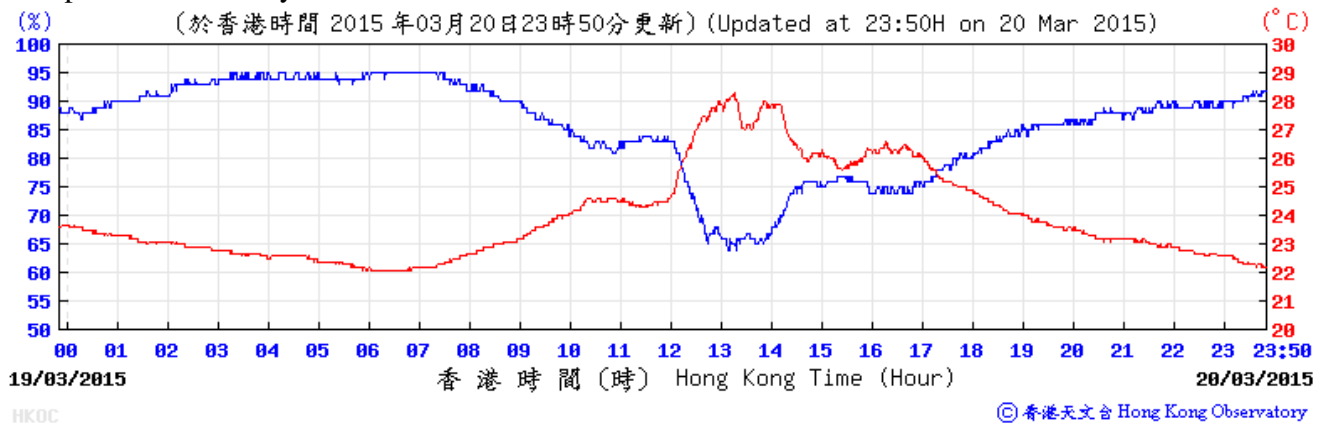
Wind Speed and Direction:



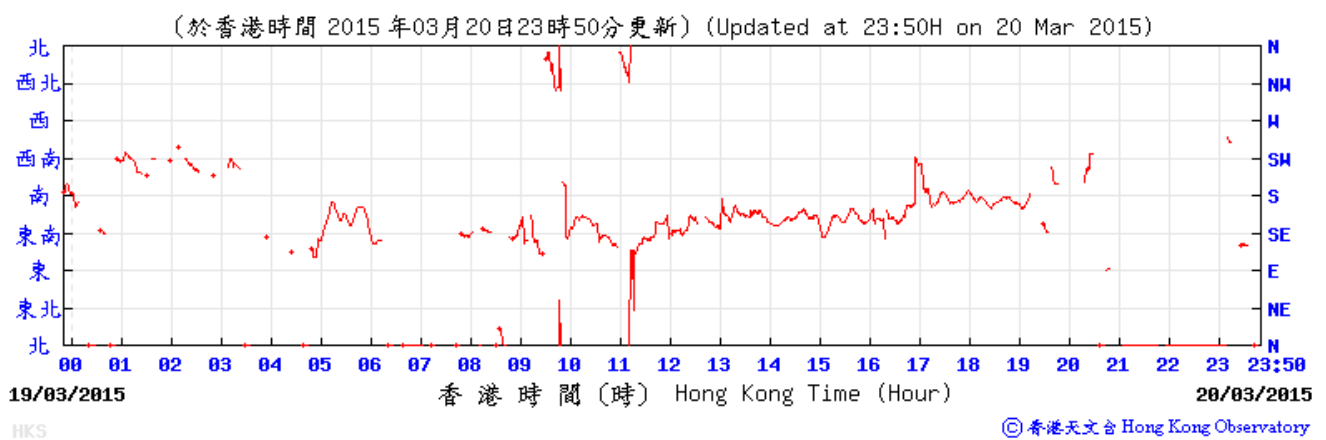
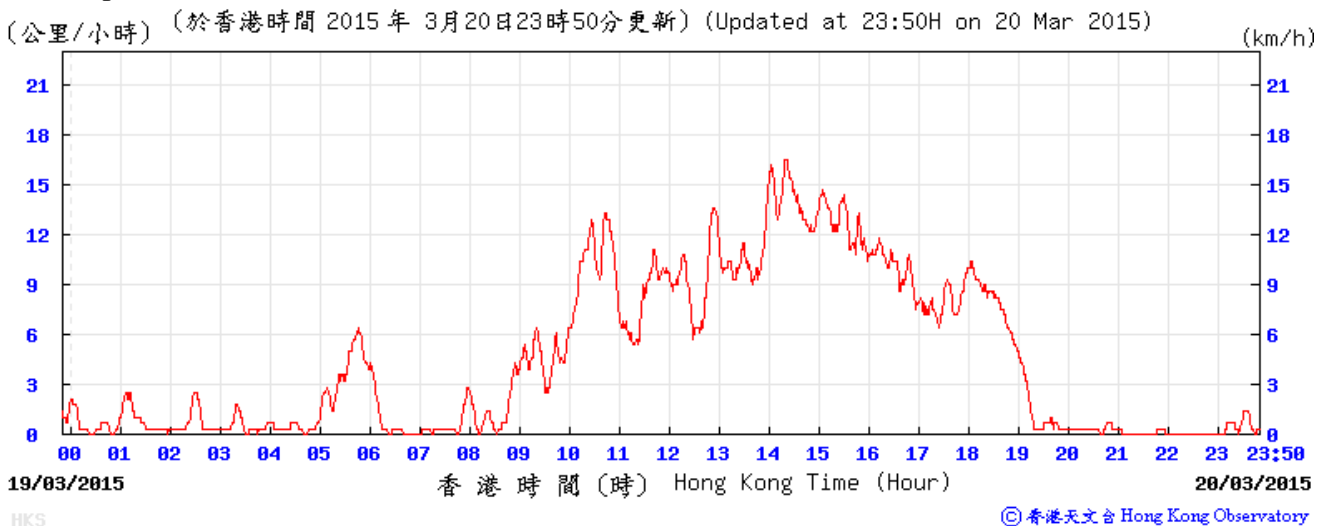
Meteorological Data Recorded from HKO Station (20 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



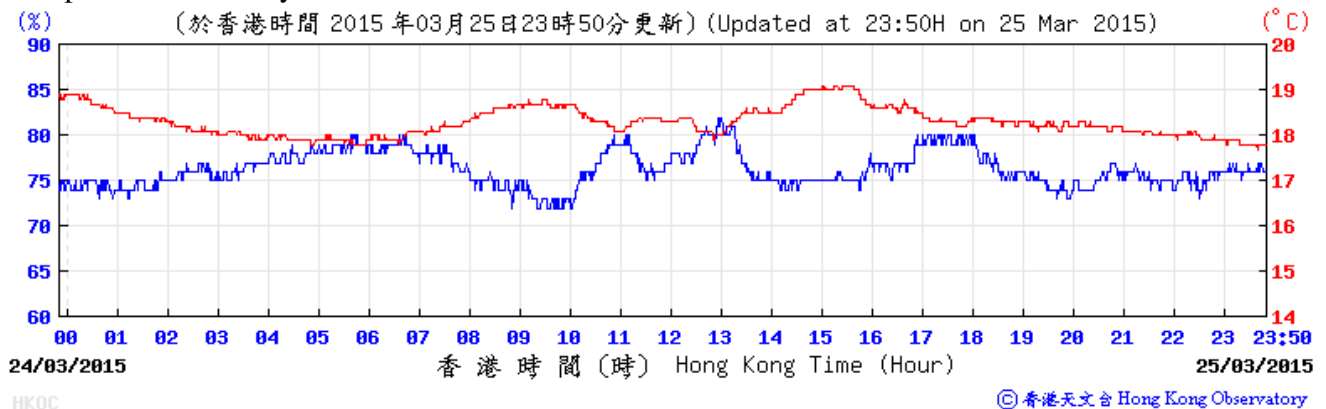
Wind Speed and Direction:



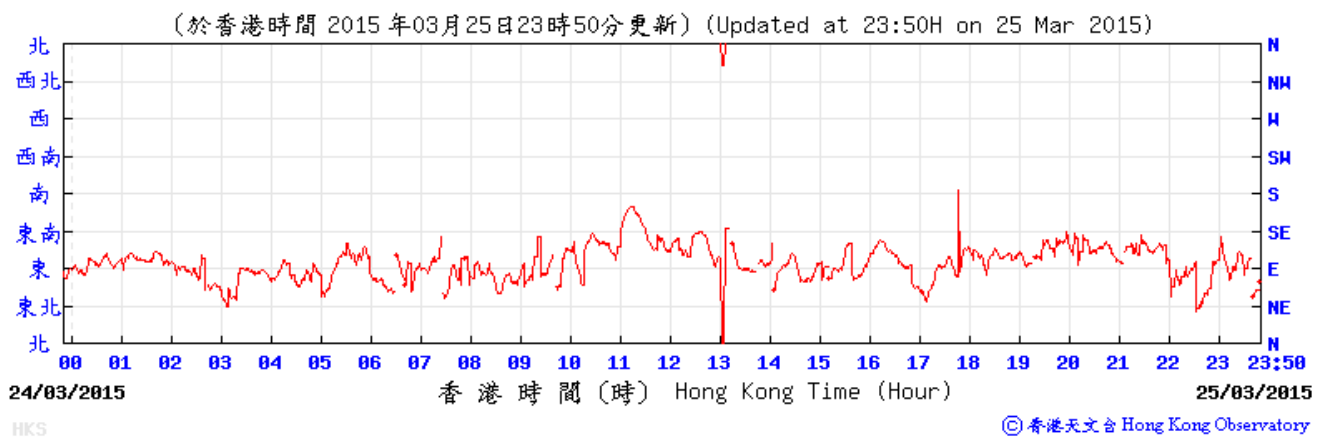
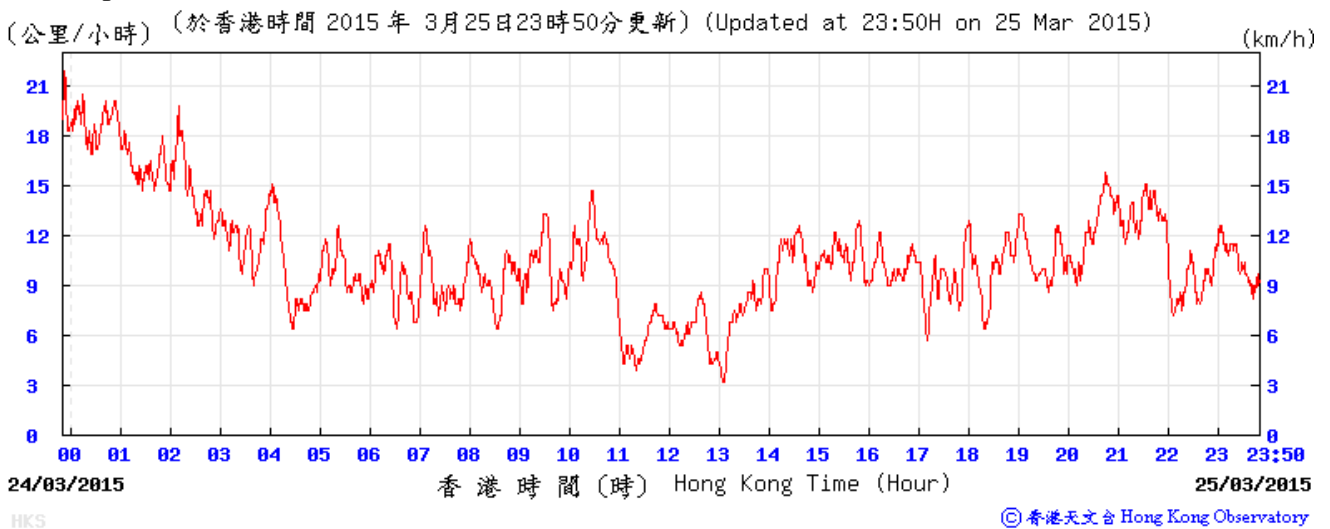
Meteorological Data Recorded from HKO Station (25 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



