GAMMON CONSTRUCTION LIMITED

Contract No. DC/2007/23

Harbour Area Treatment Scheme Stage 2A - Construction of Sewage Conveyance System from North Point to Stonecutters Island

Gammon

J3282

# CONTRACTOR'S SUBMISSION FORM

| To : Engineer's Representative<br><br>Attn. :Mr. Y H Fung | From : Gammon Construction Ltd.<br><br>Signature : _____<br>Name : Max Ko | |
|---|---|---|
| **CSF No.: J3282-E-0140** | **Rev.:A** | **Date : 15-Dec-09** |

A - Temporary Traffic Arrangement D - Permanent Works Design E - Environmental G- Geotechnical H - Health and Safety I - Inspection and Test Plan L - Land Survey
M - Material for Approval P - Programme and progress Q - Quality Assurance R - Report/ Record S - Method Statement T - Temporary Works Design O - Others

**Title of Submission:**
Baseline Monitoring Report

| *Fill up the following items (if applicable):* | |
|---|---|
| Proposed Location of Works: | N/A |
| Specification Reference: | |
| Drawing Reference: | |

## Description of Contents:

In response to EPD comments rasied under their letter ref. no. (5) in EP2/G/F/137 Ax(1) dated 2 December 2009, we would like to submit herewith 10 hard copies and 2 soft copies of the baseline monitoring reports for your comment, approval and onwards submission to Environmental Protection Department.

Attachment : ☐ No ☑ Yes,

Purpose of Submission : ☑ For Comment (if any) and Approval ☐ For reference and record

Prepared by: _____
Man Hin Chow

Reviewed by : _____
Colin Foster (GCL)

Distribution :

*Response to Comments*
*Contract No. DC/2007/23*
*Harbour Area Treatment Scheme Stage 2A (HATS 2A)*
*Construction of Sewage Conveyance System from North Point to Stonecutters Island*
*Baseline Monitoring Report (December 2009)*

*H:\Team\EM\GMS Projects\0104887 EM&A for HATS2A NP to SCI\09 EP Submission\Baseline Monitoring Report\RtC\0104887_RTCs for Baseline Monitoring Report.doc*

| No. | Department | Reference | Comments | Consultants' Response |
|---|---|---|---|---|
| 1. | EPD | (5) in EP 2/G/F/137 Ax (1) dated 2 Dec 09 | I refer to your letter of 12 November 2009 seeking our approval on the baseline monitoring report for the construction of sewage conveyance system from North Point to Stonecutters Island. Please find our comments on the report in the attached Annex. Furthermore, please forward us 8 copies of all future EM&A reports together with an e-copy for our perusal as different parties would be responsible for different area of this project. | Noted. |
| 2. | | | Event and action plan for other parameters in addition to landscape and visual aspect should be included. | Noted. The event and action plans for air and noise monitoring have been added to the Baseline Monitoring Report. Those parameters other than air quality, noise and landscape and visual stated in the EM&A Manual are not applicable to this Contract and the event and action plans for these parameters are therefore not included. |
| 3. | | | Monitoring results for other parameters recommended in the approval EM&A Manual such as vibration and ground settlement should be included in the monthly reports. | Noted. |
| 4. | | | Please report the changes, eg. Monitoring locations, made in the approved EM&A manual in the report to facilitate readers understanding. | Noted. The changes in monitoring locations in the approved EM&A manual have been included in revised Sections 2.1 and 3.1. |

FINAL REPORT

Gammon Construction Limited

# Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A Construction of Sewage Conveyance System from North Point to Stonecutters Island: *Baseline Monitoring Report*

December 2009

**Environmental Resources Management**
21/F Lincoln House
979 King's Road
Taikoo Place
Island East, Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660
E-mail: post.hk@erm.com
http://www.erm.com

FINAL REPORT

Gammon Construction Limited

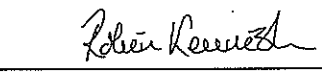
# Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A Construction of Sewage Conveyance System from North Point to Stonecutters Island: *Baseline Monitoring Report*

December 2009

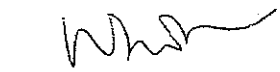
Reference 0104887

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Dr Robin Kennish

Signed: 

Position: Director

Certified by: 
(Environmental Team Leader – Winnie Ko)

Date: 10 December 2009

This report has been prepared by ERM-Hong Kong, Limited with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Our ref KMY/PEJ/AFK/JOC/fy/T261332/22.01/L-0011
T 2828 5757
E Anne.Kerr@mottmac.com.hk
Your ref -

Mott MacDonald

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

10 December 2009

**Attn: Mr. Albert Chan**

By Fax ( 2833 9162) and Post

Dear Sir,

**Agreement No. CE 8/2009(EP)**
**Harbour Area Treatment Scheme (HATS) Stage 2A**
**Independent Environmental Checker for Construction Phase – Investigation**
**Condition 4.3 – Submission of Baseline Monitoring Report for Contract No. DC/2007/23**

I refer to the revised Baseline Monitoring Report received on 9 December 2009 submitted and certified by ETL via email. Pursuant to Condition 4.3 of Environmental Permit No. EP-332/2008/B, I hereby verify the captioned Baseline Monitoring Report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c.

| | | |
|---|---|---|
| AECOM | Mr. Y H Fung | By email |
| Gammon | Mr. Max Ko | By email |
| ERM | Ms. Winnie Ko | By email |

*CONTENTS*

*EXECUTIVE SUMMARY*


| | | |
|---|---|---|
| *1* | *INTRODUCTION* | *1* |
| *1.1* | *PROJECT DESCRIPTION* | *1* |
| *1.2* | *PURPOSE OF THE REPORT* | *2* |
| *1.3* | *STRUCTURE OF THE REPORT* | *2* |
| *2* | *BASELINE AIR QUALITY MONITORING* | *3* |
| *2.1* | *MONITORING STATION* | *3* |
| *2.2* | *MONITORING PARAMETERS, FREQUENCY AND PROGRAMME* | *4* |
| *2.3* | *MONITORING EQUIPMENT AND METHODOLOGY* | *5* |
| *2.4* | *RESULTS AND OBSERVATIONS* | *7* |
| *2.5* | *ESTABLISHMENT OF ACTION AND LIMIT LEVELS* | *8* |
| *3* | *BASELINE NOISE MONITORING* | *12* |
| *3.1* | *MONITORING STATION* | *12* |
| *3.2* | *MONITORING PARAMETERS, FREQUENCY AND PROGRAMME* | *13* |
| *3.3* | *MONITORING EQUIPMENT AND METHODOLOGY* | *13* |
| *3.4* | *RESULTS AND OBSERVATIONS* | *14* |
| *3.5* | *ACTION AND LIMIT LEVEL* | *15* |
| *4* | *BASELINE LANDSCAPE AND VISUAL MONITORING* | *19* |
| *4.1* | *MONITORING PARAMETERS* | *19* |
| *4.2* | *MONITORING PROCEDURES AND LOCATIONS* | *22* |
| *4.3* | *RESULTS AND OBSERVATIONS* | *22* |
| *4.4* | *EVENT AND ACTION PLAN* | *25* |
| *5* | *CONCLUSION* | *27* |
| *5.1* | *BASELINE AIR QUALITY* | *27* |
| *5.2* | *BASELINE NOISE* | *27* |
| *5.3* | *LANDSCAPE AND VISUAL* | *27* |


*ANNEXES*


| | |
|---|---|
| Annex A | Location of Air Quality and Noise Monitoring Stations |
| Annex B | Baseline Air and Noise Monitoring Schedule |
| Annex C | Calibration Reports for High Volume Samplers |
| Annex D | Baseline 24-hr and 1-hr TSP Monitoring Results |
| Annex E | Calibration Reports for Noise Monitoring Equipments |
| Annex F | Baseline Noise Monitoring Results |
| Annex G | Baseline Landscape and Visual Monitoring Results |

## EXECUTIVE SUMMARY

ERM-Hong Kong, Limited (ERM) was appointed by Gammon Construction Ltd to undertake baseline air quality, noise monitoring and landscape and visual monitoring prior to the commencement of construction works for the *Construction of Sewage Conveyance System from North Point to Stonecutters Island* (the Project) for Drainage Services Department (DSD) under the Harbour Area Treatment Scheme (HATS) Stage 2A.

This Baseline Monitoring Report has been prepared pursuant to Condition 4.3 of the Environmental Permit for the Project (EP-322/2008/B) and Environmental Monitoring and Audit Manual for the HATS Stage 2A.

Baseline Air Quality Monitoring

Baseline air quality monitoring were conducted between 25 September and 24 October 2009 at designated monitoring stations established for the Project. The weather condition during the baseline monitoring period varied from sunny, cloudy to rainy. No major activities in vicinity of the designed monitoring stations were undertaken during baseline monitoring, and therefore the baseline air quality monitoring data established in this monitoring period are representative of the baseline condition for the Project.

The Action Levels for 24-hr and 1-hr TSP during impact monitoring established based on the measured baseline TSP levels for assessing the impact and compliance during the construction of the Project.

Baseline Noise Monitoring

Baseline noise monitoring was conducted between 18 September and 18 October 2009 at designated monitoring stations established for the Project. The weather condition during the baseline monitoring period varied from sunny, cloudy to rainy.

The measured baseline noise levels ($L_{eq, 30min}$) between 0700 and 1900 hours at are well within 75dB(A), which is daytime construction noise limit under Environmental Impact Assessment Ordinance (EIAO). Yet, the $L_{eq, 30min}$ at NM1 exceeds 65 dB(A), the Limit Level of daytime construction noise during examination periods. The measured baseline noise levels ($L_{eq, 5min}$) between 1900 and 2300 hours on weekdays and between 0700-2300 on public holidays (including Sundays) at all but NM2 and NM3 are within 70 dB(A), which is the evening acceptable noise limit (ANL) for urban areas under NCO. The measured baseline noise levels ($L_{eq, 5min}$) between 2300 and 0700 hours during night-time at all stations exceeds 60dB(A) and ($L_{eq, 5min}$), which is the night-time acceptable noise limit (ANL) for urban areas under NCO. No major activities in the Project were undertaken during baseline monitoring period, and therefore the baseline noise monitoring data is representative of the baseline condition for the Project.

During impact monitoring, the Action Level will be triggered when one complaint is received, and the daytime construction noise limit under EIAO, ie

75 dB(A) will be adopted as the Limit Level. In particular at NM1, 70dB(A) and 69.0dB(A) will be respectively adopted as the Limit Level during the normal teaching period and examination period.

Baseline Landscape and Visual Monitoring

Site visits for the baseline landscape and visual baseline monitoring were made on 23 September and 30 October 2009. No significant changes between existing and the baseline conditions of LRs, LCAs and views towards VSRs as stipulated in the EIA were identified. No changes to the landscape and visual mitigation measures as proposed in EIA are therefore, required.

# 1 INTRODUCTION

## 1.1 PROJECT DESCRIPTION

ERM-Hong Kong, Limited (ERM) was appointed as an Environmental Team (ET) to undertake baseline monitoring prior to the commencement of construction works for the *DC/2007/23 - Construction of Sewage Conveyance System from North Point to Stonecutters Island* (the Project) for Drainage Services Department (DSD) under the Harbour Area Treatment Scheme Stage 2A (HATS2A). The Project comprises the construction of production shafts, drop shafts and riser shaft and approximately 12km of tunnel excavation from North Point via Sai Ying Pun to Stonecutters Island. Shafts vary in depth from 140m and 170m below ground with 10 - 12m diameter. Tunnel face area ranges from 16 to 23 $m^2$. Embedded drainage pipelines will be installed upon the completion of tunnel excavation.

Construction works to be carried out under this Contract include the following major items:

- construction of sewage conveyance system (SCS) from North Point Preliminary Treatment Works (NP PTW) to Stonecutters Island Sewage Treatment Works (SCI STW) via Wan Chai East Preliminary Treatment Works (WCE PTW), Central Preliminary Treatment Works (CEN PTW) and Fung Mat Street Sai Ying Pun (SYP) junction shaft;
- construction of drop shafts at NP PTW, WCE PTW and CEN PTW;
- construction of riser shaft at SCI STW;
- construction of junction shaft at SYP;
- construction of temporary production shafts at NP, WCE and SCI to provide access for the construction of SCS;
- construction of connection channels, pipes, chambers and tunnel connecting the proposed drop shafts / riser shaft to the facilities of the preliminary treatment works / sewage treatment works;
- carrying out survey of existing buildings, taking over of existing and installation of new piezometers and ground settlement markers and subsequent monitoring thereof and vibration monitoring along the alignment of the SCS;
- miscellaneous building, civil, electrical and mechanical works; and
- landscape works.

## 1.2 *PURPOSE OF THE REPORT*

This Baseline Monitoring Report has been prepared pursuant to Condition 4.3 of the Environmental Permit for the Project (EP-322/2008/B) and approved Environmental Monitoring and Audit (EM&A) Manual for the *Agreement No. CE 43/2005 (EP) Harbour Area Treatment Works (HATS) Stage 2A EIA Study – Investigation.*

The purpose of this Baseline Monitoring Report (BMR) is to:

- determine ambient 24-hour and 1-hour Total Suspended Particulates (TSP) levels at the designated monitoring stations before commencement of the Project;
- establish Action Levels of 24-hour and 1-hour TSP levels for assessing the impact and compliance during the construction of the Project;
- determine existing noise levels at the designated monitoring stations before commencement of the Project; and
- update the status of landscape resources and visual sensitive receivers (VSRs) within or adjacent to construction sites and works area.

## 1.3 *STRUCTURE OF THE REPORT*

The structure of the remaining sections of the report is as follows:

Section 2 : Baseline **Air Quality Monitoring**
summarizes the baseline air quality monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring stations, monitoring results, observations and establishes the Action Levels in accordance with the EM&A Manual.

Section 3 : Baseline **Noise Monitoring**
summarizes the baseline noise monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring stations and monitoring results.

Section 4 : Baseline **Landscape and Visual Monitoring**
summarizes the existing landscape and visual monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring stations and monitoring results.

Section 5 : **Conclusions**
concludes the representativeness of the baseline monitoring results and observations for the Project.

## 2.1 MONITORING LOCATION

Since access to some of the proposed monitoring locations stated in the EM&A Manual were rejected or not available, alternative locations, therefore, were proposed and agreed by the ER and the IEC. The construction air quality monitoring stations for this Contract are listed in *Table 2.1* and shown in *Figures 1* to *5* in *Annex A*. The original proposed monitoring locations in EM&A Manual are also shown in *Figures 1* to *5* for reference.

*Table 2.1 Construction Phase Air Monitoring Location*

| Worksite | Proposed Construction Air Quality Monitoring Station | | | |
|---|---|---|---|---|
| | ID in EM&A Manual | ID | Location | Remark |
| North Point | - | AM1 | Chan's Creative School (formerly known as Madam Chan Wai Chow Memorial School) | • Access for station setup to K.Wah Centre (CM_NP1) and Tin Chiu Street Children's Playground (CM_NP3) was rejected. |
| | CM_NP2 | AM2 | Rooftop of Hong Kong & Islands Regional Office, WSD | |
| Wan Chai East | - | AM3 | Rooftop of Wan Chai East PTW | • The rooftop of Society for the Prevention of Cruelty to Animals building (CM_WC1) was crowded with existing facilities (eg water tanks) that setup of HVSs for baseline monitoring is not feasible. |
| Central | - | AM4 | A Location within the DSD Central PTW | • Access to Sheung Wan Fire Station (CM_C1) was rejected.<br>• All possible locations along Connaught Road West and Connaught Road East have been exhausted and no suitable location is identified due to rejection by the premise owner, security reason, without guaranteed access or inaccessible. AM4 is the alternative location. |
| Fung Mat Street | CM_FM1 | AM5 | Western Wholesale Food Market | - |

| Worksite | Proposed Construction Air Quality Monitoring Station | | | |
|---|---|---|---|---|
| | ID in EM&A Manual | ID | Location | Remark |
| SCISTW | - | AM6 | Works Site Boundary | • Power Access supply for operation of HVS was not feasible to the rooftop of Government Dockyard Offices (CM_SCI1).<br>• For COSCO HIT Terminal (CM_SCI2), access application was verbally rejected.<br>• Club House (CM_SCI3) is blocked by a high building which will deteriorate the dust levels during measurement.<br>• Work Site Boundary (near Ngong Shuen Chau Barracks Group 2 (CM_SCI4) was designed for the HATS2A Disinfection Facilities works and the station is separated by a small hill.<br>• Baseline dust monitoring data measured under HATS2A – Provision of Disinfection Facilities at SCISTW will also be obtained for the establishment of the action level for the impact monitoring. |

## 2.2 *MONITORING PARAMETERS, FREQUENCY AND PROGRAMME*

Baseline air quality monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual (*Table* 2.2) at the proposed monitoring stations. Total suspended particulates (TSP) is the monitoring parameter during the baseline AQ monitoring. The baseline TSP monitoring schedule is shown in *Annex B*. TSP monitoring at AM1 was ceased on 1, 3, 4 and 11 Oct 2009 as access to the school is not available on public holidays. TSP monitoring at AM6 was also ceased on 11 Oct 2009 as the monitoring station was not accessible on the said date. TSP monitoring at the above stations were therefore conducted after the original 14-day monitoring period accordingly.

*Table 2.2* *Baseline Air Quality Monitoring Parameter and Frequency*

| Parameter | Frequency |
|---|---|
| 24-hour TSP | Once per day for 14 consecutive days |
| 1-hour TSP | 3 times per day for 14 consecutive days |

## 2.3 MONITORING EQUIPMENT AND METHODOLOGY

The baseline TSP levels were measured with equipment in accordance with requirements stated in Sections 2.8 to 2.14 and Sections 2.15 to 2.19 of the EM&A Manual.

### 2.3.1 *Monitoring Equipment*

Continuous 24-hour and 1-hour TSP monitoring were performed using High Volume Samplers (HVS) with appropriate sampling inlets installed, located at the designated monitoring station. The performance specification of HVS complied with the standard method *"Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)"* as stipulated in *US EPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50 Appendix B).* *Table 2.3* summarizes the equipment that were deployed for the 24-hour and 1-hour TSP monitoring respectively.

*Table 2.3* ***TSP Monitoring Equipment***

| Monitoring Station | Monitoring Equipment (HVS and Calibrator) |
|---|---|
| *24-hr TSP* | |
| AM1 | GMW GS-2310 (S/N 1808), CM-AIR-43 (S/N 9833620) |
| AM2 | GMW GS-2310 (S/N 0145), CM-AIR-43 (S/N 9833620) |
| AM3 | GMW GS-2310 (S/N 0481), CM-AIR-43 (S/N 9833620) |
| AM4 | GMW GS-2310 (S/N 0764), CM-AIR-43 (S/N 9833620) |
| AM5 | GMW GS-2310 (S/N 8162), CM-AIR-43 (S/N 9833620) |
| AM6 | GMW GS-2310 (S/N 1254), CM-AIR-43 (S/N 9833620) |
| *1-hr TSP* | |
| AM1 | GMW GS-2310 (S/N 0816), CM-AIR-43 (S/N 9833620) |
| AM2 | GMW GS-2310 (S/N 0106), CM-AIR-43 (S/N 9833620) |
| AM3 | GMW GS-2310 (S/N 1806), CM-AIR-43 (S/N 9833620) |
| AM4 | GMW GS-2310 (S/N 9315), CM-AIR-43 (S/N 9833620) |
| AM5 | GMW GS-2310 (S/N 1658), CM-AIR-43 (S/N 9833620) |
| AM6 | GMW GS-2310 (S/N 7580), CM-AIR-43 (S/N 9833620) |

### 2.3.2 *Monitoring Methodology*

*Installation by Envirotech*

The setup locations of the HVSs at monitoring stations were listed in *Table 2.1* in the above sections. All HVSs were free-standing with no obstruction.

The following criteria were considered in the installation of the HVSs:

- appropriate support to secure the samplers against gusty wind were provided at AM1-AM6;
- a minimum of 2m separation from walls, parapets and penthouses was required for rooftop samplers;
- no furnace or incinerator flues were nearby;
- airflow around the sampler was unrestricted; and

- permission was obtained to set up the samplers and to gain access to the monitoring stations.

*Preparation of Filter Papers by SGS Hong Kong Ltd*

- glass fibre filters were labelled and sufficient filters that were clean and without pinholes were selected;
- all filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS accredited laboratory, implements comprehensive quality assurance and quality control programmes.

*Field Monitoring (by Envirotech)*

- the power supply was checked to ensure that the HVSs were working properly;
- the filter holder and the area surrounding the filter were cleaned;
- the filter holder was removed by loosening the foul bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully;
- the filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- the swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- then the shelter lid was closed and secured with the aluminium strip;
- the HVSs were warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flowrate record sheet was set into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 - 1.37 $m^3min^{-1}$ which were within the range specified in the EM&A Manual (ie 0.6 – 1.7 $m^3min^{-1}$);
- the programmable timer was set for a sampling period of 24 hours ± 1 hour, and the starting time, weather condition and the filter number were recorded;
- the initial elapsed time was recorded;

- at the end of sampling, the sampled filter was removed carefully and folder in half length so that only surfaces with collected particulate matter were in contact;
- it was then placed in a clean plastic envelope and sealed;
- all monitoring information was recorded on a standard data sheet; and
- filters were sent to SGS Hong Kong Ltd for analysis.

*Maintenance and Calibration (by Envirotech)*

- the HVSs and their accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply; and
- the flow rate of each HVS with mass flow controller were calibrated using an orifice calibrator. Initial calibrations of the dust monitoring equipments were conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVSs using CM-AIR-43 Calibration Kit. The calibration records for the HVSs are given in *Annex C*.

*Wind Data Monitoring*

Average wind data (wind speed and wind direction) during the monitoring period were obtained from the meteorological stations at Tsing Yi, Green Island, King's Park and Kai Tak of the Hong Kong Observatory (HKO). The wind data were applied to different monitoring stations based on separation distance from the above listed stations.

## 2.4 RESULTS AND OBSERVATIONS

The average measured baseline TSP levels for AM1 to AM6 were summarized in *Table 2.4*, and the detailed monitoring data together with wind data and graphical presentations are summarized in *Annex D*. The weather condition during the baseline monitoring period varied from sunny, cloudy and rainy.

*Table 2.4 Summary of Average Baseline Air Quality Monitoring Results* [a]

| Baseline Air Quality Monitoring Station | Average 24-hour TSP Level, $\mu gm^{-3}$ (range of data) | Average 1-hour TSP Level, $\mu gm^{-3}$ (range of data) |
|---|---|---|
| AM1 | 85 (58 – 109) | 139 (77 – 270) |
| AM2 | 80 (58 – 104) | 157 (81 – 218) |
| AM3 | 78 (56 – 93) | 162 (71 – 248) |
| AM4 | 124 (59-191) | 220 (89-412) |
| AM5 | 90 (50 – 147) | 126 (61 – 201) |

| Baseline Air Quality Monitoring Station | Average 24-hour TSP Level, $\mu gm^{-3}$ (range of data) | Average 1-hour TSP Level, $\mu gm^{-3}$ (range of data) |
|---|---|---|
| AM6 | 160<br>(56-438) | 208<br>(65-554) |

Note:
(a) Detailed baseline TSP levels measured at each station are presented in *Annex D*.

No major dust emission sources were observed in the vicinity of AM1 to AM6. A construction site is identified located at Java Road opposite to the Project's works area. However, building work is being carried out and no major dusty works were carried out.

## 2.5 *ESTABLISHMENT OF ACTION AND LIMIT LEVELS*

The Action and Limit levels have been established and presented in *Table 2.6* following the formula stated in the EM&A Manual (*Table 2.5*). The baseline air monitoring data (24-hr and 1-hr TSP average) measured under *HATS2A – Provision of Disinfection Facilities at SCISTW* (DF) is also included to establish the Action Level at AM6.

*Table 2.5 Proposed Action and Limit Levels for Impact Monitoring*

| Parameter | Action Level[a], $\mu gm^{-3}$ | Limit Level, $\mu gm^{-3}$ |
|---|---|---|
| 24-hour TSP | • BL ≤ 200 $\mu g\ m^{-3}$, AL = (BL * 1.3 + LL)/2<br>• BL > 200 $\mu g\ m^{-3}$, AL = LL | 260 |
| 1-hour TSP | • BL ≤ 384 $\mu g\ m^{-3}$, AL = (BL * 1.3 + LL)/2<br>• BL > 384 $\mu g\ m^{-3}$, AL = LL | 500 |

Note:
(a) BL – Baseline Level, AL – Action Level, LL – Limit Level

*Table 2.6 Action and Limit Levels for Air Quality Monitoring for this Project*

| Parameter | Air Monitoring Station | Action Level, $\mu gm^{-3}$ | Limit Level, $\mu gm^{-3}$ |
|---|---|---|---|
| 24-hour TSP | AM1 | ((85x 1.3)+ 260)/2 = 185 | 260 |
| | AM2 | ((80x 1.3)+ 260)/2 = 182 | 260 |
| | AM3 | ((78x 1.3)+ 260)/2 = 181 | 260 |
| | AM4 | ((124x 1.3)+ 260)/2 = 211 | 260 |
| | AM5 | ((90x 1.3)+ 260)/2 = 188 | 260 |
| | AM6 (with 24-hr TSP data from DF project) | (((160x 1.3)+ 260)/2 + ((43x 1.3)+ 260)/2)/2 = 196 | 260 |
| 1-hour TSP | AM1 | ((139x 1.3)+ 500)/2 = 340 | 500 |
| | AM2 | ((157x 1.3)+ 500)/2 = 352 | 500 |
| | AM3 | ((162x 1.3)+ 500)/2 = 355 | 500 |
| | AM4 | ((220x 1.3)+ 500)/2 = 393 | 500 |
| | AM5 | ((126x 1.3)+ 500)/2 =332 | 500 |
| | AM6 (with 1-hr TSP data from DF project) | (((208x 1.3)+ 500)/2 + ((88x 1.3)+ 500)/2)/2 = 346 | 500 |

## 2.6 *EVENT AND ACTION PLAN*

Air quality monitoring will be conducted during the construction of the Project to ensure the implementation dust control mitigation measures. Should non-compliance of the air quality monitoring action and limit levels occurs, actions in accordance with the action plan stated in *Table 2.7* shall be carried out.

*Table 2.7 Event Action Plan for Air Quality Monitoring*

| Action Level/Limit Level | Environmental Team Leader (ETL) | Independent Environmental Checker (IEC) | Engineer's Representative (ER) | Contractor |
|---|---|---|---|---|
| *Action Level* | | | | |
| Exceedance for one sample | • Identify source, investigate the causes of exceedance and propose remedial measures;<br>• Inform IEC and ER;<br>• Repeat measurement to confirm finding; and,<br>• Increase monitoring frequency to daily. | • Check monitoring data submitted by ET; and,<br>• Check Contractor's working method. | • Notify Contractor | • Rectify any unacceptable practice; and,<br>• Amend working methods if appropriate. |
| Exceedance for two or more consecutive samples | • Identify source;<br>• Inform IEC and ER;<br>• Advise the ER on the effectiveness of the proposed remedial measures;<br>• Repeat measurements to confirm findings;<br>• Increase monitoring frequency to daily; and,<br>• Discuss with IEC and Contractor on remedial actions required; | • Check monitoring data submitted by ET;<br>• Check Contractor's working method;<br>• Discuss with ET and Contractor on possible remedial measures;<br>• Advise the ET on the effectiveness of the proposed remedial measures; and,<br>• Supervise Implementation of remedial measures. | • Confirm receipt of notification of failure in writing;<br>• Notify Contractor, and,<br>• Ensure remedial measures properly implemented. | • Submit proposals for remedial to ER within 3 working days of notification;<br>• Implement the agreed proposals;<br>• Amend proposal if appropriate. |

| Action Level/Limit Level | Environmental Team Leader (ETL) | Independent Environmental Checker (IEC) | Engineer's Representative (ER) | Contractor |
|---|---|---|---|---|
| *Limit Level* | | | | |
| Exceedance for one sample | • Identify source, investigate the causes of exceedance and propose remedial measures;<br>• Inform ER, Contractor and EPD;<br>• Repeat measurement to confirm finding;<br>• Increase monitoring frequency to daily; and,<br>• Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. | • Check monitoring data submitted by ET;<br>• Check Contractor's working method;<br>• Discuss with ET and Contractor on possible remedial measures;<br>• Advise the ER on the effectiveness of the proposed remedial measures; and,<br>• Supervise implementation of remedial measures. | • Confirm receipt of notification of failure in writing;<br>• Notify Contractor; and,<br>• Ensure remedial measures properly implemented. | • Take immediate action to avoid further exceedance;<br>• Submit proposals for remedial actions to IEC within 3 working days of notification;<br>• Implement the agreed proposals; and,<br>• Amend proposal if appropriate. |
| Exceedance for two or more consecutive samples | • Notify IEC, ER, Contractor and EPD;<br>• Identify source;<br>• Repeat measurement to confirm findings;<br>• Increase monitoring frequency to daily;<br>• Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;<br>• Arrange meeting with IEC and ER to discuss the remedial actions to be taken;<br>• Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and,<br>• If exceedance stops, cease additional monitoring. | • Check monitoring data submitted by ET;<br>• Check Contractor's working method;<br>• Discuss amongst ER, ET, and Contractor on the potential remedial actions;<br>• Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and,<br>• Supervise the implementation of remedial measures. | • Confirm receipt of notification of failure in writing;<br>• Notify Contractor;<br>• In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;<br>• Ensure remedial measures properly implemented; and,<br>• 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. | • Take immediate action to avoid further exceedance;<br>• Submit proposals for remedial actions to IEC within 3 working days of notification;<br>• Implement the agreed proposals;<br>• Resubmit proposals if problem still not under control; and,<br>• Stop the relevant portion of works as determined by the ER until the exceedance is abated. |

# 3 BASELINE NOISE MONITORING

## 3.1 MONITORING LOCATION

Accesses to some of the proposed monitoring locations stated in the EM&A Manual were rejected or not available; alternative locations, therefore, were proposed and agreed by the ER and the IEC. The construction noise monitoring locations for this Contract are listed in *Table 3.1* and are shown in *Figures 1* to *5* in *Annex A*. The original proposed monitoring locations in EM&A Manual are also shown in *Figures 1* to *5* for reference.

*Table 3.1* ***Proposed Construction Noise Monitoring Station***

| Worksite | Proposed Construction Noise Monitoring Station | | | | |
|---|---|---|---|---|---|
| | ID in EM&A Manual | ID | Location | Type of Measurement | Remark |
| North Point | M1 | NM1 | Rooftop of Chan's Creative School (formerly known as Madam Chan Wai Chow Memorial School) | Façade | - |
| Wan Chai East | - | NM2 | Rooftop of Hyde Building | Façade | • No guaranteed access for equipment set-up due to no caretaker of Kei Wah Building (M2)<br>• Alternative location, NM2, is located next to Kei Wah Building and is also the background noise monitoring station in the HATS2A EIA study. |
| Central | - | NM3 | Rooftop of Goldfield Building | Façade | • Chi Cheung Building (M4) is not accessible. |
| Fung Mat Road | M3 | NM4 | Rooftop of Block A, Kwan Yick Building Phase III | Façade | - |

| Worksite | Proposed Construction Noise Monitoring Station | | | | |
|---|---|---|---|---|---|
| | ID in EM&A Manual | ID | Location | Type of Measurement | Remark |
| SCISTW | - | NM5 | A Location near the FSD Diving Rescue and Diving Training Centre near the Site Boundary | Free-Field (3dB(A) was added to the measured results) | • Access to FSD Fire Rescue and Diving Training Centre (M11) was rejected.<br>• NM5 is located next to the original proposed location. |

## 3.2 *MONITORING PARAMETERS, FREQUENCY AND PROGRAMME*

Baseline noise monitoring was conducted at the designated noise monitoring stations listed in *Table 3.1* for 14 consecutive days subjected to weather conditions. The baseline noise monitoring programme is shown in *Annex B*. Noise monitoring has been ceased from 28 September 2009 to 1 October 2009 at NM1, NM2, NM3 and NM4 due to rainy weather. Noise monitoring at NM4 originally scheduled from 2 to 6 October 2009 were also repeated on 13 to 17 October 2009 due to equipment malfunctioning.

The baseline noise levels were measured in terms of A-weighted equivalent continuous sound pressure level ($L_{eq}$) in decibels dB(A). Supplementary information for data auditing, two statistical sound levels $L_{10}$ and $L_{90}$; the levels exceeded for 10 and 90 percent of the time respectively, were also recorded during the monitoring for reference. The measured noise levels were logged in every 5 minutes throughout the baseline monitoring period.

## 3.3 *MONITORING EQUIPMENT AND METHODOLOGY*

Baseline noise measurements were conducted (by Envirotech) in accordance with the calibration and measurement procedures as stated in *Annex – General Calibration and Measurement Procedures* of *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW-TM*) issued under the *Noise Control Ordinance* (*NCO*) (Cap.400).

The sound level meters and calibrator used for the noise measurement, as listed in *Table 3.2*, complies with IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in *Annex E*.

*Table 3.2* *Noise Monitoring Equipment*

| Monitoring Station | Monitoring Equipment (Noise Meter and Calibrator) |
|---|---|
| NM1 | Rion NL-18 (S/N 00360030), NC73 (S/N 10786708) |
| NM2 | Rion NL-31 (S/N 00320533), NC73 (S/N 10786708) |
| NM3 | Rion NL-31 (S/N 00410224), NC73 (S/N 10786708) |

| Monitoring Station | Monitoring Equipment (Noise Meter and Calibrator) |
|---|---|
| NM4 | Rion NL-31 (S/N 00201194) / Rion NA-27 (S/N 00410224), NC73 (S/N 10786708) |
| NM5 | Rion NA-27 (S/N 00201194), NC73 (S/N 10786708) |

Immediately prior to and following the noise measurements, the accuracy of the measurement equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were accepted as the calibration level from before and after the noise measurement agree to within 1.0 dB. A correction of +3dBA) was made to the free field measurement at NM5.

## 3.4 *RESULTS AND OBSERVATIONS*

The baseline noise monitoring results are summarized in *Table 3.3* and the detailed monitoring data together with graphical presentations are presented in *Annex F*. The weather condition during the baseline monitoring period at the designated monitoring stations varied from sunny, cloudy to rainy. The noise monitoring results below will be used as a reference of future impact monitoring period.

*Table 3.3* ***Summary of Noise Monitoring Results***

| Noise Monitoring Stations | Average $L_{Aeq,30min}$, dB(A) (0700 – 1900 hours on normal weekday) (range of data) | Average $L_{eq,5min}$, dB(A) during evening (1900 – 2300 hours) and general holidays (0700-2300 hrs including Sundays) (range of data) | Average $L_{eq,5min}$, dB(A) (2300 – 0700 hours during night-time) (range of data) |
|---|---|---|---|
| NM1 | 69.0 (66.2 – 71.7) | 66.5 (61.7-73.0) | 62.1 (56.2-76.6) |
| NM2 | 73.5 (70.6-76.3) | 71.2 (68.6-76.8) | 68.7 (62.5-75.3) |
| NM3 | 74.9 (71.2-80.6) | 73.0 (69.4-79.3) | 68.9 (61.9-75.4) |
| NM4 | 69.4 (66.1-74.3) | 67.4 (63.0-72.4) | 63.2 (57.2-70.3) |
| NM5 (corrected data for free-field) | 66.4 (54.7-74.6) | 60.6 (55.3-73.7) | 60.1 (52.0-79.1) |

The measured baseline noise levels ($L_{eq,30min}$) at NM1 between 0700 and 1900 hours and ($L_{eq,5min}$) between 1900-2300 and public holidays are well within 70dB(A), which is daytime and evening construction noise limit under the EIAO and *Noise Control Ordinance* (NCO). However, while NM1 is set up in a school, the 14-day average $L_{Aeq,30min}$ measured between 0700 and 1900 hours exceeds 65 dB(A), the Limit Level of daytime construction noise during examination periods. Traffic noise from King's Road, Java Road and nearby small roads; school bell rings; student noise were the key noise sources during measurement.

The measured baseline noise levels ($L_{eq, 30min}$) at NM2 between 0700 and 1900 hours is within 75dB(A), which is daytime construction noise limit under Environmental Impact Assessment Ordinance (EIAO), but the measured baseline noise levels ($L_{eq, 5min}$) between 1900-2300 and public holidays and ($L_{eq, 5min}$) between 2300 and 0700 hours exceeds 70 dB(A) and 60dB(A) and ($L_{eq, 5min}$), which is the evening and night-time acceptable noise limit (ANL) for urban areas under NCO. Traffic noise from Gloucester Road and Hung Hing Road are the major sources. No major construction activities in the vicinity were identified in the vicinity during measurement.

The measured baseline noise levels ($L_{eq, 30min}$) at NM3 between 0700 and 1900 hours is within 75dB(A), which is daytime construction noise limit under EIAO, but the measured baseline noise levels ($L_{eq, 5min}$) between 1900-2300 and public holidays and ($L_{eq, 5min}$) between 2300 and 0700 hours exceeds 70 dB(A) and 60dB(A) and ($L_{eq, 5min}$), which is the evening and night-time acceptable noise limit (ANL) for urban areas under NCO Traffic noise from Connaught Road Central is the major noise source contributing the baseline noise measured. No construction activities were identified in the vicinity during measurement.

The measured baseline noise levels ($L_{eq, 30min}$) at NM4 between 0700 and 1900 hours and ($L_{eq, 5min}$) between 1900-2300 and public holidays are well within 75dB(A) and 70dB(A), which is daytime and evening construction noise limit under EIAO and NCO, but the measured baseline noise levels ($L_{eq, 5min}$) between 2300 and 0700 hours exceeded 60dB(A), which is the night-time acceptable noise limit (ANL) for urban areas under NCO. Traffic noise from Connaught Road West is the major noise source contributing the results. No construction activities were identified in the vicinity during measurement.

The measured baseline noise levels ($L_{eq, 30min}$) at NM5 between 0700 and 1900 hours and ($L_{eq, 5min}$) between 1900-2300 and public holidays are well within 75dB(A) and 70dB(A), which is daytime and evening construction noise limit under EIAO and NCO, but the measured baseline noise levels ($L_{eq, 5min}$) between 2300 and 0700 hours slightly exceeds 60dB(A), which is the night-time acceptable noise limit (ANL) for urban areas under NCO. Operations at the Government Dockyard and traffic within the SCI STW were the major noise source. No construction activities were identified in the vicinity during measurement.

## 3.5 *ACTION AND LIMIT LEVEL*

During impact monitoring, the Action Level will be triggered when one complaint is received, and the daytime construction noise limit on normal weekdays under EIAO, ie 75 dB(A) will be adopted as the Limit Level.

At NM1, 70dB(A) will be adopted as the Limit Level during the normal teaching period. Meanwhile, the average $L_{Aeq, 30min}$ measured at NM1 between 0700 and 1900 hours is 69.0 dB(A), exceeding the Limit Level of daytime construction noise during examination periods (65 dB(A)) and it will

therefore be adopted as the Limit Level during the examination period at NM1.

## 3.6 *EVENT AND ACTION PLAN*

Noise monitoring will be conducted during the construction of the Project to ensure the implementation noise control mitigation measures. Should non-compliance of the noise action and limit levels occur, actions in accordance with the action plan stated in *Table 3.4* shall be carried out.

*Table 3.4 Event Action Plan for Noise Monitoring*

| Action Level/Limit Level | Environmental Team Leader (ETL) | Independent Environmental Checker (IEC) | Engineer's Representative (ER) | Contractor |
|---|---|---|---|---|
| Action Level being exceeded | • Notify ER, IEC and Contractor;<br>• Carry out investigation;<br>• Report the results of investigation to the IEC, ER and Contractor;<br>• Discuss with the IEC and Contractor on remedial measures required; and,<br>• Increase monitoring frequency to check mitigation effectiveness. | • Review the investigation results submitted by the ET;<br>• Review the proposed remedial measures by the Contractor and advise the ER accordingly; and,<br>• Advise the ER on the effectiveness of the proposed remedial measures. | • Confirm receipt of notification of failure in writing;<br>• Notify Contractor;<br>• In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; and,<br>• Supervise the implementation of remedial measures. | • Submit noise mitigation proposals to IEC and ER; and,<br>• Implement noise mitigation proposals. |

| Action Level/Limit Level | Environmental Team Leader (ETL) | Independent Environmental Checker (IEC) | Engineer's Representative (ER) | Contractor |
|---|---|---|---|---|
| Limit Level being exceeded | • Inform IEC, ER, Contractor and EPD;<br>• Repeat measurements to confirm findings;<br>• Increase monitoring frequency;<br>• Identify source and investigate the cause of exceedance;<br>• Carry out analysis of Contractor's working procedures;<br>• Discuss with the IEC, Contractor and ER on remedial measures required;<br>• Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and,<br>• If exceedance stops, cease additional monitoring. | • Discuss amongst ER, ET, and Contractor on the potential remedial actions; and,<br>• Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. | • Confirm receipt of notification of failure in writing;<br>• Notify Contractor;<br>• In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;<br>• Supervise the implementation of remedial measures; and,<br>• If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. | • Take immediate action to avoid further exceedance;<br>• Submit proposals for remedial actions to IEC and ER within 3 working days of notification;<br>• Implement the agreed proposals;<br>• Submit further proposal if problem still not under control; and,<br>• Stop the relevant portion of works as instructed by the ER until the exceedance is abated. |

# 4 BASELINE LANDSCAPE AND VISUAL MONITORING

## 4.1 MONITORING PARAMETERS

Site visits were undertaken on 23 September and 30 October 2009 to review the baseline landscape and visual conditions of each site and its vicinity with regard to parameters assessed in the *Section 13* of the approved EIA Report of HATS2A. This includes landscape resources (LRs), landscape character areas (LCAs) and viewing condition of Visual Sensitive Receiver (VSR) as summarized below:

*Landscape Resource (LR)*

- LR1 – Trees on PTW and temporary works area (TWA) at North Point
- LR2 – Trees on PTW and TWA at Wan Chai East
- LR3 – Trees on Central PTW and Sai Ying Pun TWA
- LR9 – Trees on SCISTW and temporary works areas on Stonecutters Island

*Landscape Character Area (LCA)*

- LCA1 – Miscellaneous Urban Fringe Landscape
- LCA2 –Civic Urban Waterfront Landscape
- LCA3 – Transportation Corridor Landscape
- LCA4 – Residential Urban Landscape
- LCA5 – Industrial Urban Landscape

*Visual Sensitive Receiver (VSR)*

*Table 4.1* lists the key VSRs found within the Zone of Visual Influence (ZVI).

*Table 4.1* *Key Visual Sensitive Receivers (VSRs)*

| Id. No. | Key Visual Sensitive Receivers (VSRs) | Type of VSRs [a] |
|---|---|---|
| *North Point Area* | | |
| C1.1 | K. Wah Centre | Commercial |
| C1.2 | 625 King's Road | Commercial |
| C1.3 | Kodak House | Commercial |
| R1.1 | Temporary Carpark, Planned Residential Area | Residential |
| R1.2 | Healthy Garden | Residential |
| R1.3 | 614-632 King's Road | Residential |
| R1.4 | 483-497 King's Road | Residential |
| R1.5 | Healthy Village Estate | Residential |
| CR1.1 | 62-76 Marble Road | Commercial/ Residential |
| CR1.2 | Island Place Tower | Commercial/ Residential |
| GIC1.1 | Tin Chiu Road Playground | Recreational |
| GIC1.2 | Existing Carpart, Planned Customs HR Tower | Government/ Institution/ Community |
| GIC1.3 | Kai Fong Ass. Madame Chan Wai Chow Memorial School | Government/ Institution/ Community |
| GIC1.4 | ICAC North Point Headquarter | Government/ Institution/ Community |
| GIC1.5 | Regional Office Water Supplies Dept | Government/ Institution/ Community |
| O1.1 | Tin Chiu Road Children Playground | Recreational |
| O1.2 | Sitting Out area near North Point waterfront | Recreational |
| O1.3 | Man Hong Street Playground | Recreational |
| O1.4 | King's Road Playground | Recreational |
| T1.1 | King's Road | Transportational |
| T1.2 | Java Road | Transportational |
| T1.3 | Island East Corridor Slip Road "F" | Transportational |
| *Wan Chai East Area* | | |
| C2.1 | Harbour Centre | Commercial |
| C2.2 | Causeway Centre | Commercial |
| C2.3 | Sun Hung Kai Centre | Commercial |
| CR2.1 | 144-159 Gloucester Road | Commercial |
| CR2.2 | 160-200 Gloucester Road | Commercial |
| CR2.3 | 210-233 Gloucester Road | Commercial |
| CR2.4 | Elizabeth House | Commercial |
| CR2.5 | 256-275 Gloucester Road | Commercial |
| CDA2.1 | Existing Wan Chai Swimming Centre, Planned waterfront open space | Government/ Institution/ Community |
| GIC2.1 | Wan Chai Sport Ground | Government/ Institution/ Community |
| GIC2.2 | SPCA Hong Kong | Government/ Institution/ Community |
| GIC2.3 | Vehicle Emission Testing Centre | Government/ Institution/ Community |
| OU2.1 | Royal Hong Kong Yacht Club | Recreational |
| OU2.2 | Cross Harbour Tunnel Rest Garden | Recreational |
| O2.1 | Wan Chai Waterfront park | Recreational |
| T2.1 | Gloucester Road | Transportational |
| T2.2 | Hung Hing Road | Transportational |

| Id. No. | Key Visual Sensitive Receivers (VSRs) | Type of VSRs [a] |
|---|---|---|
| T3.2 | Victoria Harbour | Transportational |
| *Central and Sai Ying Pun Area* | | |
| C3.1 | Shun Tak Centre | Commercial |
| CR3.1 | 11-47 Connaught Road | Commercial/ Residential |
| CR3.2 | 8-227 Wing Lok Street | Commercial/ Residential |
| CR3.3 | 55-60 Connaught Road | Commercial/ Residential |
| CR3.4 | 62-87 Connaught Road | Commercial/ Residential |
| CR3.5 | 88-103A Connaught Road | Commercial/ Residential |
| CR3.6 | 107-128 Connaught Road | Commercial/ Residential |
| CR3.7 | 129-152 Connaught Road | Commercial/ Residential |
| CR3.8 | Connaught Garden | Commercial/ Residential |
| CR3.9 | 158A-162 Connaught Road West | Commercial/ Residential |
| CR3.10 | 165-167 Connaught Road West | Commercial/ Residential |
| CR3.11 | 168-185B Connaught Road West | Commercial/ Residential |
| GIC3.1 | Sheung Wan Zone Substation | Government/ Institution/ Community |
| GIC3.2 | Waterfront Divisional Police Station | Government/ Institution/ Community |
| GIC3.3 | Sheung Wan Fire Station | Government/ Institution/ Community |
| GIC3.4 | Western Park Indoor Game Hall | Recreational |
| OU3.1 | HK Macau Ferry Terminal | Transportational |
| OU3.2 | Bus Terminal | Transportational |
| OU3.3 | Western Wholesale Market | Commercial |
| O3.1 | Sun Yen Sen Memorial Park | Recreational |
| T3.1 | Connaught Road | Transportational |
| T3.2 | Victoria Harbour | Transportational |
| *Stonecutters Island Area* | | |
| R9.1 | Mei Foo Sun Chuen | Residential |
| R9.2 | Hoi Lai Estate | Residential |
| R9.3 | Fu Cheong Estate | Residential |
| R9.4 | Nam Cheong Estate | Residential |
| CDA9.1 | Manhattan Hill | Residential |
| CDA9.2 | Nam Cheong Station | Residential |
| GIC9.1 | Government Dockyard | Government/ Institution/ Community |
| GIC9.2 | West Kowloon North Sewage Pumping Station | Government/ Institution/ Community |
| OU 9.1 | Ngong Shuen Chau Barracks | Government/ Institution/ Community |
| OU9.2 | Container Terminal 8 | Occupational |
| OU9.3 | Open Storage Car Park | Government/ Institution/ Community |
| OU9.4 | West Kowloon Refuse Transfer Station | Government/ Institution/ Community |
| OU9.5 | Shipyard and Cheung Sha Wan Wholesale Market | Government/ Institution/ Community |
| I 9.1 | Kowloon Motor Bus Depot | Occupational |
| T9.1 | West Kowloon Expressway | Transportational |
| T9.2 | Container Port Road South | Transportational |
| Note: | | |

| Id. No. | Key Visual Sensitive Receivers (VSRs) | Type of VSRs [a] |
|---|---|---|

(a) R = Residential; C = Commercial, C/R = Commercial/Residential, GIC = Government/Institution/Community, O = Open space, OU = Others use; T = Transport related.

## 4.2 *MONITORING PROCEDURES AND LOCATIONS*

In accordance with the EM&A Manual, the baseline review should be conducted by a register landscape architect (RLA) to record changes of each landscape resource, landscape character area and the viewing conditions of visually sensitive receiver. The monitoring procedures and criteria as described in the EM&A Manual were adopted for the baseline landscape and visual assessment.

The present baseline condition of LRs, LCAs, and VSRs within the zone of visual influence, were checked against *Section 13* of the approved EIA Report of HATS2A through on site verification and Tree Survey Report for this Project.

## 4.3 *RESULTS AND OBSERVATIONS*

### 4.3.1 *Landscape Resources (LRs)*

Based on the site visit findings, the review of the Tree Survey Report for this Project and updated construction worksite boundary, the number of trees at each worksites in NP, WCE, CEN, SYP and SCI is updated. The health, form and amenity value of trees, inclusive those marked for future transplant and retained, were similar to that described in the EIA except two dead trees were observed in LR1. No significant change in landscape resources at LR1, LR2, LR3 and LR9 was found.

The updated information is summarized in *Table 4.2* and the change status of the LR is presented in *Table 4.3*.

*Table 4.2* ***Updated Information on Landscape Resources***

| LR | Name of LR | No. of Trees identified in EIA Report | No. of Trees estimated to be affected in the EIA Report | Updated no. of Trees Identified within Project Worksites During Baseline Monitoring [a] |
|---|---|---|---|---|
| LR1 | Trees on TWA and PTW at North Point | 109 (with 5 dead trees) | 55 | 47 (with 7 dead trees) [a][b] |
| LR2 | Trees on PTW and TWA at Wan Chai East | 92 | 39 | 56 [b] |
| LR3 | Trees on Central PTW and Sai Ying Pun TWA | 17 | 3 | 5 [b] |

| LR | Name of LR | No. of Trees identified in EIA Report | No. of Trees estimated to be affected in the EIA Report | Updated no. of Trees Identified within Project Worksites During Baseline Monitoring [a] |
|---|---|---|---|---|
| LR9 | Trees on SCISTW and TWA on Stonecutters Island | 247 | 179 | 21 [b] |

Notes:

(a) Site boundaries of work sites in the Project have updated from the boundaries stated in the EIA based on current site conditions.

(b) The estimated number of trees in the EIA covers all trees in the Project areas of HATS Stage2A. While this Project only covers works to be carried out at the worksite presented in *Figure 5* of *Annex A*, the total number of trees identified within Project worksites during baseline monitoring is therefore smaller than the number estimated in the EIA Report.

*Table 4.3* *Landscape Resources with Changed Status*

| LR | Name of LR | Tree No. | Previous Status | Current Status |
|---|---|---|---|---|
| LR1 | Trees on TWA and PTW at North Point | T038 | Retained | Dead |
| | | T039 | Retained | Dead |

### 4.3.2 *Landscape Character Areas (LCAs)*

Based on the site visit findings, no substantial change in the baseline condition of LCA was found. *Fig 4.1 to 4.4* in *Annex G* shows the existing LCAs locations and *Fig 4.5* in *Annex G* shows the typical LCA onsite. A summary of the baseline condition of LCAs recorded in the recent review and EIA is given in *Table 4.4*.

