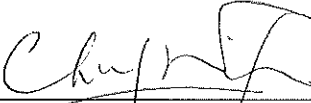


Leader and JEC Joint Venture

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

Monthly Environmental
Monitoring and Audit Report
September 2014

(Version 1.0)

Certified By	
	(Environmental Team Leader)

REMARKS:

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

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

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

16 October 2014
By Post

Attn: Mr. Danny Tang

Dear Sir,

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

**Contract No. DC/2009/23
Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Condition 4.4 – Monthly EM&A Report for September 2014 (no. 44) Version 1.0**

I refer to the revised Monthly EM&A for September 2014 (version 1.0) submitted by ETL on 15 October 2014 via email. In accordance with Condition 4.4 of Environmental Permit No. EP-322/2008/G, I hereby verify the captioned Monthly EM&A Report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

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

Mr. Ted Y F Tang
Mr. Rex Lau
Dr. Priscilla Choy

Fax: (2370 4377)
By email
By email

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ABBREVIATION AND ACRONYM

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

EXECUTIVE SUMMARY**Introduction**

1. This is the 44th Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract No. DC/2009/23 “HATS Stage 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central” (The Project) which documents the key information of EM&A and environmental monitoring works by Contract DC/2007/23 HATS Stage 2A with the same Environmental Permit (Permit No. EP-322/2008/G) for September 2014.
2. The site activities undertaken for in the reporting month included:
 - Wan Chai East PTW:
 - Construction of concrete plinth at the inlet pumping station (Civil);
 - Pump Replacement Work at the inlet pumping station (E&M);
 - Installation of steel cage and wall opening for sewage pump replacement at flow distribution chamber (Stage 2).
 - North Point PTW
 - Demolition of existing fine screen plant;
 - Pre-bore socket H-Pile;
 - Operation and maintain of the new FSGT Building;
 - Enhancement work for Construction of RM at the existing pumping station (night works).
 - Central PTW
 - Substructure construction for FSGT Building;
 - Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
 - External wall finishing work.

Environmental Monitoring Works

3. The environmental monitoring works of the Project was conducted by the ET for the Contract: DC/2007/23 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. Summary of the non-compliance of the reporting month is tabulated in **Table I**.

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

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

	24-hr TSP	0	0	0	0	N/A
NM1	Noise	0	0	0	0	N/A
NM2	Noise	0	3	0	0	N/A
NM3	Noise	0	0	0	0	N/A

Note: Since the site area where air monitoring station AM4 was located had to be returned to DSD for another Works Contract, AM4 was relocated to AM4_2 on 24 September 2012.

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

- All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded, while three non-project related Limit Level exceedance was recorded during the restricted hour noise monitoring on 9th, 14th & 23rd September 2014 by the ET of DC/2007/23 at NM2. Details of the exceedance could be referred to **Appendix E**.

Environmental Licenses and Permits

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

Environmental Mitigation Implementation Schedule

- 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 I**.

Key Information in the Reporting Month

- Summary of key information in the reporting month is tabulated in **Table II**.
Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Status of submissions under EP	0	Monthly Environmental Monitoring and Audit Report for August 2014	Submitted to EPD on 15 September 2014	No Comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

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

Future Key Issues

- 13. Major site activities for the coming two months include:

Wan Chai East PTW:

- Construction of concrete plinth at the inlet pumping station (Civil);
- Pump Replacement Work at the inlet pumping station (E&M);
- Installation of steel cage and wall opening for sewage pump replacement at flow distribution chamber (Stage 2).

North Point PTW

- Pre-bore socket H-Pile;
- Operation and maintain of the new FSGT Building;
- Sheet piling and excavation work for the new screening plant.

Central PTW

- Substructure construction for FSGT Building;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work;
- Excavation for the new FSGT Building.

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

1. INTRODUCTION

Background

- 1.1 The Project ‘HATS Stage 2A - Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central with Contract No: DC/2009/23’ mainly comprises the following major works:
- Decommissioning, demolition and removal of existing structures and buildings, including the associated E&M works;
 - Relocation of sewers, control room, workshop equipment and the associated E&M works; and
 - Construction of new buildings and structures.
- 1.2 The general location plan of the Project is shown in **Figure 1A** to **1C**.
- 1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project (Register No. : AEIAR-121/2008). The environmental permit: (Permit No. EP-322/2008/G) which was issued on 9th May 2014 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.4 Leader and JEC Joint Venture (hereafter called the LJJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/23 “Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central”. The date of commencement of construction of the Project is on 14th 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 44th monthly EM&A report summarizing the EM&A works conducted for the Project in September 2014.

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. P K Kwok	Senior Engineer 2	2159 3403
Ove Arup & Partners Hong Kong Ltd	Engineer’s Representative	Mr. Ted Tang	Principal Resident Engineer	2370-4311
	Coordinator	Ms. Natalie Kwok	Resident Engineer	6794 8844
Cinotech	Environmental 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

Construction Programme

1.8 The site activities undertaken in the reporting month included:

Wan Chai East PTW:

- Construction of concrete plinth at the inlet pumping station (Civil);
- Pump Replacement Work at the inlet pumping station (E&M);
- Installation of steel cage and wall opening for sewage pump replacement at flow distribution chamber (Stage 2).

North Point PTW

- Demolition of existing fine screen plant;
- Pre-bore socket H-Pile;
- Operation and maintain of the new FSGT Building;
- Enhancement work for Construction of RM at the existing pumping station (night works).

Central PTW

- Substructure construction for FSGT Building;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work.

Summary of EM&A Requirements

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

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

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

1.11 This report presents the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project in September 2014. For the methodology and QA/QC procedures of the monitoring parameters, please refer to the monthly report for the Contract DC/2007/23.

2. AIR QUALITY

Monitoring Requirements

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

Monitoring Locations

- 2.2 Four designated monitoring stations, AM1, AM2, AM3 and AM4_2 were selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1A** to **1C**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM1	DC/2007/23	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. Copies of calibration certificates are provided in Annex H of DC/2007/23 monthly EM&A report.

Table 2.2 Air Quality Monitoring Equipment

Monitoring Station	Model and Make	
	HVS Sampler	Calibrator
AM1	GMWS-2310 ACCU-VOL	CM-AIR-43
AM2	GMWS-2310 ACCU-VOL	
AM3	GMWS-2310 ACCU-VOL	
AM4_2	GMWS-2310 ACCU-VOL	

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. The air quality monitoring schedule for the reporting period is shown in **Appendix B**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedure

- 2.5 The monitoring methodology and QA/QC procedures are presented in the monthly report for Contract DC/2007/23.

Results and Observations

- 2.6 **Table 2.4** summarizes the monitoring results at AM1, AM2, AM3 and AM4_2 in reporting month.

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

Air Quality Monitoring Station	Average $\mu\text{g}/\text{m}^3$	Range $\mu\text{g}/\text{m}^3$	Action Level $\mu\text{g}/\text{m}^3$	Limit Level $\mu\text{g}/\text{m}^3$
1 hour TSP				
AM1	161	83 - 257	340	500
AM2	161	91 - 240	352	
AM3	147	95 - 217	355	
AM4_2	164	98 - 245	393	
24 hours TSP				
AM1	77	46 - 101	185	260
AM2	80	55 - 111	182	
AM3	85	48 - 148	181	
AM4_2	84	49 - 113	211	

Note: Since the site area where air monitoring station AM4 was located had to be returned to DSD for another Works Contract, AM4 was relocated to AM4_2 on 24 September 2012.

- 2.7 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix E**.
- 2.8 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix E**.
- 2.9 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are extracted from the monthly reports of Contract DC/2007/23 and 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**, which are also depicted in **Figure 1A** to **1C**

Table 3.1 Location of Noise Monitoring Stations

Monitoring Station	Monitored By	Location of Measurement
NM1	DC/2007/23	Chan's Creative School
NM2		Hyde Building
NM3		Goldfield Building

Monitoring Equipment

3.3 **Table 3.2** summarizes the noise monitoring equipments. Copies of calibration certificates are provided in Annex H of DC/2007/23 monthly EM&A report.

Table 3.2 Noise Monitoring Equipment

Monitoring Station	Model and Make	
	Sound Level Meter	Calibrator
NM1	Rion NL-31	Rion NC-73
NM2		
NM3		

Monitoring Parameters, Frequency and Duration

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

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NM1	L _{eq} (30 min.) dB(A)	0700-1900 hrs. on weekdays	Once per week
	L _{eq} (5 min.) dB(A)	Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)	
NM2 NM3	L _{eq} (30 min.) dB(A)	0700-1900 hrs. on weekdays	

Monitoring Methodology and QA/QC Procedures

3.5 The monitoring methodology and QA/QC procedure are provided in the monthly report for Contract DC/2007/23.

Results and Observations

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

Table 3.4 Summary of Daytime Noise Monitoring Results in Reporting Month

For the time period 0700-1900 hrs. on weekdays		
Monitoring Station	Range, dB(A) L _{eq} (30 min.)	Limit Level ,dB(A) L _{eq} (30 min.)
NM1	67 - 70	70.0 *
NM2	71 - 73	75.0
NM3	73 - 75	

* 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 month.

3.8

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

Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)		
Monitoring Station	Range, dB(A) L _{eq} (5 min.)	Limit Level ,dB(A) L _{eq} (5 min.)
NM1	68 - 70	70.0 *
NM2	68 - 71	70.0 *

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

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

3.9 The construction noise monitoring at the designated locations was conducted by the ET of Contract: DC/2007/23 as scheduled in the reporting month.

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

3.11 All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded, while three non-project related Limit Level exceedance was recorded during the restricted hour noise monitoring on 9th, 14th & 23rd September 2014 by the ET of DC/2007/23 at NM2. Details of the exceedance could be referred to **Appendix E**.

3.12 Noise monitoring results and graphical presentations are extracted from the monthly report of Contract DC/2007/23 and shown in **Appendix D**.

3.13 The major noise sources identified at the designated noise monitoring stations were traffic

noise and construction activities.

4 ENVIRONMENTAL AUDIT

Site Audits

- 4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 4.2 Environmental site audits were conducted on 5th, 12th, 17th and 26th September 2014. No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.
- 4.4 The summaries of site audits are attached in **Appendix F**.

Review of Environmental Monitoring Procedures

- 4.5 The monitoring works were conducted by the monitoring team of Contract DC/2007/23. The monitoring procedures were reviewed by its ET.

Status of Environmental Licensing and Permitting

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

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

Ref. No.	Valid Period		Details	Status
	From	To		
Water Discharge License				
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	
Registered Chemical Waste Producer				
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	
Construction Noise Permit				
GW- RS0516-13	29/5/2013	28/11/2013	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS0906-13	23/8/2013	22/11/2013	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS1387-13	5/12/2013	21/5/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS0424-14	5/5/2014	5/7/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Valid

Ref. No.	Valid Period		Details	Status
	From	To		
			Kong	
GW- RS0643-14	3/7/2014	30/09/2014	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	Valid
Special Waste Admission Ticket				
11287	1/4/2014	30/9/2014	Location: North Point PTW	Valid
11586	24/8/2014	23/11/2014	Location: Central PTW	Valid

Status of Waste Management

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

Implementation Status of Environmental Mitigation Measures

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

4.9 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations and recommendations for the Projects are summarized in **Table 4.2**.

Table 4.2 Observations and Recommendations of Site Audit

Parameters	Date/Ref. Number	Observations	Follow Up Action
Water Quality	140905-R03	Properly clear the stagnant water at Central-PTW.	The stagnant water was cleared at Central-PTW.
	140917-R02	The bunding should be provided to prevent the muddy and slurry water overflowing to the access road at North Point-PTW.	The bunding was provided to prevent the muddy and slurry water overflowing to the access road at North Point-PTW.
	140917-R05	The maintenance of the pH meter of the sediment tank should be provided at Central-PTW.	The maintenance of the pH meter of the sediment tank was provided by the Contractor at Central-PTW.
	140926-R06	Properly clear the oil stain and oil stained water at Central-PTW.	The oil stain and oil stained water were cleared at Central-PTW.
Air Quality	140912-R01	The dusty materials should be cleared properly or covered by impervious materials at Wan Chai-PTW.	The dusty materials were covered by impervious materials at Wan Chai-PTW.
	140917-R03	Properly clear the odour emission materials regularly at North Point-PTW.	The odour emission materials were covered by impervious material at North Point-PTW.

	140926-R03	The dusty materials should be cleared properly or covered by impervious materials at North Point-PTW and Wan Chai-PTW.	The dusty materials were cleared properly at North Point-PTW and covered by impervious materials at Wan Chai-PTW.
Waste/ Chemical Management	140829-O03	The oil leakage from the breaker tip was observed at Central-PTW. The Contractor was reminded to provide the maintenance of the breaker tip.	Please refer to 140905-O01.
	140905-O01	The oil leakage from the breaker tip was observed at Central-PTW. The Contractor was reminded to provide the maintenance of the breaker tip.	The oil leakage from the breaker tip was not observed at Central-PTW.
	140905-R02	The chemical container should be provided with the drip tray at Central-PTW.	The chemical container was not observed at Central-PTW.
	140912-R02	The construction wastes should be sorted out properly at Wan Chai-PTW.	The construction wastes were sorted out properly at Wan Chai-PTW.
	140912-R03	Properly clear the oil stain at Central-PTW.	Please refer to 140917-R01.
	140917-R01	Properly clear the oil stain at North Point-PTW and Central-PTW.	Please refer to 140926-R06.
	140917-R04	The chemical containers should be provided with the drip tray at Central-PTW.	The chemical containers were provided with the drip tray at Central-PTW.
	140926-O01	The oil leakage was observed from the excavator at North Point-PTW. The Contractor was reminded to keep it in a good condition.	The oil leakage was not observed from the excavator at North Point-PTW.
	140926-R04	The chemical containers should be provided with the drip tray at North Point-PTW and Wan Chai-PTW.	The chemical containers were provided with the drip tray at North Point-PTW and Wan Chai-PTW.
	140926-R05	Properly sort out the construction wastes at Wan Chai-PTW.	The follow up action will be reported during site inspections in October 2014.
	140926-R06	Properly clear the oil stain and oil stained water at Central-PTW.	The oil stain and oil stained water were cleared at Central-PTW.
Noise	--	--	--
Landscape and Visual	140905-R04	The construction materials should be placed far away from the tree protection area at North Point-PTW.	Please refer to 140912-R04.
	140912-R04	The construction materials should be placed far away from the tree protection area at North Point-PTW.	The construction materials were cleared in the tree protection area at North Point-PTW.
	140926-O02	The heavy materials should be placed far away from the planter and tree protection area at North Point-PTW and Wan Chai-PTW.	The follow up action will be reported during site inspections in October 2014.
Permit/ Licenses	--	--	--

Implementation Status of Event Action Plans

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

1-hr TSP

- 4.11 No Action/Limit Level exceedance was recorded.

24-hr TSP

- 4.12 No Action/Limit Level exceedance was recorded.

Construction Noise

- 4.13 No Action Level exceedance was recorded, while three non-project related Limit Level exceedance was recorded during the restricted hour noise monitoring on 9th, 14th & 23rd September 2014 by the ET of DC/2007/23 at NM2. Details of the exceedance could be referred to **Appendix E**.