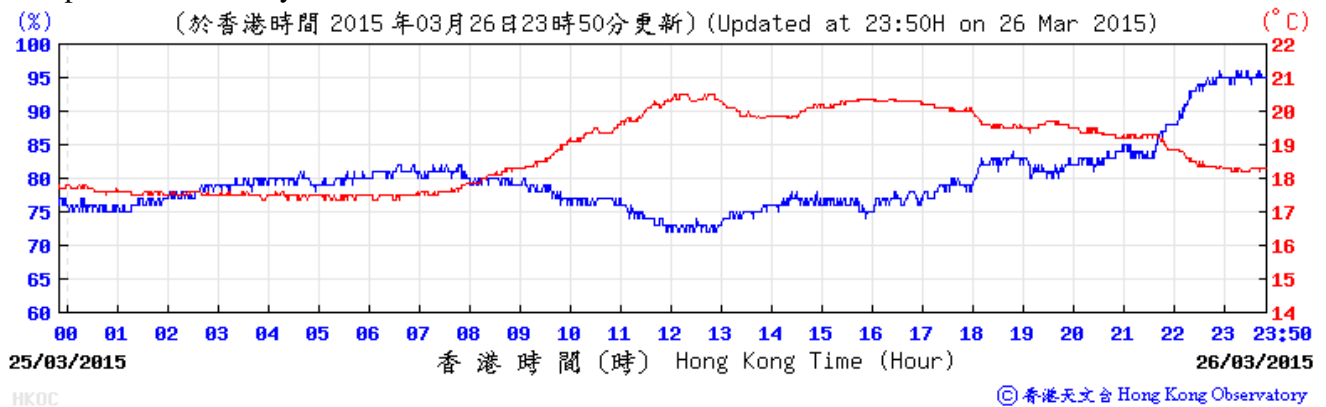
Wind Speed and Direction:



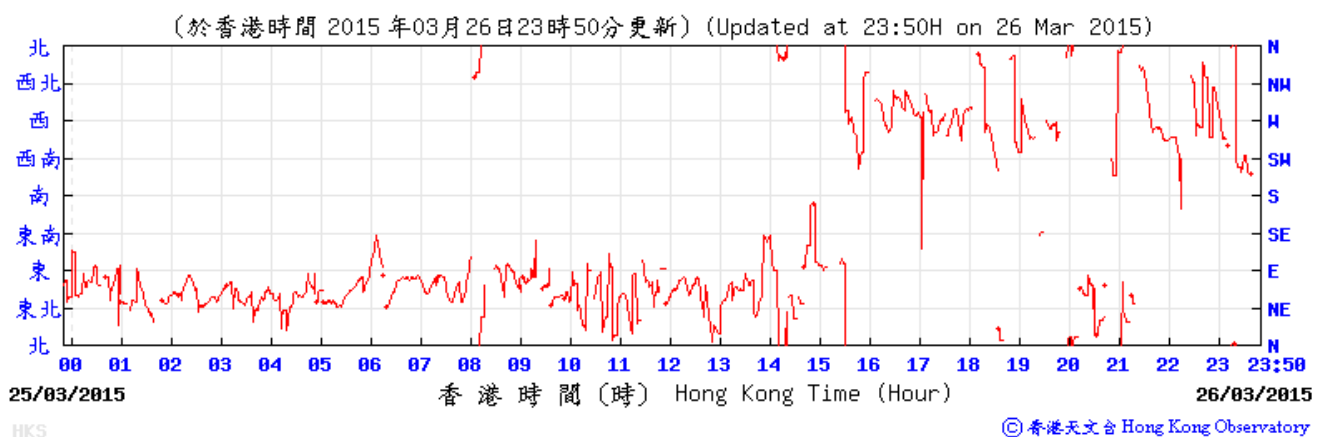
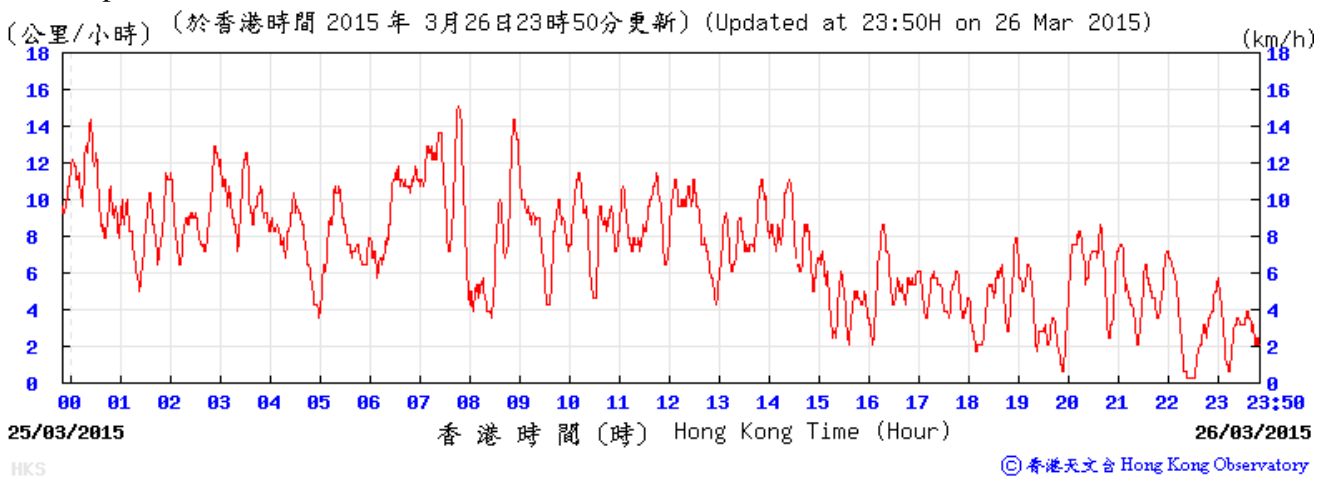
Meteorological Data Recorded from HKO Station (26 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



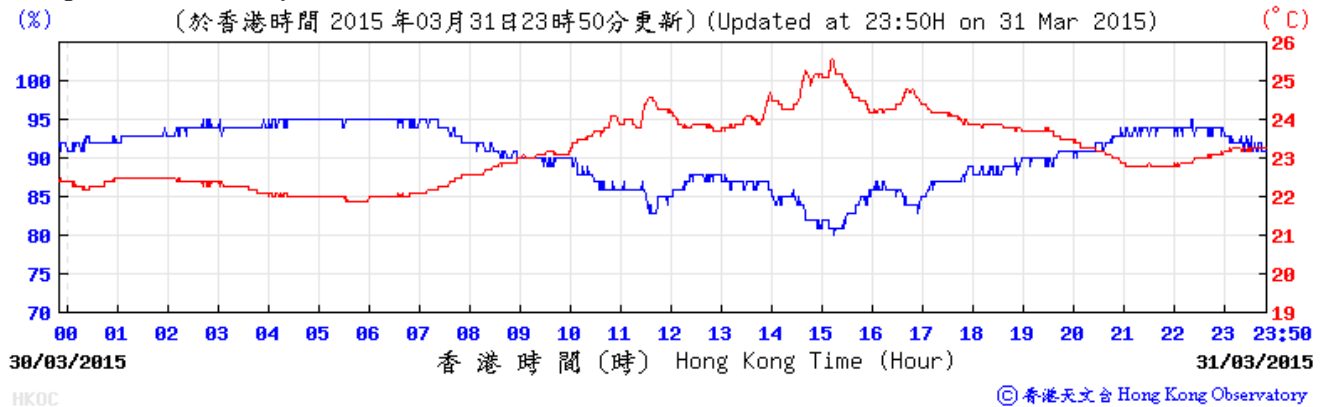
Wind Speed and Direction:



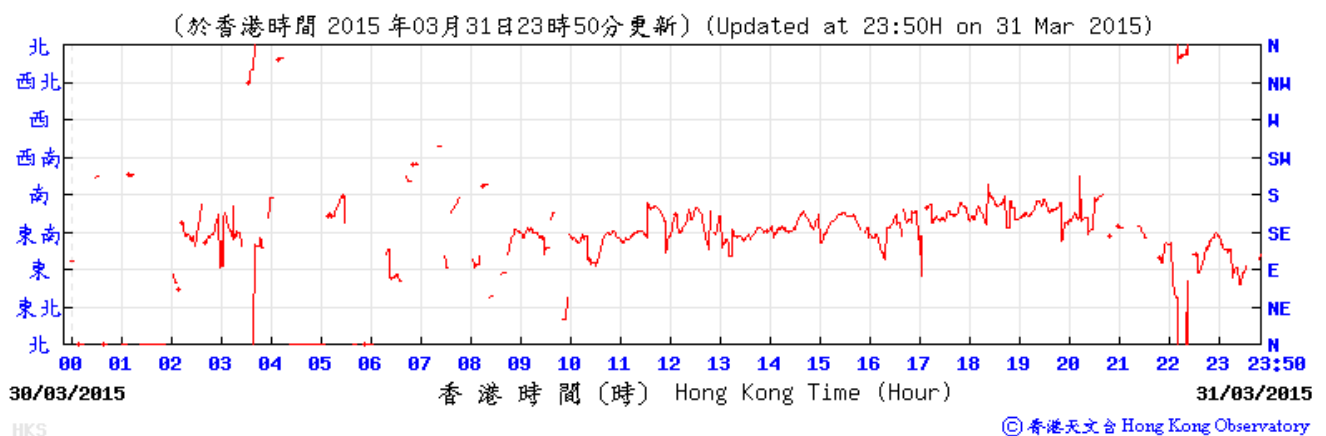
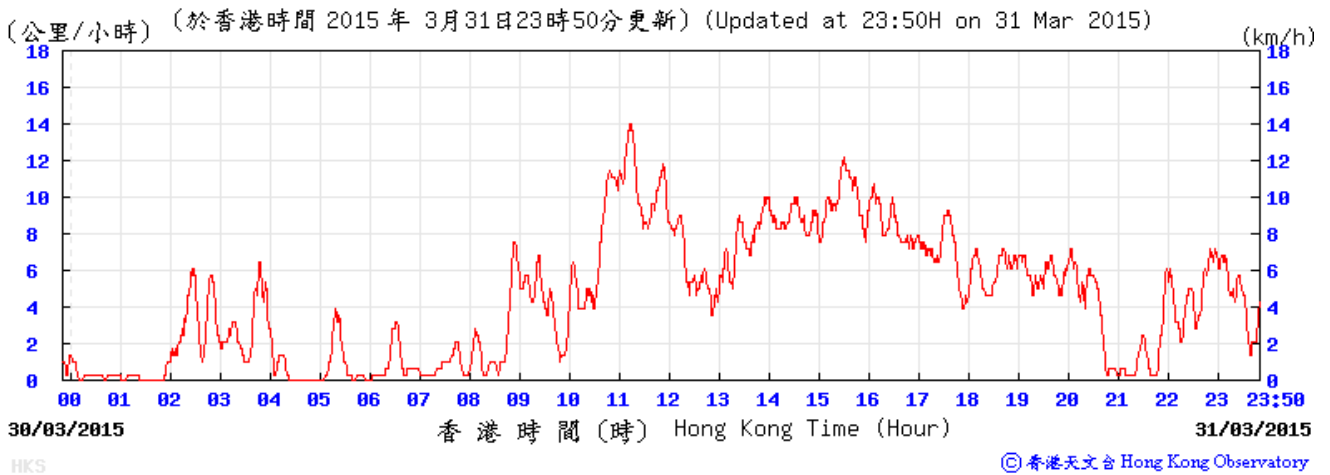
Meteorological Data Recorded from HKO Station (31 March 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



