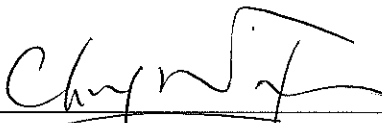


**Contract No. DC/2009/23**  
**HATS Stage 2A – Upgrading of Preliminary  
Treatment Works at  
North Point, Wan Chai East and Central**

**Quarterly Environmental  
Monitoring and Audit Report  
November 2015 to January 2016**

**(Version 1.0)**

Certified By   
(Environmental Team Leader)

**REMARKS:**

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

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

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CE/Harbour Area Treatment Scheme  
Drainage Services Department  
Sewage Services Branch  
Harbour Area Treatment Scheme Division  
5/F, Western Magistracy  
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3 March 2016  
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/2009/23  
Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central  
Submission of 20<sup>th</sup> Quarterly EM&A Report for November 2015 to January 2016  
(Version 1.0)**

We refer to the Quarterly EM&A Report for November 2015 to January 2016 (version 1.0) received on 3 March 2016 and confirm that we have no further comment.

Yours faithfully  
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr  
Independent Environmental Checker

c.c. Ove Arup & Partners Hong Kong Ltd.  
Leader and JEC JV  
Cinotech Consultants Ltd.

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

Fax: 2370 4377  
By email  
By email

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## ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
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
HATS 2A	Harbour Area Treatment Scheme Stage 2A

---

## EXECUTIVE SUMMARY

### Introduction

1. This is the 20<sup>th</sup> Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract No. DC/2009/23 “HATS Stage 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central” (The Project) which documents the key information of EM&A and environmental monitoring works by Contract DC/2009/23 HATS Stage 2A with the Environmental Permit (Permit No. EP-322/2008/G).
2. The site activities undertaken for in the reporting quarter included:

November 2015:

#### Wan Chai East PTW:

- Pump Replacement Work at the inlet pumping station (E&M);
- Building service and E&M works for the administration and workshop building;
- Finishing work for the new administration and workshop building;
- Construction of curtain wall;
- Construction of boundary wall.

#### North Point PTW

- Operation and maintain of the new FSGT Building;
- ELS work for the seawater pumping station;
- Construction of Grit Handling Room;
- Construction of DO Building;
- Construction of seawater pumping station.

#### Central PTW

- Operation and maintain of the new FSGT Building;
- Superstructure construction for FSGT Building;
- Construction of the flume channel, Grit Trap and Deodorization Room;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work;
- Construction of boundary wall.

December 2015:

#### Wan Chai East PTW:

- External wall finishing work for the new administration and workshop building;
- Construction of curtain wall;
- Construction of boundary wall.

#### North Point PTW

- Operation and maintain of the new FSGT Building;
- ELS work for the seawater pumping station;
- Construction of Grit Handling Room;
- Delivery and installation of the Bio trickling tank and the associated equipment into the DO Building;
- Construction of seawater pumping station.

#### Central PTW

- Operation and maintain of the new FSGT Building;
- Construction of curtain wall;
- Installation of Splash Arrestor and FRP cover inside the FSGT building;

- Installation of multi-part cover to flume channel;
- Delivery and installation of the Bio trickling tank and the associated equipment into the DO Building;
- External wall finishing work;
- Construction of boundary wall.

January 2016:

Wan Chai East PTW:

- External wall finishing work for the new administration and workshop building;
- Construction of curtain wall;
- Construction of boundary wall.

North Point PTW

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

Central PTW

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

**Environmental Monitoring Works**

3. The environmental monitoring works of the Project was conducted by the ET for the Contract: DC/2009/23 under HATS 2A with 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.
4. Since the monitoring of air quality monitoring station at Chan's Creative School (AM1), Hong Kong & Islands Regional Office, WSD (AM2), Wan Chai East PTW (AM3), a location next to Sheung Wan Fire Station (AM4\_2); and noise monitoring station at Chan's Creative School (NM1), Hyde Building (NM2) and Goldfield Building (NM3) would be handover to Contract No. DC/2009/23 from Contract No. DC/2007/23 in October 2015. The air quality and noise monitoring stations would be set up by Cinotech Consultants Limited (ET for Contract No. DC/2009/23 for HATS 2A) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from October 2015. The environmental monitoring schedule for the next reporting month is shown in **Appendix B** of Monthly EM&A Report for this project.
5. Summary of the non-compliance of the reporting quarter is tabulated in **Table I**.

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

Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
AM1	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A

AM2	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM3	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM4_2	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
NM1	Noise	0	0	0	0	N/A
NM2	Noise	0	5	0	0	N/A
NM3	Noise	0	3	0	0	N/A

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

#### *1-hour TSP Monitoring*

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

#### *24-hour TSP Monitoring*

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

#### *Construction Noise*

8. All Construction Noise monitoring was conducted as scheduled in the reporting quarter. No Action Level exceedance was recorded, while five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 9<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> December 2015; 5<sup>th</sup> & 21<sup>st</sup> January 2016 by the ET of this Project at NM2 and three non-project related Limit Level exceedance were recorded during the daytime noise monitoring on 5<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> January 2016 by the ET of this Project at NM3. No construction plants was operated and no works was performed by contract DC/2009/23 during these periods of exceedance. Details of the exceedance could be referred to **Appendix B** of this report and Appendix H of the monthly reports for this project.

### **Environmental Licenses and Permits**

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

### **Environmental Mitigation Implementation Schedule**

10. According to the EIA Report Section 3.74, 4.56, 6.384, 9.154 and 13.44, air quality, noise, water quality, waste management and landscape and visual would be the key environmental issues and mitigation measures shall be implemented during the construction phase. Details of the implementation of mitigation measures are provided in the **Appendix G**.



**Key Information in the Reporting Quarter**

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

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

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP covering the reporting quarter	3	Monthly Environmental Monitoring and Audit Report for November 2015, December 2015 and January 2016	Submitted to EPD	No Comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

**Summary of Complaints and Prosecutions**

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

**Future Key Issues:**

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

Wan Chai East PTW:

- External wall finishing work for the new administration and workshop building;
- Construction of curtain wall;
- Construction of boundary wall.

North Point PTW

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

Central PTW

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

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

## 1. INTRODUCTION

### Background

- 1.1 The Project ‘HATS Stage 2A - Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central with Contract No: DC/2009/23’ mainly comprises the following major works:
- Decommissioning, demolition and removal of existing structures and buildings, including the associated E&M works;
  - Relocation of sewers, control room, workshop equipment and the associated E&M works; and
  - Construction of new buildings and structures.
- 1.2 The general location plan of the Project is shown in **Figure 1**.
- 1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project (Register No. : AEIAR-121/2008). The environmental permit: (Permit No. EP-322/2008/G) which was issued on 9<sup>th</sup> May 2014 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.4 Leader and JEC Joint Venture (hereafter called the LJJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/23 “Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central”. The date of commencement of construction of the Project is 14<sup>th</sup> February 2011.
- 1.5 Cinotech Consultants Limited was commissioned by LJJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP.
- 1.6 This is the 20<sup>th</sup> quarterly EM&A report summarizing the EM&A works conducted for the Project from November 2015 to January 2016.

### Project Organizations

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

**Table 1.1 Key Project Contacts**

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

Party	Role	Name	Position	Phone No.
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	28285757
Leader and JEC Joint Venture	Contractor	Mr. Vincent Chan	Site Agent	9650 9410
		Mr. Lawrence Lam	Environmental Officer	9650 9410
		General Enquiry Hotline of Contract DC/2009/23		9755 3112

## Construction Programme

1.8 The site activities undertaken in the reporting quarter included:

November 2015:

### Wan Chai East PTW:

- Pump Replacement Work at the inlet pumping station (E&M);
- Building service and E&M works for the administration and workshop building;
- Finishing work for the new administration and workshop building;
- Construction of curtain wall;
- Construction of boundary wall.

### North Point PTW

- Operation and maintain of the new FSGT Building;
- ELS work for the seawater pumping station;
- Construction of Grit Handling Room;
- Construction of DO Building;
- Construction of seawater pumping station.

### Central PTW

- Operation and maintain of the new FSGT Building;
- Superstructure construction for FSGT Building;
- Construction of the flume channel, Grit Trap and Deodorization Room;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work;
- Construction of boundary wall.

December 2015:

### Wan Chai East PTW:

- External wall finishing work for the new administration and workshop building;
- Construction of curtain wall;
- Construction of boundary wall.

### North Point PTW

- Operation and maintain of the new FSGT Building;
- ELS work for the seawater pumping station;
- Construction of Grit Handling Room;
- Delivery and installation of the Bio trickling tank and the associated equipment into the DO Building;
- Construction of seawater pumping station.

### Central PTW

- Operation and maintain of the new FSGT Building;
- Construction of curtain wall;
- Installation of Splash Arrestor and FRP cover inside the FSGT building;

- Installation of multi-part cover to flume channel;
- Delivery and installation of the Bio trickling tank and the associated equipment into the DO Building;
- External wall finishing work;
- Construction of boundary wall.

January 2016:

Wan Chai East PTW:

- External wall finishing work for the new administration and workshop building;
- Construction of curtain wall;
- Construction of boundary wall.

North Point PTW

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

Central PTW

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

### Summary of EM&A Requirements

- 1.9 The EM&A programme requires construction phase monitoring for air quality and construction noise, landscape and visual and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
  - Action and Limit levels for all environmental parameters;
  - Event Action Plans;
  - Environmental mitigation measures, as recommended in the project EIA study final report; and
  - Environmental requirements in contract documents.
- 1.10 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.
- 1.11 This report presents the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project from November 2015 to January 2016. For the methodology and QA/QC procedures of the monitoring parameters, please refer to the monthly reports for this project.

**2. AIR QUALITY**

**Monitoring Requirements**

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

**Monitoring Locations**

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

**Table 2.1 Locations for Air Quality Monitoring**

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

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

**Monitoring Equipment**

2.3 **Table 2.2** summarizes the equipment used in the impact air monitoring programme in the reporting quarter. Copies of calibration certificates can be found in the relevant monthly reports of this project.

**Table 2.2 Air Quality Monitoring Equipment**

Monitoring Station	Model and Make		
	HVS Sampler	Laser Dust Meter	Calibrator
AM1	GMWS 2310 HVS, Model GS-2310-105; Tisch Environmental, Inc.; Model no. TE-5170	Sibata; Model no. LD-3 & LD-3B; Met One Instruments; Model no. AEROCET-531; JDHS; Model no. LD-5C	Tisch Environmental, Inc.; Model no. TE-5025A
AM2			
AM3			
AM4_2			

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

**Monitoring Parameters, Frequency and Duration**

2.4 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period.

**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 The monitoring methodology and QA/QC procedures are presented in the relevant monthly report for this project.

**Results and Observations**

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

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

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 $\mu\text{g}/\text{m}^3$
<b>1 hour TSP</b>					
November 2015	AM1	151	21 - 244	340	500
	AM2	151	22 - 255	352	
	AM3	157	33 - 284	355	
	AM4_2	174	40 - 283	393	
December 2015	AM1	182	116 - 275	340	
	AM2	176	123 - 249	352	
	AM3	192	131 - 256	355	
	AM4_2	198	136 - 281	393	
January 2016	AM1	118	50 - 217	340	
	AM2	130	51 - 229	352	
	AM3	177	81 - 267	355	
	AM4_2	149	60 - 251	393	
<b>24 hours TSP</b>					
November 2015	AM1	61	40 - 102	185	260
	AM2	109	89 - 155	182	
	AM3	133	110 - 165	181	
	AM4_2	159	134 - 173	211	
December 2015	AM1	64	36 - 97	185	
	AM2	99	39 - 143	182	
	AM3	136	102 - 154	181	
	AM4_2	137	76 - 165	211	
January 2016	AM1	63	35 - 89	185	
	AM2	118	87 - 143	182	
	AM3	138	118 - 155	181	
	AM4_2	143	126 - 155	211	

- 2.7 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix B**.
- 2.8 All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix B**.
- 2.9 Graphical presentation of Air Quality Monitoring in the reporting quarter is shown in **Appendix C**.
- 2.10 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from loading of material, vehicles movement and construction works in site.



**3 NOISE**

**Monitoring Requirements**

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

**Monitoring Locations**

3.2 Noise monitoring was conducted at three designated monitoring stations as listed in **Table 3.1**.

**Table 3.1 Location of Noise Monitoring Stations**

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

**Monitoring Equipment**

3.3 **Table 3.2** summarizes the noise monitoring equipments used in the reporting quarter. Copies of calibration certificates can be found in the relevant monthly reports of this project.

**Table 3.2 Noise Monitoring Equipment**

Monitoring Station	Model and Make	
	Sound Level Meter	Calibrator
NM1	SVAN 955 & SVAN 957	SV30A; B&K 4231
NM2		
NM3		

**Monitoring Parameters, Frequency and Duration**

3.4 Table 3.3 summarizes the monitoring parameters, frequency and total duration of monitoring.

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

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

NM2 NM3	$L_{eq}(30 \text{ min.})$ dB(A)	0700-1900 hrs. on weekdays	
------------	------------------------------------	----------------------------	--

**Monitoring Methodology and QA/QC Procedures**

3.5 The monitoring methodology and QA/QC procedure could be referring to the monthly reports for this project.

**Results and Observations**

3.6 **Table 3.4** summarizes the monitoring results at NM1, NM2 and NM3 in reporting quarter.

**Table 3.4 Summary of the Noise Monitoring Results in Reporting Quarter**

For the time period 0700-1900 hrs. on weekdays			
	Monitoring Station	Range, dB(A) $L_{eq}(30 \text{ min.})$	Limit Level ,dB(A) $L_{eq}(30 \text{ min.})$
November 2015	NM1	64 - 70	70.0 *
	NM2	57 - 74	75.0
	NM3	62 - 75	
December 2015	NM1	59 - 67	70.0 *
	NM2	68 - 73	75.0
	NM3	65 - 75	
January 2016	NM1	66 - 68	70.0 *
	NM2	72 - 75	75.0
	NM3	74 - 76	

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

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

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

Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)			
	Monitoring Station	Range, dB(A) $L_{eq}(30 \text{ min.})$	Limit Level ,dB(A) $L_{eq}(5 \text{ min.})$
November 2015	NM1	62 - 66	70.0 *
	NM2	55 - 69	
December 2015	NM1	60 - 68	70.0 *
	NM2	70 - 71	
January 2016	NM1	67 - 70	70.0 *
	NM2	69 - 72	

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

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

3.8 The construction noise monitoring at the designated locations was conducted by the ET of Contract DC/2009/23 as scheduled in the reporting quarter. The monitoring results could be referring to Appendix F of the monthly reports for this project.