Landscape and Visual

- 4.14 No non-compliance was recorded.

Summary of Complaints and Prosecutions

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

5. FUTURE KEY ISSUES

Key Issues for the Coming Month

5.1 Key environmental issues in the coming month include:

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

Monitoring Schedule for the Next Month

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

5.3 Construction Activities for the Next Two Months:

Wan Chai East PTW:

- Construction of concrete plinth at the inlet pumping station (Civil);
- Pump Replacement Work at the inlet pumping station (E&M);
- Installation of steel cage and wall opening for sewage pump replacement at flow distribution chamber (Stage 2).

North Point PTW

- Pre-bore socket H-Pile;
- Operation and maintain of the new FSGT Building;
- Sheet piling and excavation work for the new screening plant.

Central PTW

- Substructure construction for FSGT Building;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work;
- Excavation for the new FSGT Building.

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

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

- 6.4 All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded, while three non-project related Limit Level exceedance was recorded during the restricted hour noise monitoring on 9th, 14th & 23rd September 2014 by the ET of DC/2007/23 at NM2. Details of the exceedance could be referred to **Appendix E**.

Environmental Audit

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

Complaint and Prosecution

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

Recommendations for the coming reporting month:

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

Air Quality Impact

- To provide impervious covers for dusty materials to reduce dust generation; and
- To provide the appropriate measure to control the odour emission.

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.

Water Impact

- To avoid accumulation of stagnant / oil stained water on site;
- To avoid water from accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed;
- To provide the bunding to prevent the muddy / slurry water overflowing on site; and
- To provide the maintenance of the sediment tank to ensure the sediment tank is functioned properly.

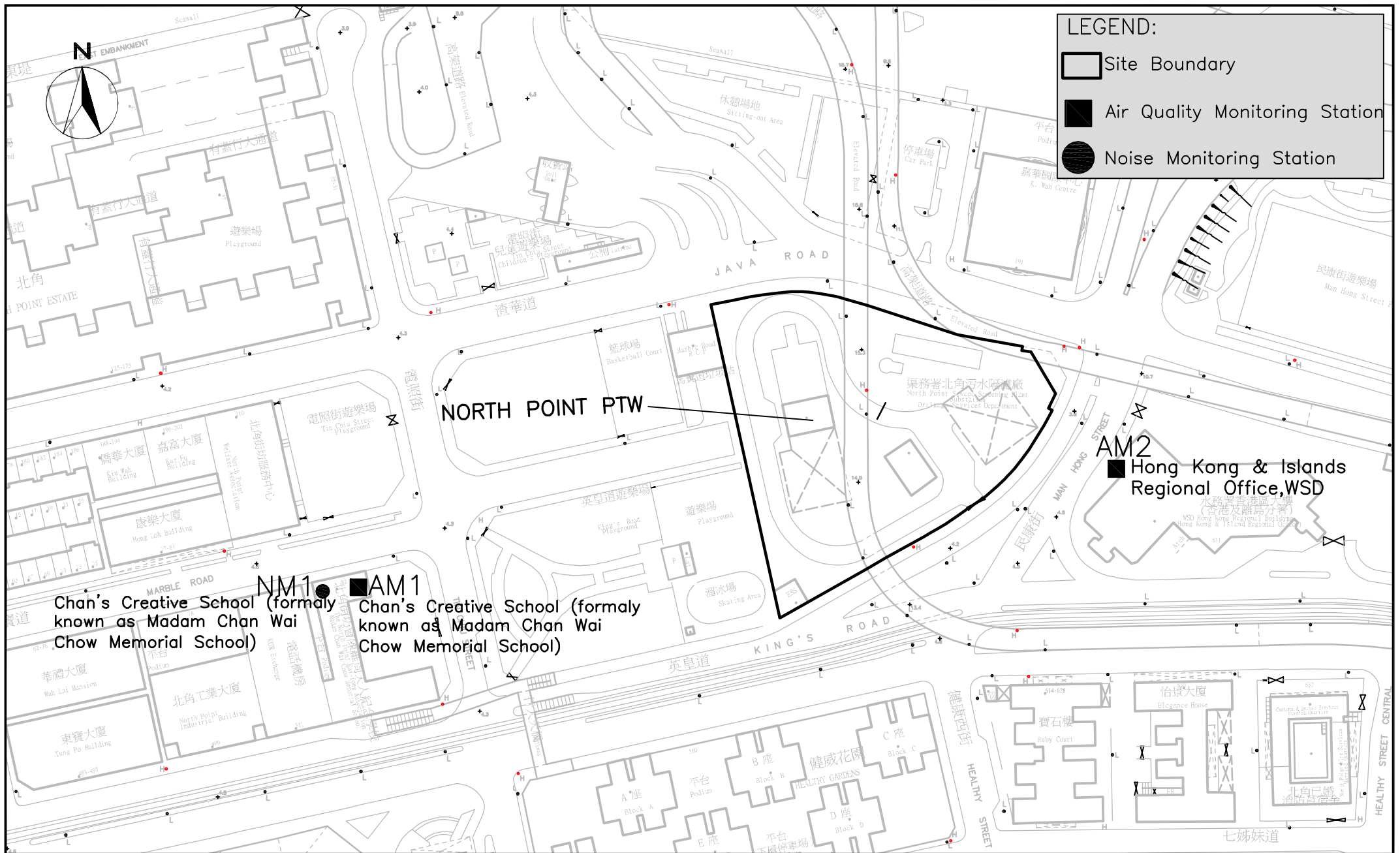
Waste/Chemical Management

- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment;
- To well maintain the equipments and drip trays to avoid oil leakage;
- To avoid improper handling or storage of oil drum on site;
- Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;
- To check for any accumulation of wasted materials or debris on site;
- To proper sort out the construction wastes; and
- To provide adequate skips / containers for waste collection.

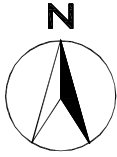
Landscape and Visual

- To avoid any heavy materials placed into tree protection zone.

FIGURES



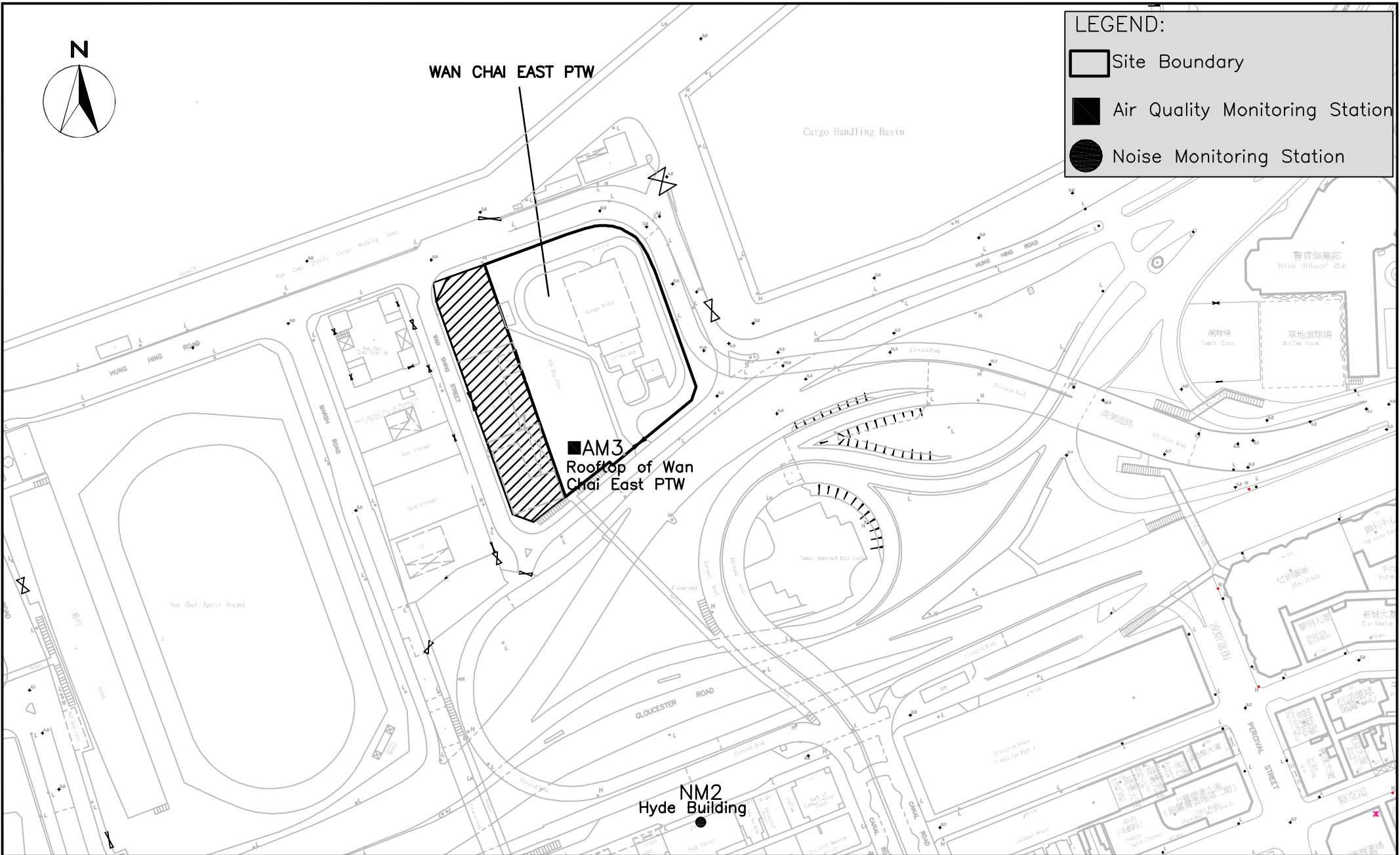
SCALE	N.T.S	DATE	11 MAR 2011	
CHECK	GL	DRAWN	TW	
PROJECT NO.	MA11003	FIGURE NO.	1A	REV —



WAN CHAI EAST PTW

LEGEND:

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



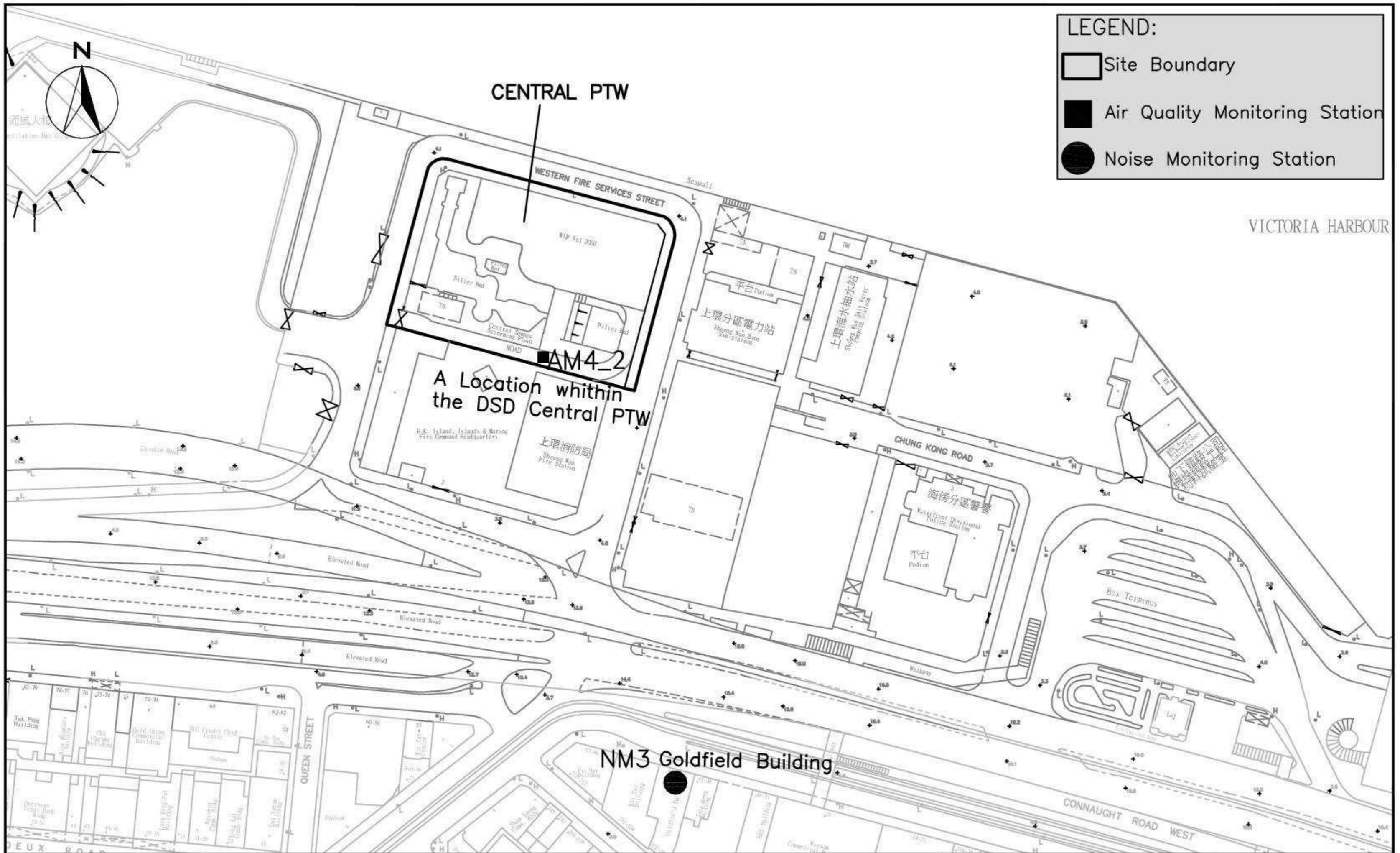
■ AM3
Rooftop of Wan Chai East PTW

● NM2
Hyde Building



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	—



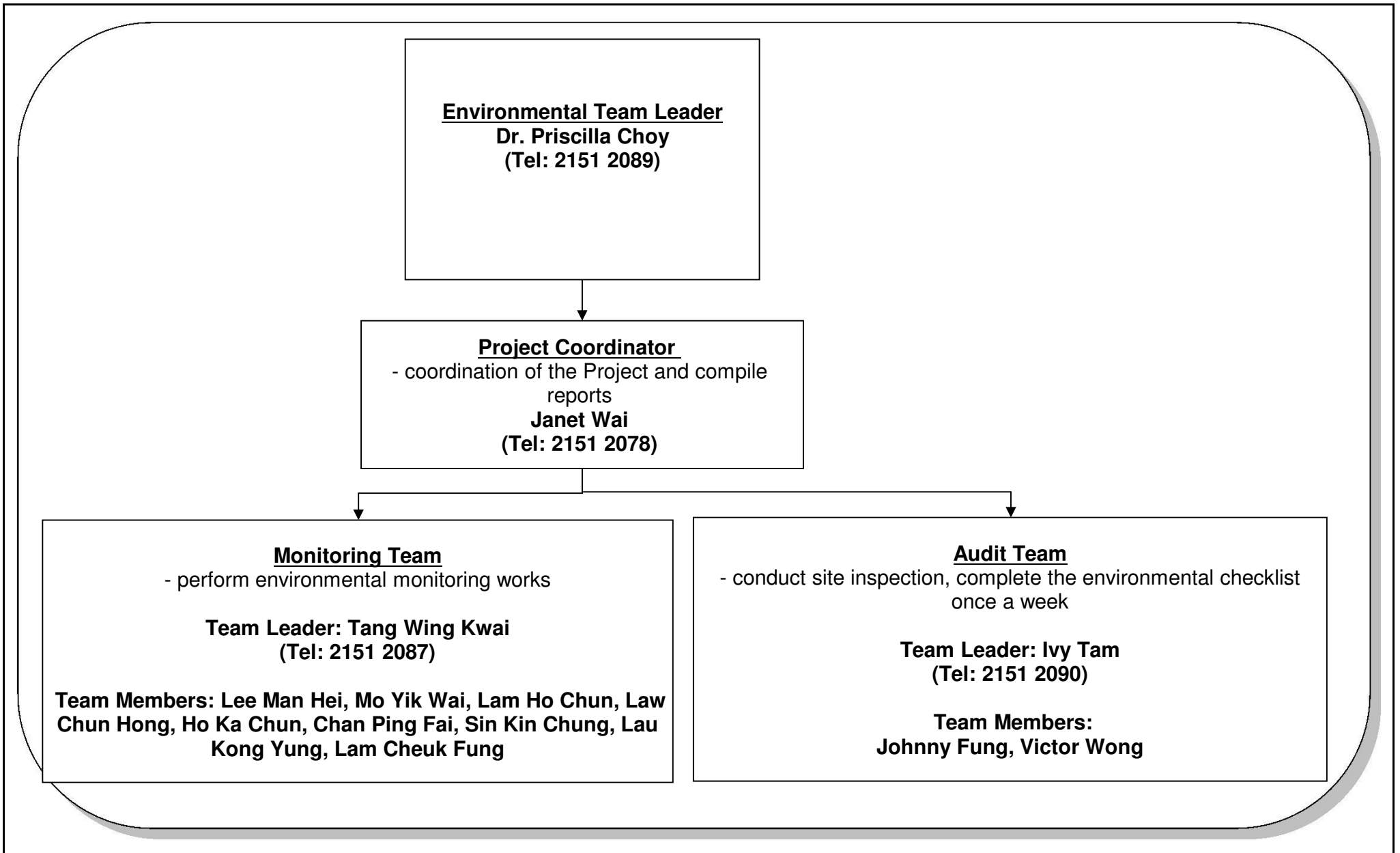
LEGEND:

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

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-14	Figure	2	
ET's Organization Chart						

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

Appendix A Action and Limit Levels

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

Monitoring Stations	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-hour	24-hour	1-hour	24-hour
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

**APPENDIX B
ENVIRONMENTAL MONITORING
SCHEDULES**

**Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Impact Air Quality and Noise Monitoring Schedule for September 2014**

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

Air Quality Monitoring Station

AM1 - Works site boundary of DC/2007/23
AM2 - Hong Kong & Islands Regional Office, WSD
AM3 - Wan Chai East PTW
AM4_2 - A Location within the DSD Central PTW

Noise Monitoring Station

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

**Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Tentative Impact Air Quality and Noise Monitoring Schedule for October 2014**

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

Air Quality Monitoring Station

AM1 - Works site boundary of DC/2007/23
AM2 - Hong Kong & Islands Regional Office, WSD
AM3 - Wan Chai East PTW
AM4_2 - A Location within the DSD Central PTW

Noise Monitoring Station

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

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

1-hour TSP Monitoring Results

Station AM1

	Start	Finish	Weather	TSP Concentration	Action Level	Limit Level	Site Conditions /	Temperature	Wind Speed *	Sampler	Filter
Date	Time	Time		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	Observations / Remarks	($^{\circ}\text{C}$)	(m/s)	ID	ID
2-Sep-14	09:42	10:42	Sunny	157	340	500	-	33	<5	GMW GS 2310 (S/N 1808)	4222
	10:44	11:44	Sunny	151	340	500	-	33	<5	GMW GS 2310 (S/N 1808)	4219
	11:46	12:46	Sunny	122	340	500	-	33	<5	GMW GS 2310 (S/N 1808)	4217
8-Sep-14	10:05	11:05	Sunny	95	340	500	-	30	<5	GMW GS 2310 (S/N 1808)	4401
	11:07	12:07	Sunny	83	340	500	-	30	<5	GMW GS 2310 (S/N 1808)	4402
	12:09	13:09	Sunny	91	340	500	-	30	<5	GMW GS 2310 (S/N 1808)	4403
13-Sep-14	09:30	10:30	Sunny	112	340	500	-	31	<5	GMW GS 2310 (S/N 1808)	2452
	10:32	11:32	Sunny	105	340	500	-	31	<5	GMW GS 2310 (S/N 1808)	2451
	11:34	12:34	Sunny	108	340	500	-	31	<5	GMW GS 2310 (S/N 1808)	2449
19-Sep-14	13:50	14:50	Fine	221	340	500	Construction work in progress	32	<5	GMW GS 2310 (S/N 1808)	4203
	14:52	15:52	Fine	257	340	500	Construction work in progress	32	<5	GMW GS 2310 (S/N 1808)	2437
	15:54	16:54	Fine	238	340	500	Construction work in progress	32	<5	GMW GS 2310 (S/N 1808)	2438
25-Sep-14	14:00	15:00	Sunny	184	340	500	-	31	<5	GMW GS 2310 (S/N 1808)	2441
	15:02	16:02	Sunny	198	340	500	-	31	<5	GMW GS 2310 (S/N 1808)	2442
	16:04	17:04	Sunny	195	340	500	-	31	<5	GMW GS 2310 (S/N 1808)	2446
30-Sep-14	10:22	11:22	Sunny	206	340	500	-	32	<5	GMW GS 2310 (S/N 1808)	4433
	11:24	12:24	Sunny	186	340	500	-	32	<5	GMW GS 2310 (S/N 1808)	4434
	12:26	13:26	Sunny	193	340	500	-	32	<5	GMW GS 2310 (S/N 1808)	4435
			Min.	83							
			Max.	257							
			Average	161							

* Wind Speed data is presented in the Meteorological Data table

1-hour TSP Monitoring Results

Station AM2

	Start	Finish	Weather	TSP Concentration	Action Level	Limit Level	Site Conditions /	Temperature	Wind Speed *	Sampler	Filter
Date	Time	Time		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	Observations / Remarks	($^{\circ}\text{C}$)	(m/s)	ID	ID
2-Sep-14	10:00	11:00	Sunny	146	352	500	-	33	<5	GMW GS-2310 (S/N 0145)	4221
	11:02	12:02	Sunny	122	352	500	-	33	<5	GMW GS-2310 (S/N 0145)	4220
	12:04	13:04	Sunny	148	352	500	-	33	<5	GMW GS-2310 (S/N 0145)	4218
8-Sep-14	10:20	11:20	Sunny	107	352	500	-	30	<5	GMW GS-2310 (S/N 0145)	4405
	11:22	12:22	Sunny	91	352	500	-	30	<5	GMW GS-2310 (S/N 0145)	4406
	12:24	13:24	Sunny	96	352	500	-	30	<5	GMW GS-2310 (S/N 0145)	4407
13-Sep-14	09:15	10:15	Sunny	112	352	500	-	31	<5	GMW GS-2310 (S/N 0145)	2453
	10:17	11:17	Sunny	127	352	500	-	31	<5	GMW GS-2310 (S/N 0145)	2436
	11:19	12:19	Sunny	117	352	500	-	31	<5	GMW GS-2310 (S/N 0145)	2450
19-Sep-14	14:10	15:10	Fine	190	352	500	-	32	<5	GMW GS-2310 (S/N 0145)	4204
	15:12	16:12	Fine	240	352	500	-	32	<5	GMW GS-2310 (S/N 0145)	4205
	16:14	17:14	Fine	236	352	500	-	32	<5	GMW GS-2310 (S/N 0145)	4206
25-Sep-14	14:15	15:15	Sunny	180	352	500	-	31	<5	GMW GS-2310 (S/N 0145)	4208
	15:17	16:17	Sunny	182	352	500	-	31	<5	GMW GS-2310 (S/N 0145)	4209
	16:19	17:19	Sunny	186	352	500	-	31	<5	GMW GS-2310 (S/N 0145)	4210
30-Sep-14	10:04	11:04	Sunny	207	352	500	-	32	<5	GMW GS-2310 (S/N 0145)	4211
	11:42	12:42	Sunny	203	352	500	-	32	<5	GMW GS-2310 (S/N 0145)	4212
	12:44	13:44	Sunny	203	352	500	-	32	<5	GMW GS-2310 (S/N 0145)	4213
			Min.	91							
			Max.	240							
			Average	161							

* Wind Speed data is presented in the Meteorological Data table

1-hour TSP Monitoring Results

Station AM3

	Start	Finish	Weather	TSP Concentration	Action Level	Limit Level	Site Conditions /	Temperature	Wind Speed *	Sampler	Filter
Date	Time	Time		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	Observations / Remarks	($^{\circ}\text{C}$)	(m/s)	ID	ID
2-Sep-14	08:00	09:00	Sunny	102	355	500	Construction work in progress	33	<5	GMW GS-2310 (S/N 0481)	4069
	09:02	10:02	Sunny	110	355	500	Construction work in progress	33	<5	GMW GS-2310 (S/N 0481)	4070
	10:04	11:04	Sunny	106	355	500	Construction work in progress	33	<5	GMW GS-2310 (S/N 0481)	4071
8-Sep-14	08:00	09:00	Sunny	95	355	500	Construction work in progress	30	<5	GMW GS-2310 (S/N 0481)	2593
	09:02	10:02	Sunny	111	355	500	Construction work in progress	30	<5	GMW GS-2310 (S/N 0481)	2594
	10:04	11:04	Sunny	96	355	500	Construction work in progress	30	<5	GMW GS-2310 (S/N 0481)	2595
13-Sep-14	11:50	12:50	Sunny	102	355	500	Construction work in progress	31	<5	GMW GS-2310 (S/N 0481)	2431
	12:52	13:52	Sunny	114	355	500	Construction work in progress	31	<5	GMW GS-2310 (S/N 0481)	4202
	13:54	14:54	Sunny	107	355	500	Construction work in progress	31	<5	GMW GS-2310 (S/N 0481)	2433
19-Sep-14	12:00	13:00	Fine	217	355	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 0481)	4413
	13:02	14:02	Fine	202	355	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 0481)	4414
	14:04	15:04	Fine	189	355	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 0481)	4415
25-Sep-14	12:00	13:00	Sunny	197	355	500	Construction work in progress	31	<5	GMW GS-2310 (S/N 0481)	4421
	13:02	14:02	Sunny	179	355	500	Construction work in progress	31	<5	GMW GS-2310 (S/N 0481)	4422
	14:04	15:04	Sunny	210	355	500	Construction work in progress	31	<5	GMW GS-2310 (S/N 0481)	4423
30-Sep-14	08:00	09:00	Sunny	156	355	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 0481)	4425
	09:02	10:02	Sunny	168	355	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 0481)	4426
	10:04	11:04	Sunny	176	355	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 0481)	4427
			Min.	95							
			Max.	217							
			Average	147							

* Wind Speed data is presented in the Meteorological Data table

1-hour TSP Monitoring Results

Station AM4_2

	Start	Finish	Weather	TSP Concentration	Action Level	Limit Level	Site Conditions /	Temperature	Wind Speed *	Sampler	Filter
Date	Time	Time		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	Observations / Remarks	($^{\circ}\text{C}$)	(m/s)	ID	ID
2-Sep-14	11:42	12:42	Sunny	171	393	500	-	33	<5	GMW GS-2310 (S/N 9315)	2589
	12:44	13:44	Sunny	149	393	500	-	33	<5	GMW GS-2310 (S/N 9315)	2590
	13:46	14:46	Sunny	135	393	500	-	33	<5	GMW GS-2310 (S/N 9315)	2591
8-Sep-14	11:42	12:42	Sunny	112	393	500	-	30	<5	GMW GS-2310 (S/N 9315)	2597
	12:44	13:44	Sunny	106	393	500	-	30	<5	GMW GS-2310 (S/N 9315)	2598
	13:50	14:50	Sunny	98	393	500	-	30	<5	GMW GS-2310 (S/N 9315)	2599
13/Sep/14	08:00	09:00	Sunny	103	393	500	-	31	<5	GMW GS-2310 (S/N 9315)	2432
	09:02	10:02	Sunny	107	393	500	-	31	<5	GMW GS-2310 (S/N 9315)	4201
	10:04	11:04	Sunny	132	393	500	-	31	<5	GMW GS-2310 (S/N 9315)	2434
19-Sep-14	08:00	09:00	Fine	244	393	500	-	32	<5	GMW GS-2310 (S/N 9315)	4409
	09:02	10:02	Fine	245	393	500	-	32	<5	GMW GS-2310 (S/N 9315)	4410
	10:10	11:10	Fine	220	393	500	-	32	<5	GMW GS-2310 (S/N 9315)	4411
25-Sep-14	08:00	09:00	Sunny	185	393	500	-	31	<5	GMW GS-2310 (S/N 9315)	4417
	09:02	10:02	Sunny	197	393	500	-	31	<5	GMW GS-2310 (S/N 9315)	4418
	10:04	11:04	Sunny	189	393	500	-	31	<5	GMW GS-2310 (S/N 9315)	4419
30-Sep-14	11:50	12:50	Sunny	183	393	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 9315)	4429
	12:52	13:52	Sunny	193	393	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 9315)	4430
	14:02	15:02	Sunny	189	393	500	Construction work in progress	32	<5	GMW GS-2310 (S/N 9315)	4431
				Min.	98						
				Max.	245						
				Average	164						

* Wind Speed data is presented in the Meteorological Data table

24-hour TSP Monitoring Results

Station AM1

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID			
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average									
2-Sep-14	12:48	3-Sep-14	12:48	Sunny	2.7908	2.9334	18184.03	18208.03	24.00	1.24	1.24	1.24	80	185	260	-	GMW GS 2310 (S/N 1808)	4216			
8-Sep-14	13:11	9-Sep-14	13:11	Sunny	2.7192	2.8009	18211.03	18235.03	24.00	1.24	1.24	1.24	46	185	260	-	GMW GS 2310 (S/N 1808)	4404			
13-Sep-14	12:36	14-Sep-14	12:36	Sunny	2.7662	2.8500	18238.03	18262.03	24.00	1.24	1.24	1.24	47	185	260	-	GMW GS 2310 (S/N 1808)	2447			
19-Sep-14	18:08	20-Sep-14	18:08	Fine	2.7276	2.9017	18265.03	18289.03	24.00	1.22	1.22	1.22	99	185	260	-	GMW GS 2310 (S/N 1808)	2439			
25-Sep-14	17:06	26-Sep-14	17:06	Sunny	2.7384	2.9004	18292.03	18316.03	24.00	1.22	1.22	1.22	92	185	260	-	GMW GS 2310 (S/N 1808)	2440			
30-Sep-14	13:28	1-Oct-14	13:28	Sunny	2.7542	2.9309	18319.03	18343.03	24.00	1.22	1.22	1.22	101	185	260	-	GMW GS 2310 (S/N 1808)	2443			
												Min.	46								
												Max.	101								
												Average	77								