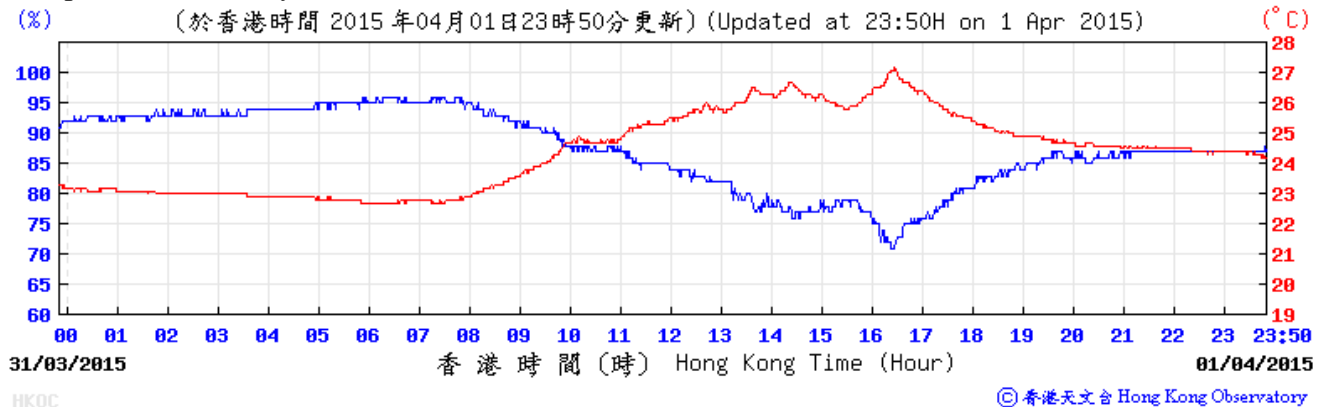
Wind Speed and Direction:



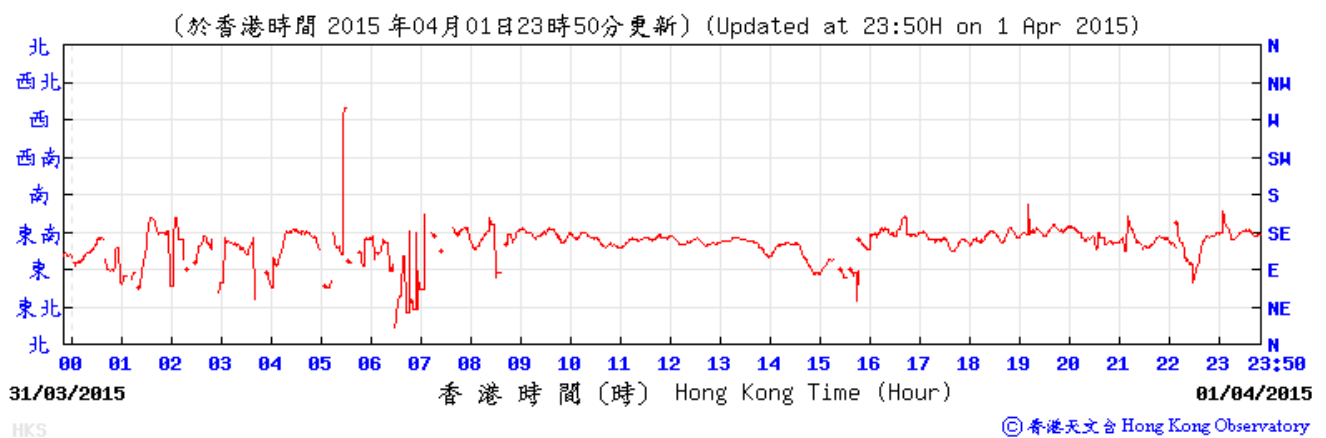
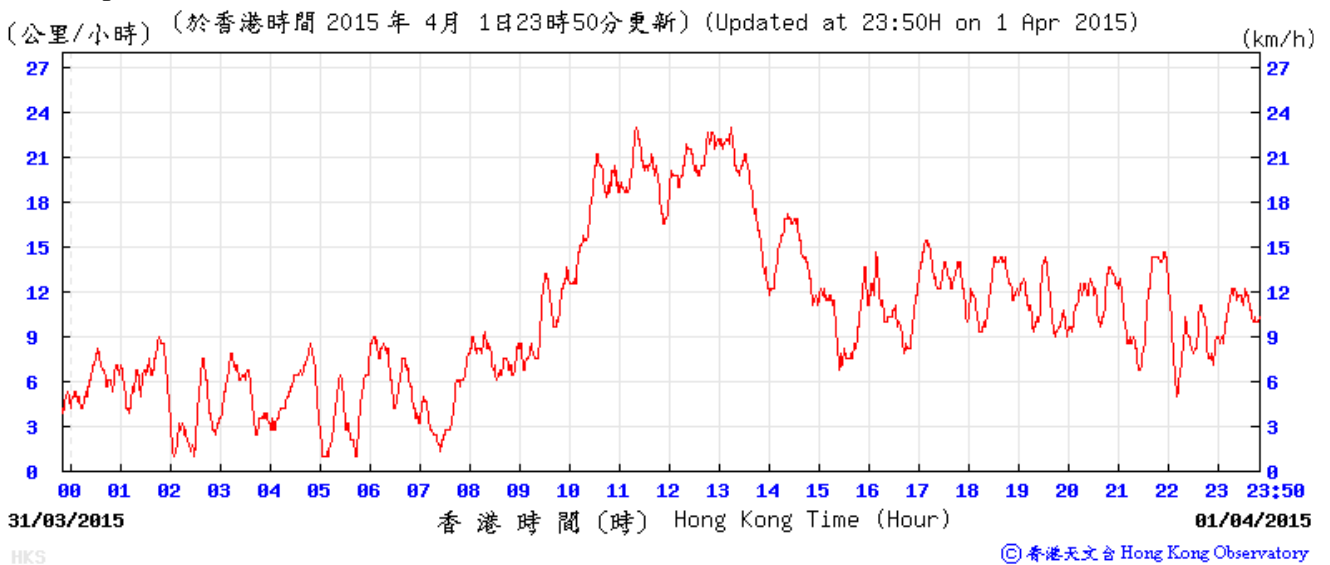
Meteorological Data Recorded from HKO Station (1 April 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



Wind Speed and Direction:



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

Appendix E - 1-hour TSP Monitoring Results

Location CM_WF1a - Wah Ming House (Roof)			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Mar-15	14:15	Cloudy	187.2
2-Mar-15	15:15	Cloudy	194.2
2-Mar-15	16:15	Cloudy	189.2
6-Mar-15	13:35	Cloudy	174.2
6-Mar-15	14:35	Cloudy	179.1
6-Mar-15	15:35	Cloudy	165.8
11-Mar-15	14:05	Cloudy	217.6
11-Mar-15	15:05	Cloudy	211.6
11-Mar-15	16:05	Cloudy	206.9
17-Mar-15	9:00	Fine	110.4
17-Mar-15	10:00	Fine	112.8
17-Mar-15	11:00	Fine	119.2
20-Mar-15	14:00	Sunny	107.7
20-Mar-15	15:00	Sunny	115.8
20-Mar-15	16:00	Sunny	106.0
26-Mar-15	14:10	Cloudy	110.1
26-Mar-15	15:10	Cloudy	107.9
26-Mar-15	16:10	Cloudy	116.0
		Average	151.8
		Maximum	217.6
		Minimum	106.0

Location CM_AB1b - Works Site Boundary of Aberdeen PTW			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Mar-15	9:00	Cloudy	193.1
2-Mar-15	10:00	Cloudy	204.8
2-Mar-15	11:00	Cloudy	182.6
6-Mar-15	9:00	Cloudy	160.6
6-Mar-15	10:00	Cloudy	158.5
6-Mar-15	11:00	Cloudy	152.9
11-Mar-15	9:00	Cloudy	252.9
11-Mar-15	10:00	Cloudy	239.1
11-Mar-15	11:00	Cloudy	251.4
17-Mar-15	8:30	Sunny	103.6
17-Mar-15	9:30	Sunny	105.5
17-Mar-15	10:30	Sunny	106.9
20-Mar-15	13:00	Sunny	121.0
20-Mar-15	14:00	Sunny	128.6
20-Mar-15	15:00	Sunny	130.0
26-Mar-15	9:00	Cloudy	131.6
26-Mar-15	10:00	Cloudy	138.3
26-Mar-15	11:00	Cloudy	126.2
		Average	160.4
		Maximum	252.9
		Minimum	103.6

Appendix E - 1-hour TSP Monitoring Results

Location CM_CB1a - The Arcade, Cyberport			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Mar-15	14:25	Cloudy	206.0
2-Mar-15	15:25	Cloudy	210.2
2-Mar-15	16:25	Cloudy	197.0
6-Mar-15	13:45	Cloudy	173.3
6-Mar-15	14:45	Cloudy	163.5
6-Mar-15	15:45	Cloudy	164.1
11-Mar-15	14:20	Cloudy	197.6
11-Mar-15	15:20	Cloudy	193.2
11-Mar-15	16:20	Cloudy	188.0
17-Mar-15	9:00	Fine	110.4
17-Mar-15	10:00	Fine	111.6
17-Mar-15	11:00	Fine	115.9
20-Mar-15	9:00	Fine	122.5
20-Mar-15	10:00	Fine	108.4
20-Mar-15	11:00	Fine	110.3
26-Mar-15	14:15	Cloudy	117.9
26-Mar-15	15:15	Cloudy	111.7
26-Mar-15	16:15	Cloudy	115.5
		Average	151.0
		Maximum	210.2
		Minimum	108.4

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 ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
2-Mar-15	09:00	Cloudy	290.1	3.1721	3.2780	0.1059	2208.2	2232.2	24.0	1.23	1.23	1.23	1773.1	59.7	150101/083
7-Mar-15	09:00	Cloudy	289.4	3.1933	3.2712	0.0779	2232.2	2256.2	24.0	1.23	1.23	1.23	1775.4	43.9	150302/091
13-Mar-15	09:00	Cloudy	289.7	3.2863	3.3989	0.1126	2256.2	2280.2	24.0	1.23	1.23	1.23	1775.0	63.4	130303/099
19-Mar-15	09:00	Cloudy	295.5	3.2623	3.3350	0.0727	2280.2	2304.2	24.0	1.22	1.22	1.22	1752.0	41.5	150304/063
25-Mar-15	09:00	Cloudy	291.4	3.2710	3.3918	0.1208	2304.2	2328.2	24.0	1.23	1.23	1.23	1773.5	68.1	150305/049
31-Mar-15	09:00	Cloudy	296.7	3.3228	3.3995	0.0767	2328.2	2352.2	24.0	1.21	1.21	1.21	1749.2	43.8	150401/012
												Min	41.5		
												Max	68.1		
												Average	53.4		