- 3.9 Excavation works were conducted during day time at North Point PTW. No construction work was conducted during the restricted hours under the Project in the reporting quarter.
- 3.10 No Action Level exceedance was recorded, while five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 9<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> December 2015; 5<sup>th</sup> & 21<sup>st</sup> January 2016 by the ET of this Project at NM2 and three non-project related Limit Level exceedance were recorded during the daytime noise monitoring on 5<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> January 2016 by the ET of this Project at NM3. No construction plants was operated and no works was performed by contract DC/2009/23 during these periods of exceedance. Details of the exceedance could be referred to **Appendix B** of this report and Appendix H of the monthly reports for this project.
- 3.11 Graphical presentation of Noise monitoring in the reporting quarter is shown in **Appendix D**.
- 3.12 The major noise sources identified at the designated noise monitoring stations were traffic noise and construction activities.

**4 ENVIRONMENTAL AUDIT****Site Audits**

- 4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 4.2 13 Environmental site audits were conducted by ET and 3 IEC audits were conducted in the reporting quarter for the project. No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting quarter in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.

**Review of Environmental Monitoring Procedures**

- 4.4 The monitoring works conducted by the monitoring team of this project. The monitoring procedures were reviewed by its ET.

**Status of Environmental Licensing and Permitting**

- 4.5 All permits/licenses obtained for the Contract DC/2009/23 are summarized in **Table 4.1**.  
**Table 4.1 Summary of Environmental Licensing and Permit Status for Contract DC/2009/23**

Ref. No.	Valid Period		Details	Status
	From	To		
<b>Water Discharge License</b>				
WT000944 3-2011	22/6/2011	30/6/2016	Location: Aberdeen	Valid
WT000164 39-2013	2/7/2013	31/5/2016	Location: North Point PTW	
WT000164 65-2013	21/6/2013	30/4/2016	Location: Wan Chai East PTW	
WT000164 62-2013	2/7/2013	30/4/2016	Location: Central PTW	
<b>Registered Chemical Waste Producer</b>				
5213-153- L2743-01	15/02/2011	N/A	Location: North Point PTW	Valid
5213-115- L2737-01	26/01/2011	N/A	Location: Wan Chai East PTW	
5213-134- L2745-01	16/02/2011	N/A	Location: Central PTW	
<b>Construction Noise Permit</b>				
GW- RS0516-13	29/5/2013	28/11/2013	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong	Expiry

Ref. No.	Valid Period		Details	Status
	From	To		
			Kong	
GW- RS0906-13	23/8/2013	22/11/2013	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS1387-13	5/12/2013	21/5/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS0424-14	5/5/2014	5/7/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS0643-14	3/7/2014	30/9/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Wan Chai East Preliminary Treatment Works, Wan Chai, Hong Kong	Expiry
GW- RS1078-14	10/10/2014	9/4/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Wan Chai East Preliminary Treatment Works, Wan Chai, Hong Kong	Expiry
GW- RS0179-15	25/2/2015	23/5/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Central Preliminary Treatment Works, Western Fire Services Street, Hong Kong	Expiry
GW- RS0484-15	8/5/2015	3/8/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying	Expiry

Ref. No.	Valid Period		Details	Status
	From	To		
			out construction work other than percussive piling and/or the carrying out of prescribed construction work at Wan Chai East Preliminary Treatment Works, Wan Chai, Hong Kong	
GW-RS0567-15	26/5/2015	23/11/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Central Preliminary Treatment Works, Western Fire Services Street, Hong Kong	Valid until 23/11/2015
<b>Special Waste Admission Ticket</b>				
12448	24/8/2015	23/11/2015	Location: Central PTW	Valid until 23/11/2015
12670	24/11/2015	23/5/2016	Location: Central PTW	Valid

### Status of Waste Management

- 4.6 The amount of wastes generated by the activities of the Project in the reporting quarter is shown in **Table 4.2**.

**Table 4.2: Summary of Waste Generated in Reporting Quarter**

Reporting Month	Inert C&D <sup>1</sup> Materials ('000 m <sup>3</sup> )	Other C&D <sup>2</sup> Waste ('000 m <sup>3</sup> )	Chemical Waste ('000kg)
November 2015	0.343	0.713	0
December 2015	0.274	0.232	0
January 2016	0.205	0.190	0

1: Inert C&D Materials includes Broken Concrete, Inert C&D waste reused in the Contract/other Project and disposal at Public Fill.

2: Other C&D Waste includes Metals, Paper/Cardboard packaging, plastics and other General Refuse.

- 4.7 The waste flow table in the reporting quarter was shown in **Appendix E**.

### Implementation Status of Environmental Mitigation Measures

- 4.8 Details of the implementation of mitigation measures are provided in the **Appendix G**.
- 4.9 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations in the site audits for the Projects are summarized in **Table 4.3**.

**Table 4.3 Observations of Site Audit**

Parameters	Date/Ref. Number	Observations	Follow Up Action
Water Quality	151028-O01	The muddy materials should be cleared properly at North Point-PTW.	Please refer to 151104-O01.
	151028-R04	<u>Reminder:</u> Properly clear the wastewater near the site boundary of Central-PTW.	Please refer to 151104-O04.
	151104-O01	The muddy materials should be cleared properly at North Point-PTW.	Please refer to 151111-O01.
	151104-O04	Properly clear the wastewater near the site boundary of Central-PTW.	Please refer to 151111-O03.
	151111-O01	The muddy materials should be cleared properly at North Point-PTW.	The muddy materials were cleared properly at North Point-PTW.
	151111-O03	Properly clear the wastewater in the sewer and near the site boundary of Central-PTW	The wastewater was cleared in the sewer and near the site boundary of Central-PTW.
	151125-R04	<u>Reminder:</u> Properly clear the wastewater near the sewer and the site boundary of Central-PTW.	Please refer to 151202-O03.
	151202-O01	The water quality of the WetSep at North Point-PTW should be fulfilled the requirement of the WPCO’s wastewater discharge license before discharging out. The Contractor was reminded to provide the maintenance of the WetSep and ensure the water quality comply with the license.	Please refer to 151209-O01.
	151202-O03	Properly clear the wastewater near the sewer and the site boundary of Central-PTW.	The sewers were blocked by the Contractor to prevent the accumulation of wastewater at Central-PTW.
	151209-O01	The water quality of the WetSep at North Point-PTW should be fulfilled the requirement of the WPCO’s wastewater discharge license before discharging out. The Contractor was reminded to provide the maintenance of the WetSep and ensure the water quality comply with the license.	Water quality of the WetSep was maintained.
	151209-O02	Properly clear the wastewater near the site boundary of Central-PTW.	Wastewater was cleared and not observed.
	151223-R02	<u>Reminder:</u> Cement water near the entrance of North Point-PTW should be cleared.	Cement water near the entrance of North Point-PTW was cleared.
	160113-O01	The slurry water was observed at Central-PTW. The Contractor was reminded to prevent the overflow of the slurry water to the public sewage.	The slurry water was not observed at Central-PTW.
	160122-R01	<u>Reminder:</u> The bund should be provided to prevent the muddy water runoff to the access road at Central-PTW.	Please refer to 160127-R01.
	160127-R01	<u>Reminder:</u> The bund should be provided to prevent the muddy water runoff to the access road at Central-PTW.	The bund was provided at Central-PTW.
	160127-R02	<u>Reminder:</u> Properly clear the debris and sediment in the wheel washing facility at Central-PTW.	The follow up action will be reported during site inspections in February 2016.
Air Quality	151120-R02	<u>Reminder:</u> The cement bags should be covered by impervious material to prevent the dust emission and the empty cement bags should be cleared properly at Wan Chai-PTW and Central-PTW.	Please refer to 151125-R02.

	151125-R02	<u>Reminder:</u> The cement bags should be covered by impervious material to prevent the dust emission and the empty cement bags should be cleared properly at Wan Chai-PTW and Central-PTW.	The cement bags and empty cement bags were removed and not observed at Wan Chai-PTW and Central-PTW.
	151218-R02	<u>Reminder:</u> The exposed dusty area should be covered by imperious material to prevent the dust emission at Central-PTW.	The exposed dusty area was covered.
	160127-R03	<u>Reminder:</u> Properly clear the broken sandbag at Central-PTW.	The broken sandbag was cleared at Central-PTW.
<b>Waste/ Chemical Management</b>	151028-R02	<u>Reminder:</u> The oil stained earth and oil stain should be cleared properly at North Point-PTW.	Please refer to 151104-O02.
	151104-O02	The oil stained earth and oil stain should be cleared properly at North Point-PTW and Central-PTW.	The oil stained earth and oil stain were cleared properly at North Point-PTW and Central-PTW.
	151120-R02	<u>Reminder:</u> The cement bags should be covered by impervious material to prevent the dust emission and the empty cement bags should be cleared properly at Wan Chai-PTW and Central-PTW.	Please refer to 151125-R02.
	151120-R03	<u>Reminder:</u> Properly clear the oil stain at Wan Chai-PTW.	Please refer to 151125-R03.
	151125-R02	<u>Reminder:</u> The cement bags should be covered by impervious material to prevent the dust emission and the empty cement bags should be cleared properly at Wan Chai-PTW and Central-PTW.	The cement bags and empty cement bags were removed and not observed at Wan Chai-PTW and Central-PTW.
	151125-R03	<u>Reminder:</u> Properly clear the oil stain at Wan Chai-PTW.	The oil stain was not observed at Wan Chai-PTW.
	151202-R04	<u>Reminder:</u> The chemical containers should be provided with the drip tray at North Point-PTW.	The chemical containers were removed and not observed at North Point-PTW.
	151202-R06	<u>Reminder:</u> The empty cement bags should be cleared properly at Central-PTW.	The empty cement bags were cleared and removed properly at Central-PTW.
	151223-R01	<u>Reminder:</u> Chemical containers should be provided with labels at North Point-PTW.	Please refer to 151230-R01.
	151230-R01	<u>Reminder:</u> Chemical containers should be provided with the drip trays and labels at North Point-PTW.	Chemical containers were removed and not observed at North Point-PTW.
	160106-R01	<u>Reminder:</u> Properly clear the oil stain at North Point-PTW and Central-PTW.	The oil stain was cleared at North Point-PTW and Central-PTW.
160113-R02	<u>Reminder:</u> Properly sort out the construction wastes and chemical wastes before disposed them at Central-PTW.	The construction wastes and chemical wastes were cleared at Central-PTW.	
<b>Noise</b>	--	--	--
<b>Landscape and Visual</b>	151028-R03	<u>Reminder:</u> The construction materials should be placed far away from the tree protection area at Wan Chai-PTW.	Please refer to 151104-O03.
	151104-O03	The construction materials should be placed far away from the tree protection area at Wan Chai-PTW.	Please refer to 151111-O02.
	151111-O02	The construction materials should be placed far away from the tree protection area at Wan Chai-PTW.	The construction materials was removed from the tree protection area at Wan Chai-PTW.



	151202-R05	<u>Reminder:</u> The construction materials should be placed far away from the tree protection area of North Point-PTW.	Please refer to 151209-O03.
	151209-O03	The construction materials should be placed far away from the tree protection area of North Point-PTW.	Please refer to 151218-O01.
	151218-O01	The construction materials should be placed far away from the tree protection area of North Point-PTW.	Construction materials were replaced far away from the tree protection area.
<b>Permit/ Licenses</b>	151120-O01	The Environmental Permit should be displayed in the full version at the site entrance of Central-PTW.	Please refer to 151125-O01.
	151125-O01	The Environmental Permit should be displayed in the full version at the site entrance of Central-PTW.	Please refer to 151202-O02.
	151202-O02	The Environmental Permit should be displayed in the full version at the site entrance of Central-PTW.	The Environmental Permit was displayed in the full version at the site entrance of Central-PTW.

### Implementation Status of Event Action Plans

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

#### 1-hr TSP

4.11 No Action/Limit Level exceedance was recorded.

#### 24-hr TSP

4.12 No Action/Limit Level exceedance was recorded.

#### Construction Noise

4.13 No Action Level exceedance was recorded, while five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 9<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> December 2015; 5<sup>th</sup> & 21<sup>st</sup> January 2016 by the ET of this Project at NM2 and three non-project related Limit Level exceedance were recorded during the daytime noise monitoring on 5<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> January 2016 by the ET of this Project at NM3. No construction plants was operated and no works was performed by contract DC/2009/23 during these periods of exceedance. Details of the exceedance could be referred to **Appendix B** of this report and Appendix H of the monthly reports for this project.

#### Landscape and Visual

4.14 No non-compliance was recorded.

### Summary of Complaints and Prosecutions

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

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

## 5. FUTURE KEY ISSUES

### Key Issues for the Coming Months

5.1 Key environmental issues in the coming months 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 from operation of equipment and machinery on-site;
- Provision well maintenance on the storage facilities of chemicals/fuel and chemical waste/waste oil on-site;
- Ponding water generated in pre-drillings;
- Drainage system should be well designed and maintained to prevent flooding and silty water getting into the public area during and after rainstorm;
- Silty surface runoff generated from the site area; and
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities.

### Construction Program for the Coming Months

5.2 The tentative construction program is provided in **Appendix I**.

## 6. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- 6.1 Environmental monitoring and audit works were performed in the reporting quarter 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 quarter. 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 quarter. No Action/Limit Level exceedance was recorded.

#### Construction Noise Monitoring

- 6.4 All construction noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded, while five non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 9<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> December 2015; 5<sup>th</sup> & 21<sup>st</sup> January 2016 by the ET of this Project at NM2 and three non-project related Limit Level exceedance were recorded during the daytime noise monitoring on 5<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> January 2016 by the ET of this Project at NM3. No construction plants was operated and no works was performed by contract DC/2009/23 during these periods of exceedance. Details of the exceedance could be referred to **Appendix B** of this report and Appendix H of the monthly reports for this project.

#### Environmental Audit

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

#### Complaint and Prosecution

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

### Recommendations

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

#### *Air Quality Impact*

- To provide impervious covers for dusty materials to reduce dust generation; and
- To proper clear the dusty material to prevent the dust generation.

#### *Water Quality Impact*

- To well maintain the wheel washing facility in the site such as clear the debris and

sediment;

- To provide the bund to prevent the muddy water runoff to the access road;
- To provide the maintenance of WetSep to fulfil the requirement of the WPCO's wastewater discharge license before discharging out;
- To proper clear the muddy materials on the site; and
- To proper clear the stagnant/cement/slurry water and wastewater on the site.

#### *Noise Impact*

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers;
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location;
- To provide adequate lubricant on mechanical equipments to reduce frictional noise;
- To ensure the doors of the air compressors are closed; and
- To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance.

