

Hip Hing Joint Venture

Hong Kong Convention and  
Exhibition Centre Expansion  
Project:

*13<sup>th</sup> Quarterly Environmental  
Monitoring and Audit Report  
(1 Aug 2009 – 4 Nov 2009)*

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](mailto:post.hk@erm.com)  
<http://www.erm.com>


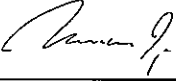
Hip Hing Joint Venture

Hong Kong Convention and  
Exhibition Centre Expansion  
Project:

*13<sup>th</sup> Quarterly Environmental  
Monitoring and Audit Report  
(1 Aug 2009 – 4 Nov 2009)*

December 2009

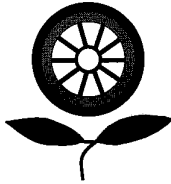
Reference 0050690

For and on behalf of ERM-Hong Kong, Ltd
Approved by: <u>Dr. Robin Kennish</u>
Signed: <u></u>
Position: <u>Director</u>
Certified by: <u></u> (Environmental Team Leader – Marcus Ip)
Date: <u>29 December 2009</u>

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.



**NATURE & TECHNOLOGIES (HK) LIMITED**  
**科技環保(香港)有限公司**

Unit 2 & 3, 4/F., Wellborne Commercial Centre, 8 Java Road, North Point, Hong Kong.  
香港北角渣華道8號威邦商業中心4樓2及3室 Tel電話 : (852) 2877 3122 Fax傳真 : (852) 2511 0922  
Email電郵: enquiry@nt.com.hk Web page網址 : http://www.nt.com.hk

Our Ref: 3.16/014/2006/at

28 December 2009

Maunsell Consultants Asia Ltd  
Grand Central Plaza, Tower 2  
138 Shatin Rural Committee Road  
Shatin, N.T., Hong Kong

Attn: Ms Vera Chan

Dear Sir/Madam,

**Hong Kong Convention Center Expansion Project**  
**Quarterly Environmental Monitoring and Audit Report for 1 August 2009 to 4 November 2009**  
**(Environmental Permit No. EP-239/2006/B)**

With reference to the captioned document concerning the Quarterly EM&A report for 1 August 2009 to 4 November 2009 received from ERM dated 22 December 2009, we are pleased to provide our verification for the document pursuant to condition 3 of the Environmental Permit (EP) No. EP-239/2006/B.

Yours faithfully,  
Nature & Technologies (HK) Limited

Ir Dr Gabriel C K Lam  
Independent Environmental Checker

- cc: - Hong Kong Trade Development Council (Attn: Mr. K. F. Chan)  
- Hip Hing Ngo Kee Joint Venture (Attn: Mr. Eric Lau & Mr. William Tam)  
- ERM (Attn: Mr. Marcus Ip)

## CONTENTS

	<i>EXECUTIVE SUMMARY</i>	<i>I</i>
<i>1</i>	<i>INTRODUCTION</i>	<i>1</i>
<i>1.1</i>	<i>PURPOSE OF THE REPORT</i>	<i>1</i>
<i>1.2</i>	<i>STRUCTURE OF THE REPORT</i>	<i>1</i>
<i>2</i>	<i>PROJECT INFORMATION</i>	<i>3</i>
<i>2.1</i>	<i>BACKGROUND</i>	<i>3</i>
<i>2.2</i>	<i>SITE DESCRIPTION</i>	<i>4</i>
<i>2.3</i>	<i>CONSTRUCTION ACTIVITIES</i>	<i>4</i>
<i>2.4</i>	<i>PROJECT ORGANISATION</i>	<i>4</i>
<i>2.5</i>	<i>STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS</i>	<i>4</i>
<i>3</i>	<i>ENVIRONMENTAL MONITORING METHODOLOGY</i>	<i>6</i>
<i>3.1</i>	<i>AIR QUALITY MONITORING</i>	<i>6</i>
<i>3.2</i>	<i>MARINE WATER QUALITY MONITORING</i>	<i>9</i>
<i>4</i>	<i>IMPLEMENTATION STATUS OF ENVIRONMENTAL PROTECTION REQUIREMENTS</i>	<i>12</i>
<i>4.1</i>	<i>ENVIRONMENTAL SITE AUDITING</i>	<i>12</i>
<i>4.2</i>	<i>EFFLUENT DISCHARGE SAMPLING</i>	<i>12</i>
<i>4.3</i>	<i>LANDSCAPE AND VISUAL MONITORING</i>	<i>12</i>
<i>4.4</i>	<i>EFFECTIVENESS OF MITIGATION MEASURES AND MONITORING</i>	<i>13</i>
<i>5</i>	<i>MONITORING RESULTS</i>	<i>14</i>
<i>5.1</i>	<i>AIR QUALITY</i>	<i>14</i>
<i>5.2</i>	<i>MARINE WATER QUALITY</i>	<i>14</i>
<i>5.3</i>	<i>WASTE MANAGEMENT</i>	<i>15</i>
<i>6</i>	<i>ENVIRONMENTAL NON-CONFORMANCE</i>	<i>17</i>
<i>6.1</i>	<i>SUMMARY OF ENVIRONMENTAL EXCEEDANCE</i>	<i>17</i>
<i>6.2</i>	<i>SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE</i>	<i>17</i>
<i>6.3</i>	<i>SUMMARY OF ENVIRONMENTAL COMPLAINT</i>	<i>17</i>
<i>6.4</i>	<i>SUMMARY OF ENVIRONMENTAL SUMMONS AND PROSECUTION</i>	<i>17</i>
<i>7</i>	<i>REVIEW OF THE EM&amp;A DATA AND EIA PREDICTIONS</i>	<i>18</i>
<i>7.1</i>	<i>AIR QUALITY</i>	<i>18</i>
<i>7.2</i>	<i>MARINE WATER QUALITY</i>	<i>18</i>
<i>7.3</i>	<i>WASTE MANAGEMENT</i>	<i>18</i>
<i>7.4</i>	<i>CONCLUSION OF THE REVIEW</i>	<i>19</i>
<i>8</i>	<i>CONCLUSIONS</i>	<i>20</i>

## ***LIST OF TABLES***

Table 2.1	Summary of Construction Activities Undertaken
Table 2.2	Summary of Environmental Licensing, Notification and Permit Status
Table 3.1	Air Monitoring Stations
Table 3.2	TSP Monitoring Parameter and Frequency
Table 3.3	Action and Limit Levels for Air Quality
Table 3.4	TSP Monitoring Equipment
Table 3.5	Marine Water Quality Monitoring Locations
Table 3.6	Marine Water Quality Monitoring Parameters & Frequency
Table 3.7	Action and Limit Levels for Marine Water Quality
Table 5.1	Summary of Record of Exceedance recorded during the Reporting Period
Table 5.2	Quantities of Waste Generated from the Project
Table 7.1	Comparison of the HKAQO and Air Quality Monitoring Results
Table 7.2	Comparison of the Estimated Amount and the Actual Amount of Waste Generated

## ***LIST OF ANNEXES***

Annex A	Location of Works Areas
Annex B	Location of Construction Activities during the Reporting Quarter
Annex C	Project Organization Chart and Contact Detail
Annex D	Locations of Monitoring Stations
Annex E	Summary of Implementation Status
Annex F	24-hour and 1-hour TSP Monitoring Results
Annex G	Marine Water Quality Monitoring Results
Annex H	Waste Flow Table

## EXECUTIVE SUMMARY

The construction works for Hong Kong Convention and Exhibition Centre Expansion (previously known as HKCEC Atrium Link Extension) (EIAO Register No: AEIAR-100/2006) commenced on 1 August 2006. This is the thirteenth quarterly Environmental Monitoring and Audit (EM&A) report presenting the EM&A work carried out during this period from 1 August 2009 to 31 October 2009 and the period of 1 to 4 November 2009 in accordance with the EM&A Manual. The proposal for the termination of the construction phase EM&A programme was submitted to EPD on 28 October 2009 (Aecom letter ref: AKWL: VCML:JWHW:lcl:98705/EN100-776) and was approved on 4 November 2009. With the receipt of EPD's approval, the construction phase EM&A programme was terminated on 5 November 2009. The Contractor is in the course of demobilization from Project site. The commencement of operational phase EM&A programme will follow upon the completion of demobilization.

### Summary of Construction Works undertaken during the Reporting Period

The major construction works taken during the reporting period include the reinstatement of seawall parapet and promenade along Convention Avenue and Expo Drive Central, extraction of temporary marine piles, removal of temporary marine platform and the installation of new traffic signs.

### Environmental Monitoring and Audit Progress

A summary of the monitoring activities in this reporting period is listed below:

24-hour Total Suspended Particulates (TSP) monitoring	17 times
1-hour TSP monitoring	50 times
Marine water quality sampling	15 times
Joint environmental site inspection	11 times

### Air Quality

Seventeen sets of 24-hour TSP monitoring and 50 sets of 1-hour TSP monitoring were carried out at the designated monitoring stations (AM1 & AM2) during this quarter. No exceedance of Action and Limit Levels was recorded at the monitoring stations during this quarter.

### Marine Water Quality

Fifteen sets of marine water quality measurements were carried out at the designated monitoring stations W3, W4 and W5 during the preparatory works for extraction of marine piles in this reporting period. A total of two exceedances of Action Level of turbidity were recorded on 4 September 2009. Investigations indicated that these exceedances were likely due to natural fluctuation in marine water quality rather than Project work.

### Construction Waste Management

The major construction activities undertaken in the reporting period were installation of marine pile, construction of marine platform and pedestrian tunnel. A total of 150.0 tonnes of inert C&D materials and 142.42 tonnes of C&D wastes were generated during this quarter. The C&D wastes and inert C&D materials generated from the Project were disposed of at SENT Landfill / Tseung Kwan O Area 137 temporary construction waste sorting facility and the public fill barging point at Quarry Bay respectively. A total of 2 tonnes of steel materials were generated from works over this quarter and sent to recycler. No chemical waste was collected during the reporting period by licensed chemical waste collector.

### Environmental Non-conformance

Eleven weekly joint environmental site inspections were carried out by the ET. No non-compliance event is recorded during this quarter.

No environmental complaints or summons were received during this quarter.

## 1 INTRODUCTION

ERM-Hong Kong, Limited (ERM) was appointed by Hip Hing Joint Venture as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for Hong Kong Convention and Exhibition Centre Expansion (previously known as HKCEC Atrium Link Extension) (the Project).

### 1.1 PURPOSE OF THE REPORT

This is the thirteenth and last quarterly EM&A report, which summarizes the impact monitoring results and audit findings for the EM&A programme during the reporting period from **1 August 2009** to **4 November 2009**.

### 1.2 STRUCTURE OF THE REPORT

The structure of the report is as follows:

*Section 1 :* **Introduction**

details the scope and structure of the report.

*Section 2 :* **Project Information**

summarizes background and scope of the Project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licences during the reporting period.

*Section 3 :* **Environmental Monitoring Requirement**

summarizes the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels and Event / Action Plans.

*Section 4 :* **Implementation Status on Environmental Mitigation Measures**

summarizes the implementation of environmental protection measures during the reporting period.

*Section 5 :* **Monitoring Results**

summarizes the monitoring results obtained in the reporting period.

*Section 6 :* **Environmental Non-conformance**

summarizes any environmental exceedance, environmental complaints and environmental summons received within the reporting period.



*Section 7:* **Review of EM&A Data and EIA Predictions**

compares and contrasts the EM&A data in the reporting period with the EIA predictions and annotates with explanation for any discrepancies.

*Section 8:* **Conclusion**

## 2.1

## BACKGROUND

The Hong Kong Trade Development Council (HKTDC) is expanding its existing facilities to provide additional space for Hong Kong's leading trade fairs to be held at the Hong Kong Convention and Exhibition Centre (HKCEC). The Project is located in North Wan Chai and will occupy the aerial space between Phase I and Phase II of the HKCEC. The new Atrium Link Extension (ALE) will span across the water channel between Phase I and Phase II of the HKCEC to accommodate 3 main levels of Exhibition Hall Extensions. The level of the main roof of the Extension will be of similar height as that of the podium roof of the Phase I building. A northern row of permanent supporting columns will be located on land close to Expo Drive Central and similarly a southern row will land near to Convention Avenue. There will be no permanent intermediate columns in the waterway.

The major works activities for the ALE will comprise the following:

- Construction and demolition of the temporary footbridge;
- Demolition of the existing Atrium Link;
- Construction and demolition of a temporary working platform;
- Construction of foundations and pile caps for the ALE; and
- Construction of superstructure for the ALE.

The potential environmental impacts of the Project have been studied in the "Hong Kong Convention and Exhibition Centre, Atrium Link Extension – Environmental Impact Assessment Report" (EIAO Register No: AEIAR-100/2006). The EIA was approved on 21 April 2006 under the *Environmental Impact Assessment Ordinance* (EIAO). An Environmental Permit (EP-239/2006) for the works was granted on 12 May 2006. An application for variation of the Environmental Permit was made on 25 January 2007, an amended Environmental Permit (EP-239/2006/A) was granted on 12 February 2007. An application for further variation of the Environmental Permit was made on 18 April 2008, and an amended Environmental Permit (EP-239/2006/B) was granted on 12 May 2008. Under the requirements of Condition 3.1 of Environmental Permit EP-239/2006/B, an EM&A programme as set out in the EM&A Manual and its supplement is required to be implemented.

The construction works commenced on 1 August 2006. All construction works, except minor works for the reinstatement of the Promenade, were completed on 30 September 2009 as reported by the Contractor. The proposal for the termination of the construction phase EM&A programme was

submitted to EPD on 28 October 2009 (ref: AKWL: VCML:JWHW:lcl:98705/EN100-776) and was approved on 4 November 2009. With EPD's approval, the construction phase EM&A programme was terminated on 5 November 2009. The Contractor is in the course of demobilizing from the Project Site. The commencement of operational phase EM&A programme will follow upon the completion of demobilization.

## 2.2 *SITE DESCRIPTION*

The works areas of the Project are illustrated in *Annex A*.

## 2.3 *CONSTRUCTION ACTIVITIES*

A summary of the major construction activities undertaken in this quarter is shown in *Table 2.1*. The locations of the construction activities are presented in *Annex B*.

*Table 2.1 Summary of Construction Activities Undertaken*

<b>Construction Activities Undertaken</b>
<ul style="list-style-type: none"><li>• Extraction of Temporary Marine Piles</li><li>• Extraction of Temporary Marine Platform</li><li>• Reinstatement of Sea Parapet</li><li>• Reinstatement of Promenade</li><li>• Installation of Traffic Signs</li></ul>

## 2.4 *PROJECT ORGANIZATION*

The Project organization chart and contact details are shown in *Annex C*.

## 2.5 *STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS*

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since August 2006 is presented in *Table 2.2*.

**Table 2.2 Summary of Environmental Licensing, Notification and Permit Status**

<b>Permit/ Licenses/ Notification</b>	<b>Reference</b>	<b>Validity Period</b>	<b>Remarks</b>
Environmental Permit	EP-239/2006/B	Throughout the Contract -	Environmental Permit (EP) EP-239/2006 granted originally on 12 May 2006. Since then the EP have been varied twice. The latest revised EP was issued on 12 May 2008
Notification of Construction Works under Air Pollution Control (Construction Dust) Regulation	--	--	Notification on 23 June 2006
Discharge Licence under Water Pollution Control Ordinance	EP860/W10/XY 0145	N/A	-
Chemical Waste Producer Registration	WPN5213-134-H3125-01	N/A	Chemical waste types: spent paint, acid, alkaline, adhesive, diesel fuel, lubricating oil and bitumen.
Valid Construction Noise Permit for area inside the Atrium Link	GW-RS0553-09	Valid from 1 August 2009 to 30 September 2009	

### 3.1 AIR QUALITY MONITORING

#### 3.1.1 Monitoring Location

In accordance with the EM&A Manual, sampling for 24-hour and 1-hour Total Suspended Particulates (TSP) levels were conducted at the designated monitoring stations listed in *Table 3.1*. Map and photographs showing the monitoring stations are presented in *Annex D*.