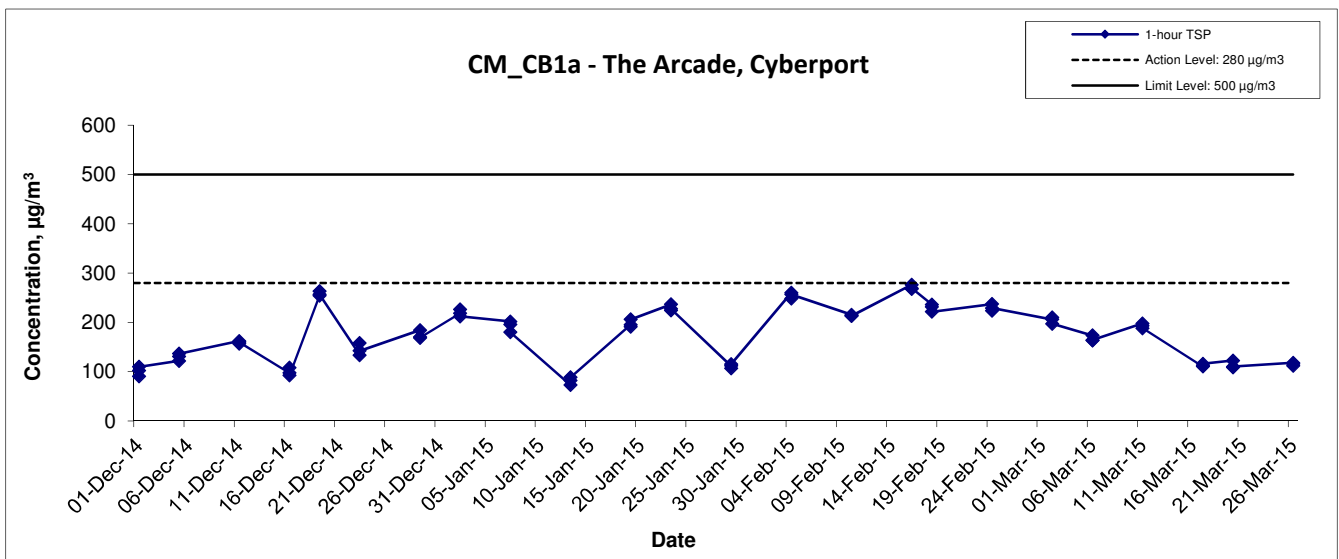
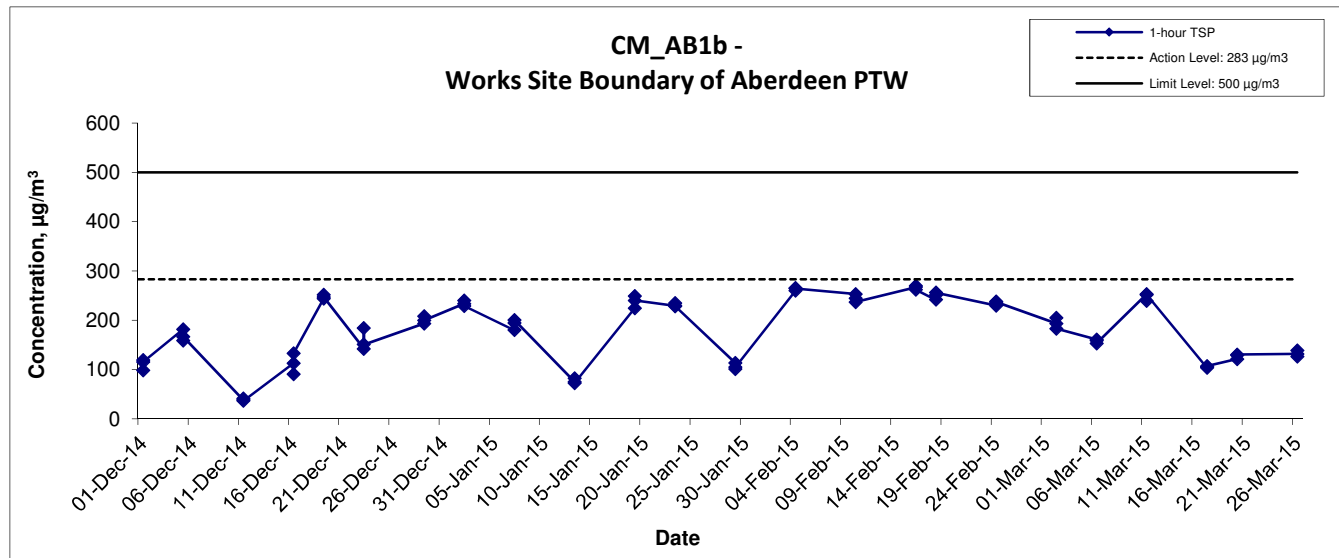
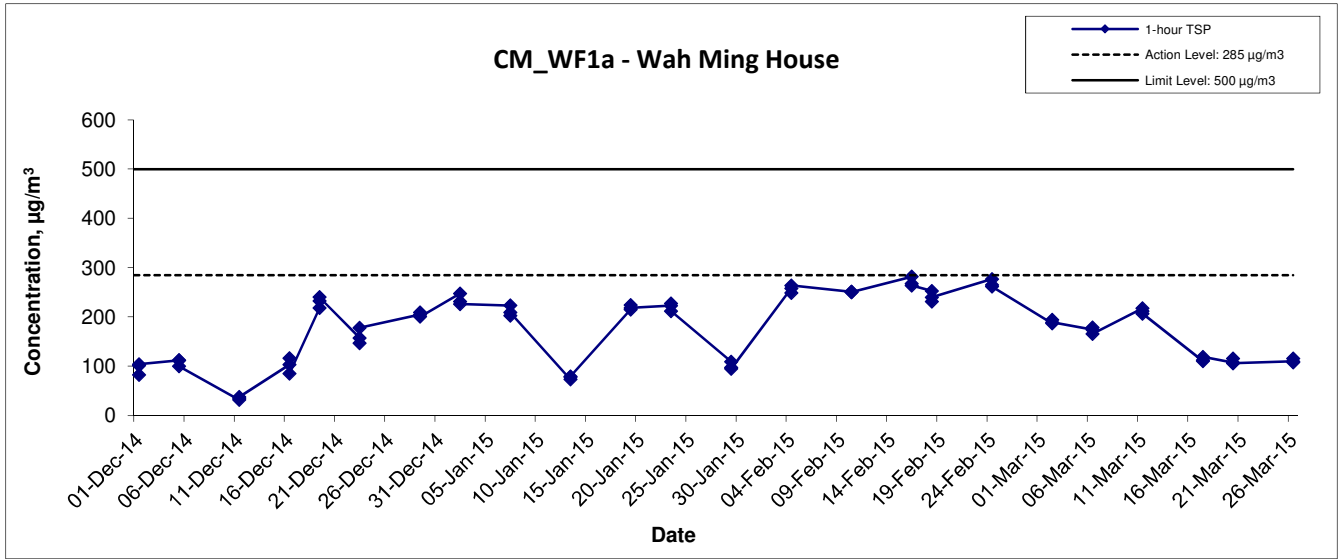
Location CM_AB1b - Works Site Boundary of Aberdeen PTW

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
2-Mar-15	09:00	Cloudy	290.4	3.1869	3.4122	0.2253	3443.1	3467.1	24.0	1.21	1.21	1.21	1746.4	129.0	150101/081
7-Mar-15	09:00	Cloudy	289.8	3.1764	3.2815	0.1051	3467.1	3491.1	24.0	1.21	1.21	1.21	1748.5	60.1	150302/090
13-Mar-15	09:00	Cloudy	289.2	3.2868	3.5187	0.2319	3491.1	3515.1	24.0	1.22	1.22	1.22	1751.3	132.4	150303/098
19-Mar-15	09:00	Sunny	285.8	3.2673	3.5190	0.2517	3515.1	3539.1	24.0	1.22	1.22	1.22	1756.8	143.3	150304/064
25-Mar-15	09:00	Cloudy	291.8	3.2715	3.5172	0.2457	3539.1	3563.1	24.0	1.21	1.21	1.21	1747.4	140.6	150305/050
31-Mar-15	09:00	Cloudy	296.6	3.3119	3.4213	0.1094	3563.1	3587.1	24.0	1.20	1.20	1.20	1724.1	63.5	150401/011
												Min	60.1		
												Max	143.3		
												Average	111.5		

Location CM_CB1a - The Arcade, Cyberport

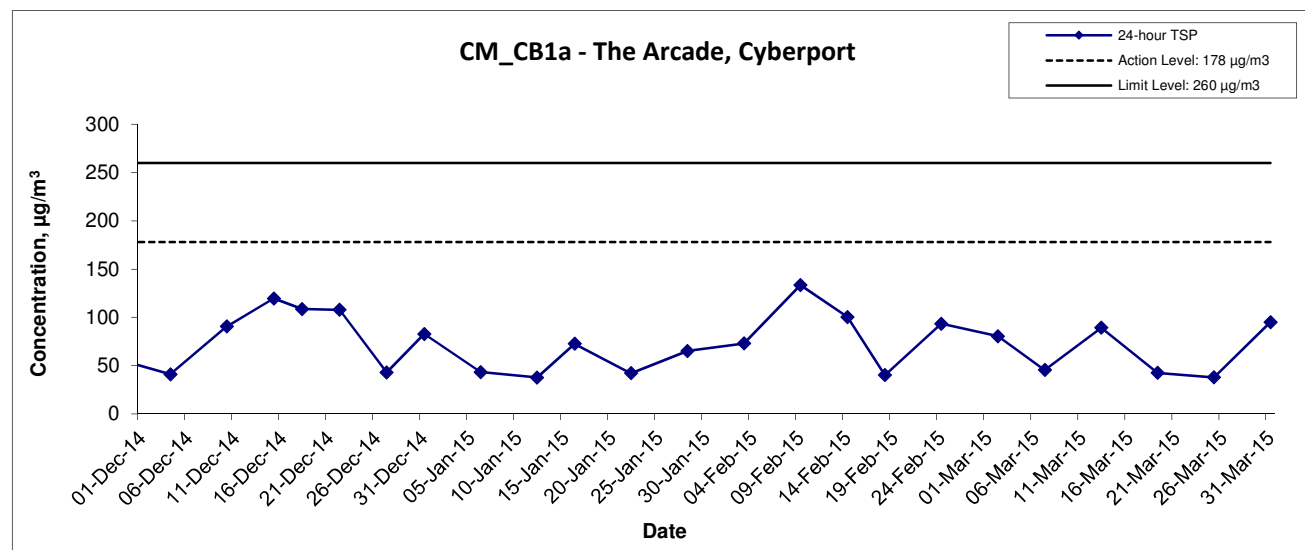
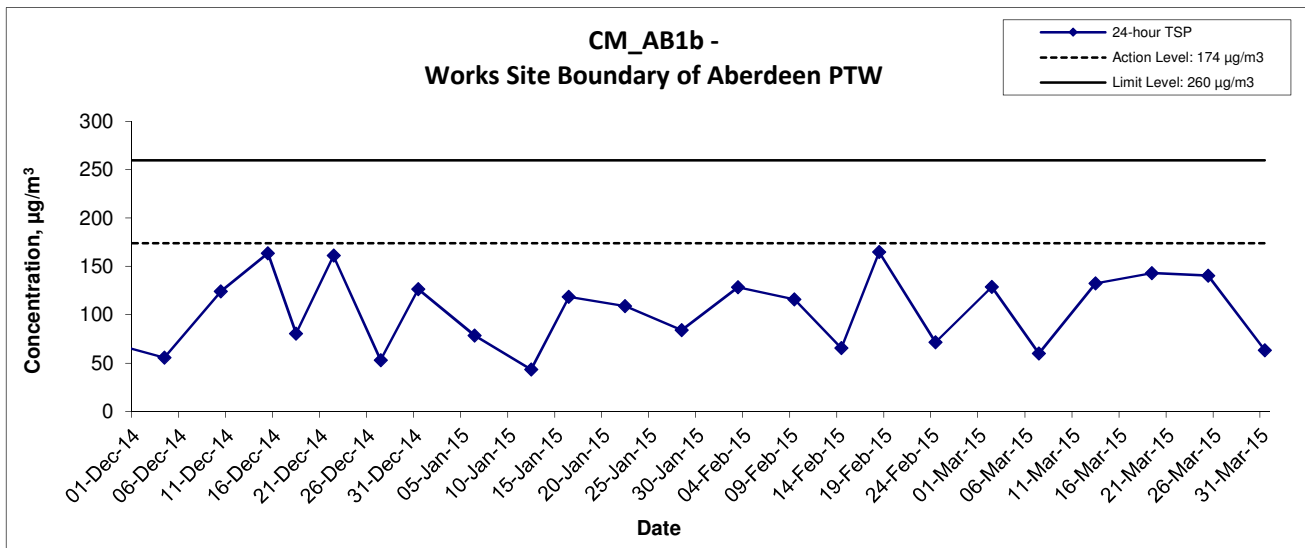
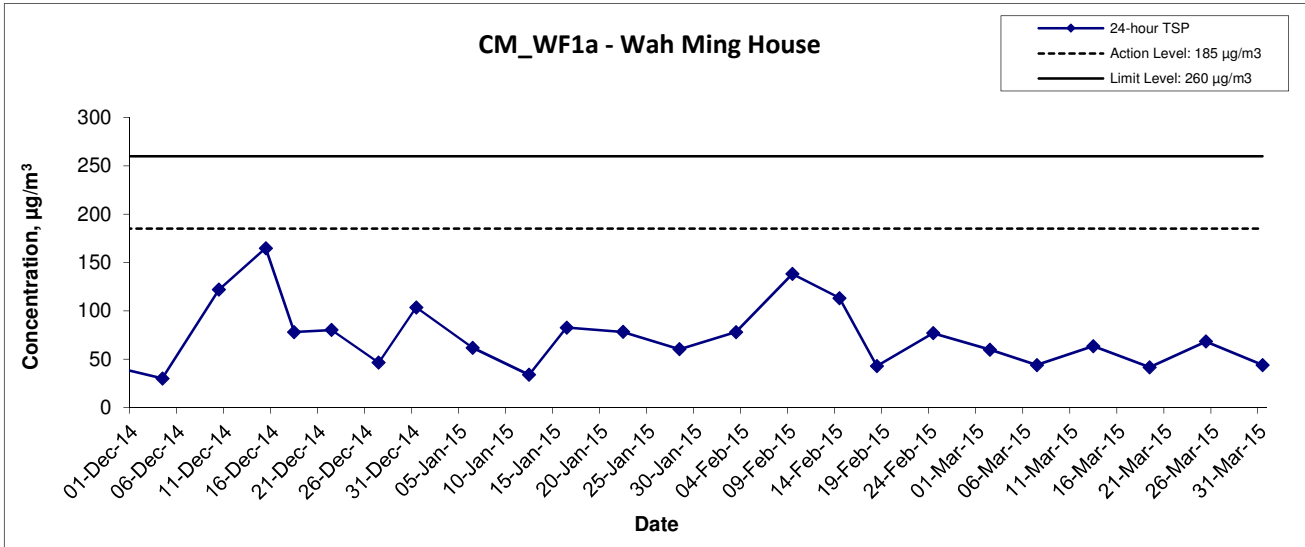
Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
2-Mar-15	09:00	Cloudy	290.5	3.1842	3.3237	0.1395	1609.9	1633.9	24.0	1.20	1.20	1.20	1734.3	80.4	150101/082
7-Mar-15	09:00	Cloudy	289.4	3.1652	3.2444	0.0792	1633.9	1657.9	24.0	1.21	1.21	1.21	1737.6	45.6	150302/092
13-Mar-15	09:00	Cloudy	289.7	3.2970	3.4521	0.1551	1657.9	1681.9	24.0	1.21	1.21	1.21	1737.5	89.3	150303/100
19-Mar-15	09:00	Sunny	285.8	3.2059	3.2802	0.0743	1681.9	1705.9	24.0	1.21	1.21	1.21	1744.0	42.6	150305/010
25-Mar-15	09:00	Cloudy	291.7	3.2366	3.3023	0.0657	1705.9	1729.9	24.0	1.21	1.20	1.20	1734.9	37.9	150305/048
31-Mar-15	09:00	Cloudy	296.9	3.2942	3.4570	0.1628	1729.9	1753.9	24.0	1.19	1.19	1.19	1711.5	95.1	150401/013
												Min	37.9		
												Max	95.1		
												Average	65.1		