*Table 4.4* *Baseline condition of LCAs*

| LCA | Condition Reported in EIA Report | Recent Review during Baseline Monitoring |
|---|---|---|
| LCA1 | Miscellaneous Urban Fringe Landscape | Same as the EIA report |
| LCA2 | Civic Urban Waterfront Landscape | Same as the EIA report |
| LCA3 | Transportation Corridor Landscape | Same as the EIA report |
| LCA4 | Residential Urban Landscape | Same as the EIA report |
| LCA5 | Industrial Urban Landscape | Same as the EIA report |

### 4.3.3 *Visual Sensitive Receiver (VSR)*

Based on the site visit findings, no substantial change was observed except a new VSR identified in North Point (R1.6, Island Lodge) and three identified VSRs to be updated. A summary of updated information for a newly identified R1.6 and three updated VSRs is given in *Table 4.5*. Since the view from R1.6 is similar to those adjacent VSRs, the landscape and visual mitigation measures as proposed in EIA should be sufficient to mitigate the visual impact and no additional mitigation measures are therefore required.

*Fig 4.6-4.9* of *Annex G* shows the existing location of VSRs. A comparison of viewing condition of VSR in the approved EIA Report and baseline site visit at

all VSRs relevant to this Project, as listed in *Table 4.1*, are shown in *Figures 4.10 to 4.18* in *Annex G*.

*Table 4.5* *Update Information of VSRs*

| Area | Id. No. | Visual Sensitive Receivers | Type of Visual Sensitive Receivers | Change observed |
|---|---|---|---|---|
| North Point | R1.6 | Island Lodge | Residential | New VSR identified |
| North Point | GIC1.2 | Customs HR Tower (Under Construction) | Government/ Institution/ Community | Existing Car park has been demolished and Customs HR Tower is currently under construction |
| North Point | CR1.1 | 62-76 Marble Road | Commercial/ Residential | Location of CR1.1 on plan in the approved EIA Report is incorrect. Refer to Figure 4.6 of Annex G for the correct location of CR1.1 |
| North Point | GIC1.3 | Chan's Creative School | Government/ Institution/ Community | VSR name updated |

## 4.4 *EVENT AND ACTION PLAN*

No significant change in baseline condition from the approved EIA Report was recorded for LRs, LCAs and views from VSRs. Hence, no revision of landscape and visual mitigation measures is required for construction phase proposed in *Section 10.7* of the approved EIA Report and Section 11.10 and Implementation Schedule (IS) of EM&A Manual.

Nevertheless, landscape and visual monitoring audit will be conducted during the construction of the Project to ensure that the implementation and maintenance of landscape and visual mitigation measures. Site inspections will be undertaken at least once every month throughout the construction period.

Should non-compliance of the landscape and visual impacts occur, actions in accordance with the action plan stated in *Table 4.6* shall be carried out.

*Table 4.6 Event and Action Plan for Landscape and Visual Impact - Construction Phase*

| Action Level | Environmental Team Leader (ETL) | Independent Environmental Checker (IEC) | Engineer's Representative (ER) | Contractor |
|---|---|---|---|---|
| Non-conformity on one occasion | Identify source<br>Inform the IEC and the ER<br>Discuss remedial actions with the IEC, the ER and the Contractor<br>Monitor remedial action until rectification has been completed | Check report<br>Check the Contractor's working method<br>Discuss with the ER and the Contractor on possible remedial measures<br>Advise the ER on effectiveness of proposed remedial measures | Notify the Contractor<br>Ensure remedial measures are properly implemented | Amend working methods<br>Rectify damage and undertake remedial measures or any necessary replacement |
| Repeated Non-conformity | Identify source<br>Inform the IEC and the ER<br>Increase monitoring (site audit) frequency<br>Discuss remedial actions with the IEC, the ER and the Contractor<br>Monitor remedial actions until rectification has been completed<br>If exceedance stops, cease additional monitoring (site audit) | Check report<br>Check the Contractor's working method<br>Discuss with the ER and the Contractor on possible remedial measures<br>Advise the ER on effectiveness of proposed remedial measures<br>Supervise implementation of remedial measures | Notify the Contractor<br>Ensure remedial measures are properly implemented | Amend working methods<br>Rectify damage and undertake remedial measures or any necessary replacement |

# 5 CONCLUSION

## 5.1 BASELINE AIR QUALITY

Baseline 24-hour and 1-hour TSP levels were measured in 14 consecutive days at the designated monitoring stations (AM1-AM6) established for the Project between 25 September and 24 October 2009. The weather condition during the baseline monitoring period varied from sunny, cloudy to rainy. There was no major construction activity identified in the vicinity of the monitoring stations influencing the measured TSP levels. The measured TSP levels are therefore representative of the baseline condition for the Project.

The measured 24-hour and 1-hour TSP levels were used to establish the Action Levels for impact monitoring throughout the construction of the Project.

## 5.2 BASELINE NOISE

Baseline noise levels ($L_{eq}$, $L_{10}$ and $L_{90}$) were conducted at the designated monitoring stations (NM1-NM5) for 14 consecutive days between 18 September and 18 October 2009. The weather condition during the baseline monitoring period varied from sunny, cloudy to rainy. There was no major construction activity from the Project identified influencing the measured noise levels at NM1 to NM5. Monitoring results indicate that the collected noise data is representative of the baseline condition at the impact monitoring stations.

During impact monitoring, the Action Level will be triggered when one complaint is received, and the daytime construction noise limit under EIAO, ie 75 dB(A) will be adopted as the Limit Level. In particular at NM1, 70dB(A) and 69.0 dB(A) will be respectively adopted as the Limit Level during the normal teaching period and examination period.

## 5.3 LANDSCAPE AND VISUAL

Site visits for the environmental baseline monitoring were made between 23 September and 30 October 2009. No significant changes between existing and the baseline condition of LRs, LCAs and views towards VSRs as stipulated in the EIA were identified except a new VSR, ie, a residential building – Island Lodge. Since the view from the new VSR is similar to those adjacent identified VSRs, the landscape and visual mitigation measures as proposed in EIA should be sufficient to mitigate the visual impact. No changes to the landscape and visual mitigation measures as proposed in EIA are therefore, required. Compliance to the EIA is mandatory and close monitory throughout the construction period shall be undertaken as per the Event and Action Plan in the EM&A Manual of the Project.

Annex A

# Locations of Air Quality and Noise Monitoring Stations

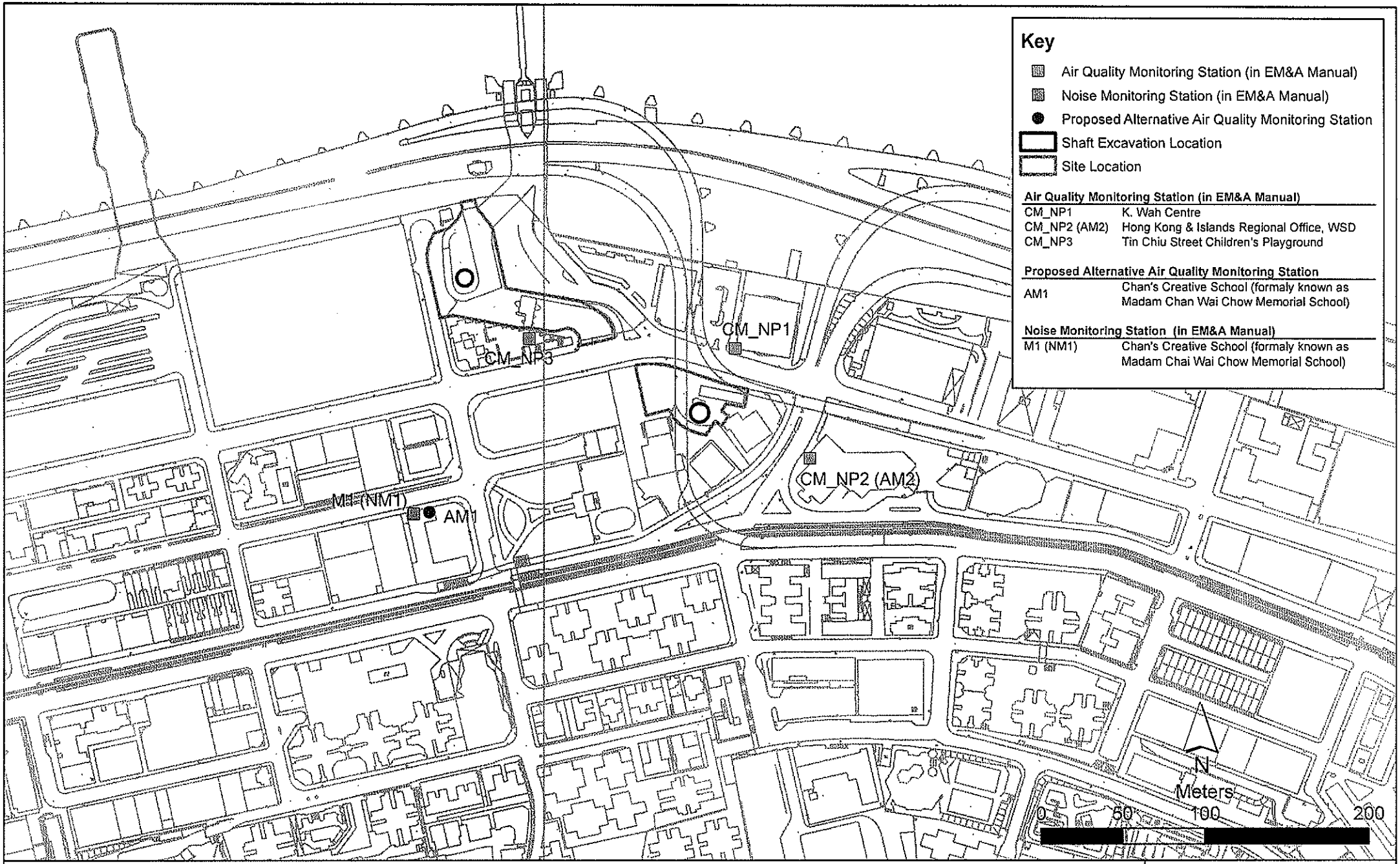



Figure 1

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
*Baseline Air Quality & Noise Monitoring Stations (North Point)*

File: EM&A and proposed station\0104867_North Point.mxd
Date: 16/10/2009

Environmental Resources Management

ERM

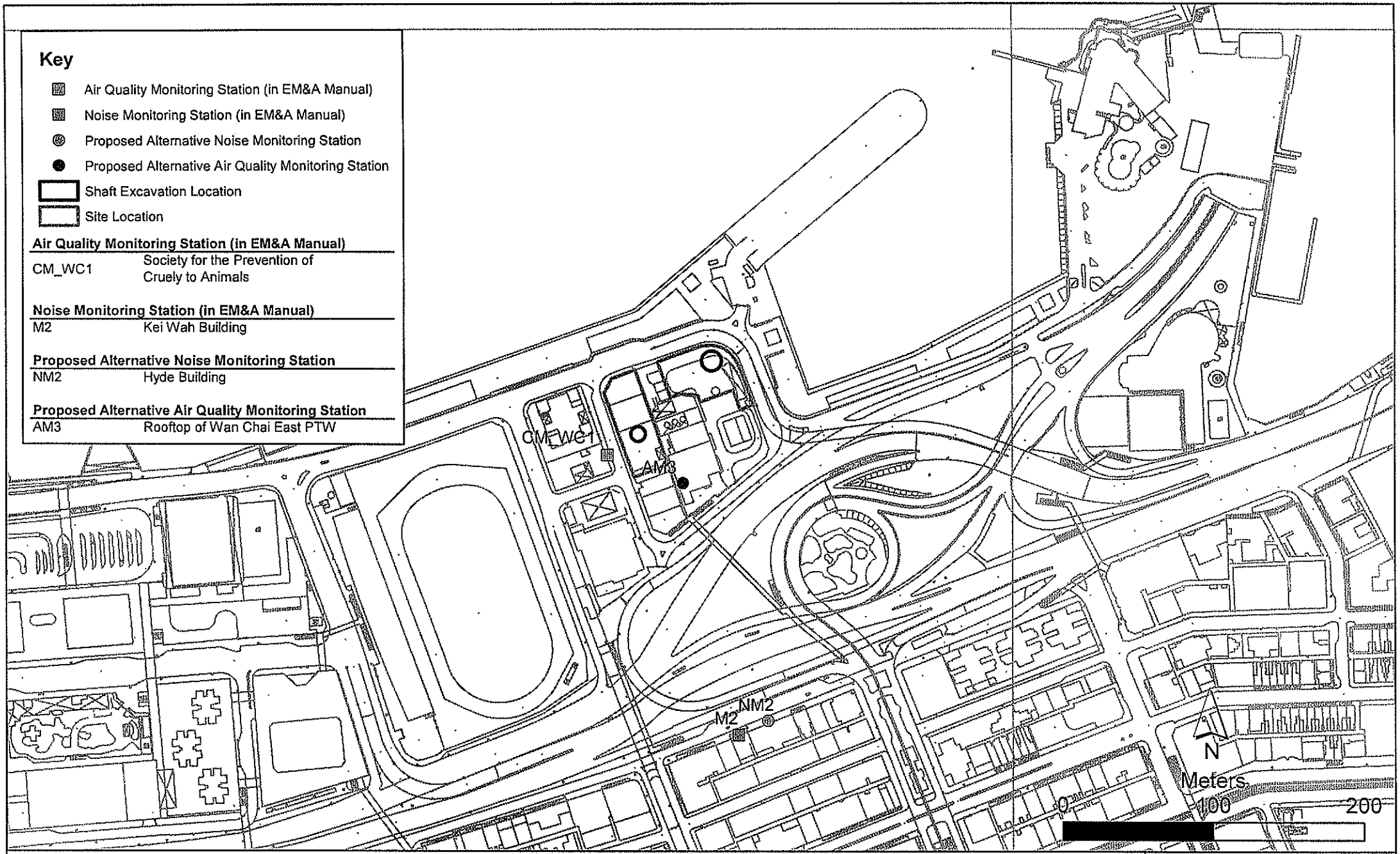



Figure 2

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
*Baseline Air Quality & Noise Monitoring Stations (Wan Chai East)*

File: EM&A and proposed station\0104887_Wan Chai.mxd
Date: 16/10/2009

Environmental Resources Management

ERM

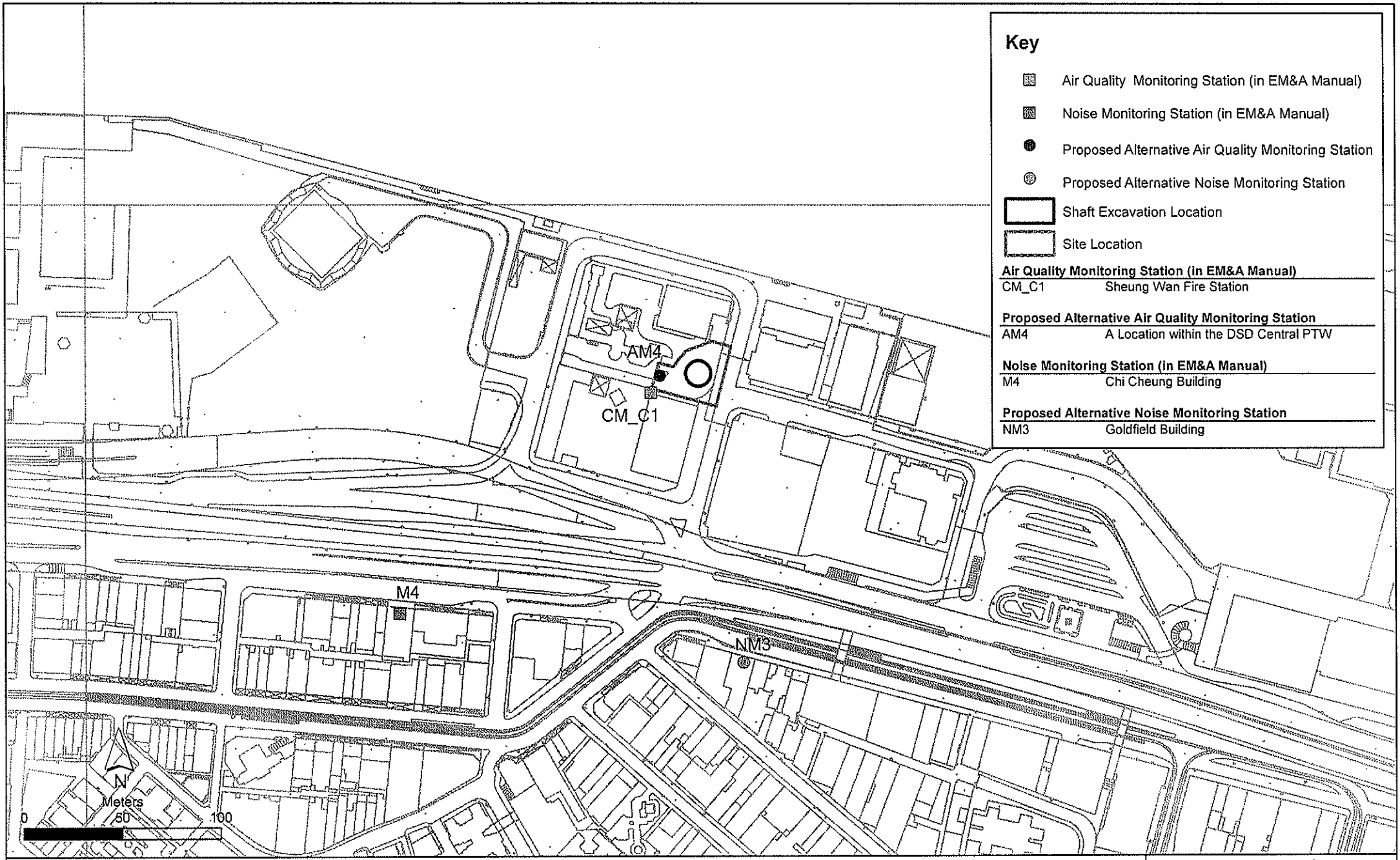



Figure 3

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
*Baseline Air Quality & Noise Monitoring Station (Central)*

File: EM&A and proposed station\0104887_Central.mxd
Date: 16/10/2009

Environmental Resources Management
ERM

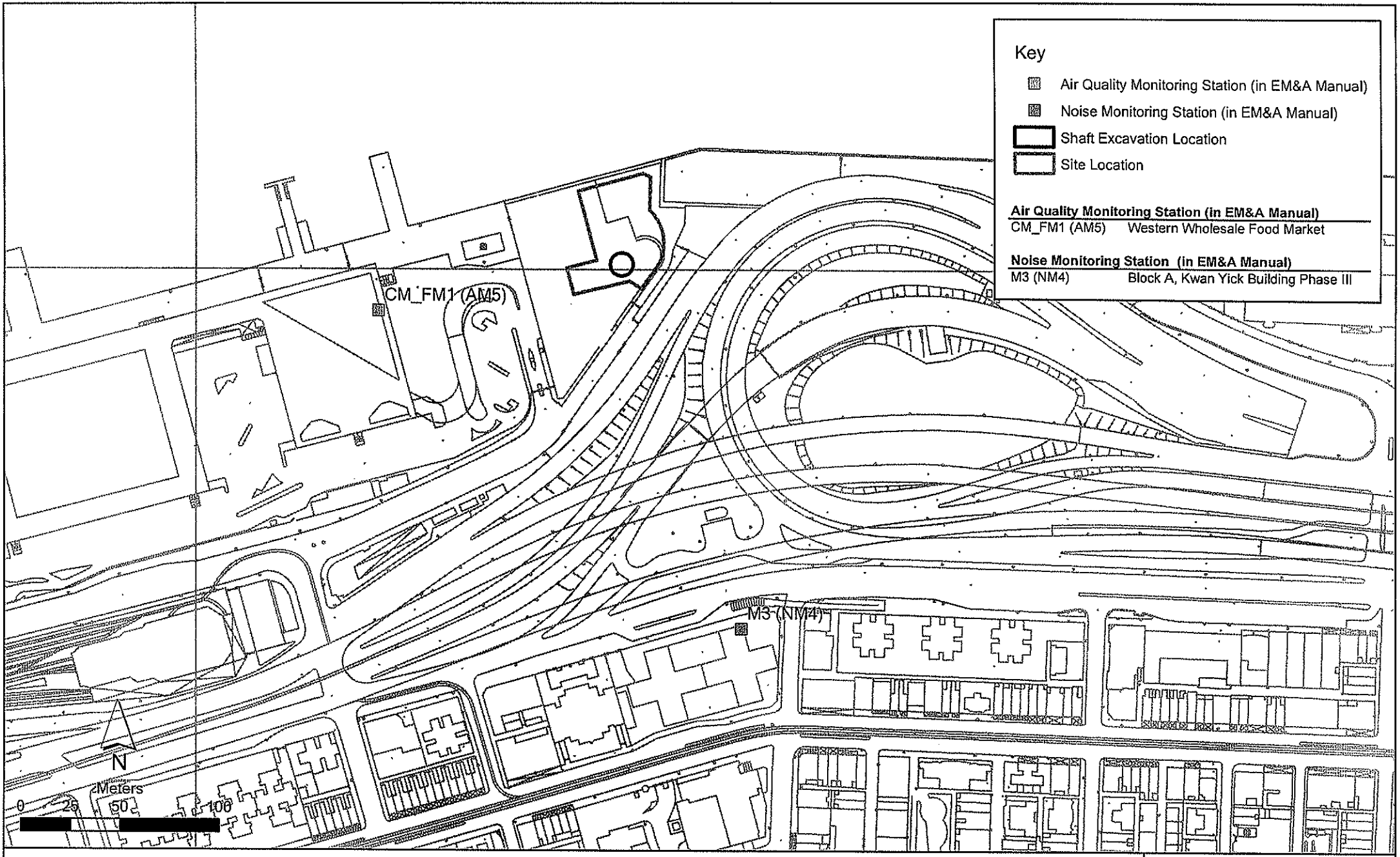



Figure 4

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
*Baseline Air Quality & Noise Monitoring Station (Fung Mat Road)*

File: EM&A and proposed station\0104887_Sai Ying Pun.mxd
Date: 16/10/2009

Environmental Resources Management

ERM

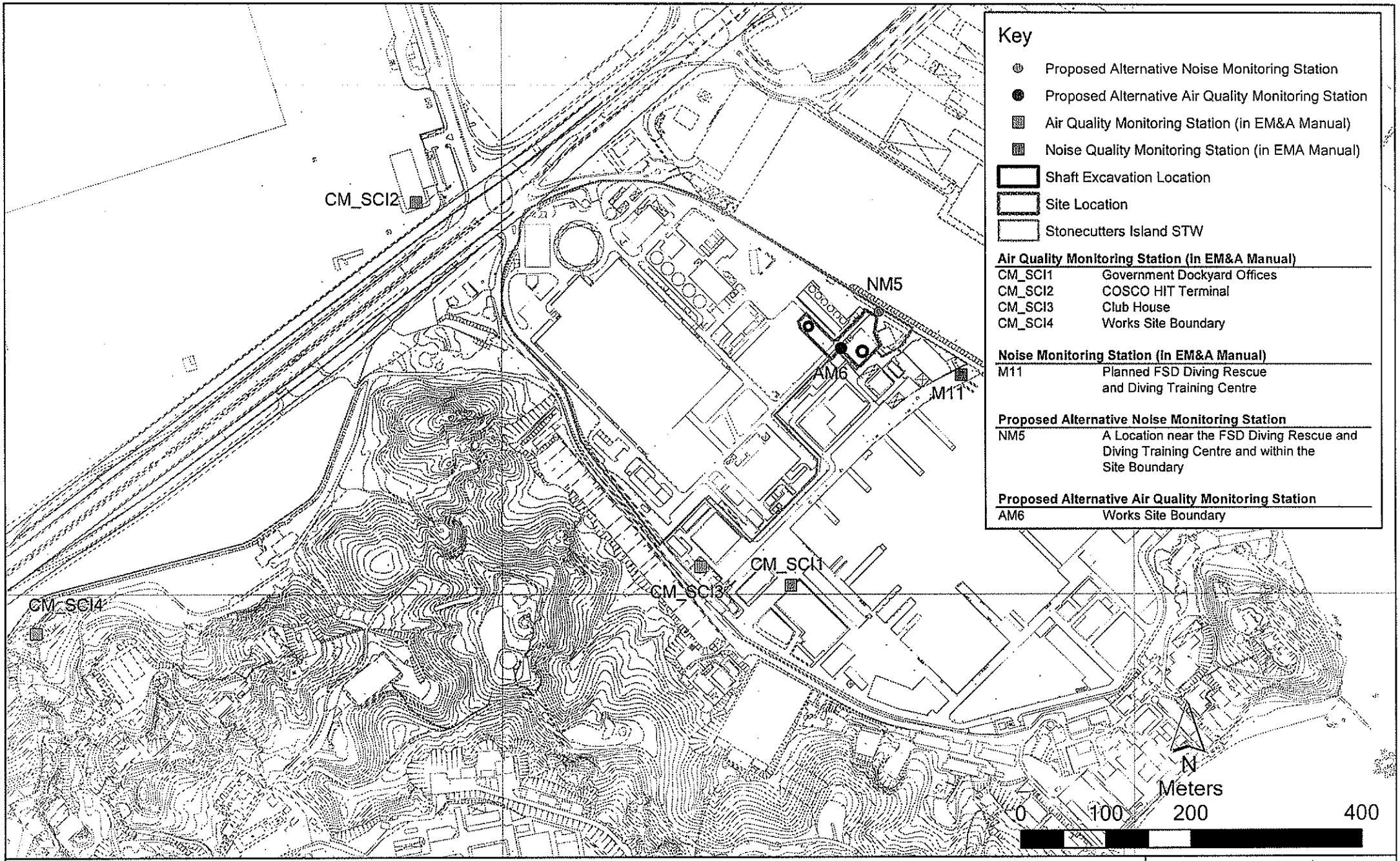



Figure 5

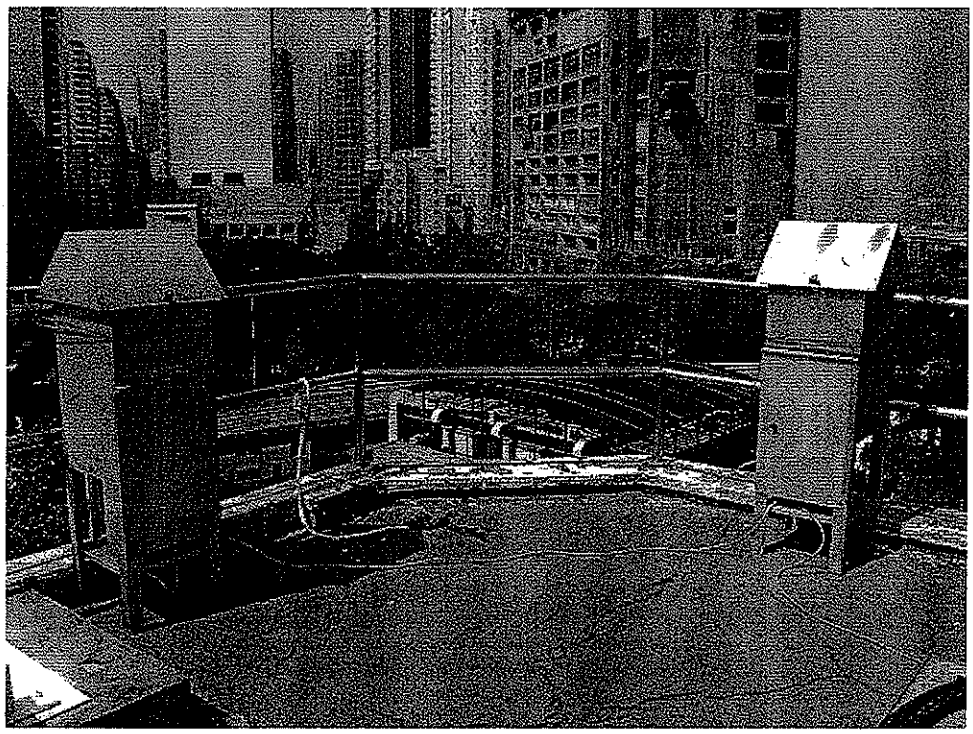
Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
*Baseline Air Quality Monitoring Station (Stonecutters Island STW)*

File: EM&A and proposed station\0104887_Stonecutters Island.mxd
Date: 16/10/2009

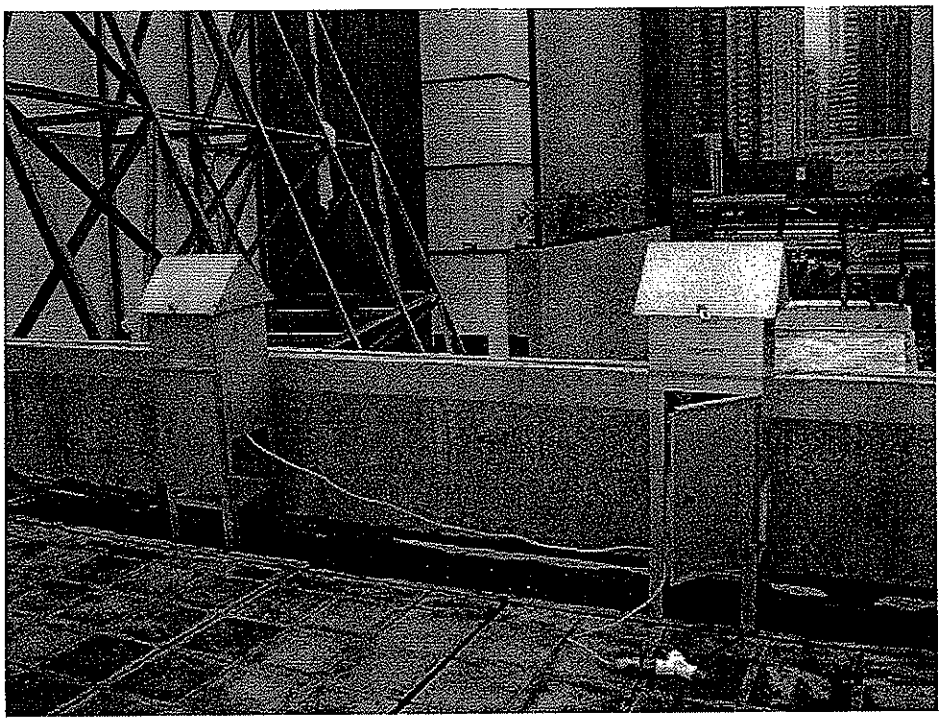
Environmental Resources Management

ERM

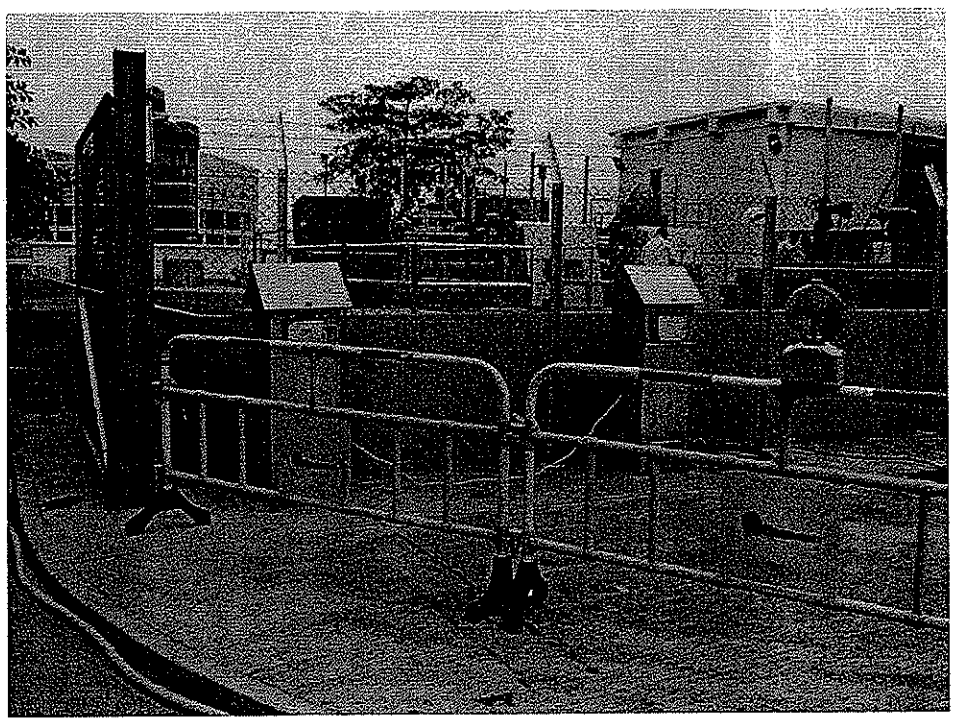
AM1 – Chan's Creative School



AM2 - Rooftop of Hong Kong & Islands Regional Office, WSD

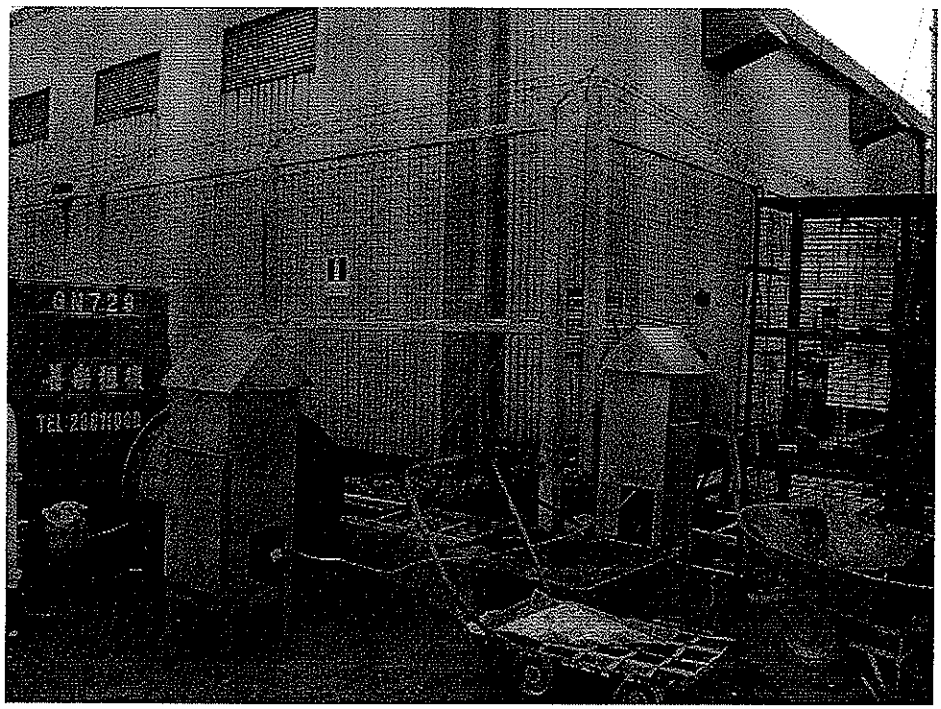


AM3 – Rooftop on DSD Wan Chai East PTW

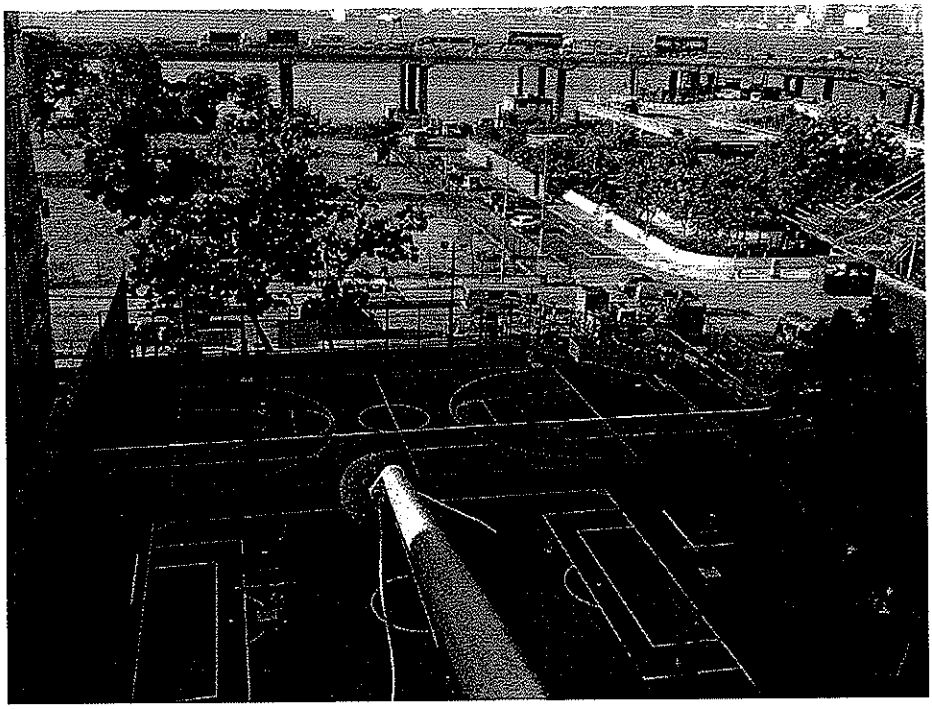


AM4 – Location within DSD Central PTW

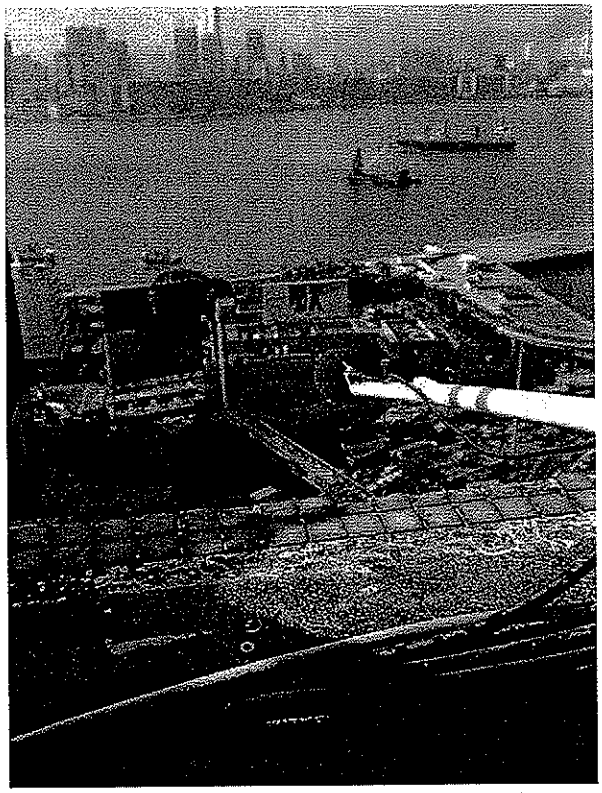
AM5 – AFCD Western Wholesale Food Market



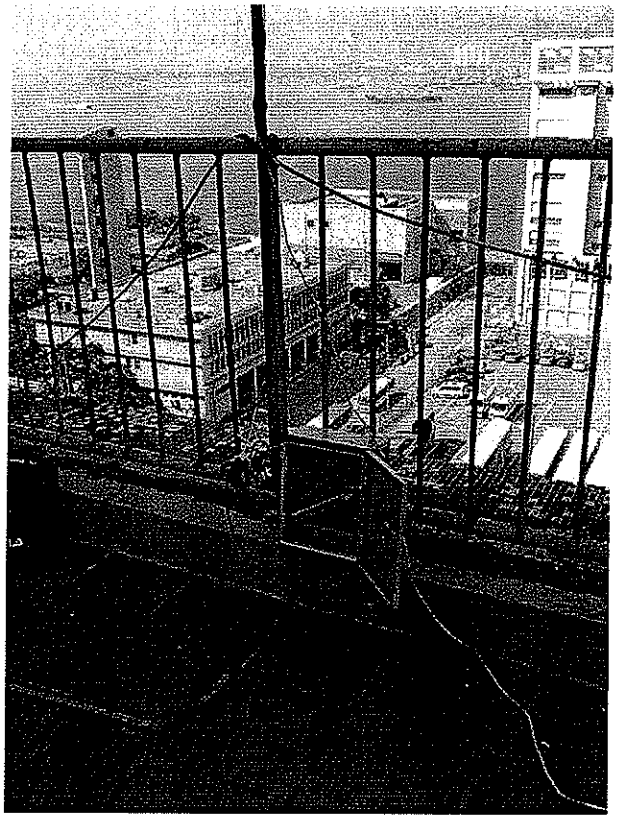
AM6 – Site Boundary at Stonecutters Island Work Site



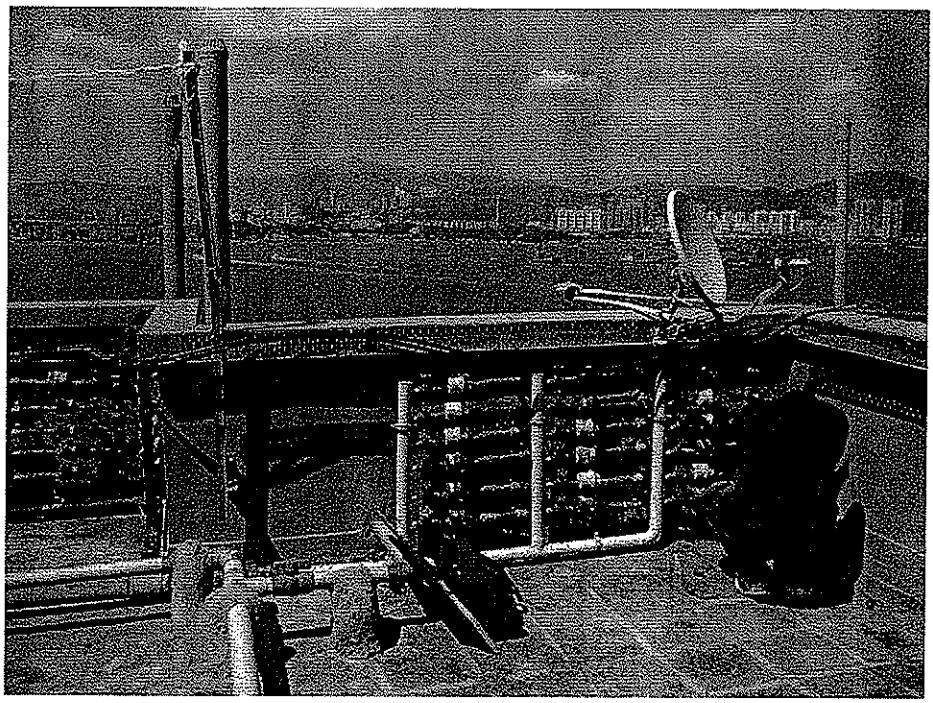
NM1 – Chan's Creative School



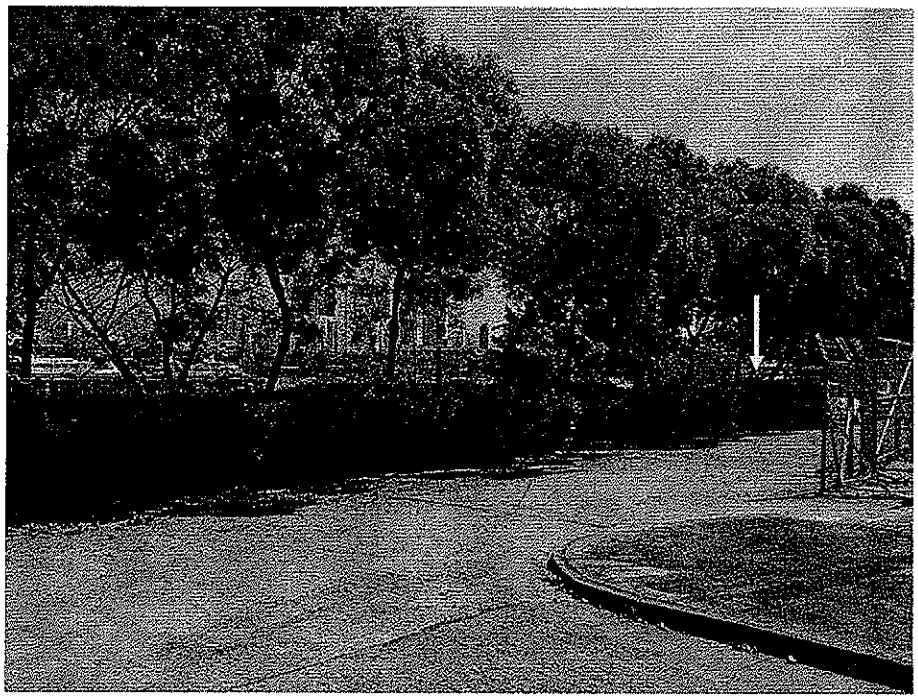
NM2 – Hyde Building



NM3 – Goldfield Building



NM4 – Kwan Yick Building Phase III



NM5 – A Location near the FSD Diving Rescue and Diving Training Centre near the Site Boundary

Annex B

# Baseline Monitoring Programme (Air Quality and Noise)

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Air Quality Monitoring Schedule**
**September - October 2009 (Chan's Creative School - AM1)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct |
| | | Air Monitoring | Air Monitoring | HKSAR Day | Air Monitoring | Mid-autumn festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | |
| 18-Oct | 19-Oct | 20-Oct | 21-Oct | 22-Oct | 23-Oct | 24-Oct |
| | | | | | | |
| 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Air Quality Monitoring Schedule**
**September - October 2009 (WSD Hong Kong and Islands Office - AM2)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct |
| | | Air Monitoring | Air Monitoring | Air Monitoring<br>HKSAR Day | Air Monitoring | Air Monitoring<br>Mid-autumn festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| Air Monitoring | Air Monitoring | | | | | |
| 18-Oct | 19-Oct | 20-Oct | 21-Oct | 22-Oct | 23-Oct | 24-Oct |
| | | | | | | |
| 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Air Quality Monitoring Schedule**
**September - October 2009 (Wanchai East DSD PTW - AM3)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct |
| | | Air Monitoring | Air Monitoring | Air Monitoring<br>HKSAR Day | Air Monitoring | Air Monitoring<br>Mid-autumn festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| Air Monitoring | Air Monitoring | | | | | |
| 18-Oct | 19-Oct | 20-Oct | 21-Oct | 22-Oct | 23-Oct | 24-Oct |
| | | | | | | |
| 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Air Quality Monitoring Schedule**
**October 2009 (Sheung Wan Drop Shaft Site Boundary - AM4)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | 1-Oct | 2-Oct | 3-Oct |
| | | | | HKSAR Day | | Mid-autumn festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| | | | | | Air Monitoring | Air Monitoring |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring |
| 18-Oct | 19-Oct | 20-Oct | 21-Oct | 22-Oct | 23-Oct | 24-Oct |
| Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | | |
| 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Air Quality Monitoring Schedule**
**September-October 2009 (AFCD Wholesale Food Market - AM5)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | | 25-Sep | 26-Sep |
| | | | | | Air Monitoring | Air Monitoring |
| 27-Sep | 28-Sep | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct |
| Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring<br>HKSAR Day | Air Monitoring | Air Monitoring<br>Mid-autumn festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | | |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| | | | | | | |
| 18-Oct | 19-Oct | 20-Oct | 21-Oct | 22-Oct | 23-Oct | 24-Oct |
| | | | | | | |
| 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Air Quality Monitoring Schedule**
**October 2009 (Stonecutters Island Production Shaft: Site Boundary - AM6)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | 1-Oct | 2-Oct | 3-Oct |
| | | | | HKSAR Day | | Mid-autumn festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| | | | | | Air Monitoring | Air Monitoring |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring |
| 18-Oct | 19-Oct | 20-Oct | 21-Oct | 22-Oct | 23-Oct | 24-Oct |
| Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | Air Monitoring | |
| 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Noise Monitoring Schedule**
**September - October 2009 (Chan's Creative School - NM1)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | | 18-Sep | 19-Sep |
| | | | | | Noise Monitoring | Noise Monitoring |
| 20-Sep | 21-Sep | 22-Sep | 23-Sep | 24-Sep | 25-Sep | 26-Sep |
| Nosie Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring |
| 27-Sep | 28-Sep | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct |
| Nosie Monitoring | ← **Noise monitoring was ceased due to rainy weather** → | | | HKSAR Day | Noise Monitoring | Noise Monitoring<br>Mid-Autumn Festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| Noise Monitoring | Noise Monitoring | | | | | |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Noise Monitoring Schedule**
**September - October 2009 (Hyde Building - NM2)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | | 18-Sep | 19-Sep |
| | | | | | Noise Monitoring | Noise Monitoring |
| 20-Sep | 21-Sep | 22-Sep | 23-Sep | 24-Sep | 25-Sep | 26-Sep |
| Nosie Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring |
| 27-Sep | 28-Sep | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct |
| Nosie Monitoring | ← **Noise monitoring was ceased due to rainy weather** → | | | HKSAR Day | Noise Monitoring | Noise Monitoring<br>Mid-Autumn Festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| Noise Monitoring | Noise Monitoring | | | | | |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Noise Monitoring Schedule**
**September - October 2009 (Goldfield Building - NM3)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | | 18-Sep | 19-Sep |
| | | | | | Noise Monitoring | Noise Monitoring |
| 20-Sep | 21-Sep | 22-Sep | 23-Sep | 24-Sep | 25-Sep | 26-Sep |
| Nosie Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring |
| 27-Sep | 28-Sep | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct |
| Nosie Monitoring | ← **Noise monitoring was ceased due to rainy weather** | | | → HKSAR Day | Noise Monitoring | Noise Monitoring<br>Mid-Autumn Festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| Noise Monitoring | Noise Monitoring | | | | | |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| | | | | | | |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Noise Monitoring Schedule**
**September - October 2009 (Kwan Yick Building Phase III - NM4)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | | 18-Sep | 19-Sep |
| 20-Sep | 21-Sep | 22-Sep | 23-Sep | 24-Sep | 25-Sep | 26-Sep |
| | | | | | Noise Monitoring | Noise Monitoring |
| 27-Sep | 28-Sep | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct |
| Nosie Monitoring | ← Noise monitoring was ceased due to rainy weather → | | | HKSAR Day | | Mid-Autumn Festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| Noise monitoring was ceased due to noise equipment malfunction → | | | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| Nosie Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring |

**Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A -**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island: Baseline Noise Monitoring Schedule**
**October 2009 (A Location near the FSD Diving Rescue and Diving Training Centre near the Site Boundary - NM5)**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | 1-Oct | 2-Oct | 3-Oct |
| | | | | HKSAR Day | Noise Monitoring | Noise Monitoring<br>Mid-Autumn Festival |
| 4-Oct | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct |
| Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring |
| 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct |
| Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | Noise Monitoring | | |
| 18-Oct | 19-Oct | 20-Oct | 21-Oct | 22-Oct | 23-Oct | 24-Oct |
| | | | | | | |
| 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct |
| | | | | | | |

Annex C

# Calibration Certificates for High Volume Samplers

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM1 (1hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 28/09/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 0816 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1010 |
| Ta(K) | : | 301 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC (indicated flow) | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 12.0 | 3.5263 | 1.7154 | 50 | 50.9 |
| 2 | 13 holes | 9.0 | 3.0539 | 1.4872 | 42 | 42.8 |
| 3 | 10 holes | 6.9 | 2.6739 | 1.3036 | 34 | 34.6 |
| 4 | 7 holes | 7.0 | 2.0862 | 1.0197 | 24 | 24.4 |
| 5 | 5 holes | 5.0 | 1.5770 | 0.7737 | 15 | 15.3 |

Sampler Calibration Relationship

Slope(m):38.039 Intercept(b): -14.333 Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan Date: 29/09/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AMI (24hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 28/09/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 1808 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1011 |
| Ta(K) | : | 302 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 12.2 | 3.5173 | 1.7777 | 57 | 57.4 |
| 2 | 13 holes | 9.5 | 3.1038 | 1.5712 | 48 | 48.3 |
| 3 | 10 holes | 7.0 | 2.6643 | 1.3516 | 40 | 40.3 |
| 4 | 7 holes | 4.3 | 2.0882 | 1.0638 | 28 | 28.2 |
| 5 | 5 holes | 2.3 | 1.5272 | 0.7836 | 18 | 18.1 |

Sampler Calibration Relationship

Slope(m):39.502 Intercept(b): -13.264 Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan Date: 29/09/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM2 (1hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 28/09/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 0106 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1011 |
| Ta(K) | : | 302 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 8.6 | 2.9560 | 1.4973 | 53 | 53.4 |
| 2 | 13 holes | 6.8 | 2.6285 | 1.3338 | 45 | 45.4 |
| 3 | 10 holes | 5.8 | 2.4276 | 1.2334 | 40 | 40.3 |
| 4 | 7 holes | 4.3 | 2.0902 | 1.0649 | 32 | 32.3 |
| 5 | 5 holes | 2.2 | 1.4951 | 0.7676 | 18 | 18.1 |