**Table 3.1** *Air Monitoring Stations*

Monitoring Station	Description
AM1	Pedestrian Plaza
AM2	Renaissance Harbour View Hotel Hong Kong

#### 3.1.2 Monitoring Parameters, Frequency and Programme

Air quality monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual (*Table 3.2*).

**Table 3.2** *TSP Monitoring Parameter and Frequency*

Parameter	Frequency
24-hour TSP	Once per every 6 days
1-hour TSP	3 times per every 6 days

#### 3.1.3 Action and Limit Levels

The Action and Limit levels were established in accordance with the EM&A Manual and are presented in *Table 3.3*.

**Table 3.3** *Action and Limit Levels for Air Quality*

Parameter	Air Monitoring Station	Action Level ( $\mu\text{gm}^{-3}$ )	Limit Level ( $\mu\text{gm}^{-3}$ )
24-hour TSP	AM1	161	260
	AM2	168	260
1-hour TSP	AM1	327	500
	AM2	329	500

#### 3.1.4 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 complies 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 3.4 summarizes the equipment that was used in the 24-hour and 1-hour TSP monitoring.

**Table 3.4 TSP Monitoring Equipment**

Monitoring Station	Equipment	Model (HVS, Calibration Kit)
AM1 (for 24-hr TSP)	HVS, Calibration Kit	GMW-9503, Tisch TE-5025A
AM2 (for 24-hr TSP)	HVS, Calibration Kit	GMW-9795, Tisch TE-5025A
AM1 (for 1-hr TSP)	HVS, Calibration Kit	GMW-9864, Tisch TE-5025A
AM2 (for 1-hr TSP)	HVS, Calibration Kit	GMW-8115, Tisch TE-5025A

### 3.1.5 Monitoring Methodology

#### *Installation*

The HVSs at AM1 and AM2 were placed at about 1.3 m above local ground level and about 4.3 m above local ground respectively. All of the HVSs were free-standing with no obstruction.

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

- horizontal platform with appropriate support to secure the samplers against gusty wind were provided at AM1 & AM2;
- a minimum of 2 m 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 ETS-Testconsult Ltd*

- glass fibre filters were labeled 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  $\pm 3$  °C; the relative humidity (RH) was 40%; and
- ETS-Testconsult Ltd, a HOKLAS accredited laboratory, implements comprehensive quality assurance and quality control programmes.

#### *Field Monitoring*

- 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 four 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 rate of the HVSs was checked and adjusted at around 0.6 -1.44 m<sup>3</sup>/min. The range specified in the EM&A Manual was between 0.6 – 1.7 m<sup>3</sup>/min;
- 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 folded 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 ETS-Testconsult Ltd for analysis.

### 3.1.6 *Maintenance and Calibration*

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.

The flow rate of each HVS with mass flow controller was calibrated using an orifice calibrator. Initial calibration of the dust monitoring equipments was conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVSs using Tisch TE-5025A Calibration Kit. The calibration records for the HVSs are given in the respective monthly reports.

## 3.2 MARINE WATER QUALITY MONITORING

### 3.2.1 Monitoring Location

In accordance with the EM&A Manual, the marine water quality monitoring was conducted at the designated monitoring stations during the installation and removal of temporary marine piles listed in *Table 3.5*. The map and photographs showing the monitoring stations are presented in *Annex D*.

**Table 3.5** *Marine Water Quality Monitoring Locations*

Station	Location	Intake Level	Easting	Northing
W3	Hong Kong Convention and Exhibition Centre Phase I Cooling Water Intake	7.5m below the existing pump house floor	835852	815907
W4	Wan Chai Tower/ Revenue Tower/ Immigration Tower Cooling Water Intake <sup>(a)</sup>	5m below the top of the existing sea wall	835944	815885
W5	Great Eagle Centre, China Resources Building Cooling Water Intake	5m below the top of the existing sea wall	835963	815886

**Note:**  
(a) The cooling water intake for Wan Chai Tower / Revenue Tower/ Immigration Tower was partially relocated to the new pump house adjacent to Station W3.

### 3.2.2 Monitoring Parameters, Frequency and Programme

The marine water quality monitoring was conducted in accordance with *Table 3.6* during the period of installation and removal of temporary marine piles.

**Table 3.6** *Marine Water Quality Monitoring Parameters & Frequency*

Parameter	Frequency	No. of Samples per Monitoring Event	Duration
Dissolved Oxygen (DO)	3 days per week at mid-flood & mid-ebb tides	2	During installation and removal of temporary marine piles.
Suspended Solids (SS)			
Turbidity			

Reference was made to the predicted tides at Quarry Bay, which is the tidal station nearest to the Project Site, published on the web site of Hong Kong Observatory (<http://www.hko.gov.hk/tide/eQUBtide.htm>).

Measurements of suspended solids (SS), turbidity in Nephelometric Turbidity Units (NTU) and dissolved oxygen (DO) in mgL<sup>-1</sup> were undertaken at the designated monitoring stations. The first parameter was determined in the laboratory with the latter three were measured in-situ.

### 3.2.3 Action and Limit Levels

The Action and Limit levels were established in accordance with the EM&A Manual and are presented in *Table 3.7*.



**Table 3.7 Action and Limit Levels for Marine Water Quality**

Parameter	Tide	Action Level	Limit Level
Dissolved Oxygen (DO) in mgL <sup>-1</sup>	Mid-Ebb	3.26	3.23
	Mid-Flood	3.25	3.14
Suspended Solids (SS) in mgL <sup>-1</sup>	Mid-Ebb	9.00	10.00
	Mid-Flood	8.18	8.40
Turbidity (Tby) in NTU	Mid-Ebb	5.32	6.19
	Mid-Flood	4.76	5.79

### 3.2.4 Monitoring Equipment and Methodology

#### *Dissolved oxygen and temperature measuring equipment*

The portable and weatherproof dissolved oxygen (DO) measuring meter (YSI Model 95) was used in the impact monitoring.

The DO measuring meter has a membrane electrode with automatic temperature compensation complete with a 50-foot cable. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring station.

#### *Turbidity Measurement Instrument*

The turbidity measurements were carried out on split water sample collected from the same depths of SS samples. A portable and weatherproof turbidity-measuring meter (HACH 2100P) was used in the impact monitoring. It has a photoelectric sensor capable of measuring turbidity between 0-1000 NTU. Response of the sensor was checked with certified standard turbidity solutions before the start of measurement.

#### *Suspended Solids*

Water samples for suspended solids measurement were collected by use of a transparent PVC cylinder (Kahlsico Water Sampler), packed in ice (cooled to 4°C without being frozen) and delivered to the laboratory as soon as possible after collection. The SS determination work started within 24 hours after the collection of the water samples, and the testing method of SS were carried by ETS-Testconsult Ltd (HOKLAS accredited laboratory) in accordance with the APHA 19ed 2540D<sup>(1)</sup> and the lowest detection limit is 1 mgL<sup>-1</sup>. The Quality Assurance/Quality Control (QA/QC) procedures were followed as required by HOKLAS.

#### *Water Depth Detector*

A portable, battery-operated echo sounder (Speedtech instrument SM-5A) was used for the determination of water depth at each designated monitoring station.

<sup>(1)</sup> American Public Health Association Standard Methods for the Examination of Water and Wastewater.

### *Location of the Monitoring Sites*

A hand-held GPS (MLR SP24) and together with a suitably scaled map were used for locating the marine water quality monitoring stations.

### *Calibration of Equipment*

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout the marine water quality monitoring. The calibration records for the monitoring instruments are given in the respective monthly reports.

## 4 IMPLEMENTATION STATUS OF ENVIRONMENTAL PROTECTION REQUIREMENTS

### 4.1 ENVIRONMENTAL SITE INSPECTIONS

Weekly site inspections were carried out by the ET. Eleven site inspections were conducted on 5, 12, 20 and 26 August 2009; 2, 7, 18, 24 and 30 September 2009, and 9 and 16 October 2009 respectively. As reported by the Contractor and confirmed by the ET, no further works were conducted for the period from 18 October to 4 November 2009. With the termination of works for the Project, no site inspections were arranged after 16 October 2009. The major construction activities undertaken in the reporting period were the extraction of temporary marine piles and platforms, the reinstatement of sea parapet and the reinstatement of the promenade. The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. There was no non-compliance event recorded in the reporting period. The implementation status of environmental mitigation and status of relevant required submissions under the EP were reported as part of the monthly EM&A reports <sup>(1)</sup>. Relevant submissions made on these measures and requirements during these reporting periods are summarized in *Annex E*.

### 4.2 EFFLUENT DISCHARGE SAMPLING

In accordance with the discharge licence issued under WPCO, water sampling should be conducted at least quarterly to ensure the quality of treated effluent at operating discharge points complies with the requirements of discharge license. During the reporting period, <sup>(2)(3)(4)</sup> effluent sample monitoring was not necessary as discharge points are not in operation.

### 4.3 LANDSCAPE AND VISUAL MONITORING

In accordance with *Section 6.7* of the EM&A Manual, bi-weekly landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures are fully achieved. The monitoring has commenced since January 2007 and is conducted by

<sup>(1)</sup> The Monthly EM&A Reports for August 2009, September 2009 and October 2009 were submitted to the EPD on 6 October 2009, 29 October 2009 and 26 November 2009 respectively.

<sup>(2)</sup> Discharge point 1 is designated for discharge of treated effluents from plant room construction works near gate no.4 on Expo Drive Central. Effluents are no longer discharged upon completion of respective works, and therefore further effluent sampling and testing at Discharge point 1 are no longer conducted.

<sup>(3)</sup> Discharge point 2 is designated for discharge of treated effluents from works near gate no.1 on Expo Drive Central. Effluents are no longer discharged upon completion of works in the area, and therefore no further effluent sampling are conducted.

<sup>(4)</sup> Discharge point 3 is designated for discharge of treated effluents from works near the southwest corner under the atrium link extension. Effluents are no longer discharged upon completion of works in the area, and therefore no further effluent sampling are conducted.

Earthasia Limited. Landscape and visual mitigation measures were implemented by the Contractor and the implementation status is given in *Annex E*.

#### 4.4

#### *EFFECTIVENESS OF MITIGATION MEASURES AND MONITORING*

The mitigation measures recommended in the EIA report and required by the EP are considered effective in minimizing environmental impacts.

The EM&A for the Project was conducted as scheduled during the reporting period. No non-compliance events were observed during site inspections and no exceedances were recorded during this reporting period. The EM&A programme is considered effective.

### 5.1 AIR QUALITY

The monitoring data at AM1 and AM2 were provided by ETS-Testconsult Ltd. Seventeen sets of 24-hour and 50 sets of 1-hour TSP monitoring were carried out at the designated monitoring stations (AM1 & AM2) during this quarter. A power supply failure at AM1 on 16 September 2009 prevented the 1-hour TSP monitoring from being undertaken as scheduled but the monitoring was immediately re-scheduled and conducted on 17 September 2009. The monitoring data for 24-hour TSP and 1-hour TSP with weather conditions and graphical presentations are presented in *Annex F*.

The weather condition during the monitoring period varied from sunny to rainy. The local impacts observed near the monitoring stations were mainly vehicle emissions along Convention Avenue and Fleming Road.

No exceedance of Action and Limit Levels of 24-hour and 1-hour TSP was recorded at the monitoring stations during this quarter. The measured 24-hr TSP in the reporting period ranged from 35 to 134  $\mu\text{gm}^{-3}$  at AM1 and from 29 to 121  $\mu\text{gm}^{-3}$  at AM2.

### 5.2 MARINE WATER QUALITY

Marine water quality monitoring was conducted in the reporting period and the results of marine water quality monitoring were provided by ETS-Testconsult Ltd. Fifteen sets of marine water quality measurements were carried out at the designated monitoring stations W3, W4 and W5 in the reporting period during the extraction of temporary marine piles, which was started on 20 April 2009.

The monitoring data and graphical presentations are summarized in *Annex G*. The monitoring results can also be found in the web-site (<http://www.hkcecema.com/index.html>).

During the reporting period a total of two exceedances of marine water quality parameters of the monitoring stations were recorded and were summarized in *Table 5.1*. Notification of Exceedances with detailed investigation reports were issued to IEC when the exceedances were identified.

**Table 5.1 Summary of Record of Exceedance recorded during the Reporting Period**

Station	Record of Exceedance
W4	Exceedance of Action Level for Turbidity on 4 Sept 2009 during the mid-flood tide
W5	Exceedance of Action Level for Turbidity on 4 Sept 2009 during the mid-flood tide

Two exceedances of the Action Level for turbidity were recorded on 4 September 2009. No land-based construction works were observed on the

promenade immediately adjacent to W4 and W5 at the time of monitoring. It was reported by the Contractor that pile extraction had already been completed at around 10:00am on 4 September 2009, and no further marine works were conducted on that day. The exceedances were however recorded at around 18:00 hours on the same day. The Contractor also confirmed that silt curtains had been properly deployed during the extraction of temporary marine piles.

Given that the general tidal currents flow from the east to the west in the middle of the flood tide, it would be highly unlikely that such currents would carry suspended particles, if any had been released from the pile extraction operations, with the marine water to induce an elevation of turbidity levels at the two monitoring stations concerned located directly south of the pile extraction works already completed much early that day.

From observations during site inspections conducted on 2 and 7 September 2009, there was no evidence of surface runoff from land-based works area discharged into the channel, and therefore the possibility of the exceedance caused by silty runoff was also discounted.

It is also noted that the suspended solids (SS) in the water samples measured gravimetrically in the laboratory was within the relevant Action Level for SS, indicating that the water quality was acceptable.

Based on the above, it was concluded that the exceedance was unlikely caused by the works of the Project.

With the completion of the pile extraction works, the owners of the cooling water intakes were notified and the silt curtains at these intakes were removed on 19 September 2009. No issue on water quality in the marine channel was observed in subsequent site inspections and no complaint has been received from the cooling water intake owners since the removal of the silt curtains.

### 5.3 WASTE MANAGEMENT

Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D wastes. Reference has been made on the Monthly Summary Waste Flow Table prepared by Hip Hing Joint Venture (*Annex H*).

With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting period are summarized in *Table 5.1*.

**Table 5.2 Quantities of Waste Generated from the Project**

Month / Year	Quantity		
	C&D Materials (inert) <sup>(a)</sup>	C&D Wastes (non-inert) <sup>(b)</sup>	Chemical Waste
August 2009	100.0 tonnes	102.31 tonnes (2 tonnes of steel materials were collected and recycled)	0

Month / Year	Quantity		
	C&D Materials (inert) <sup>(a)</sup>	C&D Wastes (non-inert) <sup>(b)</sup>	Chemical Waste
September 2009	50.0 tonnes	40.11 tonnes (no steel materials were collected and recycled)	0
1 October to 4 November 2009	0.0 tonnes	0.0 tonnes (no steel materials which were collected and recycled)	0
Total	150.0 tonnes	142.42 tonnes (including 2 tonnes steel material which were collected and recycled)	0

Notes:

- (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil. No inert C&D materials were reused in this Project. Non-reused inert C&D materials were disposed at the public fill barging point at Quarry Bay.
- (b) C&D wastes include steel materials generated from demolition of footbridge, the existing Atrium Link and working platform, paper / cardboard packaging waste, chemical waste and other wastes such as general refuse. A total of 6 tonnes of steel material were sent to recycler and the remaining C&D wastes other than general refuse were disposed of at SENT Landfill / Tseung Kwan O Area 137 temporary construction waste sorting facility.

A total of 150.0 tonnes of inert C&D materials and 142.42 tonnes of C&D wastes were generated during the reporting period. The C&D wastes and inert C&D materials generated from the Project were disposed of at SENT Landfill / Tseung Kwan O Area 137 temporary construction waste sorting facility and the public fill barging point at Quarry Bay respectively. A total of 2 tonnes of steel materials from works were generated and recycled in this quarter. No chemical waste was collected during the reporting period by licensed chemical waste collector.

## 6 ENVIRONMENTAL NON-CONFORMANCE

### 6.1 SUMMARY OF ENVIRONMENTAL EXCEEDANCE

No exceedance of the Action and Limit Levels of 24-hour and 1-hour TSP was recorded at monitoring stations during this quarter.