1-hr TSP Concentration Levels



Title 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 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11060	
	Date Mar 15	Appendix E	

24-hr TSP Concentration Levels



Title 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	Scale N.T.S	Project No. MA11060	
	Date Mar 15	Appendix E	

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

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 _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
2-Mar-15	16:20	Cloudy	55.6	57.8	52.3	57.3	55.6 Measured ≤ Baseline
11-Mar-15	16:15	Cloudy	59.1	60.7	54.3		54.4
17-Mar-15	9:20	Fine	57.4	60.9	49.0		41.0
26-Mar-15	16:25	Cloudy	56.1	58.2	53.1		56.1 Measured ≤ Baseline

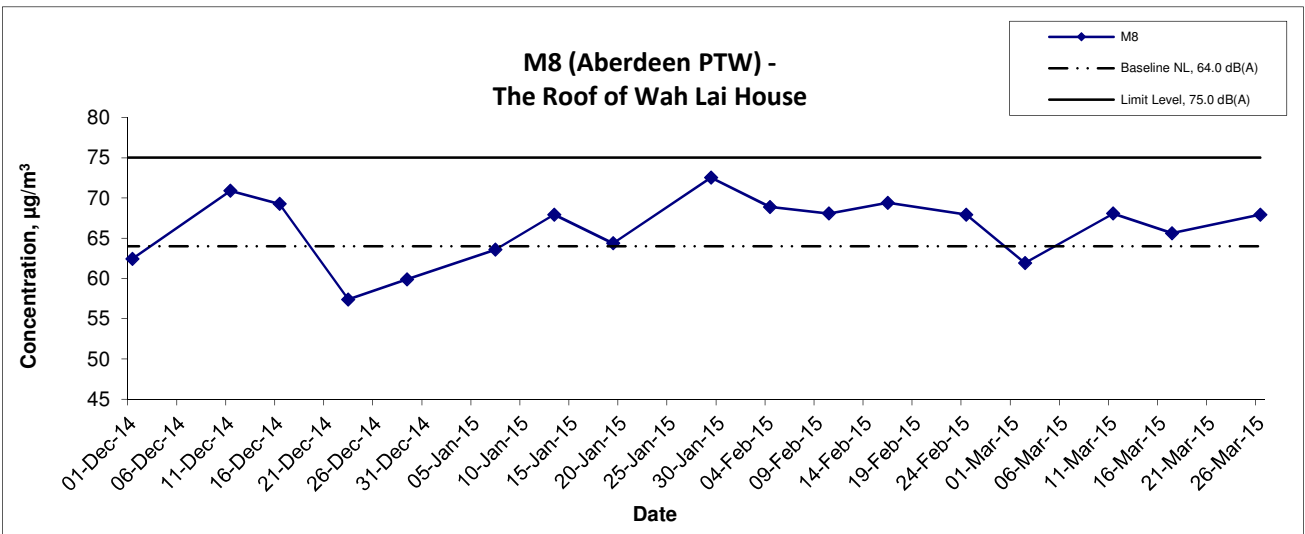
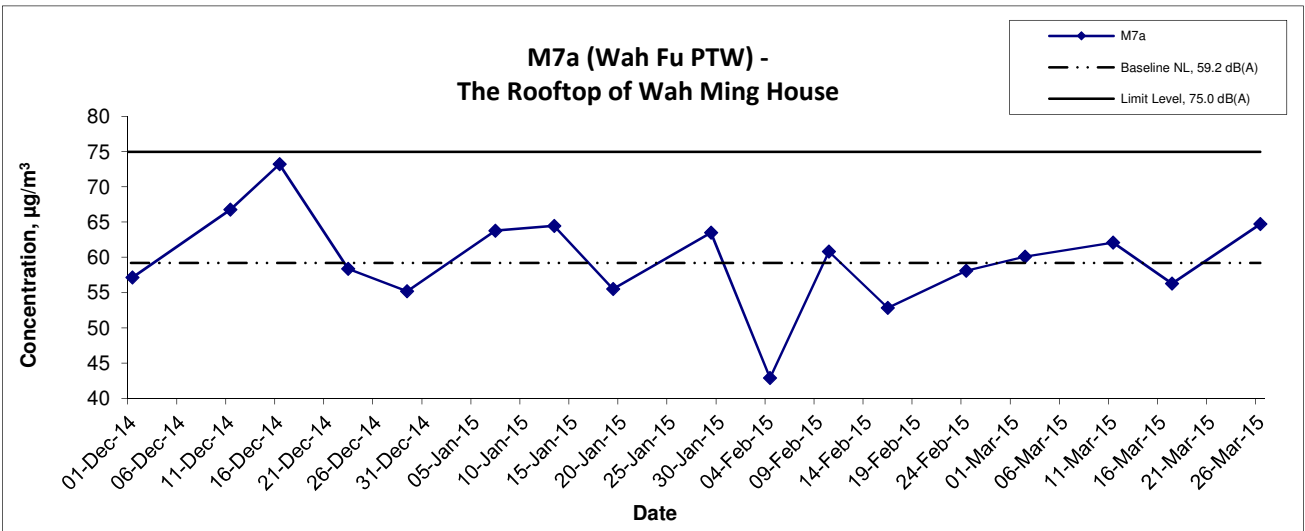
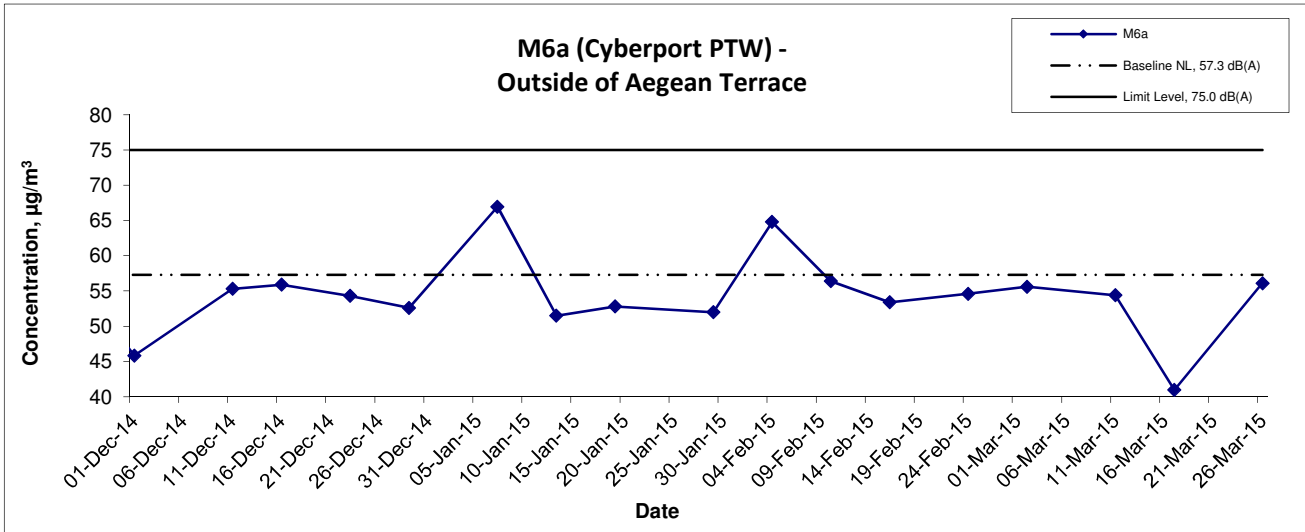
Location M7a (Wah Fu PTW) The rooftop of Wah Ming House							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
2-Mar-15	14:15	Cloudy	62.7	63.6	55.0	59.2	60.1
11-Mar-15	14:05	Cloudy	63.9	66.4	60.5		62.1
17-Mar-15	9:10	Sunny	61.0	63.7	57.6		56.3
26-Mar-15	14:10	Cloudy	65.8	69.3	57.0		64.7

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 _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
2-Mar-15	13:20	Cloudy	66.1	67.8	64.1	64.0	61.9
11-Mar-15	13:15	Cloudy	69.5	70.8	68.2		68.1
17-Mar-15	10:20	Sunny	67.9	69.1	66.2		65.6
26-Mar-15	13:00	Cloudy	69.4	70.2	68.1		67.9

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 _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
2-Mar-15	9:35	Cloudy	50.6	52.2	48.8	56.5	50.6 Measured ≤ Baseline
11-Mar-15	9:30	Cloudy	60.4	62.2	58.4		58.1
17-Mar-15	13:00	Fine	60.1	63.4	58.9		57.6
26-Mar-15	9:25	Cloudy	55.3	58.6	50.1		55.3 Measured ≤ Baseline