#### *Waste/Chemical Management*

- To proper sort out the construction waste and chemical wastes on the site;
- Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;
- To proper clear the cement bags as chemical waste; and
- To provide adequate drip trays to store the chemical containers on the site.

#### *Landscape and Visual*

- To place the construction materials far away the tree protection area.

#### *Permit/Licenses*

- To display the Environmental Permit in the full version at the site entrance.

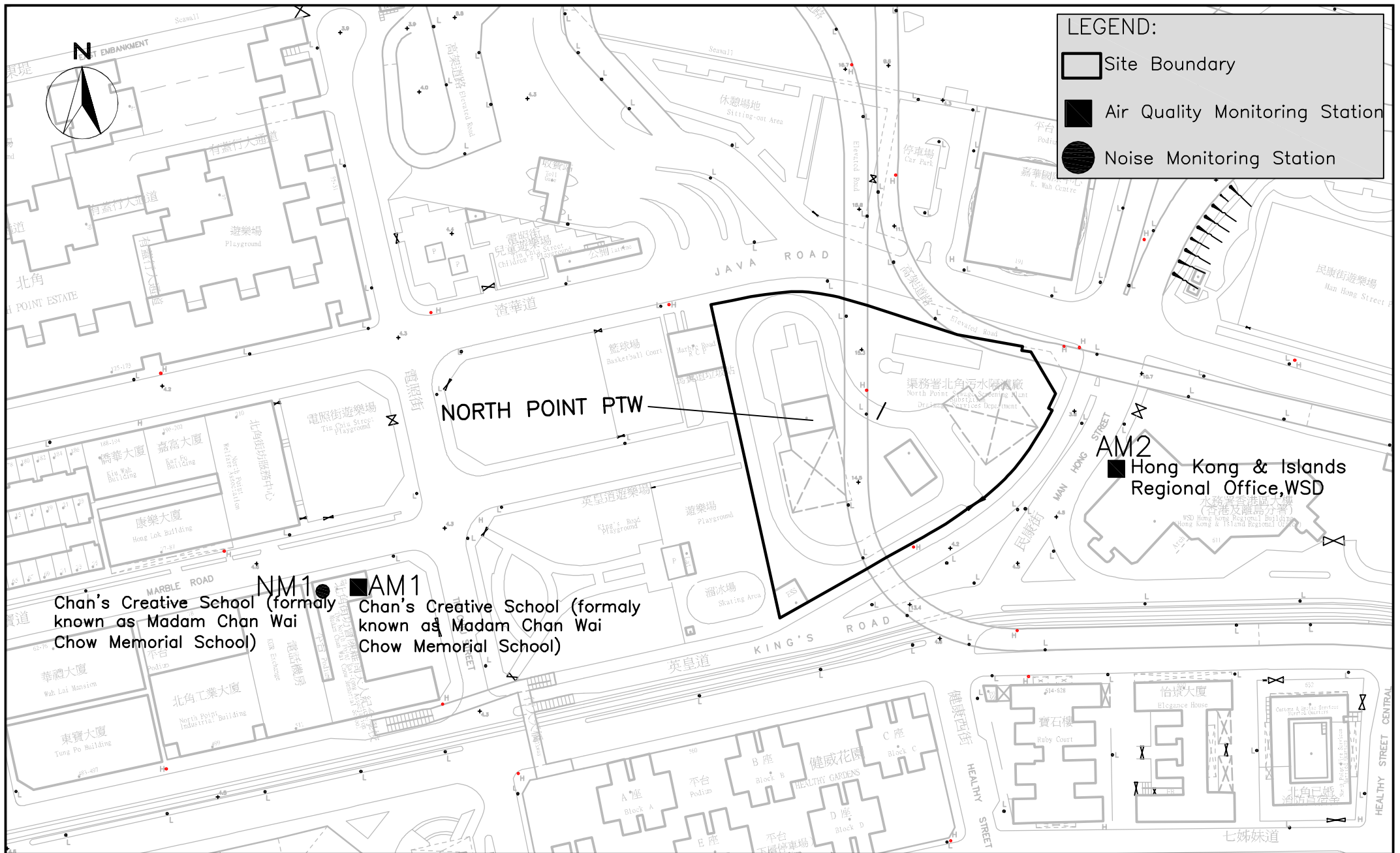
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## FIGURES

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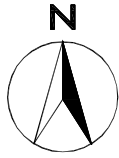
**LEGEND:**

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






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

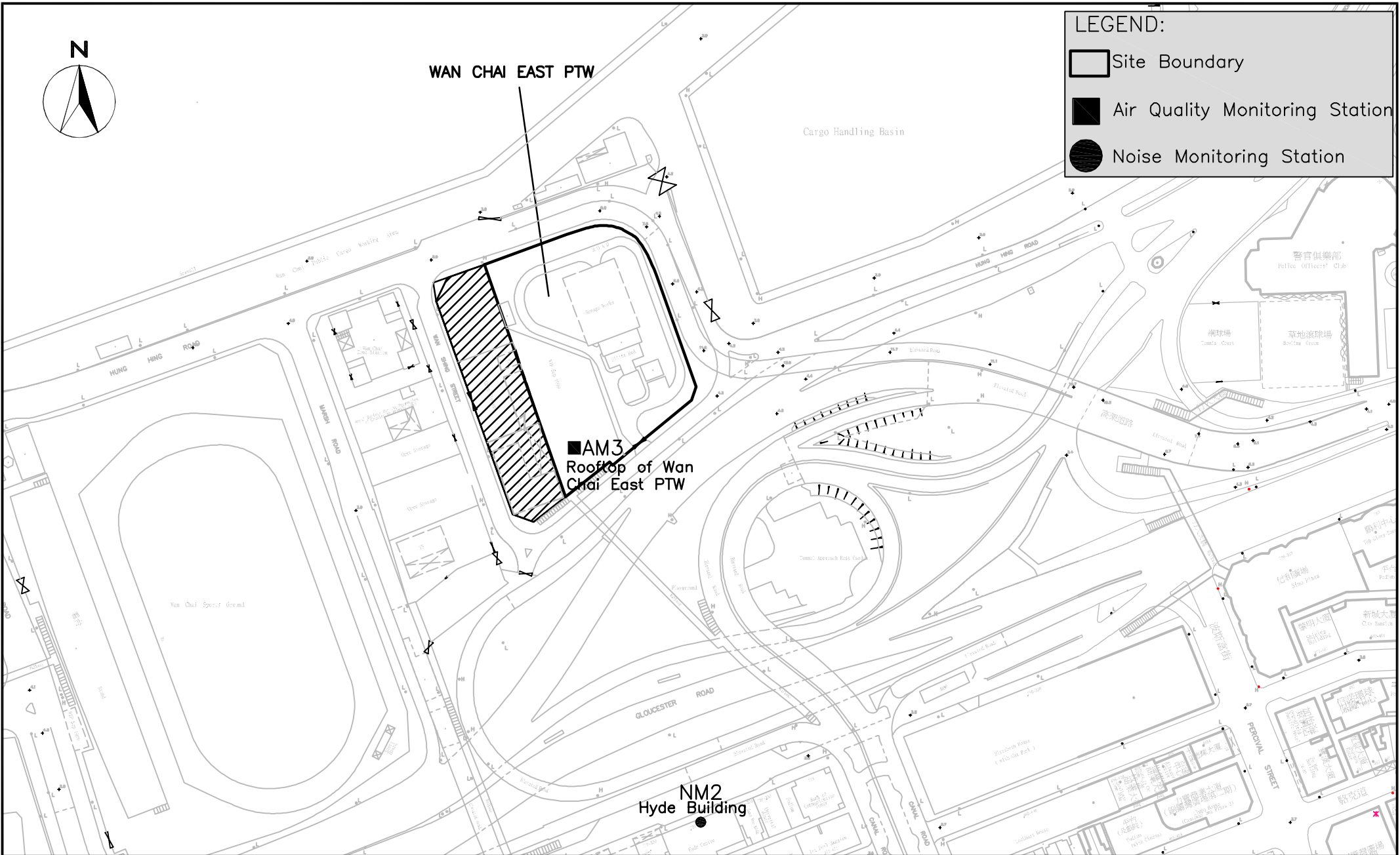
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WAN CHAI EAST PTW

**LEGEND:**

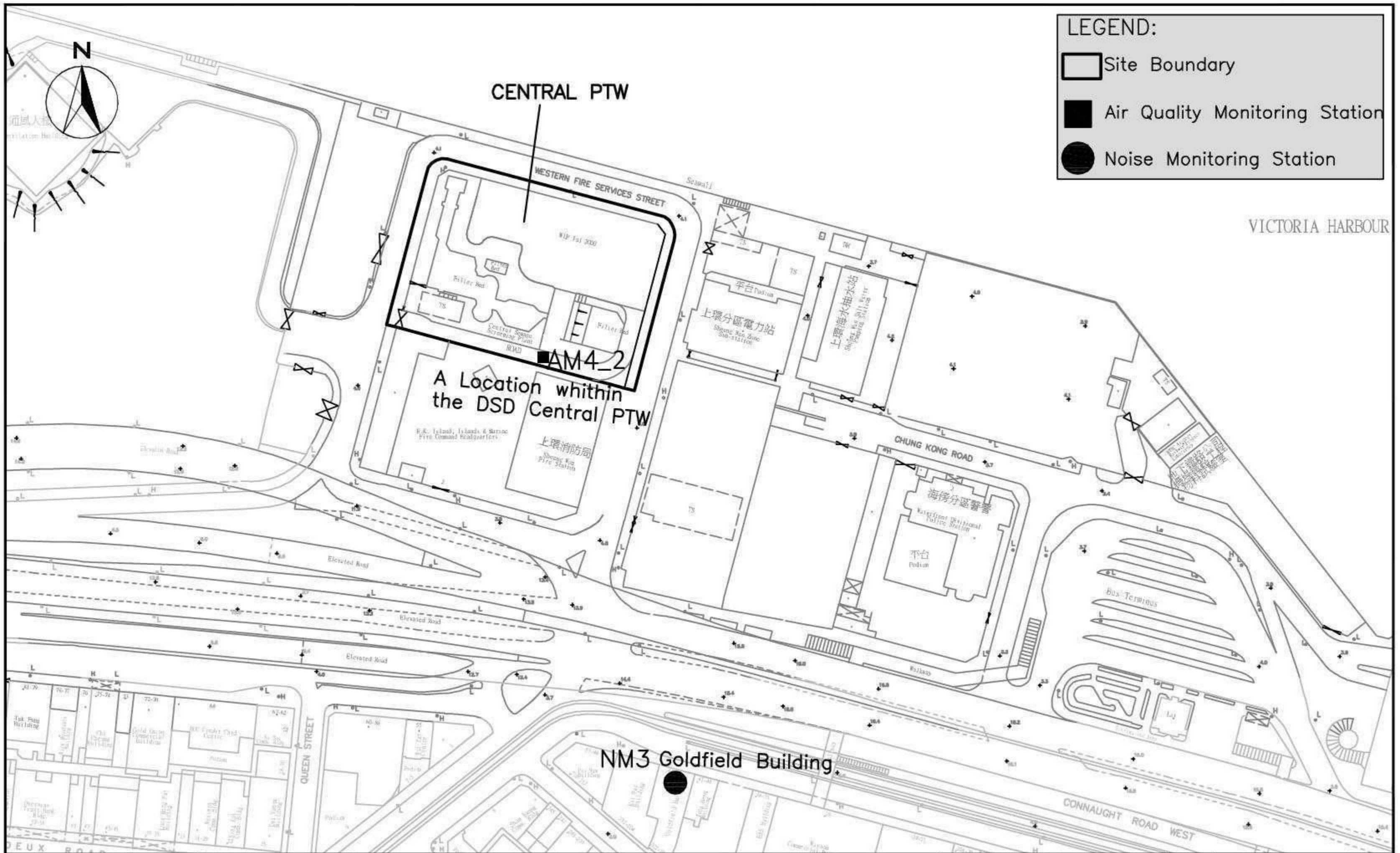
-  Site Boundary
-  Air Quality Monitoring Station
-  Noise Monitoring Station



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

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





**LEGEND:**

	Site Boundary
	Air Quality Monitoring Station
	Noise Monitoring Station

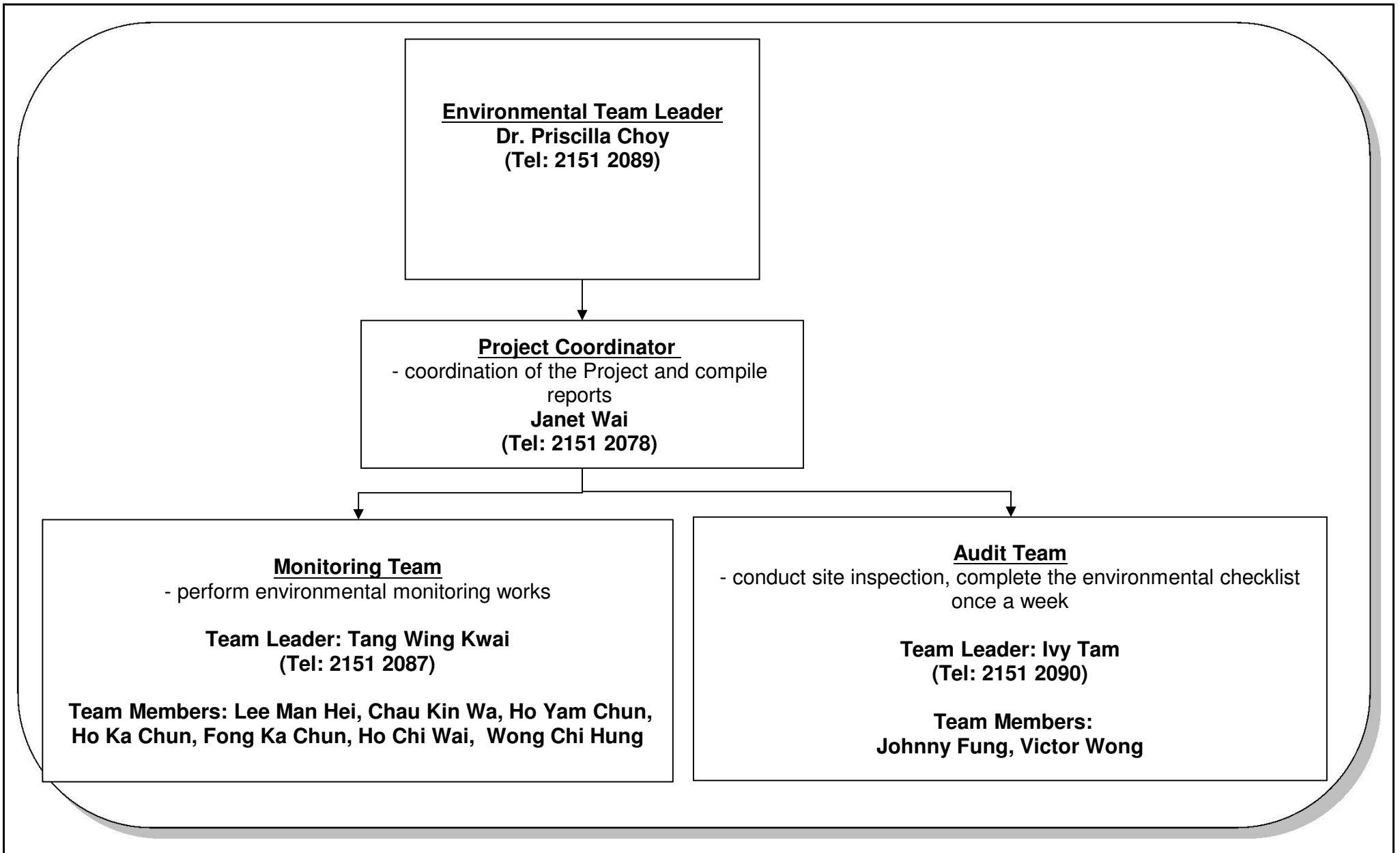
VICTORIA HARBOUR

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



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





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

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

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## Appendix A Action and Limit Levels