Two exceedances of the Action Level of marine water quality parameters were recorded at monitoring stations during the reporting period. Details of the exceedance are summarized in *Table 5.1*.

### 6.2 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

No non-compliance event was recorded during this quarter.

### 6.3 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaint was received during this quarter.

### 6.4 SUMMARY OF ENVIRONMENTAL SUMMONS AND PROSECUTION

There was no summons or prosecution on environmental matters during this quarter.



### 7.1 AIR QUALITY

Since qualitative assessment of dust impact was conducted during construction phase in the EIA, a comparison was made against monitoring results and the Hong Kong Air Quality Objectives (HKAQO) (*Table 7.1*).

**Table 7.1 Comparison of the HKAQO and Air Quality Monitoring Results**

Month	Monitoring Stations	Corresponding ASR in EIA	HKAQO,	Measured 24 hour TSP	
			$\mu\text{gm}^{-3}$	Monitoring Results, $\mu\text{gm}^{-3}$ (a) (b)	
			24 hour (a)	Average	Range(b)
August 2009	AM1	AM8	260	80	23 – 160
	AM2	AM6	260	71	14 – 161
September 2009	AM1	AM8	260	79	23 – 160
	AM2	AM6	260	71	14 – 161
October 2009	AM1	AM8	260	80	23 – 160
	AM2	AM6	260	71	14 - 161

Notes:

(a) 24-hour TSP criterion under HKAQOs was used.

(b) Average and range of data were calculated for the period of monitoring between the commencement of the construction works and the reporting month listed.

The monitoring results show that the average and range of 24-hour TSP levels measured since the commencement of the construction works were well below the 24-hour TSP criterion in the HKAQO. Recommended mitigation measures in *Section 4.24* of EIA were implemented throughout the construction period and were considered effective.

### 7.2 MARINE WATER QUALITY

The hydrodynamic modelling assessment undertaken in the approved EIA Report was targeted at assessing the potential effects of the marine works on the flushing capacity of the water channel during the construction phase and no prediction was made on the change in marine water quality, hence no comparison can be made with the monitoring results.

### 7.3 WASTE MANAGEMENT

The estimated amount of waste generated in this project and the accumulated quantities of waste generated up to the reporting period are presented in *Table 7.2*. Recommended mitigation measures in *Sections 6.35* to *6.41* of the EIA report are implemented during the reporting period. These measures are regarded as effective.

**Table 7.2 Comparison of the Estimated Amount and the Actual Amount of Waste Generated**

Type of Material	Estimated Amount of C&D Materials in EIA (inert & non-inert)	Accumulated Actual Amount of C&D Materials Recorded <sup>(a)</sup> (inert & non-inert)
Demolition of temp. footbridge	585 tonnes	0 tonne
Demolition of existing Atrium Link	4,680 tonnes	2,681.5 tonnes
Demolition of temp. working platform	390 tonnes	0 tonne
Construction of foundations and pile caps	20,000 tonnes	27,945.4 tonnes
General Refuse	Insignificant	6,055.9 tonnes
Chemical Waste	Small	288 Litres

Note:  
(a) The actual amount of C&D Materials was recorded since the commencement of construction works in August 2006.

#### 7.4 CONCLUSION OF THE REVIEW

The EIA predictions and the monitoring results since the commencement of construction works have been reviewed. The EIA concluded that the Project would not pose adverse impacts to the environment, and the monitoring results also indicated that the construction of the Project did not pose adverse impacts to the environment. Recommendations given in the EIA are also considered to be adequate and effective for minimising the environmental impacts.

This Thirteenth and last Quarterly Environmental Monitoring and Audit (EM&A) Report presents the EM&A work undertaken during the period from 1 August 2009 to 4 November 2009 in accordance with the EM&A Manual and the requirement under EP-239/2006B.

Seventeen sets of 24-hour TSP monitoring and 50 sets of 1-hour TSP monitoring were carried out at the designated monitoring stations (AM1 & AM2) during this quarter. A power supply failure incident at AM1 on 16 September 2009 prevented the 1-hour TSP monitoring from being undertaken as scheduled but the monitoring was immediately re-scheduled and conducted on 17 September 2009. No exceedance of Action and Limit Levels was recorded at the monitoring stations during this quarter.

Fifteen sets of marine water quality measurements were carried out at the designated monitoring stations W3, W4 and W5 in the reporting period during the extraction of temporary marine piles starting from 20 April 2009. Two exceedances of the Action Level of marine water quality parameters were recorded at monitoring stations during this quarter. Details of the exceedance are summarized in *Table 5.1*.

No non-compliance event was recorded during this quarter.

No complaint and summons/prosecution was received during this quarter.



Water sampling at discharge points was not scheduled as all discharge points are no longer used by the Contractor since May 2009.

The proposal for the termination of the construction phase EM&A programme was submitted to EPD on 28 October 2009 (Aecom letter ref: AKWL: VCML:JWHW:lcl:98705/EN100-776) and was approved on 4 November 2009. With EPD's approval, the construction phase EM&A programme was terminated on 5 November 2009.

Annex A

## Location of Works Areas

**Key**

-  Proposed Atrium Link Extension
-  Existing Atrium Link

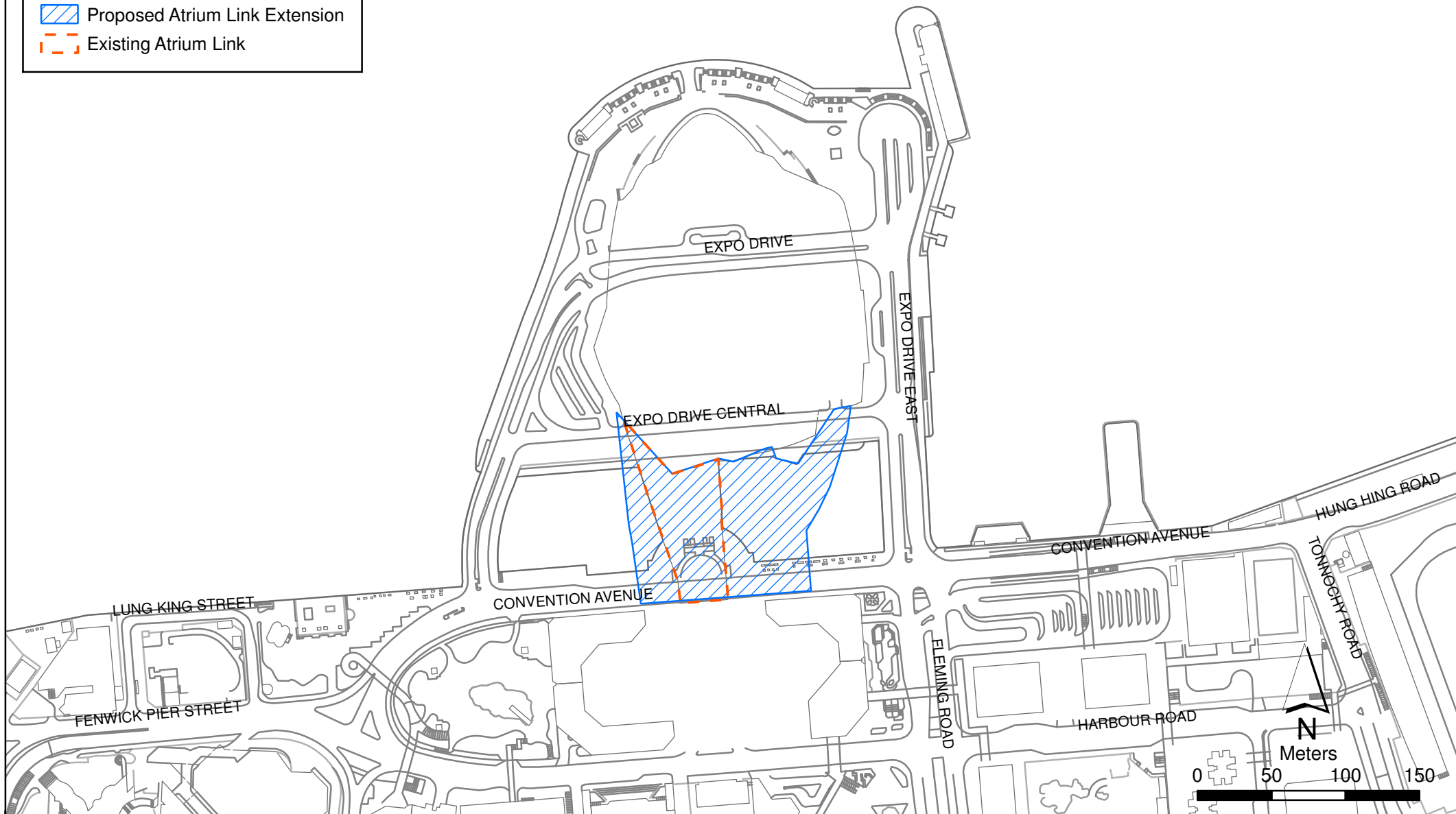


Figure A1


Location of Atrium Link Extension

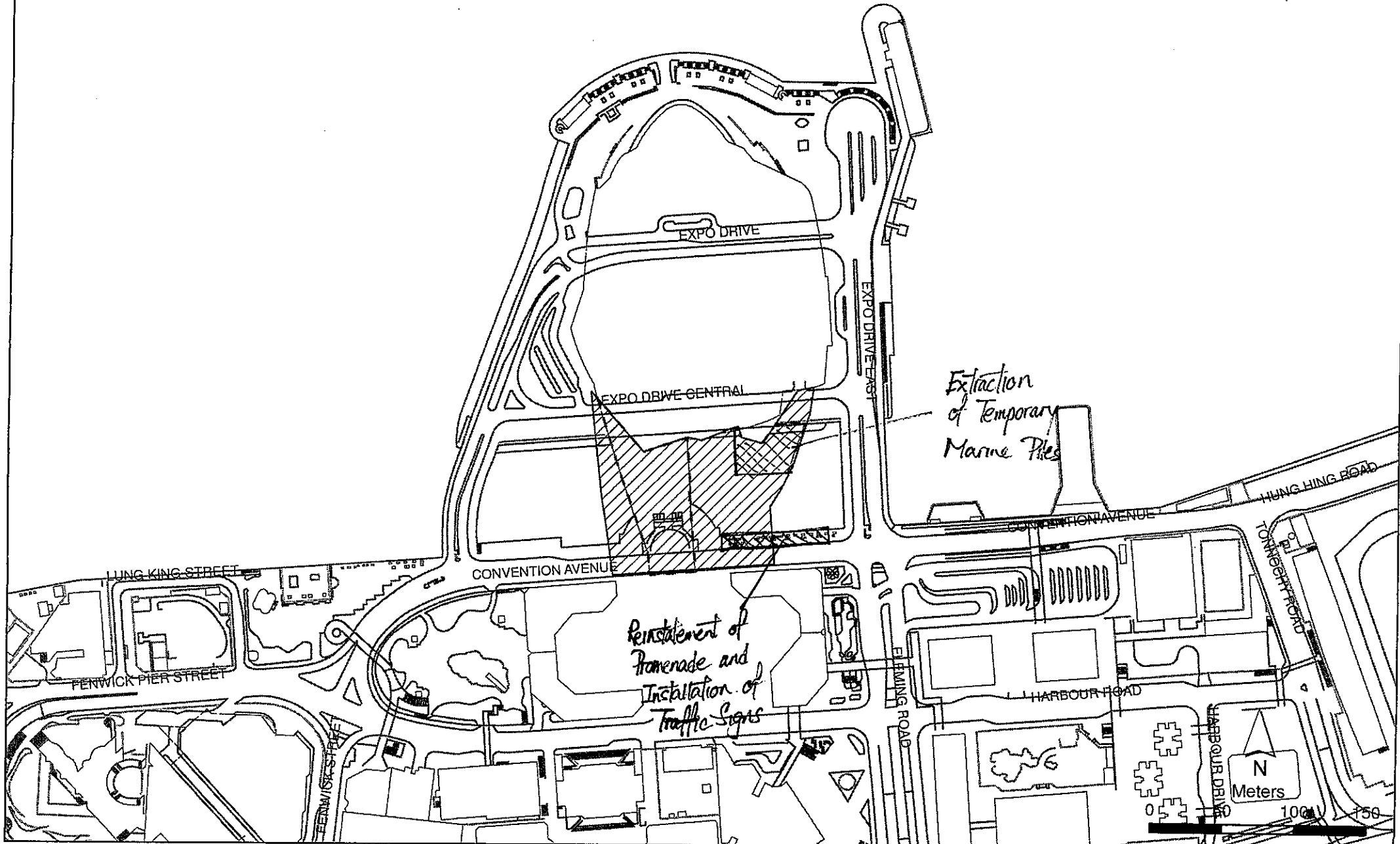
Annex B

Location of Construction  
Activities during the  
Reporting Period

Key

 Proposed Atrium Link Extension

 Existing Atrium Link





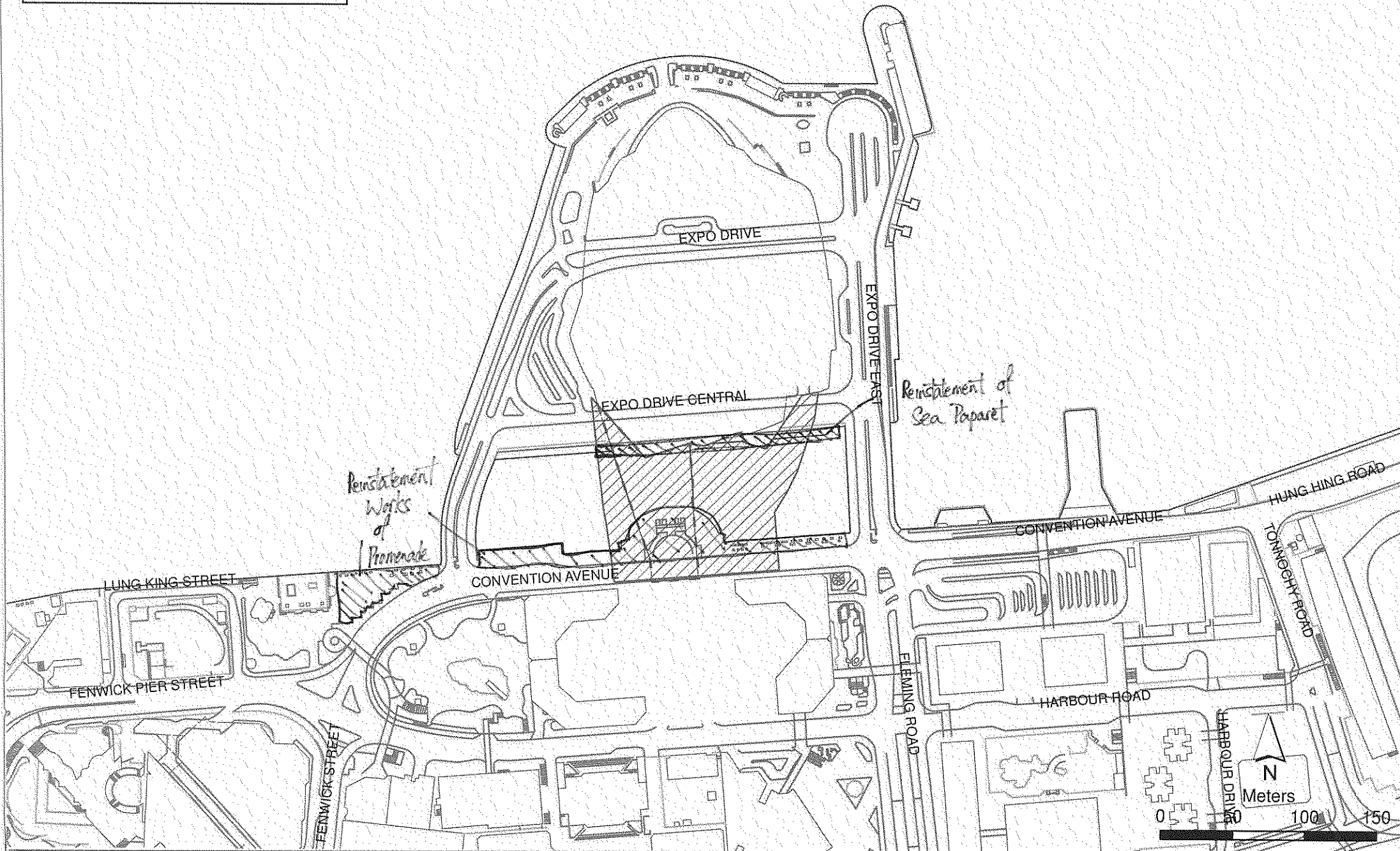
## Summary of Works for August 2009

<b>Description</b>	<b>Location</b>	<b>Finish Date</b>
Extraction of Temporary Marine Piles	Eastern Marine Channel	Early September 2009
Extraction of Temporary Marine Platform	Eastern Platform	Completed (August 2009)
Reinstatement of Sea Paparet	Along Sea Paparet	Late September 2009
Reinstatement of promenade	Convention Avenue and Expo Drive Central	Late September 2009
Installation of new traffic sign	Not available	Completed (Late August 2009)