24-hour TSP Monitoring Results

Station AM2

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID			
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average									
2-Sep-14	13:06	3-Sep-14	13:06	Sunny	2.7875	2.9077	13802.93	13826.93	24.00	1.23	1.23	1.23	68	182	260	-	GMW GS 2310 (S/N 0145)	4215			
8-Sep-14	13:26	9-Sep-14	13:26	Sunny	2.7069	2.8102	13829.93	13853.93	24.00	1.23	1.23	1.23	58	182	260	-	GMW GS 2310 (S/N 0145)	4408			
13-Sep-14	12:22	14-Sep-14	12:22	Sunny	2.7440	2.8419	13856.93	13880.93	24.00	1.23	1.23	1.23	55	182	260	-	GMW GS 2310 (S/N 0145)	2448			
19-Sep-14	17:16	20-Sep-14	17:16	Fine	2.7831	2.9800	13883.93	13907.93	24.00	1.23	1.23	1.23	111	182	260	-	GMW GS 2310 (S/N 0145)	4207			
25-Sep-14	17:21	26-Sep-14	17:21	Sunny	2.7791	2.9500	13910.93	13934.93	24.00	1.23	1.23	1.23	96	182	260	-	GMW GS 2310 (S/N 0145)	4214			
30-Sep-14	13:46	1-Oct-14	13:46	Sunny	2.7492	2.9111	13937.93	13961.93	24.00	1.23	1.23	1.23	91	182	260	-	GMW GS 2310 (S/N 0145)	2444			
												Min.	55								
												Max.	111								
												Average	80								

24-hour TSP Monitoring Results

Station AM3

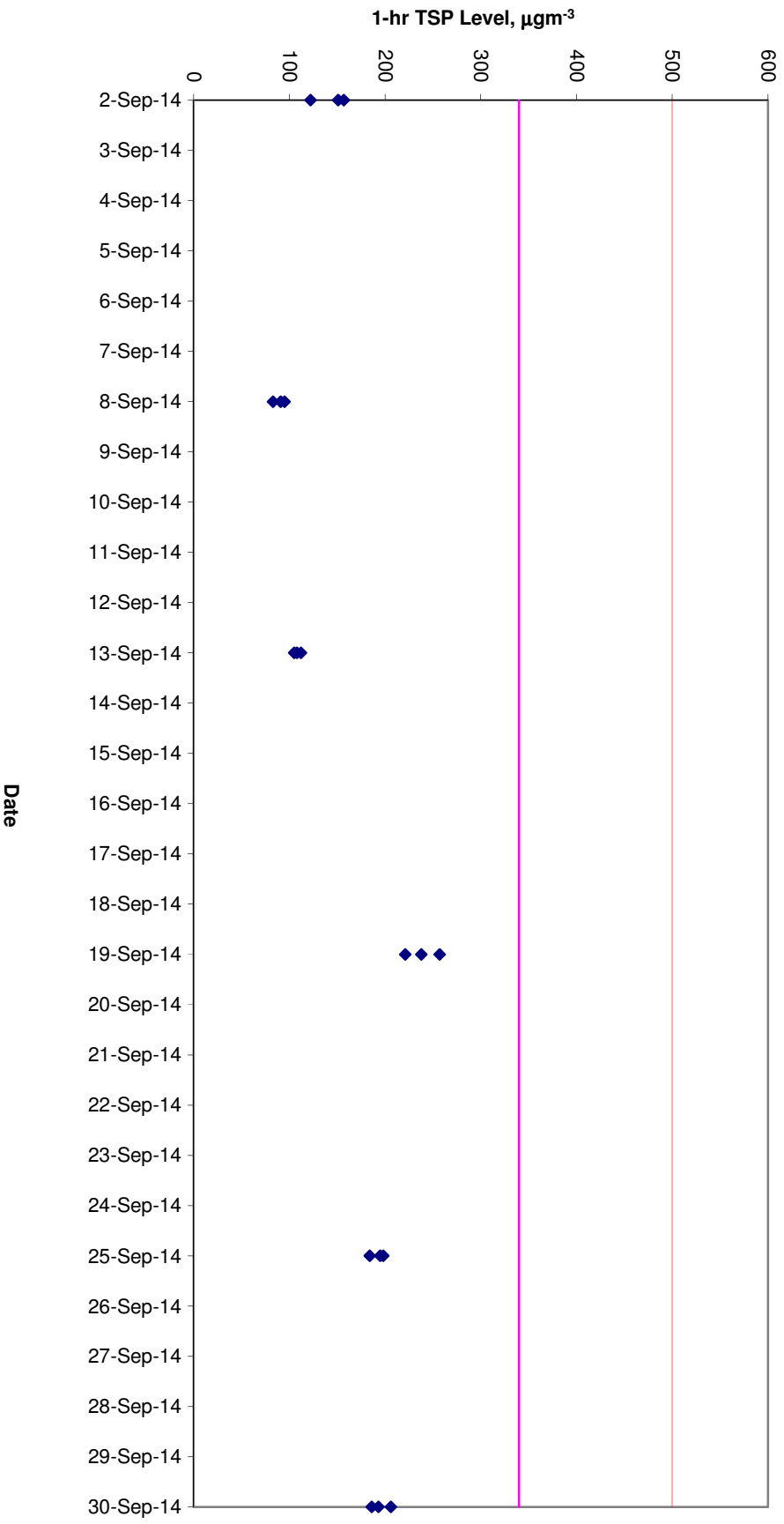
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			TSP Conc.	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID			
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average	(µg/m ³)								
2-Sep-14	11:06	3-Sep-14	11:06	Sunny	2.7782	2.9011	10463.32	10487.32	24.00	1.23	1.23	1.23	69	181	260	-	GMW GS 2310 (S/N 0481)	4072			
8-Sep-14	11:06	9-Sep-14	11:06	Sunny	2.7258	2.8211	10490.32	10514.32	24.00	1.23	1.23	1.23	54	181	260	-	GMW GS 2310 (S/N 0481)	4596			
13-Sep-14	14:58	14-Sep-14	14:58	Sunny	2.7741	2.8600	10517.32	10541.32	24.00	1.23	1.23	1.23	48	181	260	-	GMW GS 2310 (S/N 0481)	2435			
19-Sep-14	15:06	20-Sep-14	15:06	Fine	2.7092	2.9769	10544.32	10568.32	24.00	1.26	1.26	1.26	148	181	260	-	GMW GS 2310 (S/N 0481)	4416			
25-Sep-14	15:20	26-Sep-14	15:20	Sunny	2.7469	2.9311	10571.32	10595.32	24.00	1.26	1.26	1.26	102	181	260	-	GMW GS 2310 (S/N 0481)	4424			
30-Sep-14	11:06	1-Oct-14	11:06	Sunny	2.7272	2.8897	10598.32	10622.32	24.00	1.26	1.26	1.26	90	181	260	-	GMW GS 2310 (S/N 0481)	4428			
												Min.	48								
												Max.	148								
												Average	85								

24-hour TSP Monitoring Results

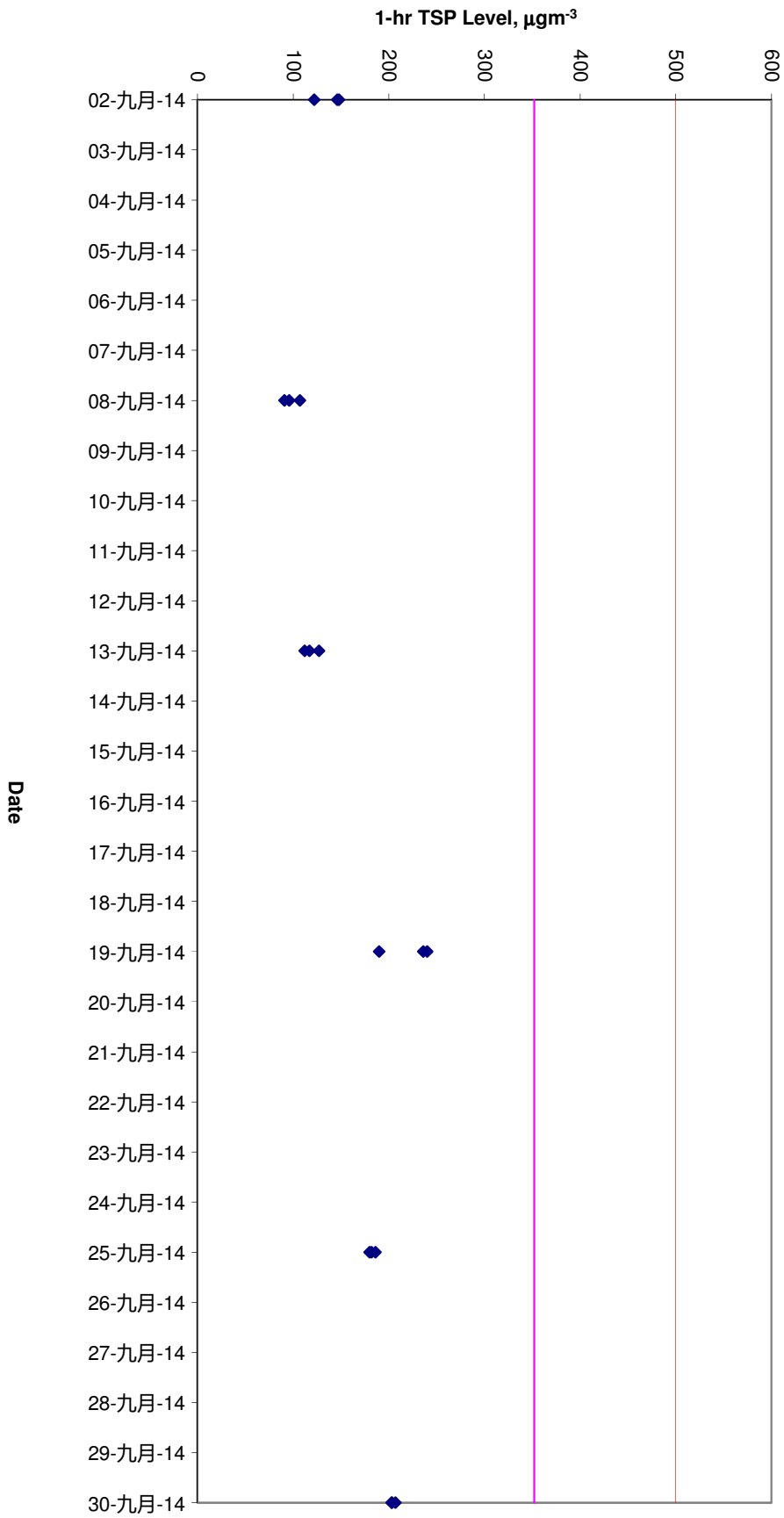
Station AM4_2

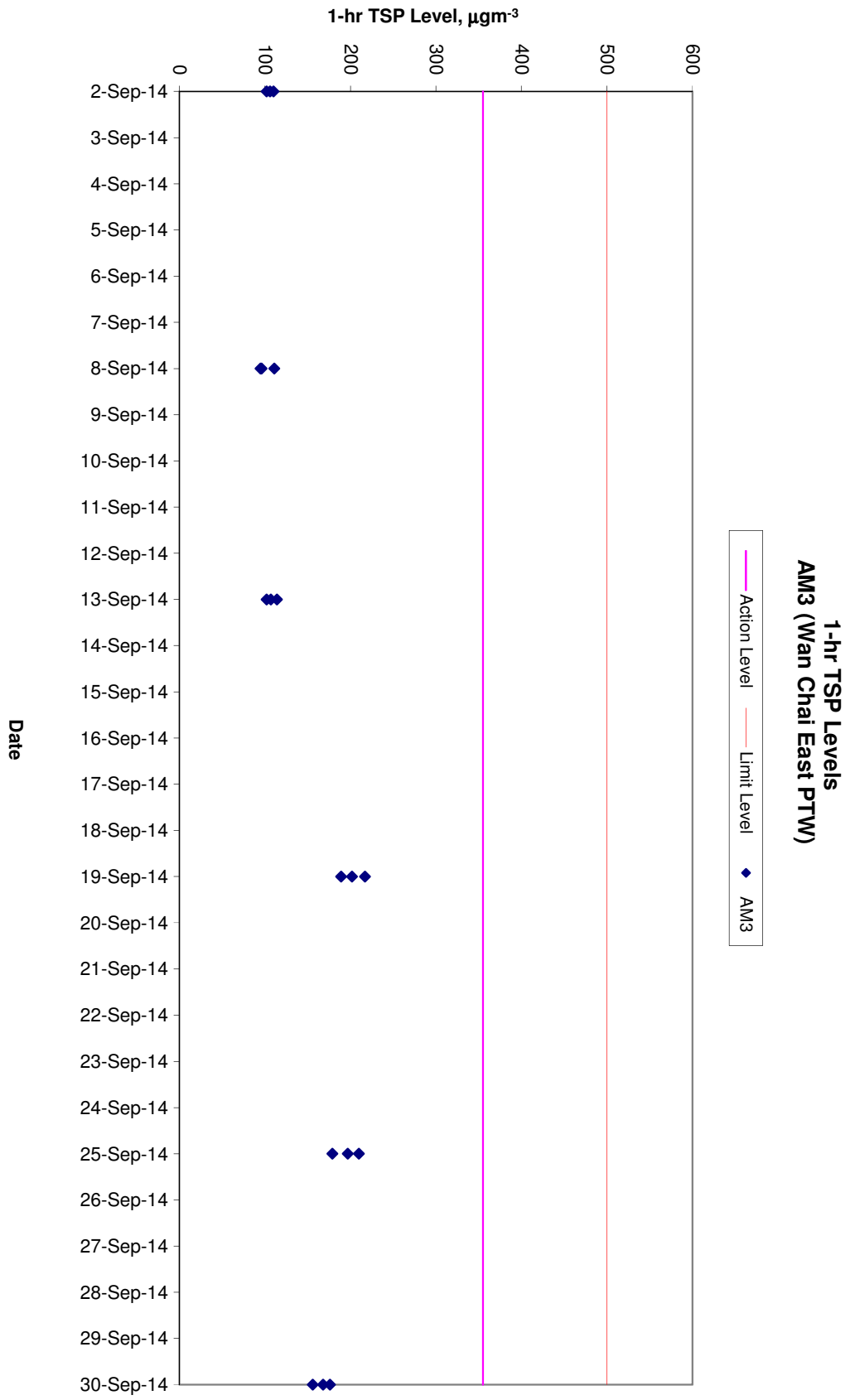
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			TSP Conc.	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID		
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average	(µg/m ³)							
2-Sep-14	15:00	3-Sep-14	15:00	Sunny	2.7172	2.8525	16635.85	16659.85	24.00	1.21	1.21	1.21	78	211	260	-	GMW GS 2310 (S/N 9315)	2592		
8-Sep-14	14:55	9-Sep-14	14:55	Sunny	2.7088	2.8249	16662.85	16686.85	24.00	1.21	1.21	1.21	67	211	260	-	GMW GS 2310 (S/N 9315)	2600		
13-Sep-14	11:06	14-Sep-14	11:06	Sunny	2.7741	2.8599	16689.85	16713.85	24.00	1.21	1.21	1.21	49	211	260	-	GMW GS 2310 (S/N 9315)	2454		
19-Sep-14	11:15	20-Sep-14	11:15	Fine	2.7195	2.9227	16716.85	16740.85	24.00	1.25	1.25	1.25	113	211	260	-	GMW GS 2310 (S/N 9315)	4412		
25-Sep-14	11:14	26-Sep-14	11:14	Sunny	2.7099	2.8991	16743.85	16767.85	24.00	1.25	1.25	1.25	105	211	260	-	GMW GS 2310 (S/N 9315)	4420		
30-Sep-14	15:05	1-Oct-14	15:05	Sunny	2.7282	2.8921	16670.85	16694.85	24.00	1.25	1.25	1.25	91	211	260	-	GMW GS 2310 (S/N 9315)	4432		
												Min.	49							
												Max.	113							
												Average	84							