Sampler Calibration Relationship

Slope(m):48.303 Intercept(b): -19.067 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 29/09/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM2 (24hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 28/09/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 0145 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1011 |
| Ta(K) | : | 302 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 10.9 | 3.2868 | 1.6626 | 52 | 51.8 |
| 2 | 13 holes | 8.8 | 2.9533 | 1.4960 | 46 | 45.8 |
| 3 | 10 holes | 6.6 | 2.5576 | 1.2983 | 39 | 38.8 |
| 4 | 7 holes | 4.4 | 2.0883 | 1.0639 | 29 | 28.9 |
| 5 | 5 holes | 2.6 | 1.6053 | 0.8226 | 20 | 19.9 |

Sampler Calibration Relationship

Slope(m):38.247 Intercept(b): -11.488 Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan Date: 29/09/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM3 (1 hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 28/09/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 1806 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1010 |
| Ta(K) | : | 301 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 11.8 | 3.4592 | 1.7487 | 60 | 60.4 |
| 2 | 13 holes | 9.2 | 3.0544 | 1.5465 | 52 | 52.3 |
| 3 | 10 holes | 7.1 | 2.6832 | 1.3611 | 45 | 45.3 |
| 4 | 7 holes | 4.6 | 2.1598 | 1.0996 | 34 | 34.2 |
| 5 | 5 holes | 2.9 | 1.7149 | 0.8773 | 24 | 24.2 |

Sampler Calibration Relationship

Slope(m):41.453 Intercept(b): -11.692 Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan Date: 29/09/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM3 (24hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 28/09/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 0481 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1010 |
| Ta(K) | : | 301 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 12.4 | 3.5460 | 1.7921 | 53 | 53.4 |
| 2 | 13 holes | 9.8 | 3.1524 | 1.5954 | 45 | 45.3 |
| 3 | 10 holes | 7.6 | 2.7761 | 1.4075 | 38 | 38.3 |
| 4 | 7 holes | 4.8 | 2.2062 | 1.1228 | 27 | 27.2 |
| 5 | 5 holes | 2..9 | 1.7149 | 0.7676 | 18 | 18.1 |

Sampler Calibration Relationship

Slope(m):38.467 Intercept(b): -15.825 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 29/09/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM4 (1 hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 09/10/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 0764 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1011 |
| Ta(K) | : | 303 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 10.8 | 3.2717 | 1.6550 | 52 | 51.8 |
| 2 | 13 holes | 8.9 | 2.9700 | 1.5043 | 45 | 44.8 |
| 3 | 10 holes | 6.7 | 2.5769 | 1.3080 | 38 | 37.8 |
| 4 | 7 holes | 4.3 | 2.0644 | 1.0520 | 28 | 27.9 |
| 5 | 5 holes | 2.7 | 1.6358 | 0.8379 | 20 | 19.9 |

Sampler Calibration Relationship

Slope(m):38.563 Intercept(b): -12.593 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan Date: 10/10/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM4 (24hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 09/10/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 9315 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1011 |
| Ta(K) | : | 303 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 10.7 | 3.2973 | 1.6048 | 52 | 53.4 |
| 2 | 13 holes | 6.8 | 2.6285 | 1.2817 | 45 | 45.4 |
| 3 | 10 holes | 6.1 | 2.4896 | 1.2145 | 40 | 40.3 |
| 4 | 7 holes | 3.6 | 1.9125 | 0.9358 | 32 | 32.3 |
| 5 | 5 holes | 2.0 | 1.4255 | 0.7005 | 18 | 18.1 |

Sampler Calibration Relationship

Slope(m):37.967 Intercept(b): -8.285 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan Date: 10/10/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM5 (1hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 25/09/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 1658 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1012 |
| Ta(K) | : | 303 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 11.4 | 3.3468 | 1.6925 | 61 | 60.5 |
| 2 | 13 holes | 9.6 | 3.0712 | 1.5549 | 56 | 55.5 |
| 3 | 10 holes | 8.2 | 2.8384 | 1.4386 | 51 | 50.6 |
| 4 | 7 holes | 6.0 | 2.4280 | 1.2336 | 43 | 42.6 |
| 5 | 5 holes | 3.0 | 1.7169 | 0.8783 | 29 | 28.7 |

Sampler Calibration Relationship

Slope(m):39.140 Intercept(b): -5.635 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 26/09/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM5 (24 hr) |
| Calibrated by | : | K.T.Ho |
| Date | : | 25/09/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 8162 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1012 |
| Ta(K) | : | 303 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 10.9 | 3.2868 | 1.6626 | 51 | 50.8 |
| 2 | 13 holes | 8.9 | 2.9700 | 1.5043 | 44 | 43.8 |
| 3 | 10 holes | 6.7 | 2.5769 | 1.3080 | 38 | 37.8 |
| 4 | 7 holes | 4.3 | 2.0644 | 1.0520 | 28 | 27.9 |
| 5 | 5 holes | 2.7 | 1.6359 | 0.8379 | 21 | 20.9 |

Sampler Calibration Relationship

Slope(m):35.953 Intercept(b): -9.528 Correlation Coefficient(r): 0.9990

Checked by: Magnum Fan Date: 26/09/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM6 (1hr) |
| Calibrated by | : | P.F.Yeung |
| Date | : | 09/10/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 7580 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1011 |
| Ta(K) | : | 303 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 12.0 | 3.4201 | 1.7292 | 50 | 49.4 |
| 2 | 13 holes | 9.0 | 2.9619 | 1.5003 | 42 | 41.5 |
| 3 | 10 holes | 6.9 | 2.5934 | 1.3162 | 35 | 34.6 |
| 4 | 7 holes | 4.2 | 2.0234 | 1.0315 | 24 | 23.7 |
| 5 | 5 holes | 2.4 | 1.5295 | 0.7848 | 15 | 14.8 |

Sampler Calibration Relationship

Slope(m):36.869 Intercept(b): -14.132 Correlation Coefficient(r): 0.9998

Checked by: Magnum Fan Date: 10/10/09

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | AM6 (24hr) |
| Calibrated by | : | P.F.Yeung |
| Date | : | 09/10/09 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 1254 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | 9833620 |
| Service Date | : | 18 May 2009 |
| Slope (m) | : | 1.97702 |
| Intercept (b) | : | -0.00070 |
| Correlation Coefficient(r) | : | 0.99992 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1011 |
| Ta(K) | : | 303 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 11.8 | 3.4016 | 1.7199 | 60 | 59.4 |
| 2 | 13 holes | 9.2 | 3.0036 | 1.5211 | 52 | 51.5 |
| 3 | 10 holes | 7.1 | 2.6386 | 1.3388 | 44 | 43.6 |
| 4 | 7 holes | 4.6 | 2.1238 | 1.0816 | 33 | 32.7 |
| 5 | 5 holes | 2.9 | 1.6863 | 0.8631 | 24 | 23.8 |

Sampler Calibration Relationship

Slope(m):41.856 Intercept(b): -12.434 Correlation Coefficient(r): 0.9998

Checked by: Magnum Fan Date: 10/10/09

Annex D

# Baseline 24-hr and 1-hr TSP Monitoring Results

## Baseline 24-hr TSP Monitoring Results

**Station :** AM1 **(Chan's Creative School)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 29/09/2009 | 9684 | 2.7933 | 2.9095 | 1.35 | 1.35 | 9394.01 | 9418.01 | 24.0 | 60 | Rainy | 26.0 | 1002 | 0.12 | 1.35 | 1944.0 |
| 30/09/2009 | 9688 | 2.7961 | 2.9085 | 1.35 | 1.35 | 9418.01 | 9442.01 | 24.0 | 58 | Rainy | 27.0 | 1002 | 0.11 | 1.35 | 1944.0 |
| 2/10/2009 | 9316 | 2.7891 | 2.9339 | 1.35 | 1.35 | 9442.01 | 9466.01 | 24.0 | 74 | Sunny | 29.0 | 1014 | 0.14 | 1.35 | 1944.0 |
| 5/10/2009 | 0066 | 2.8390 | 3.0212 | 1.35 | 1.35 | 9466.01 | 9490.01 | 24.0 | 94 | Sunny | 28.0 | 1012 | 0.18 | 1.35 | 1944.0 |
| 6/10/2009 | 0070 | 2.8177 | 2.9910 | 1.35 | 1.35 | 9490.01 | 9514.01 | 24.0 | 89 | Sunny | 29.5 | 1013 | 0.17 | 1.35 | 1944.0 |
| 7/10/2009 | 0075 | 2.8208 | 3.0151 | 1.35 | 1.35 | 9514.01 | 9538.01 | 24.0 | 100 | Sunny | 29.5 | 1011 | 0.19 | 1.35 | 1944.0 |
| 8/10/2009 | 0079 | 2.8280 | 3.0304 | 1.35 | 1.35 | 9538.01 | 9562.01 | 24.0 | 104 | Fine | 29.0 | 1010 | 0.20 | 1.35 | 1944.0 |
| 9/10/2009 | 9769 | 2.7967 | 3.0084 | 1.35 | 1.35 | 9562.01 | 9586.01 | 24.0 | 109 | Sunny | 29.0 | 1011 | 0.21 | 1.35 | 1944.0 |
| 10/10/2009 | 9757 | 2.7900 | 2.9812 | 1.35 | 1.35 | 9586.01 | 9610.01 | 24.0 | 98 | Sunny | 27.0 | 1012 | 0.19 | 1.35 | 1944.0 |
| 12/10/2009 | 9756 | 2.7875 | 2.9671 | 1.35 | 1.35 | 9610.01 | 9634.01 | 24.0 | 92 | Cloudy | 26.0 | 1008 | 0.18 | 1.35 | 1944.0 |
| 13/10/2009 | 9669 | 2.7904 | 2.9468 | 1.35 | 1.35 | 9634.01 | 9658.01 | 24.0 | 80 | Sunny | 25.5 | 1012 | 0.16 | 1.35 | 1944.0 |
| 14/10/2009 | 9742 | 2.8019 | 2.9398 | 1.35 | 1.35 | 9658.01 | 9682.01 | 24.0 | 71 | Sunny | 27.0 | 1009 | 0.14 | 1.35 | 1944.0 |
| 15/10/2009 | 9778 | 2.8011 | 2.9456 | 1.35 | 1.35 | 9682.01 | 9706.01 | 24.0 | 74 | Sunny | 26.0 | 1011 | 0.14 | 1.35 | 1944.0 |
| 16/10/2009 | 9735 | 2.7825 | 2.9559 | 1.35 | 1.35 | 9706.01 | 9730.01 | 24.0 | 89 | Sunny | 26.5 | 1010 | 0.17 | 1.35 | 1944.0 |

| | |
|---|---|
| Min | 58 |
| Max | 109 |
| Average | 85 |

**Action Level** 185 ug/m3

**Station :** AM2 **(Hong Kong & Island Regional office, WSD)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 29/9/2009 | 9615 | 2.8248 | 2.9411 | 1.29 | 1.29 | 10240.88 | 10264.88 | 24.0 | 63 | Rainy | 26.0 | 1002 | 0.12 | 1.29 | 1857.6 |
| 30/9/2009 | 9318 | 2.7875 | 2.9011 | 1.29 | 1.29 | 10264.88 | 10264.88 | 24.0 | 61 | Rainy | 27.0 | 1002 | 0.11 | 1.29 | 1857.6 |
| 1/10/2009 | 0061 | 2.8360 | 2.9440 | 1.29 | 1.29 | 10288.88 | 10288.88 | 24.0 | 58 | Sunny | 27.5 | 1012 | 0.11 | 1.29 | 1857.6 |
| 2/10/2009 | 9673 | 2.7878 | 2.9117 | 1.29 | 1.29 | 10312.88 | 10336.88 | 24.0 | 67 | Sunny | 28.5 | 1014 | 0.12 | 1.29 | 1857.6 |
| 3/10/2009 | 9793 | 2.7880 | 2.9464 | 1.29 | 1.29 | 10376.88 | 10360.88 | 24.0 | 85 | Fine | 27.5 | 1010 | 0.16 | 1.29 | 1857.6 |
| 4/10/2009 | 9789 | 2.7824 | 2.9501 | 1.29 | 1.29 | 10360.88 | 10384.88 | 24.0 | 90 | Sunny | 27.0 | 1014 | 0.17 | 1.29 | 1857.6 |
| 5/10/2009 | 9787 | 2.7850 | 2.9467 | 1.29 | 1.29 | 10384.88 | 10408.88 | 24.0 | 87 | Sunny | 26.5 | 1012 | 0.16 | 1.29 | 1857.6 |
| 6/10/2009 | 9783 | 2.7950 | 2.9876 | 1.29 | 1.29 | 10408.88 | 10432.88 | 24.0 | 104 | Sunny | 26.0 | 1013 | 0.19 | 1.29 | 1857.6 |
| 7/10/2009 | 9778 | 2.7967 | 2.9771 | 1.29 | 1.29 | 10432.88 | 10456.88 | 24.0 | 97 | Sunny | 26.5 | 1011 | 0.18 | 1.29 | 1857.6 |
| 8/10/2009 | 9774 | 2.7849 | 2.9315 | 1.29 | 1.29 | 10456.88 | 10480.88 | 24.0 | 79 | Fine | 27.0 | 1010 | 0.15 | 1.29 | 1857.6 |
| 9/10/2009 | 9766 | 2.7935 | 2.9286 | 1.29 | 1.29 | 10480.88 | 10504.88 | 24.0 | 73 | Sunny | 26.5 | 1011 | 0.14 | 1.29 | 1857.6 |
| 10/10/2009 | 9758 | 2.7849 | 2.9399 | 1.29 | 1.29 | 10504.88 | 10528.88 | 24.0 | 83 | Sunny | 25.5 | 1012 | 0.16 | 1.29 | 1867.6 |
| 11/10/2009 | 9752 | 2.7866 | 2.9264 | 1.29 | 1.29 | 10528.88 | 10552.88 | 24.0 | 75 | Cloudy | 24.5 | 1010 | 0.14 | 1.29 | 1857.6 |
| 12/10/2009 | 9745 | 2.7955 | 2.9673 | 1.29 | 1.29 | 10552.88 | 10576.88 | 24.0 | 93 | Cloudy | 25.0 | 1008 | 0.17 | 1.29 | 1857.6 |

| | |
|---|---|
| Min | 58 |
| Max | 104 |
| Average | 80 |

**Action Level** 182 ug/m3

## Baseline 24-hr TSP Monitoring Results

**Station :** AM3 **(Wan Chai East PTW)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 29/9/2009 | 9628 | 2.7904 | 2.9001 | 1.35 | 1.35 | 1859.32 | 1883.32 | 24.0 | 56 | Rainy | 26.0 | 1002 | 0.12 | 1.35 | 1944.0 |
| 30/9/2009 | 9630 | 2.7915 | 2.9245 | 1.35 | 1.35 | 1883.32 | 1907.32 | 24.0 | 68 | Rainy | 27.0 | 1002 | 0.13 | 1.35 | 1944.0 |
| 1/10/2009 | 9637 | 2.7933 | 2.9315 | 1.35 | 1.35 | 1907.32 | 1931.32 | 24.0 | 71 | Sunny | 27.5 | 1012 | 0.14 | 1.35 | 1944.0 |
| 2/10/2009 | 9648 | 2.7944 | 2.9471 | 1.35 | 1.35 | 1931.32 | 1955.32 | 24.0 | 79 | Sunny | 29.0 | 1014 | 0.15 | 1.35 | 1944.0 |
| 3/10/2009 | 9660 | 2.7850 | 2.9421 | 1.35 | 1.35 | 1955.32 | 1979.32 | 24.0 | 81 | Fine | 28.0 | 1010 | 0.16 | 1.35 | 1944.0 |
| 4/10/2009 | 9600 | 2.8006 | 2.9456 | 1.35 | 1.35 | 1979.32 | 2003.32 | 24.0 | 75 | Sunny | 27.5 | 1014 | 0.15 | 1.35 | 1944.0 |
| 5/10/2009 | 9604 | 2.7964 | 2.9511 | 1.35 | 1.35 | 2003.32 | 2027.32 | 24.0 | 80 | Sunny | 28.0 | 1012 | 0.15 | 1.35 | 1944.0 |
| 6/10/2009 | 9611 | 2.7987 | 2.9503 | 1.35 | 1.35 | 2027.32 | 2051.32 | 24.0 | 78 | Sunny | 29.5 | 1013 | 0.15 | 1.35 | 1944.0 |
| 7/10/2009 | 9621 | 2.7959 | 2.9776 | 1.35 | 1.35 | 2051.32 | 2075.32 | 24.0 | 93 | Sunny | 29.5 | 1011 | 0.18 | 1.35 | 1944.0 |
| 8/10/2009 | 9642 | 2.7980 | 2.9578 | 1.35 | 1.35 | 2075.32 | 2099.32 | 24.0 | 82 | Fine | 29.0 | 1010 | 0.16 | 1.35 | 1944.0 |
| 9/10/2009 | 9675 | 2.7924 | 2.9661 | 1.35 | 1.35 | 2099.32 | 2123.32 | 24.0 | 89 | Sunny | 29.0 | 1011 | 0.17 | 1.35 | 1944.0 |
| 10/10/2009 | 9682 | 2.7967 | 2.9498 | 1.35 | 1.35 | 2123.32 | 2147.32 | 24.0 | 79 | Sunny | 27.0 | 1012 | 0.15 | 1.35 | 1944.0 |
| 11/10/2009 | 9693 | 2.8303 | 2.9779 | 1.35 | 1.35 | 2147.32 | 2171.32 | 24.0 | 76 | Cloudy | 24.5 | 1010 | 0.15 | 1.35 | 1944.0 |
| 12/10/2009 | 9697 | 2.8726 | 3.0334 | 1.35 | 1.35 | 2171.32 | 2195.32 | 24.0 | 83 | Cloudy | 26.0 | 1008 | 0.16 | 1.35 | 1944.0 |
| | | | | | | | | Min | 56 | | | | | | |
| | | | | | | | | Max | 93 | | | | | | |
| | | | | | | | | Average | 78 | | | | | | |

**Action Level** 181 ug/m3

**Station :** AM4 **(A Location within the DSD Central PTW)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 09/10/2009 | 0100 | 2.8393 | 3.1499 | 1.32 | 1.32 | 16275.84 | 16299.84 | 24.0 | 163 | Sunny | 26.0 | 1012 | 0.31 | 1.32 | 1900.8 |
| 10/10/2009 | 0084 | 2.8333 | 3.1965 | 1.32 | 1.32 | 16299.84 | 16323.84 | 24.0 | 191 | Sunny | 26.0 | 1010 | 0.36 | 1.32 | 1900.8 |
| 11/10/2009 | 0088 | 2.7864 | 2.9380 | 1.32 | 1.32 | 16323.84 | 16347.84 | 24.0 | 80 | Cloudy | 24.0 | 1000 | 0.15 | 1.32 | 1900.8 |
| 12/10/2009 | 0098 | 2.8704 | 3.0734 | 1.32 | 1.32 | 16347.84 | 16371.84 | 24.0 | 107 | Rainy | 26.0 | 1012 | 0.20 | 1.32 | 1900.8 |
| 13/10/2009 | 0095 | 2.8082 | 2.9577 | 1.32 | 1.32 | 16371.84 | 16395.84 | 24.0 | 79 | Sunny | 25.0 | 1009 | 0.15 | 1.32 | 1900.8 |
| 14/10/2009 | 0092 | 2.8439 | 3.0346 | 1.32 | 1.32 | 16395.84 | 16419.84 | 24.0 | 100 | Cloudy | 26.0 | 1011 | 0.19 | 1.32 | 1900.8 |
| 15/10/2009 | 0155 | 2.8644 | 3.0972 | 1.32 | 1.32 | 16419.84 | 16443.84 | 24.0 | 122 | Fine | 25.0 | 1010 | 0.23 | 1.32 | 1900.8 |
| 16/10/2009 | 0159 | 2.8532 | 3.0877 | 1.32 | 1.32 | 16443.84 | 16467.84 | 24.0 | 123 | Fine | 25.0 | 1012 | 0.23 | 1.32 | 1900.8 |
| 17/10/2009 | 0167 | 2.8582 | 3.1220 | 1.32 | 1.32 | 16467.84 | 16491.84 | 24.0 | 139 | Sunny | 25.0 | 1012 | 0.26 | 1.32 | 1900.8 |
| 18/10/2009 | 0171 | 2.9099 | 3.2104 | 1.32 | 1.32 | 16491.84 | 16515.84 | 24.0 | 158 | Sunny | 24.0 | 1012 | 0.30 | 1.32 | 1900.8 |
| 19/10/2009 | 0161 | 2.8352 | 3.0381 | 1.32 | 1.32 | 16515.84 | 16539.84 | 24.0 | 107 | Cloudy | 25.0 | 1009 | 0.20 | 1.32 | 1900.8 |
| 20/10/2009 | 0174 | 2.9014 | 3.2118 | 1.32 | 1.32 | 16539.84 | 16563.84 | 24.0 | 163 | Cloudy | 24.0 | 1010 | 0.31 | 1.32 | 1900.8 |
| 21/10/2009 | 0178 | 2.8928 | 3.0055 | 1.32 | 1.32 | 16563.84 | 16587.84 | 24.0 | 59 | Cloudy | 25.0 | 1015 | 0.11 | 1.32 | 1900.8 |
| 22/10/2009 | 0181 | 2.8809 | 3.1603 | 1.32 | 1.32 | 16507.04 | 16611.84 | 24.0 | 147 | Sunny | 26.0 | 1015 | 0.28 | 1.32 | 1900.8 |
| | | | | | | | | Min | 59 | | | | | | |
| | | | | | | | | Max | 191 | | | | | | |
| | | | | | | | | Average | 124 | | | | | | |

**Action Level** 211 ug/m3

## Baseline 24-hr TSP Monitoring Results

**Station :** AM5 **(AFCD Western Wholesale Food Market)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 25/09/2009 | 0001 | 2.8167 | 2.9385 | 1.37 | 1.37 | 10182.18 | 10206.18 | 24.0 | 62 | Sunny | 29.0 | 1012 | 0.12 | 1.37 | 1972.8 |
| 26/09/2009 | 0008 | 2.8554 | 3.0300 | 1.37 | 1.37 | 10206.18 | 10230.18 | 24.0 | 89 | Sunny | 29.5 | 1012 | 0.17 | 1.37 | 1972.8 |
| 27/09/2009 | 0012 | 2.7868 | 2.9882 | 1.37 | 1.37 | 10230.18 | 10254.18 | 24.0 | 102 | Sunny | 29.0 | 1010 | 0.20 | 1.37 | 1972.8 |
| 28/09/2009 | 0017 | 2.8277 | 2.9915 | 1.37 | 1.37 | 10254.18 | 10278.18 | 24.0 | 83 | Rainy | 26.5 | 1012 | 0.16 | 1.37 | 1972.8 |
| 29/09/2009 | 0056 | 2.8186 | 2.9177 | 1.37 | 1.37 | 10278.18 | 10302.18 | 24.0 | 50 | Rainy | 26.0 | 1002 | 0.10 | 1.37 | 1972.8 |
| 30/09/2009 | 0020 | 2.7991 | 2.9042 | 1.37 | 1.37 | 10302.18 | 10326.18 | 24.0 | 53 | Rainy | 27.0 | 1002 | 0.11 | 1.37 | 1972.8 |
| 01/10/2009 | 0027 | 2.7968 | 2.9344 | 1.37 | 1.37 | 10326.18 | 10350.18 | 24.0 | 70 | Sunny | 28.0 | 1012 | 0.14 | 1.37 | 1972.8 |
| 02/10/2009 | 0031 | 2.8079 | 2.9494 | 1.37 | 1.37 | 10350.18 | 10374.18 | 24.0 | 72 | Sunny | 28.0 | 1014 | 0.14 | 1.37 | 1972.8 |
| 03/10/2009 | 0035 | 2.7746 | 2.9458 | 1.37 | 1.37 | 10374.18 | 10398.18 | 24.0 | 87 | Fine | 28.0 | 1010 | 0.17 | 1.37 | 1972.8 |
| 04/10/2009 | 0039 | 2.8087 | 3.0994 | 1.37 | 1.37 | 10398.18 | 10422.18 | 24.0 | 147 | Sunny | 27.0 | 1014 | 0.29 | 1.37 | 1972.8 |
| 05/10/2009 | 0043 | 2.8222 | 3.0853 | 1.37 | 1.37 | 10422.18 | 10446.18 | 24.0 | 133 | Sunny | 27.0 | 1012 | 0.26 | 1.37 | 1972.8 |
| 06/10/2009 | 0047 | 2.7978 | 2.9862 | 1.37 | 1.37 | 10446.18 | 10470.18 | 24.0 | 95 | Sunny | 26.0 | 1013 | 0.19 | 1.37 | 1972.8 |
| 07/10/2009 | 0051 | 2.8018 | 3.0085 | 1.37 | 1.37 | 10470.18 | 10494.18 | 24.0 | 105 | Sunny | 27.0 | 1011 | 0.21 | 1.37 | 1972.8 |
| 08/10/2009 | 0055 | 2.8122 | 3.0193 | 1.37 | 1.37 | 10494.18 | 10518.18 | 24.0 | 105 | Fine | 27.0 | 1010 | 0.21 | 1.37 | 1972.8 |
| | | | | | | | | Min | 50 | | | | | | |
| | | | | | | | | Max | 147 | | | | | | |
| | | | | | | | | Average | 90 | | | | | | |

**Action Level** **188 ug/m3**

**Station :** AM6 **(Works Site Boundary - Stonecutters Island Sewage Treatment Works)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 09/10/2009 | 0102 | 2.8802 | 3.1067 | 1.30 | 1.30 | 5166.37 | 5190.37 | 24.0 | 121 | Sunny | 28.0 | 1011 | 0.23 | 1.30 | 1872.0 |
| 10/10/2009 | 0108 | 2.8560 | 2.9604 | 1.30 | 1.30 | 5190.37 | 5214.37 | 24.0 | 56 | Sunny | 27.0 | 1010 | 0.10 | 1.30 | 1872.0 |
| 12/10/2009 | 0111 | 2.9020 | 3.1006 | 1.30 | 1.30 | 5214.37 | 5238.37 | 24.0 | 106 | Sunny | 25.0 | 1011 | 0.20 | 1.30 | 1872.0 |
| 13/10/2009 | 0116 | 2.8868 | 3.0145 | 1.30 | 1.30 | 5238.37 | 5262.37 | 24.0 | 68 | Sunny | 26.0 | 1011 | 0.13 | 1.30 | 1872.0 |
| 14/10/2009 | 0120 | 2.8914 | 3.0755 | 1.30 | 1.30 | 5262.37 | 5286.37 | 24.0 | 98 | Cloudy | 26.0 | 1010 | 0.18 | 1.30 | 1872.0 |
| 15/10/2009 | 0124 | 2.8817 | 3.1364 | 1.30 | 1.30 | 5286.37 | 5310.37 | 24.0 | 136 | Sunny | 27.0 | 1010 | 0.25 | 1.30 | 1872.0 |
| 16/10/2009 | 0128 | 2.8623 | 3.6817 | 1.30 | 1.30 | 5310.37 | 5334.37 | 24.0 | 438 | Sunny | 27.0 | 1011 | 0.82 | 1.30 | 1872.0 |
| 17/10/2009 | 0132 | 2.8812 | 3.1778 | 1.30 | 1.30 | 5334.37 | 5358.37 | 24.0 | 158 | Sunny | 26.0 | 1012 | 0.30 | 1.30 | 1872.0 |
| 18/10/2009 | 0136 | 2.8034 | 3.0415 | 1.30 | 1.30 | 5358.37 | 5382.37 | 24.0 | 127 | Sunny | 26.0 | 1012 | 0.24 | 1.30 | 1872.0 |
| 19/10/2009 | 0140 | 2.9030 | 3.2287 | 1.30 | 1.30 | 5382.37 | 5406.37 | 24.0 | 174 | Cloudy | 26.0 | 1011 | 0.33 | 1.30 | 1872.0 |
| 20/10/2009 | 0144 | 2.8993 | 3.3863 | 1.30 | 1.30 | 5406.37 | 5430.37 | 24.0 | 260 | Cloudy | 26.0 | 1010 | 0.49 | 1.30 | 1872.0 |
| 21/10/2009 | 0148 | 2.8707 | 3.2211 | 1.30 | 1.30 | 5430.37 | 5454.37 | 24.0 | 187 | Cloudy | 26.0 | 1013 | 0.35 | 1.30 | 1872.0 |
| 22/10/2009 | 0059 | 2.7644 | 2.9572 | 1.30 | 1.30 | 5454.37 | 5478.37 | 24.0 | 103 | Fine | 27.0 | 1015 | 0.19 | 1.30 | 1872.0 |
| 23/10/2009 | 0203 | 2.8048 | 3.1943 | 1.30 | 1.30 | 5478.37 | 5502.37 | 24.0 | 208 | Sunny | 27.0 | 1015 | 0.39 | 1.30 | 1872.0 |
| | | | | | | | | Min | 56 | | | | | | |
| | | | | | | | | Max | 438 | | | | | | |
| | | | | | | | | Average | 160 | | | | | | |

**Action Level** [a] **196 ug/m3**

Notes:

(a) Action Level is determined based on the average 24-hr TSP measured at at AM6 and the baseline monitoring data obtained from the Construction of Disinfection Facilties Project in HATS Stage 2A

**Baseline 1-hr TSP Monitoring Results**

**Station :** **AM1** **(Chan's Creative School)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 29/09/09 | 9685 | 2.7997 | 2.8065 | 1.37 | 1.37 | 13388.35 | 13389.35 | 1 | 83 | Rainy | 25.0 | 1002 | 0.01 | 1.37 | 82.2 |
| 29/09/09 | 9686 | 2.7944 | 2.8007 | 1.37 | 1.37 | 13389.50 | 13390.35 | 1 | 77 | Rainy | 25.0 | 1002 | 0.01 | 1.37 | 82.2 |
| 29/09/09 | 9687 | 2.7982 | 2.8060 | 1.37 | 1.37 | 13390.35 | 13391.35 | 1 | 95 | Rainy | 25.0 | 1002 | 0.01 | 1.37 | 82.2 |
| 30/09/09 | 9689 | 2.7924 | 2.7997 | 1.37 | 1.37 | 13391.35 | 13392.35 | 1 | 89 | Rainy | 27.0 | 1002 | 0.01 | 1.37 | 82.2 |
| 30/09/09 | 9690 | 2.7906 | 2.7978 | 1.37 | 1.37 | 13392.35 | 13393.35 | 1 | 88 | Rainy | 27.0 | 1002 | 0.01 | 1.37 | 82.2 |
| 30/09/09 | 9691 | 2.7929 | 2.8004 | 1.37 | 1.37 | 13393.35 | 13394.35 | 1 | 91 | Rainy | 27.0 | 1002 | 0.01 | 1.37 | 82.2 |
| 2/10/2009 | 9317 | 2.7875 | 2.7996 | 1.37 | 1.37 | 13394.35 | 13395.35 | 1 | 147 | Sunny | 30.0 | 1014 | 0.01 | 1.37 | 82.2 |
| 2/10/2009 | 9644 | 2.7979 | 2.8091 | 1.37 | 1.37 | 13395.35 | 13396.35 | 1 | 136 | Sunny | 30.0 | 1014 | 0.01 | 1.37 | 82.2 |
| 2/10/2009 | 9645 | 2.8149 | 2.8273 | 1.37 | 1.37 | 13396.35 | 13397.35 | 1 | 151 | Sunny | 30.0 | 1014 | 0.01 | 1.37 | 82.2 |
| 5/10/2009 | 0065 | 2.8302 | 2.8419 | 1.37 | 1.37 | 13397.35 | 13398.35 | 1 | 142 | Sunny | 27.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 5/10/2009 | 0067 | 2.8312 | 2.8410 | 1.37 | 1.37 | 13398.35 | 13399.35 | 1 | 119 | Sunny | 27.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 5/10/2009 | 0068 | 2.8087 | 2.8178 | 1.37 | 1.37 | 13799.50 | 13400.35 | 1 | 111 | Sunny | 27.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 6/10/2009 | 0069 | 2.8266 | 2.8357 | 1.37 | 1.37 | 13400.35 | 13401.35 | 1 | 111 | Sunny | 29.0 | 1013 | 0.01 | 1.37 | 82.2 |
| 6/10/2009 | 0071 | 2.7942 | 2.8012 | 1.37 | 1.37 | 13401.35 | 13402.35 | 1 | 85 | Sunny | 29.0 | 1013 | 0.01 | 1.37 | 82.2 |
| 6/10/2009 | 0072 | 2.7733 | 2.7796 | 1.37 | 1.37 | 13402.35 | 13403.35 | 1 | 77 | Sunny | 29.0 | 1013 | 0.01 | 1.37 | 82.2 |
| 7/10/2009 | 0073 | 2.8091 | 2.8220 | 1.37 | 1.37 | 13403.35 | 13404.35 | 1 | 157 | Sunny | 30.0 | 1011 | 0.01 | 1.37 | 82.2 |
| 7/10/2009 | 0074 | 2.8226 | 2.8342 | 1.37 | 1.37 | 13404.35 | 13405.35 | 1 | 141 | Sunny | 30.0 | 1011 | 0.01 | 1.37 | 82.2 |
| 7/10/2009 | 0076 | 2.8105 | 2.8216 | 1.37 | 1.37 | 13405.35 | 13406.35 | 1 | 135 | Sunny | 30.0 | 1011 | 0.01 | 1.37 | 82.2 |
| 8/10/2009 | 0077 | 2.8270 | 2.8424 | 1.37 | 1.37 | 13406.35 | 13407.35 | 1 | 187 | Fine | 29.0 | 1010 | 0.02 | 1.37 | 82.2 |
| 8/10/2009 | 0078 | 2.7959 | 2.8091 | 1.37 | 1.37 | 13407.35 | 13408.35 | 1 | 161 | Fine | 29.0 | 1010 | 0.01 | 1.37 | 82.2 |
| 8/10/2009 | 0080 | 2.8114 | 2.8336 | 1.37 | 1.37 | 13408.35 | 13409.35 | 1 | 270 | Fine | 29.0 | 1010 | 0.02 | 1.37 | 82.2 |
| 9/10/2009 | 9773 | 2.7887 | 2.8015 | 1.37 | 1.37 | 13409.35 | 13410.35 | 1 | 156 | Sunny | 29.0 | 1011 | 0.01 | 1.37 | 82.2 |
| 9/10/2009 | 9771 | 2.7950 | 2.8091 | 1.37 | 1.37 | 13410.35 | 13411.35 | 1 | 172 | Sunny | 29.0 | 1011 | 0.01 | 1.37 | 82.2 |
| 9/10/2009 | 9770 | 2.7991 | 2.8146 | 1.37 | 1.37 | 13411.35 | 13412.35 | 1 | 189 | Sunny | 29.0 | 1011 | 0.02 | 1.37 | 82.2 |
| 10/10/2009 | 9765 | 2.7998 | 2.8134 | 1.37 | 1.37 | 13412.35 | 13413.35 | 1 | 165 | Sunny | 29.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 10/10/2009 | 9763 | 2.8033 | 2.8155 | 1.37 | 1.37 | 13413.35 | 13414.35 | 1 | 148 | Sunny | 29.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 10/10/2009 | 9761 | 2.7977 | 2.8112 | 1.37 | 1.37 | 13414.35 | 13415.35 | 1 | 164 | Sunny | 29.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 12/10/2009 | 9756 | 2.7871 | 2.7997 | 1.37 | 1.37 | 13415.35 | 13416.35 | 1 | 153 | Cloudy | 24.0 | 1008 | 0.01 | 1.37 | 82.2 |
| 12/10/2009 | 9751 | 2.7859 | 2.8000 | 1.37 | 1.37 | 13416.35 | 13417.35 | 1 | 172 | Cloudy | 24.0 | 1008 | 0.01 | 1.37 | 82.2 |
| 12/10/2009 | 9749 | 2.7855 | 2.8002 | 1.37 | 1.37 | 13417.35 | 13418.35 | 1 | 179 | Cloudy | 24.0 | 1008 | 0.01 | 1.37 | 82.2 |
| 13/10/2009 | 9747 | 2.7988 | 2.8105 | 1.37 | 1.37 | 13418.35 | 13419.25 | 1 | 142 | Sunny | 26.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 13/10/2009 | 9668 | 2.7877 | 2.7995 | 1.37 | 1.37 | 13419.35 | 13420.35 | 1 | 144 | Sunny | 26.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 13/10/2009 | 9670 | 2.7950 | 2.8088 | 1.37 | 1.37 | 13420.35 | 13421.35 | 1 | 168 | Sunny | 26.0 | 1012 | 0.01 | 1.37 | 82.2 |
| 14/10/2009 | 9671 | 2.7932 | 2.8023 | 1.37 | 1.37 | 13421.35 | 13422.35 | 1 | 111 | Sunny | 26.0 | 1009 | 0.01 | 1.37 | 82.2 |
| 14/10/2009 | 9744 | 2.8001 | 2.8100 | 1.37 | 1.37 | 13422.35 | 13423.35 | 1 | 120 | Sunny | 26.0 | 1009 | 0.01 | 1.37 | 82.2 |
| 14/10/2009 | 9743 | 2.8023 | 2.8120 | 1.37 | 1.37 | 13423.35 | 13424.35 | 1 | 118 | Sunny | 26.0 | 1009 | 0.01 | 1.37 | 82.2 |
| 15/10/2009 | 9741 | 2.8071 | 2.8150 | 1.37 | 1.37 | 13424.35 | 13425.35 | 1 | 96 | Sunny | 26.0 | 1011 | 0.01 | 1.37 | 82.2 |
| 15/10/2009 | 9740 | 2.8024 | 2.8143 | 1.37 | 1.37 | 13425.35 | 13426.35 | 1 | 145 | Sunny | 26.0 | 1011 | 0.01 | 1.37 | 82.2 |
| 15/10/2009 | 9739 | 2.8049 | 2.8175 | 1.37 | 1.37 | 13426.35 | 13427.35 | 1 | 153 | Sunny | 27.0 | 1011 | 0.01 | 1.37 | 82.2 |
| 16/10/2009 | 9737 | 2.7998 | 2.8124 | 1.37 | 1.37 | 13427.35 | 13428.35 | 1 | 153 | Sunny | 25.0 | 1010 | 0.01 | 1.37 | 82.2 |
| 16/10/2009 | 9736 | 2.7881 | 2.8009 | 1.37 | 1.37 | 13428.35 | 13429.35 | 1 | 156 | Sunny | 25.0 | 1010 | 0.01 | 1.37 | 82.2 |
| 16/10/2009 | 9734 | 2.7840 | 2.7981 | 1.37 | 1.37 | 13429.35 | 13430.35 | 1 | 172 | Sunny | 26.5 | 1010 | 0.01 | 1.37 | 82.2 |

| | |
|---|---|
| Min | 77 |
| Max | 270 |
| Average | 139 |

**Action Level** **340 ug/m3**

**Baseline 1-hr TSP Monitoring Results**

**Station :** **AM2** **(Hong Kong & Island Regional office, WSD)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 29/09/09 | 9616 | 2.8107 | 2.8183 | 1.26 | 1.26 | 13104.12 | 13105.12 | 1 | 101 | Rainy | 25.0 | 1002 | 0.01 | 1.26 | 75.6 |
| 29/09/09 | 9617 | 2.8415 | 2.8498 | 1.26 | 1.26 | 13105.12 | 13106.12 | 1 | 110 | Rainy | 25.0 | 1002 | 0.01 | 1.26 | 75.6 |
| 29/09/09 | 9618 | 2.8331 | 2.8415 | 1.26 | 1.26 | 13106.12 | 13107.12 | 1 | 111 | Rainy | 25.0 | 1002 | 0.01 | 1.26 | 75.6 |
| 30/09/09 | 9323 | 2.7951 | 2.8021 | 1.26 | 1.26 | 13107.12 | 13107.12 | 1 | 93 | Rainy | 27.0 | 1002 | 0.01 | 1.26 | 75.6 |
| 30/09/09 | 9319 | 2.7886 | 2.7959 | 1.26 | 1.26 | 13108.12 | 13109.12 | 1 | 97 | Rainy | 27.0 | 1002 | 0.01 | 1.26 | 75.6 |
| 30/09/09 | 9320 | 2.7902 | 2.7977 | 1.26 | 1.26 | 13109.12 | 13110.12 | 1 | 99 | Rainy | 27.0 | 1002 | 0.01 | 1.26 | 75.6 |
| 1/10/2009 | 9322 | 2.7929 | 2.8020 | 1.26 | 1.26 | 13110.12 | 13111.12 | 1 | 120 | Sunny | 27.0 | 1012 | 0.01 | 1.26 | 75.6 |
| 1/10/2009 | 0062 | 2.7994 | 2.8079 | 1.26 | 1.26 | 13111.12 | 13112.12 | 1 | 112 | Sunny | 27.0 | 1012 | 0.01 | 1.26 | 75.6 |
| 1/10/2009 | 0063 | 2.8193 | 2.8279 | 1.26 | 1.26 | 13112.12 | 13113.12 | 1 | 114 | Sunny | 27.0 | 1012 | 0.01 | 1.26 | 75.6 |
| 2/10/2009 | 0064 | 2.8090 | 2.8151 | 1.26 | 1.26 | 13113.12 | 13114.12 | 1 | 81 | Sunny | 27.5 | 1014 | 0.01 | 1.26 | 75.6 |
| 2/10/2009 | 9672 | 2.7869 | 2.7977 | 1.26 | 1.26 | 13114.12 | 13115.12 | 1 | 143 | Sunny | 28.0 | 1014 | 0.01 | 1.26 | 75.6 |
| 2/10/2009 | 9799 | 2.7880 | 2.7968 | 1.26 | 1.26 | 13115.12 | 13116.12 | 1 | 116 | Sunny | 28.5 | 1014 | 0.01 | 1.26 | 75.6 |
| 3/10/2009 | 9798 | 2.7891 | 2.7972 | 1.26 | 1.26 | 13116.12 | 13117.12 | 1 | 107 | Fine | 27.0 | 1010 | 0.01 | 1.26 | 75.6 |
| 3/10/2009 | 9321 | 2.7922 | 2.8064 | 1.26 | 1.26 | 13117.12 | 13118.12 | 1 | 188 | Fine | 27.0 | 1010 | 0.01 | 1.26 | 75.6 |
| 3/10/2009 | 9795 | 2.7869 | 2.7997 | 1.26 | 1.26 | 13118.12 | 13119.12 | 1 | 169 | Fine | 27.5 | 1010 | 0.01 | 1.26 | 75.6 |
| 4/10/2009 | 9794 | 2.7871 | 2.8005 | 1.26 | 1.26 | 13119.12 | 13120.12 | 1 | 177 | Sunny | 26.0 | 1014 | 0.01 | 1.26 | 75.6 |
| 4/10/2009 | 9792 | 2.7859 | 2.7983 | 1.26 | 1.26 | 13120.12 | 13121.12 | 1 | 164 | Sunny | 26.5 | 1014 | 0.01 | 1.26 | 75.6 |
| 4/10/2009 | 9791 | 2.7871 | 2.8015 | 1.26 | 1.26 | 13121.12 | 13122.12 | 1 | 190 | Sunny | 27.5 | 1014 | 0.01 | 1.26 | 75.6 |
| 5/10/2009 | 9790 | 2.7849 | 2.8000 | 1.26 | 1.26 | 13122.12 | 13123.12 | 1 | 200 | Sunny | 26.0 | 1012 | 0.02 | 1.26 | 75.6 |
| 5/10/2009 | 9788 | 2.7817 | 2.7979 | 1.26 | 1.26 | 13123.12 | 13124.12 | 1 | 214 | Sunny | 26.0 | 1012 | 0.02 | 1.26 | 75.6 |
| 5/10/2009 | 9786 | 2.7879 | 2.8025 | 1.26 | 1.26 | 13124.12 | 13125.12 | 1 | 193 | Sunny | 26.5 | 1012 | 0.01 | 1.26 | 75.6 |
| 6/10/2009 | 9785 | 2.7900 | 2.8043 | 1.26 | 1.26 | 13125.12 | 13126.12 | 1 | 189 | Sunny | 26.0 | 1013 | 0.01 | 1.26 | 75.6 |
| 6/10/2009 | 9784 | 2.7929 | 2.8083 | 1.26 | 1.26 | 13126.12 | 13127.12 | 1 | 204 | Sunny | 26.0 | 1013 | 0.02 | 1.26 | 75.6 |
| 6/10/2009 | 9882 | 2.7988 | 2.8153 | 1.26 | 1.26 | 13127.12 | 13128.12 | 1 | 218 | Sunny | 27.0 | 1013 | 0.02 | 1.26 | 75.6 |
| 7/10/2009 | 9781 | 2.7939 | 2.8065 | 1.26 | 1.26 | 13128.12 | 13128.19 | 1 | 167 | Sunny | 25.0 | 1011 | 0.01 | 1.26 | 75.6 |
| 7/10/2009 | 9780 | 2.7921 | 2.8069 | 1.26 | 1.26 | 13129.12 | 13130.12 | 1 | 196 | Sunny | 26.5 | 1011 | 0.01 | 1.26 | 75.6 |
| 7/10/2009 | 9779 | 2.7970 | 2.8131 | 1.26 | 1.26 | 13130.12 | 13131.12 | 1 | 213 | Sunny | 28.5 | 1011 | 0.02 | 1.26 | 75.6 |
| 8/10/2009 | 9777 | 2.7967 | 2.8092 | 1.26 | 1.26 | 13131.12 | 13132.12 | 1 | 165 | Sunny | 26.5 | 1010 | 0.01 | 1.26 | 75.6 |
| 8/10/2009 | 9776 | 2.7961 | 2.8088 | 1.26 | 1.26 | 13132.12 | 13133.12 | 1 | 168 | Sunny | 27.5 | 1010 | 0.01 | 1.26 | 75.6 |
| 8/10/2009 | 9775 | 2.7849 | 2.7976 | 1.26 | 1.26 | 13133.12 | 13134.12 | 1 | 168 | Sunny | 28.5 | 1010 | 0.01 | 1.26 | 75.6 |
| 9/10/2009 | 9772 | 2.7878 | 2.7954 | 1.26 | 1.26 | 13134.12 | 13135.12 | 1 | 101 | Sunny | 26.0 | 1011 | 0.01 | 1.26 | 75.6 |
| 9/10/2009 | 9768 | 2.7911 | 2.8002 | 1.26 | 1.26 | 13135.12 | 13136.12 | 1 | 120 | Sunny | 26.0 | 1011 | 0.01 | 1.26 | 75.6 |
| 9/10/2009 | 9767 | 2.7967 | 2.8088 | 1.26 | 1.26 | 13136.12 | 13137.12 | 1 | 160 | Sunny | 27.5 | 1011 | 0.01 | 1.26 | 75.6 |
| 10/10/2009 | 9764 | 2.8006 | 2.8144 | 1.26 | 1.26 | 13137.12 | 13138.12 | 1 | 183 | Sunny | 26.0 | 1012 | 0.01 | 1.26 | 75.6 |
| 10/10/2009 | 9762 | 2.7992 | 2.8123 | 1.26 | 1.26 | 13138.12 | 13139.12 | 1 | 173 | Sunny | 26.0 | 1012 | 0.01 | 1.26 | 75.6 |
| 10/10/2009 | 9760 | 2.7957 | 2.8097 | 1.26 | 1.26 | 13139.12 | 13140.12 | 1 | 185 | Sunny | 26.5 | 1012 | 0.01 | 1.26 | 75.6 |
| 11/10/2009 | 9759 | 2.7924 | 2.8037 | 1.26 | 1.26 | 13140.12 | 13141.12 | 1 | 149 | Cloudy | 25.0 | 1010 | 0.01 | 1.26 | 75.6 |
| 11/10/2009 | 9755 | 2.7914 | 2.8017 | 1.26 | 1.26 | 13141.12 | 13141.12 | 1 | 136 | Cloudy | 25.0 | 1010 | 0.01 | 1.26 | 75.6 |
| 11/10/2009 | 9754 | 2.7906 | 2.8039 | 1.26 | 1.26 | 13142.12 | 13143.12 | 1 | 176 | Cloudy | 25.5 | 1010 | 0.01 | 1.26 | 75.6 |
| 12/10/2009 | 9753 | 2.7844 | 2.8007 | 1.26 | 1.26 | 13143.12 | 13144.12 | 1 | 216 | Cloudy | 24.0 | 1008 | 0.02 | 1.26 | 75.6 |
| 12/10/2009 | 9748 | 2.7823 | 2.7968 | 1.26 | 1.26 | 13144.12 | 13145.12 | 1 | 192 | Cloudy | 24.0 | 1008 | 0.01 | 1.26 | 75.6 |
| 12/10/2009 | 9746 | 2.7929 | 2.8089 | 1.26 | 1.26 | 13145.12 | 13145.12 | 1 | 212 | Cloudy | 24.0 | 1008 | 0.02 | 1.26 | 75.6 |