Key



-  Proposed Atrium Link Extension
-  Existing Atrium Link

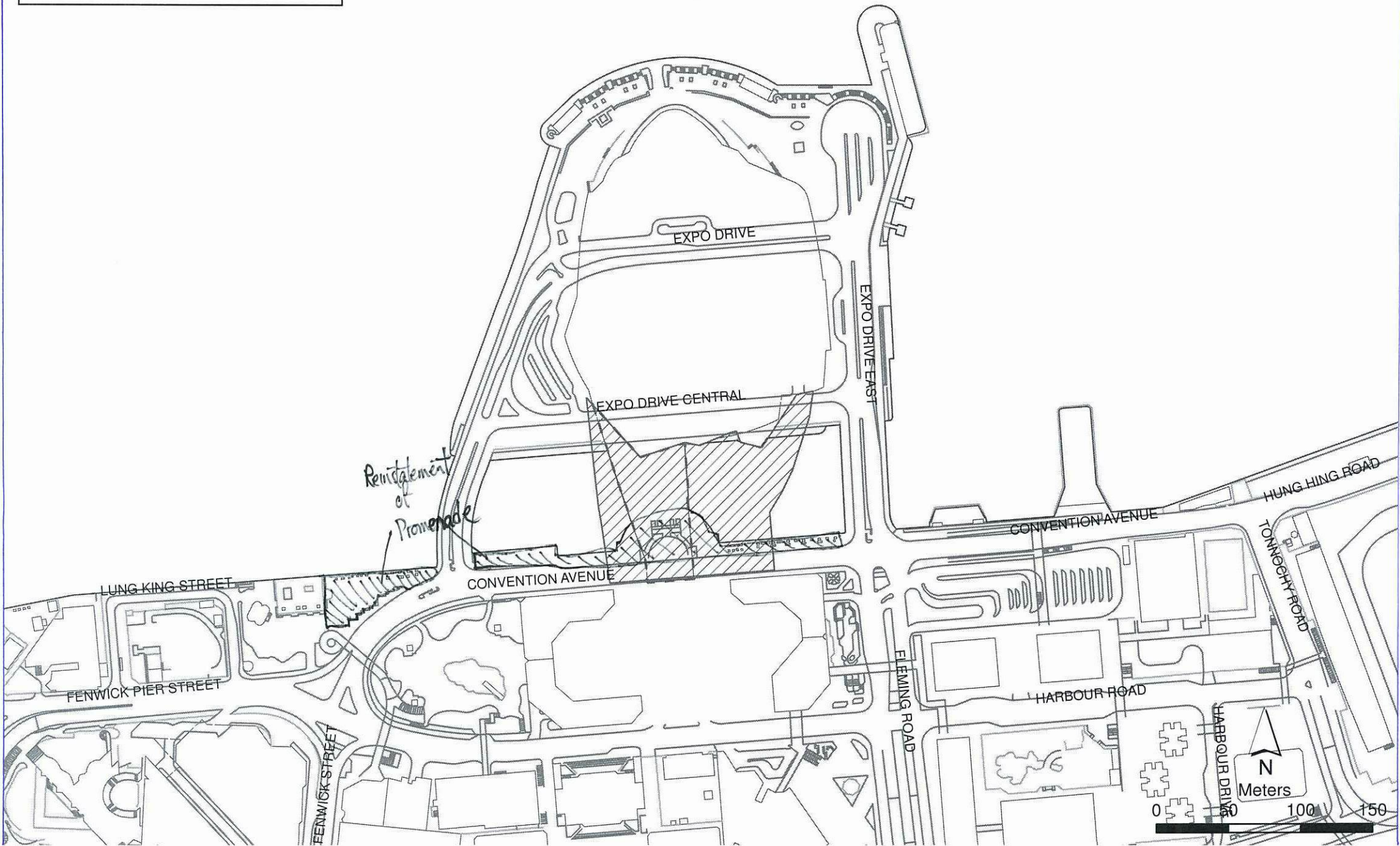


## Summary of Works for September 2009

<b>Description</b>	<b>Location</b>	<b>Finish Date</b>
Extraction of Temporary Marine Piles	Eastern Marine Channel	Completed (Early September 2009)
Reinstatement of Sea Paparet	Along Sea Paparet	Completed (Mid-September 2009)
Reinstatement of promenade and landscape works	Convention Avenue and Expo Drive Central	Mid-October 2009

Key

-  Proposed Atrium Link Extension
-  Existing Atrium Link



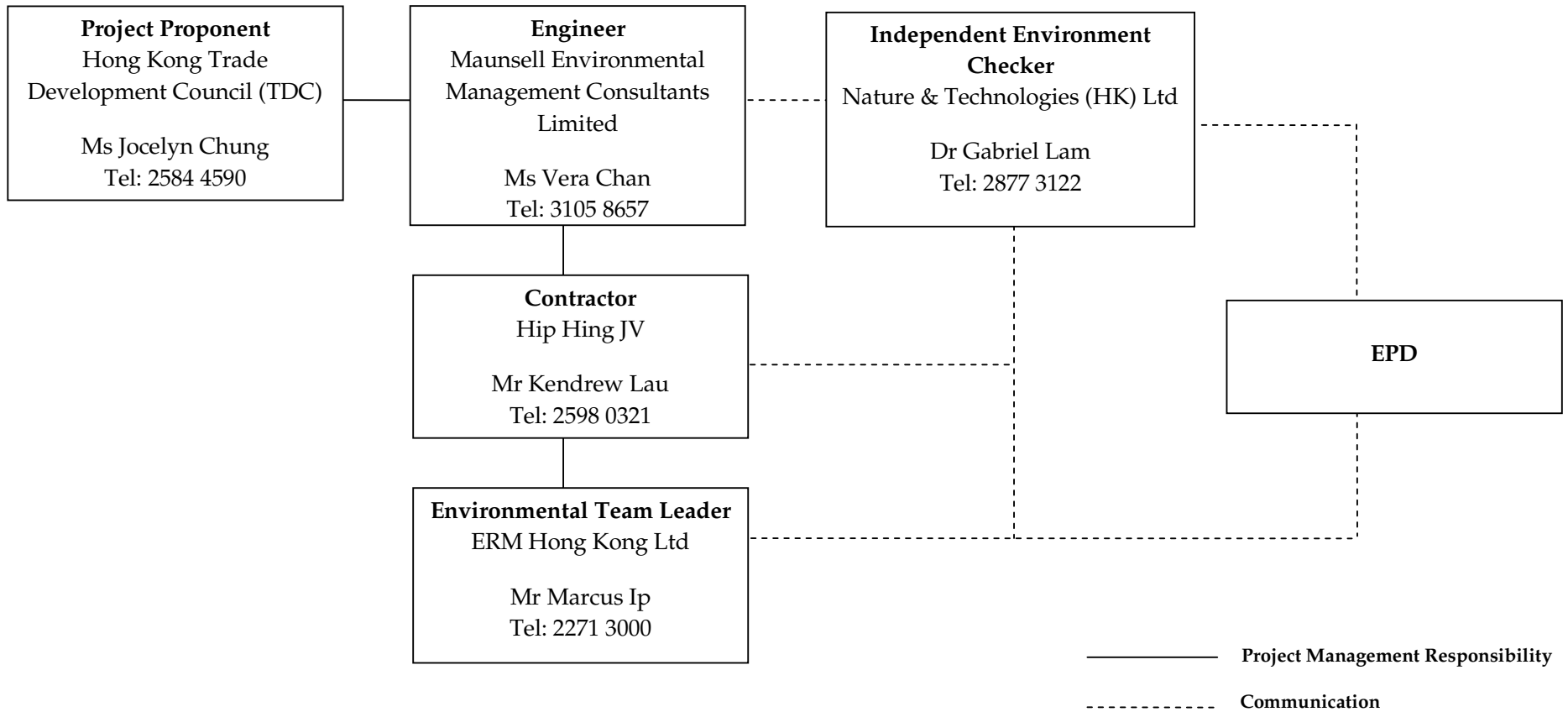
**Summary of Works from 1 October to 4 November 2009**

<b>Description</b>	<b>Location</b>	<b>Finish Date</b>
Reinstatement of promenade	Convention Avenue and Expo Drive Central	Mid- October 2009

Annex C

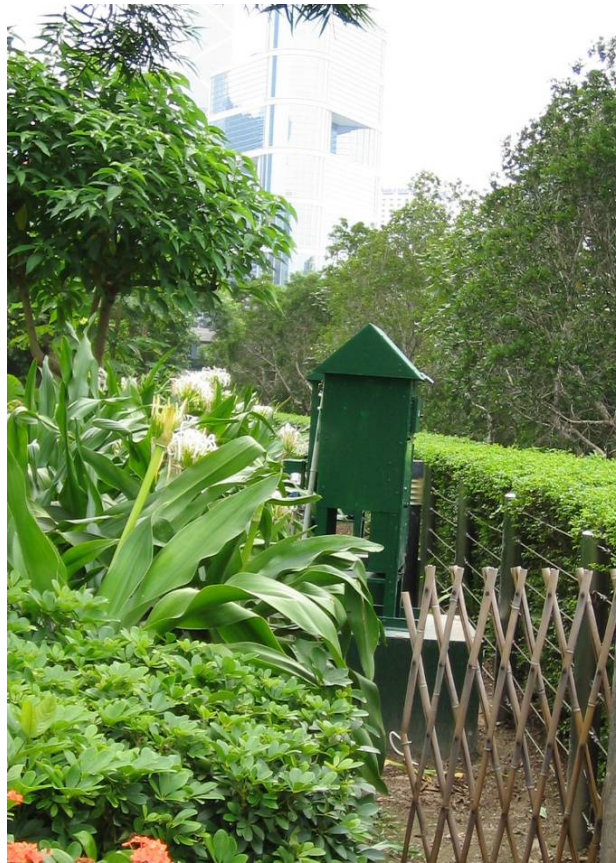
## Project Organization Chart and Contact Detail

**Project Organization (with contact details)**



Annex D

## Locations of Air and Water Quality Monitoring Stations



Air Quality Monitoring Station (AM1)



Air Quality Monitoring Station (AM2)



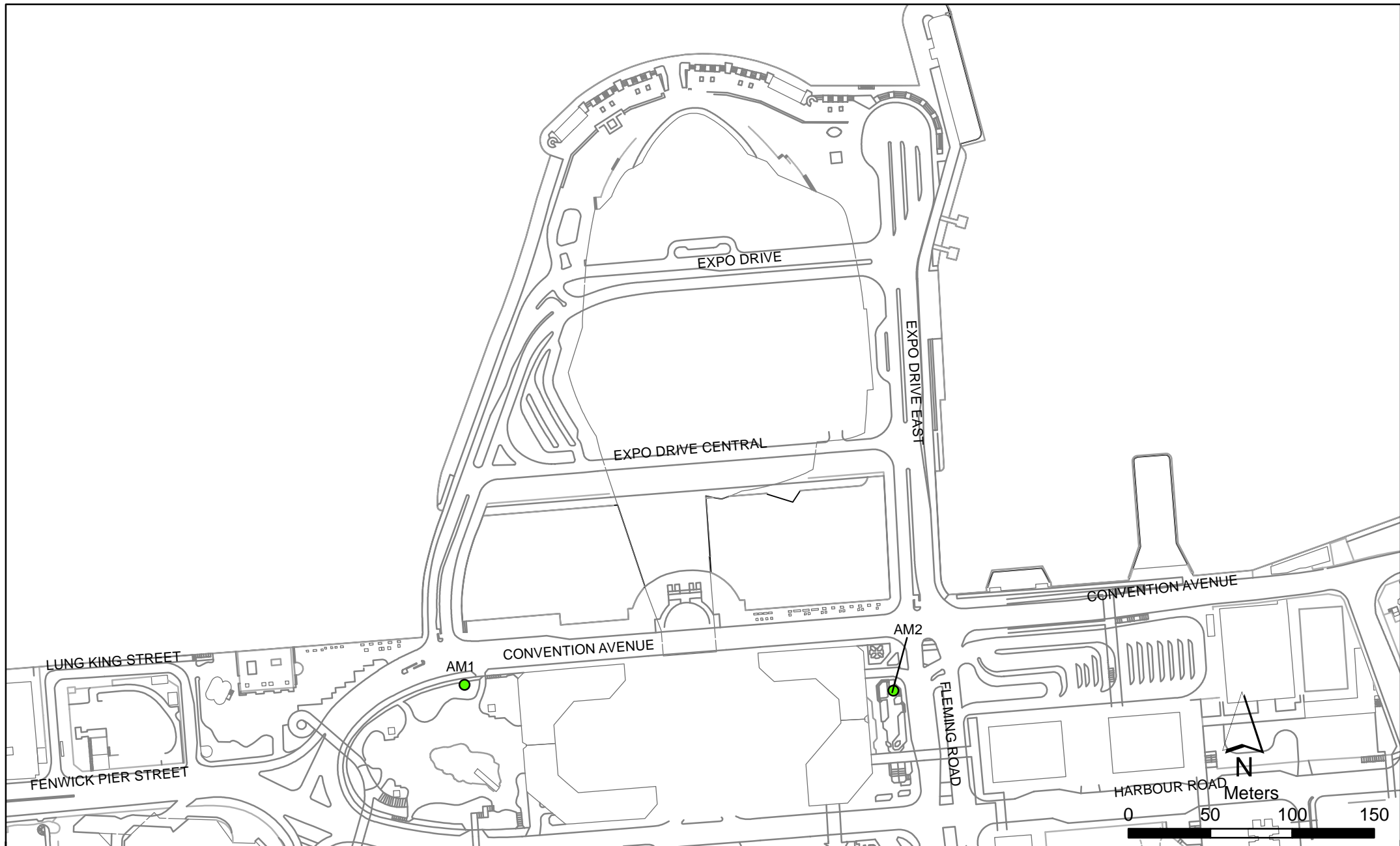


Figure D1

Air Quality Monitoring Station

File: 0050690\_2.mxd  
Date: 08/09/2006

Environmental  
Resources  
Management





Water Quality Monitoring Location – Station W3



Water Quality Monitoring Location – Stations W4 and W5

Monitoring Station	Description	Easting	Northing
3	Hong Kong Convention and Exhibition Centre Phase I Cooling Water Intake	835852.3	815907.0
4	Wan Chai Tower/Revenue Tower/Immigration Tower Cooling Water Intake	835944.1	815885.0
5	Great Eagle Centre/China Resources Building Cooling Water Intake	835963.4	815886.5