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

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

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

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

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

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

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

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**APPENDIX B**  
**SUMMARY OF EXCEEDANCE**

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## APPENDIX B – SUMMARY OF EXCEEDANCE

**Reporting Quarter:** November 2015 to January 2016

- a) **Exceedance Report for 1-hr TSP (NIL)**
- b) **Exceedance Report for 24-hr TSP (NIL)**
- c) **Exceedance Report for Construction Noise (8)  
(3 in December 2015, 5 in January 2016)**

No Action Level exceedance was recorded, while three non-project related Limit Level exceedance were recorded during the restricted hour noise monitoring on 9<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> December 2015 by the ET of this Project at NM2. According to the information provided by the Contractor, no construction works were carried out during the restricted hours period on 9<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> December 2015 at Wan Chai East Preliminary Treatment Works under DC/2009/23.

No Action Level exceedance was recorded, while two non-project related Limit Level exceedance were recorded during the restricted hour noise monitoring on 5<sup>th</sup> & 21<sup>st</sup> January 2016 by the ET of this Project at NM2 and three non-project related Limit Level exceedance were recorded during the daytime noise monitoring on 5<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> January 2016 by the ET of this Project at NM3. According to the information provided by the Contractor, no construction works were carried out during the restricted hours period on 5<sup>th</sup> & 21<sup>st</sup> January 2016 at Wan Chai East Preliminary Treatment Works under DC/2009/23 and no construction plant for the Contract No. DC/2009/23 was operated during the daytime period on 5<sup>th</sup>, 21<sup>st</sup> & 27<sup>th</sup> January 2016 at Central Preliminary Treatment Works under DC/2009/23.

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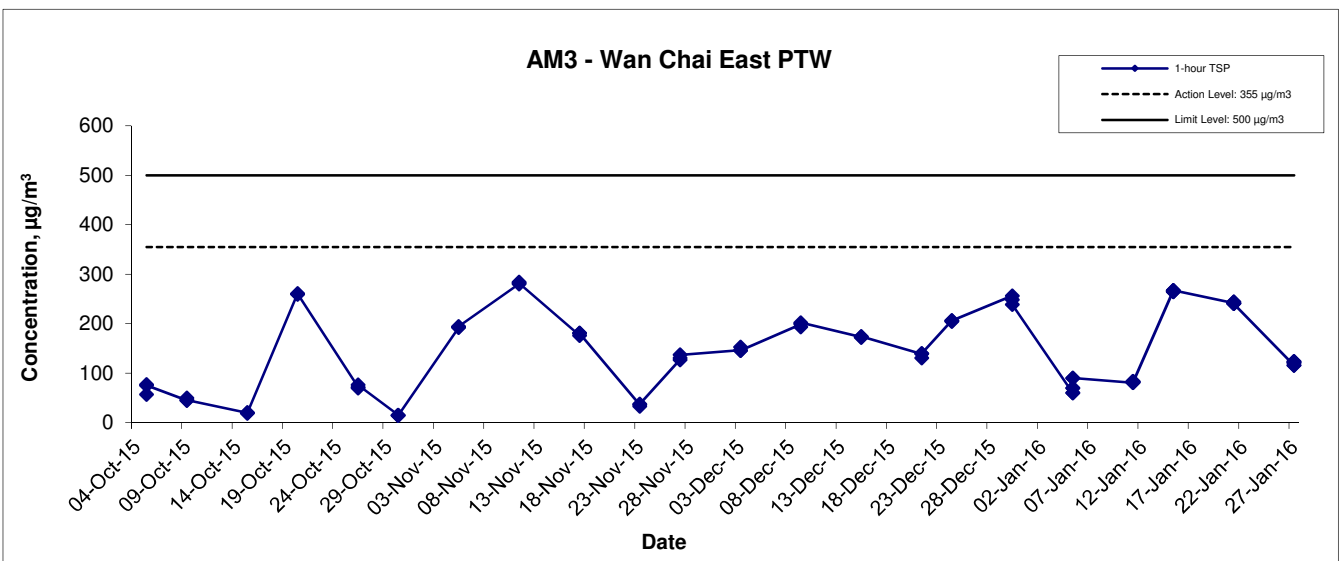
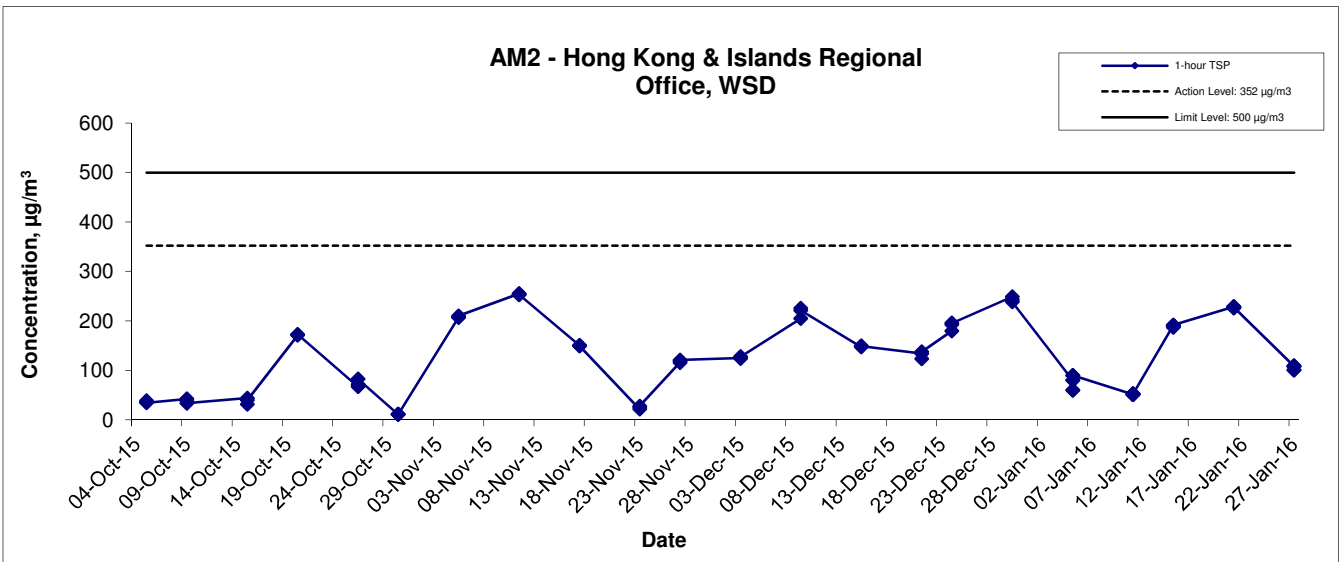
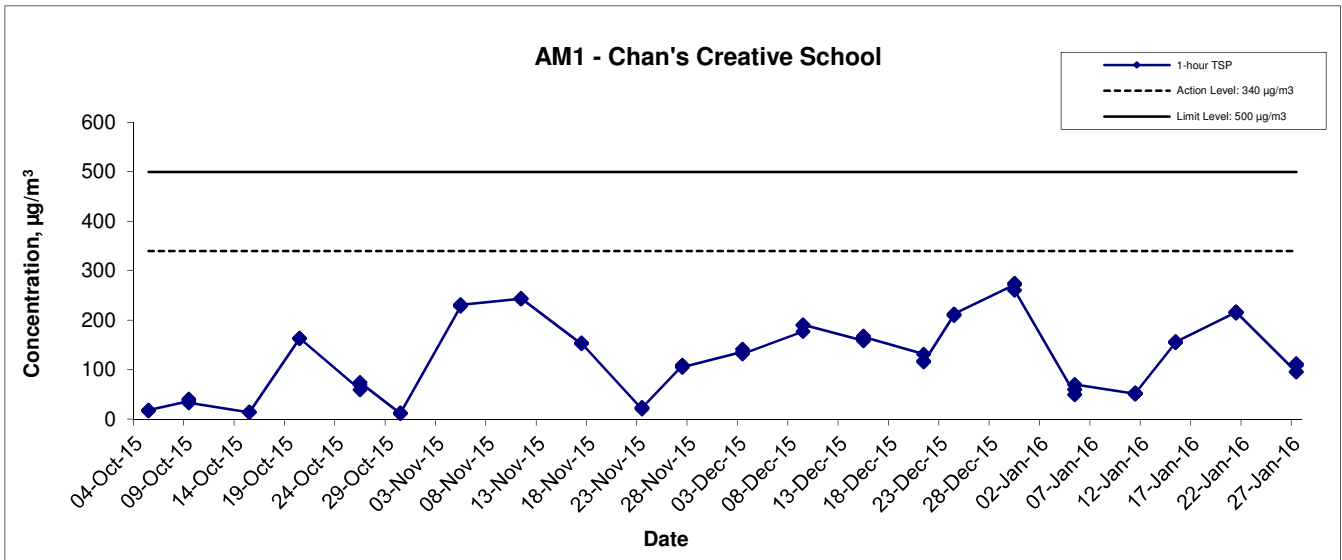
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**APPENDIX C  
1-HOUR AND 24-HOUR TSP  
GRAPHICAL PRESENTATION**

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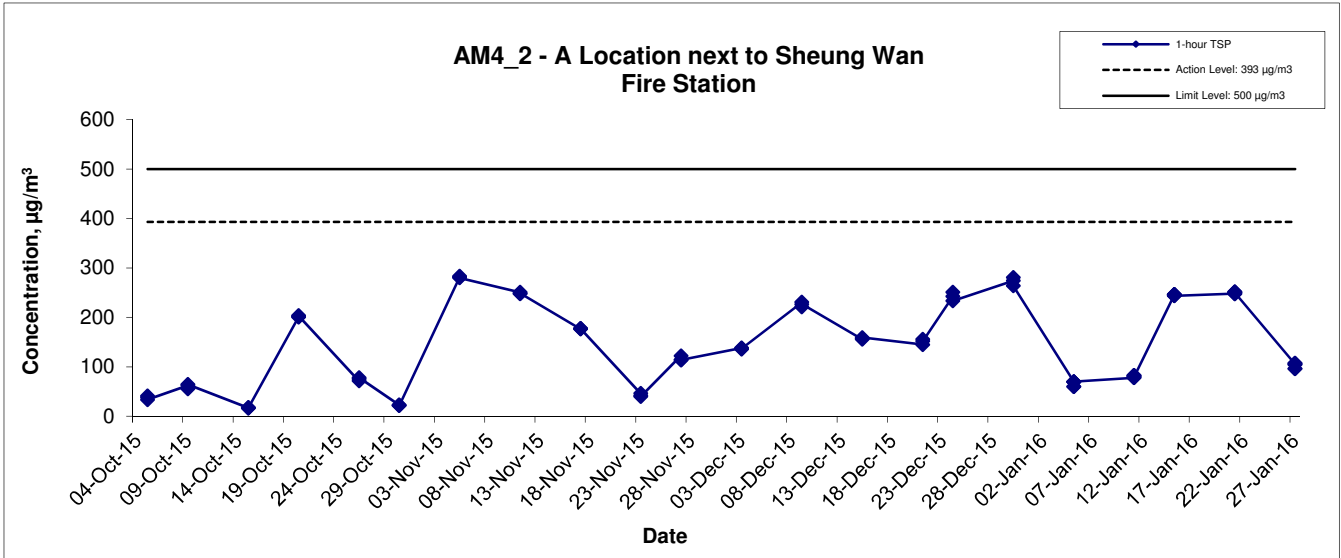
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### 1-hr TSP Concentration Levels



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

### 1-hr TSP Concentration Levels



Title Contract No. DC/2009/23  
 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central  
 Graphical Presentation of 1-hour TSP Monitoring Results