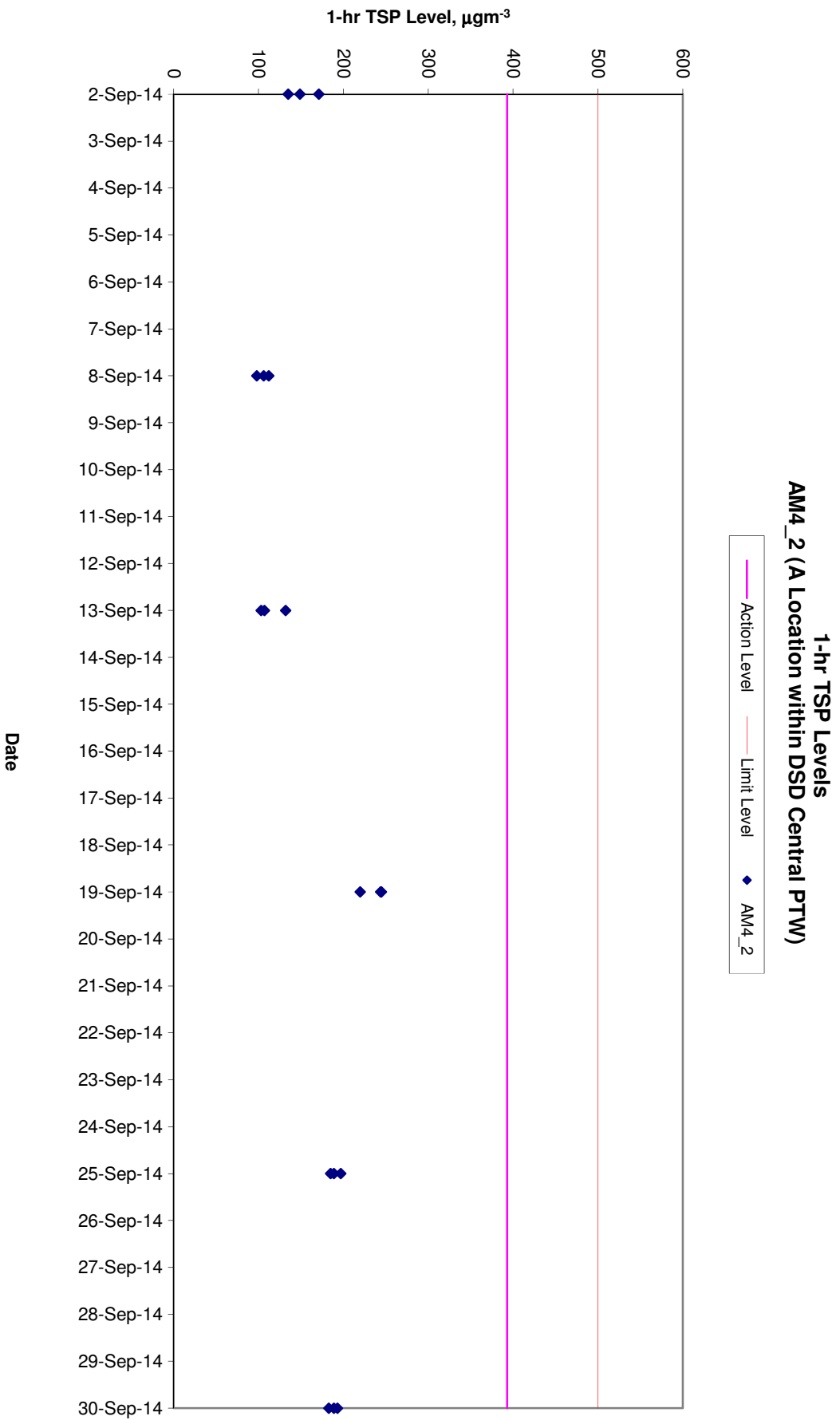
1-hr TSP Levels AM1 (Chan's Creative School)

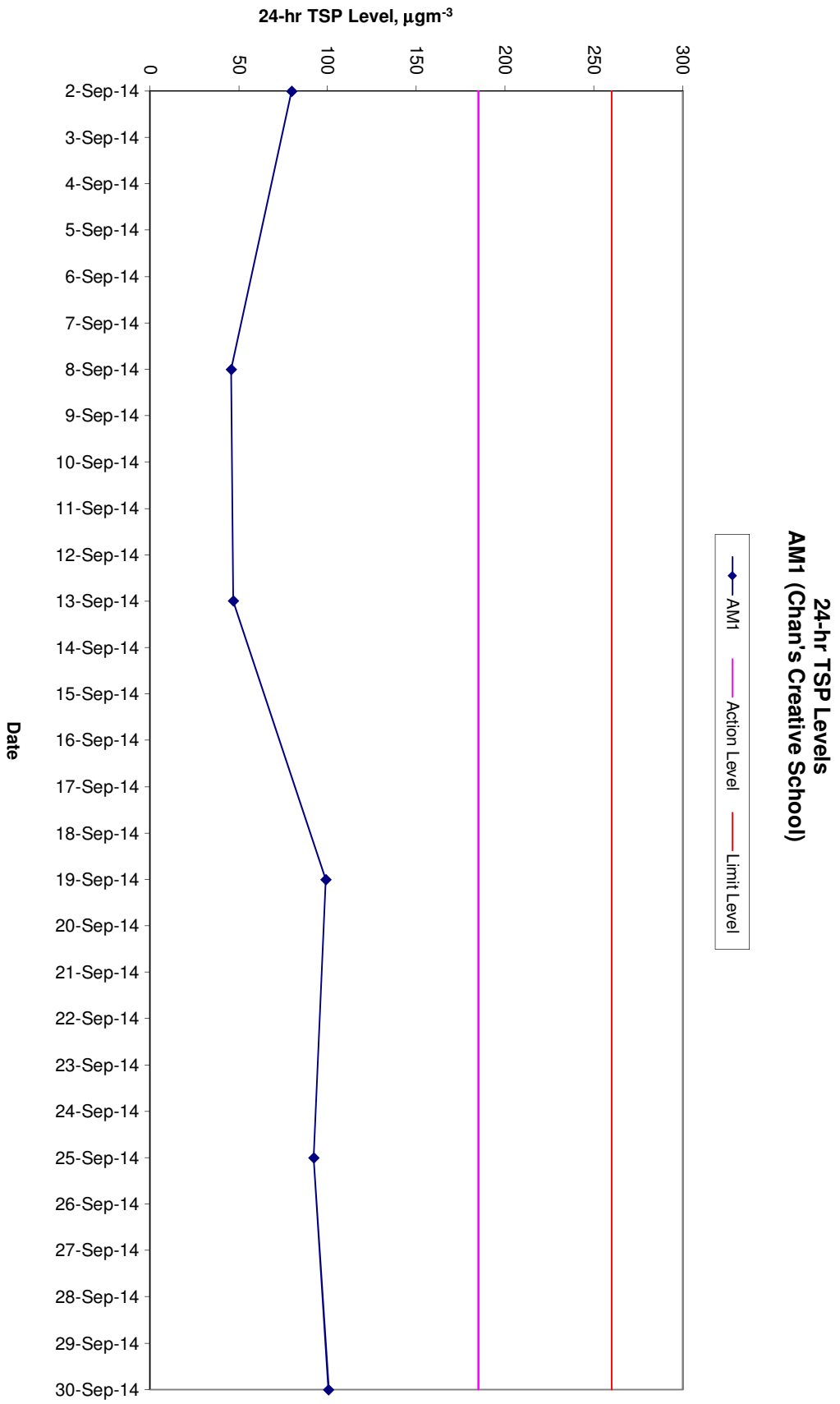


1-hr TSP Levels
AM2 (Hong Kong & Island Regional Office, WSD)