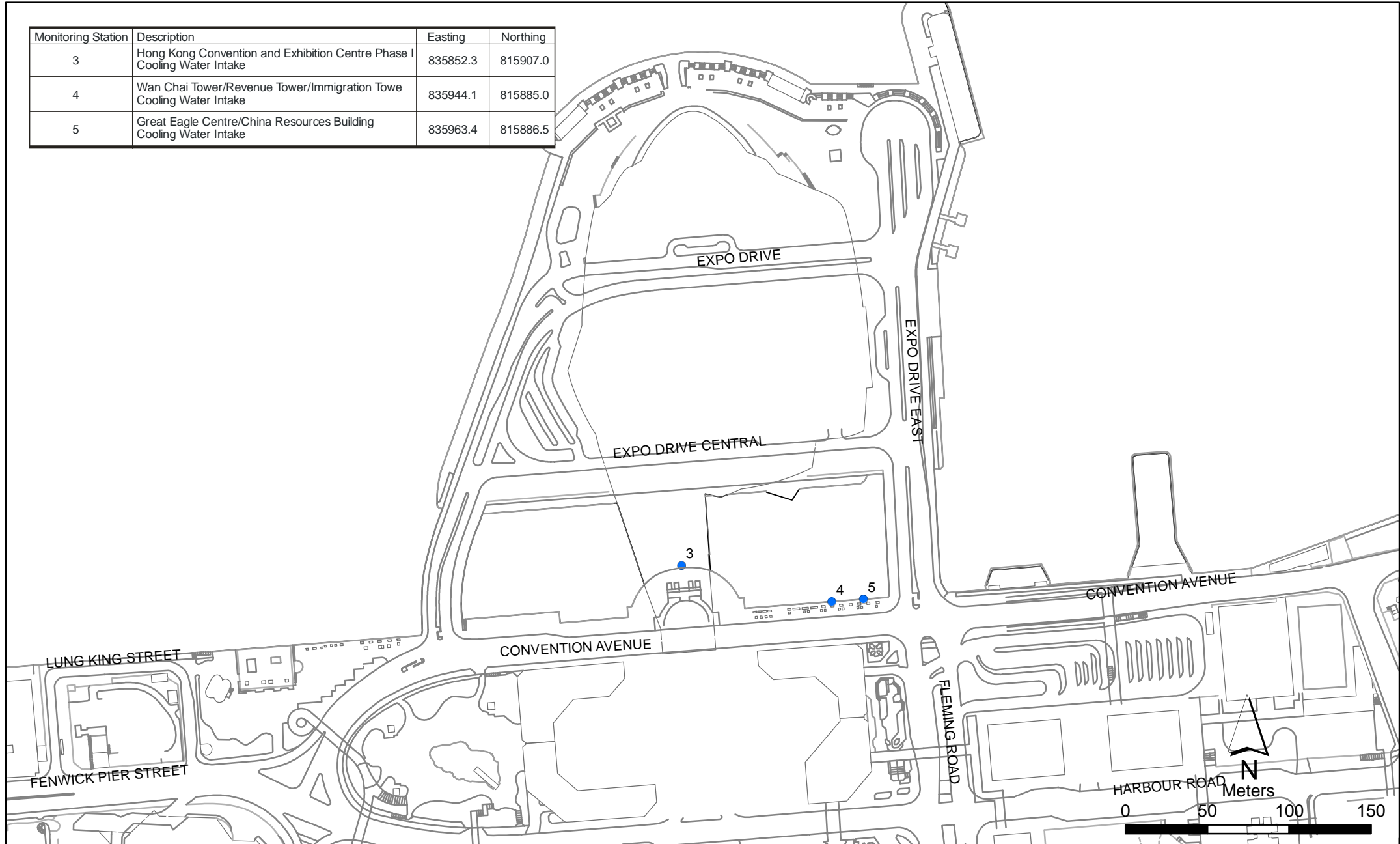


Figure D2

Marine Water Quality Monitoring Station

Annex E

## Summary of Implementation Status

## Annex E - Summary of Environmental Protection / Mitigation Activities

Environmental Permit No. EP-239/2006/B

EP Condition Ref	Submission	Action Required by the Permit Holder	Implementation Status
<b>Measures for Mitigating Water Quality Impact</b>			
2.4	Method statement on silt screens for seawater intakes (including design and maintenance requirements)	2 weeks before commencement of marine pile installation works	Method statement was submitted to the EPD on 21/6/06. Method statement (Revision A) was submitted to the EPD on 29/9/06. Method statement (Revision B) and supplementary information was submitted to the EPD on 23/5/07 and 18/6/07 respectively.
2.5	Method statement on silt curtain system for marine piling works (including design and maintenance requirements)	2 weeks before commencement of marine pile installation works	Method statement was submitted to the EPD on 15/9/06.
2.8	Design drawings specifying pile dimension and layout	2 weeks before commencement of marine pile installation works	Marine pile layout (final stage) was submitted to the EPD on 15/2/07.  Revised marine pile layout (final stage) was submitted to the EPD on 26/3/07.
<b>Measures for Mitigating Air Quality Impact</b>			
2.9	Design drawings of ventilation facility for fresh air intakes (req'd only before operation of Project)	2 weeks before commencement of installation of ventilation facility	Design drawings were submitted to EPD on 17/03/09
<b>Measures for Mitigating Landscape and Visual Impact</b>			
2.10	Implementation programme for landscape and visual mitigation measures (for both construction and operational phases of Project)	Within 6 months after commencement of construction of Project	Implementation programme (CM01, CM04 and CM05) was submitted to the EPD on 8/12/06.
2.10	Details of each landscape and visual mitigation measures package (incl plans)	2 weeks before implementation of a particular mitigation package	Proposal on protection and transplantation of existing trees was submitted to the EPD on 8/12/06. Proposal for CM03 was submitted to the EPD on 8/12/06. Proposal for CM01, CM04 and CM05 was submitted to the EPD on 15/12/06. CM01 Rev 1 was submitted to the EPD on 22/1/07. Proposal CM02 was submitted to the EPD on 13/3/07. Proposal for OM01 was submitted to the EPD on 15/11/07. Proposal for OM05 was submitted to the EPD on 25/02/09. Proposal for OM02 and OM09 were submitted to EPD on 15/04/09.
3.2	Baseline Monitoring Report	One week before the commencement of construction	Report was submitted to the EPD on 24/7/06 and comments from the EPD was received on 3/8/06. Revised report was submitted to EPD on 17/8/06 and no further comments received.

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
<i>Construction Phase</i>			
Air Quality	<p>The Air Pollution Control (Construction Dust) Regulation shall be implemented and good site practices shall be incorporated in the contract clauses to minimize construction dust impact. A number of practical measures are listed below:</p> <ul style="list-style-type: none"> <li>• skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site;</li> <li>• the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> <li>• where a site boundary adjoins a road, streets or other accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit;</li> <li>• every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides;</li> <li>• all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet;</li> <li>• the height from which excavated materials dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading;</li> <li>• the load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle; and</li> <li>• instigation of an environmental monitoring auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.</li> </ul>	Work site / during construction	Δ

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
<i>Operational Phase</i>			
Air Quality	Some fresh air intakes of the Hong Kong Convention and Exhibition Centre Phase I, Renaissance Harbour View Hotel and Grand Hyatt Hotel (ASRs A4, A5 and A6) should be re-diverted to the new air vent shaft provided for Atrium Link Extension where fresh air intake located at +55.8mPD.	Location of ASRs A4, A5 & A6 / Design & Operation Stage (Long-term and Interim Scenario)	√. Notes: Proposal for diversion of fresh air intakes was submitted on 17 Mar 2009 to EPD. Diversion works of fresh air intake have been completed.
Air Quality	Monitoring of NO <sub>2</sub> concentration underneath the Atrium Link Extension should be conducted.	Underneath the deckover / The first six months upon completion of the ALE.	Measures not required until commencement of operational phase
<i>Construction Phase</i>			
Noise	<p>Good Site Practice:</p> <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program;</li> <li>• silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program;</li> <li>• mobile plant, if any, should be sited as far from NSRs as possible;</li> <li>• machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>• plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and</li> <li>• material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities;</li> </ul> <p>Environmental audit shall be carried out to ensure that appropriate noise control measures would be properly implemented.</p>	Construction work areas / Construction period	√

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
<i>Operational Phase</i>			
Noise	<p>The following noise reduction measures should be considered as far as practicable during detailed design:</p> <ul style="list-style-type: none"> <li>• choose quieter plant such as those which have been effectively silenced;</li> <li>• include noise levels specification when ordering new plant;</li> <li>• locate fixed plant away from any NSRs as far as practicable;</li> <li>• locate fixed plant in plant rooms with thick walls or specially designed enclosure;</li> <li>• locate noisy machines in basement or a completely separate building; and</li> <li>• develop and implement a regularly scheduled plant maintenance programme in order to maintain controlled level of noise.</li> </ul>	Plant Room / Design and Operation Stage	√
<i>Construction Phase</i>			
Water Quality	There should be no permanent structure in the water channel.	At the ALE sea channel / during operational phase	√
Water Quality	No dredging and no reclamation should be carried out for the Project.	At work sites / during construction phase	√
Water Quality	The marine pile layout as shown in Figure 3 of the Environmental Permit should be adopted. No more than approximately 80 numbers of temporary marine piles should be installed in the ALE sea channel during the construction phase. The dimension of each temporary marine pile should be 800mm nominal diameter. These piles should be driven into position and internal space should not be excavated, i.e. left as soil. No dredging or soil /sediment excavation should be carried out. Marine piles would be removed by reverse driving.	At work sites / during construction phase	√
Water Quality	Two layers of silt curtain should be installed around each of the marine piling and pile extraction locations. The proposed silt curtain should be extended to seabed with sinker blocks and regularly inspected and maintained to ensure it is serviceable.	At marine work sites and nearby seawater intakes / during marine piling and marine pile extraction	√ Notes: Extraction of temporary marine piles were completed on 4 September 2009.



## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	All marine works should be carried out in a controlled manner such that release of sediments into the marine environment would be minimized. All wastewater generated from the piling activities should be collected and be treated before controlled discharge. Spoil should also be properly collected for proper disposal.		
Water Quality	In view of the close vicinity of the seawater intakes to the work site, silt screens are recommended to be deployed at the seawater intakes shown in Figure 5.2 of the EIA report during the whole construction period. Silt screens to be provided at seawater intakes should be regularly checked and maintained to ensure that they are serviceable. Refuse collection vessel should be mobilized on a need basis to collect any floating refuse lost from/ trapped at the work site during the construction period.	At seawater intakes / during the whole construction period	√. Silt screens have been reinstalled at seawater intakes before 20 April 2009.
Water Quality	Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided where necessary to intercept storm runoff from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks. Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains. Minimum distances of 100 m should be maintained between the discharge points of construction site runoff and the nearby saltwater intakes.	Works areas / construction period	Δ

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	<p>There is a need to apply to EPD for a discharge license for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge license. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Reuse and recycling of the treated effluent can minimize water consumption and reduce the effluent discharge volume. The beneficial uses of the treated effluent may include dust suppression, wheel washing and general cleaning. It is anticipated that only a small quantity of wastewater would be generated from the works areas. Any effluent discharge from the construction activities should be diverted away from the sea channel so as to avoid adverse water quality impact. Construction works should be programmed to minimize excavation works in rainy seasons (April to September). If excavation in soil could not be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.</p>	Works areas / construction period	√
Water Quality	<p>Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.</p> <p>Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations</p>	Works areas / construction period	Δ

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>should be discharged into storm drains via silt removal facilities.</p> <p>Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</p> <p>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.</p>		
Water Quality	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	Works areas / construction period	Δ
Water Quality	Under normal circumstances, groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction should be discharged into storm drains after the removal of silt in silt removal facilities.	Works areas / construction period	√
Water Quality	Water used in ground boring and drilling or rock /soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Works areas / construction period	√
Water Quality	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum.	Works areas / construction period	√

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an on-line standby pump of adequate capacity and with automatic alternating devices.</p> <p>Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment.</p>		
Water Quality	<p>All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads.</p> <p>A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.</p>	Works areas / construction period	√
Water Quality	<p>Bentonite slurries used in diaphragm wall and bore-pile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.</p> <p>If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.</p>	Works areas / construction period	√

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>Water used in water testing to check leakage of structures and pipes should be reused for other purposes as far as practicable. Surplus unpolluted water could be discharged into storm drains.</p> <p>Sterilization is commonly accomplished by chlorination. Specific advice from EPD should be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water should be reused wherever practicable. Discharge of sterilization effluent should be properly pre-treated for compliance with TM/WPCO requirements, such as but not limited to total residual chlorine.</p>	Works areas / construction period	√
Water Quality	<p>Effluent discharges from building construction and other construction site activities are subject to WPCO control. Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains.</p> <p>Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary.</p>	Works areas / construction period	√
Water Quality	<p>Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater should be tinkered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters.</p>	Works areas / construction period	No acidic wastewater will be generated.
Water Quality	<p>Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul</p>	Works areas / construction period	√

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>sewer via grease traps capable of providing at least 20 minutes retention during peak flow.</p> <p>Drainage serving an open oil filling point should be connected to storm drains via a petrol interceptors with peak storm bypass.</p> <p>Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor. Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.</p>		
Water Quality	<p>It is recommended to provide sufficient chemical toilets in the works areas. The toilet facilities should be more than 30 m from the seafront or any watercourse. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis.</p> <p>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment. Regular environmental audit on the construction site can provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site.</p>	Works areas / construction period	√
Water Quality	<p>Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.</p>	Works areas / construction period	√
Water Quality	<p>Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and</p>	Works areas / construction period	Δ

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</p> <p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> <li>• suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;</li> <li>• chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and</li> <li>• storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>		
Water Quality	<p>To minimize the potential water quality impacts from the construction works located at or near the storm system or seafront, the following mitigation measures should be adopted:</p> <ul style="list-style-type: none"> <li>• the use of less or smaller construction plants may be specified to reduce the disturbance to the seabed;</li> <li>• temporary sewerage system should be designed to prevent wastewater from entering the storm system and sea;</li> <li>• temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works;</li> <li>• stockpiling of construction materials and dusty materials should be covered and located away from any water courses;</li> <li>• construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers;</li> <li>• construction activities, which generate large amount of</li> </ul>	Works areas / construction period	√

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>wastewater, should be carried out in a distance away from the waterfront, where practicable;</p> <ul style="list-style-type: none"> <li>mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff;</li> <li>construction effluent, site run-off and sewage should be properly collected and/or treated;</li> <li>proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/sea; and</li> <li>supervisory staff should be assigned to station on site to closely supervise and monitor the works.</li> </ul>		
Water Quality	If monitoring of the treated effluent quality from the Works Areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. The contractor should submit detailed monitoring programme to EPD for approval before commencement of the construction activities.	Works areas / construction period	√
Water Quality	Monitoring of the water quality at the seawater intakes inside the ALE sea channel should be conducted.	ALE sea channel / Before construction period and during installation and removal of temporary marine piles.	√
Water Quality	All barges should be fitted with tight seals to their bottom opening to prevent leakage of materials. The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard. Loading of barges should be controlled to prevent splashing of materials to the surrounding environment and barges should under no circumstances be filled to a level which would cause overflowing of material or sediment laden water during loading and transportation. All barges should maintain adequate clearance between vessels and the seabed at all states of the tide and	Works areas / construction period	No barge will be required for the project.



## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	should operate at a reduced speeds to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.		
Water Quality	Connection of sewage generated from the ALE will be connected to the existing public sewer. For handling, treatment and disposal of other operational stage effluent, the practices outlined in ProPECC PN 5/93 should be adopted where applicable. Consensus from DSD should be sought on technical details of the drainage and sewerage proposals.	Project site / design and construction period	√
<i>Construction Phase</i>			
Waste	<p>Recommendations for good site practices during the construction activities include:</p> <ul style="list-style-type: none"> <li>• nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all Wastes generated at the site;</li> <li>• training of site personnel in proper waste management and chemical handling procedures;</li> <li>• provision of sufficient waste disposal points and regular collection of waste;</li> <li>• appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and</li> <li>• regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.</li> </ul>	Work site / during the construction period	√
Waste	<p>Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>• sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (ie soil, broken concrete, metal, etc);</li> <li>• segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or</li> </ul>	Work site / during the construction period	√

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>recycling of materials and their proper disposal;</p> <ul style="list-style-type: none"> <li>• encourage collection of aluminum cans by individual collectors by providing separate labeled bins to enable this waste to be segregated from other general refuse generated by the work force;</li> <li>• proper storage and site practices to minimize the potential for damage to contamination of construction materials; and</li> <li>• plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.</li> </ul>		
Waste	<p><u>General Refuse</u></p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</p>	Work site / during the construction period	Δ
Waste	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> <li>• In order to minimize the impact resulting from collection and transportation of C&amp;D material for off-site disposal, the C&amp;D material from the following construction activities should be reused and recycled as far as possible to reduce the net amount of C&amp;D material generated from the Project;</li> <li>• a Waste Management Plan should be prepared in accordance with ETWB TCW No. 19/2005;</li> <li>• a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed;</li> <li>• in order to monitor the disposal of C&amp;D and solid wastes at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be included. One may make</li> </ul>	Work site / during the construction period	√

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>reference to ETWB TCW No.31/2004 for details;</p> <ul style="list-style-type: none"> <li>the large amount of C&amp;D waste generated is mainly due to the piling works of large diameter piles' excavation at the sea front site. If however marine sediment is found during pile excavation, the handling and disposal of such wastes will be managed in accordance with the requirements of the DASO and the current ETWB Tech. Circular no. 34/2002.</li> </ul>		
Waste	<p><u>Chemical Wastes</u></p> <p>If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. For this Project, the amount of chemical wastes produced would be small.</p>	Work site / during the construction period	√
<i>Operational Phase</i>			
Waste	<p><u>General Refuse</u></p> <p>Similar to the existing situation, the main waste type generated during the operation stage of the Project will be general refuse generated by the public and staff. These include waste paper, food wrappings and beverage containers. The disposal of future waste arisings generated at the HKCEC would follow the existing handling and disposal arrangement. Provided proper</p>	Work site / during the construction period	Measures not required until commencement of operational phase

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	arrangements are made with licensed contractors to collect the generated waste, adverse waste-related impact is not anticipated during the operation stage. It is expected that there will be a 5-7% increase ratio in the future operations.		
<i>Construction Phase</i>			
Landscape & Visual	Due consideration of appearance and view to 'hide' the construction through careful use of: (a) hoarding design; (b) temporary partition walls; (c) screen for hotels; and (d) temporary footbridge.	Entire works area and adjacent hotels	√
Landscape & Visual	Due consideration to protect existing trees.	Entire works area	√
Landscape & Visual	Due consideration of visual impact from construction activities: (a) construction workers access to reach construction areas without passing through hotels and existing HKCEC; and (b) construction light.	Entire works area	√
<i>Operational Phase</i>			
Landscape & Visual	Sensitive soft and hard landscape design for exposed rooftop garden and shady covered area underneath the Atrium Link Extension. Maximize greening opportunity via various in-situ planting and potted planting to achieve 30% of the roof area as planting area for the project.	Roof top and area underneath the Atrium Link Extension	√
Landscape & Visual	Sensitive building architecture to visually reduce the bulkiness of the building structure, to visually break down the scale of the facades, and to create rooftops for greening opportunities.	Building of the Atrium Link Extension	√
Landscape & Visual	Appearance and view considerations: (a) avoid industrial feel of building service elements;	Entire proposed works and adjacent hotels	√

## Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	(b) interior visual screens for lower levels of the hotels; (c) consider relocation of facilities of interior spaces of hotels; and (d) careful lighting design at roofs and for building façade to avoid night-time glare.		
Landscape & Visual	Transplanting of trees to adjacent locations.	Convention Avenue	√
Landscape & Visual	Reinstatement of existing waterfront public footpaths along Convention Avenue and the existing open spaces near Fenwick Street.	Convention Avenue and Fenwick Street	√

Remark:

- √ Compliance of Mitigation Measures
- <> Compliance of Mitigation but need improvement
- x Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Hip Hing JV
- Δ Deficiency of Mitigation Measures but rectified by Hip Hing JV

Annex F

## 24-hour and 1-hour TSP Monitoring Results

## 24-hour TSP Monitoring Results

### 24-hour TSP Monitoring Results at Station AM1 (Nearby The Grand Hyatt)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )
	Initial	Final	Initial	Final	Initial	Final							
1/8/09 to 2/8/09	2.8210	2.9460	1.4555	1.4555	15520.58	15544.58	24.0	60	Sunny	30.2	0.1250	1.4555	2095.92
7/8/09 to 8/8/09	2.8207	2.9648	1.3968	1.3968	15547.58	15571.58	24.0	72	Sunny	30	0.1441	1.3968	2011.39
13/8/09 to 14/8/09	2.8238	2.8914	1.3381	1.3381	15574.58	15598.59	24.0	35	Rainy	26	0.0676	1.3381	1927.67
19/8/09 to 20/8/09	2.8212	2.9060	1.3381	1.3381	15601.59	15625.59	24.00	44	Sunny	29	0.0848	1.3381	1926.86
25/8/09 to 26/8/09	2.8710	2.9504	1.3381	1.3381	15628.59	15652.59	24.0	41	Sunny	30	0.0794	1.3381	1926.86
31/8/09 to 1/9/09	2.8197	2.9536	1.3675	1.3675	15655.59	15679.59	24.0	68	Rainy	30	0.1339	1.3675	1969.20
								Min	35				
								Max	72				
								Average	53				

### 24-hour TSP Monitoring Results at Station AM2 (Nearby Renaissance Harbour View Hotel)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )
	Initial	Final	Initial	Final	Initial	Final							
1/8/09 to 2/8/09	2.8064	2.8836	1.1623	1.1623	13871.61	13895.61	24.0	46	Sunny	30.2	0.0772	1.1623	1673.71
7/8/09 to 8/8/09	2.8228	2.9419	0.9299	0.9299	13898.61	13922.61	24.0	89	Sunny	30	0.1191	0.9299	1339.06
13/8/09 to 14/8/09	2.8345	2.8963	1.1955	1.1955	13925.61	13949.61	24.0	36	Rainy	26	0.0618	1.1955	1721.52
19/8/09 to 20/8/09	2.8123	2.8844	1.2618	1.2618	13952.61	13976.61	24.0	40	Sunny	29	0.0721	1.2618	1816.99
25/8/09 to 26/8/09	2.8609	2.9137	1.2618	1.2618	13979.61	14003.61	24.0	29	Sunny	30	0.0528	1.2618	1816.99
31/8/09 to 1/9/09	2.8761	2.9752	1.2618	1.2618	14006.61	14030.61	24.0	55	Rainy	30	0.0991	1.2618	1816.99
								Min	29				
								Max	89				
								Average	49				

### 1-hour TSP Monitoring Results

#### 1-hour TSP Monitoring Results at Station AM1 (Nearby The Grand Hyatt)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	
	Initial	Final	Initial	Final	Initial	Final								
01 Aug 09	2.8815	2.8878	1.2207	1.2207	15519.58	15520.58	1.00	86	Sunny	30.2	0.0063	1.2207	73.24	
03 Aug 09	2.8362	2.8437	1.3675	1.3675	15544.58	15545.58	1.00	91	Rainy	30	0.0075	1.3675	82.05	
05 Aug 09	2.8118	2.8247	1.1327	1.1327	15545.58	15546.58	1.00	190	Rainy	27	0.0129	1.1327	67.96	
07 Aug 09	2.7976	2.8084	1.0740	1.0740	15546.58	15547.58	1.00	168	Sunny	30	0.0108	1.0740	64.44	
10 Aug 09	2.8311	2.8383	0.9565	0.9565	15571.58	15572.58	1.00	125	Rainy	29	0.0072	0.9565	57.39	
12 Aug 09	2.8187	2.8245	1.3088	1.3088	15572.58	15573.58	1.00	74	Rainy	27	0.0058	1.3088	78.53	
13 Aug 09	2.8620	2.8708	1.0446	1.0446	15573.58	15574.58	1.00	140	Rainy	26	0.0088	1.0446	62.68	
14 Aug 09	2.8449	2.8523	1.3088	1.3088	15598.59	15599.59	1.00	94	Rainy	28	0.0074	1.3088	78.53	
17 Aug 09	2.8256	2.8355	1.1327	1.1327	15599.59	15600.59	1.00	146	Sunny	29	0.0099	1.1327	67.96	
19 Aug 09	2.8344	2.8420	0.9859	0.9859	15600.59	15601.59	1.00	128	Sunny	29	0.0076	0.9859	59.15	
21 Aug 09	2.7880	2.7933	1.1033	1.1033	15625.59	15626.59	1.00	80	Sunny	30	0.0053	1.1033	66.20	
24 Aug 09	2.8484	2.8606	1.3088	1.3088	15626.59	15627.59	1.00	155	Sunny	30	0.0122	1.3088	78.53	
25 Aug 09	2.8186	2.8236	1.2207	1.2207	15627.59	15628.59	1.00	68	Sunny	30	0.0050	1.2207	73.24	
26 Aug 09	2.8417	2.8481	1.3675	1.3675	15652.59	15653.59	1.00	78	Rainy	30	0.0064	1.3675	82.05	
28 Aug 09	2.8445	2.8510	1.1327	1.1327	15653.59	15654.59	1.00	96	Sunny	30.4#	0.0065	1.1327	67.96	
31 Aug 09	2.8273	2.8397	1.1327	1.1327	15654.59	15655.59	1.00	182	Rainy	30	0.0124	1.1327	67.96	
								Min						68
								Max						190
								Average						119

#### 1-hour TSP Monitoring Results at Station AM2 (Nearby Renaissance Harbour View Hotel)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	
	Initial	Final	Initial	Final	Initial	Final								
01 Aug 09	2.8116	2.8173	0.9299	0.9299	13870.61	13871.61	1.00	102	Sunny	30.2	0.0057	0.9299	55.79	
03 Aug 09	2.8237	2.8283	0.9631	0.9631	13895.61	13896.61	1.00	80	Rainy	30	0.0046	0.9631	57.79	
05 Aug 09	2.8177	2.8236	0.9631	0.9631	13896.61	13897.61	1.00	102	Rainy	27	0.0059	0.9631	57.79	
07 Aug 09	2.8515	2.8589	0.9299	0.9299	13897.61	13898.61	1.00	133	Sunny	30	0.0074	0.9299	55.79	
10 Aug 09	2.8094	2.8155	1.0959	1.0959	13922.61	13923.61	1.00	93	Rainy	29	0.0061	1.0959	65.75	
12 Aug 09	2.8078	2.8130	1.1623	1.1623	13923.61	13924.61	1.00	75	Rainy	27	0.0052	1.1623	69.74	
13 Aug 09	2.8198	2.8269	1.1623	1.1623	13924.61	13925.61	1.00	102	Rainy	26	0.0071	1.1623	69.74	
14 Aug 09	2.8175	2.8255	1.2287	1.2287	13949.61	13950.61	1.00	109	Rainy	28	0.0080	1.2287	73.72	
17 Aug 09	2.8718	2.8809	1.1623	1.1623	13950.61	13951.61	1.00	130	Sunny	29	0.0091	1.1623	69.74	
19 Aug 09	2.8099	2.8159	1.2287	1.2287	13951.61	13952.61	1.00	81	Sunny	29	0.0060	1.2287	73.72	
21 Aug 09	2.8937	2.8985	1.2287	1.2287	13976.61	13977.61	1.00	65	Sunny	30	0.0048	1.2287	73.72	
24 Aug 09	2.8313	2.8437	1.2287	1.2287	13977.61	13978.61	1.00	168	Sunny	30	0.0124	1.2287	73.72	
25 Aug 09	2.8484	2.8538	1.2618	1.2618	13978.61	13979.61	1.00	71	Sunny	30	0.0054	1.2618	75.71	
26 Aug 09	2.8386	2.8437	1.2618	1.2618	14003.61	14004.61	1.00	67	Rainy	30	0.0051	1.2618	75.71	
28 Aug 09	2.8585	2.8690	1.2287	1.2287	14004.61	14005.61	1.00	142	Sunny	30.4#	0.0105	1.2287	73.72	
31 Aug 09	2.8463	2.8571	1.2287	1.2287	14005.61	14006.61	1.00	146	Rainy	30	0.0108	1.2287	73.72	
								Min						65
								Max						168
								Average						104



## Meteorological Data Extracted from King's Park Stations of the Hong Kong Observatory

Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Relative Humidity (%)	Total Rainfall (mm)	Wind Direction (Degree)	Average Wind Speed (km/h)
01 Aug 09	Sunny	30.2	72	0.0	270	6.3
03 Aug 09	Rainy	29.8	78	20.5	100	12.5
05 Aug 09	Rainy	27.1	92	94.5	140	13.7
07 Aug 09	Sunny	29.5	80	0.0	270	8.2
10 Aug 09	Rainy	29.1	87	26.0	280	5.9
12 Aug 09	Rainy	26.8	90	3.5	280	4.8
13 Aug 09	Rainy	26.1	93	58.0	270#	3.7#
14 Aug 09	Rainy	27.6	88	49.5	280	4.8
17 Aug 09	Sunny	28.9	82	0.0	110	4.6
19 Aug 09	Sunny	29.1	82	0.0	120	4.5
21 Aug 09	Sunny	29.8	73	0.0	280	8.3
24 Aug 09	Sunny	30	72	0.0	110	8.3
25 Aug 09	Sunny	29.5	78	0.0	110	11.7
26 Aug 09	Rainy	29.9	79	0.5	110	8.3
28 Aug 09	Sunny	30.4#	74#	0.0	280#	10.0#
31 Aug 09	Rainy	29.7	73	0.5	100	6.7

Notes:

# - missing (less than 24 hourly observations a day)

NA - not available

Figure G1 - Measured 24-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM1

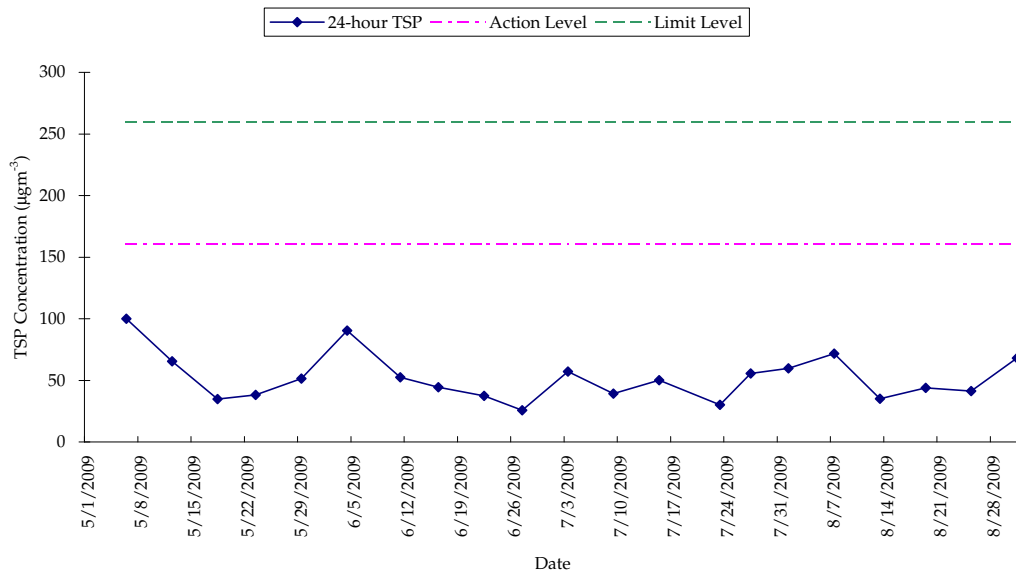


Figure G2 - Measured 24-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM2

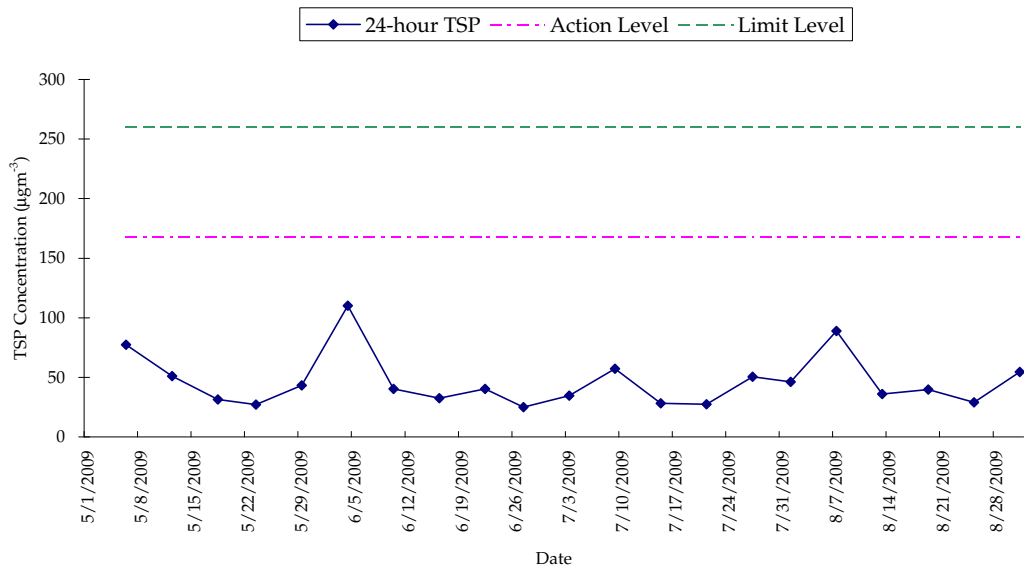


Figure G3 - Measured 1-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM1

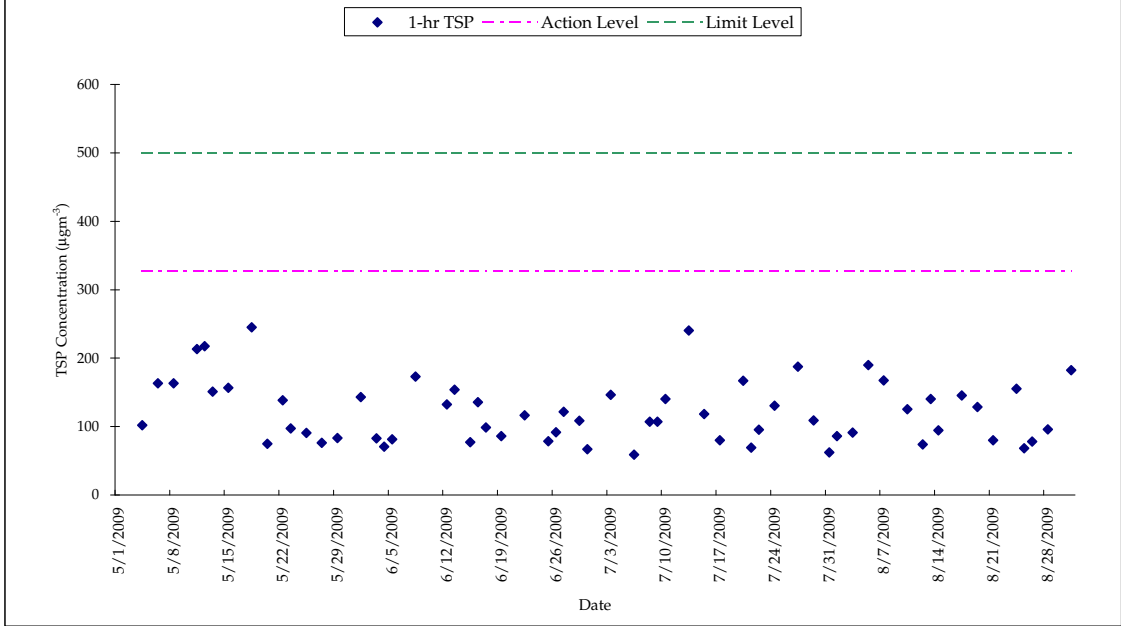
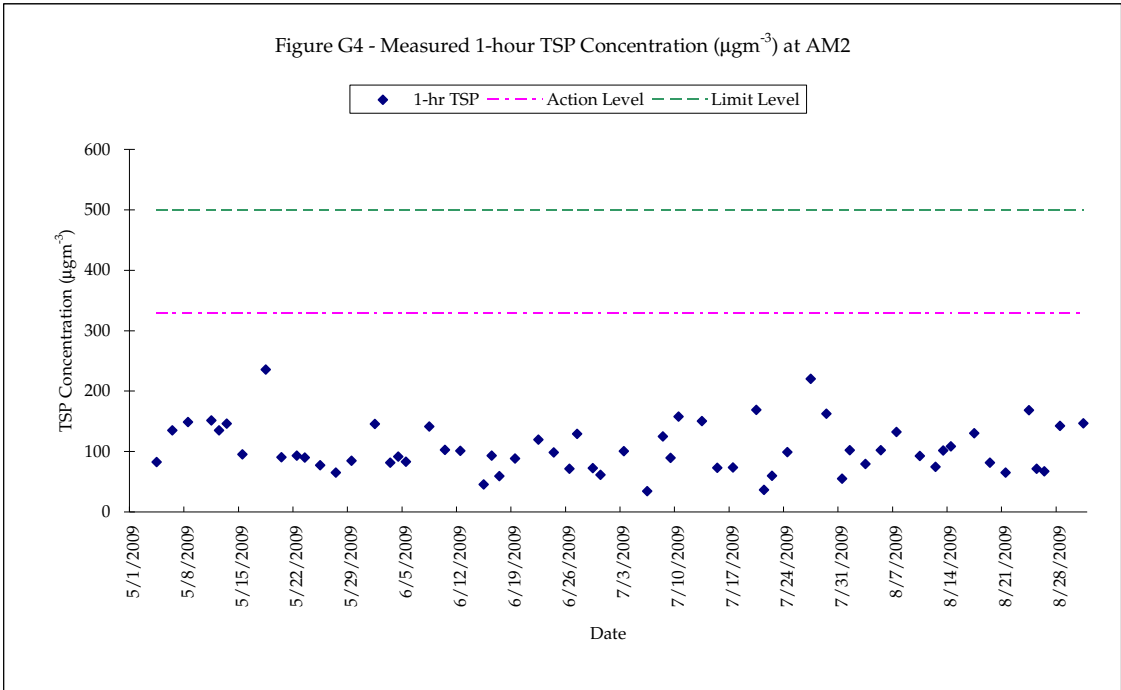


Figure G4 - Measured 1-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM2



## 24-hour TSP Monitoring Results

### 24-hour TSP Monitoring Results at Station AM1 (Nearby The Grand Hyatt)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	
	Initial	Final	Initial	Final	Initial	Final								
05 Oct 09 to 06 Oct 09	2.8156	2.9523	1.0136	1.0136	15817.59	15841.59	24.0	94	Sunny	28	0.1367	1.0136	1459.58	
10 Oct 09 to 11 Oct 09	2.8216	2.9257	0.9813	0.9813	15844.59	15868.59	24.0	74	Sunny	27	0.1041	0.9813	1413.07	
16 Oct 09 to 17 Oct 09	2.8448	2.9789	0.9813	0.9813	15871.59	15895.59	24.0	95	Sunny	25	0.1341	0.9813	1413.07	
22 Oct 09 to 23 Oct 09	2.8228	3.0121	0.9813	0.9813	15898.59	15922.59	24.0	134	Sunny	26	0.1893	0.9813	1413.07	
28 Oct 09 to 29 Oct 09	2.8131	2.9584	0.9491	0.9491	15925.60	15949.60	24.0	106	Sunny	24	0.1453	0.9491	1366.70	
03 Nov 09 to 04 Nov 09	2.8125	2.9839	1.0315	1.0315	15952.60	15976.60	24.0	115	Sunny	19	0.0113	1.0315	1485.36	
								Min	74					
								Max	134					
								Average	103					

### 24-hour TSP Monitoring Results at Station AM2 (Nearby Renaissance Harbour View Hotel)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	
	Initial	Final	Initial	Final	Initial	Final								
05 Oct 09 to 06 Oct 09	2.8154	2.9733	1.2049	1.2049	14168.62	14192.62	24.0	91	Sunny	28	0.1579	1.2049	1735.06	
10 Oct 09 to 11 Oct 09	2.8169	2.9531	1.1372	1.1372	14195.62	14219.62	24.0	83	Sunny	27	0.1362	1.1372	1637.57	
16 Oct 09 to 17 Oct 09	2.8569	3.0015	1.1372	1.1372	14222.62	14246.00	23.4	91	Sunny	25	0.1446	1.1372	1595.26	
22 Oct 09 to 23 Oct 09	2.8312	3.0354	1.1711	1.1711	14249.00	14273.00	24.0	121	Sunny	26	0.2042	1.1711	1686.38	
28 Oct 09 to 29 Oct 09	2.8615	3.0512	1.4753	1.4753	14276.00	14300.00	24.0	89	Sunny	24	0.1897	1.4753	2124.43	
03 Nov 09 to 04 Nov 09	2.7409	2.9021	1.1274	1.1274	14303.00	14327.00	24.0	99	Sunny	19	0.1612	1.1274	1623.46	
								Min	83					
								Max	121					
								Average	96					

### 1-hour TSP Monitoring Results

#### 1-hour TSP Monitoring Results at Station AM1 (Nearby The Grand Hyatt)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )
	Initial	Final	Initial	Final	Initial	Final							
02 Oct 09	2.8248	2.8341	1.0136	1.0136	15815.59	15816.59	1.00	153	Sunny	28	0.0093	1.0136	60.82
05 Oct 09	2.8245	2.8358	1.0136	1.0136	15816.59	15817.59	1.00	186	Sunny	28	0.0113	1.0136	60.82
07 Oct 09	2.8208	2.8310	1.0136	1.0136	15841.59	15842.59	1.00	168	Rainy	28	0.0102	1.0136	60.82
09 Oct 09	2.8236	2.8315	1.0136	1.0136	15842.59	15843.59	1.00	130	Sunny	26	0.0079	1.0136	60.82
10 Oct 09	2.8077	2.8177	0.9813	0.9813	15843.59	15844.59	1.00	170	Sunny	27	0.0100	0.9813	58.88
12 Oct 09	2.8647	2.8725	0.9813	0.9813	15868.59	15869.59	1.00	132	Rainy	25	0.0078	0.9813	58.88
14 Oct 09	2.8521	2.8634	0.9813	0.9813	15869.59	15870.59	1.00	192	Rainy	25	0.0113	0.9813	58.88
16 Oct 09	2.8349	2.8443	0.9813	0.9813	15870.59	15871.59	1.00	160	Sunny	25	0.0094	0.9813	58.88
19 Oct 09	2.8515	2.8621	0.9813	0.9813	15895.59	15896.59	1.00	180	Rainy	26	0.0106	0.9813	58.88
21 Oct 09	2.8015	2.8125	0.9813	0.9813	15896.59	15897.59	1.00	187	Sunny	25	0.0110	0.9813	58.88
22 Oct 09	2.8214	2.8367	0.9813	0.9813	15897.59	15898.59	1.00	260	Sunny	26	0.0153	0.9813	58.88
23 Oct 09	2.8229	2.8340	0.9813	0.9813	15922.59	15923.60	1.01	187	Sunny	26	0.0111	0.9813	59.47
27 Oct 09	2.8086	2.8191	0.7555	0.7555	15923.60	15924.60	1.00	232	Sunny	24	0.0105	0.7555	45.33
28 Oct 09	2.8488	2.8561	0.9491	0.9491	15924.60	15925.60	1.00	128	Sunny	24	0.0073	0.9491	56.95
30 Oct 09	2.8515	2.8604	0.9813	0.9813	15949.60	15950.60	1.00	151	Sunny	24	0.0089	0.9813	58.88
02 Nov 09	2.8675	2.8788	1.0315	1.0315	15950.60	15951.60	1.00	183	Sunny	23	0.0113	1.0315	61.89
03 Nov 09	2.8521	2.8649	1.0315	1.0315	15951.60	15952.60	1.00	207	Sunny	19	0.0128	1.0315	61.89
04 Nov 09	2.8348	2.8452	0.9707	0.9707	15976.60	15977.60	1.00	179	Sunny	21	0.0104	0.9707	58.24
								Min	128				
								Max	260				
								Average	177				

#### 1-hour TSP Monitoring Results at Station AM2 (Nearby Renaissance Harbour View Hotel)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )
	Initial	Final	Initial	Final	Initial	Final							
02 Oct 09	2.8204	2.8267	1.1372	1.1372	14166.62	14167.62	1.00	92	Sunny	28	0.0063	1.1372	68.23
05 Oct 09	2.8247	2.8333	1.1372	1.1372	14167.62	14168.62	1.00	126	Sunny	28	0.0086	1.1372	68.23
07 Oct 09	2.8056	2.8147	1.2049	1.2049	14192.62	14193.62	1.00	126	Rainy	28	0.0091	1.2049	72.29
09 Oct 09	2.8159	2.8220	1.1711	1.1711	14193.62	14194.62	1.00	87	Sunny	26	0.0061	1.1711	70.27
10 Oct 09	2.8056	2.8145	1.1372	1.1372	14194.62	14195.62	1.00	130	Sunny	27	0.0089	1.1372	68.23
12 Oct 09	2.8769	2.8829	1.1711	1.1711	14219.62	14220.62	1.00	85	Rainy	25	0.0060	1.1711	70.27
14 Oct 09	2.8369	2.8479	1.1711	1.1711	14220.62	14221.62	1.00	157	Rainy	25	0.0110	1.1711	70.27
16 Oct 09	2.8414	2.8515	1.1711	1.1711	14221.62	14222.62	1.00	144	Sunny	25	0.0101	1.1711	70.27
19 Oct 09	2.8656	2.8771	1.1372	1.1372	14246.00	14247.00	1.00	169	Rainy	26	0.0115	1.1372	68.23
21 Oct 09	2.7843	2.8025	1.1372	1.1372	14247.00	14248.00	1.00	267	Sunny	25	0.0182	1.1372	68.23
22 Oct 09	2.8125	2.8288	1.1711	1.1711	14248.00	14249.00	1.00	232	Sunny	26	0.0163	1.1711	70.27
23 Oct 09	2.8569	2.8681	1.1711	1.1711	14273.00	14274.00	1.00	159	Sunny	26	0.0112	1.1711	70.27
27 Oct 09	2.8374	2.8537	1.3739	1.3739	14274.00	14275.00	1.00	198	Sunny	24	0.0163	1.3739	82.43
28 Oct 09	2.8251	2.8325	1.4415	1.4415	14275.00	14276.00	1.00	86	Sunny	24	0.0074	1.4415	86.49
30 Oct 09	2.8683	2.8769	1.4077	1.4077	14300.00	14301.00	1.00	102	Sunny	24	0.0086	1.4077	84.46
02 Nov 09	2.8746	2.8877	1.4487	1.4487	14301.00	14302.00	1.00	151	Sunny	23	0.0131	1.4487	86.92
03 Nov 09	2.8398	2.8536	1.2345	1.2345	14302.00	14303.00	1.00	186	Sunny	19	0.0138	1.2345	74.07
04 Nov 09	2.8248	2.8323	1.3416	1.3416	14327.00	14328.00	1.00	93	Sunny	21	0.0075	1.3416	80.50
								Min	85				
								Max	267				
								Average	144				

## Meteorological Data Extracted from King's Park Stations of the Hong Kong Observatory

Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Relative Humidity (%)	Total Rainfall (mm)	Wind Direction (Degree)	Average Wind Speed (km/h)
10/2/2009	Sunny	27.9	70	0.0	110	7.9
10/5/2009	Sunny	28.3	46	0.0	20	9.3
10/7/2009	Rainy	27.6	67	1.5	160	6.3
10/9/2009	Sunny	26.3	66	0.0	100	4.6
10/10/2009	Sunny	26.7	63	0.0	100	8.0
10/12/2009	Rainy	25.1	83	1.5	100	14.9
10/14/2009	Rainy	25.4	86	9.5	110	11.1
10/16/2009	Sunny	25.4	78	0.0	110	10.2
10/19/2009	Rainy	25.5	82	2.0	110	12.7
10/21/2009	Sunny	24.6	77	0.0	100	10.0
10/22/2009	Sunny	25.6	73	0.0	270	5.2
10/23/2009	Sunny	26.1	65	0.0	280	6.3
10/27/2009	Sunny	24	71	0.0	110	14.5
10/28/2009	Sunny	24.3	70	0.0	110	11.7
10/30/2009	Sunny	24.4	75	0.0	100	8.9
11/2/2009*	Sunny	22.9	45	0.0	NE	0-27
11/3/2009*	Sunny	18.5	47	0.0	NE	6-33
11/4/2009*	Sunny	21	53	0.0	NE	0-21