Noise Levels

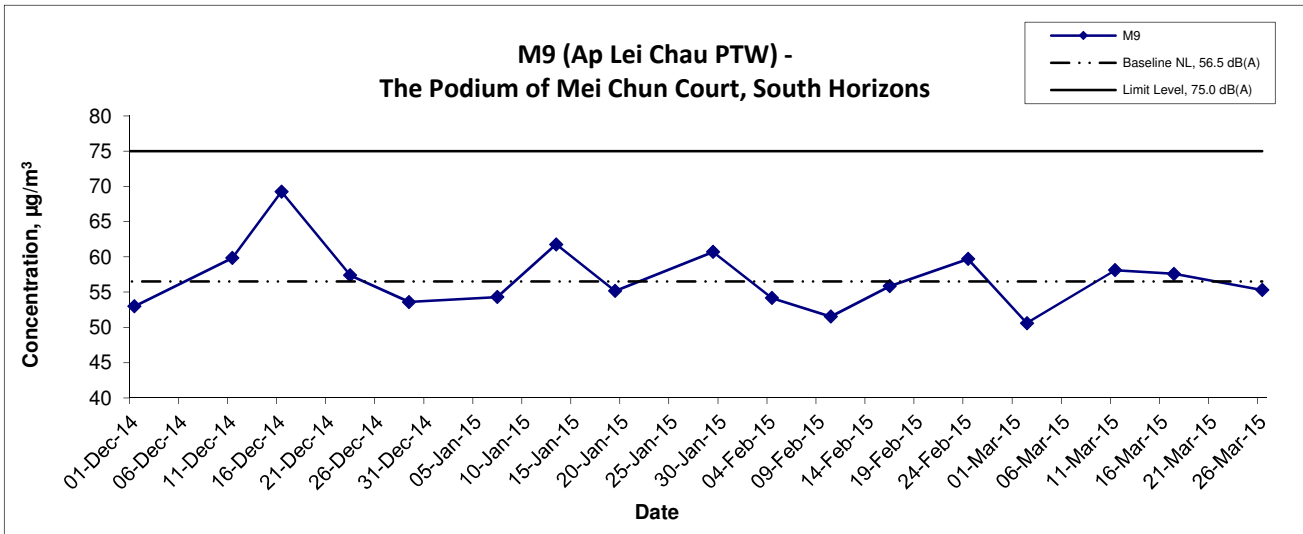
(0700-1900 hrs on Normal Weekdays)



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	Project No. MA11060	
	Date Mar 15	Appendix F	

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	CINOTECH
	Date Mar 15	Appendix F	

**APPENDIX G
SUMMARY OF EXCEEDANCE**

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: March 2015

- 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)**

**APPENDIX H
SITE AUDIT SUMMARY**

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	150306
Date	6 March 2015 (Friday)
Time	09:30 – 11:45

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

Ref. No.	Remarks/Observations	Related Item No.
150306-R02	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> Properly clear the slurry water at Wah Fu-PTW to prevent the water overflow the public access road. 	A 11
150306-R02	<p>Part B – Landscape and Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
150306-R02	<p>Part C - Air Quality</p> <ul style="list-style-type: none"> The dusty material should be covered by the impervious material at Wah Fu-PTW. 	C 6
150306-R02	<p>Part D – Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
150306-O01	<p>Part E –Waste / Chemical Management</p> <ul style="list-style-type: none"> The oil leakage was observed from the excavator at Abd-PTW. The Contractor was reminded to provide the maintenance and keep it in a good condition. 	E 7i
150306-R04	<ul style="list-style-type: none"> Properly clear the muddy substance at Abd-PTW. 	E 6
	<p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	<p>Others</p> <ul style="list-style-type: none"> Follow-up on previous audit sessions: On previous audit session (Ref. No. 150227), all environmental deficiencies were improved by the Contractor. 	
	<p>Remark:</p> <ul style="list-style-type: none"> N/A 	

	Name	Signature	Date
Recorded by	Janet Wai		6 March 2015
Checked by	Dr. Priscilla Choy		6 March 2015

Contract No: DC/2009/24

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

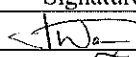

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150313
Date	13 March 2015 (Friday)
Time	09:30 – 11:45

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

Ref. No.	Remarks/Observations	Related Item No.
150313-R03	Part A - Water Quality <ul style="list-style-type: none">The bunding should be provided to prevent the muddy water runoff to the public sewer at Abd-PTW.	A 2
150313-R02	Part B – Landscape and Visual <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. Part C - Air Quality <ul style="list-style-type: none">Properly clear the dusty materials at ALC-PTW and Abd-PTW. Part D – Noise <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection.	C 6
150313-O01	Part E –Waste / Chemical Management <ul style="list-style-type: none">The oil leakage was observed from the excavators at Abd-PTW. The Contractor was reminded to provide the maintenance and keep them in a good condition. Part F - Permit / Licenses <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. Others <ul style="list-style-type: none">Follow-up on previous audit sessions: On previous audit session (Ref. No. 150306), all environmental deficiencies were improved by the Contractor. Remark: <ul style="list-style-type: none">N/A	E 7i

	Name	Signature	Date
Recorded by	Janet Wai		13 March 2015
Checked by	Dr. Priscilla Choy		13 March 2015

Contract No: DC/2009/24

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

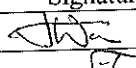

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150320
Date	20 March 2015 (Friday)
Time	09:30 – 10:40

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

Ref. No.	Remarks/Observations	Related Item No.
150320-R01	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> Properly clear the stagnant water at Wah Fu-PTW. <p>Part B - Landscape and Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C - Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D - Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others</p> <ul style="list-style-type: none"> Follow-up on previous audit sessions: On previous audit session (Ref. No. 150313), all environmental deficiencies were improved by the Contractor. <p>Remark:</p> <ul style="list-style-type: none"> N/A 	A 11

	Name	Signature	Date
Recorded by	Janet Wai		20 March 2015
Checked by	Dr. Priscilla Choy		20 March 2015

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	150327
Date	27 March 2015 (Friday)
Time	09:30 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
150327-R01	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> Properly clear the stagnant water regularly at Wah Fu-PTW and Abd-PTW. 	A 11
150327-R03	<p>Part B – Landscape and Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C - Air Quality</p> <ul style="list-style-type: none"> The broken sand bags should be cleared properly and replaced with the new sand bags at Abd-PTW. <p>Part D – Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	C 6
150327-R02	<p>Part E –Waste / Chemical Management</p> <ul style="list-style-type: none"> Properly clear the oil stain at ALC-PTW. <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others</p> <ul style="list-style-type: none"> Follow-up on previous audit sessions: On previous audit session (Ref. No. 150320), outstanding item 150320-R01 is required to be followed up and remarked as 150327-R01 which will be reviewed in the next weekly site inspection (Ref. No. 150402). <p>Remark:</p> <ul style="list-style-type: none"> N/A 	E 7i

	Name	Signature	Date
Recorded by	Janet Wai		27 March 2015
Checked by	Dr. Priscilla Choy		27 March 2015

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

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 2015 (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 ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]	[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
Year2014	4.639730	0.000000	0.000000	0.000000	4.639730	0.000000	0.000000	0.000000	0.000000	0.450000	0.145370	1.832460
JAN	0.921395	0	0	0	0.921395	0	0	0	0	0	0.0112	0.12827
FEB	0.145405	0	0	0	0.145405	0	0	0	0.031	0	0.01901	0.10553
MAR	0.51156	0	0	0	0.51156	0	0	0	0	0	0.01676	0.10203
APR	0	0	0	0	0	0	0	0	0	0	0	0
MAY	0	0	0	0	0	0	0	0	0	0	0	0
JUNE	0	0	0	0	0	0	0	0	0	0	0	0
SUB-TOTAL	1.578360	0.000000	0.000000	0.000000	1.578360	0.000000	0.000000	0.000000	0.031000	0.000000	0.046970	0.335830
JULY	0	0	0	0	0	0	0	0	0	0	0	0
AUG	0	0	0	0	0	0	0	0	0	0	0	0
SEPT	0	0	0	0	0	0	0	0	0	0	0	0
OCT	0	0	0	0	0	0	0	0	0	0	0	0
NOV	0	0	0	0	0	0	0	0	0	0	0	0
DEC	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	11.485035	0.000000	0.000000	0.000000	11.485035	0.000000	17.430000	0.070000	0.101000	0.900000	0.271230	6.807456

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 ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]	[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 to total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m³. (PS Clause 5(4)(b) refers).
[Delete Note (4) and the table above on the forecast, where inapplicable].

- * (4) The assumed density (kg/m³) for both C&D material and general refuse.

C&D material 2000kg/m³
General refuse 1.0 tonnes/m³

- (5) Conversion factors for reporting purpose:

in-situ: rock = 2.5 tonnes/m³ ; soil = 2.0 tonnes/m³
excavated: rock = 2.0 tonnes/m³ ; soil = 1.8 tonnes/m³
broken concrete and bitumen = 2.5 tonnes/m³
C&D Waste = 1.0 tonnes/m³
bentonite slurry = 2.8 tonnes/m³
Paper = 800kg/m³
Chemical = 800kg/m³
Special waste = 0.6m³ / container

APPENDIX J
EVENT ACTION PLANS

APPENDIX J – Event / Action Plans

Table J-1 Event / Action Plan For Air Quality

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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	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

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

APPENDIX K IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
A	Air Quality		
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>
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	Airborne Noise		
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.		^
C	Water Quality		
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"> • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 		*
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"> • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • 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. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • 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. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea. 	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
D	Waste Management		
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"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	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

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
E	Terrestrial Ecology		
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.		^
F	Landscape and Visual		
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
G	Marine Ecology		
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	*
H	Hazard to Life		
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;

**APPENDIX L
COMPLAINT LOG**

APPENDIX L – COMPLAINT LOG

Reporting Month: March 2015

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 th 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 st 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 & 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"> • Adopting a relatively low-noise construction method – small drilling rig to install the pipe piles; • Equipping noise reducing jacket on the small drilling rig. <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"> • To adopt movable noise barrier; • To use silenced equipment where practicable; • To avoid concurrent uses of noisy equipment near the sensitive area; • To ensure the equipment are maintaining in good operation condition; and • To turned off any idle equipment on site. 	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 th 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 12th 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"> • Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced); • To install movable noise absorption screen located close to the operating PME/noisy works (noise sources); • To enclose or wrap the breaking tip with sound insulating materials to reduce the noise. <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 th 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 29th 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"> • Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced); • To install the erected noise absorption screen located close to the operating PME/noisy works (noise sources). <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.	
CIR#4_150330	DSD's Preliminary Treatment Work (PTW) at Wah Fu	30 th March 2015	One anonymous complainant complained about the dark smoke emission 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 30 th March 2015 and initiated the complaint investigation procedures. According to the information provided by the Contractor, there was no dark smoke emission was observed at Wah Fu PTW at the date of the complaint. Referring to the information of the Contractor, the potential construction machine that might generate the dark smoke emission at the date of the complaint was sheet piling machine for the sheet piling works (installation of sheet piles).	After complaint received, the Contractor has taken initiative to prevent dark smoke emission to the nearby residents by implementation of mitigation measures as below: <ul style="list-style-type: none"> • Remove the sheet piling machine that had generated the dark smoke emission on 31st March 2015; • Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced). The Contractor was reminded to determine the darkness of smoke generated from mechanical equipment. With comparison to the shade of smoke to the shades on a Ringelmann Chart or other approved devices to ensure the emitting smoke is lighter than shade 1 on the Ringelmann Chart. Referring to the Air Pollution Control (Smoke) Regulations, the Contractor was also reminded to avoid any dark smoke emission generated from mechanical equipment for more than 6 minutes in any period of 4 hours or for more than 3 minutes continuously at any one time; and remove the carbon deposits from the muffler and keep the mesh at the inlet of the air blower clear frequently which could further prevent the dark smoke emission generated from construction machines of construction works in Wah Fu PTW.	The situation is to be kept in view.

Remarks: One environmental complaint was received in March 2015.