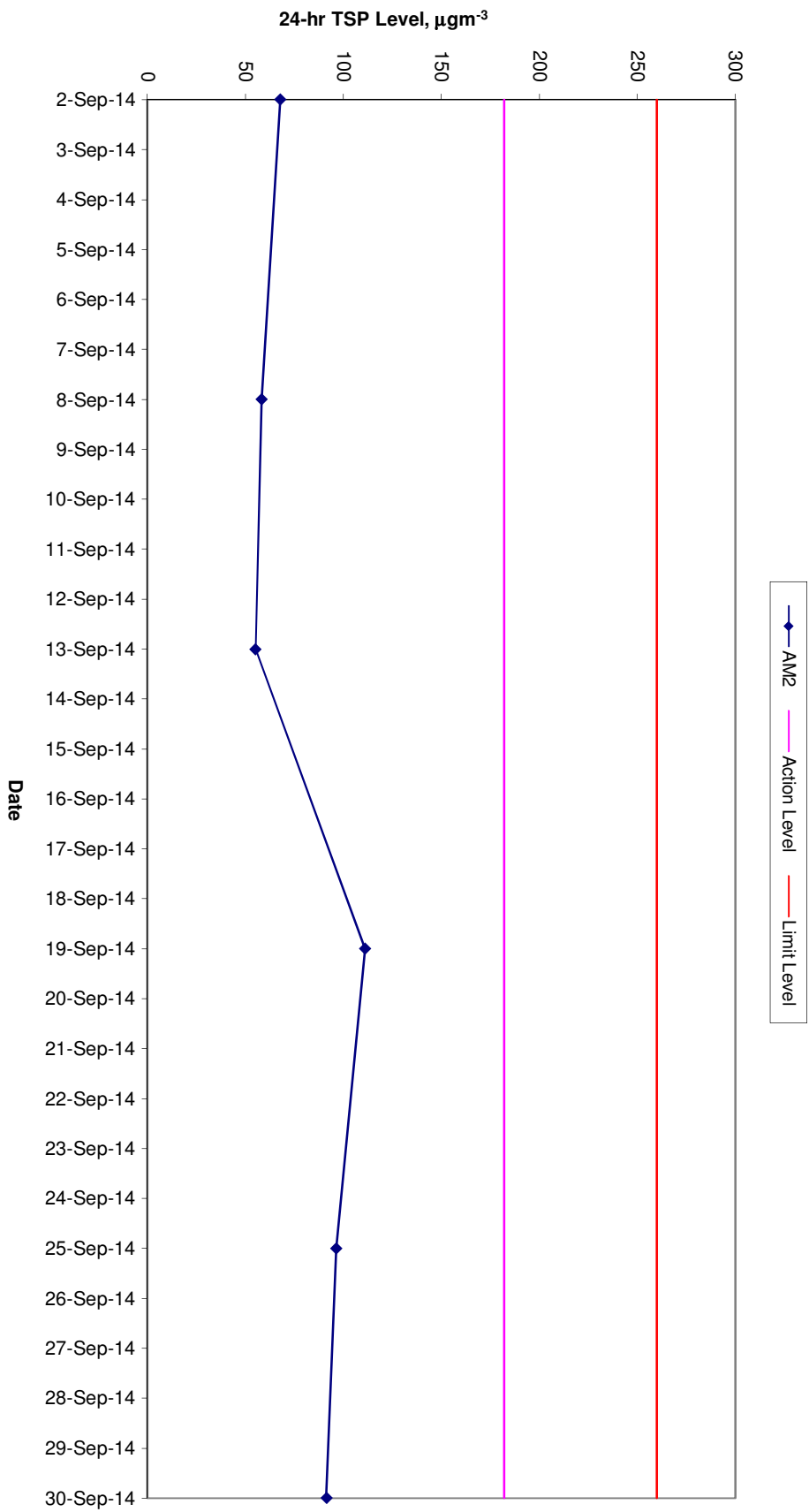


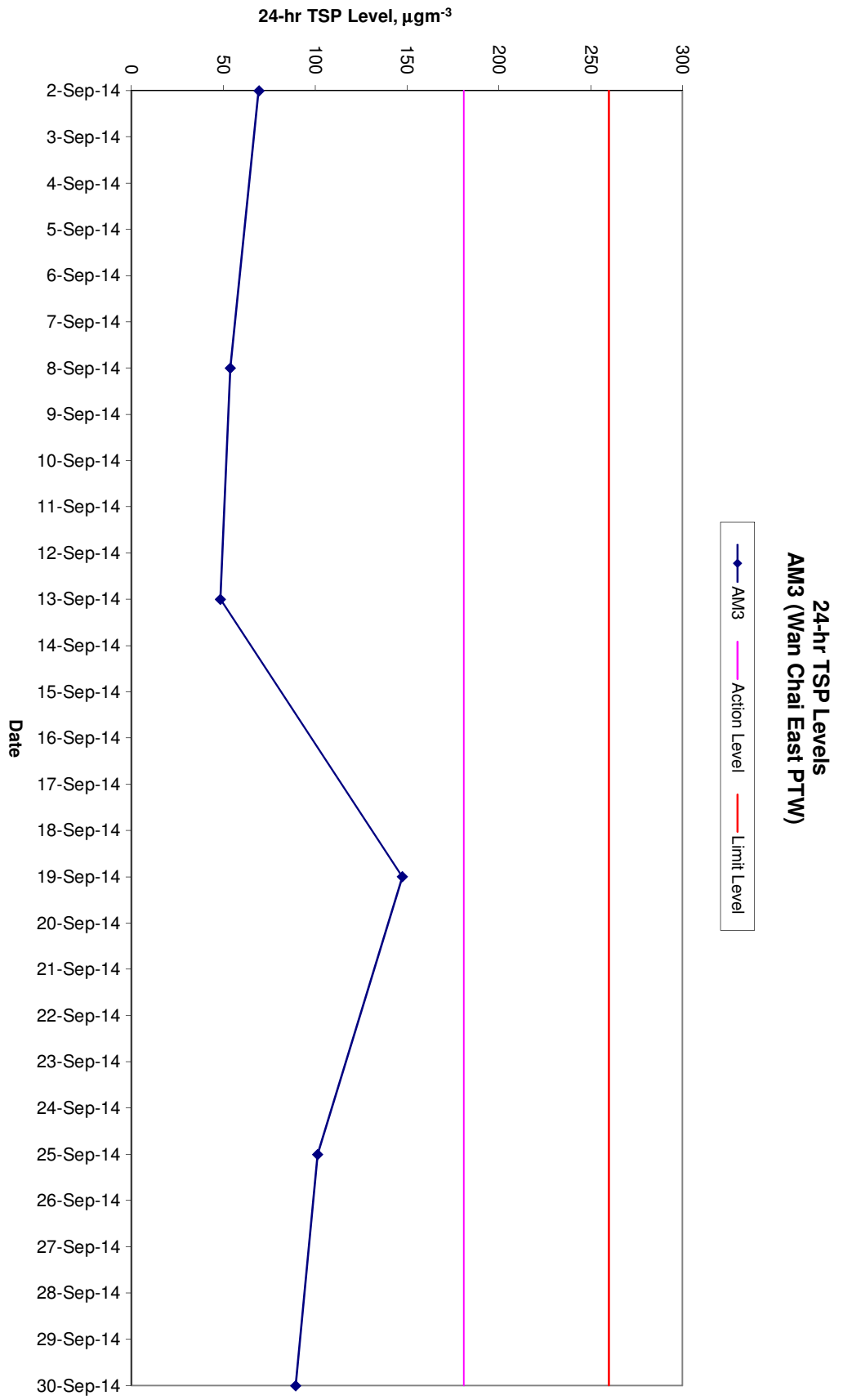


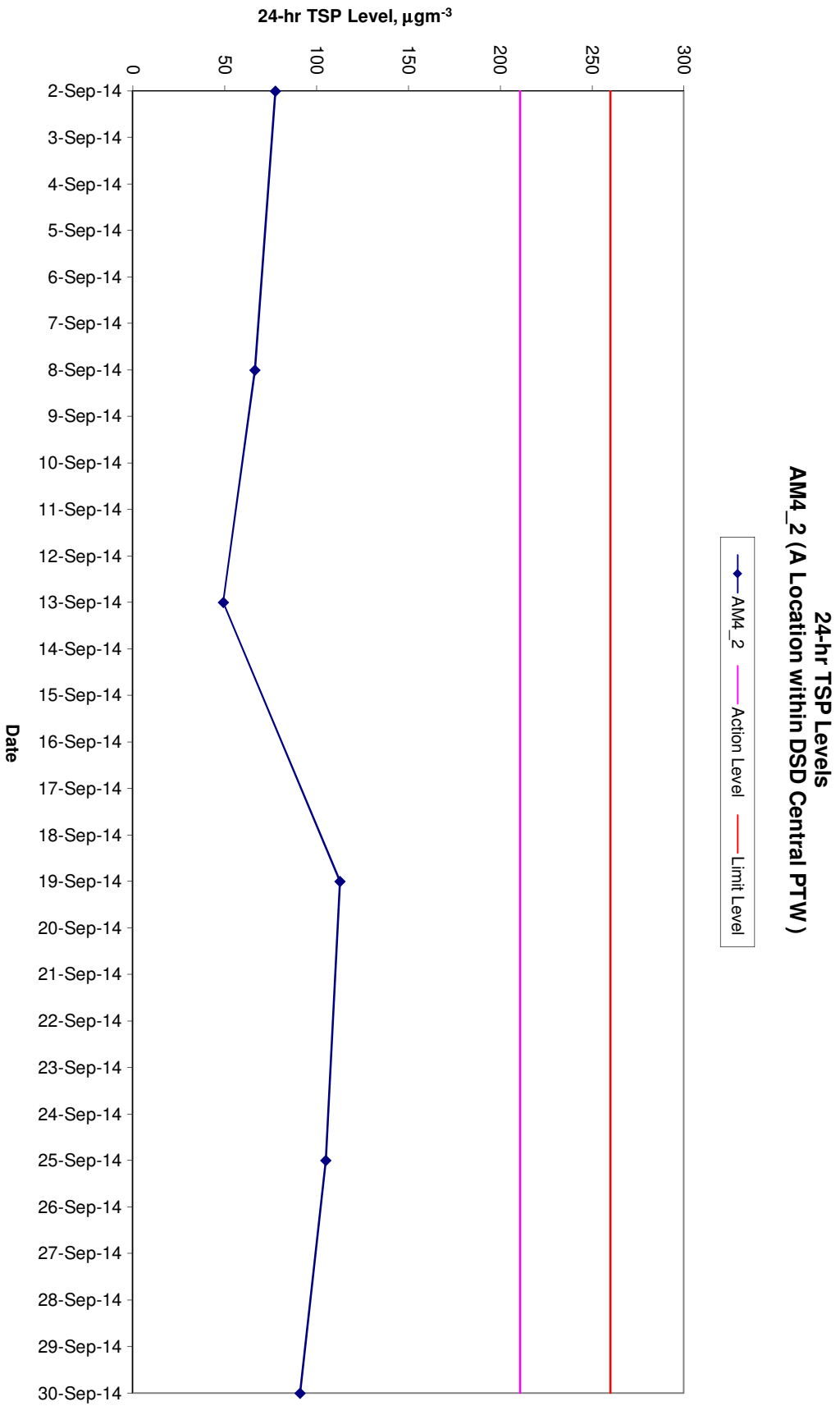




24-hr TSP Levels
AM2 (Hong Kong & Island Regional Office, WSD)







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

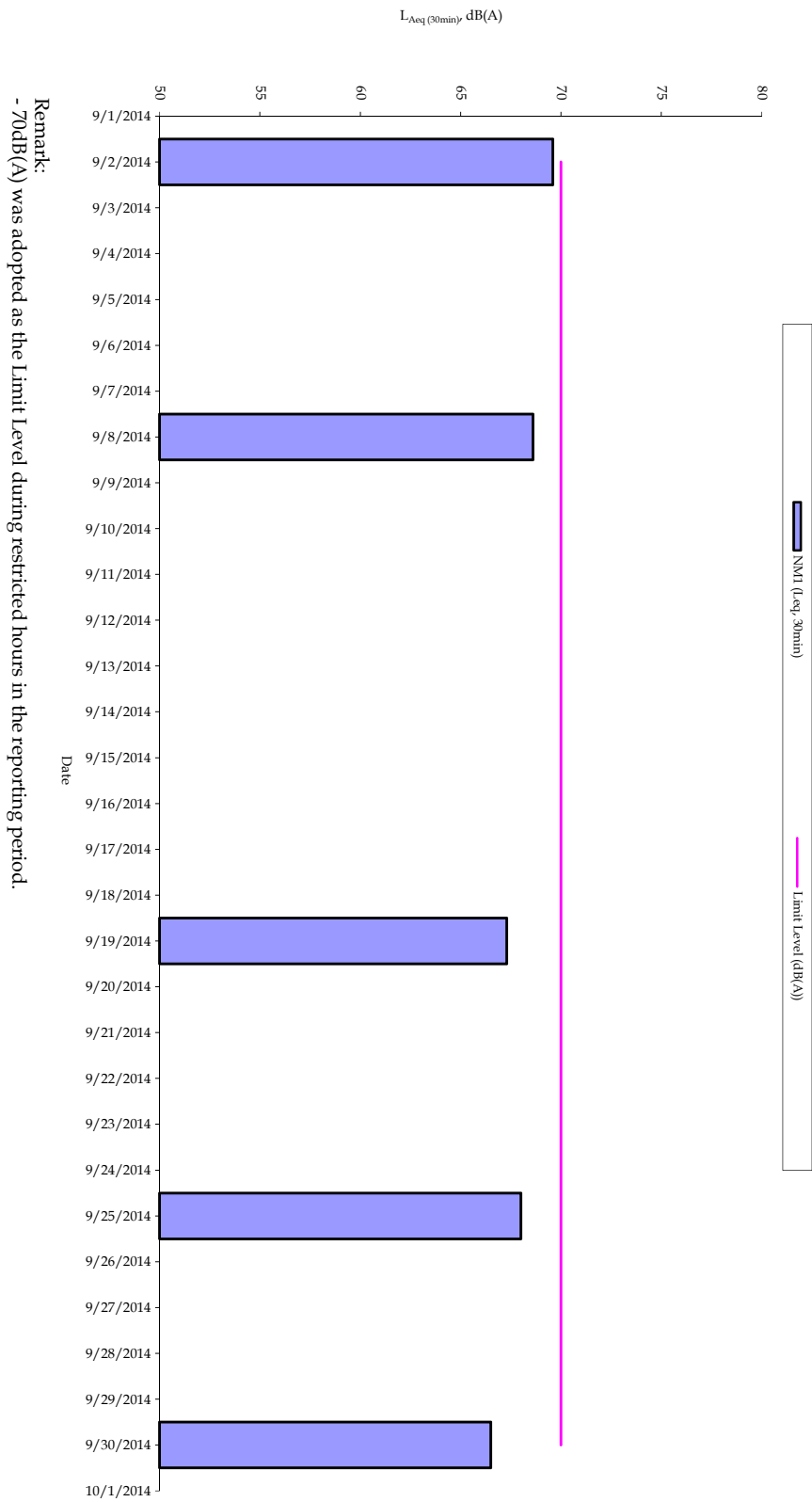
Restricted Hours Noise Monitoring Results ^[1]

Station NM1

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
9-Sep-14	19:00	19:05	Fine	70	71	67	Noise from nearby playground	Traffic noise	-	30	0.3	RION- NL52 (S/N 00131627)	RION - NC73 (S/N 10997142)
	19:05	19:10	Fine	69	71	68			-				
	19:10	19:15	Fine	70	72	68			-				
	19:00	19:15	Fine	70	71	68			-				
14-Sep-14	09:55	10:00	Sunny	70	72	67	-	Traffic noise	-	30	0.3	RION- NL52 (S/N 00131627)	RION - NC73 (S/N 10997142)
	10:00	10:05	Sunny	69	72	68			-				
	10:05	10:10	Sunny	69	71	67			-				
	09:55	10:10	Sunny	69	72	67			-				
23-Sep-14	19:12	19:17	Fine	69	70	66	Noise from nearby playground	Traffic noise	-	28	0.3	RION- NL52 (S/N 00131627)	RION - NC73 (S/N 10997142)
	19:17	19:22	Fine	69	71	66			-				
	19:22	19:27	Fine	69	70	67			-				
	19:12	19:27	Fine	69	71	66			-				
28-Sep-14	11:05	11:10	Fine	70	71	67	Noise from nearby playground	Traffic noise	-	29	0.3	RION- NL52 (S/N 00131627)	RION - NC73 (S/N 10997142)
	11:10	11:15	Fine	68	71	67			-				
	11:15	11:20	Fine	69	71	67			-				
	11:05	11:20	Fine	69	71	67			-				
				Min.	68								
				Max.	70								

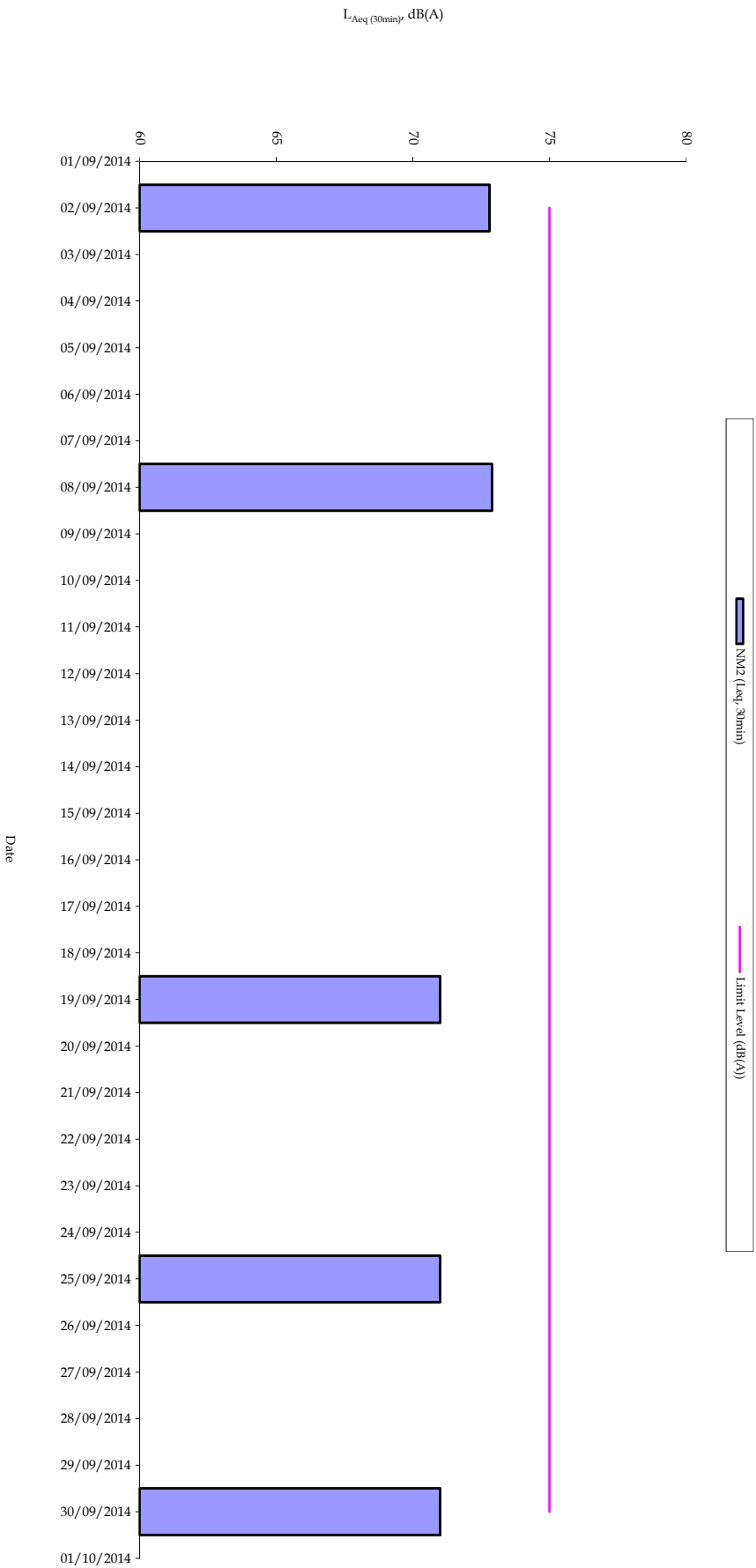
[1] No class was held at the school during all the measurement period.