| | |
|---|---|
| Min | 81 |
| Max | 218 |
| Average | 157 |

**Action Level** **352 ug/m3**

**Baseline 1-hr TSP Monitoring Results**

**Station :** **AM3** **(Wan Chai East PTW)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 29/09/09 | 9627 | 2.7871 | 2.7924 | 1.25 | 1.25 | 9354.57 | 9355.57 | 1 | 71 | Rainy | 25.0 | 1002 | 0.01 | 1.25 | 75.0 |
| 29/9/09 | 9633 | 2.7880 | 2.7935 | 1.25 | 1.25 | 9355.57 | 9356.57 | 1 | 73 | Rainy | 25.0 | 1002 | 0.01 | 1.25 | 75.0 |
| 29/9/09 | 9625 | 2.7827 | 2.7887 | 1.25 | 1.25 | 9356.57 | 9357.57 | 1 | 80 | Rainy | 25.0 | 1002 | 0.01 | 1.25 | 75.0 |
| 30/09/09 | 9626 | 2.7859 | 2.7925 | 1.25 | 1.25 | 9357.57 | 9358.57 | 1 | 88 | Cloudy | 27.0 | 1002 | 0.01 | 1.25 | 75.0 |
| 30/09/09 | 9629 | 2.7885 | 2.7956 | 1.25 | 1.25 | 9358.57 | 9359.57 | 1 | 95 | Cloudy | 27.0 | 1002 | 0.01 | 1.25 | 75.0 |
| 30/09/09 | 9632 | 2.7862 | 2.7940 | 1.25 | 1.25 | 9359.57 | 9361.57 | 1 | 104 | Cloudy | 27.0 | 1002 | 0.01 | 1.25 | 75.0 |
| 1/10/2009 | 9636 | 2.7887 | 2.7950 | 1.25 | 1.25 | 9361.57 | 9362.57 | 1 | 84 | Cloudy | 27.0 | 1012 | 0.01 | 1.25 | 75.0 |
| 1/10/2009 | 9634 | 2.7839 | 2.7928 | 1.25 | 1.25 | 9362.57 | 9363.57 | 1 | 119 | Sunny | 27.0 | 1012 | 0.01 | 1.25 | 75.0 |
| 1/10/2009 | 9635 | 2.7856 | 2.7950 | 1.25 | 1.25 | 9363.57 | 9364.57 | 1 | 125 | Sunny | 27.0 | 1012 | 0.01 | 1.25 | 75.0 |
| 2/10/2009 | 9631 | 2.7847 | 2.7954 | 1.25 | 1.25 | 9364.57 | 9365.57 | 1 | 143 | Sunny | 27.5 | 1014 | 0.01 | 1.25 | 75.0 |
| 2/10/2009 | 9638 | 2.7918 | 2.8030 | 1.25 | 1.25 | 9365.57 | 9366.57 | 1 | 149 | Sunny | 28.0 | 1014 | 0.01 | 1.25 | 75.0 |
| 2/10/2009 | 9639 | 2.7927 | 2.8049 | 1.25 | 1.25 | 9366.57 | 9367.57 | 1 | 163 | Sunny | 30.0 | 1014 | 0.01 | 1.25 | 75.0 |
| 3/10/2009 | 9649 | 2.7966 | 2.8045 | 1.25 | 1.25 | 9367.57 | 9368.57 | 1 | 105 | Fine | 27.0 | 1010 | 0.01 | 1.25 | 75.0 |
| 3/10/2009 | 9650 | 2.7927 | 2.8023 | 1.25 | 1.25 | 9368.57 | 9369.57 | 1 | 128 | Fine | 27.0 | 1010 | 0.01 | 1.25 | 75.0 |
| 3/10/2009 | 9651 | 2.7911 | 2.8019 | 1.25 | 1.25 | 9369.57 | 9370.57 | 1 | 144 | Fine | 28.0 | 1010 | 0.01 | 1.25 | 75.0 |
| 4/10/2009 | 9661 | 2.7833 | 2.7920 | 1.25 | 1.25 | 9370.57 | 9371.57 | 1 | 116 | Sunny | 26.0 | 1014 | 0.01 | 1.25 | 75.0 |
| 4/10/2009 | 9662 | 2.7819 | 2.7941 | 1.25 | 1.25 | 9371.57 | 9372.57 | 1 | 163 | Sunny | 26.5 | 1014 | 0.01 | 1.25 | 75.0 |
| 4/10/2009 | 9663 | 2.7842 | 2.7953 | 1.25 | 1.25 | 9372.57 | 9373.57 | 1 | 148 | Sunny | 27.5 | 1014 | 0.01 | 1.25 | 75.0 |
| 5/10/2009 | 9601 | 2.7997 | 2.8125 | 1.25 | 1.25 | 9373.57 | 9374.57 | 1 | 171 | Sunny | 26.0 | 1012 | 0.01 | 1.25 | 75.0 |
| 5/10/2009 | 9602 | 2.7975 | 2.8119 | 1.25 | 1.25 | 9374.57 | 9375.57 | 1 | 192 | Sunny | 26.0 | 1012 | 0.01 | 1.25 | 75.0 |
| 5/10/2009 | 9603 | 2.7988 | 2.8130 | 1.25 | 1.25 | 9375.57 | 9376.57 | 1 | 189 | Sunny | 27.0 | 1012 | 0.01 | 1.25 | 75.0 |
| 6/10/2009 | 9605 | 2.7955 | 2.8049 | 1.25 | 1.25 | 9376.57 | 9377.57 | 1 | 125 | Sunny | 26.0 | 1013 | 0.01 | 1.25 | 75.0 |
| 6/10/2009 | 9616 | 2.7951 | 2.8066 | 1.25 | 1.25 | 9377.57 | 9378.57 | 1 | 153 | Sunny | 26.0 | 1013 | 0.01 | 1.25 | 75.0 |
| 6/10/2009 | 9617 | 2.7981 | 2.8118 | 1.25 | 1.25 | 9378.57 | 9379.57 | 1 | 183 | Sunny | 28.5 | 1013 | 0.01 | 1.25 | 75.0 |
| 7/10/2009 | 9618 | 2.7974 | 2.8110 | 1.25 | 1.25 | 9379.57 | 9380.57 | 1 | 181 | Sunny | 25.0 | 1011 | 0.01 | 1.25 | 75.0 |
| 7/10/2009 | 9619 | 2.7941 | 2.8082 | 1.25 | 1.25 | 9380.57 | 9381.57 | 1 | 188 | Sunny | 29.5 | 1011 | 0.01 | 1.25 | 75.0 |
| 7/10/2009 | 9620 | 2.7960 | 2.8121 | 1.25 | 1.25 | 9381.57 | 9382.57 | 1 | 215 | Sunny | 30.0 | 1011 | 0.02 | 1.25 | 75.0 |
| 8/10/2009 | 9622 | 2.7940 | 2.8100 | 1.25 | 1.25 | 9382.57 | 9383.57 | 1 | 213 | Sunny | 26.0 | 1010 | 0.02 | 1.25 | 75.0 |
| 8/10/2009 | 9623 | 2.7942 | 2.8120 | 1.25 | 1.25 | 9383.57 | 9384.57 | 1 | 237 | Fine | 26.5 | 1010 | 0.02 | 1.25 | 75.0 |
| 8/10/2009 | 9640 | 2.7959 | 2.8145 | 1.25 | 1.25 | 9384.57 | 9385.57 | 1 | 248 | Fine | 29.0 | 1010 | 0.02 | 1.25 | 75.0 |
| 9/10/2009 | 9641 | 2.7988 | 2.8132 | 1.25 | 1.25 | 9385.57 | 9386.57 | 1 | 192 | Sunny | 26.0 | 1011 | 0.01 | 1.25 | 75.0 |
| 9/10/2009 | 9643 | 2.7977 | 2.8139 | 1.25 | 1.25 | 9386.57 | 9387.57 | 1 | 216 | Sunny | 26.0 | 1011 | 0.02 | 1.25 | 75.0 |
| 9/10/2009 | 9674 | 2.7878 | 2.8045 | 1.25 | 1.25 | 9387.57 | 9388.57 | 1 | 223 | Sunny | 29.0 | 1011 | 0.02 | 1.25 | 75.0 |
| 10/10/2009 | 9676 | 2.7924 | 2.8067 | 1.25 | 1.25 | 9388.57 | 9389.57 | 1 | 191 | Sunny | 26.0 | 1012 | 0.01 | 1.25 | 75.0 |
| 10/10/2009 | 9680 | 2.7940 | 2.8098 | 1.25 | 1.25 | 9389.57 | 9390.57 | 1 | 211 | Sunny | 26.5 | 1012 | 0.02 | 1.25 | 75.0 |
| 10/10/2009 | 9681 | 2.7938 | 2.8100 | 1.25 | 1.25 | 9390.57 | 9391.57 | 1 | 216 | Sunny | 29.0 | 1013 | 0.02 | 1.25 | 75.0 |
| 11/10/2009 | 9677 | 2.7966 | 2.8089 | 1.25 | 1.25 | 9391.57 | 9392.57 | 1 | 164 | Cloudy | 25.0 | 1010 | 0.01 | 1.25 | 75.0 |
| 11/10/2009 | 9678 | 2.7987 | 2.8134 | 1.25 | 1.25 | 9392.57 | 9393.57 | 1 | 196 | Cloudy | 25.0 | 1010 | 0.01 | 1.25 | 75.0 |
| 11/10/2009 | 9692 | 2.8375 | 2.8512 | 1.25 | 1.25 | 9393.57 | 9394.57 | 1 | 183 | Cloudy | 25.0 | 1010 | 0.01 | 1.25 | 75.0 |
| 12/10/2009 | 9694 | 2.8486 | 2.8650 | 1.25 | 1.25 | 9394.57 | 9395.57 | 1 | 219 | Cloudy | 26.0 | 1008 | 0.02 | 1.25 | 75.0 |
| 12/10/2009 | 9804 | 2.8020 | 2.8166 | 1.25 | 1.25 | 9395.57 | 9396.57 | 1 | 195 | Cloudy | 24.0 | 1008 | 0.01 | 1.25 | 75.0 |
| 12/10/2009 | 9805 | 2.8487 | 2.8634 | 1.25 | 1.25 | 9396.57 | 9397.57 | 1 | 196 | Cloudy | 24.0 | 1008 | 0.01 | 1.25 | 75.0 |

| | |
|---|---|
| Min | 71 |
| Max | 248 |
| Average | 162 |

**Action Level** **355 ug/m3**

**Baseline 1-hr TSP Monitoring Results**

**Station :** **AM4** **(A Location within the DSD Central PTW)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 9/10/2009 | 0081 | 2.8008 | 2.8289 | 1.36 | 1.36 | 13104.03 | 13105.03 | 1 | 344 | Sunny | 26.0 | 1011 | 0.03 | 1.36 | 81.6 |
| 9/10/2009 | 0082 | 2.7863 | 2.8100 | 1.36 | 1.36 | 13105.03 | 13106.03 | 1 | 290 | Sunny | 29.0 | 1011 | 0.02 | 1.36 | 81.6 |
| 9/10/2009 | 9679 | 2.7959 | 2.8125 | 1.36 | 1.36 | 13106.03 | 13107.03 | 1 | 203 | Sunny | 29.0 | 1011 | 0.02 | 1.36 | 81.6 |
| 10/10/2009 | 0083 | 2.8148 | 2.8264 | 1.36 | 1.36 | 13107.03 | 13108.03 | 1 | 142 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 10/10/2009 | 0085 | 2.8259 | 2.8529 | 1.36 | 1.36 | 13108.03 | 13109.03 | 1 | 331 | Sunny | 26.0 | 1012 | 0.03 | 1.36 | 81.6 |
| 10/10/2009 | 9603 | 2.7968 | 2.8129 | 1.36 | 1.36 | 13109.03 | 13110.03 | 1 | 197 | Sunny | 29.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 11/10/2009 | 0086 | 2.8490 | 2.8692 | 1.36 | 1.36 | 13110.03 | 13111.03 | 1 | 248 | Fine | 25.0 | 1010 | 0.02 | 1.36 | 81.6 |
| 11/10/2009 | 0087 | 2.8081 | 2.8236 | 1.36 | 1.36 | 13111.03 | 13112.03 | 1 | 190 | Cloudy | 25.0 | 1010 | 0.02 | 1.36 | 81.6 |
| 11/10/2009 | 0089 | 2.8124 | 2.8437 | 1.36 | 1.36 | 13112.03 | 13113.03 | 1 | 384 | Cloudy | 25.0 | 1010 | 0.03 | 1.36 | 81.6 |
| 12/10/2009 | 0099 | 2.8473 | 2.8619 | 1.36 | 1.36 | 13113.03 | 13114.03 | 1 | 179 | Rainy | 24.0 | 1008 | 0.01 | 1.36 | 81.6 |
| 12/10/2009 | 9695 | 2.8355 | 2.8498 | 1.36 | 1.36 | 13114.03 | 13115.03 | 1 | 175 | Cloudy | 24.0 | 1008 | 0.01 | 1.36 | 81.6 |
| 12/10/2009 | 9696 | 2.9113 | 2.9277 | 1.36 | 1.36 | 13115.03 | 13116.03 | 1 | 201 | Sunny | 24.0 | 1008 | 0.02 | 1.36 | 81.6 |
| 13/10/2009 | 0097 | 2.8268 | 2.8504 | 1.36 | 1.36 | 13116.03 | 13117.03 | 1 | 289 | Sunny | 26.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 13/10/2009 | 0096 | 2.8314 | 2.8482 | 1.36 | 1.36 | 13117.03 | 13118.03 | 1 | 206 | Sunny | 26.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 13/10/2009 | 0094 | 2.8293 | 2.8510 | 1.36 | 1.36 | 13118.03 | 13119.03 | 1 | 266 | Sunny | 29.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 14/10/2009 | 0090 | 2.8262 | 2.8422 | 1.36 | 1.36 | 13119.03 | 13120.03 | 1 | 196 | Rainy | 25.0 | 1009 | 0.02 | 1.36 | 81.6 |
| 14/10/2009 | 0091 | 2.8193 | 2.8277 | 1.36 | 1.36 | 13120.03 | 13121.03 | 1 | 103 | Cloudy | 25.0 | 1009 | 0.01 | 1.36 | 81.6 |
| 14/10/2009 | 0093 | 2.8501 | 2.8574 | 1.36 | 1.36 | 13121.03 | 13122.03 | 1 | 89 | Cloudy | 26.0 | 1009 | 0.01 | 1.36 | 81.6 |
| 15/10/2009 | 0152 | 2.8600 | 2.8697 | 1.36 | 1.36 | 13122.03 | 13123.03 | 1 | 119 | Fine | 26.0 | 1011 | 0.01 | 1.36 | 81.6 |
| 15/10/2009 | 0153 | 2.8638 | 2.8857 | 1.36 | 1.36 | 13123.03 | 13124.03 | 1 | 268 | Fine | 26.0 | 1011 | 0.02 | 1.36 | 81.6 |
| 15/10/2009 | 0154 | 2.8738 | 2.8847 | 1.36 | 1.36 | 13124.03 | 13125.03 | 1 | 134 | Fine | 28.0 | 1011 | 0.01 | 1.36 | 81.6 |
| 16/10/2009 | 0157 | 2.8784 | 2.9046 | 1.36 | 1.36 | 13125.03 | 13126.03 | 1 | 321 | Cloudy | 25.0 | 1010 | 0.03 | 1.36 | 81.6 |
| 16/10/2009 | 0158 | 2.8789 | 2.8988 | 1.36 | 1.36 | 13126.03 | 13127.03 | 1 | 244 | Cloudy | 26.0 | 1010 | 0.02 | 1.36 | 81.6 |
| 16/10/2009 | 0156 | 2.8495 | 2.8698 | 1.36 | 1.36 | 13127.03 | 13128.03 | 1 | 249 | Fine | 27.0 | 1010 | 0.02 | 1.36 | 81.6 |
| 17/10/2009 | 0164 | 2.8601 | 2.8682 | 1.36 | 1.36 | 13128.03 | 13129.08 | 1 | 99 | Sunny | 25.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 17/10/2009 | 0165 | 2.8833 | 2.8987 | 1.36 | 1.36 | 13129.03 | 13130.03 | 1 | 189 | Sunny | 26.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 17/10/2009 | 0166 | 2.8946 | 2.9072 | 1.36 | 1.36 | 13130.03 | 13131.03 | 1 | 154 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 18/10/2009 | 0168 | 2.8878 | 2.9070 | 1.36 | 1.36 | 13131.03 | 13132.03 | 1 | 235 | Sunny | 25.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 18/10/2009 | 0169 | 2.8519 | 2.8688 | 1.36 | 1.36 | 13132.03 | 13133.03 | 1 | 207 | Sunny | 25.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 18/10/2009 | 0170 | 2.8843 | 2.8975 | 1.36 | 1.36 | 13133.03 | 13134.03 | 1 | 162 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 19/10/2009 | 0172 | 2.8844 | 2.9061 | 1.36 | 1.36 | 13134.03 | 13135.03 | 1 | 266 | Fine | 25.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 19/10/2009 | 0160 | 2.9157 | 2.9286 | 1.36 | 1.36 | 13135.03 | 13136.03 | 1 | 158 | Cloudy | 25.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 19/10/2009 | 0162 | 2.9085 | 2.9269 | 1.36 | 1.36 | 13136.03 | 13137.03 | 1 | 225 | Cloudy | 26.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 20/10/2009 | 0163 | 2.8773 | 2.8889 | 1.36 | 1.36 | 13137.03 | 13138.03 | 1 | 142 | Cloudy | 25.0 | 1009 | 0.01 | 1.36 | 81.6 |
| 20/10/2009 | 0057 | 2.7814 | 2.8142 | 1.36 | 1.36 | 13138.03 | 13139.03 | 1 | 402 | Cloudy | 26.0 | 1009 | 0.03 | 1.36 | 81.6 |
| 20/10/2009 | 0173 | 2.8880 | 2.9057 | 1.36 | 1.36 | 13139.03 | 13140.03 | 1 | 217 | Cloudy | 26.0 | 1009 | 0.02 | 1.36 | 81.6 |
| 21/10/2009 | 0177 | 2.8676 | 2.8910 | 1.36 | 1.36 | 13140.03 | 13141.03 | 1 | 287 | Cloudy | 24.0 | 1010 | 0.02 | 1.36 | 81.6 |
| 21/10/2009 | 0175 | 2.9005 | 2.9135 | 1.36 | 1.36 | 13141.03 | 13142.03 | 1 | 159 | Cloudy | 25.0 | 1010 | 0.01 | 1.36 | 81.6 |
| 21/10/2009 | 0176 | 2.8829 | 2.9165 | 1.36 | 1.36 | 13142.03 | 13143.03 | 1 | 412 | Cloudy | 25.0 | 1010 | 0.03 | 1.36 | 81.6 |
| 22/10/2009 | 0179 | 2.9354 | 2.9566 | 1.36 | 1.36 | 13143.03 | 13144.03 | 1 | 260 | Sunny | 25.0 | 1015 | 0.02 | 1.36 | 81.6 |
| 22/10/2009 | 0180 | 2.8499 | 2.8606 | 1.36 | 1.36 | 13144.03 | 13145.03 | 1 | 131 | Sunny | 28.0 | 1015 | 0.01 | 1.36 | 81.6 |
| 22/10/2009 | 0182 | 2.8822 | 2.8947 | 1.36 | 1.36 | 13145.03 | 13146.03 | 1 | 153 | Sunny | 28.0 | 1015 | 0.01 | 1.36 | 81.6 |

| | |
|---|---|
| Min | 89 |
| Max | 412 |
| Average | 220 |

**Action Level** **393 ug/m3**

**Baseline 1-hr TSP Monitoring Results**

**Station :** AM5 **(Western Wholesale Food Market)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 25/9/09 | 0002 | 2.8050 | 2.8111 | 1.22 | 1.22 | 9967.21 | 9968.21 | 1 | 83 | Sunny | 29.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 25/9/09 | 0003 | 2.8452 | 2.8503 | 1.22 | 1.22 | 9968.21 | 9969.21 | 1 | 70 | Sunny | 29.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 25/9/09 | 0004 | 2.8278 | 2.8346 | 1.22 | 1.22 | 9969.21 | 9970.21 | 1 | 93 | Sunny | 29.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 26/09/09 | 0005 | 2.8088 | 2.8235 | 1.22 | 1.22 | 9970.21 | 9971.21 | 1 | 201 | Sunny | 29.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 26/09/09 | 0006 | 2.7984 | 2.8114 | 1.22 | 1.22 | 9971.21 | 9972.21 | 1 | 178 | Sunny | 29.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 26/09/09 | 0007 | 2.7924 | 2.8042 | 1.22 | 1.22 | 9972.21 | 9973.21 | 1 | 161 | Sunny | 29.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 27/09/09 | 0009 | 2.8033 | 2.8163 | 1.22 | 1.22 | 9973.21 | 9974.21 | 1 | 178 | Sunny | 30.0 | 1010 | 0.01 | 1.22 | 73.2 |
| 27/09/09 | 0010 | 2.8211 | 2.8311 | 1.22 | 1.22 | 9974.21 | 9975.21 | 1 | 137 | Sunny | 30.0 | 1010 | 0.01 | 1.22 | 73.2 |
| 27/09/09 | 0011 | 2.7740 | 2.7833 | 1.22 | 1.22 | 9975.21 | 9976.21 | 1 | 127 | Sunny | 30.0 | 1010 | 0.01 | 1.22 | 73.2 |
| 28/09/09 | 0013 | 2.8220 | 2.8347 | 1.22 | 1.22 | 9976.21 | 9977.21 | 1 | 173 | Rainy | 27.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 28/09/09 | 0014 | 2.8016 | 2.8077 | 1.22 | 1.22 | 9977.21 | 9978.21 | 1 | 83 | Rainy | 27.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 28/09/09 | 0015 | 2.7966 | 2.8060 | 1.22 | 1.22 | 9978.21 | 9979.21 | 1 | 128 | Rainy | 27.5 | 1012 | 0.01 | 1.22 | 73.2 |
| 29/09/09 | 0016 | 2.7970 | 2.8051 | 1.22 | 1.22 | 9979.21 | 9980.21 | 1 | 111 | Rainy | 25.0 | 1002 | 0.01 | 1.22 | 73.2 |
| 29/09/09 | 0018 | 2.8024 | 2.8076 | 1.22 | 1.22 | 9980.21 | 9981.21 | 1 | 71 | Rainy | 25.0 | 1002 | 0.01 | 1.22 | 73.2 |
| 29/09/09 | 0019 | 2.8201 | 2.8256 | 1.22 | 1.22 | 9981.21 | 9982.21 | 1 | 75 | Rainy | 25.0 | 1002 | 0.01 | 1.22 | 73.2 |
| 30/09/09 | 0021 | 2.7946 | 2.8010 | 1.22 | 1.22 | 9982.21 | 9983.21 | 1 | 87 | Rainy | 27.0 | 1002 | 0.01 | 1.22 | 73.2 |
| 30/09/09 | 0022 | 2.8001 | 2.8046 | 1.22 | 1.22 | 9983.21 | 9984.21 | 1 | 61 | Rainy | 27.0 | 1002 | 0.00 | 1.22 | 73.2 |
| 30/09/09 | 0023 | 2.8142 | 2.8189 | 1.22 | 1.22 | 9984.21 | 9985.21 | 1 | 64 | Rainy | 27.0 | 1002 | 0.00 | 1.22 | 73.2 |
| 1/10/2009 | 0024 | 2.7793 | 2.7868 | 1.22 | 1.22 | 9985.21 | 9986.21 | 1 | 102 | Sunny | 26.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 1/10/2009 | 0025 | 2.7818 | 2.7900 | 1.22 | 1.22 | 9986.21 | 9987.21 | 1 | 112 | Sunny | 26.5 | 1012 | 0.01 | 1.22 | 73.2 |
| 1/10/2009 | 0026 | 2.7711 | 2.7788 | 1.22 | 1.22 | 9987.21 | 998.21 | 1 | 105 | Sunny | 27.5 | 1012 | 0.01 | 1.22 | 73.2 |
| 2/10/2009 | 0028 | 2.8430 | 2.8566 | 1.22 | 1.22 | 9988.21 | 9989.21 | 1 | 186 | Sunny | 26.0 | 1014 | 0.01 | 1.22 | 73.2 |
| 2/10/2009 | 0029 | 2.8045 | 2.8126 | 1.22 | 1.22 | 9989.21 | 9990.21 | 1 | 111 | Sunny | 26.5 | 1014 | 0.01 | 1.22 | 73.2 |
| 2/10/2009 | 0030 | 2.7904 | 2.8015 | 1.22 | 1.22 | 9990.21 | 9991.21 | 1 | 152 | Sunny | 27.5 | 1014 | 0.01 | 1.22 | 73.2 |
| 3/10/2009 | 0032 | 2.7815 | 2.7897 | 1.22 | 1.22 | 9991.21 | 9992.21 | 1 | 112 | Sunny | 26.0 | 1010 | 0.01 | 1.22 | 73.2 |
| 3/10/2009 | 0033 | 2.8280 | 2.8374 | 1.22 | 1.22 | 9992.21 | 9993.21 | 1 | 128 | Sunny | 26.5 | 1010 | 0.01 | 1.22 | 73.2 |
| 3/10/2009 | 0034 | 2.8227 | 2.8370 | 1.22 | 1.22 | 9993.21 | 9994.21 | 1 | 195 | Sunny | 27.5 | 1010 | 0.01 | 1.22 | 73.2 |
| 4/10/2009 | 0036 | 2.8065 | 2.8184 | 1.22 | 1.22 | 9994.21 | 9995.21 | 1 | 163 | Sunny | 26.0 | 1014 | 0.01 | 1.22 | 73.2 |
| 4/10/2009 | 0037 | 2.7953 | 2.8050 | 1.22 | 1.22 | 9995.21 | 9996.21 | 1 | 133 | Sunny | 26.5 | 1014 | 0.01 | 1.22 | 73.2 |
| 4/10/2009 | 0038 | 2.8305 | 2.8406 | 1.22 | 1.22 | 9996.21 | 9997.21 | 1 | 138 | Sunny | 27.5 | 1014 | 0.01 | 1.22 | 73.2 |
| 5/10/2009 | 0040 | 2.7922 | 2.8042 | 1.22 | 1.22 | 9997.21 | 9998.21 | 1 | 164 | Sunny | 26.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 5/10/2009 | 0041 | 2.7944 | 2.8020 | 1.22 | 1.22 | 9998.21 | 9999.21 | 1 | 104 | Sunny | 26.5 | 1012 | 0.01 | 1.22 | 73.2 |
| 5/10/2009 | 0042 | 2.8234 | 2.8333 | 1.22 | 1.22 | 9999.21 | 10000.21 | 1 | 135 | Sunny | 27.0 | 1012 | 0.01 | 1.22 | 73.2 |
| 6/10/2009 | 0044 | 2.8257 | 2.8383 | 1.22 | 1.22 | 10000.21 | 10001.21 | 1 | 172 | Sunny | 25.0 | 1013 | 0.01 | 1.22 | 73.2 |
| 6/10/2009 | 0045 | 2.8049 | 2.8140 | 1.22 | 1.22 | 10001.21 | 10002.21 | 1 | 124 | Sunny | 25.0 | 1013 | 0.01 | 1.22 | 73.2 |
| 6/10/2009 | 0046 | 2.8169 | 2.8254 | 1.22 | 1.22 | 10002.21 | 10003.21 | 1 | 116 | Sunny | 25.5 | 1013 | 0.01 | 1.22 | 73.2 |
| 7/10/2009 | 0048 | 2.8276 | 2.8370 | 1.22 | 1.22 | 10003.21 | 10004.21 | 1 | 128 | Sunny | 26.0 | 1011 | 0.01 | 1.22 | 73.2 |
| 7/10/2009 | 0049 | 2.7667 | 2.7743 | 1.22 | 1.22 | 10004.21 | 10005.21 | 1 | 104 | Sunny | 26.0 | 1011 | 0.01 | 1.22 | 73.2 |
| 7/10/2009 | 0050 | 2.8134 | 2.8228 | 1.22 | 1.22 | 10005.21 | 10006.21 | 1 | 128 | Sunny | 26.5 | 1011 | 0.01 | 1.22 | 73.2 |
| 8/10/2009 | 0052 | 2.8409 | 2.8525 | 1.22 | 1.22 | 10006.21 | 10007.21 | 1 | 158 | Fine | 26.0 | 1010 | 0.01 | 1.22 | 73.2 |
| 8/10/2009 | 0053 | 2.7940 | 2.8026 | 1.22 | 1.22 | 10007.21 | 10008.21 | 1 | 117 | Fine | 26.0 | 1010 | 0.01 | 1.22 | 73.2 |
| 8/10/2009 | 0054 | 2.8058 | 2.8145 | 1.22 | 1.22 | 10008.21 | 10009.21 | 1 | 119 | Fine | 26.5 | 1010 | 0.01 | 1.22 | 73.2 |

| | |
|---|---|
| Min | 61 |
| Max | 201 |
| Average | 126 |

**Action Level** 332 ug/m3

**Baseline 1-hr TSP Monitoring Results**

**Station :** **AM6** **(Works Site Boundary - Stonecutters Island Sewage Treatment Works)**

| Date | Filter Identification No. | Filter Weight (g) | | Flow Rate ($m^3$/min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. ($\mu g/m^3$) | Weather Condition | Ave. Air Temp. (°C) | Atmospheric Pressure(hPa) | Particulate weight(g) | Av. flow ($m^3$/min) | Total vol. ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Initial | Final | Initial | Final | | | | | | | | |
| 9/10/2009 | 0101 | 2.8588 | 2.8670 | 1.36 | 1.36 | 9244.38 | 9245.38 | 1 | 100 | Sunny | 28.0 | 1011 | 0.01 | 1.36 | 81.6 |
| 9/10/2009 | 0103 | 2.8859 | 2.9102 | 1.36 | 1.36 | 9245.38 | 9246.38 | 1 | 298 | Sunny | 29.0 | 1011 | 0.02 | 1.36 | 81.6 |
| 9/10/2009 | 0104 | 2.8694 | 2.8852 | 1.36 | 1.36 | 9246.38 | 9247.38 | 1 | 194 | Sunny | 29.0 | 1011 | 0.02 | 1.36 | 81.6 |
| 10/10/2009 | 0105 | 2.8490 | 2.8557 | 1.36 | 1.36 | 9247.38 | 9248.38 | 1 | 82 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 10/10/2009 | 0106 | 2.8840 | 2.8917 | 1.36 | 1.36 | 9248.38 | 9249.38 | 1 | 94 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 10/10/2009 | 0107 | 2.8942 | 2.8995 | 1.36 | 1.36 | 9249.38 | 9250.38 | 1 | 65 | Sunny | 27.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 12/10/2009 | 0109 | 2.8775 | 2.8897 | 1.36 | 1.36 | 9250.38 | 9251.38 | 1 | 150 | Sunny | 24.0 | 1008 | 0.01 | 1.36 | 81.6 |
| 12/10/2009 | 0110 | 2.9230 | 2.9303 | 1.36 | 1.36 | 9251.38 | 9252.38 | 1 | 89 | Sunny | 24.0 | 1008 | 0.01 | 1.36 | 81.6 |
| 12/10/2009 | 0112 | 2.9230 | 2.9285 | 1.36 | 1.36 | 9252.38 | 9253.38 | 1 | 67 | Sunny | 24.0 | 1008 | 0.01 | 1.36 | 81.6 |
| 13/10/2009 | 0113 | 2.8683 | 2.8814 | 1.36 | 1.36 | 9253.38 | 9254.38 | 1 | 161 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 13/10/2009 | 0114 | 2.8842 | 2.9014 | 1.36 | 1.36 | 9254.38 | 9255.38 | 1 | 211 | Sunny | 26.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 13/10/2009 | 0115 | 2.8790 | 2.8909 | 1.36 | 1.36 | 9255.38 | 9256.38 | 1 | 146 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 14/10/2009 | 0117 | 2.8708 | 2.8823 | 1.36 | 1.36 | 9256.38 | 9257.38 | 1 | 141 | Cloudy | 25.0 | 1009 | 0.01 | 1.36 | 81.6 |
| 14/10/2009 | 0118 | 2.8237 | 2.8338 | 1.36 | 1.36 | 9257.38 | 9258.38 | 1 | 124 | Cloudy | 25.0 | 1009 | 0.01 | 1.36 | 81.6 |
| 14/10/2009 | 0119 | 2.8225 | 2.8337 | 1.36 | 1.36 | 9258.38 | 9259.38 | 1 | 137 | Cloudy | 26.0 | 1009 | 0.01 | 1.36 | 81.6 |
| 15/10/2009 | 0121 | 2.8101 | 2.8246 | 1.36 | 1.36 | 9259.38 | 9260.38 | 1 | 178 | Sunny | 26.0 | 1011 | 0.01 | 1.36 | 81.6 |
| 15/10/2009 | 0122 | 2.9005 | 2.9090 | 1.36 | 1.36 | 9260.38 | 9261.38 | 1 | 104 | Sunny | 26.0 | 1011 | 0.01 | 1.36 | 81.6 |
| 15/10/2009 | 0123 | 2.8875 | 2.8987 | 1.36 | 1.36 | 9261.38 | 9262.38 | 1 | 137 | Sunny | 27.0 | 1011 | 0.01 | 1.36 | 81.6 |
| 16/10/2009 | 0125 | 2.8507 | 2.8652 | 1.36 | 1.36 | 9262.38 | 9263.38 | 1 | 178 | Sunny | 27.0 | 1010 | 0.01 | 1.36 | 81.6 |
| 16/10/2009 | 0126 | 2.8978 | 2.9061 | 1.36 | 1.36 | 9263.38 | 9264.38 | 1 | 102 | Sunny | 28.0 | 1010 | 0.01 | 1.36 | 81.6 |
| 16/10/2009 | 0127 | 2.8892 | 2.9012 | 1.36 | 1.36 | 9264.38 | 9265.38 | 1 | 147 | Sunny | 28.0 | 1010 | 0.01 | 1.36 | 81.6 |
| 17/10/2009 | 0129 | 2.8470 | 2.8610 | 1.36 | 1.36 | 9265.38 | 9266.38 | 1 | 172 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 17/10/2009 | 0130 | 2.8689 | 2.8840 | 1.36 | 1.36 | 9266.38 | 9267.38 | 1 | 185 | Sunny | 26.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 17/10/2009 | 0131 | 2.8982 | 2.9152 | 1.36 | 1.36 | 9267.38 | 9268.38 | 1 | 208 | Sunny | 26.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 18/10/2009 | 0133 | 2.8501 | 2.8636 | 1.36 | 1.36 | 9268.38 | 9269.38 | 1 | 165 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 18/10/2009 | 0134 | 2.8672 | 2.8780 | 1.36 | 1.36 | 9269.38 | 9270.38 | 1 | 132 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 18/10/2009 | 0135 | 2.9194 | 2.9277 | 1.36 | 1.36 | 9270.38 | 9271.38 | 1 | 102 | Sunny | 26.0 | 1012 | 0.01 | 1.36 | 81.6 |
| 19/10/2009 | 0137 | 2.9196 | 2.9563 | 1.36 | 1.36 | 9271.38 | 9272.38 | 1 | 450 | Cloudy | 26.0 | 1012 | 0.04 | 1.36 | 81.6 |
| 19/10/2009 | 0138 | 2.8698 | 2.8887 | 1.36 | 1.36 | 9272.38 | 9273.38 | 1 | 232 | Cloudy | 26.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 19/10/2009 | 0139 | 2.8681 | 2.8943 | 1.36 | 1.36 | 9273.38 | 9274.38 | 1 | 321 | Cloudy | 26.0 | 1012 | 0.03 | 1.36 | 81.6 |
| 20/10/2009 | 0141 | 2.8858 | 2.9126 | 1.36 | 1.36 | 9274.38 | 9275.38 | 1 | 328 | Cloudy | 26.0 | 1009 | 0.03 | 1.36 | 81.6 |
| 20/10/2009 | 0142 | 2.8978 | 2.9278 | 1.36 | 1.36 | 9275.38 | 9276.38 | 1 | 368 | Cloudy | 26.0 | 1009 | 0.03 | 1.36 | 81.6 |
| 20/10/2009 | 0143 | 2.8904 | 2.9240 | 1.36 | 1.36 | 9276.38 | 9277.38 | 1 | 412 | Cloudy | 26.0 | 1009 | 0.03 | 1.36 | 81.6 |
| 21/10/2009 | 0145 | 2.8796 | 2.9031 | 1.36 | 1.36 | 9277.38 | 9278.38 | 1 | 288 | Cloudy | 25.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 21/10/2009 | 0146 | 2.8311 | 2.8513 | 1.36 | 1.36 | 9278.38 | 9279.38 | 1 | 248 | Cloudy | 25.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 21/10/2009 | 0147 | 2.8775 | 2.9013 | 1.36 | 1.36 | 9279.38 | 9280.38 | 1 | 292 | Cloudy | 25.0 | 1012 | 0.02 | 1.36 | 81.6 |
| 22/10/2009 | 0149 | 2.8563 | 2.9015 | 1.36 | 1.36 | 9280.38 | 9281.38 | 1 | 554 | Fine | 28.0 | 1015 | 0.05 | 1.36 | 81.6 |
| 22/10/2009 | 0150 | 2.8636 | 2.8959 | 1.36 | 1.36 | 9281.38 | 9282.38 | 1 | 396 | Fine | 28.0 | 1015 | 0.03 | 1.36 | 81.6 |
| 22/10/2009 | 0058 | 2.7696 | 2.8014 | 1.36 | 1.36 | 9282.38 | 9283.38 | 1 | 390 | Fine | 28.0 | 1015 | 0.03 | 1.36 | 81.6 |
| 23/10/2009 | 0060 | 2.8243 | 2.8373 | 1.36 | 1.36 | 9283.38 | 9284.38 | 1 | 159 | Sunny | 26.0 | 1015 | 0.01 | 1.36 | 81.6 |
| 23/10/2009 | 0201 | 2.8399 | 2.8555 | 1.36 | 1.36 | 9284.38 | 9285.38 | 1 | 191 | Sunny | 26.0 | 1015 | 0.02 | 1.36 | 81.6 |
| 23/10/2009 | 0202 | 2.8348 | 2.8528 | 1.36 | 1.36 | 9285.38 | 9286.38 | 1 | 221 | Sunny | 27.0 | 1015 | 0.02 | 1.36 | 81.6 |

| | |
|---|---|
| Min | 65 |
| Max | 554 |
| Average | 208 |

**Action Level** [a] **346 ug/m3**

Notes:

(a) Action Level is determined based on the average 1-hr TSP measured at at AM6 and the baseline monitoring data obtained from the Construction of Disinfection Facilties Project in HATS Stage 2A

Meteorological Data Extracted from the Hong Kong Observatory

| Date | Weather | King's Park Station | | | | |
|---|---|---|---|---|---|---|
| | | Average Air Temperature (°C) | Average Relative Humidity (%) | Total Rainfall (mm) | Average Wind Speed (km/h) | Wind Direction |
| 9/28/2009 | Rainy | 25.3# | 88# | 53.5# | 11.3# | NE |
| 9/29/2009 | Rainy | 25.3 | 85 | 34.0 | 14.0 | NE |
| 9/30/2009 | Rainy | 26.5 | 86 | 60.0 | 8.8 | E |
| 10/1/2009 | Sunny | 27.5 | 80.0 | 0.0 | 0-16 | - |
| 10/2/2009 | Sunny | 28.0 | 73.0 | 0.0 | 0-17 | - |
| 10/3/2009 | Sunny | 27.7 | 71.0 | 0.0 | 0-12 | - |
| 10/4/2009 | Sunny | 28.0 | 57.0 | 0.0 | 0-21 | N |
| 10/5/2009 | Sunny | 28.1 | 51.0 | 0.0 | 0-18 | NE |
| 10/6/2009 | Sunny | 28.4 | 57.0 | 0.0 | 0-19 | W |
| 10/7/2009 | Rainy | 27.7 | 70.0 | 25.4 | 0-15 | SE |
| 10/8/2009 | Sunny | 26.2 | 72.0 | 0.0 | 0-12 | SE |
| 10/9/2009 | Sunny | 26.6 | 66.0 | 0.0 | - | - |
| 10/10/2009 | Sunny | 26.8 | 66.0 | 0.0 | - | - |
| 10/11/2009 | Rainy | 25.9 | 80.0 | 5.1 | 3-25 | |
| 10/12/2009 | Rainy | 25.3 | 84.0 | 1.5 | 1-22 | SE |
| 10/13/2009 | Sunny | 26.7 | 78.0 | 0.0 | 5-24 | E |

\# less than 24 hourly observations per day

\- data were not available

| Date | Weather | Kai Tak Station | | | | |
|---|---|---|---|---|---|---|
| | | Average Air Temperature (°C) * | Average Relative Humidity (%) * | Total Rainfall (mm) * | Average Wind Speed (km/h) | Wind Direction |
| 9/29/2009 | Rainy | 25.3 | 85 | 34.0 | 14.0 * | NE * |
| 9/30/2009 | Rainy | 26.5 | 86 | 60.0 | 8.8 * | E * |
| 10/1/2009 | Sunny | 27.5 | 80.0 | 0.0 | 0-16 * | - |
| 10/2/2009 | Sunny | 28.0 | 73.0 | 0.0 | 0-17 * | - |
| 10/3/2009 | Sunny | 27.7 | 71.0 | 0.0 | 0-12 * | - |
| 10/4/2009 | Sunny | 28.0 | 57.0 | 0.0 | 0-21 * | N * |
| 10/5/2009 | Sunny | 28.1 | 51.0 | 0.0 | 0-18 * | NE * |
| 10/6/2009 | Sunny | 28.4 | 57.0 | 0.0 | 0-18 | SE |
| 10/7/2009 | Rainy | 27.7 | 70.0 | 25.4 | 0-17 | NE |
| 10/8/2009 | Sunny | 26.2 | 72.0 | 0.0 | - | - |
| 10/9/2009 | Sunny | 26.6 | 66.0 | 0.0 | - | - |
| 10/10/2009 | Sunny | 26.8 | 66.0 | 0.0 | - | - |
| 10/11/2009 | Rainy | 25.9 | 80.0 | 5.1 | 8-33 | NE |
| 10/12/2009 | Rainy | 25.3 | 84.0 | 1.5 | 15-32 | E |
| 10/13/2009 | Sunny | 26.7 | 78.0 | 0.0 | 7-29 | E |

* king's park data

\- data were not available

**Meteorological Data Extracted from the Hong Kong Observatory**

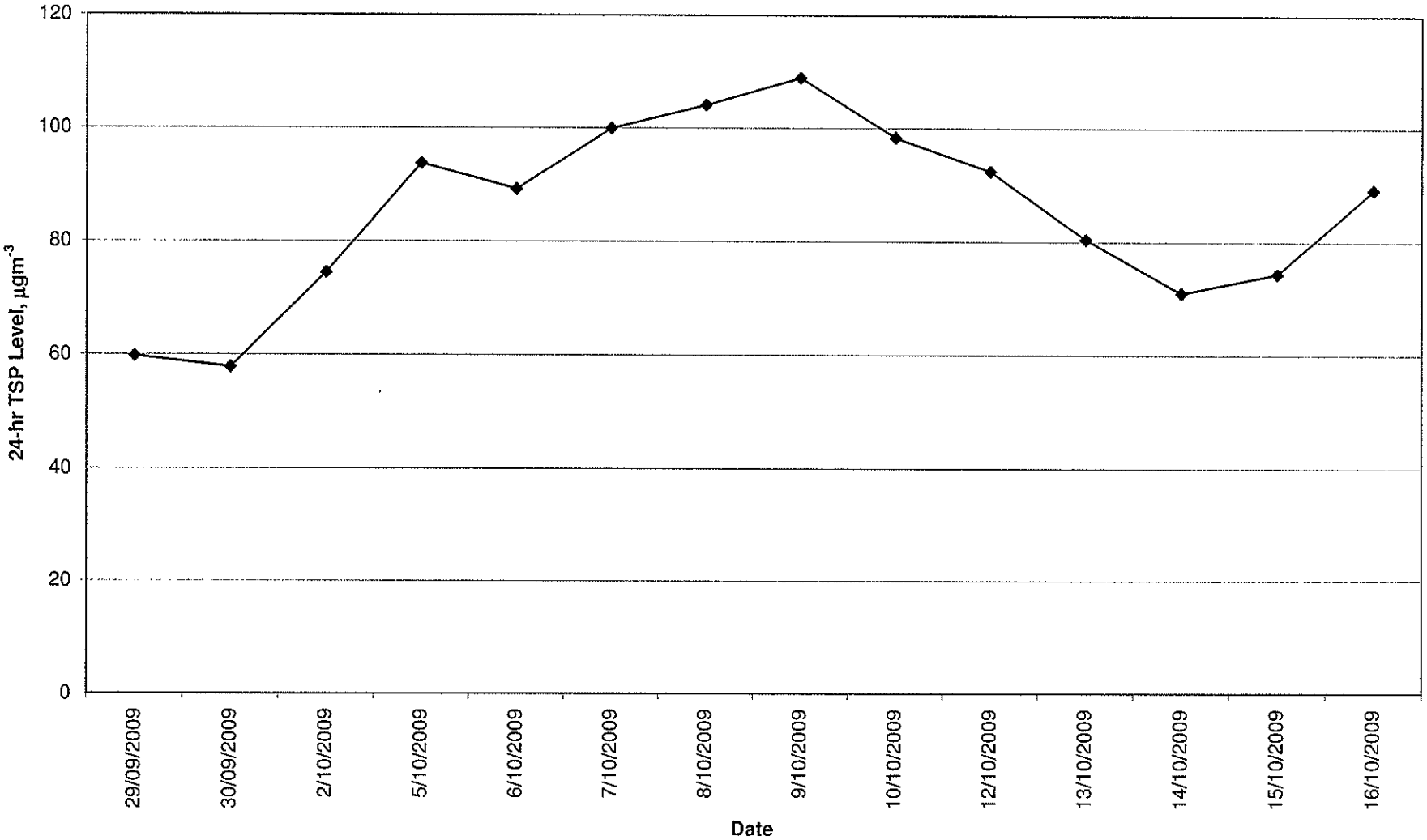
| Date | Weather | Tsing Yi Station | | | | |
|---|---|---|---|---|---|---|
| | | Average Air Temperature (°C) * | Average Relative Humidity (%) * | Total Rainfall (mm) * | Average Wind Speed (km/h) | Wind Direction |
| 10/9/2009 | Sunny | 26.6 | 66 | 0.0 | - | - |
| 10/10/2009 | Sunny | 26.8 | 66 | 0.0 | - | - |
| 10/11/2009 | Rainy | 25.9 | 80.0 | 5.1 | 2-11 | SE |
| 10/12/2009 | Rainy | 25.3 | 84.0 | 1.5 | 5-22 | SE |
| 10/13/2009 | Rainy | 26.7 | 78.0 | Trace | 1-22 | E |
| 10/14/2009 | Rainy | 25.6 | 87.0 | 9.5 | 0-19 | SE |
| 10/15/2009 | Sunny | 25.6 | 78.0 | 0.0 | 2-18 | S |
| 10/16/2009 | Rainy | 25.8 | 79.0 | Trace | 0-17 | SE |
| 10/17/2009 | Sunny | 26.5 | 74.0 | 0.0 | 3-20 | SE |
| 10/18/2009 | Sunny | 26.0 | 71.0 | 0.0 | 4-23 | E |
| 10/19/2009 | Rainy | 25.8 | 83.0 | 2.0 | 5-23 | SE |
| 10/20/2009 | Rainy | 24.5 | 83.0 | 0.9 | 1-19 | SE |
| 10/21/2009 | Sunny | 24.9 | 78.0 | 0.0 | 0-15 | SE |
| 10/22/2009 | Sunny | 25.7 | 74.0 | 0.0 | 0-13 | SE |
| 10/23/2009 | Sunny | 26.3 | 66.0 | 0.0 | 0-13 | SE |
| 10/24/2009 | Sunny | 26.2 | 71.0 | 0.0 | 0-14 | SE |

* king's park data
\- data were not available

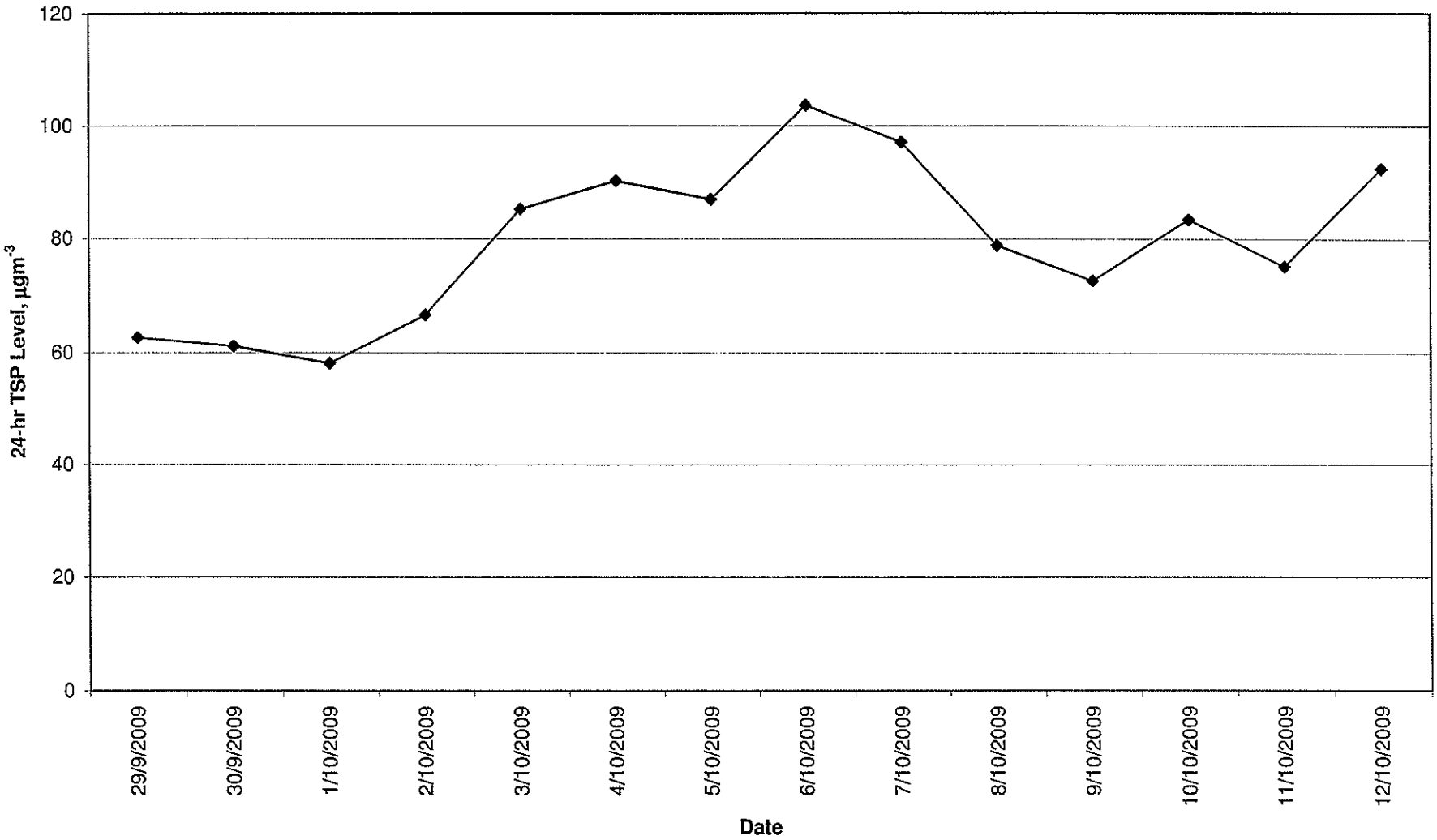
| Date | Weather | Green Island Station | | | | |
|---|---|---|---|---|---|---|
| | | Average Air Temperature (°C) * | Average Relative Humidity (%) * | Total Rainfall (mm) * | Average Wind Speed (km/h) | Wind Direction |
| 9/25/2009 | Sunny | 28.7 | 72 | 0.0 | 13.3 * | SE * |
| 9/26/2009 | Sunny | 29.1 | 73 | 0.0 | 8.0# * | SE * |
| 9/27/2009 | Sunny | 29.0# | 70# | 0.0# | - | - |
| 9/28/2009 | Rainy | 25.3# | 88# | 53.5# | 11.3# * | NE * |
| 9/29/2009 | Rainy | 25.3 | 85 | 34.0 | 14.0 * | NE * |
| 9/30/2009 | Rainy | 26.5 | 86 | 60.0 | 8.8 * | E * |
| 10/1/2009 | Sunny | 27.5 | 80.0 | 0.0 | 0-16 * | - |
| 10/2/2009 | Rainy | 28.0 | 73.0 | Trace | 0-17 * | - |
| 10/3/2009 | Sunny | 27.7 | 71.0 | 0.0 | 0-12 * | - |
| 10/4/2009 | Sunny | 28.0 | 57.0 | 0.0 | 0-21 * | N * |
| 10/5/2009 | Sunny | 28.1 | 51.0 | 0.0 | 0-18 * | NE * |
| 10/6/2009 | Sunny | 28.4 | 57.0 | 0.0 | 12-27 | S |
| 10/7/2009 | Rainy | 27.7 | 70.0 | 25.4 | 1-29 | SE |
| 10/8/2009 | Sunny | 26.2 | 72.0 | 0.0 | - | - |
| 10/9/2009 | Sunny | 26.6 | 66.0 | 0.0 | - | - |

* king's park data
\- data were not available
\# less than 24 hourly observations per day