APPENDIX M
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	March 2015				April 2015				May 2015				June 2015			
						23	02	09	16	23	30	06	13	20	27	04	11	18	25	01	08
DSD - HATSS2 Upgrading of PTW (DC/2009/24)																					
Particulars																					
Key Dates																					
Commencement / Completion																					
24GEN00020	Time for Completion of Project	0%	1309	31-Aug-11 A	30-Apr-17																
Portion of the Site (MILESTONE)																					
Sandy Bay PTW																					
Possession / Vacation of Portions																					
24MSBY00025	Vacation Date_SBY-T1 (30 days after H/O of ALC-T2)	0%	0		30-Mar-15	◆ Vacation Date_SBY-T1 (30 days after H/O of ALC-T2), Vacation Date_SBY-T1 (30 days after H/O of ALC-T2)															
Civil & Geo. Submission																					
Contractor's Design, Submission / Approval & Procurement																					
Technical Information & Drawings																					
Cyberport																					
Major Technical Data / Civil Works Design																					
24DCPT00294	Review / Resubmit of Design for Flume Channels	0%	28	28-Jul-13 A	27-Mar-15	Review / Resubmit of Design for Flume Channels															
24DCPT00295	Approval of Design for Flume Channels	0%	14	28-Mar-15	10-Apr-15	Approval of Design for Flume Channels															
24DCPT00346	Prepare / Submission of Design for permanent concrete plinth for new deodorization unit	0%	30	24-Dec-14 A	27-Mar-15	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	28-Mar-15	10-Apr-15	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	11-Apr-15	24-Apr-15	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	25-Apr-15	08-May-15	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	09-May-15	15-May-15	Approval of Design for permanent concrete plinth for new deodorization unit															
Method Statement																					
24DCPT02190	Approval of Method Statement for Trench, Chambers and Channels	0%	14	19-Dec-14 A	29-Mar-15	Approval of Method Statement for Trench, Chambers and Channels															
Order / Manufacturing / Shipment / Delivery																					
24DCPT02360	Manufacturing of 700Ø DI Pipe, valves and accessories	100%	90	11-Feb-14 A	29-Mar-15	Manufacturing of 700Ø DI Pipe, valves and accessories															
24DCPT02370	Delivery of 700Ø DI Pipe, valves and accessories	0%	21	30-Mar-15	19-Apr-15	Delivery of 700Ø DI Pipe, valves and accessories															
Wah Fu																					
Major Technical Data / Civil Works Design																					
24DWFU00130	Review / Resubmit of Piling Works Design for Fine Screen & Grit Trap Building	98%	28	22-Dec-11 A	24-Mar-15	Review / Resubmit of Piling Works Design for Fine Screen & Grit Trap Building															
24DWFU00140	Approval of Piling Works Design for Fine Screen & Grit Trap Building	50%	14	23-May-12 A	26-Mar-15	Approval of Piling Works Design for Fine Screen & Grit Trap Building															
24DWFU00160	Review / Approval of ICE for RC Design (Fine Screen & Grit Trap Building)	85%	20	08-Feb-12 A	28-Mar-15	Review / Approval of ICE for RC Design (Fine Screen & Grit Trap Building)															
24DWFU00180	Review / Resubmit of RC Design (Fine Screen & Grit Trap Building)	85%	28	08-Feb-12 A	30-Mar-15	Review / Resubmit of RC Design (Fine Screen & Grit Trap Building)															
24DWFU00190	Approval of RC Design (Fine Screen & Grit Trap Building)	50%	14	18-Jul-12 A	06-Apr-15	Approval of RC Design (Fine Screen & Grit Trap Building)															
24DWFU00200	Prepare / Submission of Design for Finishing Works (Fine Screen & Grit Trap Building)	0%	40	24-Dec-14 A	31-Mar-15	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	01-Apr-15	20-Apr-15	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	21-Apr-15	18-May-15	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	19-May-15	15-Jun-15	Review / Resubmit of Design for Finishing Works (Fine Screen & Grit Trap Building)															
24DWFU00240	Approval of Design for Finishing Works (Fine Screen & Grit Trap Building)	0%	14	16-Jun-15	29-Jun-15	Approval of Design for Finishing Works (Fine Screen & Grit Trap Building)															
24DWFU00400	Prepare / Submission of Design for Flume Channels & Chambers	0%	40	07-Apr-15	16-May-15	Prepare / Submission of Design for Flume Channels & Chambers															
24DWFU00410	Review / Approval of ICE for Design for Flume Channels & Chambers	0%	20	17-May-15	05-Jun-15	Review / Approval of ICE for Design for Flume Channels & Chambers															
24DWFU00420	Comments / Approval of Design for Flume Channels & Chambers	0%	28	06-Jun-15	03-Jul-15	Comments / Approval of Design for Flume Channels & Chambers															

Start Date: 25-Jun-11
 Finish Date: 30-Apr-18
 Date Date: 23-Mar-15
 Run Date: 31-Mar-15

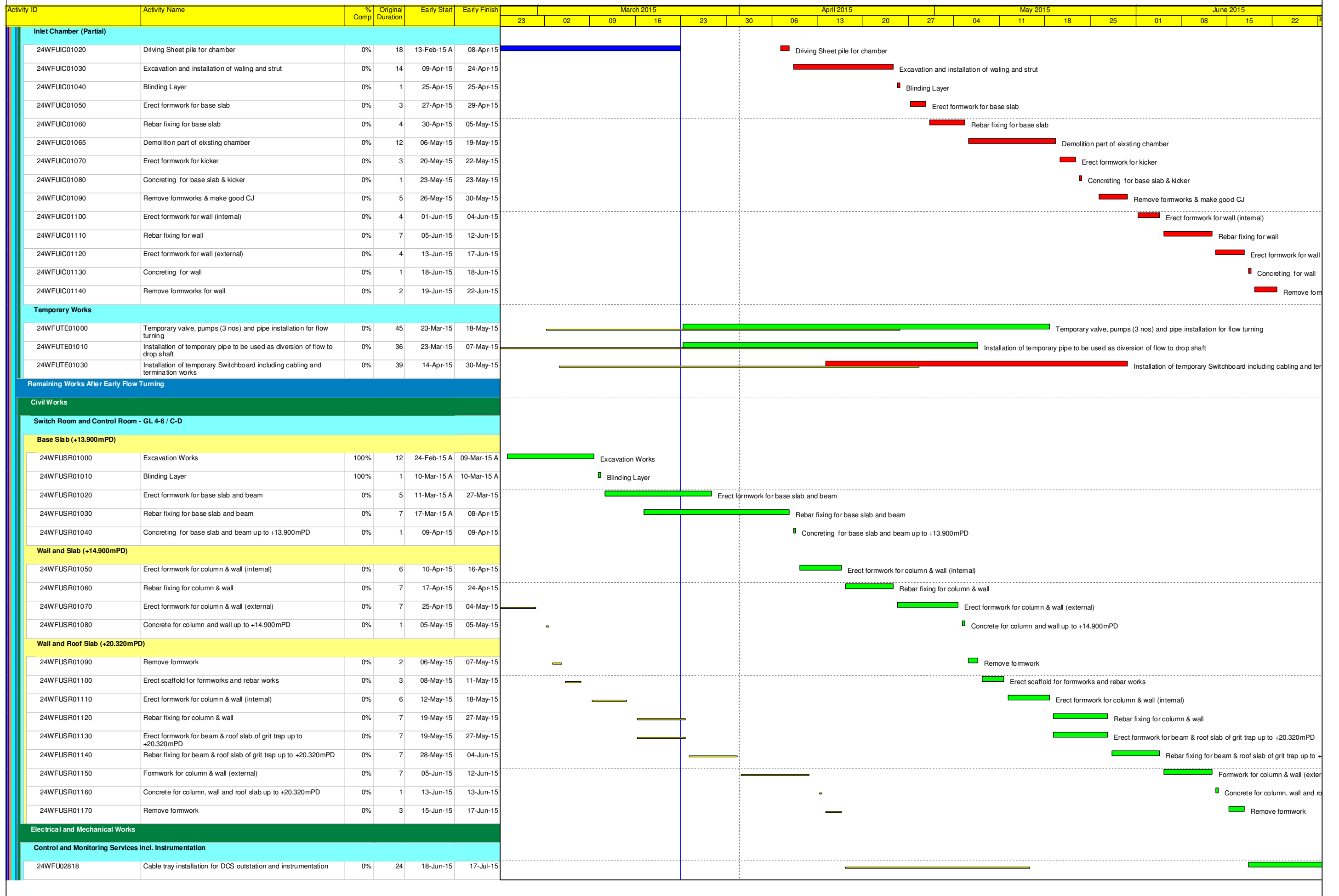
- Primary Baseline
- Actual Work
- Critical Remaining Work
- ◆ Baseline Milestone
- Current Bar Labels
- ◆ Milestone

HATSS2A Contract No. DC/2009/24
3 MONTHS ROLLING PROGRAMME
MARCH 2015

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-Mar-15	UDWP - REVISION 3		

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	March 2015				April 2015				May 2015				June 2015									
						23	02	09	16	23	30	06	13	20	27	04	11	18	25	01	08	15	22				
24PALC01260	Manufacturing of Deodorization System	0%	160	02-Apr-15	08-Sep-15																						
24PALC01320	Placing of Order on Control Panel	0%	10	23-Mar-15	01-Apr-15																						
24PALC01330	Manufacturing of Control Panel	0%	50	02-Apr-15	21-May-15																						
24PALC01340	Packaging / Delivery of Control Panel	0%	15	22-May-15	05-Jun-15																						
24PALC01350	Placing of Order on Instruments	0%	10	23-Mar-15	01-Apr-15																						
24PALC01360	Manufacturing of Instruments	0%	110	02-Apr-15	20-Jul-15																						
Sandy Bay PTW																											
Works for Section 1																											
PTW Building																											
Civil Works																											
Site Clearance and Preparation Works																											
24SBY02050	Relocation of Temp. Works in ALC-T2 from SBY-T1	0%	25	18-Sep-12 A	30-Mar-15																						
Remaining Works needed for Flow Turning at Drop Shaft																											
Cable Duct and Draw Pit Construction																											
24SBYR01000	Cable duct and draw pit construction	100%	50	24-Jan-15 A	21-Mar-15 A																						
E&M Works for Flume Channel and Drop Shaft																											
24SBYRW01010	H/O of Flume Channel and Drop Shaft from other Contractor (LLNSJV)	100%	0	09-Mar-15 A																							
24SBYRW01020	Measuring Flume with alignment check and backfilling	0%	20	09-Mar-15 A	30-Mar-15																						
24SBYRW01030	Installation of level sensor and transmitter for measuring flume	0%	4	26-Mar-15	30-Mar-15																						
24SBYRW01040	Installation of hydrostatic level sensor c/w transmitter at drop shaft	0%	4	23-Mar-15	26-Mar-15																						
24SBYRW01050	Installation of microwave level sensor c/w transmitter at drop shaft	0%	6	27-Mar-15	02-Apr-15																						
24SBYRW01060	Installation of H2S monitoring station	0%	7	07-Apr-15	14-Apr-15																						
24SBYRW01070	Cable laying	0%	12	28-Mar-15	14-Apr-15																						
24SBYRW01080	Megger test	0%	5	15-Apr-15	20-Apr-15																						
24SBYRW01090	Cable termination	0%	5	21-Apr-15	25-Apr-15																						
24SBYRW01100	Functional test	0%	10	27-Apr-15	08-May-15																						
Readiness for Flow Turning																											
24SBYRW01110	Readiness for Flow Turning to Drop Shaft	0%	0		08-May-15																						
24SBYRW01120	Testing and Commissioning of flow via new flume channels to drop shaft	0%	30	09-May-15	07-Jun-15																						
Completion of Works in Section 1																											
Hand Over Date																											
24SBY03025	Sandy Bay PTW (completion of maintenance period)	0%	0		07-Jun-15																						
Cyberport PTW																											
Key Dates																											
Time of Completion																											
24CPT01000	Time for Completion of Section 2	0%	1280	31-Aug-11 A	19-Nov-15																						
Interface and Liaison																											
Interface with other contractors																											
24MCPT00110	Liaison with SCS Contractor for the modification of existing water pipe / drainage pipe and flume channel connection	0%	90	15-Mar-14 A	11-Apr-15																						
Works for Section 2																											
Modification Inside Cyberport PTW Complex incl. Deodorization Room																											
Electrical and Mechanical Works																											
Material / Equipment Delivery on Site																											
24CPT02330	Delivery of Stoplog	0%	0		27-May-15																						
24CPT02350	Delivery of Control Panel	0%	0		22-Apr-15																						
Electrical Works																											