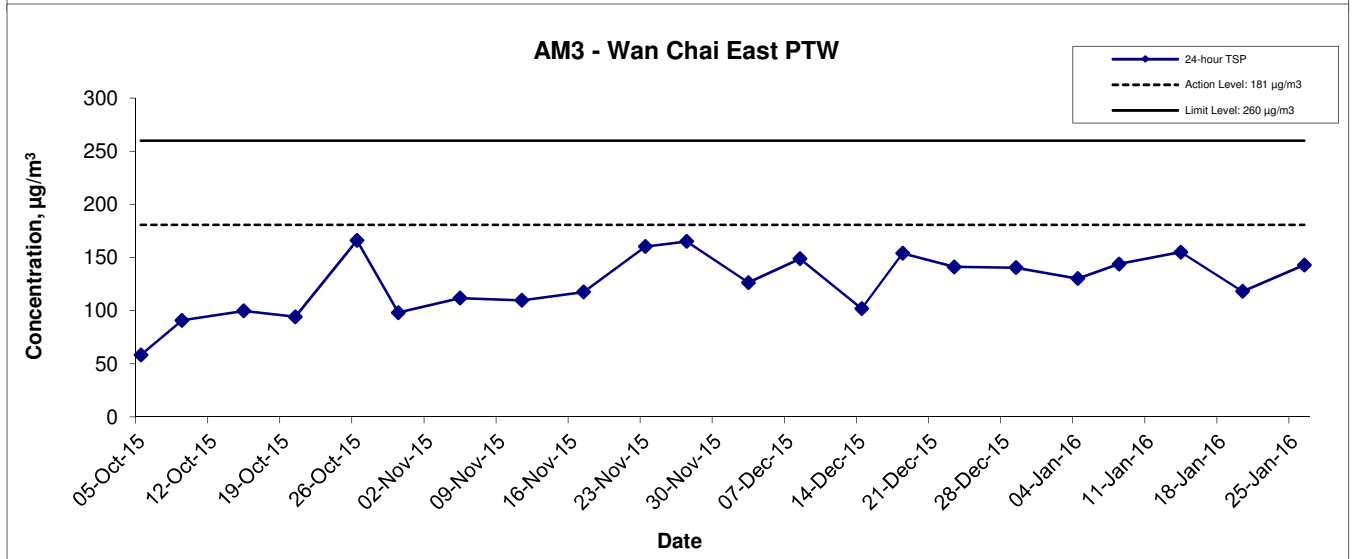
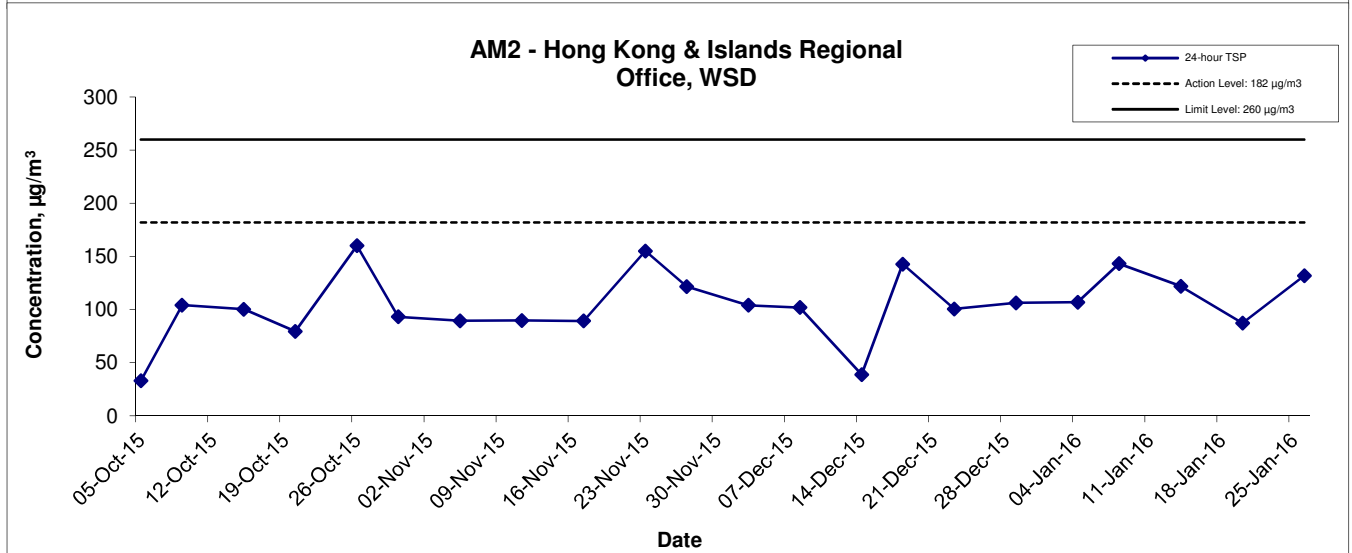
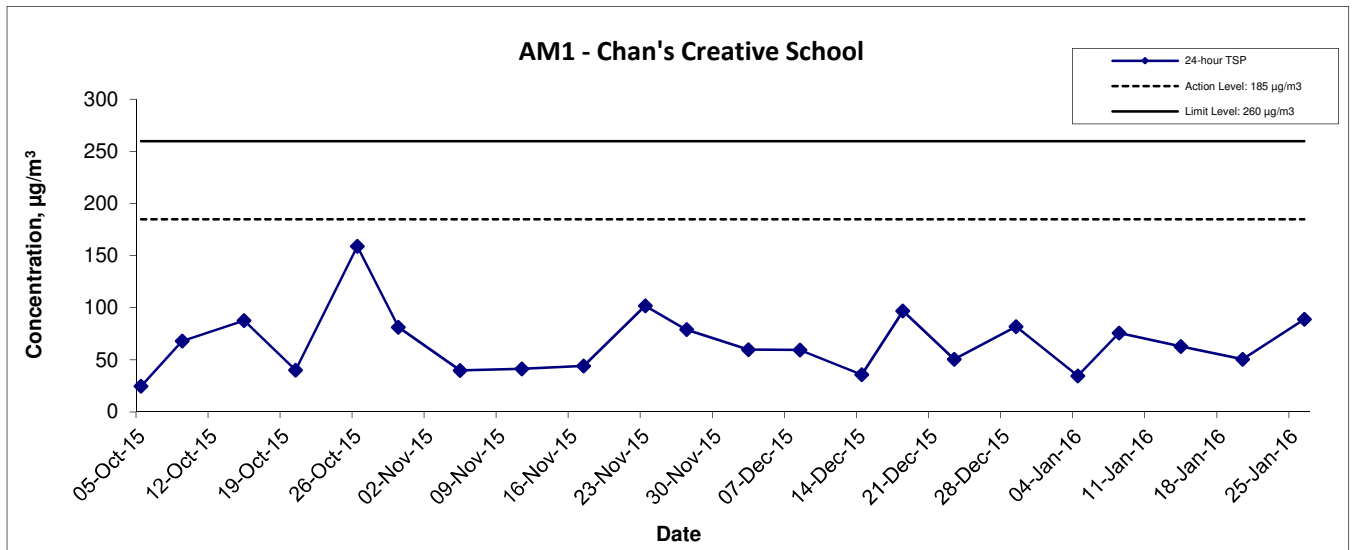
Scale N.T.S  
 Date Jan 16

Project No. MA11003  
 Appendix C



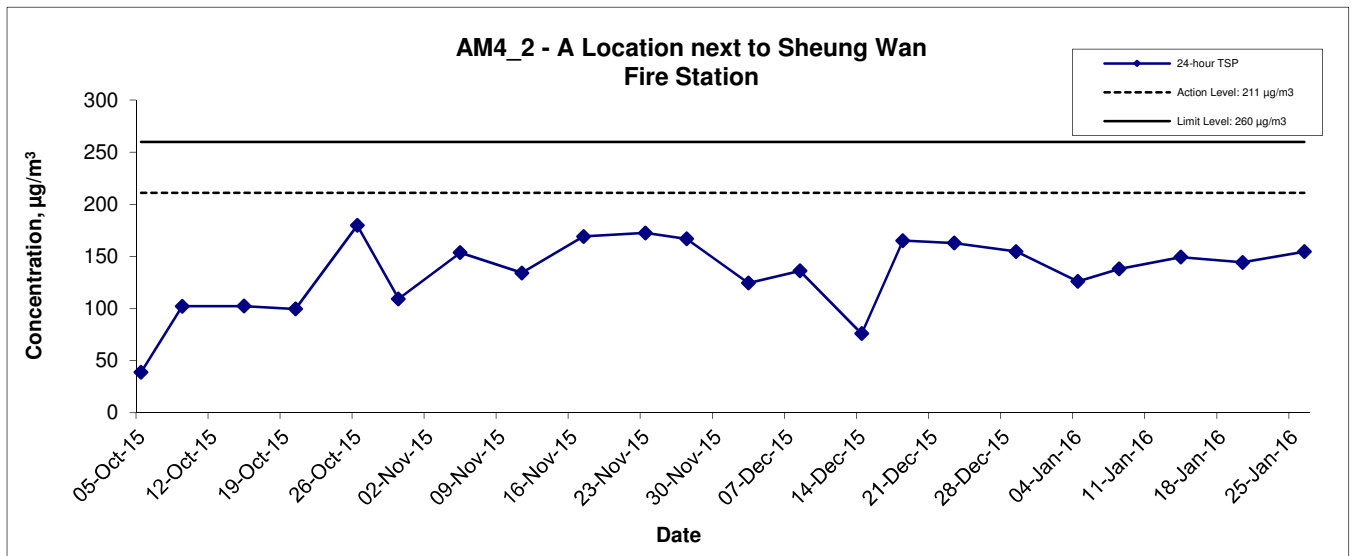


## 24-hr TSP Concentration Levels



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

### 24-hr TSP Concentration Levels



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

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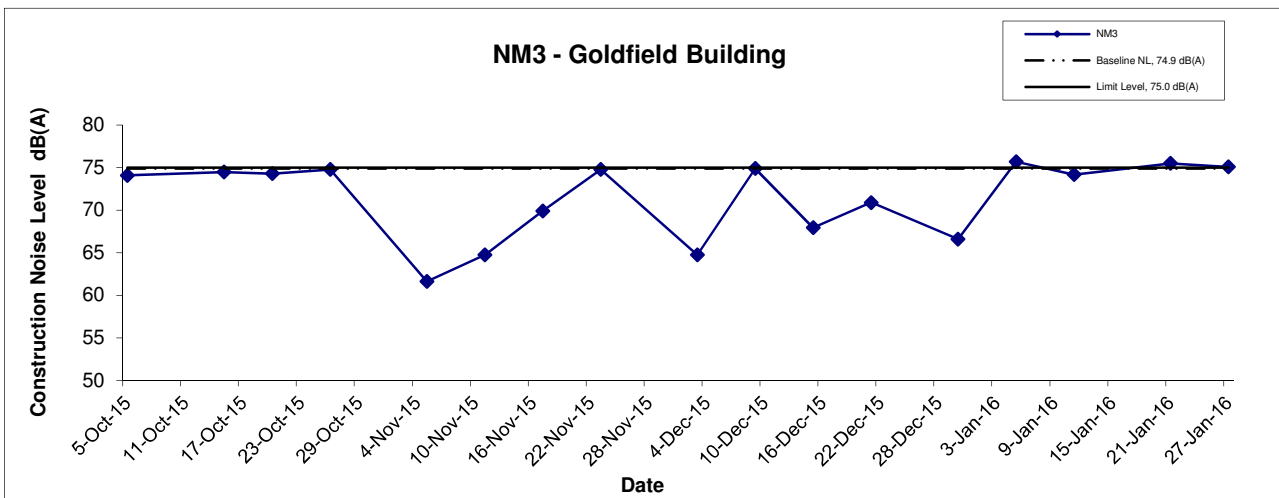
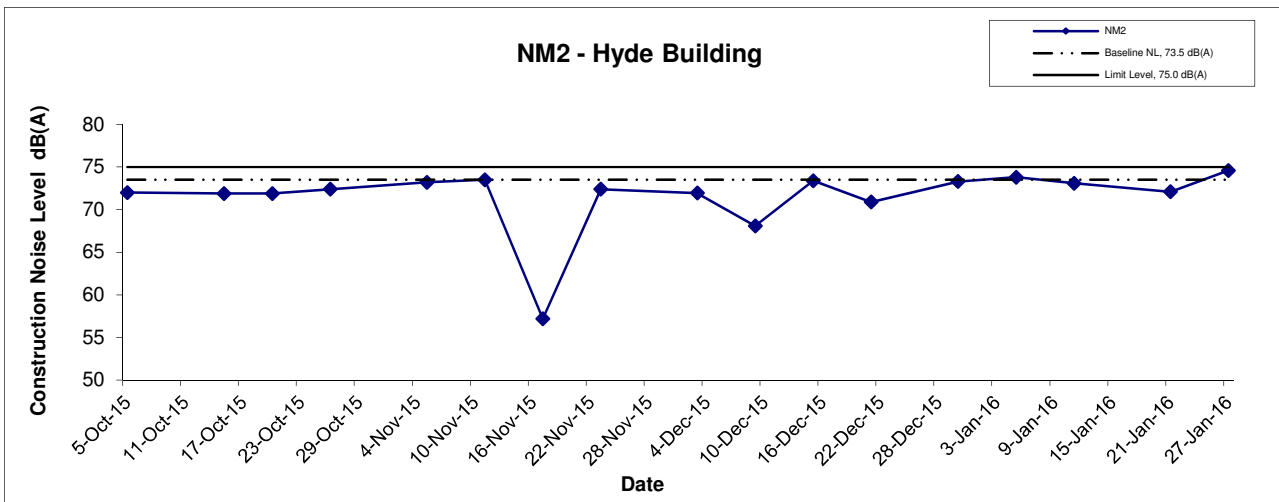
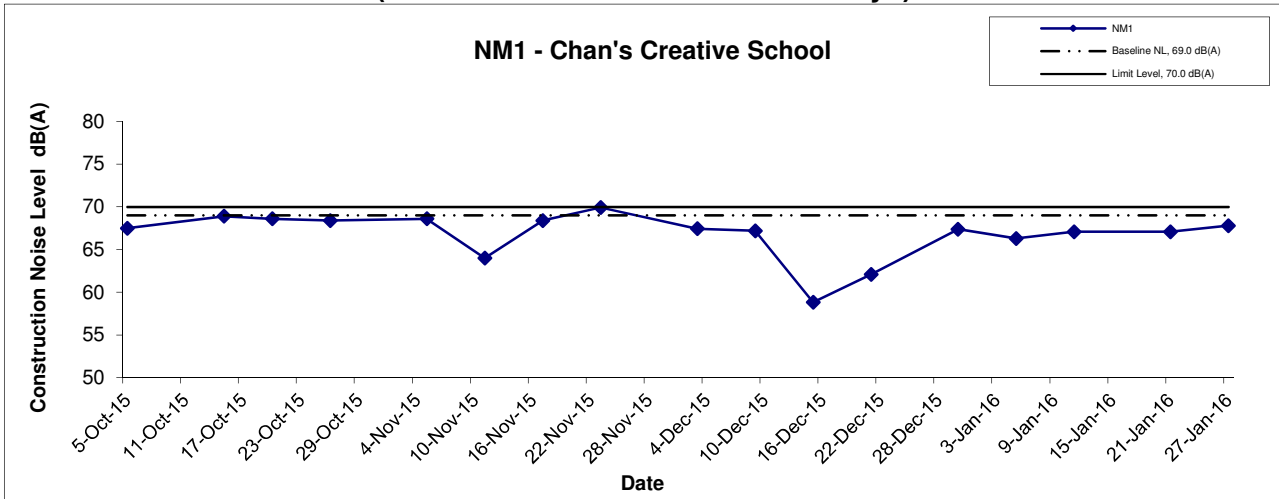
**APPENDIX D  
NOISE MONITORING GRAPHICAL  
PRESENTATIONS**