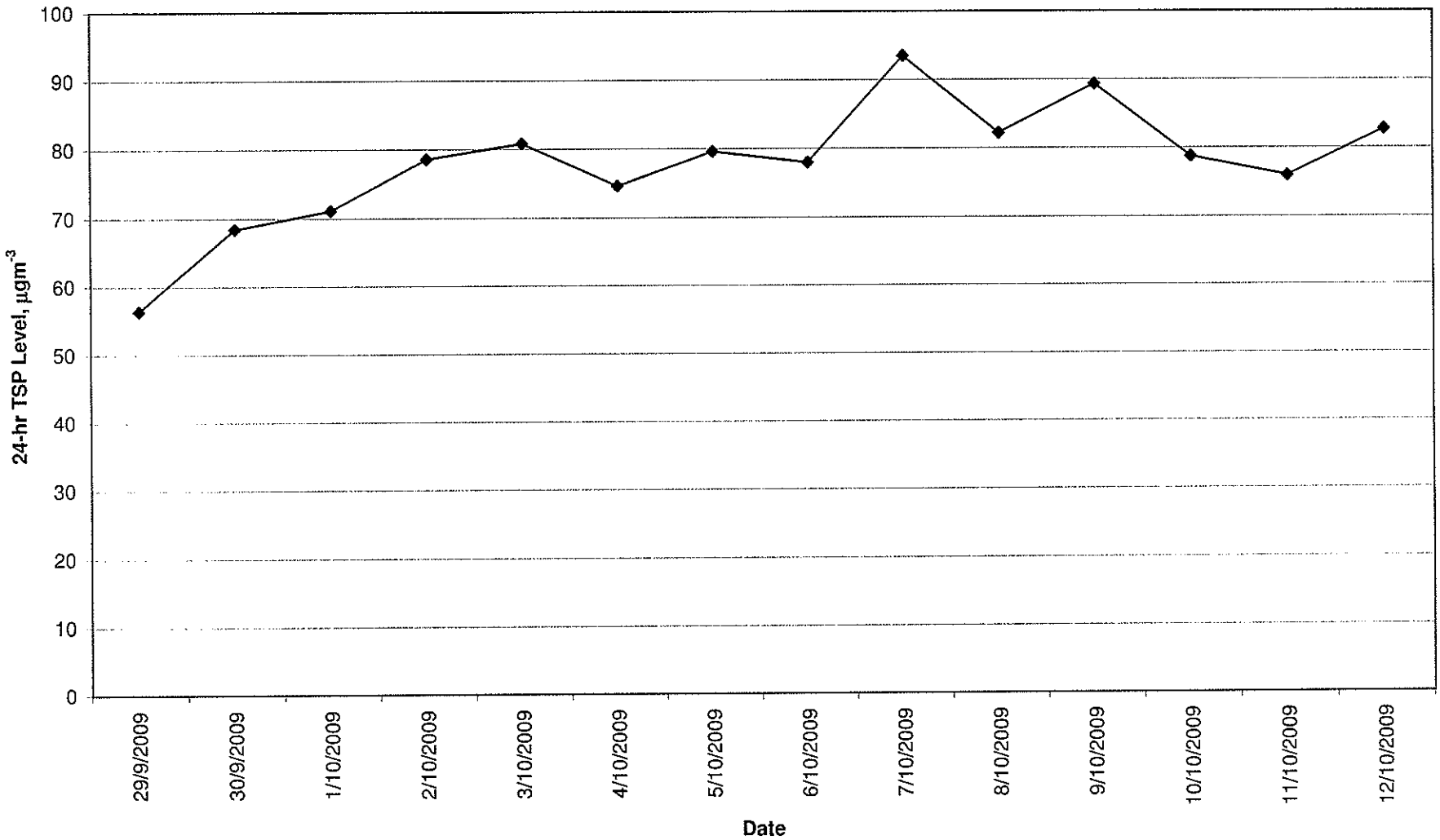
**Baseline 24-hr TSP Levels**
**AM1 (Chan's Creative School)**



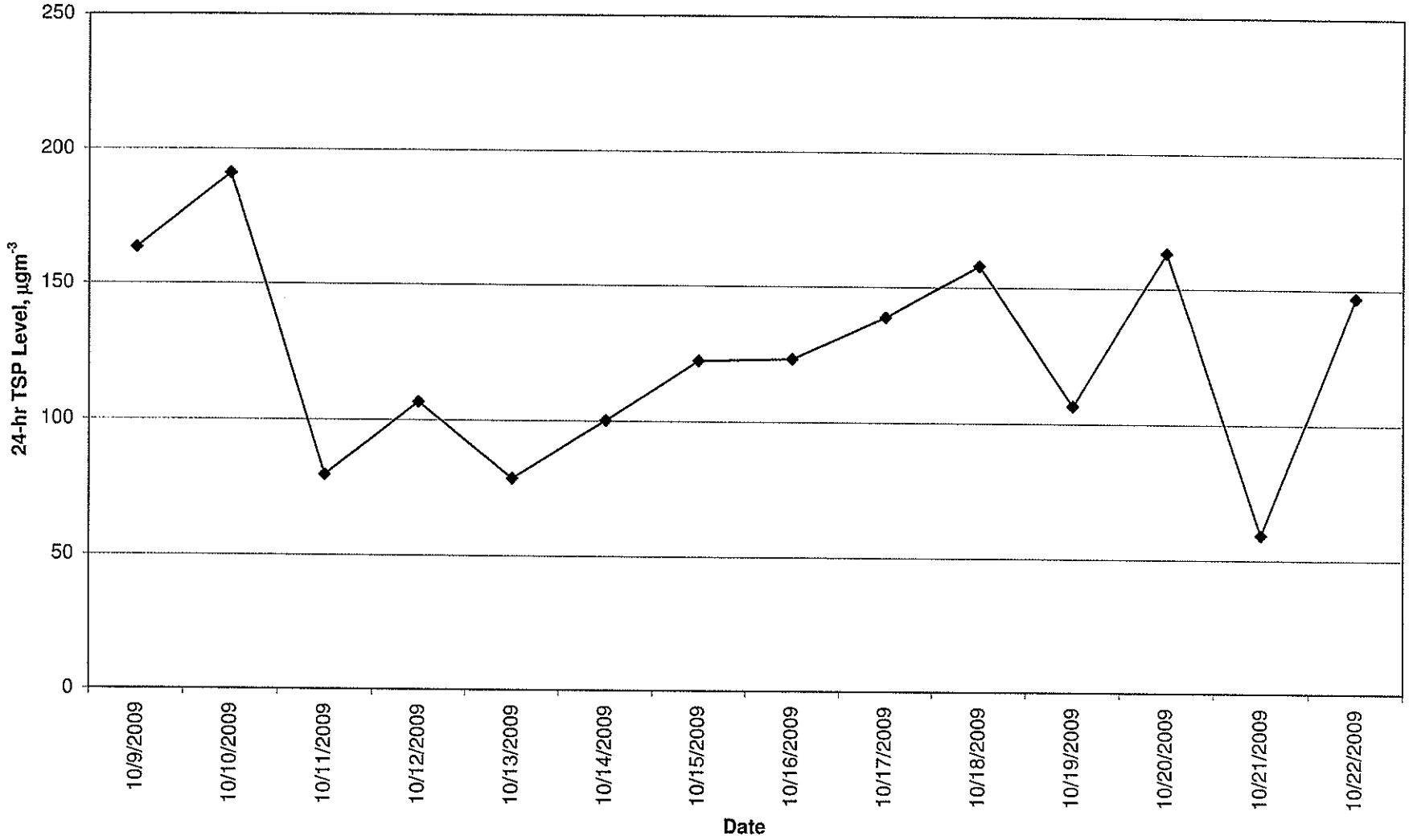
**Baseline 24-hr TSP Levels**
**AM2 (Hong Kong & Island Regional Office, WSD)**



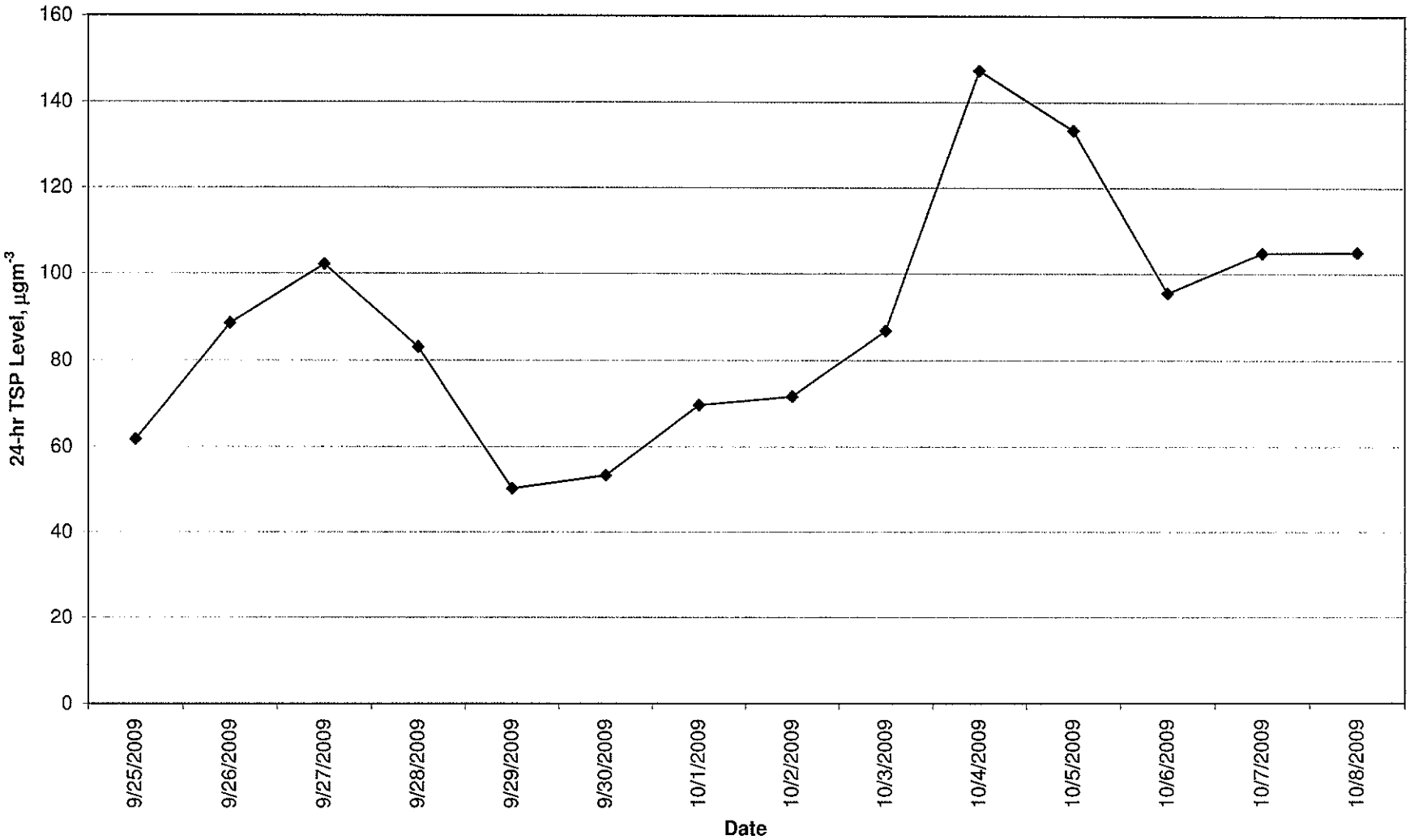
**Baseline 24-hr TSP Level**
**AM3 (Wan Chai East PTW)**



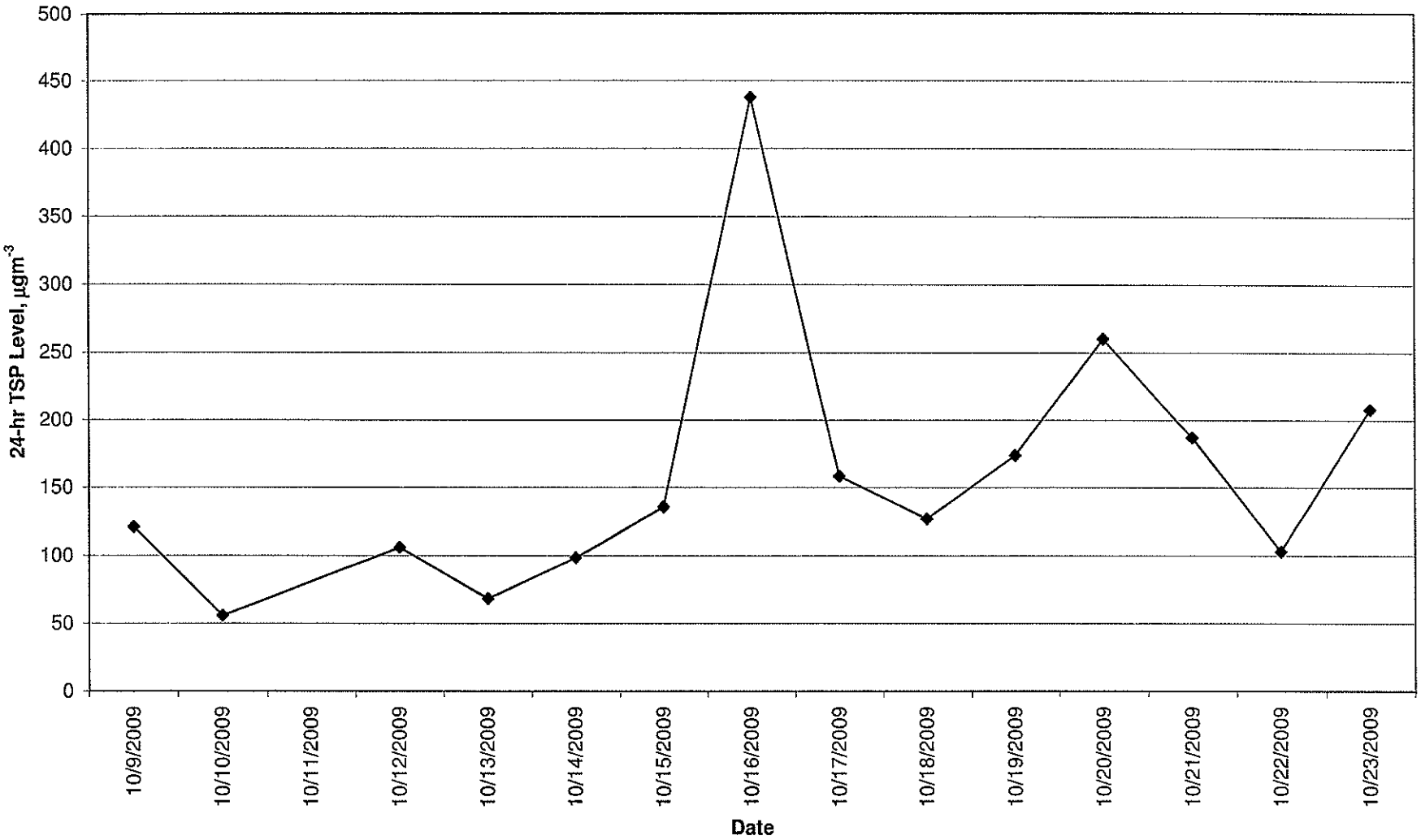
**Baseline 24-hr TSP Level**
**AM4 (A Location within DSD Central PTW )**



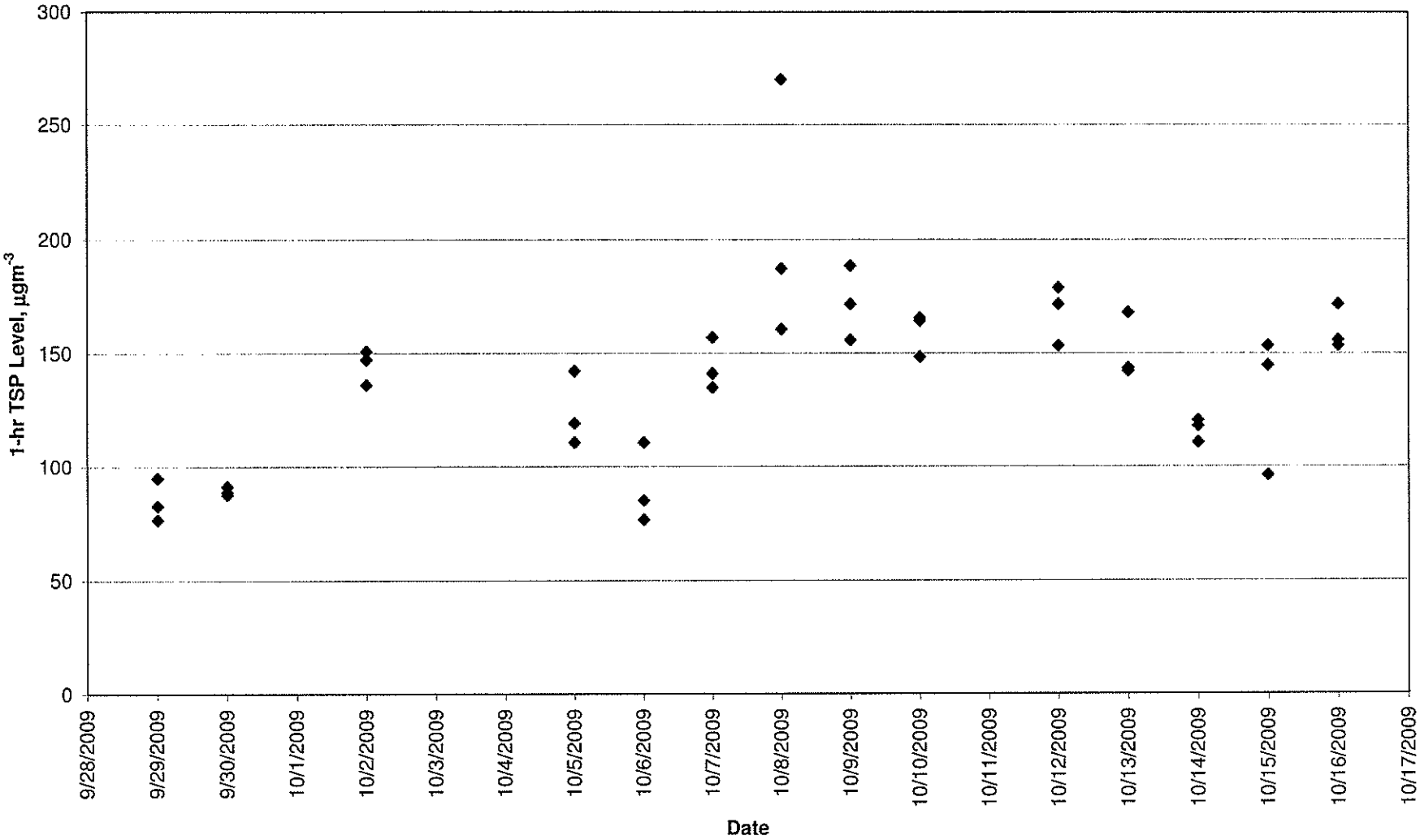
**Baseline 24-hr TSP Level**
**AM5 (AFCD Western Wholesale Food Market)**



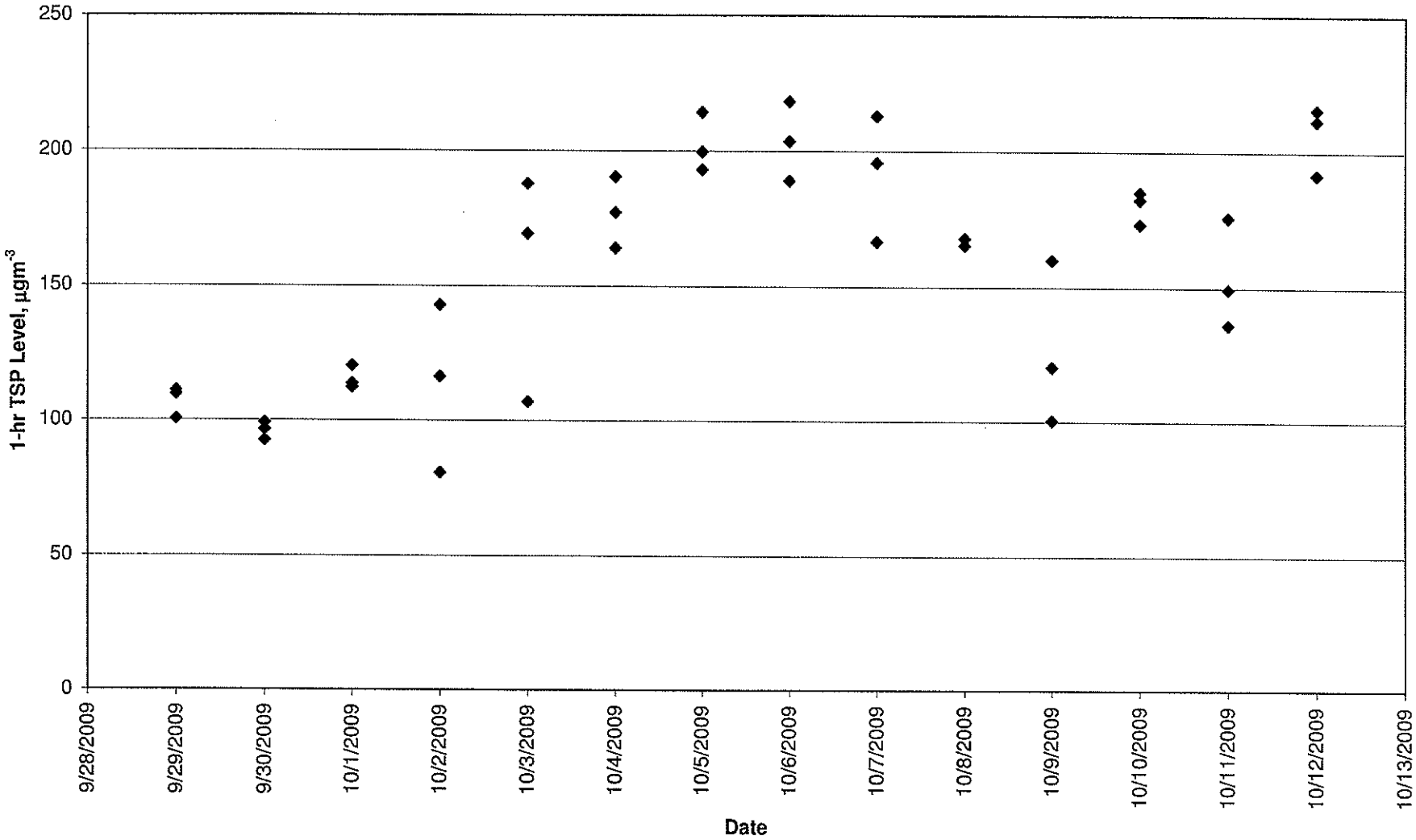
**Baseline 24-hr TSP Level**
**AM6 (Work Site Boundary - Stonecutters Island Sewage Treatment Works)**



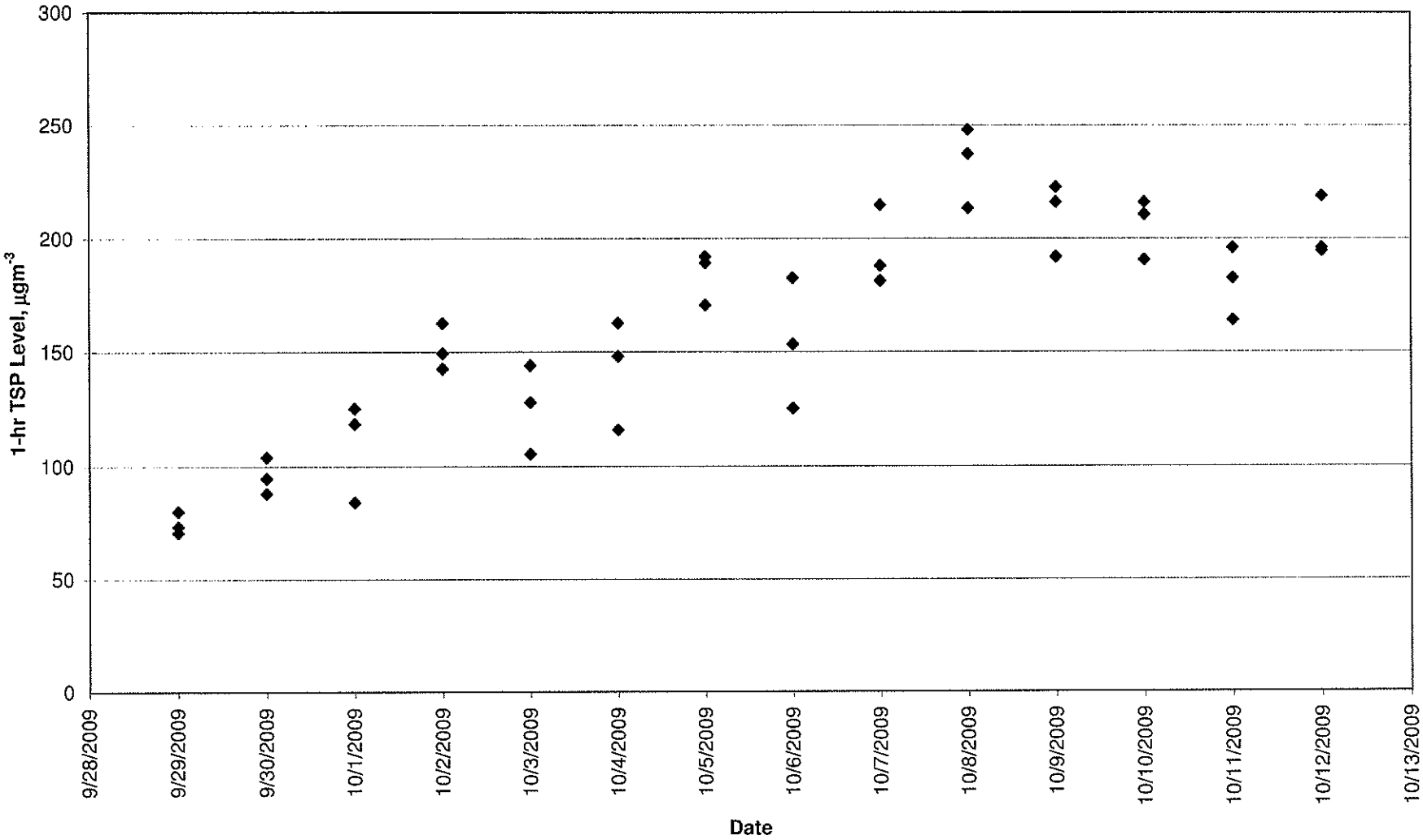
**Baseline 1-hr TSP Levels**
**AM1 (Chan's Creative School)**



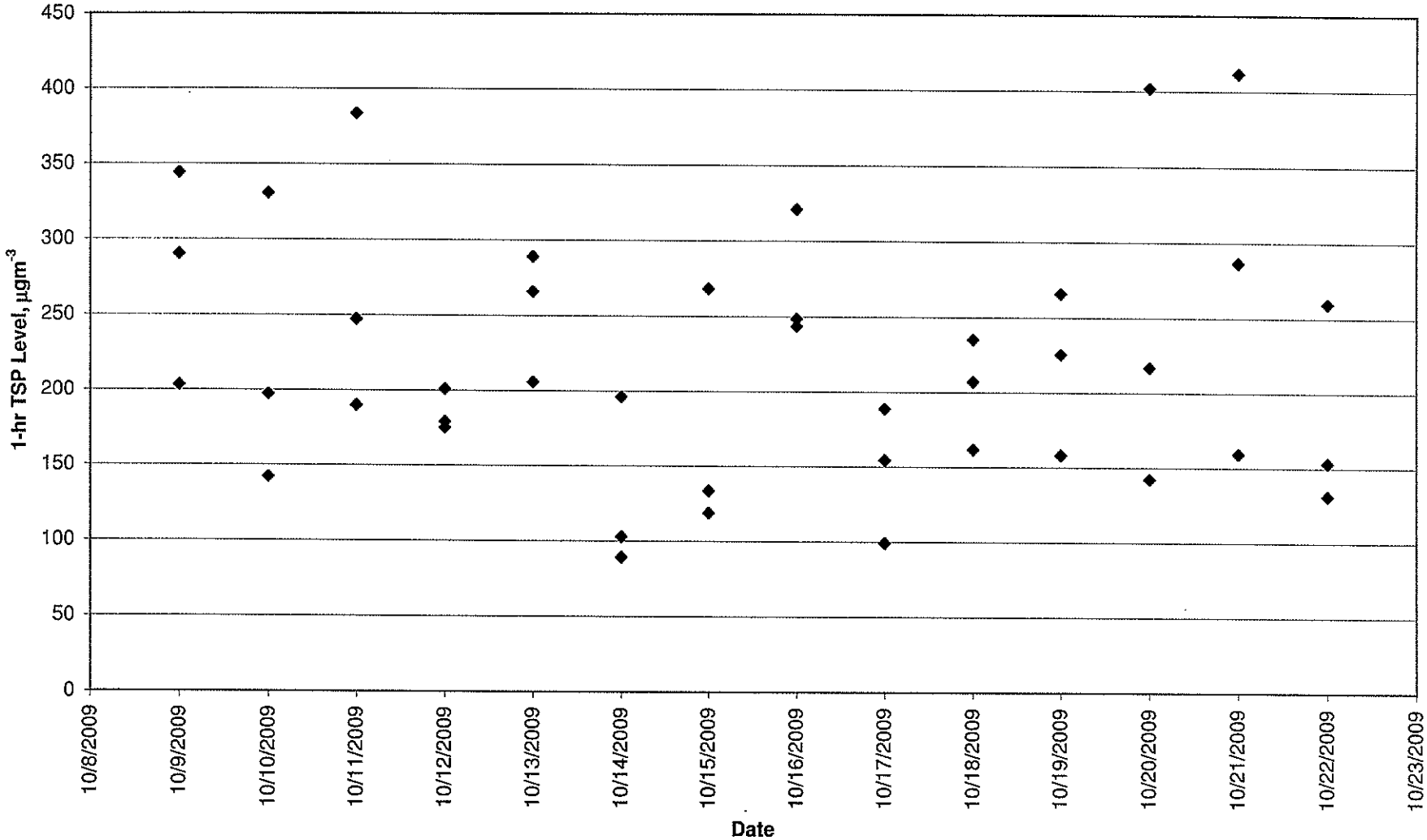
**Baseline 1-hr TSP Levels**
**AM2 (Hong Kong & Island Regional Office, WSD)**



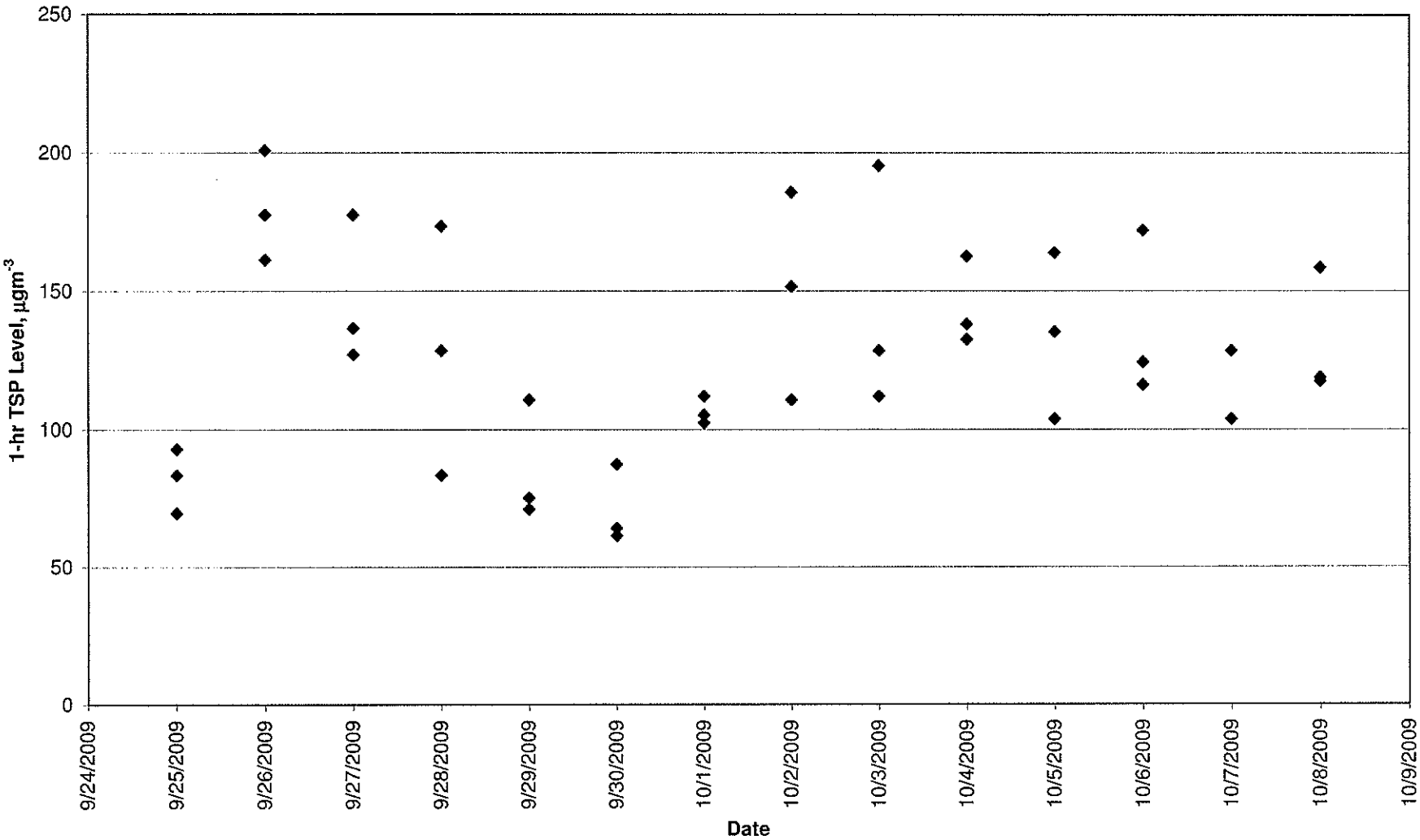
**Baseline 1-hr TSP Level**
**AM3 (Wan Chai East PTW)**



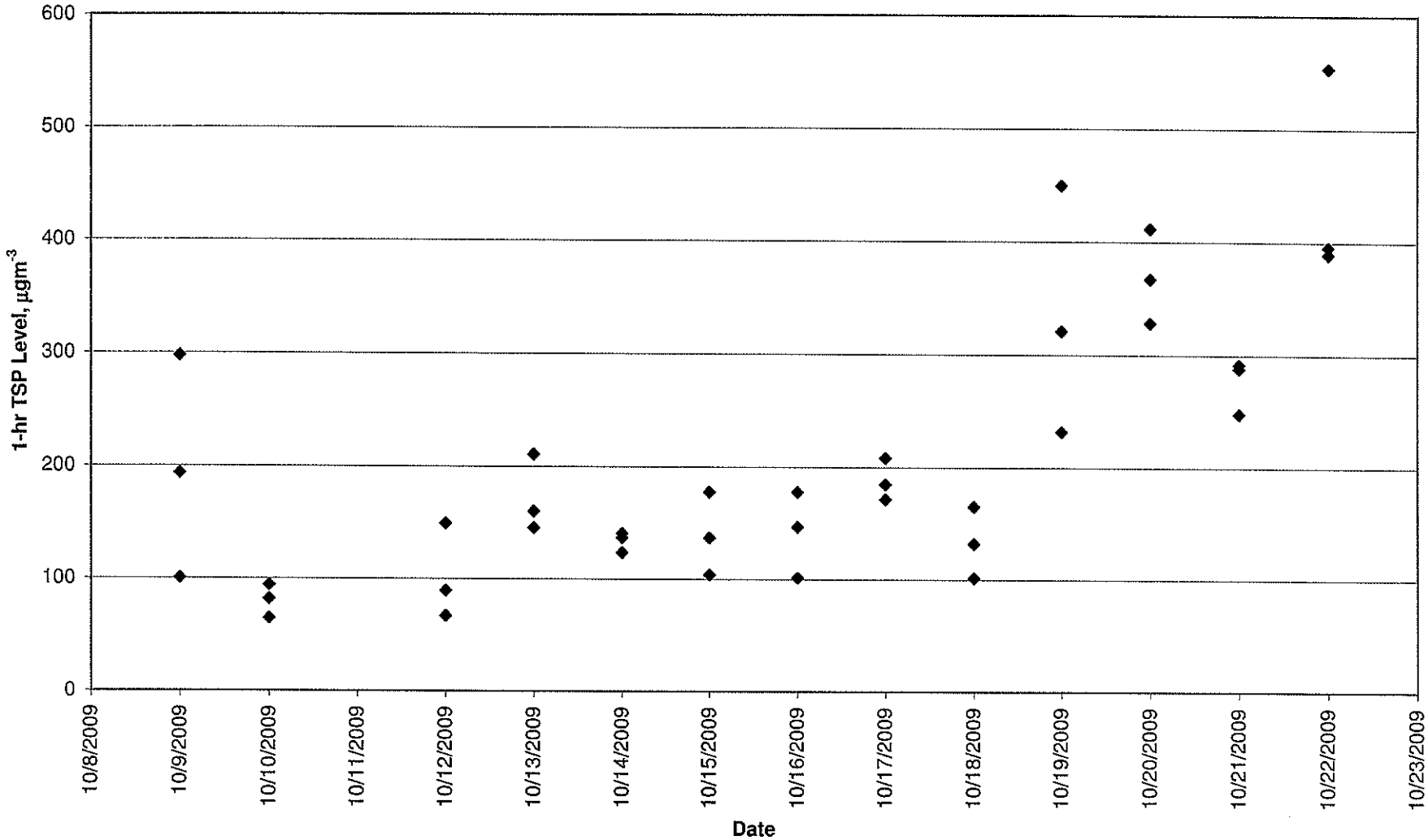
**Baseline 1-hr TSP Level**
**AM4 (A Location within DSD Central PTW)**



**Baseline 1-hr TSP Level**
**AM5 (AFCD Western Wholesale Food Market)**



**Baseline 1-hr TSP Level**
**AM6 (Stonecutters Island Sewage Treatment Works)**



Annex E

# Certificates for Noise Monitoring Equipments

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C093598

# Certificate of Calibration

*This is to certify that the equipment*

*Description : Sound Level Calibrator*

*Manufacturer : Rion*

*Model No. : NC-73*

*Serial No. : 10786708*

*has been calibrated for the specific items and ranges.*
*The results are shown in the Calibration Report No. C093598.*

*The equipment is supplied by*

*Co. Name : Envirotech Services Co.*

*Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong*

Send to: Winnie KO Ref:
Received by: Date:
Action taken:
Sent to: Date: Action:

Date Received by ERM
Login Ref IC-370

*Date of Issue : 10 July 2009*

*Certified by :* Chan Hin Ch
H C Chan

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C093598

# *Calibration Report*

*ITEM TESTED*

DESCRIPTION : Sound Level Calibrator
MANUFACTURER : Rion
MODEL NO. : NC-73
SERIAL NO. : 10786708

*TEST CONDITIONS*

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

*TEST SPECIFICATIONS*

Calibration check

*DATE OF TEST* : 9 July 2009 *JOB NO.* : IC09-1664

*TEST RESULTS*

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

*Tested by :* *K C Lee* *Date : 10 July 2009*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093598

# *Calibration Report*

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| TST150A | Measuring Amplifier | C080751 |
| CL129 | Universal Counter | C093121 |
| CL281 | Multifunction Acoustic Calibrator | DC090052 |

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

| UUT Nominal Value | Measured Value (dB) | Mfr's Spec. (dB) | Uncertainty of Measured Value (dB) |
|---|---|---|---|
| 94 dB, 1 kHz | 93.9 | ± 0.5 | ± 0.2 |

5.2 Frequency Accuracy

| UUT Nominal Value (kHz) | Measured Value (Hz) | Mfr's Spec. | Uncertainty of Measured Value (Hz) |
|---|---|---|---|
| 1 | 0.991 6 | 1 kHz ± 2 % | ± 0.1 |

Remark : - The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

*Certificate No. : C093473*

# *Certificate of Calibration*

*This is to certify that the equipment*

*Description : Precision Integrating Sound Level Meter*

*Manufacturer : Rion*

*Model No. : NL-18*

*Serial No. : 00360030*

*has been calibrated for the specific items and ranges.*
*The results are shown in the Calibration Report No. C093473.*

*The equipment is supplied by*

*Co. Name : Envirotech Services Co.*

*Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong*

*Date of Issue : 6 July 2009*

*Certified by :* H C Chan

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C093473

# *Calibration Report*

*ITEM TESTED*

DESCRIPTION : Precision Integrating Sound Level Meter
MANUFACTURER : Rion
MODEL NO. : NL-18
SERIAL NO. : 00360030

*TEST CONDITIONS*

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : —

*TEST SPECIFICATIONS*

Calibration check

*DATE OF TEST* : 3 July 2009 *JOB NO.* : IC09-1664

*TEST RESULTS*

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

*Tested by :* *K C Lee* *Date : 6 July 2009*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093473

# *Calibration Report*

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.2 - 6.4.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL280 | 40 MHz Arbitrary Waveform Generator | C090024 |
| CL281 | Multifunction Acoustic Calibrator | DC090052 |

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | | IEC 651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. (kHz) | Before Adjustment | After Adjustment | |
| 50 - 110 | LA | A | Fast | 94.00 | 1 | 93.3 | 94.1 | ± 0.7 |

6.1.2 Linearity

| UUT Setting | | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. (kHz) | |
| 60 - 120 | LA | A | Fast | 94.00 | 1 | 94.2 (Ref.) |
| | | | | 104.00 | | 104.2 |
| | | | | 114.00 | | 114.2 |

IEC 651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. (kHz) | | |
| 50 - 110 | LA | A | Fast | 94.00 | 1 | 94.1 | Ref. |
| | | | Slow | | | 94.0 | ± 0.1 |

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093473

# *Calibration Report*

6.2.2 Tone Burst Signal (2 kHz)

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Burst Duration | | |
| 50 -110 | LA | A | Fast | 106.00 | Continuous | 106.0 | Ref. |
| | LAmx | | | | 200 ms | 105.0 | -1.0 ± 1.0 |
| | LA | | Slow | | Continuous | 106.0 | Ref. |
| | LAmx | | | | 500 ms | 102.4 | -4.1 ± 1.0 |

6.3 Frequency Weighting

6.3.1 A-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. | | |
| 40 - 100 | LA | A | Fast | 94.00 | 31.5 Hz | 54.7 | -39.4 ± 1.5 |
| | | | | | 63 Hz | 68.0 | -26.2 ± 1.5 |
| | | | | | 125 Hz | 78.0 | -16.1 ± 1.0 |
| | | | | | 250 Hz | 85.4 | -8.6 ± 1.0 |
| | | | | | 500 Hz | 90.8 | -3.2 ± 1.0 |
| | | | | | 1 kHz | 94.1 | Ref. |
| | | | | | 2 kHz | 95.3 | +1.2 ± 1.0 |
| | | | | | 4 kHz | 94.9 | +1.0 ± 1.0 |
| | | | | | 8 kHz | 91.7 | -1.1 (+1.5 ; -3.0) |

6.3.2 C-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. | | |
| 40 - 100 | LC | C | Fast | 94.00 | 31.5 Hz | 91.4 | -3.0 ± 1.5 |
| | | | | | 63 Hz | 93.6 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 94.1 | -0.2 ± 1.0 |
| | | | | | 250 Hz | 94.2 | 0.0 ± 1.0 |
| | | | | | 500 Hz | 94.2 | 0.0 ± 1.0 |
| | | | | | 1 kHz | 94.1 | Ref. |
| | | | | | 2 kHz | 93.9 | -0.2 ± 1.0 |
| | | | | | 4 kHz | 93.1 | -0.8 ± 1.0 |
| | | | | | 8 kHz | 89.8 | -3.0 (+1.5 ; -3.0) |

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093473

# *Calibration Report*

6.4 Time Averaging

| UUT Setting | | | | Applied Value | | | | | UUT | IEC 60804 |
|---|---|---|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Freq. Weight | Integrating Time | Freq. (kHz) | Burst Duration (ms) | Burst Duty Factor | Burst Level (dB) | Equivalent Level (dB) | Reading (dB) | Type 1 Spec. (dB) |
| 50 - 110 | LAeq | A | 10 sec. | 4 | 1 | 1/10 | 110.0 | 100 | 100.2 | ± 0.5 |
| | | | | | | $1/10^2$ | | 90 | 90.2 | ± 0.5 |
| | | | 60 sec. | | | $1/10^3$ | | 80 | 79.8 | ± 1.0 |
| | | | 5 min. | | | $1/10^4$ | | 70 | 70.2 | ± 1.0 |

Remarks : - Mfr's Spec. : IEC 651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value : 94 dB : 31.5Hz - 125 Hz : ± 0.35 dB
  250 Hz - 500 Hz : ± 0.30 dB
  1 kHz : ± 0.20 dB
  2 kHz - 4 kHz : ± 0.35 dB
  8 kHz : ± 0.45 dB
  104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

*Certificate No. : C093733*

# *Certificate of Calibration*

*This is to certify that the equipment*

*Description : Sound Level Meter*

*Manufacturer : Rion*

*Model No. : NL-31*

*Serial No. : 00320533*

*has been calibrated for the specific items and ranges.*
*The results are shown in the Calibration Report No. C093733.*

*The equipment is supplied by*

*Co. Name : Envirotech Services Co.*

*Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong*

*Date of Issue : 16 July 2009*

*Certified by :* _____
*H C Chan*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories. Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C093733

# *Calibration Report*

***ITEM TESTED***

DESCRIPTION : Sound Level Meter
MANUFACTURER : Rion
MODEL NO. : NL-31
SERIAL NO. : 00320533

***TEST CONDITIONS***

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

***TEST SPECIFICATIONS***

Calibration check

***DATE OF TEST*** : 15 July 2009 ***JOB NO.*** : IC09-1740

***TEST RESULTS***

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

*Tested by :* K C Lee *Date : 16 July 2009*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093733

# *Calibration Report*

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL280 | 40 MHz Arbitrary Waveform Generator | C090024 |
| CL281 | Multifunction Acoustic Calibrator | DC090052 |

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 30 - 120 | $L_A$ | A | Fast | 94.00 | 1 | 94.2 | ± 0.7 |

6.1.2 Linearity

| UUT Setting | | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | |
| 30 - 120 | $L_A$ | A | Fast | 94.00 | 1 | 94.2 (Ref.) |
| | | | | 104.00 | | 104.2 |
| | | | | 114.00 | | 114.2 |

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 30 - 120 | $L_A$ | A | Fast | 94.00 | 1 | 94.2 | Ref. |
| | | | Slow | | | 94.1 | ± 0.1 |

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093733

# *Calibration Report*

6.2.2 Tone Burst Signal (2 kHz)

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Burst Duration | | |
| 20 - 110 | $L_A$ | A | Fast | 106.00 | Continuous | 106.0 | Ref. |
| | $L_{Amax}$ | | | | 200 ms | 105.0 | -1.0 ± 1.0 |
| | $L_A$ | | Slow | | Continuous | 106.0 | Ref. |
| | $L_{Amax}$ | | | | 500 ms | 102.0 | -4.1 ± 1.0 |

6.3 Frequency Weighting

6.3.1 A-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 30 - 120 | $L_A$ | A | Fast | 94.00 | 31.5 Hz | 55.0 | -39.4 ± 1.5 |
| | | | | | 63 Hz | 68.3 | -26.2 ± 1.5 |
| | | | | | 125 Hz | 78.3 | -16.1 ± 1.0 |
| | | | | | 250 Hz | 85.7 | -8.6 ± 1.0 |
| | | | | | 500 Hz | 91.0 | -3.2 ± 1.0 |
| | | | | | 1 kHz | 94.2 | Ref. |
| | | | | | 2 kHz | 95.2 | +1.2 ± 1.0 |
| | | | | | 4 kHz | 94.4 | +1.0 ± 1.0 |
| | | | | | 8 kHz | 90.1 | -1.1 (+1.5 ; -3.0) |
| | | | | | 12.5 kHz | 83.9 | -4.3 (+3.0 ; -6.0) |

6.3.2 C-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 30 - 120 | $L_C$ | C | Fast | 94.00 | 31.5 Hz | 91.4 | -3.0 ± 1.5 |
| | | | | | 63 Hz | 93.6 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 94.1 | -0.2 ± 1.0 |
| | | | | | 250 Hz | 94.3 | 0.0 ± 1.0 |
| | | | | | 500 Hz | 94.3 | 0.0 ± 1.0 |
| | | | | | 1 kHz | 94.2 | Ref. |
| | | | | | 2 kHz | 93.9 | -0.2 ± 1.0 |
| | | | | | 4 kHz | 92.7 | -0.8 ± 1.0 |
| | | | | | 8 kHz | 88.3 | -3.0 (+1.5 ; -3.0) |
| | | | | | 12.5 kHz | 82.1 | -6.2 (+3.0 ; -6.0) |

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093733

# *Calibration Report*

6.4 Time Averaging

| UUT Setting | | | | Applied Value | | | | | UUT | IEC 60804 |
|---|---|---|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Freq. (kHz) | Burst Duration (ms) | Burst Duty Factor | Burst Level (dB) | Equivalent Level (dB) | Reading (dB) | Type 1 Spec. (dB) |
| 20 - 110 | $L_{Aeq}$ | A | 10 sec. | 4 | 1 | 1/10 | 110.0 | 100 | 100.3 | ± 0.5 |
| | | | | | | $1/10^2$ | | 90 | 90.3 | ± 0.5 |
| | | | 60 sec. | | | $1/10^3$ | | 80 | 80.3 | ± 1.0 |
| | | | 5 min. | | | $1/10^4$ | | 70 | 70.3 | ± 1.0 |

Remarks : - Mfr's Spec. : IEC 60651 & IEC 60804 Type 1

- Uncertainties of Applied Value : 94 dB : 31.5 Hz - 125 Hz : ± 0.35 dB
  250 Hz - 500 Hz : ± 0.30 dB
  1 kHz : ± 0.20 dB
  2 kHz - 4 kHz : ± 0.35 dB
  8 kHz : ± 0.45 dB
  12.5 kHz : ± 0.70 dB
  104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

*Certificate No. : C092284*

# *Certificate of Calibration*

*This is to certify that the equipment*

*Description : Sound Level Meter*

*Manufacturer : Rion*

*Model No. : NL-31*

*Serial No. : 00410224*

*has been calibrated for the specific items and ranges.*
*The results are shown in the Calibration Report No. C092284.*

*The equipment is supplied by*

*Co. Name : Envirotech Services Co.*

*Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong*

*Date of Issue : 8 May 2009*

*Certified by :* K C Lee

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: catlab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C092284

# *Calibration Report*

*ITEM TESTED*

DESCRIPTION : Sound Level Meter
MANUFACTURER : Rion
MODEL NO. : NL-31
SERIAL NO. : 00410224

*TEST CONDITIONS*

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

*TEST SPECIFICATIONS*

Calibration

*DATE OF TEST* : 7 May 2009 *JOB NO.* : IC09-1058

*TEST RESULTS*

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification. (after adjustment)
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

*Tested by :* Chan Ho Cheung
*H C Chan*

*Date : 8 May 2009*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C092284

# *Calibration Report*

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the internal standard (after adjustment) was performed before the test 6.1.2 - 6.4.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL280 | 40 MHz Arbitrary Waveform Generator | C090024 |
| CL281 | Multifunction Acoustic Calibrator | DC090052 |

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | | IEC 651 Type 1 |
|---|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. (kHz) | Before Adjustment | After Adjustment | Spec. (dB) |
| 20 - 100 | $L_A$ | A | Fast | 94.00 | 1 | * 91.4 | 94.0 | ± 0.7 |

* Out of Mfr's Spec.