Normal Weekdays Noise Monitoring Results at NMI (L_{Aeq} 30min)



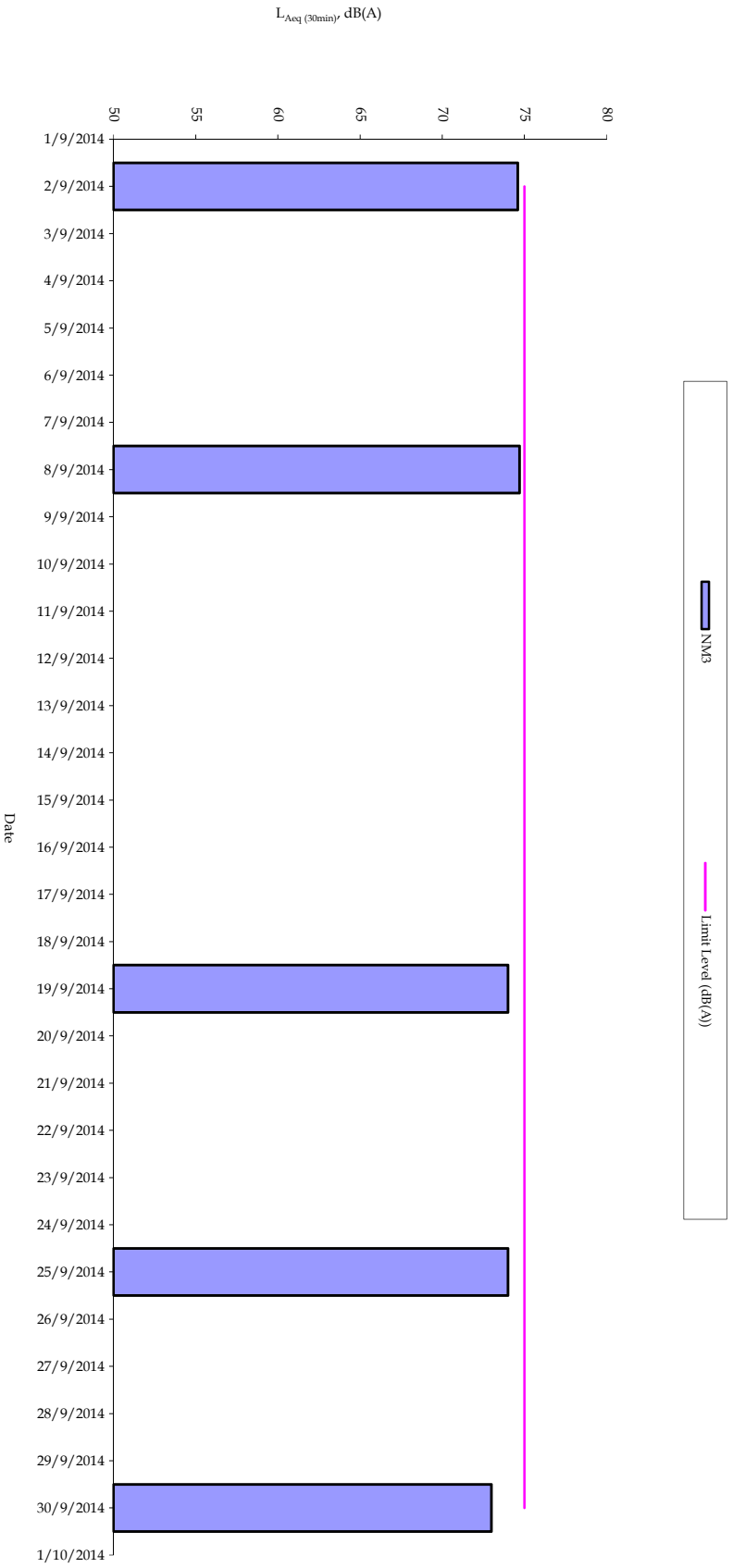
Remark:
 - 70dB(A) was adopted as the Limit Level during restricted hours in the reporting period.

Normal Weekdays Noise Monitoring Results at NM2 ($L_{Aeq, 30min}$)



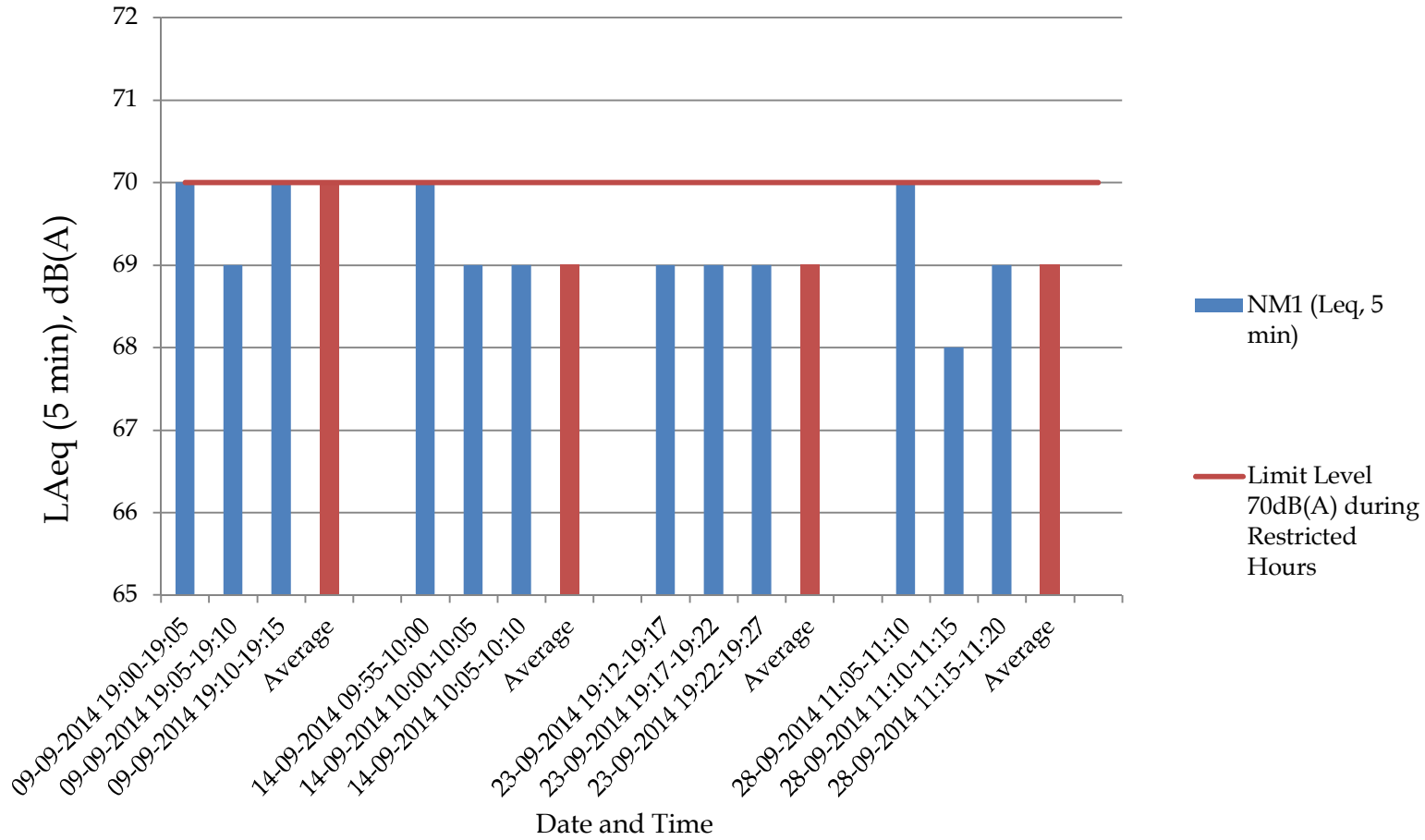
Remark:
 - 75dB(A) was adopted as the Limit Level during normal weekdays in the reporting period

Normal Weekdays Noise Monitoring Results at NM3 ($L_{Aeq, 30min}$)

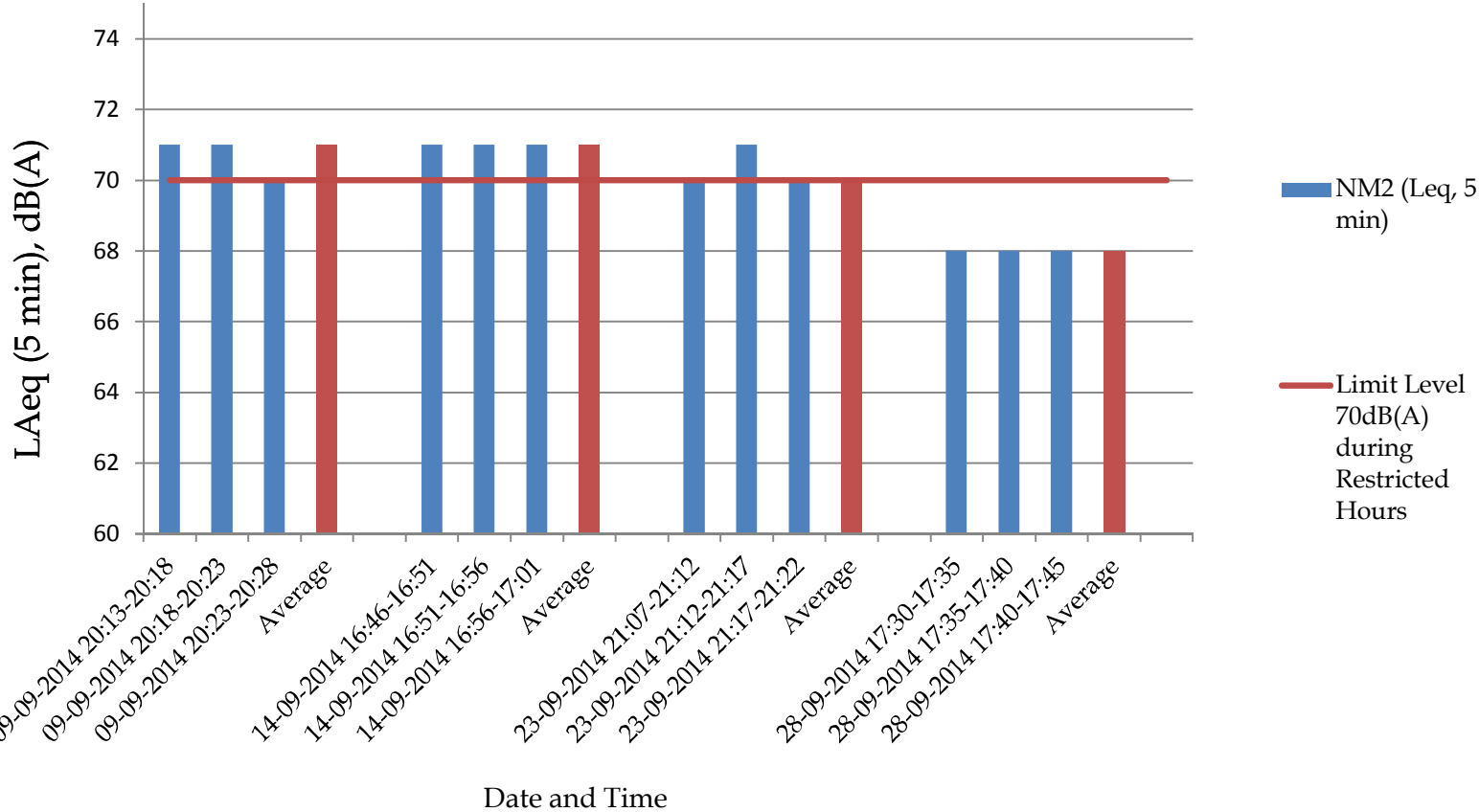


Remark:
 - 75dB(A) was adopted as the Limit Level during normal weekdays in the reporting period

Restricted Noise Monitoring at NM1 (LAeq, 5 min)



Restricted Noise Monitoring at NM2 (LAeq, 5 min)



APPENDIX E
SUMMARY OF EXCEEDANCE

APPENDIX E – SUMMARY OF EXCEEDANCE

Reporting Month: September 2014

- a) Exceedance Report for 1-hr TSP (NIL)**
- b) Exceedance Report for 24-hr TSP (NIL)**
- c) Exceedance Report for Construction Noise (3)**

No Action Level exceedance was recorded, while three non-project related Limit Level exceedance was recorded during the restricted hour noise monitoring on 9th, 14th & 23rd September 2014 by the ET of DC/2007/23 at NM2. According to the information provided by the Contractor, no construction works were carried out during the restricted hours period on 9th, 14th & 23rd September 2014 at Wan Chai East Preliminary Treatment Works under DC/2009/23.

APPENDIX F
SITE AUDIT SUMMARY

Contract No: DC/2009/23

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

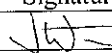

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140905
Date	5 September 2014 (Friday)
Time	14:00 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
140905-R03	Part A - Water Quality <ul style="list-style-type: none"> Properly clear the stagnant water at Central-PTW. 	A 11
140905-R04	Part B - Landscape and Visual <ul style="list-style-type: none"> The construction materials should be placed far away from the tree protection area at North Point-PTW. 	B 1
	Part C - Air Quality <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Part D - Noise <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
140905-O01	Part E - Waste / Chemical Management <ul style="list-style-type: none"> The oil leakage from the breaker tip was observed at Central-PTW. The Contractor was reminded to provide the maintenance of the breaker tip. 	E 7i
140905-R02	<ul style="list-style-type: none"> The chemical container should be provided with drip tray at Central-PTW. 	E 7ii
	Part F - Permit / Licenses <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Follow up: <ul style="list-style-type: none"> For previous audit session (Ref. No. 140829), outstanding items 140829-O03 is required to be followed up and remarked as 140905-O01 which will be reviewed in the next weekly site inspection (Ref. no. 140912). 	
	Remark: <ul style="list-style-type: none"> -- 	

	Name	Signature	Date
Recorded by	Janet Wai		5 September 2014
Checked by	Dr. Priscilla Choy		5 September 2014

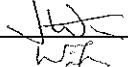

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140905
Date	5 September 2014 (Friday)
Time	14:00 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
140912-R04	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
140912-R01	<p>Part B -- Landscape and Visual</p> <ul style="list-style-type: none"> The construction materials should be placed far away from the tree protection area at North Point-PTW. 	B 1
140912-R01	<p>Part C - Air Quality</p> <ul style="list-style-type: none"> The dusty materials should be cleared properly or covered by impervious materials at Wan Chai-PTW. 	C 6
140912-R02 140912-R03	<p>Part D -- Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E --Waste / Chemical Management</p> <ul style="list-style-type: none"> The construction wastes should be sorted out properly at Wan Chai-PTW. Properly clear the oil stain at Central-PTW. 	E 4ii E 7i
	<p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Follow up:</p> <ul style="list-style-type: none"> For previous audit session (Ref. No. 140905), outstanding items 140905-R04 is required to be followed up and remarked as 140912-R04 which will be reviewed in the next weekly site inspection (Ref. no. 140917). <p>Remark:</p> <ul style="list-style-type: none"> -- 	

	Name	Signature	Date
Recorded by	Janet Wai		12 September 2014
Checked by	Dr. Priscilla Choy		12 September 2014

Contract No: DC/2009/23

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

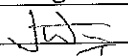

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140917
Date	17 September 2014 (Wednesday)
Time	14:00 – 16:00

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

Ref. No.	Remarks/Observations	Related Item No.
140917-R02	Part A - Water Quality <ul style="list-style-type: none"> The bunding should be provided to prevent the muddy and slurry water overflowing to the access road at North Point-PTW. 	A 2
140917-R05	<ul style="list-style-type: none"> The maintenance of the pH meter of the sediment tank should be provided at Central-PTW. 	A 5i
	Part B - Landscape and Visual <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
140917-R03	Part C - Air Quality <ul style="list-style-type: none"> Properly clear the odour emission materials regularly at North Point-PTW. 	C 16
	Part D - Noise <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
140917-R01	Part E - Waste / Chemical Management <ul style="list-style-type: none"> Properly clear the oil stain at North Point-PTW and Central-PTW. 	E 7i
140917-R04	<ul style="list-style-type: none"> The chemical containers should be provided with the drip tray at Central-PTW. 	E 7ii
	Part F - Permit / Licenses <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Follow up: <ul style="list-style-type: none"> For previous audit session (Ref. No. 140912), outstanding items 140912-R03 is required to be followed up and remarked as 140917-R01 which will be reviewed in the next weekly site inspection (Ref. no. 140926). 	
	Remark: <ul style="list-style-type: none"> -- 	