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## Noise Levels

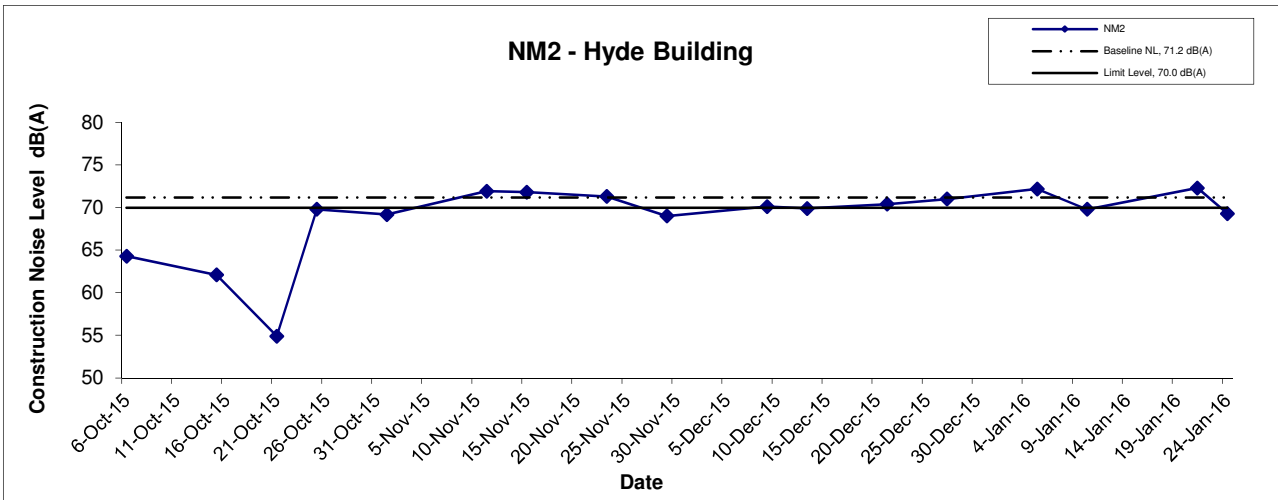
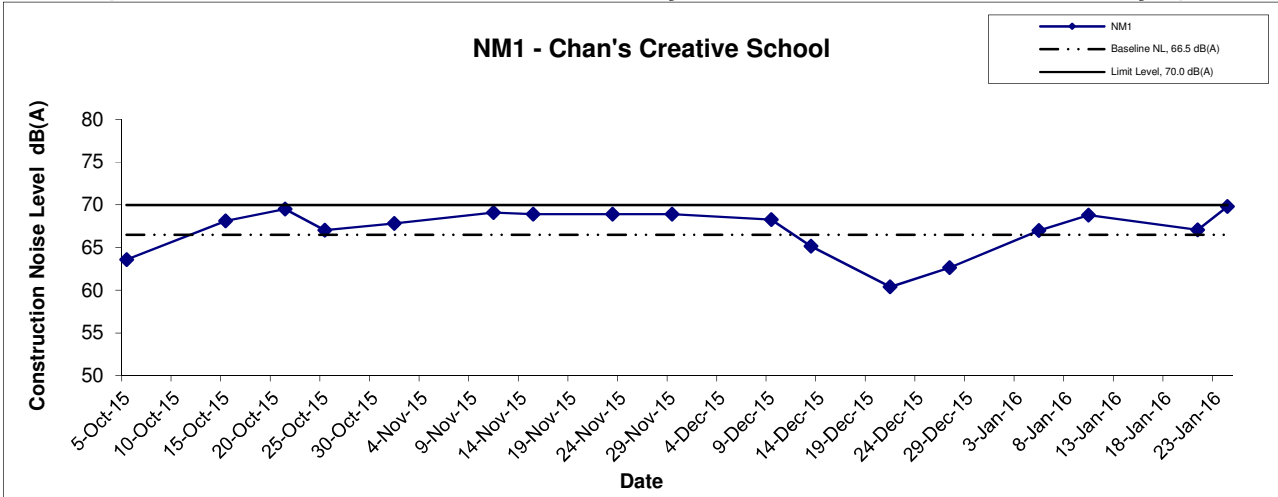
**(0700-1900 hrs on Normal Weekdays)**



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

## Noise Levels

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



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

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**APPENDIX E  
SUMMARY OF AMOUNT OF WASTE  
GENERATED**

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APPENDIX E MONTHLY SUMMARY WASTE FLOW TABLE FOR December (2015)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					Special Waste			
	Total Quantity Generated	Broken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Screening (CPTW)	Grit (CPTW)	Screening (NPPTW)	Grit (NPPTW)
	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	
Year2014	18.193	0.000	0.000	0.000	18.193	0.000	72.810	2.956	0.304	0.830	1.082	1.503	1.258	0.439	0.223
JAN	1.399	0.000	0.000	0.000	1.399	0.000	0.000	0.190	0.090	0.000	0.022	0.097	0.034	0.060	0.036
FEB	0.932	0.000	0.000	0.000	0.932	0.000	0.000	0.193	0.170	0.000	0.021	0.089	0.040	0.050	0.028
MAR	0.361	0.000	0.000	0.000	0.361	0.000	0.000	0.170	0.050	0.000	0.053	0.103	0.045	0.054	0.034
APR	0.083	0.000	0.000	0.000	0.083	0.000	0.000	0.128	0.070	0.000	0.045	0.091	0.038	0.055	0.034
MAY	0.146	0.000	0.000	0.000	0.146	0.000	0.000	0.170	0.005	0.200	0.025	0.109	0.033	0.054	0.032
JUN	0.008	0.000	0.000	0.000	0.008	0.000	0.000	0.168	0.005	0.000	0.025	0.094	0.036	0.044	0.030
SUB-TOTAL	21.122	0.000	0.000	0.000	21.122	0.000	72.810	3.975	0.694	1.030	1.273	2.086	1.484	0.756	0.417
JUL	0.507	0.000	0.000	0.000	0.507	0.000	0.000	0.170	0.003	0.000	0.033	0.093	0.047	0.048	0.033
AUG	1.392	0.000	0.000	0.000	1.392	0.000	0.000	0.172	0.005	0.000	0.024	0.091	0.045	0.040	0.029
SEP	0.222	0.000	0.000	0.000	0.222	0.000	0.000	0.170	0.002	0.000	0.065	0.084	0.029	0.047	0.033
OCT	0.203	0.000	0.000	0.000	0.203	0.000	0.000	0.170	0.001	0.000	0.048	0.082	0.027	0.044	0.034
NOV	0.343	0.000	0.000	0.000	0.343	0.000	0.000	0.700	0.002	0.000	0.011	0.095	0.034	0.041	0.028
DEC	0.274	0.000	0.000	0.000	0.274	0.000	0.000	0.200	0.001	0.000	0.031	0.084	0.031	0.046	0.030
TOTAL	24.063	0.000	0.000	0.000	24.063	0.000	72.810	5.557	0.708	1.030	1.485	2.615	1.697	1.022	0.604

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

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

in-situ: rock = 2.5 tonnes/m <sup>3</sup> ; soil = 2.0 tonnes/m <sup>3</sup>	excavated: rock = 2.0 tonnes/m <sup>3</sup> ; soil = 1.8 tonnes/m <sup>3</sup>	Special Waste (Grit) = 1.2 tonnes/m <sup>3</sup>	
broken concrete and bitumen = 2.4 tonnes/m <sup>3</sup>	C&D Waste = 0.9 tonnes/m <sup>3</sup>	bentonite slurry = 2.8 tonnes/m <sup>3</sup>	Chemical waste 1 Litres = 1 kg

 Special Waste (Screening) = 0.31 tonnes/m<sup>3</sup>

APPENDIX E MONTHLY SUMMARY WASTE FLOW TABLE FOR January (2016)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					Special Waste			
	Total Quantity Generated	Broken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Screening (CPTW)	Grit (CPTW)	Screening (NPPTW)	Grit (NPPTW)
	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	
Year2015	24.063	0.000	0.000	0.000	24.063	0.000	72.810	5.557	0.708	1.030	1.485	2.615	1.697	1.022	0.604
JAN	0.205	0.000	0.000	0.000	0.205	0.000	0.000	0.150	0.010	0.000	0.030	0.071	0.030	0.045	0.028
FEB															
MAR															
APR															
MAY															
JUN															
SUB-TOTAL	24.268	0.000	0.000	0.000	24.268	0.000	72.810	5.707	0.718	1.030	1.515	2.686	1.727	1.067	0.632
JUL															
AUG															
SEP															
OCT															
NOV															
DEC															
TOTAL	24.268	0.000	0.000	0.000	24.268	0.000	72.810	5.707	0.718	1.030	1.515	2.686	1.727	1.067	0.632

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

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

in-situ: rock = 2.5 tonnes/m <sup>3</sup> ; soil = 2.0 tonnes/m <sup>3</sup>	excavated: rock = 2.0 tonnes/m <sup>3</sup> ; soil = 1.8 tonnes/m <sup>3</sup>	Special Waste (Grit) = 1.2 tonnes/m <sup>3</sup>	
broken concrete and bitumen = 2.4 tonnes/m <sup>3</sup>	C&D Waste = 0.9 tonnes/m <sup>3</sup>	bentonite slurry = 2.8 tonnes/m <sup>3</sup>	Chemical waste 1 Litres = 1 kg
		Special Waste (Screening) = 0.31 tonnes/m <sup>3</sup>	



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**APPENDIX F**  
**EVENT ACTION PLANS**

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**APPENDIX F – Event / Action Plans**

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

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

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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>5. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated</li> </ol>

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

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

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

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

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

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



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

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

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

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

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

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

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**APPENDIX H  
COMPLAINT LOG**

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**APPENDIX H – COMPLAINT LOG**

**Reporting Quarter:** November 2015 to January 2016

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

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



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**APPENDIX I**  
**CONSTRUCTION PROGRAMME**