6.1.2 Linearity

| UUT Setting | | | | Applied Value | | UUT |
|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. (kHz) | Reading (dB) |
| 30 - 120 | $L_A$ | A | Fast | 94.00 | 1 | 94.0 (Ref.) |
| | | | | 104.00 | | 104.0 |
| | | | | 114.00 | | 114.3 |

IEC 651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

| UUT Setting | | | | Applied Value | | UUT | IEC 651 Type 1 |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. (kHz) | Reading (dB) | Spec. (dB) |
| 20 - 100 | $L_A$ | A | Fast | 94.00 | 1 | 94.0 | Ref. |
| | | | Slow | | | 94.0 | ± 0.1 |

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C092284

# *Calibration Report*

6.2.2 Tone Burst Signal (2 kHz)

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Burst Duration | | |
| 20 - 110 | $L_A$ | A | Fast | 106.00 | Continuous | 106.0 | Ref. |
| | $L_{Amax}$ | | | | 200 ms | 105.0 | -1.0 ± 1.0 |
| | $L_A$ | | Slow | | Continuous | 106.0 | Ref. |
| | $L_{Amax}$ | | | | 500 ms | 102.0 | -4.1 ± 1.0 |

6.3 Frequency Weighting

6.3.1 A-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. | | |
| 20 - 100 | $L_A$ | A | Fast | 94.00 | 31.5 Hz | 54.9 | -39.4 ± 1.5 |
| | | | | | 63 Hz | 68.1 | -26.2 ± 1.5 |
| | | | | | 125 Hz | 78.0 | -16.1 ± 1.0 |
| | | | | | 500 Hz | 90.8 | -3.2 ± 1.0 |
| | | | | | 1 kHz | 94.0 | Ref. |
| | | | | | 2 kHz | 95.2 | +1.2 ± 1.0 |
| | | | | | 4 kHz | 94.7 | +1.0 ± 1.0 |
| | | | | | 8 kHz | 90.2 | -1.1 (+1.5 ; -3.0) |

6.3.2 C-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Response | Level (dB) | Freq. | | |
| 20 - 100 | $L_C$ | C | Fast | 94.00 | 31.5 Hz | 91.3 | -3.0 ± 1.5 |
| | | | | | 63 Hz | 93.4 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 93.9 | -0.2 ± 1.0 |
| | | | | | 500 Hz | 94.1 | 0.0 ± 1.0 |
| | | | | | 1 kHz | 94.0 | Ref. |
| | | | | | 2 kHz | 93.8 | -0.2 ± 1.0 |
| | | | | | 4 kHz | 92.9 | -0.8 ± 1.0 |
| | | | | | 8 kHz | 88.4 | -3.0 (+1.5 ; -3.0) |

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C092284

# *Calibration Report*

6.4 Time Averaging

| UUT Setting | | | | Applied Value | | | | | UUT | IEC 60804 |
|---|---|---|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Weight | Integrating Time | Freq. (kHz) | Burst Duration (ms) | Burst Duty Factor | Burst Level (dB) | Equivalent Level (dB) | Reading (dB) | Type 1 Spec. (dB) |
| 20 - 110 | $L_{Aeq}$ | A | 10 sec. | 4 | 1 | 1/10 | 110.0 | 100 | 100.1 | ± 0.5 |
| | | | | | | $1/10^2$ | | 90 | 90.1 | ± 0.5 |
| | | | 60 sec. | | | $1/10^3$ | | 80 | 80.0 | ± 1.0 |
| | | | 5 min. | | | $1/10^4$ | | 70 | 70.0 | ± 1.0 |

Remarks : - Mfr's Spec. : IEC 651 & IEC 60804 Type 1

- Uncertainties of Applied Value : 94 dB : 31.5Hz - 125 Hz : ± 0.35 dB
  500 Hz : ± 0.30 dB
  1 kHz : ± 0.20 dB
  2 kHz - 4 kHz : ± 0.35 dB
  8 kHz : ± 0.45 dB
  104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

*Certificate No. : C093599*

# *Certificate of Calibration*

*This is to certify that the equipment*

*Description : Precision Sound Level Meter*

*Manufacturer : Rion*

*Model No. : NA-27*

*Serial No. : 00201194*

*has been calibrated for the specific items and ranges.*
*The results are shown in the Calibration Report No. C093599.*

*The equipment is supplied by*

*Co. Name : Envirotech Services Co.*

*Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong*

*Date of Issue : 10 July 2009*

*Certified by :* H C Chan

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F. Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories. Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C093599

# *Calibration Report*

*ITEM TESTED*

DESCRIPTION : Precision Sound Level Meter
MANUFACTURER : Rion
MODEL NO. : NA-27
SERIAL NO. : 00201194

*TEST CONDITIONS*

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : —

*TEST SPECIFICATIONS*

Calibration check

*DATE OF TEST* : 9 July 2009 *JOB NO.* : IC09-1664

*TEST RESULTS*

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

*Tested by :* K C Lee *Date : 10 July 2009*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093599

# *Calibration Report*

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurement at each calibration point.

4. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL280 | 40 MHz Arbitrary Waveform Generator | C090024 |
| CL281 | Multifunction Acoustic Calibrator | DC090052 |

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

| UUT Setting | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 50 - 110 | LA | Fast | 94.00 | 1 | 94.0 | ± 0.7 |

6.1.2 Linearity

| UUT Setting | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|
| Range (dB) | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | |
| 60 - 120 | LA | Fast | 94.00 | 1 | 94.0 (Ref.) |
| | | | 104.00 | | 104.0 |
| | | | 114.00 | | 114.0 |

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

| UUT Setting | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 50 - 110 | LA | Fast | 94.00 | 1 | 94.0 | Ref. |
| | | Slow | | | 94.0 | ± 0.1 |

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093599

# *Calibration Report*

6.2.2 Tone Burst Signal (2 kHz)

| UUT Setting | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Frequency Weighting | Time Weighting | Level (dB) | Burst Duration | | |
| 50 -110 | LA | Fast | 106.00 | Continuous | 106.0 | Ref. |
| | LAmax | | | 200 ms | 105.0 | -1.0 ± 1.0 |
| | LA | Slow | | Continuous | 106.0 | Ref. |
| | LAmax | | | 500 ms | 102.0 | -4.1 ± 1.0 |

6.3 Frequency Weighting

6.3.1 A-Weighting

| UUT Setting | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 50 - 110 | LA | Fast | 94.00 | 31.5 Hz | 54.5 | -39.4 ± 1.5 |
| | | | | 63 Hz | 68.0 | -26.2 ± 1.5 |
| | | | | 125 Hz | 78.1 | -16.1 ± 1.0 |
| | | | | 250 Hz | 85.5 | -8.6 ± 1.0 |
| | | | | 500 Hz | 90.9 | -3.2 ± 1.0 |
| | | | | 1 kHz | 94.0 | Ref. |
| | | | | 2 kHz | 95.4 | +1.2 ± 1.0 |
| | | | | 4 kHz | 95.6 | +1.0 ± 1.0 |
| | | | | 8 kHz | 93.7 | -1.1 (+1.5 ; -3.0) |
| | | | | 12.5 kHz | 89.2 | -4.3 (+3.0 ; -6.0) |

6.3.2 C-Weighting

| UUT Setting | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 50 - 110 | LC | Fast | 94.00 | 31.5 Hz | 91.1 | -3.0 ± 1.5 |
| | | | | 63 Hz | 93.3 | -0.8 ± 1.5 |
| | | | | 125 Hz | 93.8 | -0.2 ± 1.0 |
| | | | | 250 Hz | 94.0 | 0.0 ± 1.0 |
| | | | | 500 Hz | 94.0 | 0.0 ± 1.0 |
| | | | | 1 kHz | 94.0 | Ref. |
| | | | | 2 kHz | 93.9 | -0.2 ± 1.0 |
| | | | | 4 kHz | 93.7 | -0.8 ± 1.0 |
| | | | | 8 kHz | 91.8 | -3.0 (+1.5 ; -3.0) |
| | | | | 12.5 kHz | 87.2 | -6.2 (+3.0 ; -6.0) |

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Report No. : C093599

# *Calibration Report*

6.4 Time Averaging

| UUT Setting | | | Applied Value | | | | | UUT | IEC 60804 |
|---|---|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Integrating Time | Freq. (kHz) | Burst Duration (ms) | Burst Duty Factor | Burst Level (dB) | Equivalent Level (dB) | Reading (dB) | Type I Spec. (dB) |
| 50 - 110 | LAeq | 10 sec. | 4 | 1 | 1/10 | 110.0 | 100 | 100.2 | ± 0.5 |
| | | | | | $1/10^2$ | | 90 | 90.3 | ± 0.5 |
| | | 60 sec. | | | $1/10^3$ | | 80 | 80.3 | ± 1.0 |
| | | 5 min. | | | $1/10^4$ | | 70 | 70.3 | ± 1.0 |

Remarks : - Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value : 94 dB : 31.5 Hz : ± 0.85 dB
  63 Hz : ± 0.55 dB
  125 Hz : ± 0.45 dB
  250 Hz : ± 0.40 dB
  500 Hz : ± 0.40 dB
  1 kHz : ± 0.20 dB
  2 kHz : ± 0.45 dB
  4 kHz : ± 0.75 dB
  8 kHz : ± 1.35 dB
  12.5 kHz : ± 2.30 dB
  104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Annex F

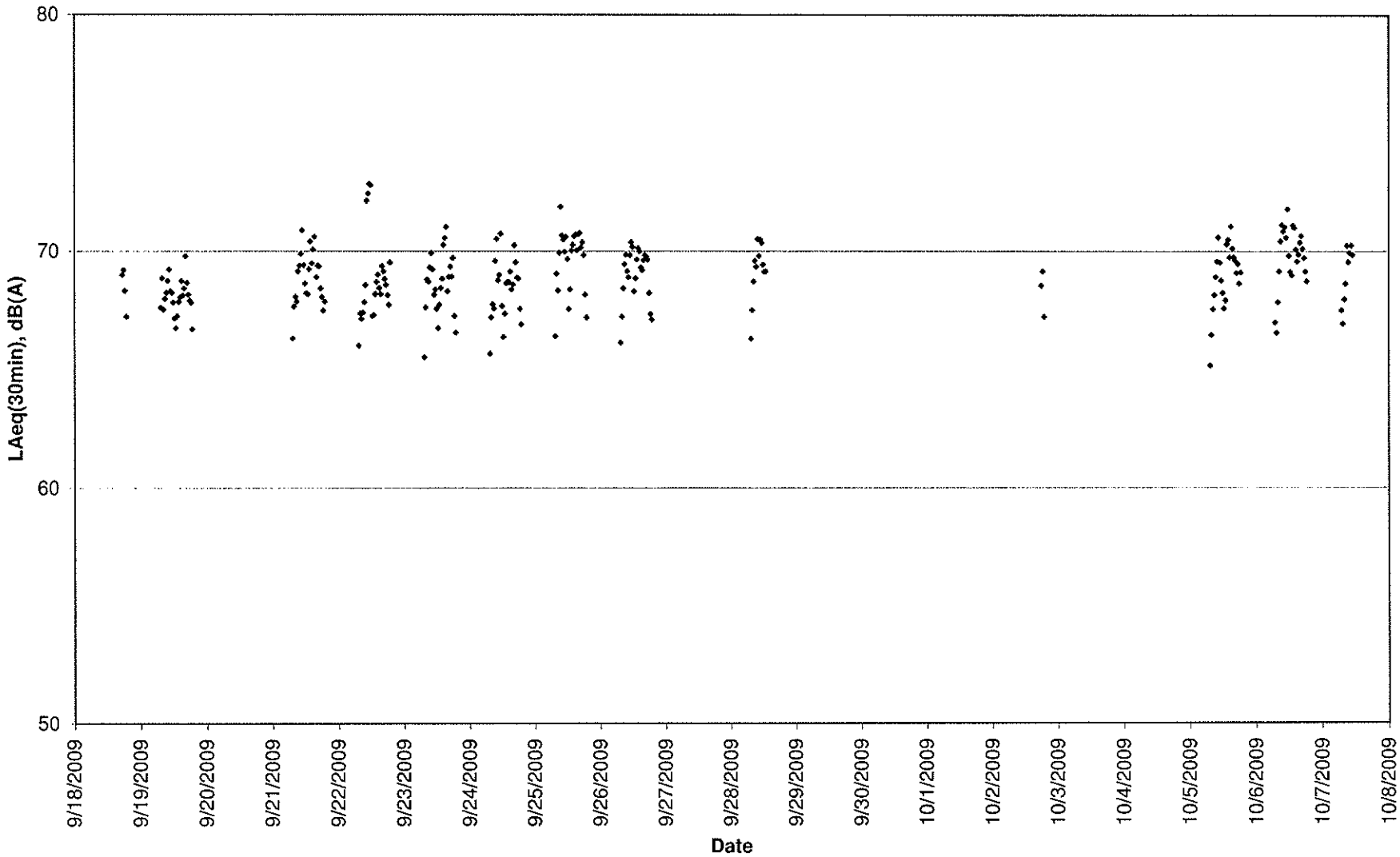
# Baseline Noise Monitoring Results

**Contract No. DC/2007/23**
**Harbour Area Treatment Scheme Stage 2A**
**Construction of Sewage Conveyance System from North Point to Stonecutters Island**

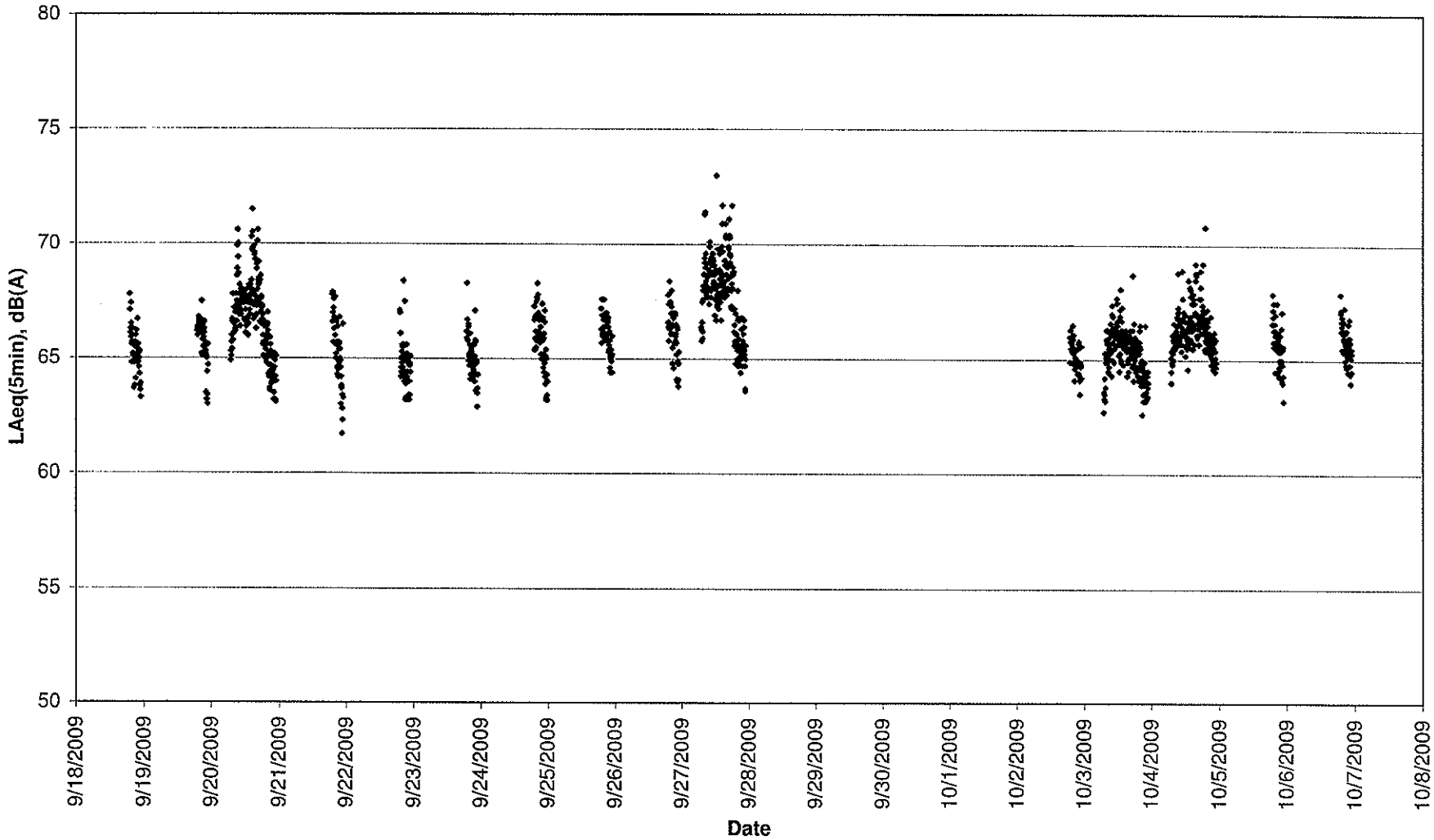
**Baseline Noise Monitoring Results**

| | | Daytime (0700 - 1900 hrs on normal weekday) | Evening (1900 - 2300 hrs) and General Holidays (including Sundays) during daytime and evening (0700 - 2300 hrs) | Night-time (2300 - 0700 hrs) |
|---|---|---|---|---|
| **ID** | **Location** | **LAeq (30min), dB(A)** | **LAeq (5min), dB(A)** | **LAeq (5min), dB(A)** |
| NM1 | Chan's Creative School | 69<br>(66.2-71.7) | 66.5<br>(61.7-73) | 62.1<br>(56.2-76.6) |
| NM2 | Hyde Building | 73.5<br>(70.6-76.3) | 71.2<br>(68.6-76.8) | 68.7<br>(62.5-75.3) |
| NM3 | Goldfield Building | 74.9<br>(71.2-80.6) | 73<br>(69.4-79.3) | 68.9<br>(61.9-75.4) |
| NM4 | Block A, Kwan Yick Building Phase III | 69.4<br>(66.1-74.3) | 67.4<br>(63-72.4) | 63.2<br>(57.2-70.3) |
| NM5 | SCI STW worksite boundary | 66.4<br>(54.7-74.6) | 60.6<br>(55.3-73.7) | 60.1<br>(52-79.1) |

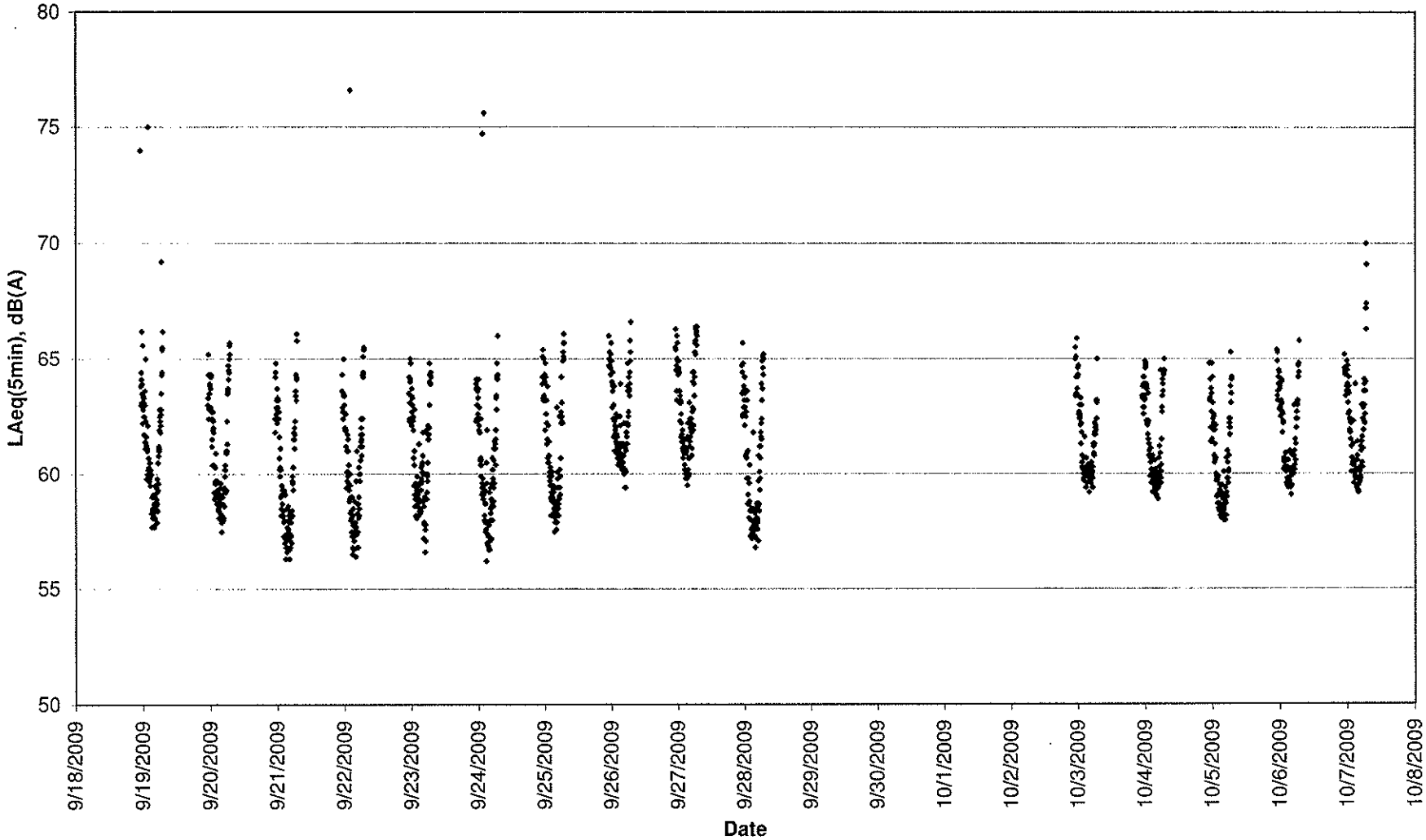
## LAeq(30min) during Normal Working Hours (0700 - 1900) at NM1 Chan's Creative School



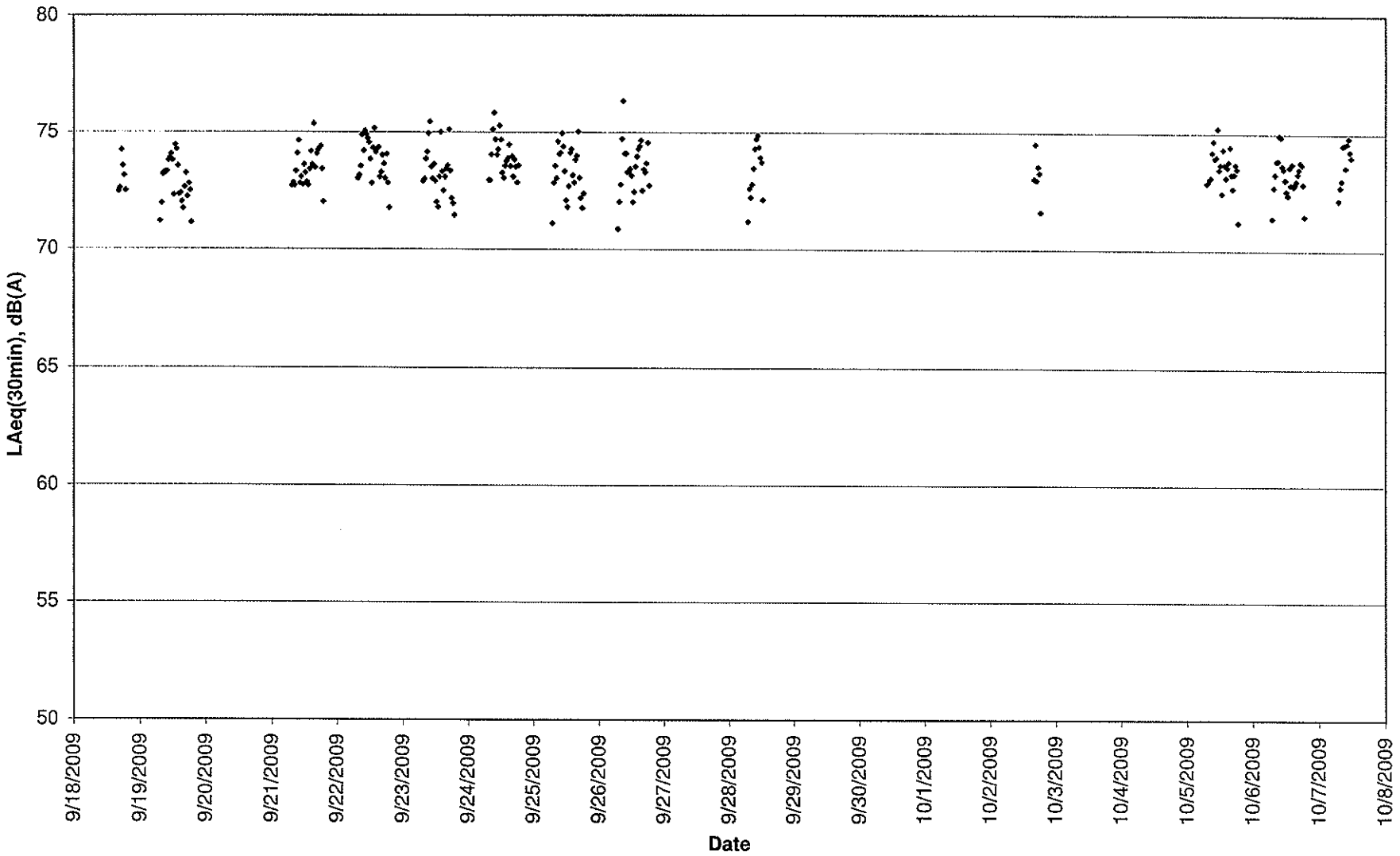
**LAeq(5min) measured at NM1 Chan's Creative School**
**(Evening on normal weekdays (1900-2300 hours) and holidays (0700-2300 hours))**

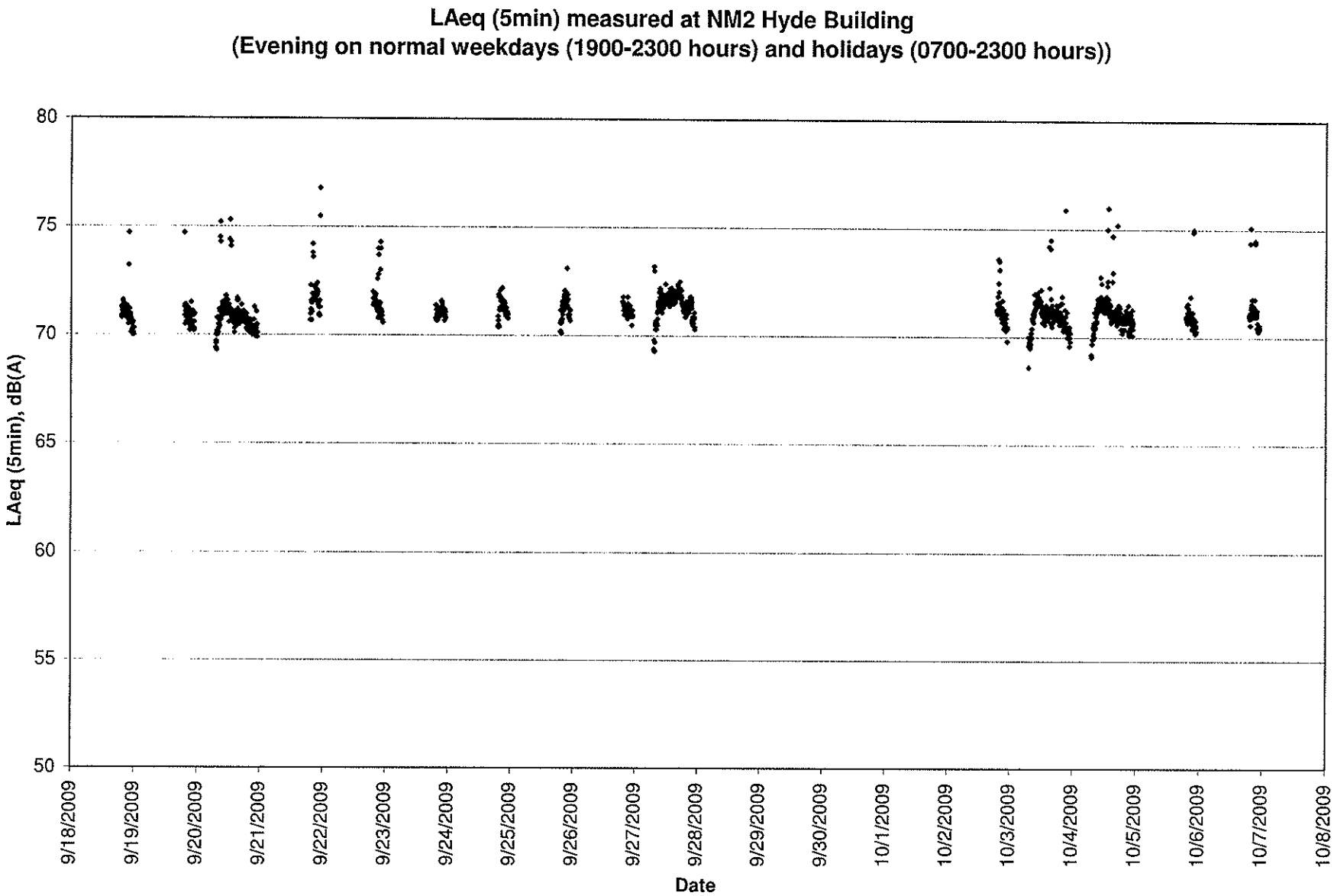


**LAeq(5min) measured at NM1 Chan's Creative School**
**Night-time (2300-0700 hours)**

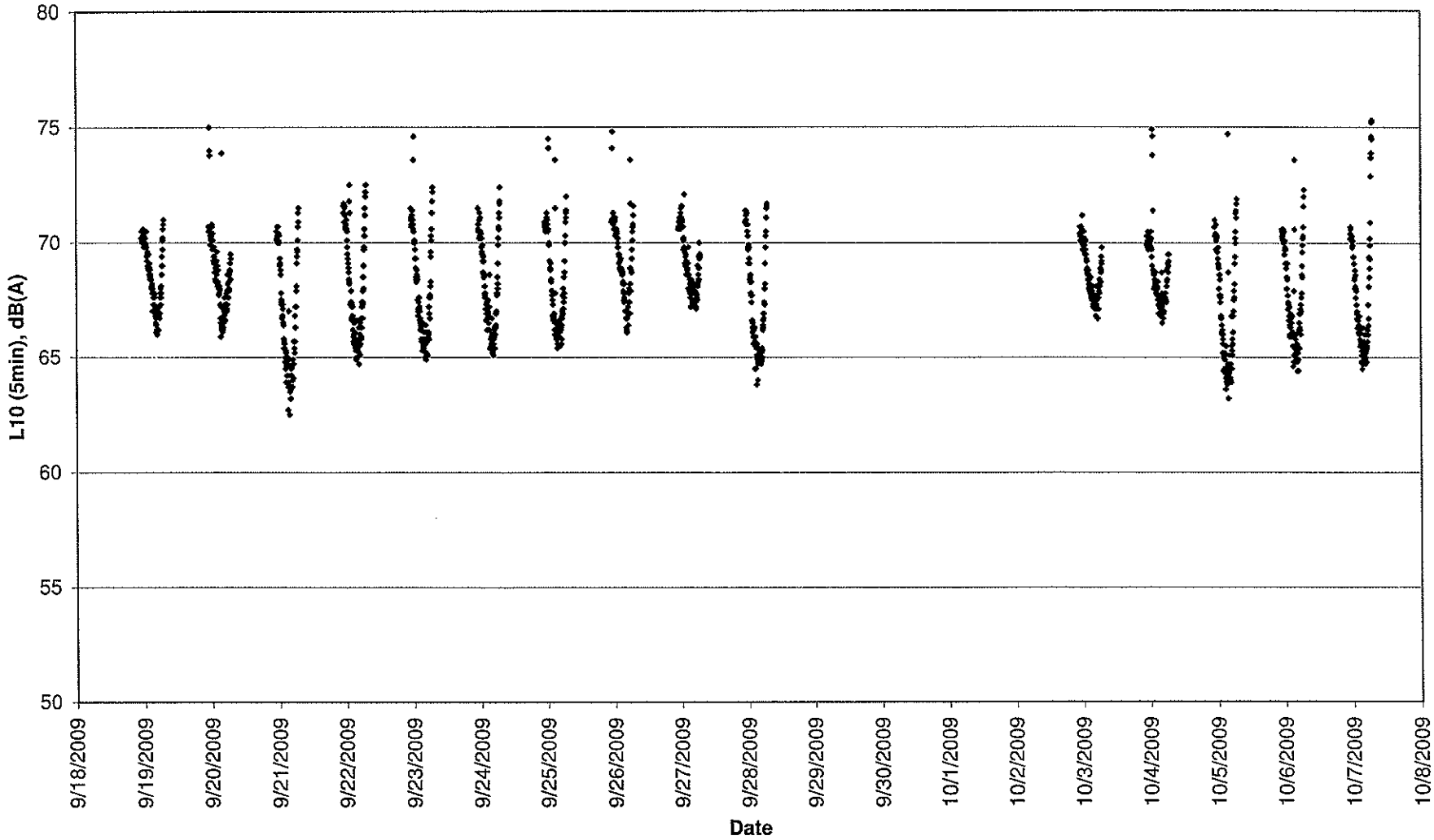


## LAeq(30min) during Normal Hours (0700 - 1900) at NM2 Hyde Building

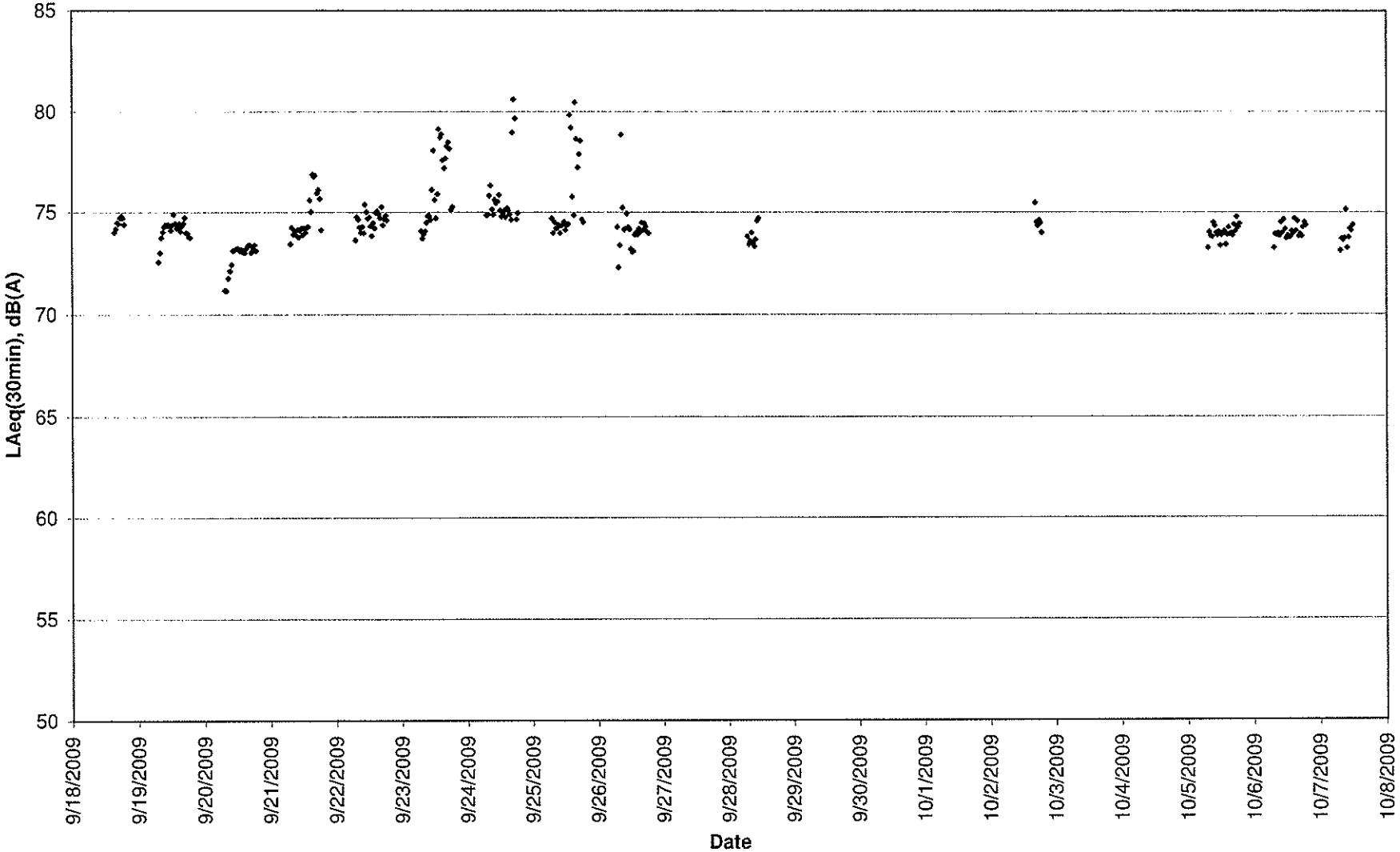



LAeq (5min) measured at NM2 Hyde Building
(Evening on normal weekdays (1900-2300 hours) and holidays (0700-2300 hours))
LAeq (5min), dB(A)
80
75
70
65
60
55
50
9/18/2009
9/19/2009
9/20/2009
9/21/2009
9/22/2009
9/23/2009
9/24/2009
9/25/2009
9/26/2009
9/27/2009
9/28/2009
9/29/2009
9/30/2009
10/1/2009
10/2/2009
10/3/2009
10/4/2009
10/5/2009
10/6/2009
10/7/2009
10/8/2009
Date

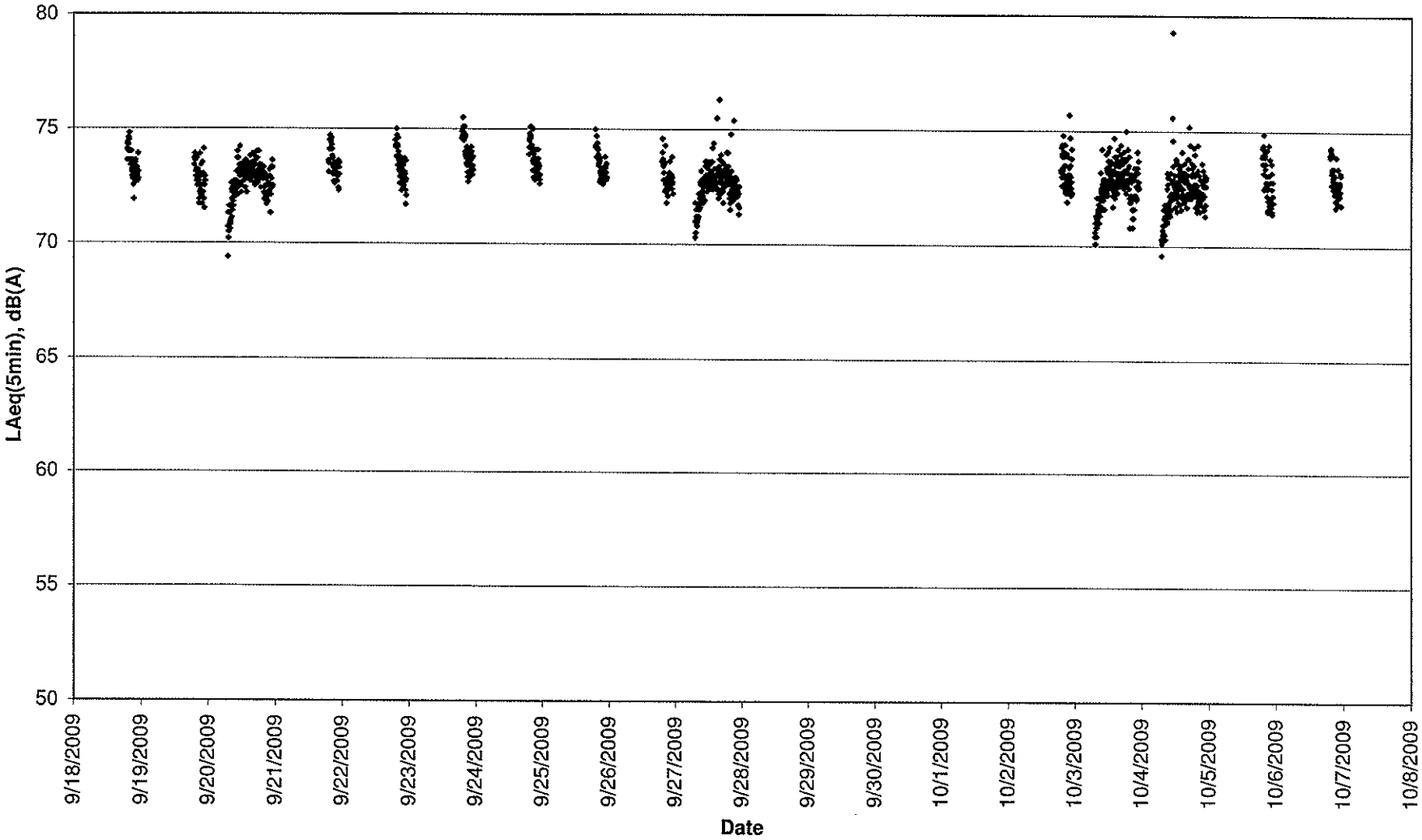
**LAeq (5min) measured at NM2 Hyde Building**
**Night-time (2300-0700 hours)**

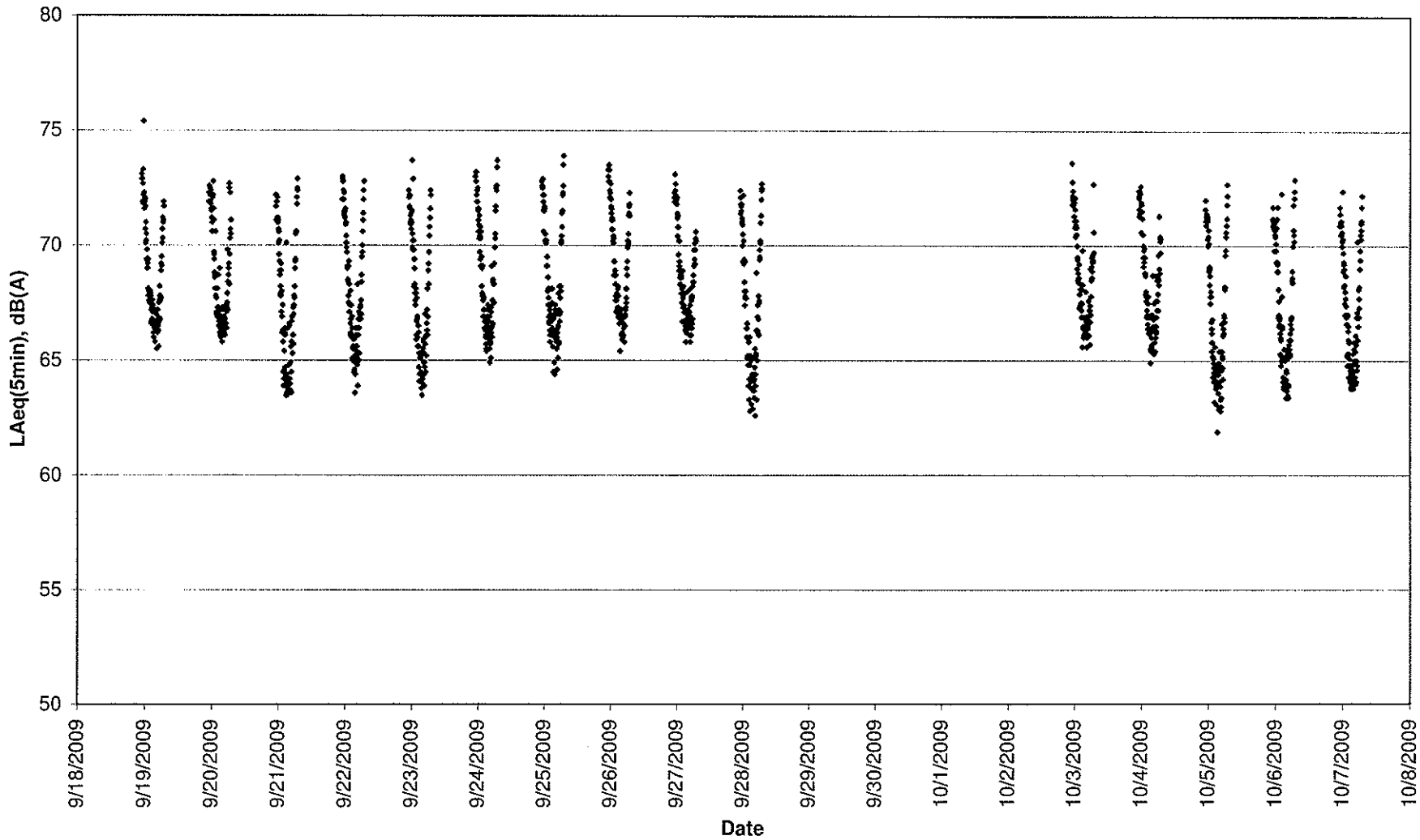


## LAeq(30min) during Normal Hours (0700 - 1900) at NM3 Goldfield Building

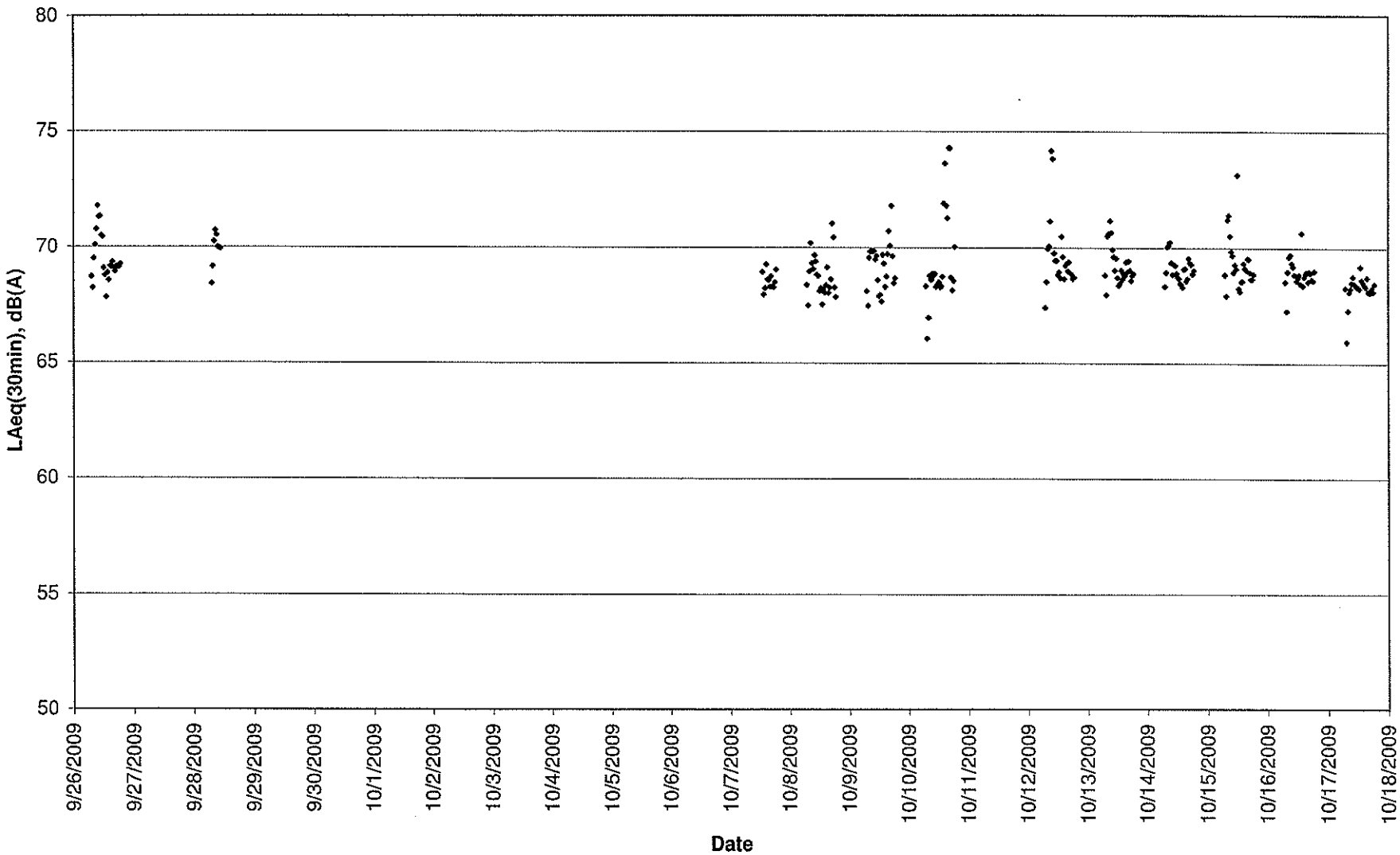


**LAeq(5min) measured at NM3 Goldfield Building**
**(Evening on normal weekdays (1900-2300 hours) and holidays (0700-2300 hours))**

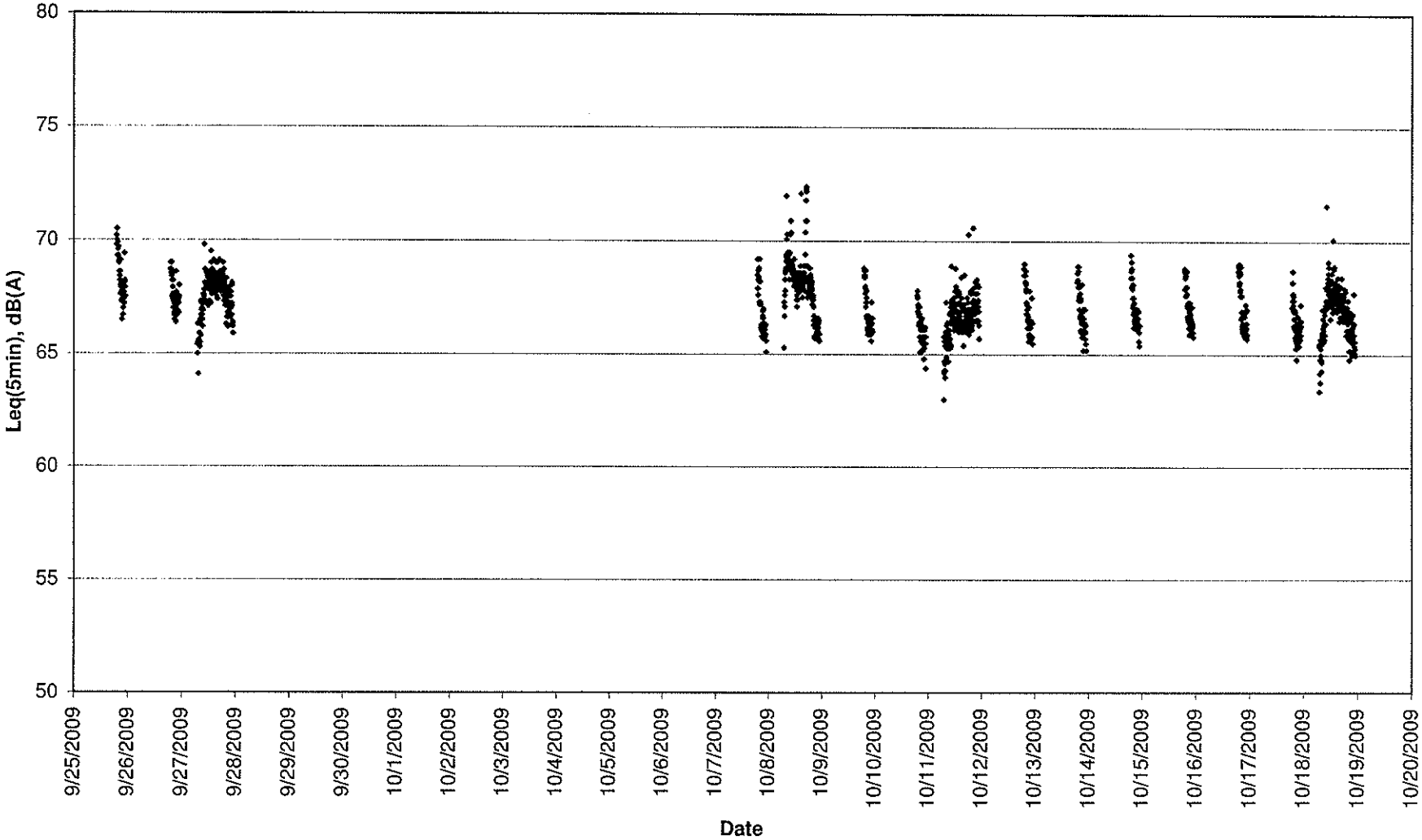



LAeq(5min) measured at NM3 Goldfield Building
Night-time (2300-0700 hours)
LAeq(5min), dB(A)
80
75
70
65
60
55
50
9/18/2009
9/19/2009
9/20/2009
9/21/2009
9/22/2009
9/23/2009
9/24/2009
9/25/2009
9/26/2009
9/27/2009
9/28/2009
9/29/2009
9/30/2009
10/1/2009
10/2/2009
10/3/2009
10/4/2009
10/5/2009
10/6/2009
10/7/2009
10/8/2009
Date