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

Contract No: DC/2009/23

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

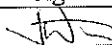

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140926
Date	26 September 2014 (Friday)
Time	14:00 – 16:00

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

Ref. No.	Remarks/Observations	Related Item No.
140926-R06	Part A - Water Quality <ul style="list-style-type: none"> Properly clear the oil stain and oil stained water at Central-PTW. 	A 11
140926-O02	Part B - Landscape and Visual <ul style="list-style-type: none"> The heavy materials should be placed far away from the planter and tree protection area at North Point-PTW and Wan Chai-PTW. 	B 1
140926-R03	Part C - Air Quality <ul style="list-style-type: none"> The dusty materials should be cleared properly or covered by impervious materials at North Point-PTW and Wan Chai-PTW. 	C 6
	Part D - Noise <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
140926-O01	Part E - Waste / Chemical Management <ul style="list-style-type: none"> The oil leakage was observed from the excavator at North Point-PTW. The Contractor was reminded to keep it in a good condition. 	E 7i
140926-R04	<ul style="list-style-type: none"> The chemical containers should be provided with the drip tray at North Point-PTW and Wan Chai-PTW. 	E 7ii
140926-R05	<ul style="list-style-type: none"> Properly sort out the construction wastes at Wan Chai-PTW. 	E 4ii
140926-R06	<ul style="list-style-type: none"> Properly clear the oil stain and oil stained water at Central-PTW. 	E 7i
	Part F - Permit / Licenses <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Follow up: <ul style="list-style-type: none"> For previous audit session (Ref. No. 140917), outstanding items 140917-R01 is required to be followed up and remarked as 140926-R06 which will be reviewed in the next weekly site inspection (Ref. no. 141003). 	
	Remark: <ul style="list-style-type: none"> -- 	

	Name	Signature	Date
Recorded by	Janet Wai		26 September 2014
Checked by	Dr. Priscilla Choy		26 September 2014

**APPENDIX G
SUMMARY OF AMOUNT OF WASTE
GENERATED**

APPENDIX G MONTHLY SUMMARY WASTE FLOW TABLE FOR September (2014)

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 ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	
Year2013	11.148	0	0	0	11.148	0	18.170	1.023	0.144	0.2	0.630	0.264	0.923	0	0
JAN	0.317	0	0	0	0.317	0	0	0.180	0.080	0	0.038	0.061	0.028	0	0
FEB	0.147	0	0	0	0.147	0	0	0.050	0	0	0.060	0.076	0.014	0	0
MAR	1.152	0	0	0	1.152	0	11.210	0.170	0.080	0	0.048	0.114	0.026	0	0
APR	0.029	0	0	0	0.029	0	15.340	0.110	0	0	0.045	0.118	0.028	0.028	0.009
MAY	0.196	0	0	0	0.196	0	15.410	0.170	0	0.40	0.023	0.126	0.033	0.045	0.021
JUN	0.087	0	0	0	0.087	0	0	0.160	0	0.23	0.038	0.117	0.033	0.046	0.024
SUB-TOTAL	13.076	0.000	0.000	0.000	13.076	0.000	60.130	1.863	0.304	0.830	0.882	0.876	1.085	0.119	0.054
JUL	0.433	0	0	0	0.433	0	12.680	0.176	0	0	0.027	0.111	0.029	0.047	0.022
AUG	0.951	0	0	0	0.951	0	0	0.177	0	0	0.028	0.103	0.029	0.056	0.027
SEP	0.617	0	0	0	0.617	0	0	0.171	0	0	0.046	0.098	0.021	0.055	0.028
OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	15.077	0.000	0.000	0.000	15.077	0.000	72.810	2.387	0.304	0.830	0.983	1.188	1.164	0.277	0.131

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 ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	
18.5	1	0.2	0.5	16.1	0.7	100	8	1	3	3.5	4.5	3	1.5	1

Notes :

- (1) The performance targets are given in PS Clause 6(14).
- (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the site.
- (3) 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 50,000m³. (PS Clause 25.25S (6)(b) refers).
[Delete Note (4) and the table above on the forecast, where inapplicable].
- (5) The assumed density (kg/m³) for both C&D material and general refuse.
C&D material 2000kg/m³
General refuse 500kg/m³
- (6) Conversion factors for reporting purpose:

broken concrete and bitumen = 2.4 tonnes/m ³	in-situ: rock = 2.5 tonnes/m ³ ; soil = 2.0 tonnes/m ³ C&D Waste = 0.9 tonnes/m ³	excavated: rock = 2.0 tonnes/m ³ ; soil = 1.8 tonnes/m ³ bentonite slurry = 2.8 tonnes/m ³	Chemical waste 1 Litres = 1 kg
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Special Waste (Grit) = 1.2 tonnes/m³
Special Waste (Screening) = 0.31 tonnes/m³

**APPENDIX H
EVENT ACTION PLANS**

APPENDIX H – Event / Action Plans

Table H-1 Event / Action Plan For Air Quality

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

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

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

Table H-2 Event / Action Plan For Construction Noise

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

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

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

APPENDIX I IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

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

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

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	the storm culvert or sea.		
D	Waste Management		
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to 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"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	All construction sites	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals;		^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.		#
	Encourage collection of 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

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

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

**APPENDIX J
COMPLAINT LOG**

APPENDIX J – COMPLAINT LOG

Reporting Month: September 2014

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 month.

**APPENDIX K
CONSTRUCTION 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	Q1	
DSD - HATSS2 Upgrading of PTW (DC/2009/23)																														
Particulars																														
Key Dates																														
Commencement / Completion																														
FGN0010	Contract Award	0	0	30-Dec-10 A		06-Jan-11																								
FGN0030	Date of Commencement of Contract	0	0	06-Jan-11		06-Jan-11																								
FGN0040	Time for Completion for Project	1393	0	06-Jan-11		29-Oct-14																								
FGN0050	Date of Completion of the Works	0	0			29-Oct-14																								
Portion of the Site																														
North Point																														
Possession / Vacation of Portions																														
FNP00010	H/O Date_NP-1 (135 days after start)	0	0	20-May-11		20-May-11																								
FNP00020	Vacation Date_NP-1 (on Sec. 1 completed)	0	0			01-Jun-13																								
FNP00030	H/O Date_NP-2 (135 days after start)	0	29	20-May-11		18-Jun-11																								
FNP00040	Vacation Date_NP-2 (on Sec. 3 completed)	0	0			14-Oct-14																								
FNP00050	H/O Date_NP-3 (after Sec. 1 completed)	0	0	02-Jun-13		02-Jun-13																								
FNP00060	Vacation Date_NP-3 (on Sec. 3 completed)	0	0			14-Oct-14																								
Wan Chai East																														
Possession / Vacation of Portions																														
FWC00010	H/O Date_WCE-1 (135 days after start)	0	0	20-May-11		20-May-11																								
FWC00020	Vacation Date_WCE-1 (on Sec. 5 completed)	0	0			23-Nov-13																								
FWC00030	H/O Date_WCE-2 (135 days after start)	0	0	20-May-11		20-May-11																								
FWC00040	Vacation Date_WCE-2 (on Sec. 4ii completed)	0	0			14-Nov-11																								
FWC00050	H/O Date_WCE-2 (after complete Sec. 5-iv)	0	0	27-Jul-13		27-Jul-13																								
FWC00060	Vacation Date_WCE-2 (on Sec. 5 completed)	0	0			23-Nov-13																								
FWC00070	H/O Date_WCE-3 (135 days after start)	0	59	20-May-11		18-Jul-11																								
FWC00080	Vacation Date_WCE-3 (on Sec. 5 completed)	0	0			23-Nov-13																								
FWC00090	H/O Date_WCE-4 (135 days after start)	0	59	20-May-11		18-Jul-11																								
FWC00100	Vacation Date_WCE-4 (on Sec. 5 completed)	0	0			23-Nov-13																								
FWC00110	H/O Date_WCE-T1 (135 days after start)	0	205	20-May-11		11-Dec-11																								
FWC00120	Vacation Date_WCE-T1 (on Sec. 6 completed)	0	0			22-May-14																								
FWC00130	H/O Date_WCE-T2 (135 days after start)	0	205	20-May-11		11-Dec-11																								
FWC00140	Vacation Date_WCE-T2 (on Sec. 6 completed)	0	0			22-May-14																								
Central																														
Possession / Vacation of Portions																														
FCT00110	H/O Date_CTL-1 (45 days after start)	0	0	19-Feb-11		19-Feb-11																								
FCT00120	Vacation Date_CTL-1 (on Sec. 9 completed)	0	0			25-May-14																								
FCT00130	H/O Date_CTL-2 (45 days after start)	0	50	19-Feb-11		10-Apr-11																								
FCT00140	Vacation Date_CTL-2 (on Sec. 9 completed)	0	0			25-May-14																								
FCT00150	H/O Date_CTL-3 (after Sec. 8 completed)	0	0	22-Mar-13		22-Mar-13																								
FCT00160	Vacation Date_CTL-3 (on Sec.10 completed)	0	0			29-Oct-14																								
FCT00170	H/O Date_CTL-T	0	806	06-Jan-11		22-Mar-13																								
FCT00180	Vacation Date_CTL-T (on Sec.10 completed)	0	0			29-Oct-14																								
Management Plans and Programmes																														
Contractor's Design, Submission / Approval																														
Particulars																														
FGN0200	Prepare/Submit Clause 16 Programme	60	11	06-Jan-11		06-Mar-11		17-Jan-11																						
FGN0210	Comment/Approval of Clause 16 Programme	30	41	07-Mar-11		05-Apr-11		17-Apr-11																						
FGN0220	Prepare/Submit Detailed Works Programme	60	11	07-Mar-11		05-May-11		18-Mar-11																						
FGN0230	Comments/Approval of Detailed Works Programme	30	11	06-May-11		04-Jun-11		17-May-11																						
FGN0250	Prepare/Submit Safety Plan	14	159	06-Jan-11		19-Jan-11		14-Jun-11																						
FGN0260	Comments/Approval of Safety Plan	60	159	20-Jan-11		28-Jan-11		26-Aug-11																						
FGN0300	Prepare/Submit Environmental Manag. Plan	21	152	06-Jan-11		26-Jan-11		07-Jun-11																						
FGN0310	Comments/Approval of Environmental Manag. Plan	60	152	27-Jan-11		27-Mar-11		28-Jun-11																						
FGN0330	Prepare / Submit Subcontractor Management Plan	30	143	06-Jan-11		04-Feb-11		29-May-11																						
FGN0340	Comments/Approval of Subcontractor Manag. Plan	60	143	05-Feb-11		05-Apr-11		28-Jun-11																						
FGN0400	Prepare / Submit Interface Management Plan	55	43	06-Jan-11		01-Mar-11		18-Feb-11																						
FGN0410	Comments / Approval of Interface Management Plan	45	43	02-Mar-11		15-Apr-11		14-Apr-11																						
FGN0420	Submit Detailed Interface Documents	60	43	16-Apr-11		14-Jun-11		29-May-11																						
FGN0430	Approval of Detailed Interface Documents	30	43	15-Jun-11		14-Jul-11		28-Jun-11																						
FGN0440	Prepare/Submit Env. Baseline Monitoring report	60	71	19-Feb-11		19-Apr-11		01-May-11																						
FGN0445	Comments/Approval Env. Baseline Report	28	71	20-Apr-11		17-May-11		30-Jun-11																						
FGN0448	Review/submit Construction Noise Permit	28	129	04-Apr-11		01-May-11		11-Aug-11																						
FGN0449	Comments/Approval of Construction Noise Permit	28	129	02-May-11		29-May-11		08-Sep-11																						
Technical Information & Drawings																														
FGN0450	Prepare/Submit initial record for CentralPTW	14	50	19-Feb-11		04-Mar-11		10-Apr-11																						
FGN0455	Prepare/Submit Tree Survey Report Pt. I	14	50	19-Feb-11		04-Mar-11		10-Apr-11																						
FGN0460	Prepare/Submit initial record for remaining area	14	50	20-May-11		02-Jun-11		09-Jul-11																						
FGN0465	Prepare/Submit Tree Survey Report Pt. II	14	13	20-May-11		02-Jun-11		02-Jun-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			
Foundation Works																																				
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																													
RC Structural Works																																				
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																													
Drainage Works																																				
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																													
Electrical and Mechanical Works																																				
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																													
Architectural Works																																				
FNP12700	Internal Finishes for F.Screen&Grit Trap Bldg.	30	0	10-Jul-12	08-Aug-12	10-Jul-12	08-Aug-12																													
Transplantation, landscape works																																				
FNP12100	2 nos.Trees Transplant	50	11	05-Jun-11	24-Jul-11	16-Jun-11	04-Aug-11																													
Mechanical Installation																																				
Electrical and Mechanical Works																																				
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																													
Electrical Installation																																				
Electrical and Mechanical Works																																				
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																													
Control and Monitoring System																																				
FNP14100	Install Monitoring & Control System	90	117	09-Aug-12	06-Nov-12	04-Dec-12	03-Mar-13																													
Building Services Installation																																				
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																													
Testing and Commissioning																																				
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																													
Works for Section 2																																				
North Point																																				
E&M Equipment / Material Delivery on Site																																				
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																													
Civil Works																																				
Site Clearance & Prep. Works																																				
FNP20100	Possession of NP-3 (after Sec. 1 completed)	0	0	02-Jun-13		02-Jun-13																														
Demolition Works																																				
FNP20200	Demolish the Extg. Fine Screen Chamber	30	0	23-Jun-13	22-Jul-13	23-Jun-13	22-Jul-13																													
Site Investigation																																				
FNP20210	6nos. Pre-drill holes	19	0	23-Jul-13	10-Aug-13	23-Jul-13	10-Aug-13																													
Foundation Works																																				
FNP20250	Piling Works for Deodorization Bldg.	55	0	11-Aug-13	04-Oct-13	11-Aug-13	04-Oct-13																													
Drainage Works																																				
FNP20150	Relocate DN300 Sewer	50	20	02-Jun-13	21-Jul-13	22-Jun-13	10-Aug-13																													
RC Structural Works																																				
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																													
Mechanical Installation																																				

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		
Civil Works Material Delivery on Site																																			
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																											
Civil Works																																			
Site Clearance & Prep. Works																																			
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																											
Demolition Works																																			
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																											
Building Service Works																																			
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																											
Transplantation, landscape works																																			
FWC01050	2nos. Tree Transplant	28	31	20-May-11	16-Jun-11	20-Jun-11	17-Jul-11	■ 2nos. Tree Transplant																											
E&M Installation																																			
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																											
Testing and Commissioning																																			
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																											
Works for Section 5																																			
Wan Chai East																																			
Possession / Vacation of Portions																																			
FWC01860	Second Possession WCE-2	0	0	27-Jul-13		27-Jul-13		◆ Second Possession WCE-2																											
Statutory Submission / Approval / Inspection																																			
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																											
Civil Works																																			
Site Clearance & Prep. Works																																			
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																											
Demolition Works																																			
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.																											
Site Investigation																																			
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																											
Foundation Works																																			
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.																											
RC / Structural Works																																			
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.																											
Building Service Works																																			
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																											
Architectural Works																																			
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																											
E&M Installation																																			
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)																											
Electrical Installation																																			
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