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Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011				2012				2013				2014				2015				2016			
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
FGN6050	Manufacture/Shipment of Pipework & Valves	150	173	29-Dec-12	27-May-13	20-Jun-13	16-Nov-13																								
FGN6100	Manufacture/Shipment of Misc. Items	120	83	28-Apr-13	25-Aug-13	20-Jul-13	16-Nov-13																								
FGN6150	Ordering of Electrical Equipment	7	283	01-Jun-11	07-Jun-11	10-Mar-12	16-Mar-12																								
FGN6200	Manufacturing/Delivery of Switchboard	210	13	04-Mar-12	29-Sep-12	17-Mar-12	12-Oct-12																								
FGN6250	Manufacturing/Delivery of UPS	150	43	03-Apr-12	30-Aug-12	16-May-12	12-Oct-12																								
FGN6300	Manufacturing/Delivery of Power Cables	90	33	12-Jun-12	09-Sep-12	15-Jul-12	12-Oct-12																								
FGN6350	Manufacturing/Delivery of Misc. Item for Elect.	90	43	02-Jun-12	30-Aug-12	15-Jul-12	12-Oct-12																								
FGN6500	Ordering of Control & Instrumentation	7	39	01-Jun-11	07-Jun-11	10-Jul-11	16-Jul-11																								
FGN6550	Manufacturing/Delivery of Control & Monitor Sys.	150	39	03-Apr-12	30-Aug-12	12-May-12	08-Oct-12																								
FGN6600	Manufacturing/Delivery of Field Instrument	150	39	03-Apr-12	30-Aug-12	12-May-12	08-Oct-12																								
FGN6650	Ordering of B.S. Equipment	7	33	01-Jun-11	07-Jun-11	04-Jul-11	10-Jul-11																								
FGN6700	Manufacturing/Delivery of B.S. Mat'l & Equip't	120	33	02-Jun-12	29-Sep-12	05-Jul-12	01-Nov-12																								
<b>SISTW</b>																															
<b>Key Dates</b>																															
<b>Time For Completion</b>																															
FGN0170	Time for Completion of Section 11	1393	0	06-Jan-11	29-Oct-14	06-Jan-11	29-Oct-14	Time for Completion of Section 11																							
<b>Temporary Land</b>																															
<b>Key Dates</b>																															
<b>Possession / Vacation of Portions</b>																															
FGN0350	H/O_ABN-T	0	0	06-Jan-11*		06-Jan-11		H/O_ABN-T																							
FGN0355	Vacation Date_ABN-T (Maintenance Completion)	0	0		29-Oct-14		29-Oct-14													Vacation Date_ABN-T (Maintenance Completion)											
FGN0360	H/O Date_SBY-T1 (60 days after start)	0	0	06-Mar-11*		06-Mar-11		H/O Date_SBY-T1 (60 days after start)												Vacation Date_SBY-T1 (on Sec. 6 completed)											
FGN0365	Vacation Date_SBY-T1 (on Sec. 6 completed)	0	0		22-May-14		22-May-14																								
FGN0370	H/O Date_SBY-T2 (60 days after start)	0	0	06-Mar-11*		06-Mar-11		H/O Date_SBY-T2 (60 days after start)																							
FGN0375	Vacation Date_SBY-T2 (183 days or earlier)	0	0		07-Jul-11*		07-Jul-11	Vacation Date_SBY-T2 (183 days or earlier)																							
FGN0380	H/O Date_SBY-T3 (60 days after start)	0	0	06-Mar-11*		06-Mar-11		H/O Date_SBY-T3 (60 days after start)																							
FGN0385	Vacation Date_SBY-T3 (183 days or earlier)	0	0		07-Jul-11*		07-Jul-11	Vacation Date_SBY-T3 (183 days or earlier)																							
<b>Engineer's Office and Accommodation</b>																															
<b>Key Dates</b>																															
<b>Aberdeen Office</b>																															
FGN0500	Construction of Engineer's Office	61	1247	01-Apr-11*	31-May-11	30-Aug-14	29-Oct-14	Construction of Engineer's Office																							
<b>Wan Chai Office and Accommodation</b>																															
FGN0505	Design Submission and Approval of Engineer's Office and Accommodation	21	1178	20-May-11	09-Jun-11	10-Aug-14	30-Aug-14	Design Submission and Approval of Engineer's Office and Accommodation																							
FGN0510	Construction of Engineer's Office and Accommodation	60	1178	10-Jun-11	08-Aug-11	31-Aug-14	29-Oct-14	Construction of Engineer's Office and Accommodation																							
<b>Works for Section 1</b>																															
<b>North Point</b>																															
<b>Civil Works Material Delivery on Site</b>																															
FNP00110	Delivery of DN 1800 & DN1650 Pipes on Site	50	50	01-Jul-11	19-Aug-11	20-Aug-11	08-Oct-11	Delivery of DN 1800 & DN1650 Pipes on Site																							
<b>E&amp;M Equipment / Material Delivery on Site</b>																															
FNP10100	Fine Screen & Associate Equip't Delivery on Site	7	101	23-Apr-12	29-Apr-12	02-Aug-12	08-Aug-12													Fine Screen & Associate Equip't Delivery on Site											
FNP10150	Fine Screening Conveyor Delivery on Site	7	91	03-May-12	09-May-12	02-Aug-12	08-Aug-12													Fine Screening Conveyor Delivery on Site											
FNP10200	Grit Removal System Delivery on Site	7	141	14-Mar-12	20-Mar-12	02-Aug-12	08-Aug-12													Grit Removal System Delivery on Site											
FNP10250	Penstocks Delivery on Site	7	1	01-Aug-12	07-Aug-12	02-Aug-12	08-Aug-12													Penstocks Delivery on Site											
FNP10300	Stoplogs Delivery on Site	7	1	01-Aug-12	07-Aug-12	02-Aug-12	08-Aug-12													Stoplogs Delivery on Site											
FNP10350	Lifting Equipment Delivery on Site	7	121	03-Apr-12	09-Apr-12	02-Aug-12	08-Aug-12													Lifting Equipment Delivery on Site											
FNP10400	Weather Monitor Station Delivery on Site	7	61	02-Jun-12	08-Jun-12	02-Aug-12	08-Aug-12													Weather Monitor Station Delivery on Site											
FNP10450	Deodorisation System Delivery on Site	7	61	02-Jun-12	08-Jun-12	02-Aug-12	08-Aug-12													Deodorisation System Delivery on Site											
FNP10500	Activated Carbon Filter Delivery on Site	7	121	03-Apr-12	09-Apr-12	02-Aug-12	08-Aug-12													Activated Carbon Filter Delivery on Site											
FNP10550	Pipework & Valves Delivery on Site	7	151	04-Mar-12	10-Mar-12	02-Aug-12	08-Aug-12													Pipework & Valves Delivery on Site											
FNP10600	Misc. Items Delivery on Site	7	91	03-May-12	09-May-12	02-Aug-12	08-Aug-12													Misc. Items Delivery on Site											
FNP10700	Switchboard Delivery on Site	7	313	04-Jan-12	10-Jan-12	12-Nov-12	18-Nov-12													Switchboard Delivery on Site											
FNP10750	UPS Delivery on Site	7	368	05-Nov-11	11-Nov-11	07-Nov-12	13-Nov-12													UPS Delivery on Site											
FNP10800	Power Cables Delivery on Site	7	108	10-Sep-12	16-Sep-12	27-Dec-12	02-Jan-13													Power Cables Delivery on Site											
FNP10850	Misc. Item for Elect. Delivery on Site	7	118	31-Aug-12	06-Sep-12	27-Dec-12	02-Jan-13													Misc. Item for Elect. Delivery on Site											
FNP10950	Control & Monitor Sys. Delivery on Site	7	388	05-Nov-11	11-Nov-11	27-Nov-12	03-Dec-12													Control & Monitor Sys. Delivery on Site											
FNP11000	Field Instrument Delivery on Site	7	148	02-Jul-12	08-Jul-12	27-Nov-12	03-Dec-12													Field Instrument Delivery on Site											
FNP11100	B.S. Mat'l & Equip't Delivery on Site	7	198	01-Aug-12	07-Aug-12	15-Feb-13	21-Feb-13													B.S. Mat'l & Equip't Delivery on Site											
<b>Civil Works</b>																															
<b>Site Clearance &amp; Prep. Works</b>																															
FNP12000	Site Clearance	14	29	20-May-11	02-Jun-11	18-Jun-11	01-Jul-11	Site Clearance																							
FNP12010	Site Utilities Supply	60	65	03-Jun-11	01-Aug-11	07-Aug-11	05-Oct-11	Site Utilities Supply																							
FNP12050	Erection of Fencing - NP-1 & NP2	20	29	03-Jun-11	22-Jun-11	02-Jul-11	21-Jul-11	Erection of Fencing - NP-1 & NP2																							
FNP12150	Site Survey, Extg. Utilities Investigation	14	7	15-Jul-11	28-Jul-11	22-Jul-11	04-Aug-11	Site Survey, Extg. Utilities Investigation																							
FNP12200	Division of Extg. Utilities	65	0	05-Aug-11	08-Oct-11	05-Aug-11	08-Oct-11	Division of Extg. Utilities																							
<b>Geotechnical / Structural Monitoring</b>																															
FNP12160	Install Instrumentation Monitoring Pts.	28	0	08-Jul-11	04-Aug-11	08-Jul-11	04-Aug-11	Install Instrumentation Monitoring Pts.																							
<b>Demolition Works</b>																															
FNP12350	Demolish Existing Medium Screens	30	39	09-Oct-11	07-Nov-11	17-Nov-11	16-Dec-11	Demolish Existing Medium Screens																							
FNP12400	Excavate / Remove Existing Buried Structures	21	39	08-Nov-11	28-Nov-11	17-Dec-11	06-Jan-12	Excavate / Remove Existing Buried Structures																							
<b>Site Investigation</b>																															
FNP12330	7nos. Pre-drill holes	42	62	05-Aug-11	15-Sep-11	06-Oct-11	16-Nov-11	7nos. Pre-drill holes																							
FNP12410	3 nos. Pre-drill holes	18	42	08-Nov-11	25-Nov-11	20-Dec-11	06-Jan-12	3 nos. Pre-drill holes																							

Actual Work (Blue), Critical Remaining Work (Red), Remaining Work (Green), Milestone (Diamond)

TASK filter: Clause 16 Programme.

Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011				2012				2013				2014				2015				2016
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Foundation Works</b>																												
FNP12450	26nos. socket H-pile	65	0	07-Jan-12	11-Mar-12	07-Jan-12	11-Mar-12																					
FNP12480	ELS for pile cap construction for F.S&G.T.Bldg.	15	5	12-Mar-12	26-Mar-12	17-Mar-12	31-Mar-12																					
FNP12490	Construction of pile cap for F.S&G.T. Bldg.	25	5	27-Mar-12	20-Apr-12	01-Apr-12	25-Apr-12																					
<b>RC Structural Works</b>																												
FNP12550	R.C. Structure for Chamber FC-1	45	0	12-Mar-12	25-Apr-12	12-Mar-12	25-Apr-12																					
FNP12600	Construct floor slab for F.Screen,GritTrap Bldg.	47	0	26-Apr-12	11-Jun-12	26-Apr-12	11-Jun-12																					
FNP12610	Construct column&wall of F.Screen,GritTrap Bldg	14	0	12-Jun-12	25-Jun-12	12-Jun-12	25-Jun-12																					
FNP12620	Construct roof slab of FineScreen,Grit Trap Bldg	14	0	26-Jun-12	09-Jul-12	26-Jun-12	09-Jul-12																					
<b>Drainage Works</b>																												
FNP12250	Install New DN1800 & DN1650 Sewer pipes	45	0	09-Oct-11	22-Nov-11	09-Oct-11	22-Nov-11																					
FNP12260	Construct new sewer manholes	30	0	23-Nov-11	23-Dec-11	23-Nov-11	22-Dec-11																					
FNP12265	Connect to Extg. DN1800 & DN1650 Overflow Sewer	15	0	23-Dec-11	06-Jan-12	23-Dec-11	06-Jan-12																					
FNP12750	Construct new FC-2a flow chamber	30	57	12-Mar-12	10-Apr-12	08-May-12	06-Jun-12																					
FNP12755	Laying of Pipes from Fine Screen Bldg. to FC-2	30	47	21-Apr-12	20-May-12	07-Jun-12	06-Jul-12																					
FNP12765	Laying of Pipes from FC-2 to FC-2a	30	57	11-Apr-12	10-May-12	07-Jun-12	06-Jul-12																					
FNP12770	Construct new FC-2 flow chamber	30	47	21-May-12	19-Jun-12	07-Jul-12	05-Aug-12																					
FNP12780	Laying of Pipes from FC-2 to FC-3	30	47	20-Jun-12	19-Jul-12	06-Aug-12	04-Sep-12																					
FNP12800	Construct new FC-3 flow chamber	75	82	20-Jul-12	02-Oct-12	10-Oct-12	23-Dec-12																					
FNP12850	Modification works for existing flow chamber	70	47	20-Jul-12	27-Sep-12	05-Sep-12	13-Nov-12																					
FNP12900	Construct Seawater Intake Chamber	40	47	28-Sep-12	06-Nov-12	14-Nov-12	23-Dec-12																					
FNP13150	Relocate Extg. Rising Mains in NP-3 & NP-4	70	0	24-Dec-12	03-Mar-13	24-Dec-12	03-Mar-13																					
<b>Electrical and Mechanical Works</b>																												
FNP12290	Modification of existing Deodorization Plant	30	158	03-Jun-11	02-Jul-11	08-Nov-11	07-Dec-11																					
FNP12300	Demolish Extg. Deodorization Plant	30	60	09-Oct-11	07-Nov-11	08-Dec-11	06-Jan-12																					
<b>Architectural Works</b>																												
FNP12700	Internal Finishes for F.Screen&Grit Trap Bldg.	30	0	10-Jul-12	08-Aug-12	10-Jul-12	08-Aug-12																					
<b>Transplantation, landscape works</b>																												
FNP12100	2 nos.Trees Transplant	50	11	05-Jun-11	24-Jul-11	16-Jun-11	04-Aug-11																					
<b>Mechanical Installation</b>																												
<b>Electrical and Mechanical Works</b>																												
FNP13100	Install Fine Screen Equipment	60	0	09-Aug-12	07-Oct-12	09-Aug-12	07-Oct-12																					
FNP13110	Install Fine Screen conveyor system	40	0	08-Oct-12	16-Nov-12	08-Oct-12	16-Nov-12																					
FNP13120	Install compactors & equipment	20	27	17-Nov-12	06-Dec-12	14-Dec-12	02-Jan-13																					
FNP13130	Install Grit removal equipment	60	0	17-Nov-12	15-Jan-13	17-Nov-12	15-Jan-13																					
FNP13200	Install Temp. Air Duct to Extg. Deodorizer	21	66	07-Dec-12	27-Dec-12	11-Feb-13	03-Mar-13																					
FNP13250	New Treatment Facilities to Flow Meter Chamber	60	27	07-Dec-12	04-Feb-13	03-Jan-13	03-Mar-13																					
<b>Electrical Installation</b>																												
<b>Electrical and Mechanical Works</b>																												
FNP13500	Modify Extg. Switchboard	45	313	11-Jan-12	24-Feb-12	19-Nov-12	02-Jan-13																					
FNP13550	Install New Switchboard	45	102	09-Aug-12	22-Sep-12	19-Nov-12	02-Jan-13																					
FNP13600	Laying Power Supply Cables (including Termination)	60	47	17-Nov-12	15-Jan-13	03-Jan-13	03-Mar-13																					
FNP13650	Install UPS System	50	97	09-Aug-12	27-Sep-12	14-Nov-12	02-Jan-13																					
FNP13700	Install Electrical Equipments	45	177	28-Sep-12	11-Nov-12	24-Mar-13	07-May-13																					
FNP31800	Install Earthing & Lightning System	60	97	28-Sep-12	26-Nov-12	03-Jan-13	03-Mar-13																					
<b>Control and Monitoring System</b>																												
FNP14100	Install Monitoring & Control System	90	117	09-Aug-12	06-Nov-12	04-Dec-12	03-Mar-13																					
<b>Building Services Installation</b>																												
FNP12650	Construct U/G Drains, Cable Pits & Ducting	90	87	10-Jul-12	07-Oct-12	05-Oct-12	02-Jan-13																					
FNP14500	Install Building Services	75	197	09-Aug-12	22-Oct-12	22-Feb-13	07-May-13																					
<b>Testing and Commissioning</b>																												
FNP15200	T&C of Building Services	25	112	16-Jan-13	09-Feb-13	08-May-13	01-Jun-13																					
FNP15300	T&C of PTW System	90	0	04-Mar-13	01-Jun-13	04-Mar-13	01-Jun-13																					
FNP15500	Complete the Works of Section 1	0	0		01-Jun-13		01-Jun-13																					
<b>Works for Section 2</b>																												
<b>North Point</b>																												
<b>E&amp;M Equipment / Material Delivery on Site</b>																												
FNP20010	Deodorisation System Delivery on Site	7	53	05-Oct-13	11-Oct-13	27-Nov-13	03-Dec-13																					
FNP20060	Control & Monitoring System Delivery on Site	7	108	05-Oct-13	11-Oct-13	21-Jan-14	27-Jan-14																					
<b>Civil Works</b>																												
<b>Site Clearance &amp; Prep. Works</b>																												
FNP20100	Possession of NP-3 (after Sec. 1 completed)	0	0	02-Jun-13		02-Jun-13																						
<b>Demolition Works</b>																												
FNP20200	Demolish the Extg. Fine Screen Chamber	30	0	23-Jun-13	22-Jul-13	23-Jun-13	22-Jul-13																					
<b>Site Investigation</b>																												
FNP20210	6nos. Pre-drill holes	19	0	23-Jul-13	10-Aug-13	23-Jul-13	10-Aug-13																					
<b>Foundation Works</b>																												
FNP20250	Piling Works for Deodorization Bldg.	55	0	11-Aug-13	04-Oct-13	11-Aug-13	04-Oct-13																					
<b>Drainage Works</b>																												
FNP20150	Relocate DN300 Sewer	50	20	02-Jun-13	21-Jul-13	22-Jun-13	10-Aug-13																					
<b>RC Structural Works</b>																												
FNP20400	Construct Deodorization Bldg. including finishes	60	0	05-Oct-13	03-Dec-13	05-Oct-13	03-Dec-13																					
FNP20450	Construct U/G Drains, Cable Pits & Ducting	24	91	05-Oct-13	28-Oct-13	04-Jan-14	27-Jan-14																					
<b>Mechanical Installation</b>																												