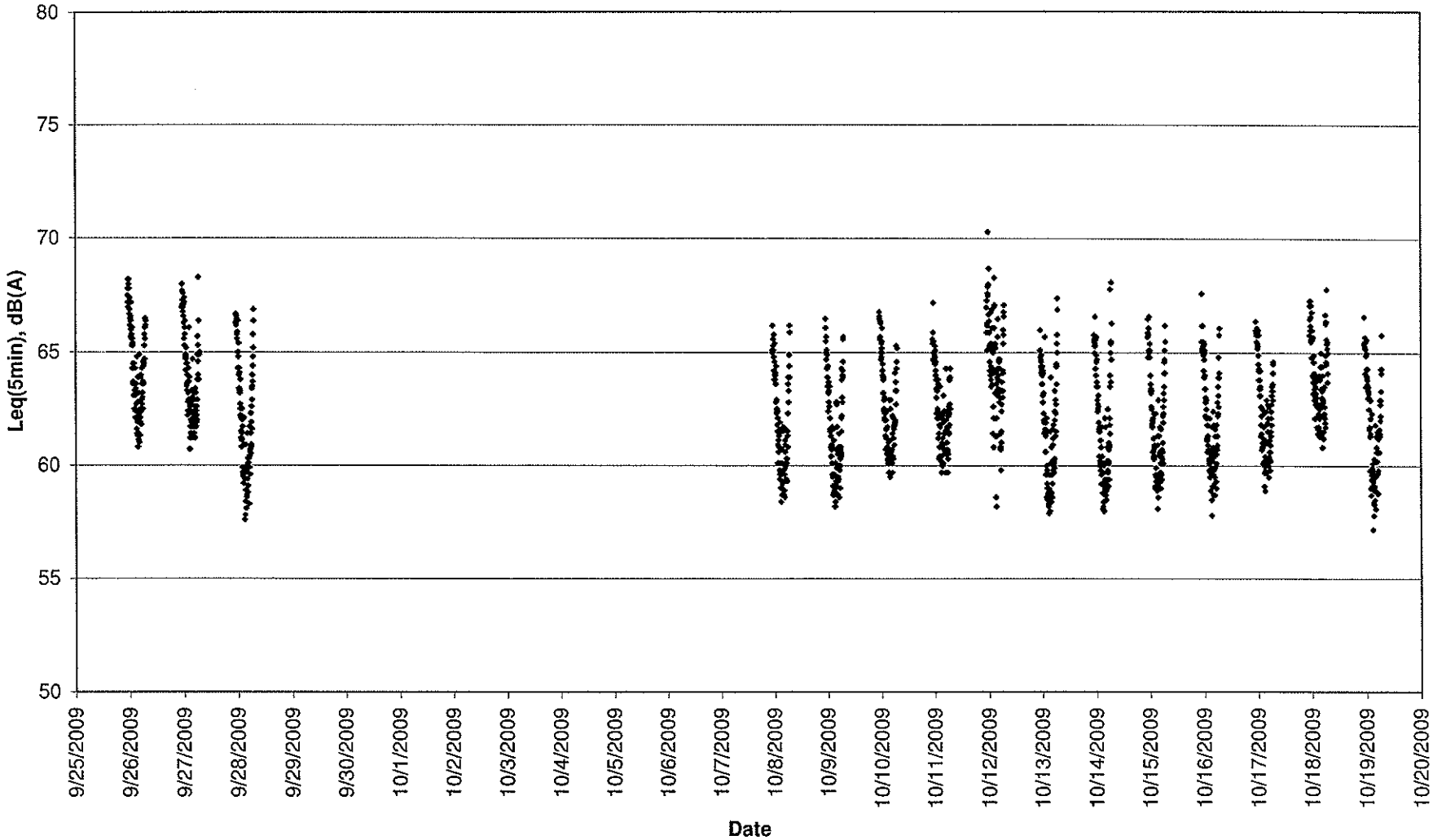
## LAeq(30min) during Normal Hours (0700 - 1900) at NM4 Block A Kwan Yick Building Phase III



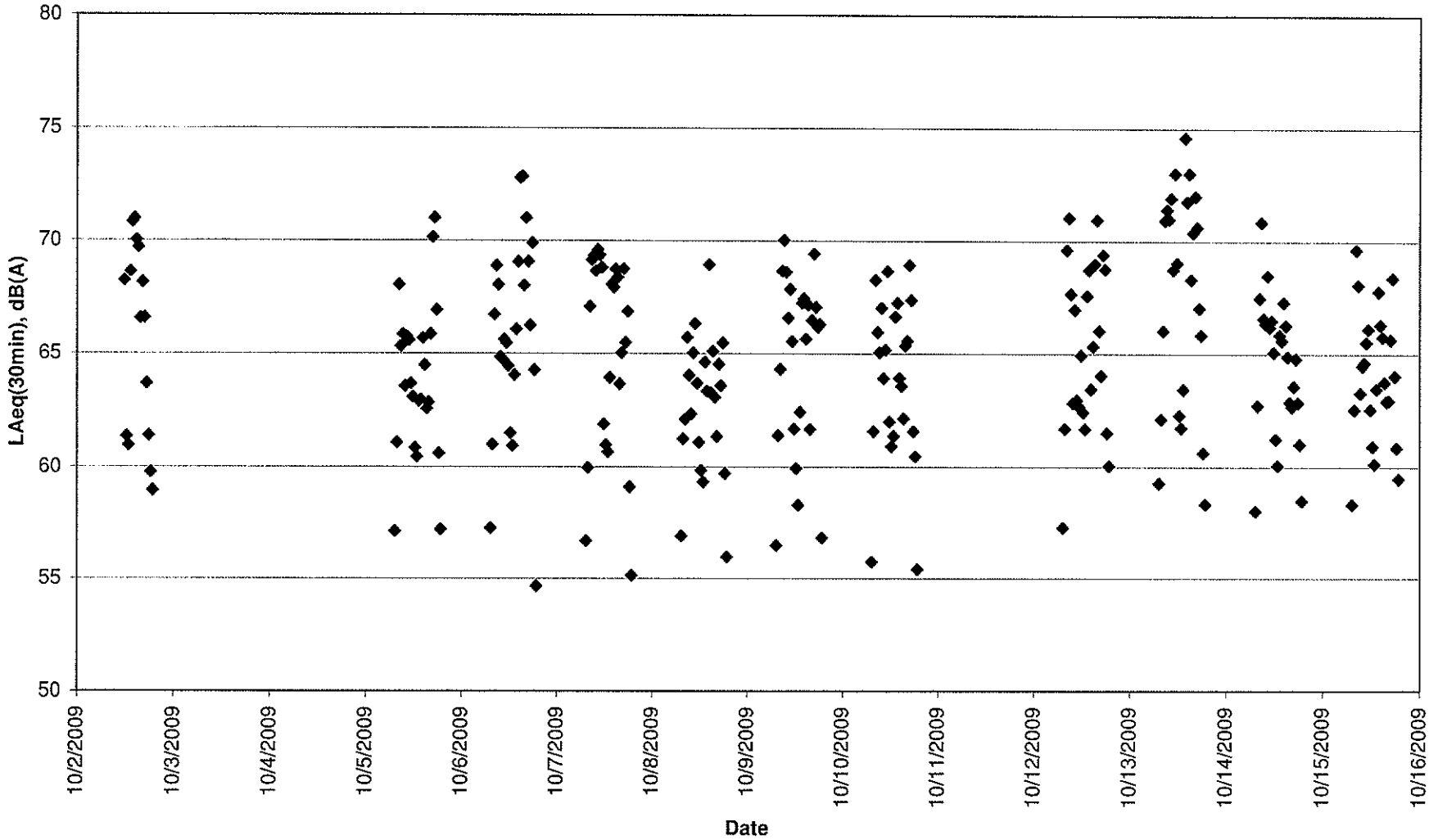
**Leq(5min) measured at NM4 Block A Kwan Yick Building Phase III**
**(Evening on normal weekdays (1900-2300 hours) and holidays (0700-2300 hours))**



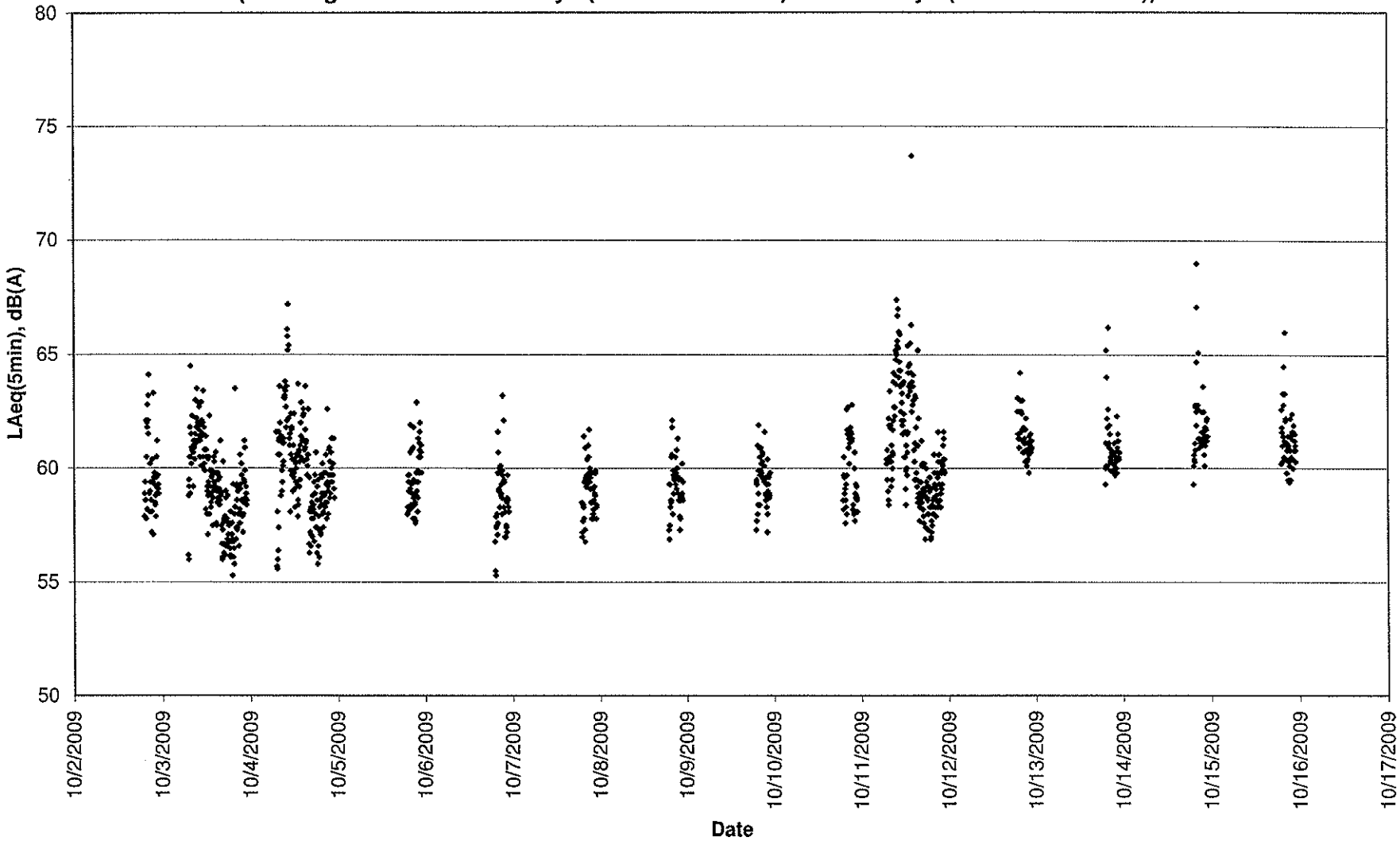
**Leq(5min) measured at NM4 Block A Kwan Yick Building Phase III**
**Night-time (2300-0700 hours)**



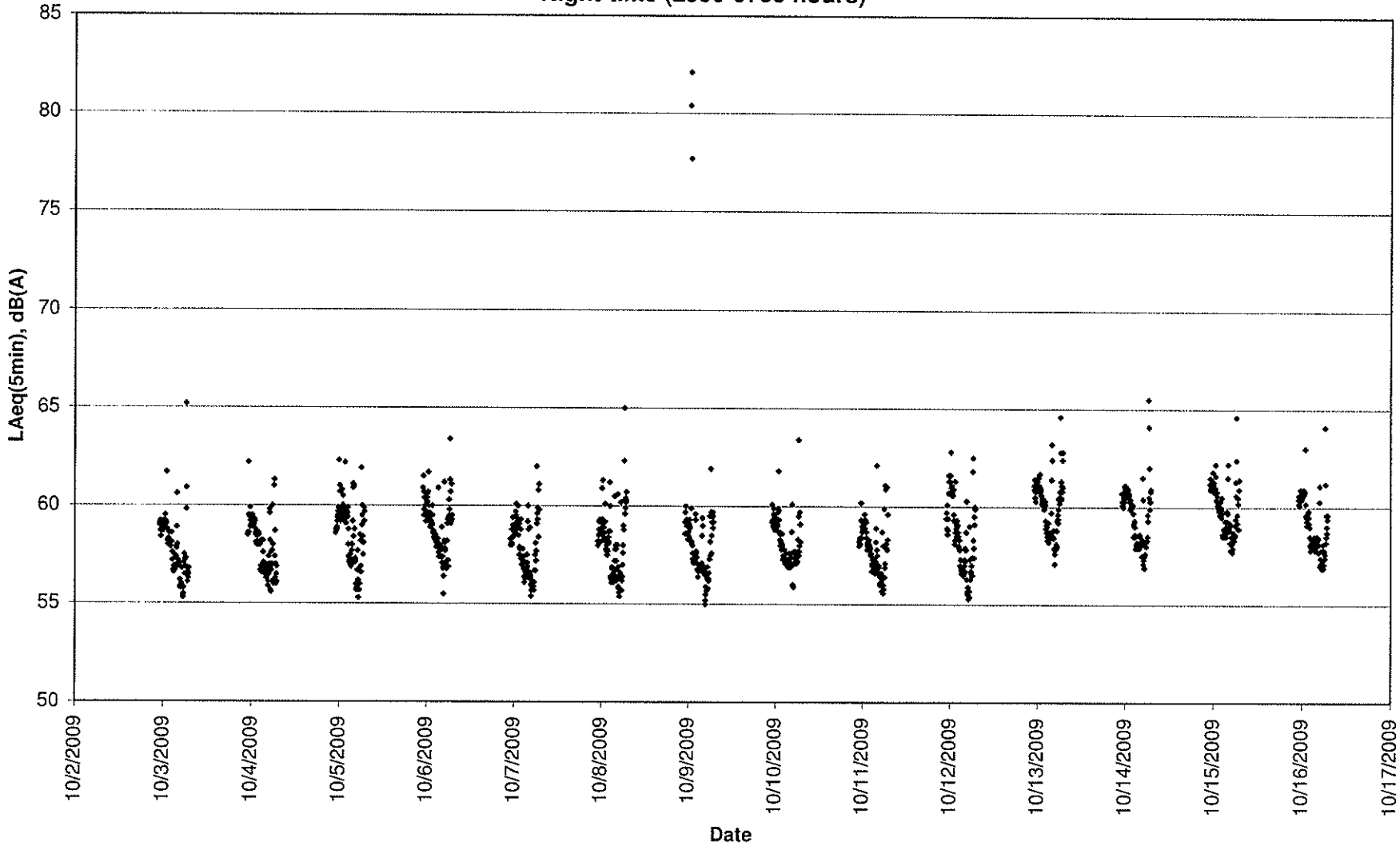
**LAeq(30min) during Normal Hours (0700 - 1900) at NM5 (A Location near the FSD Diving Rescue and Diving Training Centre near the Site Boundary)**



**LAeq (5min) measured at NM5 (A Location near the FSD Diving Rescue and Diving Training Centre near the Site Boundary)**
**(Evening on normal weekdays (1900-2300 hours) and holidays (0700-2300 hours))**



LAeq (5min) measured at NM5 (A Location near the FSD Diving Rescue and Diving Training Centre near the Site Boundary)
Night-time (2300-0700 hours)



Annex G

# Baseline Landscape and Visual Monitoring Results

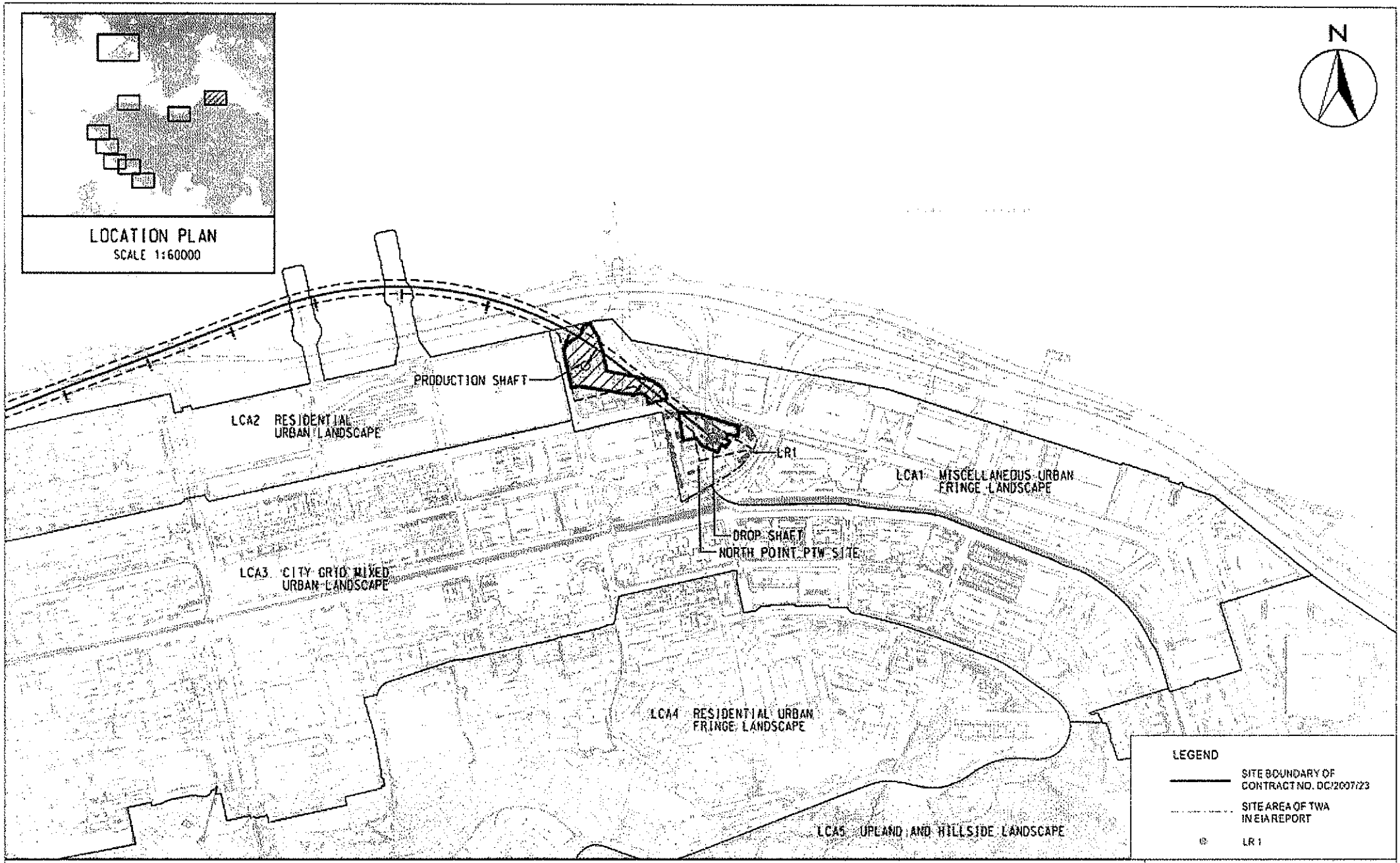



Figure 4.1

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Landscape Monitoring Locations in North Point

FILE: 0104887-HATS-LandIB-4.1-LRLCALocation-NP
DATE: 02/11/2009

Environmental Resources Management

ERM

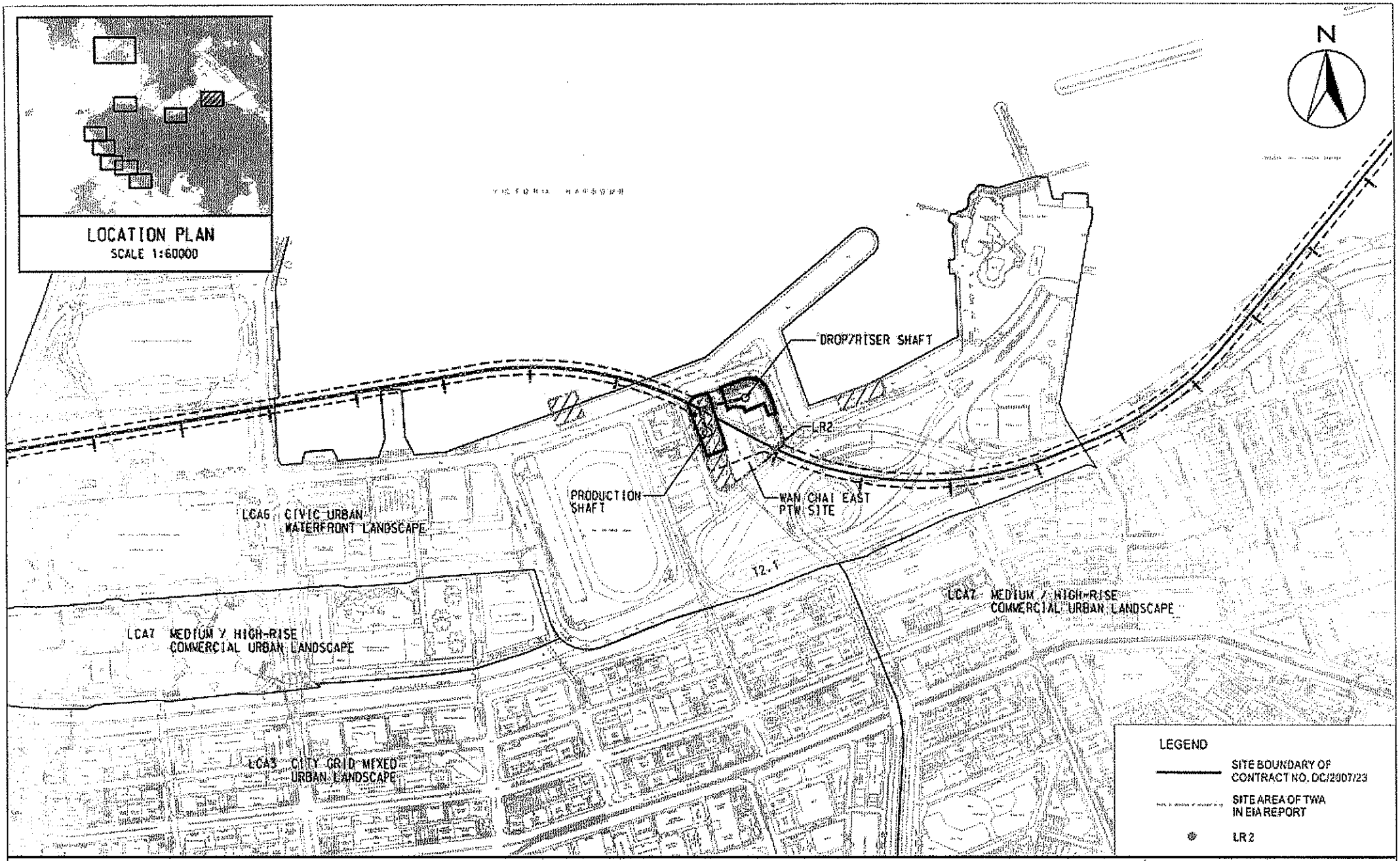



Figure 4.2

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Landscape Monitoring Locations in Wan Chai East

FILE: 0104897-HATS-LandEB-4.2-LRLCALocation-WCE
DATE: 02/11/2009

Environmental Resources Management

ERM

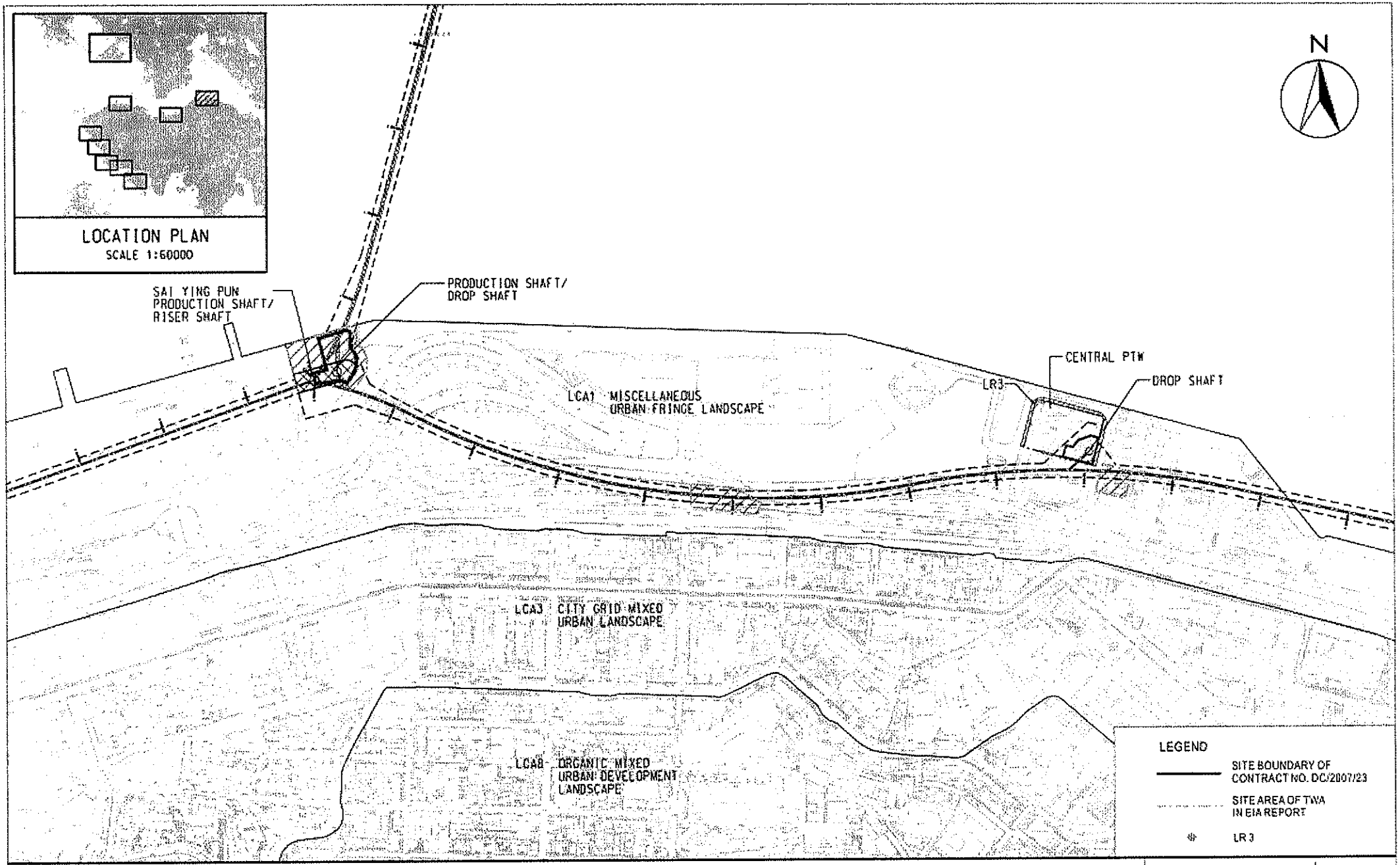



Figure 4.3

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Landscape Monitoring Locations in Central & Sai Ying Pun

FILE: 0104887-HATS-LandIB-4.3-LRLCALocation-C
DATE: 02/11/2009

Environmental
Resources
Management
ERM

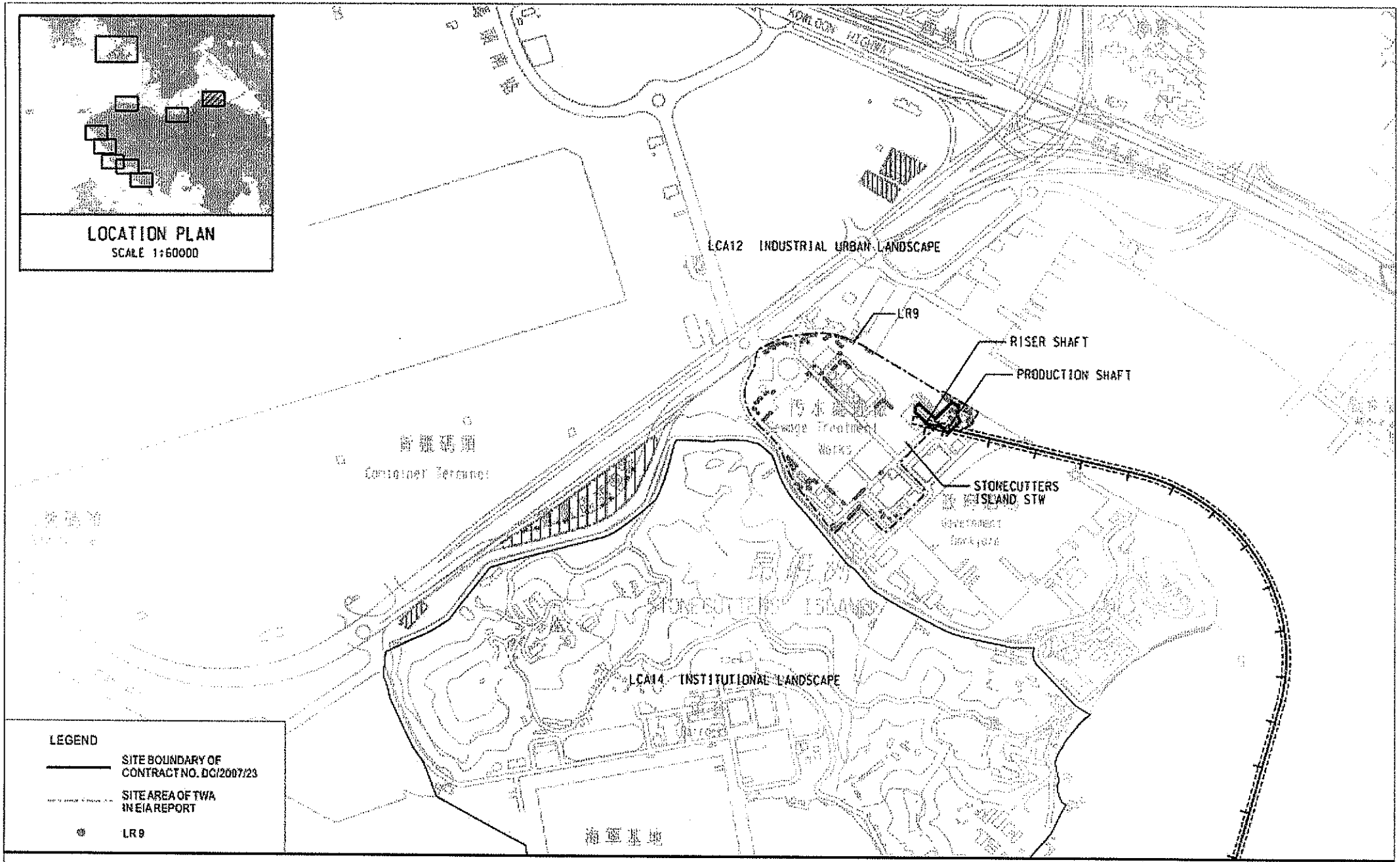


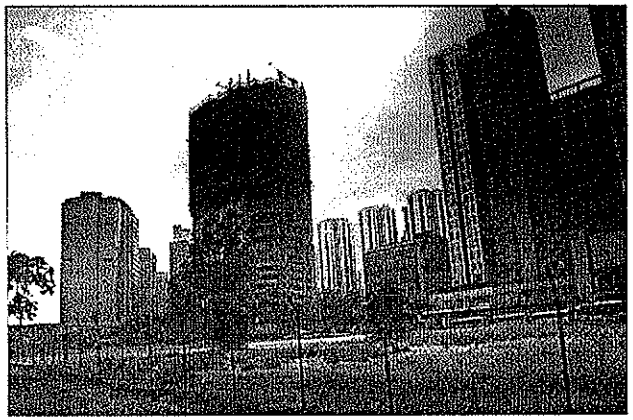

Figure 4.4

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Landscape Monitoring Locations in Stonecutters Island

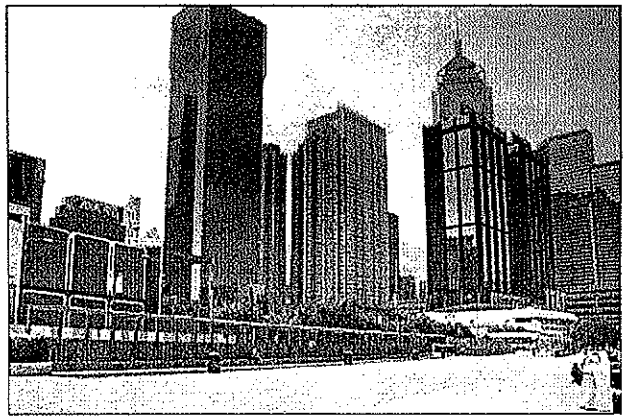
FILE: 0104887-HATS-LandIB-4.4-LRLCALocation-SI
DATE: 02/11/2009

Environmental Resources Management

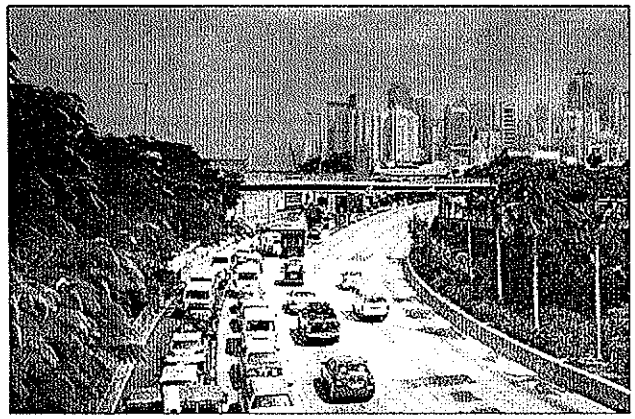
ERM



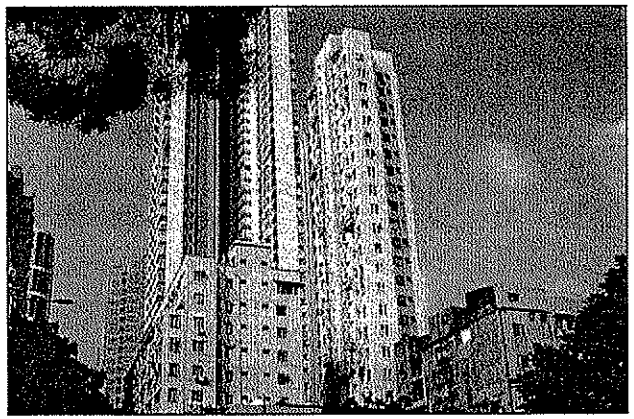
LCA1 – Miscellaneous Urban Fringe Landscape



LCA2 –Civic Urban Waterfront Landscape



LCA3 – Transportation Corridor Landscape



LCA4 – Residential Urban Landscape

LCA5 – Industrial Urban Landscape

Landscape Character Area (LCA)
LCA1 – Miscellaneous Urban Fringe Landscape
LCA2 –Civic Urban Waterfront Landscape
LCA3 – Transportation Corridor Landscape
LCA4 – Residential Urban Landscape
LCA5 – Industrial Urban Landscape

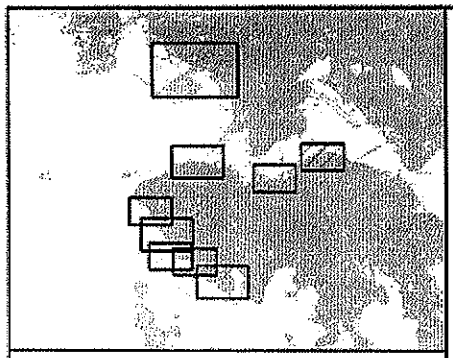
Figure 4.5

FILE: 0104887-HATS-LandIB-4.5-LCA
DATE: 02/11/2009

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Landscape Monitoring - Existing Landscape Character Areas (LCAs)

Environmental Resources Management

ERM

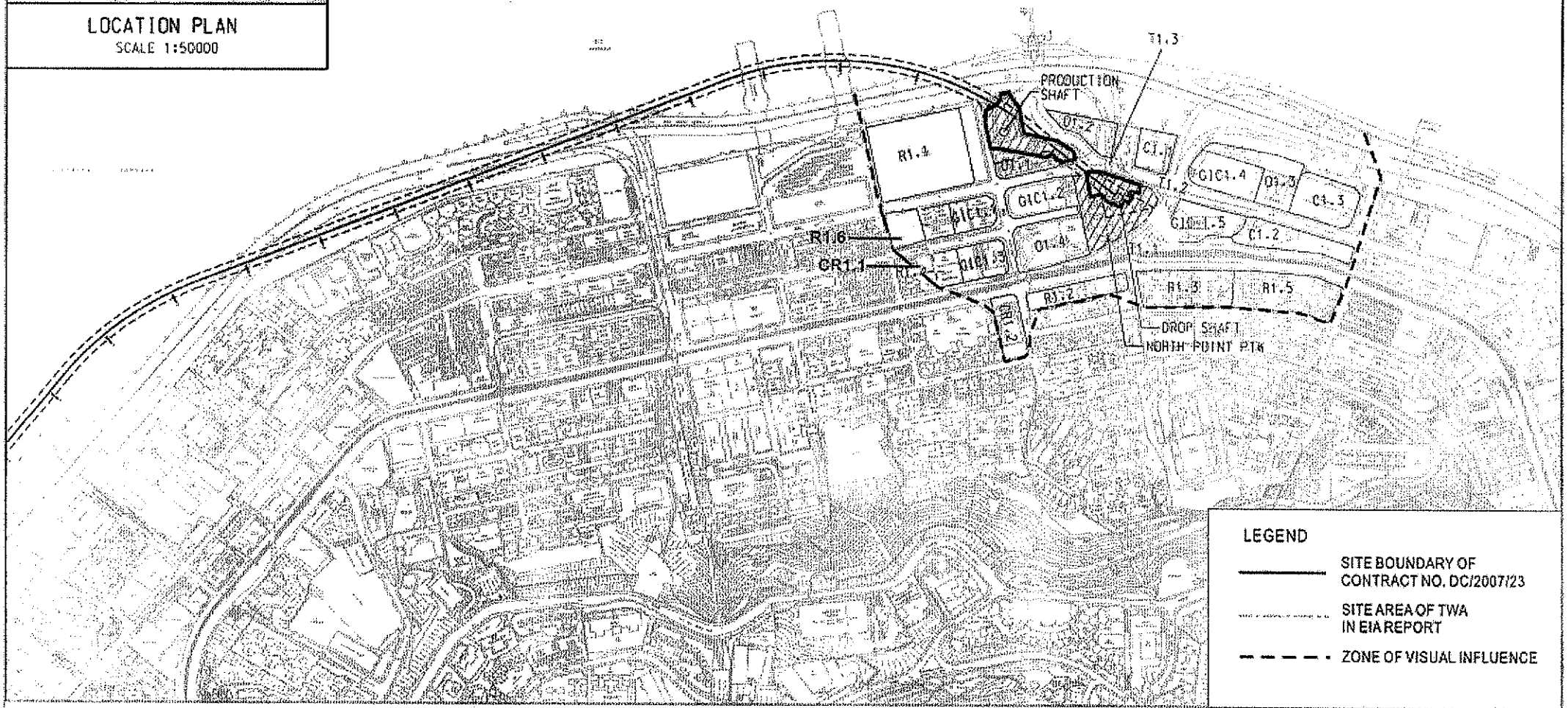


LOCATION PLAN
SCALE 1:50000

**KEY OF VISUAL SENSITIVE RECEIVERS**

C1.1 K. Wah Centre
C1.2 625 King's Road
C1.3 Kodak House
R1.1 Temporary Carpark, Planned Residential Area
R1.2 Healthy Garden
R1.3 614-632 King's Road
R1.4 483-497 King's Road
R1.5 Healthy Village Estate
R1.6 Island Lodge
CR1.1 62-76 Marble Road
CR1.2 Island Place Tower
GIC1.1 Tin Chiu Road Playground
GIC1.2 Customs HR Tower (Under Construction)
GIC1.3 Chan's Creative School
GIC1.4 ICAC North Point Headquarter
GIC1.5 Regional Office Water Supplies Dept
O1.1 Tin Chiu Road Children Playground
O1.2 Sitting Out area near North Point waterfront
O1.3 Man Hong Street Playground
O1.4 King's Road Playground
T1.1 King's Road
T1.2 Java Road
T1.3 Island East Corridor Slip Road "F"

N




LEGEND
SITE BOUNDARY OF CONTRACT NO. DC/2007/23
SITE AREA OF TWA IN EIA REPORT
ZONE OF VISUAL INFLUENCE

Figure 4.6

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations in North Point

FILE: 0104867-HATS-VisualB-4.6-VSRLocation-NP
DATE: 02/11/2009

Environmental Resources Management
ERM

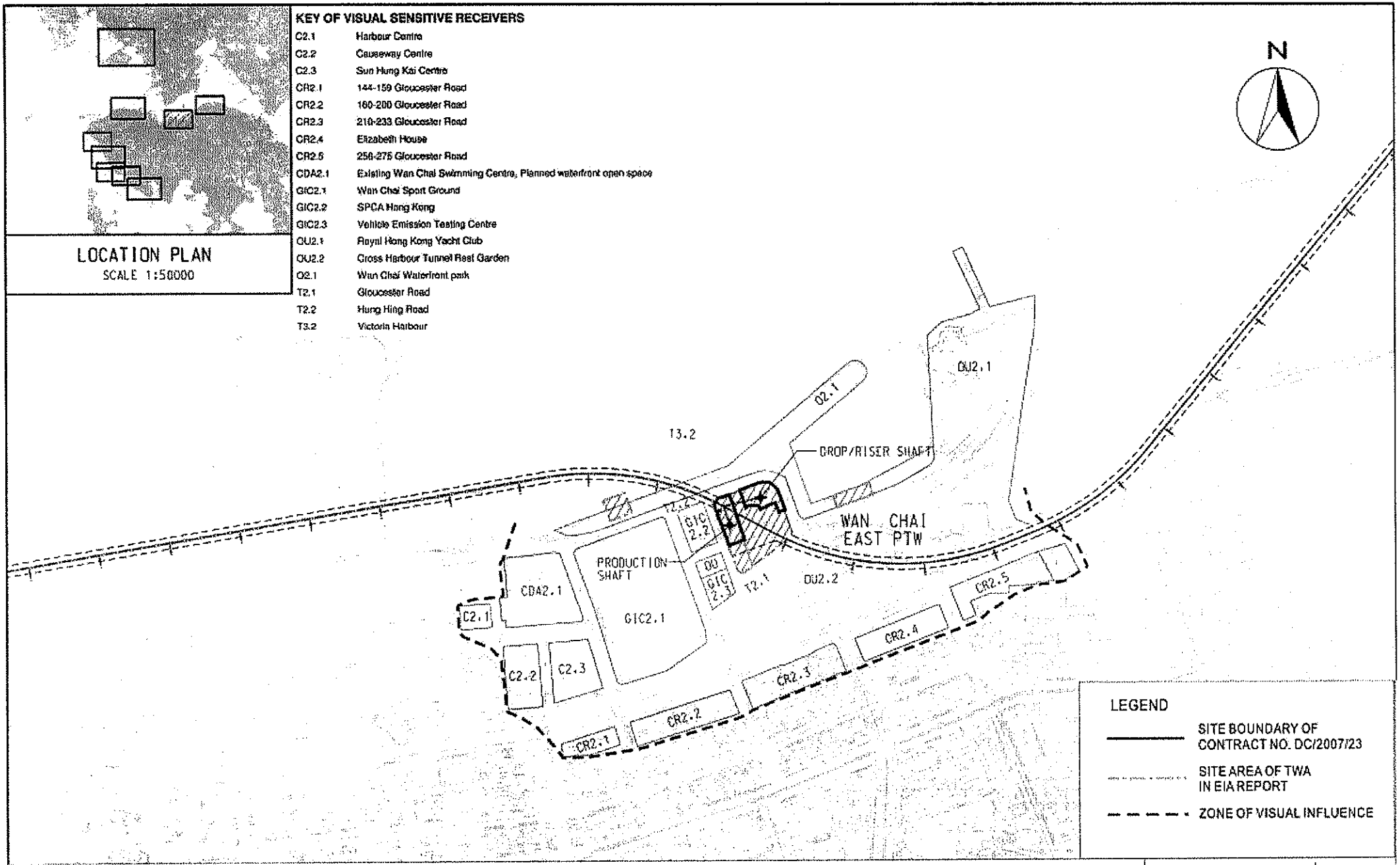



Figure 4.7

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations in Wan Chai East

FILE: 0104887-HATS-Visual\8-4.7-VSRLocation-WCE
DATE: 02/11/2009

Environmental Resources Management

ERM

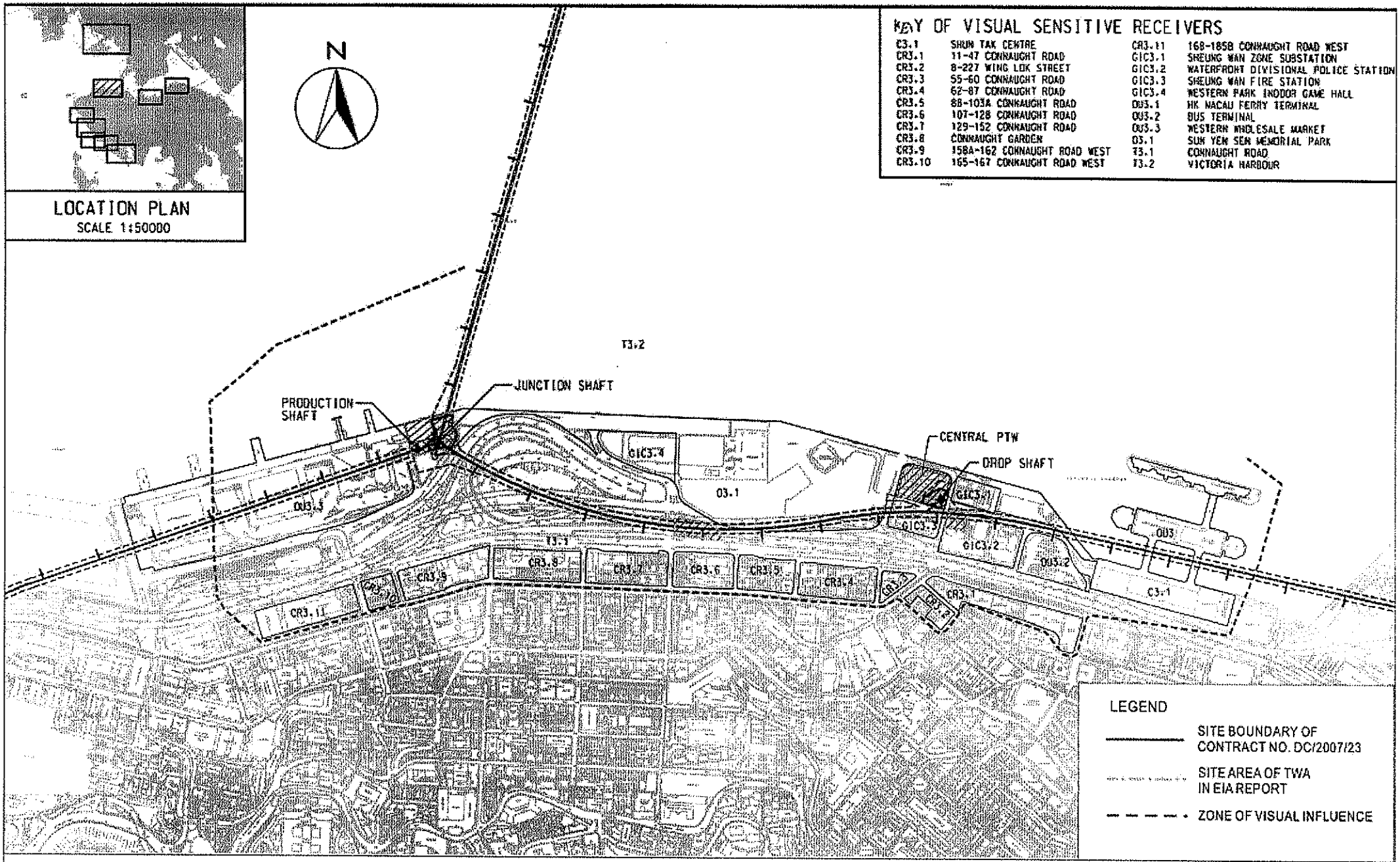



Figure 4.8

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations in Central & Sai Ying Pun

FILE: 0104887-HATS-Visual\B-4.8-VSRLocation-C
DATE: 02/11/2009

Environmental Resources Management

ERM

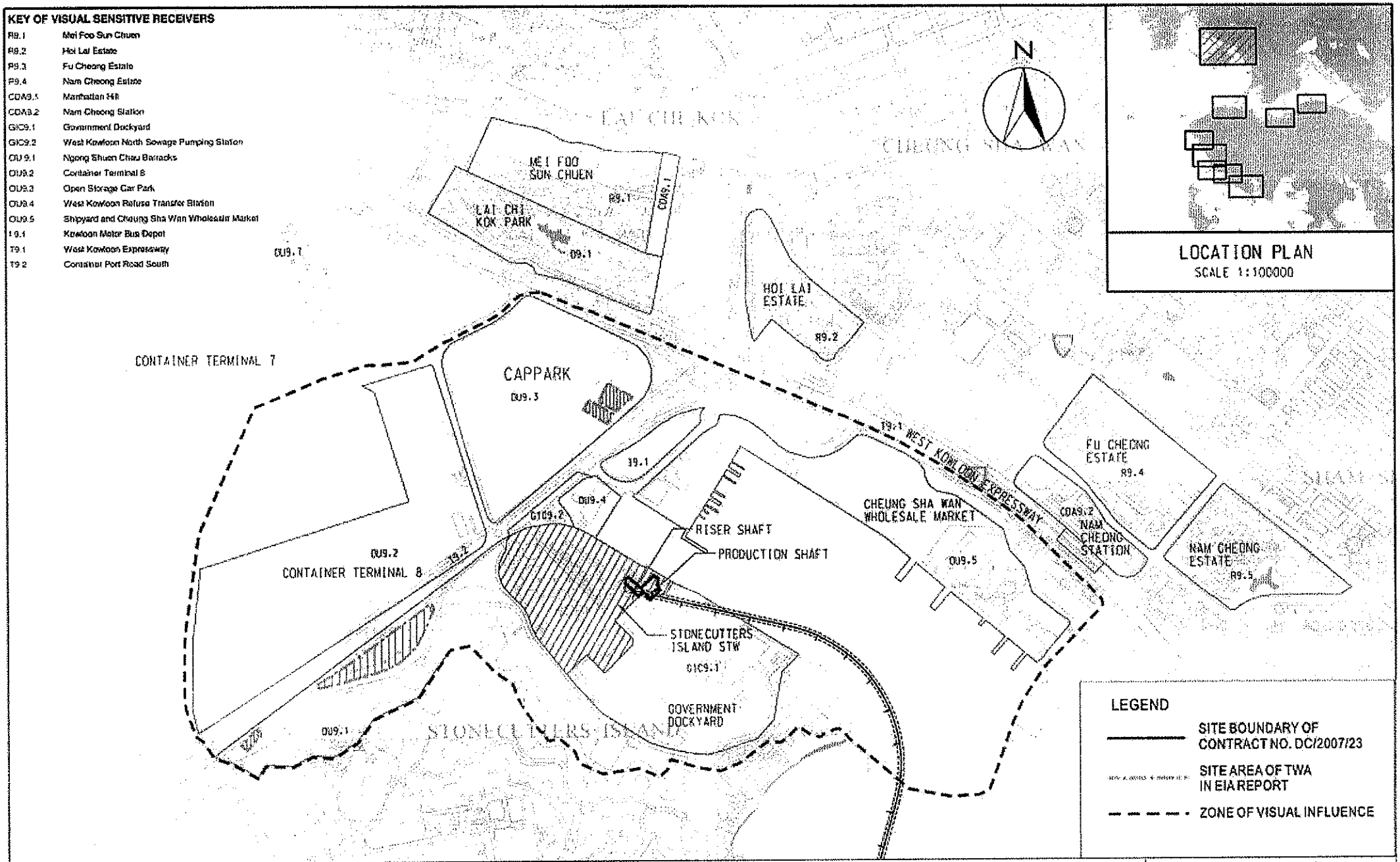


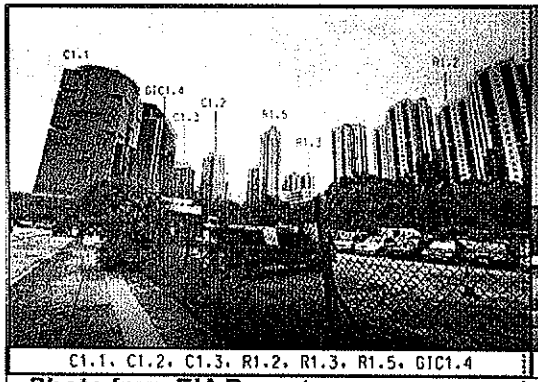

Figure 4.9

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations in Stonecutters Island