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	March 2015				April 2015				May 2015				June 2015						
						23	02	09	16	23	30	06	13	20	27	04	11	18	25	01	08	15	22	
24WFU1010H	Extension of Time Order No. 8 - Claim No. PTS/001 - 015 (Inclement Weather in September 2013)	100%	3	20-Mar-15 A	23-Mar-15 A	Extension of Time Order No. 8 - Claim No. PTS/001 - 015 (Inclement Weather in September 2013)																		
24WFU1011	Revised Completion Date for Section 4 with EoT awarded	100%	0		23-Mar-15 A	Revised Completion Date for Section 4 with EoT awarded, Revised Completion Date for Section 4 with EoT awarded																		
24WFU1012	Claim for Additional Extension of Time - under review	0%	398	23-Mar-15 A	23-Apr-16	[Red bar indicating claim period]																		
Statutory and Utility Applications and Approvals																								
Hong Kong Electric (HEC)																								
24WFU1114	Prepare / Submit Application form to HEC	0%	26	18-Jun-15	20-Jul-15	[Green bar from Jun 18 to Jul 20]																		
Environmental Protection Department (EPD)																								
24WFU1119	Statutory submission to EPD (Chimney Design)	0%	60	23-Mar-15	05-Jun-15	[Green bar from Mar 23 to Jun 05]																		
24WFU1120	Comment & re-submission to EPD	0%	30	06-Jun-15	13-Jul-15	[Green bar from Jun 06 to Jul 13]																		
Interface and Liaison																								
Interface with other contractors																								
24MWFU00170	Liason with SCS Contractor for the Connection of Flume Channels to the drop shaft	0%	60	23-Mar-15	21-May-15	[Green bar from Mar 23 to May 21]																		
Works for Section 4																								
Screen and Grit Trap Building																								
Interface between Civil / ABWF / E&M Works																								
24MWFU00210	Partial completion of structural works in preparation to start architectural works	0%	0		30-Apr-15	[Green bar at Apr 30]																		
24MWFU00220	Partial completion of architectural works in preparation to start E&M works	0%	0		08-May-15	[Green bar at May 08]																		
Civil Works																								
RC Structural Works																								
Fine Screen & Grit Handling Area - GL 1-3 / B-D up to +22.100mPD																								
Up to Roof Slab Construction of Fine Screen Area (+22.100mPD)																								
24WFUFS01280	Erect formwork for beam & roof slab of fine screen up to +22.100mPD	0%	5	12-Feb-15 A	07-Apr-15	[Red bar from Feb 12 to Apr 07]																		
24WFUFS01290	Rebar fixing for beam & roof slab of fine screen up to +22.100mPD	100%	6	17-Feb-15 A	07-Apr-15	[Red bar from Feb 17 to Apr 07]																		
24WFUFS01300	Formwork for wall (external)	100%	7	12-Mar-15 A	07-Apr-15	[Red bar from Mar 12 to Apr 07]																		
24WFUFS01310	Concrete for wall and slab up to +22.100mPD	0%	1	08-Apr-15	08-Apr-15	[Red bar at Apr 08]																		
24WFUFS01320	Remove formwork	0%	4	09-Apr-15	13-Apr-15	[Red bar from Apr 09 to Apr 13]																		
24WFUFS01330	Erect formwork for parapet wall at roof	0%	7	14-Apr-15	21-Apr-15	[Green bar from Apr 14 to Apr 21]																		
24WFUFS01340	Rebar fixing for parapet wall at roof	0%	4	22-Apr-15	25-Apr-15	[Green bar from Apr 22 to Apr 25]																		
24WFUFS01350	Concrete for parapet wall at roof	0%	1	27-Apr-15	27-Apr-15	[Green bar at Apr 27]																		
Grit Trap Area - GL 3-4 / A-D up to +20.320mPD																								
Up to Roof Slab Construction of Grit Trap Area (+20.320mPD)																								
24WFUGT01310	Erect scaffold for formworks and rebar works	0%	5	23-Mar-15	27-Mar-15	[Red bar from Mar 23 to Mar 27]																		
24WFUGT01320	Erect formwork for wall (internal)	0%	7	28-Mar-15	08-Apr-15	[Red bar from Mar 28 to Apr 08]																		
24WFUGT01330	Rebar fixing for wall	0%	7	08-Apr-15	15-Apr-15	[Red bar from Apr 08 to Apr 15]																		
24WFUGT01340	Erect formwork for beam & roof slab of grit trap up to +20.320mPD	0%	7	09-Apr-15	16-Apr-15	[Red bar from Apr 09 to Apr 16]																		
24WFUGT01350	Rebar fixing for beam & roof slab of grit trap up to +20.320mPD	0%	8	16-Apr-15	24-Apr-15	[Red bar from Apr 16 to Apr 24]																		
24WFUGT01360	Formwork for wall (external)	0%	7	18-Apr-15	25-Apr-15	[Red bar from Apr 18 to Apr 25]																		
24WFUGT01370	Concrete for wall and roof slab up to +20.320mPD	0%	1	27-Apr-15	27-Apr-15	[Red bar at Apr 27]																		
24WFUGT01380	Remove formwork	0%	3	28-Apr-15	30-Apr-15	[Red bar from Apr 28 to Apr 30]																		
Stairs																								
24WFU02240B90	Formworks for Stairs	50%	30	25-Nov-14 A	29-Apr-15	[Green bar from Nov 25 to Apr 29]																		
24WFU02240C10	Rebarworks for Stairs	50%	26	01-Dec-14 A	24-Apr-15	[Green bar from Dec 01 to Apr 24]																		
24WFU02240C20	Concrete Works for Stairs	50%	5	15-Jan-15 A	30-Apr-15	[Green bar from Jan 15 to Apr 30]																		
Finishing Works (Internal and External)																								
24WFU02250A10	Ceiling Finishes (Painting)	0%	19	02-May-15	23-May-15	[Red bar from May 02 to May 23]																		
24WFU02250A20	Wall Finishes (Painting)	0%	16	20-May-15	08-Jun-15	[Red bar from May 20 to Jun 08]																		



Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	March 2015				April 2015				May 2015				June 2015				
						23	02	09	16	23	30	06	13	20	27	04	11	18	25	01	08	15
Material / Equipment Delivery on Site																						
24ABN03570	Delivery of seawater pump	0%	0		02-May-15																◆ Delivery of seawater pump	
Mechanical Works																						
24ABN03580	Installation of stoplog no. 1 - no. 3	0%	30	06-May-15	10-Jun-15																Installation of stoplog no. 1 - no. 3	
24ABN03590	Installation of seawater pump no. 1 & no. 2	0%	16	23-May-15	11-Jun-15																Installation of seawater pump no. 1 & no. 2	
24ABN03600	Installation of pipework	0%	12	12-Jun-15	26-Jun-15																Installation of pipework	
Electrical Works																						
24ABN03610	Installation of seawater pump control panel in the existing switch room	0%	5	23-May-15	29-May-15																Installation of seawater pump control panel in the existing switch room	
24ABN03620	Cable tray installation for seawater pumps	0%	5	30-May-15	04-Jun-15																Cable tray installation for seawater pumps	
24ABN03630	Cable laying	0%	8	05-Jun-15	13-Jun-15																Cable laying	
24ABN03640	Installation of earthing protection	0%	2	15-Jun-15	16-Jun-15																Installation of earthing protection	
24ABN03650	Megger test in cables for seawater pump	0%	4	17-Jun-15	22-Jun-15																Megger test in cables for seawater pump	
Control and Monitoring Services incl. Instrumentation																						
24ABN03670	Installation of local manual control (seawater pumping station)	0%	2	12-Jun-15	13-Jun-15																Installation of local manual control (seawater pumping station)	
24ABN03680	Installation of EM flowmeters	0%	10	15-Jun-15	26-Jun-15																Installation of EM flowmeters	
Preliminary Testing and Commissioning																						
Preliminary Testing and Commissioning (Grit Trap No. 1)																						
Mechanical Works																						
24ABN03710	Water test of penstock (for grit trap no. 1)	0%	14	13-May-15	26-May-15																Water test of penstock (for grit trap no. 1)	
24ABN03830	Performance test of grit trap no. 1	0%	14	18-Jun-15	06-Jul-15																Performance test of grit trap no. 1	
24ABN03840	Performance test of grit classifier no. 1	0%	14	18-Jun-15	06-Jul-15																Performance test of grit classifier no. 1	
Preliminary Testing and Commissioning (Flume Channel)																						
Mechanical Works																						
24ABN3860	Water test of stoplog no. 4	0%	14	13-Apr-15	28-Apr-15																Water test of stoplog no. 4	
Modification at Inlet Pumping Station																						
Interface between Civil / ABWF / E&M Works																						
24MABN00490	Completion of pump modification on Pump no. 1	0%	0		30-May-15																◆ Completion of pump modification on Pump no. 1, Completion of	
Modification of Pumps																						
Sewage Pump No. 1																						
24ABN3181	Plinth modification for the installation of new sewage pump no. 1	100%	10	16-Feb-15 A	06-Mar-15 A																Plinth modification for the installation of new sewage pump no. 1	
24ABN3190	Modification / upgrading of existing power supply	100%	12	24-Feb-15 A	09-Mar-15 A																Modification / upgrading of existing power supply	
24ABN3200	Installation of new sewage pump no. 1	100%	4	07-Mar-15 A	11-Mar-15 A																Installation of new sewage pump no. 1	
24ABN3210	Installation of new pipework and associated valves and flowmeter	0%	16	12-Mar-15 A	28-Apr-15																Installation of new pipework and associated valves and flowmeter	
24ABN3220	Power connection	0%	2	29-Apr-15	30-Apr-15																Power connection	
24ABN3230	Performance test of sewage pump no. 1	0%	30	01-May-15	30-May-15																Performance test of sewage pump no. 1	
Modification of Deodorization System and DCS System																						
Electrical Works																						
24ABN03271	Replacement / upgrading of motor, starter and panel cover in existing switchboard (for deodorizer no. 1)	100%	3	16-Mar-15 A	18-Mar-15 A																Replacement / upgrading of motor, starter and panel cover in existing switchboard (for deodorizer no. 1)	
24ABN03272	Removal of existing aged cables (for deodorizer no. 1)	100%	5	19-Mar-15 A	24-Mar-15 A																Removal of existing aged cables (for deodorizer no. 1)	
24ABN03273	Installation of additional cable tray (for new deodorizer no. 1)	0%	7	13-Apr-15	20-Apr-15																Installation of additional cable tray (for new deodorizer no. 1)	
24ABN03274	Cable laying for the new deodorizer no. 1	0%	14	21-Apr-15	07-May-15																Cable laying for the new deodorizer no. 1	
24ABN03275	Megger test in cables for the new deodorizer no. 1	0%	7	08-May-15	15-May-15																Megger test in cables for the new deodorizer no. 1	
24ABN03276	Cable termination for the new deodorizer no. 1	0%	10	16-May-15	28-May-15																Cable termination for the new deodorizer no. 1	
HVAC System (Deodorization / Air Conditioning / Ventilation)																						
24ABN03283	Diversion of existing air ductworks from deodorizer no. 1 to nearby deodorizer no. 2 and no. 3	0%	5	07-Apr-15	11-Apr-15																Diversion of existing air ductworks from deodorizer no. 1 to nearby deodorizer no. 2 and no. 3	
24ABN03284	Decommission / Demolition of deodorizer no. 1	0%	10	13-Apr-15	23-Apr-15																Decommission / Demolition of deodorizer no. 1	

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	March 2015					April 2015					May 2015					June 2015			
						23	02	09	16	23	30	06	13	20	27	04	11	18	25	01	08	15	22	
24ALC01780A	EoT adjustment due to Claim No. PTN/001 - 001 to 015 (Inclement Weather up to Sep 2013)	0%	45	15-Feb-15 A	31-Mar-15	EoT adjustment due to Claim No. PTN/001 - 001 to 015 (Inclement Weather up to Sep 2013)																		
24ALC01781	Claim for Additional Extension of Time - under review	0%	656	01-Apr-15	15-Jan-17																			