Actual Work      Critical Remaining Work  
 Remaining Work      Milestone

Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011				2012				2013				2014				2015	2016
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
<b>Electrical and Mechanical Works</b>																									
FNP21100	Decommission the Existing Grit Traps, Fine Screens	21	0	02-Jun-13	22-Jun-13	02-Jun-13	22-Jun-13																		
FNP21150	Install New Deodorization System	55	0	04-Dec-13	27-Jan-14	04-Dec-13	27-Jan-14																		
<b>Electrical Installation</b>																									
FNP21200	Install Switchgear	45	10	04-Dec-13	17-Jan-14	14-Dec-13	27-Jan-14																		
FNP21400	Power Cables Laying (including termination)	20	0	28-Jan-14	16-Feb-14	28-Jan-14	16-Feb-14																		
FNP21500	Install Earthing & Lightning System	45	10	04-Dec-13	17-Jan-14	14-Dec-13	27-Jan-14																		
<b>Control and Monitoring System</b>																									
FNP23500	Install Control & Monitoring System	20	0	28-Jan-14	16-Feb-14	28-Jan-14	16-Feb-14																		
<b>Building Services Installation</b>																									
FNP24500	Install Building Services System	20	0	28-Jan-14	16-Feb-14	28-Jan-14	16-Feb-14																		
<b>Testing and Commissioning</b>																									
FNP25000	T&C of Deodorization System	30	0	17-Feb-14	18-Mar-14	17-Feb-14	18-Mar-14																		
FNP25500	Completion of the Works of Section 2	0	0		18-Mar-14		18-Mar-14																		
<b>Works for Section 3</b>																									
<b>North Point</b>																									
<b>E&amp;M Equipment / Material Delivery on Site</b>																									
FNP31100	Delivery of Seawater Pumps on Site	10	140	01-Aug-13	10-Aug-13	19-Dec-13	28-Dec-13																		
FNP31150	Delivery of Pipes, Valve, Penstock & Accessories	14	206	02-Jun-13	15-Jun-13	25-Dec-13	07-Jan-14																		
FNP31250	Delivery of Control & Instrumentation	10	55	25-Oct-13	03-Nov-13	19-Dec-13	28-Dec-13																		
<b>Civil Works</b>																									
<b>Site Clearance &amp; Prep. Works</b>																									
FNP32050	Possession of NP-3 (after Sec. 1 completed)	0	0	02-Jun-13		02-Jun-13																			
FNP33100	Demolish Extg. Deodour. Plant & Screen Chamber	30	0	02-Jun-13	01-Jul-13	02-Jun-13	01-Jul-13																		
<b>Foundation Works</b>																									
FNP32150	Construct substructure of Seawater Pump. Station	30	60	02-Jul-13	31-Jul-13	31-Aug-13	29-Sep-13																		
<b>RC Structural Works</b>																									
FNP32160	Construct superstructural for Seawater Pump. St.	90	60	01-Aug-13	29-Oct-13	30-Sep-13	28-Dec-13																		
FNP32200	Construct Twin Seawater Pumping Main	90	0	02-Jul-13	29-Sep-13	02-Jul-13	29-Sep-13																		
FNP32350	Construct U/G Drains, Cable Pits & Ducting	90	0	30-Sep-13	28-Dec-13	30-Sep-13	28-Dec-13																		
<b>Drainage Works</b>																									
FNP32300	Laying pipes between FC-3,FC-3a,FC-3b &FC-4	40	105	02-Jul-13	10-Aug-13	15-Oct-13	23-Nov-13																		
FNP32310	Construct Chamber FC3a,FC-3,FC-4&Flume Channels	35	105	11-Aug-13	14-Sep-13	24-Nov-13	28-Dec-13																		
<b>Road Works</b>																									
FNP32320	Roadworks for PTW	60	65	24-Mar-14	22-May-14	28-May-14	26-Jul-14																		
<b>Transplantation, landscape works</b>																									
FNP32330	Planting and landscape works for PTW	80	65	23-May-14	10-Aug-14	27-Jul-14	14-Oct-14																		
<b>Mechanical Installation</b>																									
<b>Electrical and Mechanical Works</b>																									
FNP33150	Install Seawater Pump Sets	120	60	30-Oct-13	26-Feb-14	29-Dec-13	27-Apr-14																		
<b>Electrical Installation</b>																									
FNP34150	Install Switchgear	30	0	29-Dec-13	27-Jan-14	29-Dec-13	27-Jan-14																		
FNP34250	Power Cables Laying	60	0	28-Jan-14	28-Mar-14	28-Jan-14	28-Mar-14																		
FNP34300	Install Earthing & Lightning System	55	35	28-Jan-14	23-Mar-14	04-Mar-14	27-Apr-14																		
<b>Control and Monitoring System</b>																									
FNP35100	Install DCS Outstation & Instrumentation	90	0	29-Dec-13	28-Mar-14	29-Dec-13	28-Mar-14																		
<b>Building Services Installation</b>																									
FNP36100	Install Building Services	60	0	27-Feb-14	27-Apr-14	27-Feb-14	27-Apr-14																		
<b>Testing and Commissioning</b>																									
FNP37100	T&C of Building Services and E&M Equipment	80	0	28-Apr-14	16-Jul-14	28-Apr-14	16-Jul-14																		
FNP37110	Final T&C of North Point PTW	30	0	17-Jul-14	15-Aug-14	17-Jul-14	15-Aug-14																		
FNP37115	Submission of Draft O&M Manuals for North Point	0	0	09-Jun-12*		08-Jun-12																			
FNP37116	Submission of Updated Draft O&M Manuals for North Point	0	0	16-Oct-12*		15-Oct-12																			
FNP37120	Modified O&M Manuals for North Point	60	30	17-Jul-14	14-Sep-14	16-Aug-14	14-Oct-14																		
FNP37125	Submission of Modified O&M Manuals for North Point	0	30		14-Sep-14		14-Oct-14																		
FNP37130	As-Built Drawings for North Point	60	30	17-Jul-14	14-Sep-14	16-Aug-14	14-Oct-14																		
FNP37140	FSD submission, application and inspection for North Point	60	0	16-Aug-14	14-Oct-14	16-Aug-14	14-Oct-14																		
FNP37150	Completion of the Works of Section 3	0	0		14-Oct-14		14-Oct-14																		
<b>Water Supply from WSD for North Point PTW</b>																									
<b>Key Dates</b>																									
FNP40000	Application for Water Connection	60	5	28-Apr-14	26-Jun-14	03-May-14	01-Jul-14																		
FNP40010	Inspection from representative of WSD	1	5	27-Jun-14	27-Jun-14	02-Jul-14	02-Jul-14																		
FNP40020	Release of Completion Certificate by WSD	7	5	28-Jun-14	04-Jul-14	03-Jul-14	09-Jul-14																		
FNP40030	Installation of Water Meter and Main line connection	7	5	05-Jul-14	11-Jul-14	10-Jul-14	16-Jul-14																		
<b>Works for Section 4</b>																									
<b>Wan Chai East</b>																									
<b>Statutory Submission / Approval / Inspection</b>																									
FWC00270	Application of temporary D.G. Store Licence	0	0	02-May-11		02-May-11																			
FWC00320	Approval of temp. D.G. Store Licence	30	0	02-May-11	31-May-11	02-May-11	31-May-11																		
FWC00370	Application of temp. D.G. Store Inspection	0	0	17-Aug-11		17-Aug-11																			
FWC00420	Temp. D.G. Store Inspection by FSD	35	0	17-Aug-11	20-Sep-11	17-Aug-11	20-Sep-11																		
FWC00470	Obtain Temp. D.G. Store Licence	0	0		20-Sep-11		20-Sep-11																		

Actual Work Remaining Work Critical Remaining Work Milestone

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

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



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

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





Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011					2012				2013				2014				2015	2016
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
FCT41100	Deodorization Equipment Delivery on Site	14	36	30-Nov-13	13-Dec-13	05-Jan-14	18-Jan-14																			
FCT41200	Electrical Equipment Delivery on Site	10	140	25-Oct-13	03-Nov-13	14-Mar-14	23-Mar-14																			
FCT41300	Control & monitoring Equipment Delivery on Site	14	82	25-Oct-13	07-Nov-13	15-Jan-14	28-Jan-14																			
<b>Civil Works</b>																										
<b>Demolition Works</b>																										
FCT42100	Extg. Screening & Grit Removal Sys. Demolished	0	0		09-May-13		09-May-13																			
FCT43550	Demolish Extg. Deodou. Sys. in CTL-4	25	9	28-Jul-14	21-Aug-14	06-Aug-14	30-Aug-14																			
<b>Site Investigation</b>																										
FCT42110	18nos. Pre-drill holes	27	0	10-May-13	05-Jun-13	10-May-13	05-Jun-13																			
<b>Foundation Works</b>																										
FCT42200	22nos socket H-piles for Deo. Rm. Gen./D.G.Store	70	0	06-Jun-13	14-Aug-13	06-Jun-13	14-Aug-13																			
FCT42300	ELS for pile cap for new Bldg.	14	0	15-Aug-13	28-Aug-13	15-Aug-13	28-Aug-13																			
FCT42310	Construct pile cap for new Bldg.	28	0	29-Aug-13	25-Sep-13	29-Aug-13	25-Sep-13																			
<b>RC Structural Works</b>																										
FCT42400	Structure - Deodour. Rm., Gen. & D.G. Store	65	0	26-Sep-13	29-Nov-13	26-Sep-13	29-Nov-13																			
FCT42710	Modify the boundary walls	60	19	13-Jun-14	11-Aug-14	02-Jul-14	30-Aug-14																			
<b>Drainage Works</b>																										
FCT42500	Construct Flume Channels	75	19	30-Nov-13	12-Feb-14	19-Dec-13	03-Mar-14																			
<b>Building Service Works</b>																										
FCT42600	Int'l Finishes for E&M Rooms, Works Area	50	0	30-Nov-13	18-Jan-14	30-Nov-13	18-Jan-14																			
<b>Architectural Works</b>																										
FCT42700	Ext'l Finishes for Deodou. & D.G. Bldg.	120	19	13-Feb-14	12-Jun-14	04-Mar-14	01-Jul-14																			
FCT42720	Planting & landscape works	60	9	22-Aug-14	20-Oct-14	31-Aug-14	29-Oct-14																			
<b>Mechanical Installation</b>																										
FCT43100	Install Deodorization System in Portion CTL-3	130	0	19-Jan-14	28-May-14	19-Jan-14	28-May-14																			
FCT43200	Install Lifting Appliance	45	145	19-Jan-14	04-Mar-14	13-Jun-14	27-Jul-14																			
FCT43500	T&C - Deodour. Sys. in Portion CTL-4	45	24	29-May-14	12-Jul-14	22-Jun-14	05-Aug-14																			
<b>Electrical Installation</b>																										
FCT44100	Install Electrical System	90	64	19-Jan-14	18-Apr-14	24-Mar-14	21-Jun-14																			
<b>Control and Monitoring System</b>																										
FCT45100	Install New Control System	120	10	19-Jan-14	18-May-14	29-Jan-14	28-May-14																			
FCT45150	T&C of New Control System	60	0	29-May-14	27-Jul-14	29-May-14	27-Jul-14																			
<b>Building Services Installation</b>																										
FCT46100	Install Building Services	120	59	19-Jan-14	18-May-14	19-Mar-14	16-Jul-14																			
<b>Testing and Commissioning</b>																										
FCT47100	T&C of Building Services and E&M Equipment	34	0	28-Jul-14	30-Aug-14	28-Jul-14	30-Aug-14																			
FCT47110	Final T&C for Central	30	30	31-Aug-14	29-Sep-14	30-Sep-14	29-Oct-14																			
FCT47115	Submission of Draft O&M Manuals for Central	0	0	15-Jul-12*		14-Jul-12																				
FCT47116	Submission of Updated Draft O&M Manuals for Central	0	0	21-Aug-12*		21-Aug-12																				
FCT47120	Modified O&M for Central	60	0	31-Aug-14	29-Oct-14	31-Aug-14	29-Oct-14																			
FCT47125	Submission of Modified O&M for Central	0	0		29-Oct-14		29-Oct-14																			
FCT47130	As-Built Drawing for Central	60	0	31-Aug-14	29-Oct-14	31-Aug-14	29-Oct-14																			
FCT47140	FSD Submission, application and inspection for Central	60	0	31-Aug-14	29-Oct-14	31-Aug-14	29-Oct-14																			
FCT47150	Completion of the Works of Section 10	0	0		29-Oct-14		29-Oct-14																			
<b>Water supply from WSD for Central PTW</b>																										
<b>Key Dates</b>																										
FCT50000	Application for Water Connection	60	59	19-May-14	17-Jul-14	17-Jul-14	14-Sep-14																			
FCT50010	Inspection from representative of WSD	1	59	18-Jul-14	18-Jul-14	15-Sep-14	15-Sep-14																			
FCT50020	Release of Completion Certificate by WSD	7	59	19-Jul-14	25-Jul-14	16-Sep-14	22-Sep-14																			
FCT50030	Installation of Water Meter and Main line connection	7	59	26-Jul-14	01-Aug-14	23-Sep-14	29-Sep-14																			
<b>Works for Section 11</b>																										
<b>SCISTW</b>																										
<b>Time for Completion</b>																										
FCT50100	Time for Completion of Section 11	1393	0	06-Jan-11	29-Oct-14	06-Jan-11	29-Oct-14																			
<b>DCS Design Development</b>																										
FCT51000	Interface Management Plan Approved	0	43		14-Jul-11		26-Aug-11																			
FCT51100	Co-ordination with Interface Contractor	180	43	15-Jul-11	10-Jan-12	27-Aug-11	22-Feb-12																			
FCT52000	Prepare DCS Hardware & Software Design	120	43	11-Jan-12	09-May-12	23-Feb-12	21-Jun-12																			
FCT52050	Submit DCS Design for Approval	90	43	10-May-12	07-Aug-12	22-Jun-12	19-Sep-12																			
FCT52150	DCS Design Approved	0	43		07-Aug-12		19-Sep-12																			
FCT52200	DCS System Development	180	43	08-Aug-12	03-Feb-13	20-Sep-12	18-Mar-13																			
FCT52250	DCS Factory Test / Submit Test Report	60	43	04-Feb-13	04-Apr-13	19-Mar-13	17-May-13																			
<b>DCS Installation</b>																										
FCT53300	DCS System Installation	60	43	05-Apr-13	03-Jun-13	18-May-13	16-Jul-13																			
FCT53350	Connection to Control Sys. under this Contract	290	43	04-Jun-13	20-Mar-14	17-Jul-13	02-May-14																			
FCT53400	T&C of the Whole of DCS	90	43	21-Mar-14	18-Jun-14	03-May-14	31-Jul-14																			
FCT53405	Draft O&M Manuals for DCS System	60	223	08-Aug-12	06-Oct-12	19-Mar-13	17-May-13																			
FCT53410	O&M for DCS Systems	90	43	19-Jun-14	16-Sep-14	01-Aug-14	29-Oct-14																			
FCT53420	As-Built Drawings for DCS System (Section 11)	60	73	19-Jun-14	17-Aug-14	31-Aug-14	29-Oct-14																			
FCT53450	Completion of the Works of Section 11	0	0		29-Oct-14*		29-Oct-14																			

Actual Work Remaining Work Critical Remaining Work Milestone