FILE: 0104887-HATS-Visual\B-4.9-VSRLocation-SI
DATE: 02/11/2009

Environmental Resources Management

ERM




C1.1, C1.2, C1.3, R1.2, R1.3, R1.5, GIC1.4

**Photo from EIA Report**

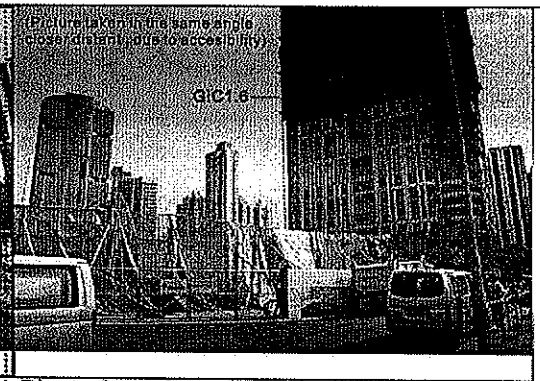
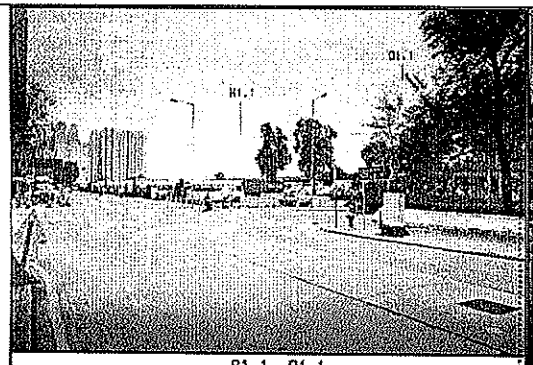



**Photo from Baseline Site Visit**




R1.1, O1.1

**Photo from EIA Report**

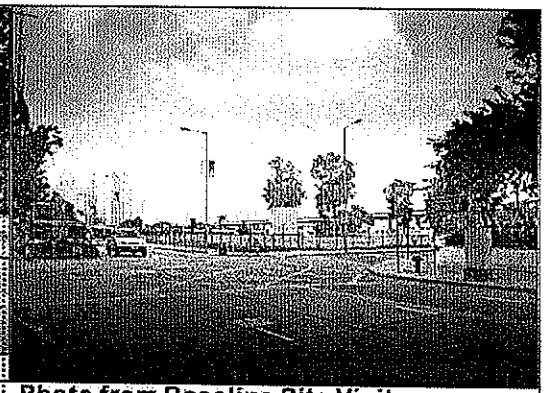
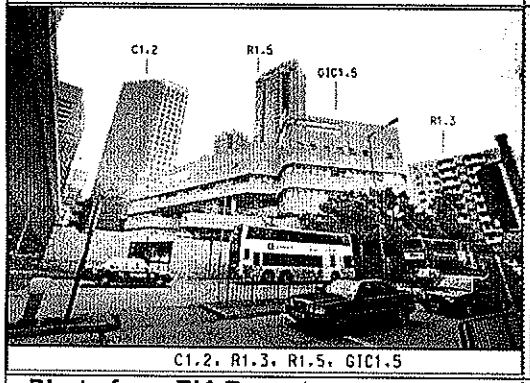


**Photo from Baseline Site Visit**




C1.2, R1.3, R1.5, GIC1.5

**Photo from EIA Report**

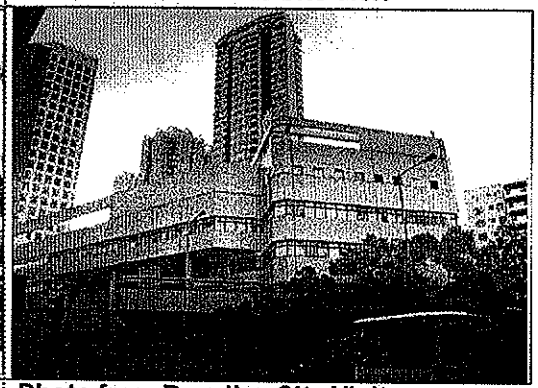
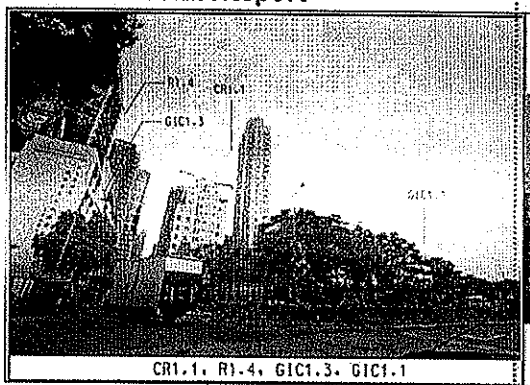


**Photo from Baseline Site Visit**




CR1.1, R1.4, GIC1.3, GIC1.1

**Photo from EIA Report**

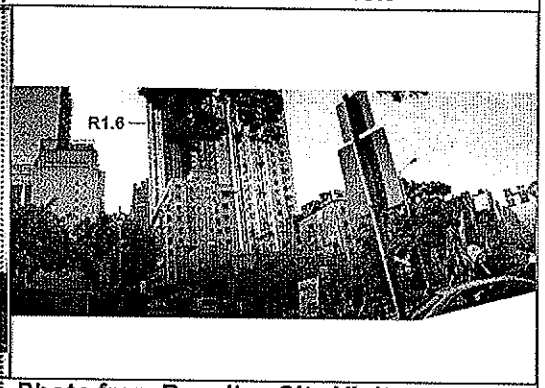



**Photo from Baseline Site Visit**

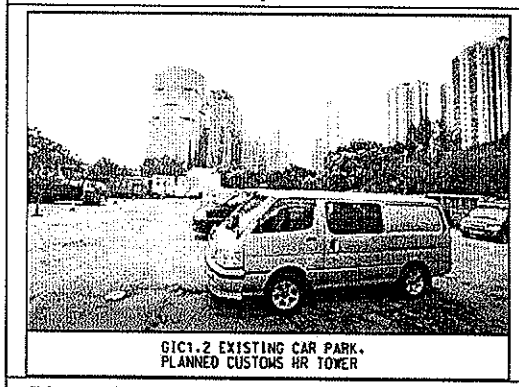



**Photo from EIA Report**

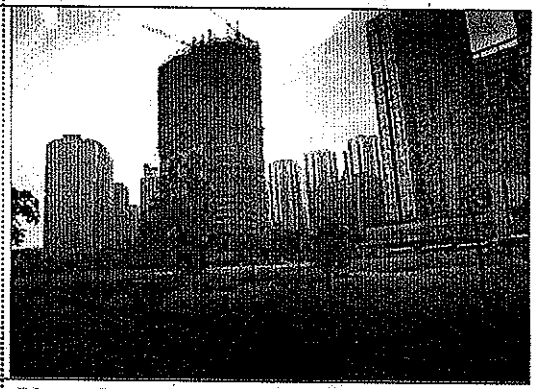


**Photo from Baseline Site Visit**

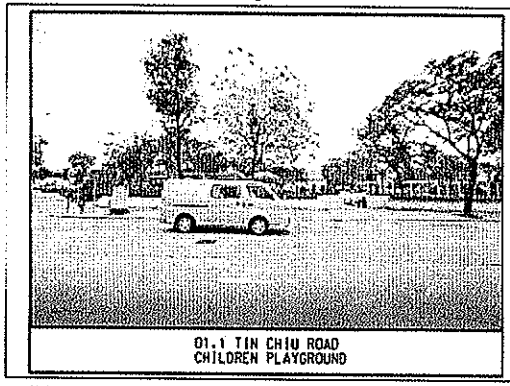



**Photo from EIA Report**

**Photo from Baseline Site Visit**

Figure 4.10

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in North Point

FILE: 0104887-HATS-VisualB-4.10-results-NP-001
DATE: 02/11/2009

Environmental Resources Management

ERM

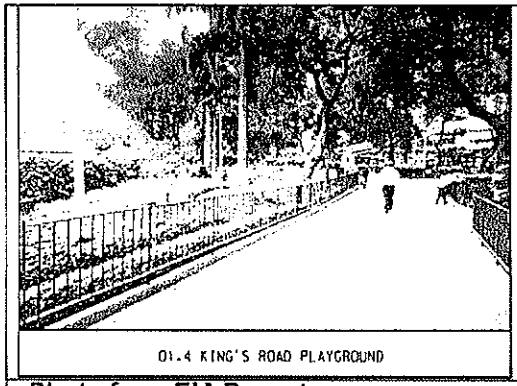



Photo from EIA Report

Photo from Baseline Site Visit

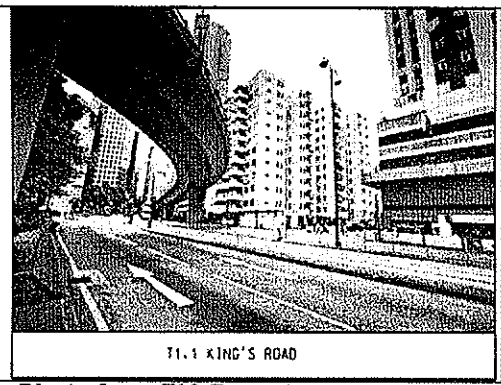



Photo from EIA Report

Photo from Baseline Site Visit

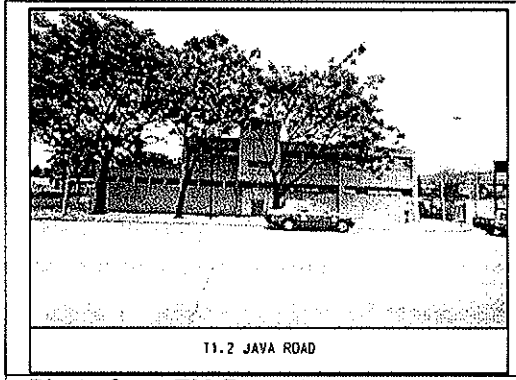



Photo from EIA Report

Photo from Baseline Site Visit

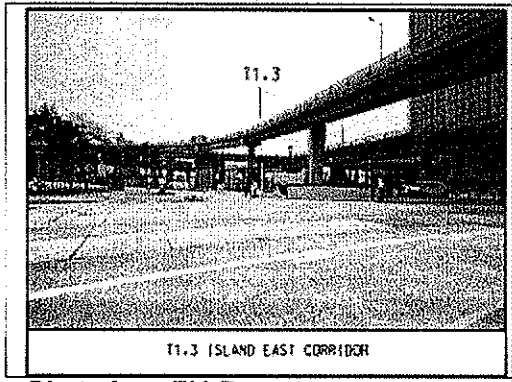



Photo from EIA Report

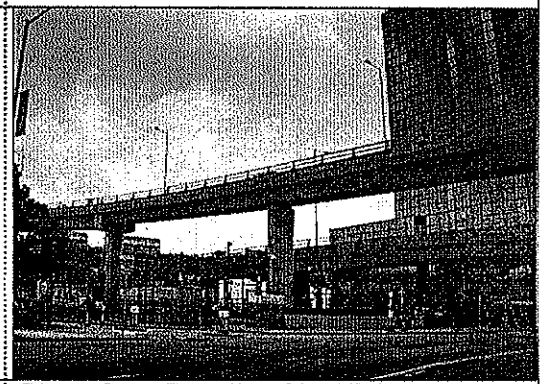


Photo from Baseline Site Visit

Photo from EIA Report

Photo from Baseline Site Visit

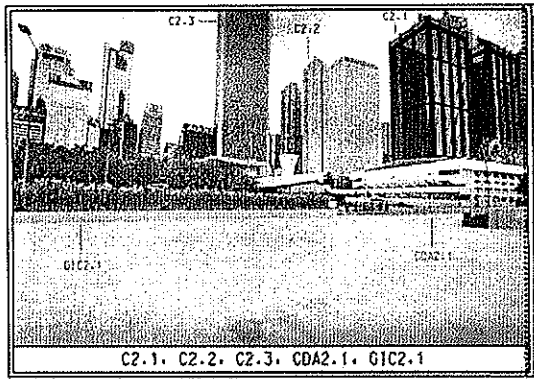
Figure 4.11

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in North Point

FILE: 0104887-HATS-VisualB-4.11-results-NP-002
DATE: 02/11/2009

Environmental Resources Management

ERM




C2.1, C2.2, C2.3, CDA2.1, GIC2.1

**Photo from EIA Report**

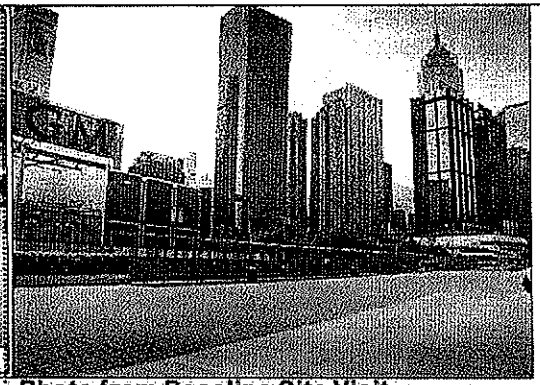
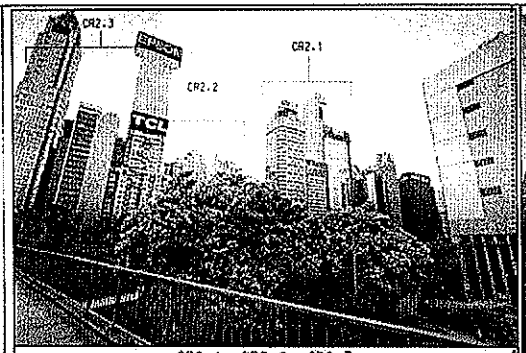


**Photo from Baseline Site Visit**




CR2.1, CR2.2, CR2.3

**Photo from EIA Report**

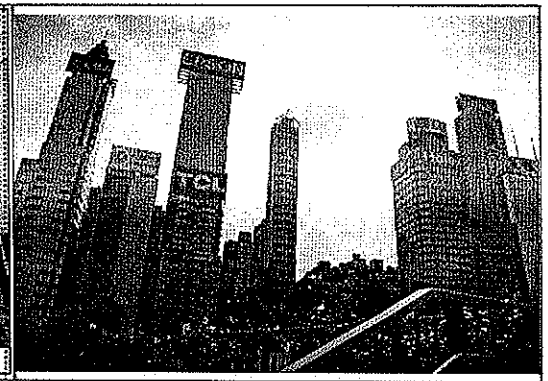
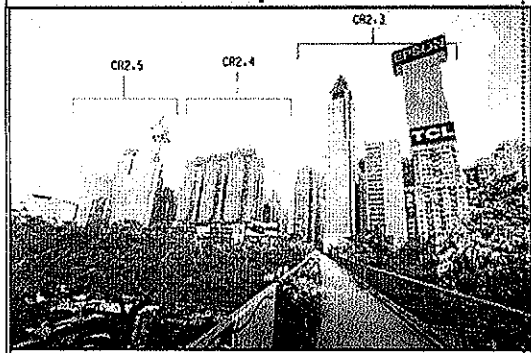


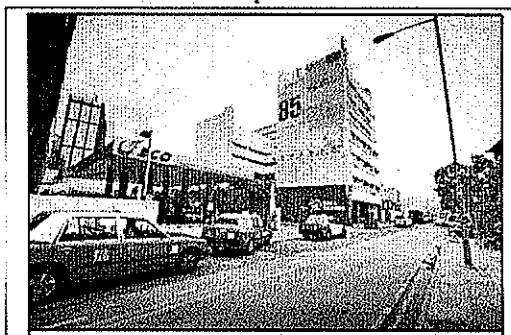
**Photo from Baseline Site Visit**




CR2.3, CR2.4, CR2.5

**Photo from EIA Report**

**Photo from Baseline Site Visit**



GIC2.2

**Photo from EIA Report**

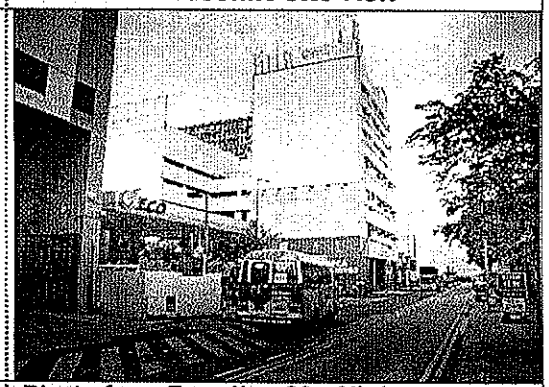
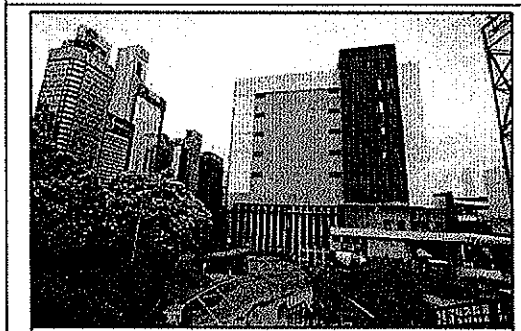


**Photo from Baseline Site Visit**



GIC2.3

**Photo from EIA Report**

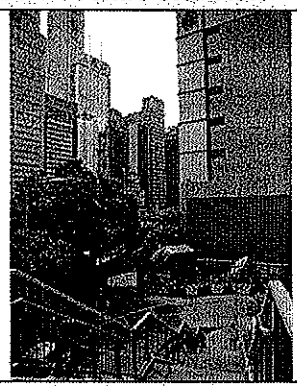
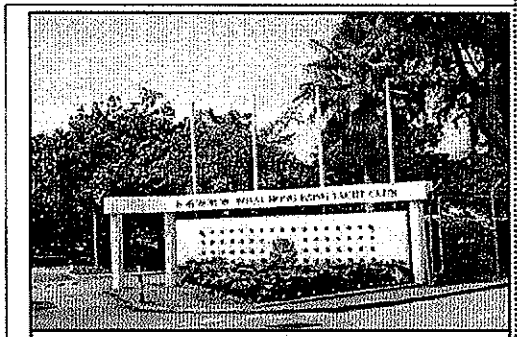


**Photo from Baseline Site Visit**



OU2.1

**Photo from EIA Report**

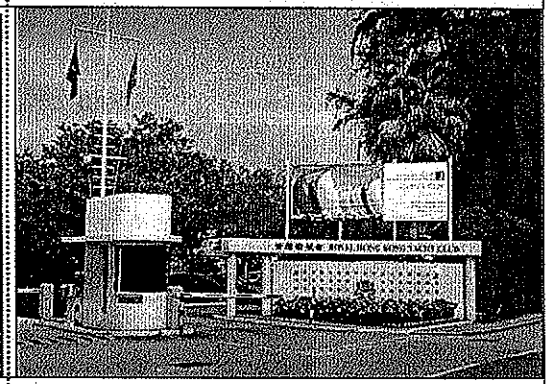


**Photo from Baseline Site Visit**

Figure 4.12

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in Wan Chai East

FILE: 0104887-HATS-VisualB-4.12-results-WCE-001
DATE: 02/11/2009

Environmental Resources Management

ERM

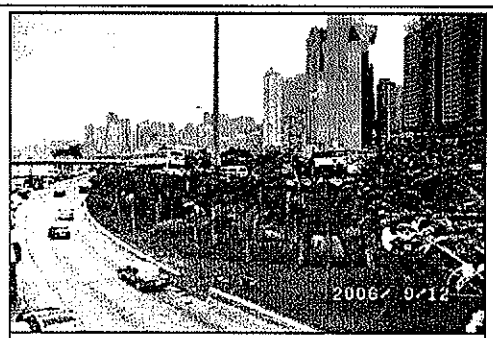



Photo from EIA Report

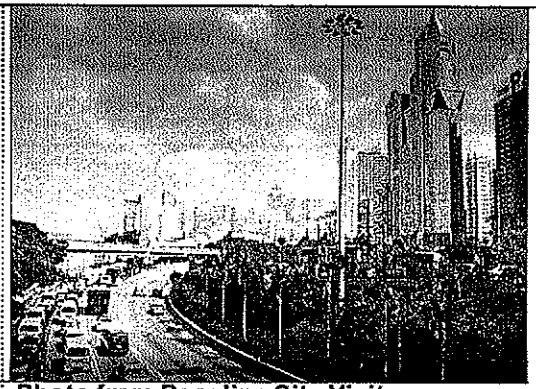


Photo from Baseline Site Visit

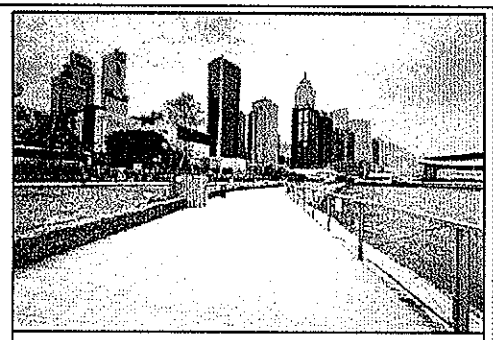



Photo from EIA Report

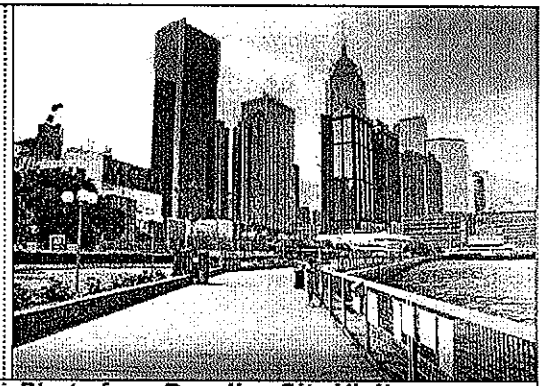


Photo from Baseline Site Visit

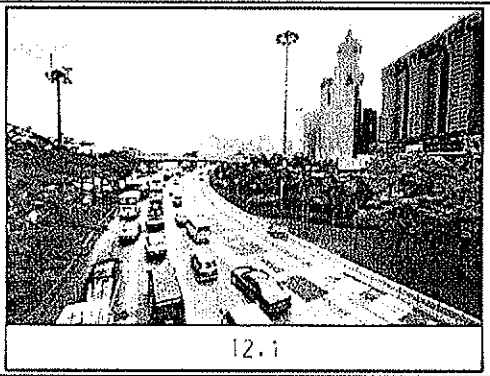



Photo from EIA Report

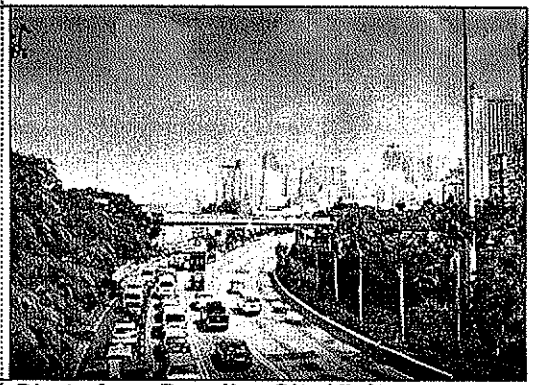


Photo from Baseline Site Visit

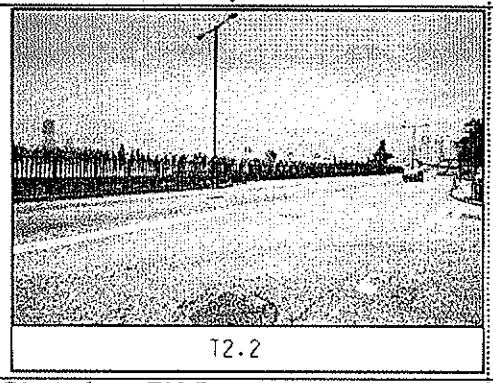



Photo from EIA Report

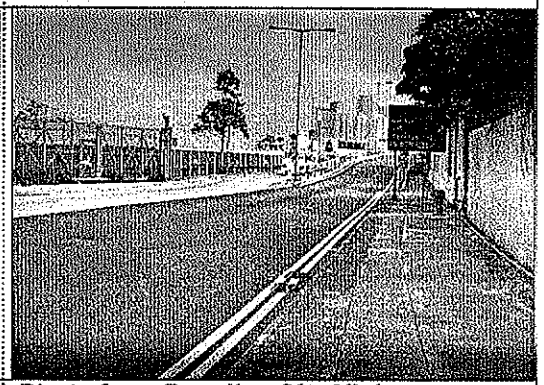


Photo from Baseline Site Visit

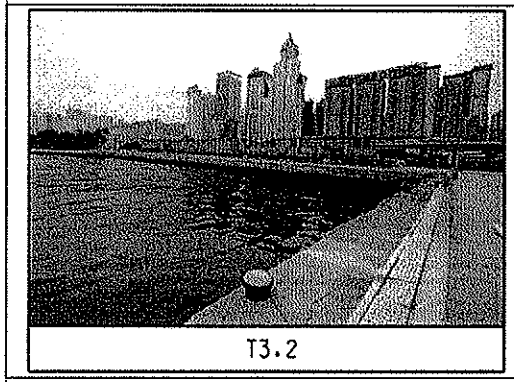



Photo from EIA Report

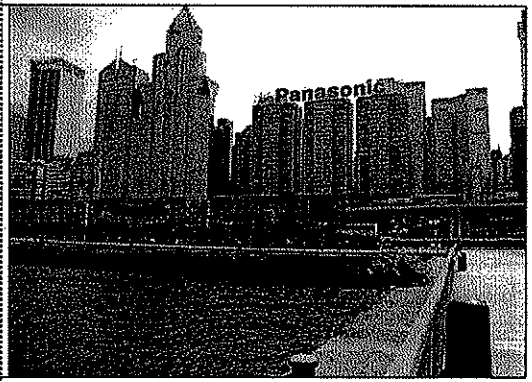



Photo from Baseline Site Visit

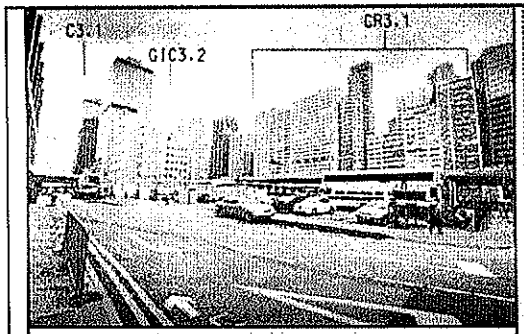
Figure 4.13

FILE: 0104887-HATS-VisualB-4.13-results-WCE-002
DATE: 02/11/2009

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in Wan Chai East

Environmental Resources Management

ERM




C3.1, GIC3.2, CR3.1

Photo from EIA Report

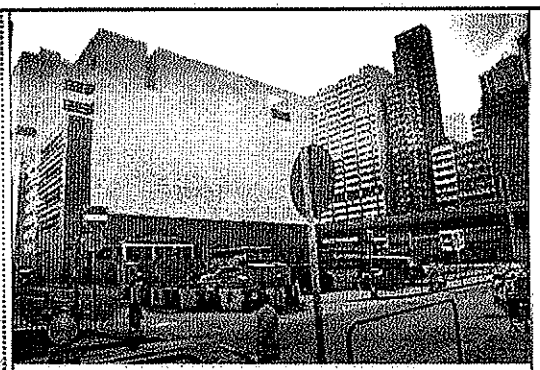
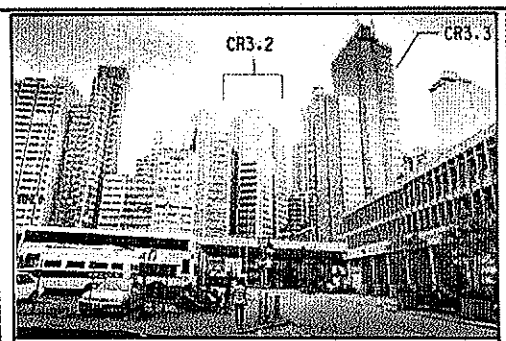


Photo from Baseline Site Visit




CR3.2, CR3.3

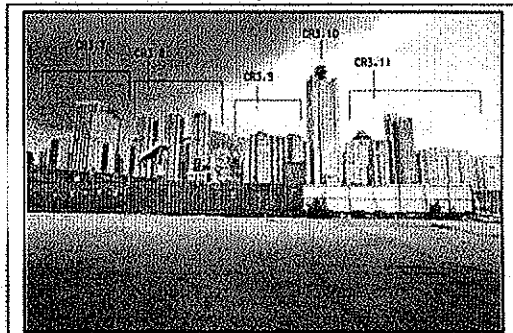
Photo from EIA Report

Photo from Baseline Site Visit

CR3.4, CR3.5, CR3.6

Photo from EIA Report

Photo from Baseline Site Visit




CR3.7, CR3.8, CR3.9, CR3.10, CR3.11

Photo from EIA Report

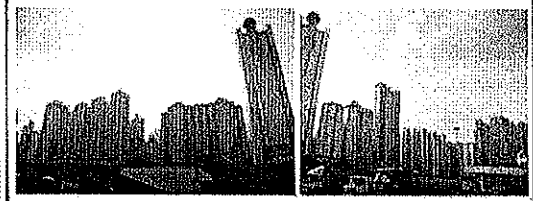
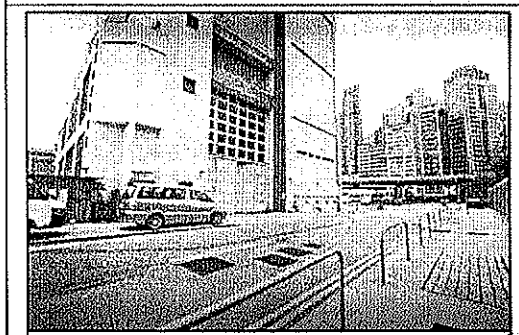


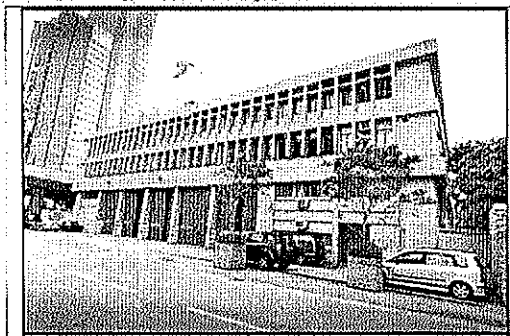
Photo from Baseline Site Visit



GIC3.1

Photo from EIA Report

Photo from Baseline Site Visit



GIC3.3

Photo from EIA Report

Photo from Baseline Site Visit

Figure 4.14

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in Central & Sai Ying Pun

FILE: 0104887-HATS-VisualB-4.14-results-C-001
DATE: 02/11/2009

Environmental Resources Management

ERM

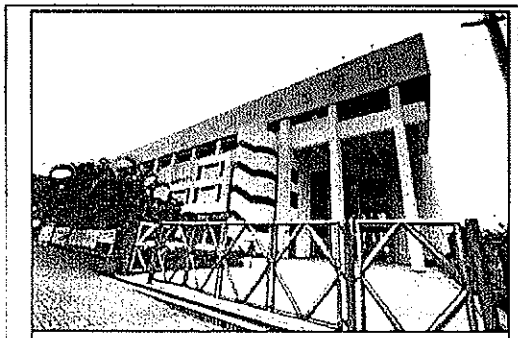



Photo from EIA Report

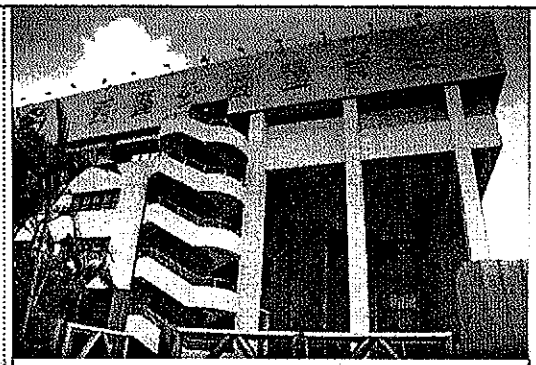


Photo from Baseline Site Visit

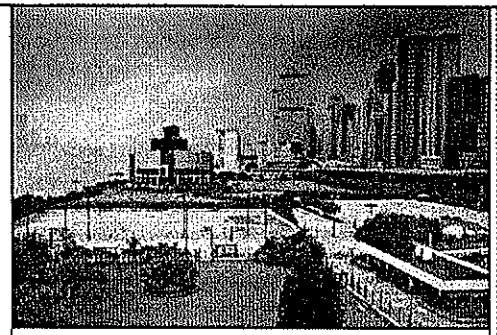



Photo from EIA Report

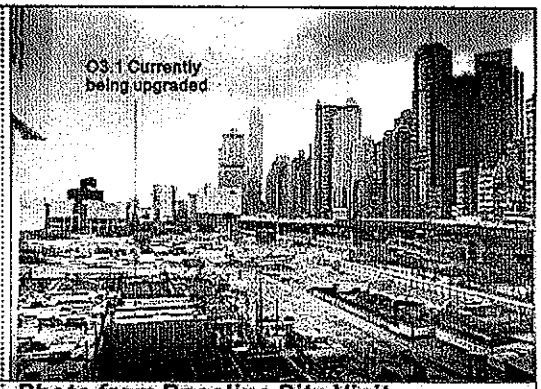



Photo from Baseline Site Visit

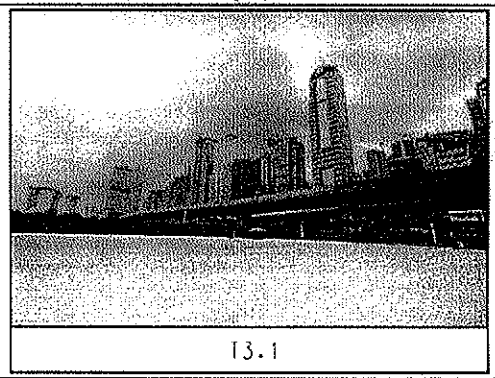



Photo from EIA Report

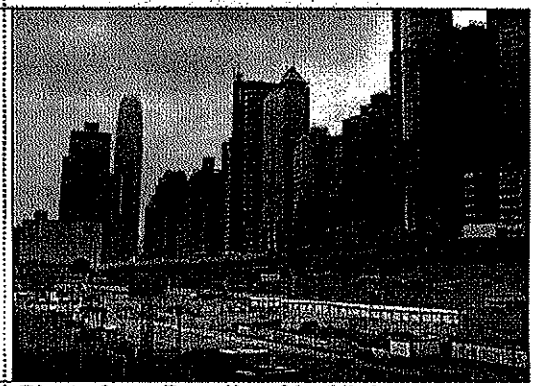


Photo from Baseline Site Visit

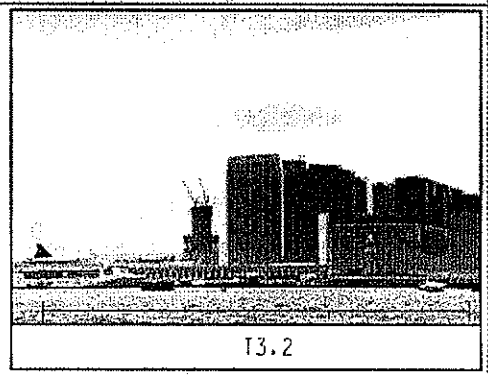



Photo from EIA Report

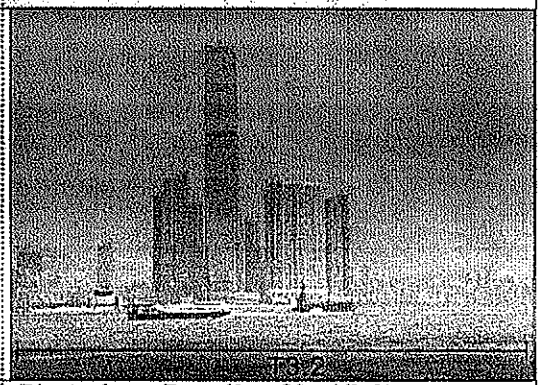


Photo from Baseline Site Visit

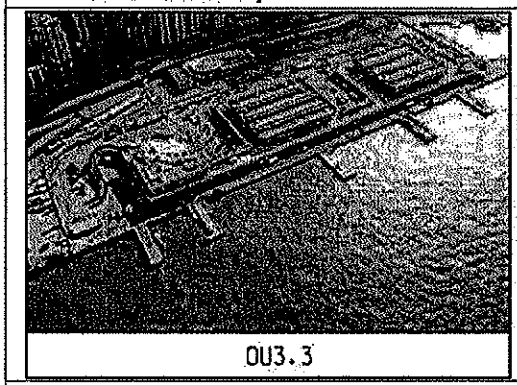



Photo from EIA Report

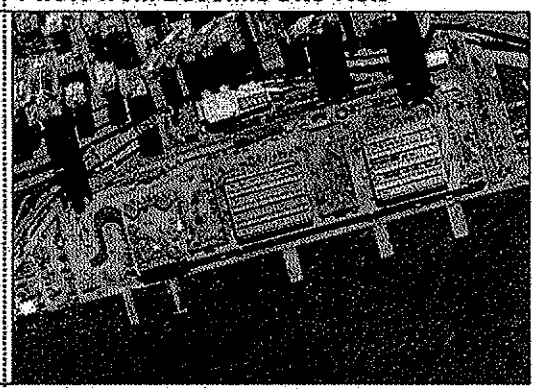


Photo from Baseline Site Visit

Figure 4.15

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in Central & Sai Ying Pun

FILE: 0104887-HATS-VisualB-4.15-results-C-002
DATE: 02/11/2009

Environmental Resources Management

ERM

R9.1 MEI FOO SUN CHUEN

Photo from EIA Report

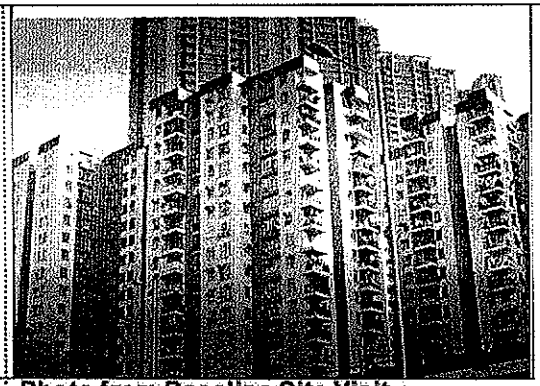


Photo from Baseline Site Visit

R9.2 HOI LAI ESTATE

Photo from EIA Report

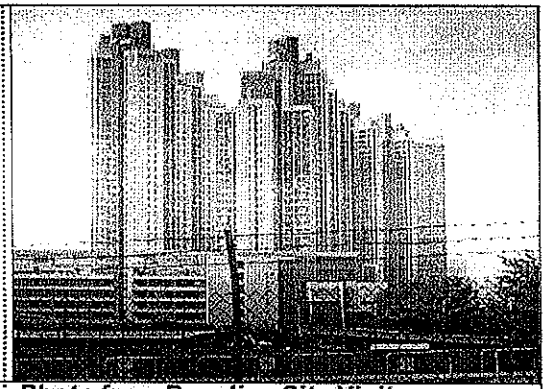
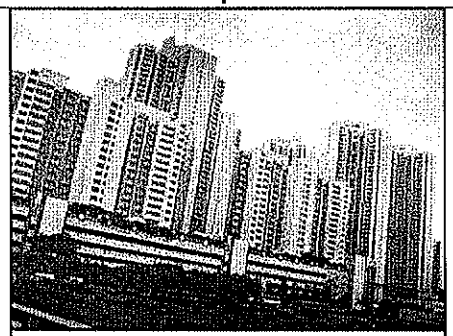


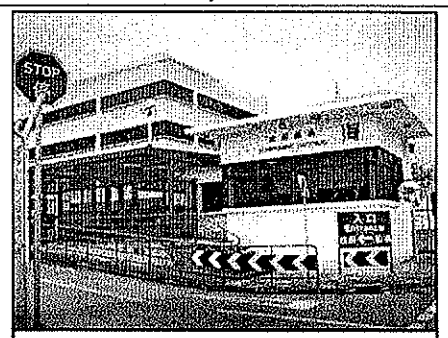
Photo from Baseline Site Visit



R9.3 FU CHEONG ESTATE
R9.4 NAM CHEONG ESTATE

Photo from EIA Report

Photo from Baseline Site Visit



GIC9.1 GOVERNMENT DOCKYARD

Photo from EIA Report

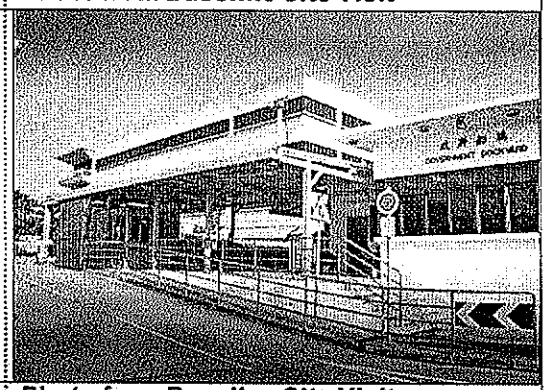
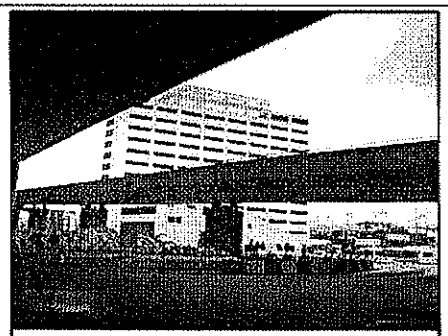


Photo from Baseline Site Visit



GIC9.2 WEST KOWLOON NORTH SEWAGE PUMPING STATION

Photo from EIA Report

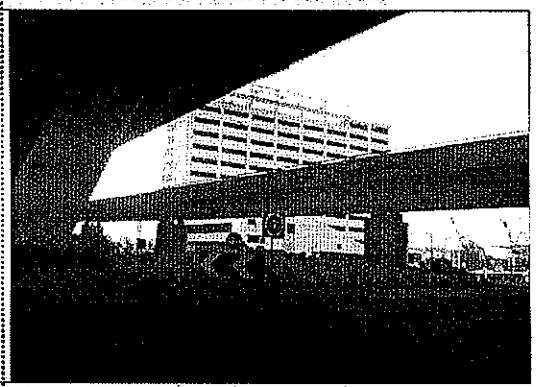
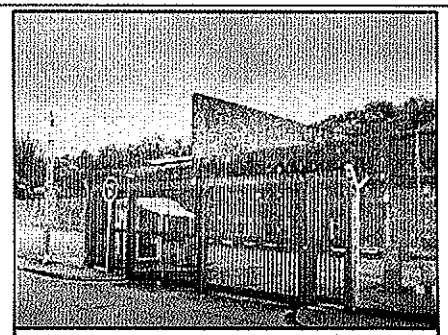


Photo from Baseline Site Visit



OU9.1 NGONG SHUEN CHAU BARRACKS

Photo from EIA Report

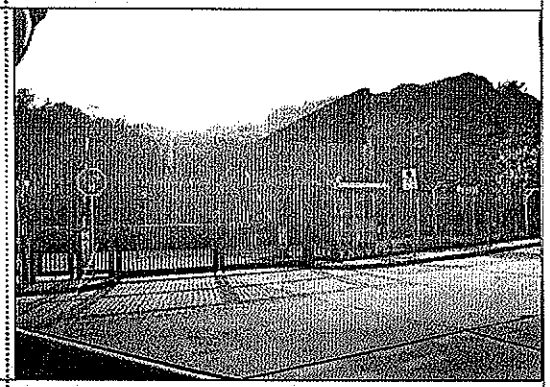


Photo from Baseline Site Visit

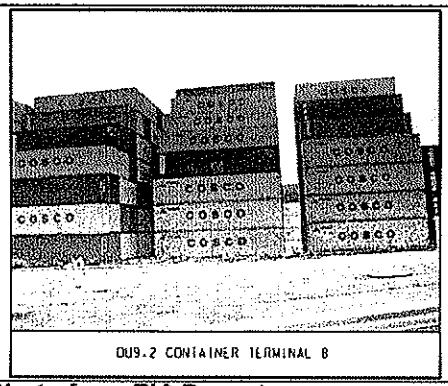
Figure 4.16

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in Stonecutters Island

FILE: 0104887-HATS-VisualB-4.16results-SI-001
DATE: 02/11/2009

Environmental Resources Management

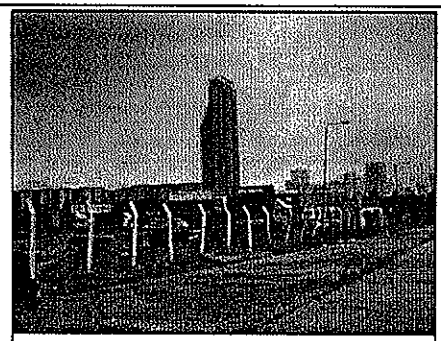
ERM




OU9.2 CONTAINER TERMINAL 8

**Photo from EIA Report**

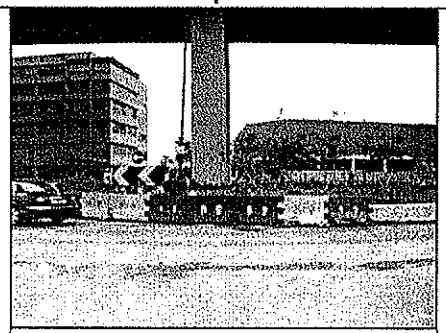
**Photo from Baseline Site Visit**



OU9.3 OPEN STORAGE CAR PARK

**Photo from EIA Report**

**Photo from Baseline Site Visit**



OU9.4 WEST KOWLOON REFUSE TRANSFER STATION

**Photo from EIA Report**

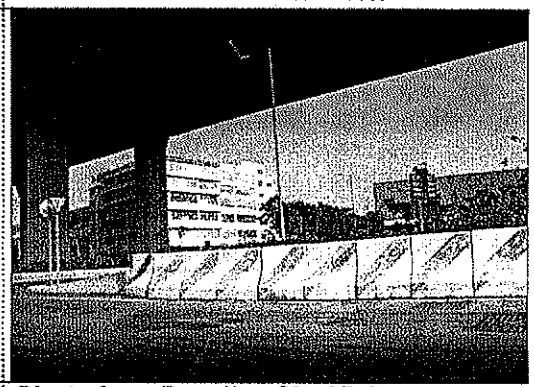
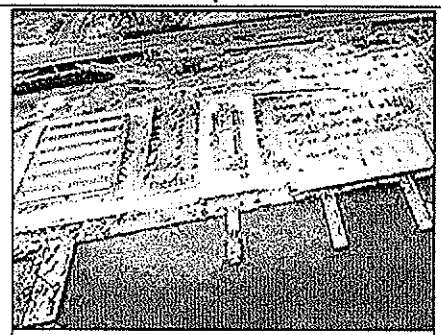


**Photo from Baseline Site Visit**



OU9.5

**Photo from EIA Report**

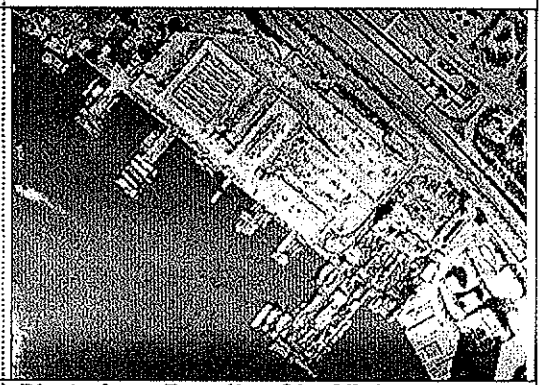
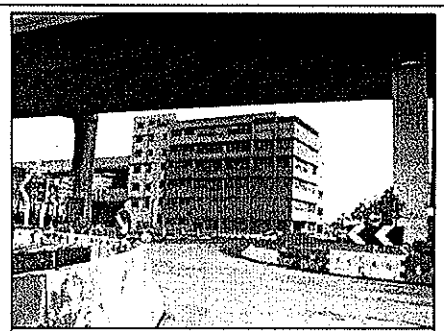


**Photo from Baseline Site Visit**



T9.1

**Photo from EIA Report**

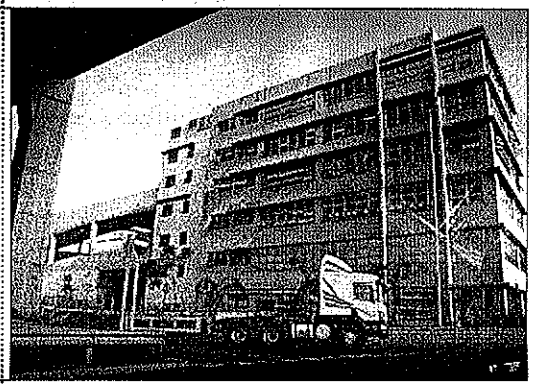
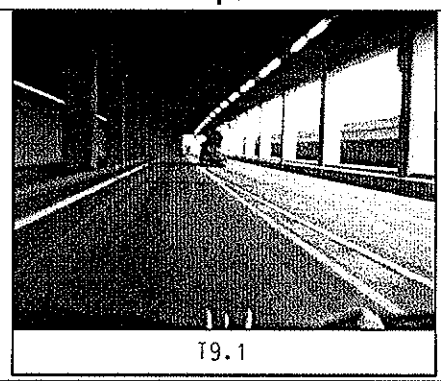


**Photo from Baseline Site Visit**



T9.1

**Photo from EIA Report**

**Photo from Baseline Site Visit**

Figure 4.17

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in Stonecutters Island

FILE: 0104887-HATS-VisualB-4.17-results-SI-002
DATE: 02/11/2009

Environmental Resources Management

ERM

T9.2

Photo from EIA Report

Photo from Baseline Site Visit

CDA9.2

Photo from EIA Report

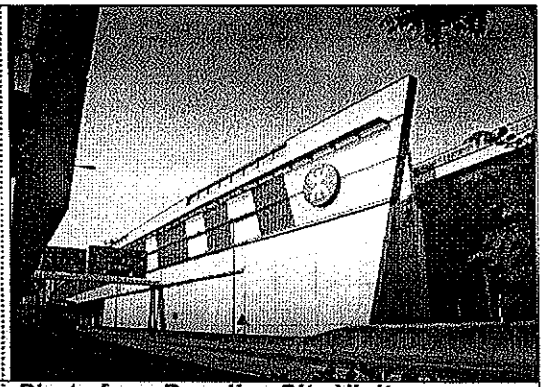
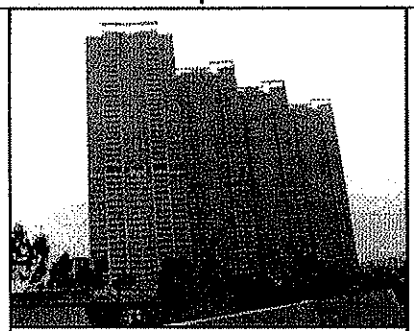


Photo from Baseline Site Visit



CDA9.1

Photo from EIA Report

Photo from Baseline Site Visit

Figure 4.18

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Baseline Visual Monitoring Locations and Results in Stonecutters Island

FILE: 0104887-HATS-VisualB-4.18-results-SI-003
DATE: 02/11/2009

Environmental Resources Management

ERM