Notes:

# - missing (less than 24 hourly observations a day)

NA - not available

\* - Extract of Meteorological Data from Hong Kong Observatory

Figure G1 - Measured 24-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM1

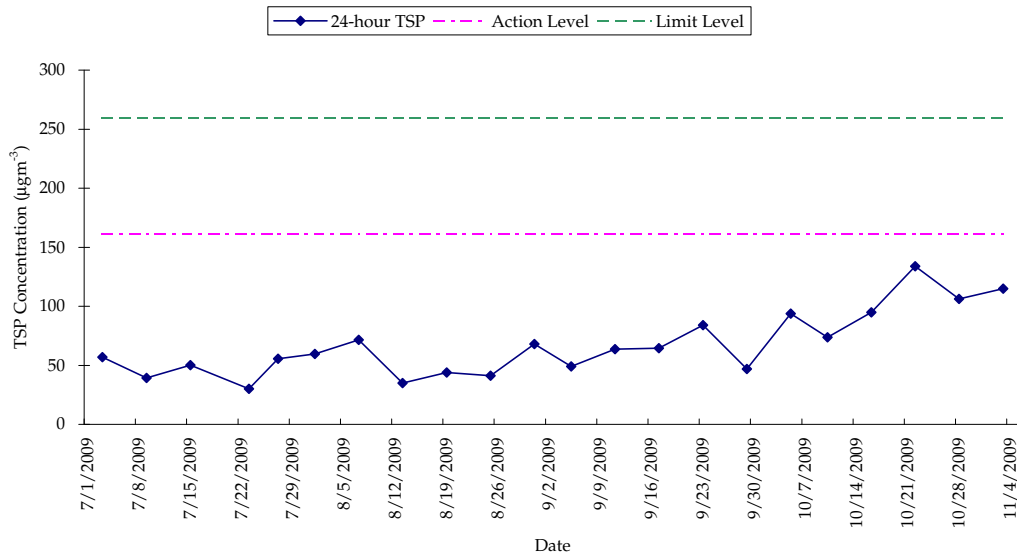


Figure G2 - Measured 24-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM2

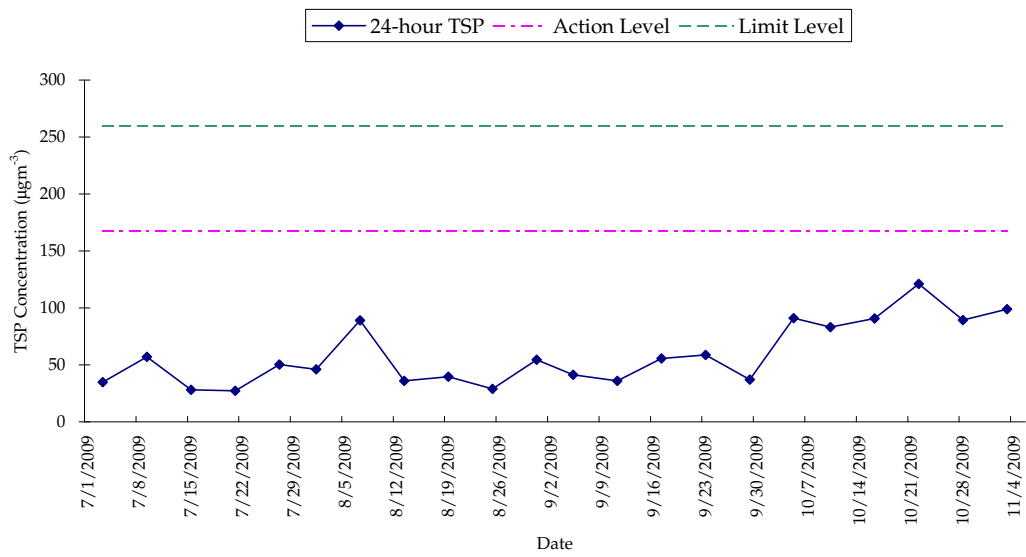


Figure G3 - Measured 1-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM1

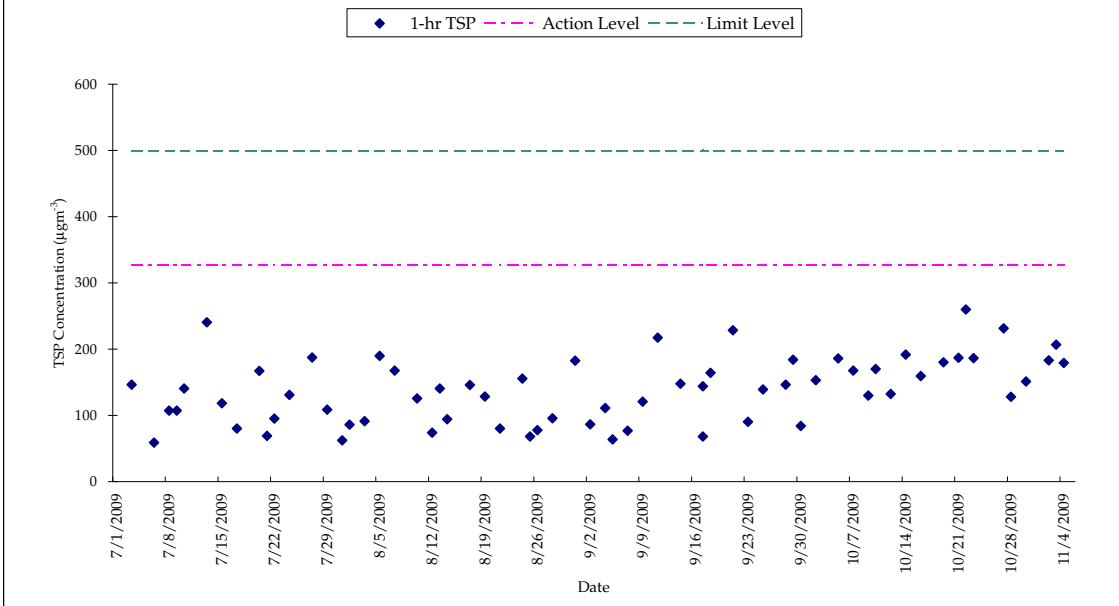
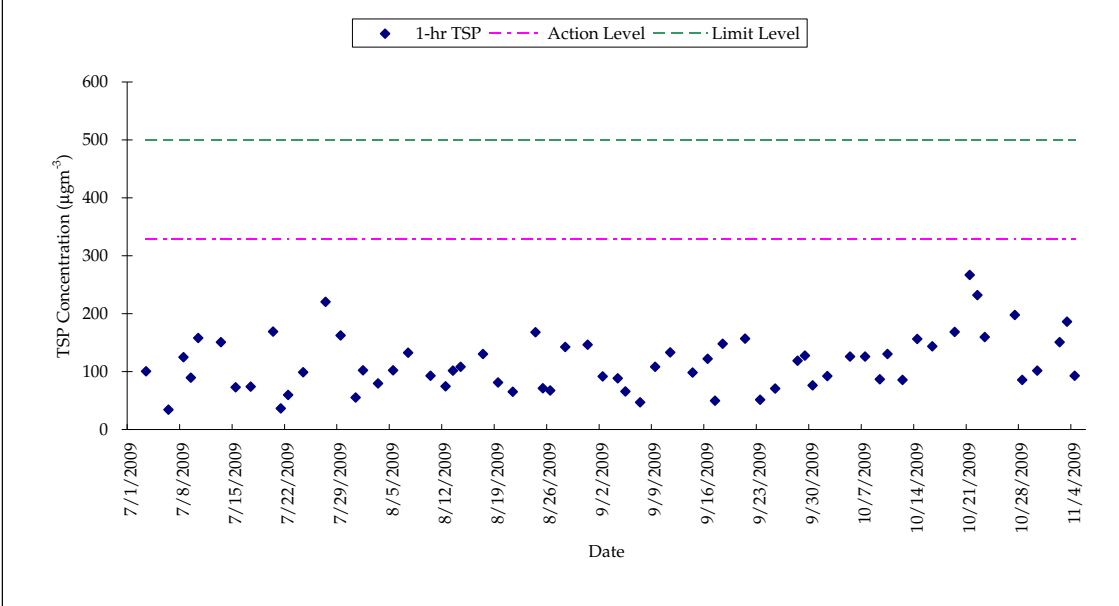


Figure G4 - Measured 1-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM2





## 24-hour TSP Monitoring Results

### 24-hour TSP Monitoring Results at Station AM1 (Nearby The Grand Hyatt)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	
	Initial	Final	Initial	Final	Initial	Final								
5 Sep 2009 to 6 Sep 2009	2.8512	2.9458	1.3361	1.3361	15682.59	15706.59	24.0	49	Sunny	30	0.0946	1.3361	1923.98	
11 Sep2009 to 12 Sep 2009	2.8057	2.8956	0.9813	0.9813	15709.59	15733.59	24.0	64	Rainy	27	0.0899	0.9813	1413.07	
17 Sep2009 to 18 Sep 2009	2.8346	2.9316	1.0458	1.0458	15736.59	15760.59	24.0	64	Sunny	29	0.0970	1.0458	1505.95	
23 Sep 2009 to 24 Sep 2009	2.8128	2.9356	1.0136	1.0136	15763.59	15787.59	24.00	84	Sunny	28	0.1228	1.0136	1459.58	
29 Sep 2009 to 30 Sep 2009	2.8115	2.8800	1.0136	1.0136	15790.59	15814.59	24.0	47	Rainy	25	0.0685	1.0136	1459.58	
								Min	47					
								Max	84					
								Average	62					

### 24-hour TSP Monitoring Results at Station AM2 (Nearby Renaissance Harbour View Hotel)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	
	Initial	Final	Initial	Final	Initial	Final								
5 Sep 2009 to 6 Sep 2009	2.7663	2.8402	1.2387	1.2387	14033.61	14057.61	24.0	41	Sunny	30	0.0739	1.2387	1783.73	
11 Sep2009 to 12 Sep 2009	2.8134	2.8759	1.2049	1.2049	14060.61	14084.61	24.0	36	Rainy	27	0.0625	1.2049	1735.06	
17 Sep2009 to 18 Sep 2009	2.8311	2.9247	1.1711	1.1711	14087.61	14111.61	24.0	56	Sunny	29	0.0936	1.1711	1686.38	
23 Sep 2009 to 24 Sep 2009	2.8333	2.9265	1.1034	1.1034	14114.61	14138.62	24.0	59	Sunny	28	0.0932	1.1034	1589.56	
29 Sep 2009 to 30 Sep 2009	2.8053	2.8644	1.1034	1.1034	14141.62	14165.62	24.0	37	Rainy	25	0.0591	1.1034	1588.90	
								Min	36					
								Max	59					
								Average	46					

### 1-hour TSP Monitoring Results

#### 1-hour TSP Monitoring Results at Station AM1 (Nearby The Grand Hyatt)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )
	Initial	Final	Initial	Final	Initial	Final							
02 Sep 09	2.8120	2.8186	1.2716	1.2716	15679.59	15680.59	1.00	87	Sunny	30	0.0066	1.2716	76.30
04 Sep 09	2.8307	2.8407	1.4974	1.4974	15680.59	15681.59	1.00	111	Sunny	30	0.0100	1.4974	89.84
05 Sep 09	2.8491	2.8546	1.4329	1.4329	15681.59	15682.59	1.00	64	Sunny	30	0.0055	1.4329	85.97
07 Sep 09	2.8116	2.8176	1.3039	1.3039	15706.59	15707.59	1.00	77	Sunny	30	0.0060	1.3039	78.23
09 Sep 09	2.8182	2.8286	1.4329	1.4329	15707.59	15708.59	1.00	121	Rainy	29	0.0104	1.4329	85.97
11 Sep 09	2.8189	2.8317	0.9813	0.9813	15708.59	15709.59	1.00	217	Rainy	27	0.0128	0.9813	58.88
14 Sep 09	2.8395	2.8482	0.9813	0.9813	15733.59	15734.59	1.00	148	Rainy	28	0.0087	0.9813	58.88
17 Sep 09	2.8162	2.8206	1.0781	1.0781	15734.59	15735.59	1.00	68	Sunny	29	0.0044	1.0781	64.69
17 Sep 09	2.8094	2.8176	0.9491	0.9491	15735.59	15736.59	1.00	144	Sunny	29	0.0082	0.9491	56.95
18 Sep 09	2.8727	2.8827	1.0136	1.0136	15760.59	15761.59	1.00	164	Sunny	30	0.0100	1.0136	60.82
21 Sep 09	2.8540	2.8679	1.0136	1.0136	15761.59	15762.59	1.00	229	Rainy	29	0.0139	1.0136	60.82
23 Sep 09	2.8568	2.8623	1.0136	1.0136	15762.59	15763.59	1.00	90	Sunny	28	0.0055	1.0136	60.82
25 Sep 09	2.8235	2.8317	0.9813	0.9813	15787.59	15788.59	1.00	139	Sunny	29	0.0082	0.9813	58.88
28 Sep 09	2.8325	2.8414	1.0136	1.0136	15788.59	15789.59	1.00	146	Rainy	25.3#	0.0089	1.0136	60.82
29 Sep 09	2.8046	2.8158	1.0136	1.0136	15789.59	15790.59	1.00	184	Rainy	25	0.0112	1.0136	60.82
30 Sep 09	2.8158	2.8209	1.0136	1.0136	15814.59	15815.59	1.00	84	Rainy	27	0.0051	1.0136	60.82
							Min	64					
							Max	229					
							Average	130					

#### 1-hour TSP Monitoring Results at Station AM2 (Nearby Renaissance Harbour View Hotel)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )
	Initial	Final	Initial	Final	Initial	Final							
02 Sep 09	2.8433	2.8516	1.5091	1.5091	14030.61	14031.61	1.00	92	Sunny	30	0.0083	1.5091	90.55
04 Sep 09	2.8161	2.8241	1.5091	1.5091	14031.61	14032.61	1.00	88	Sunny	30	0.0080	1.5091	90.55
05 Sep 09	2.8228	2.8286	1.4753	1.4753	14032.61	14033.61	1.00	66	Sunny	30	0.0058	1.4753	88.52
07 Sep 09	2.8371	2.8404	1.1711	1.1711	14057.61	14058.61	1.00	47	Sunny	30	0.0033	1.1711	70.27
09 Sep 09	2.8126	2.8202	1.1711	1.1711	14058.61	14059.61	1.00	108	Rainy	29	0.0076	1.1711	70.27
11 Sep 09	2.8470	2.8561	1.1372	1.1372	14059.61	14060.61	1.00	133	Rainy	27	0.0091	1.1372	68.23
14 Sep 09	2.8515	2.8584	1.1711	1.1711	14084.61	14085.61	1.00	98	Rainy	28	0.0069	1.1711	70.27
16 Sep 09	2.8369	2.8450	1.1034	1.1034	14085.61	14086.61	1.00	122	Rainy	28	0.0081	1.1034	66.20
17 Sep 09	2.8354	2.8389	1.1711	1.1711	14086.61	14087.61	1.00	50	Sunny	29	0.0035	1.1711	70.27
18 Sep 09	2.8680	2.8781	1.1372	1.1372	14111.61	14112.61	1.00	148	Sunny	30	0.0101	1.1372	68.23
21 Sep 09	2.8485	2.8592	1.1372	1.1372	14112.61	14113.61	1.00	157	Rainy	29	0.0107	1.1372	68.23
23 Sep 09	2.8930	2.8964	1.1034	1.1034	14113.61	14114.61	1.00	51	Sunny	28	0.0034	1.1034	66.20
25 Sep 09	2.8247	2.8294	1.1034	1.1034	14138.62	14139.62	1.00	71	Sunny	29	0.0047	1.1034	66.20
28 Sep 09	2.8315	2.8396	1.1372	1.1372	14139.62	14140.62	1.00	119	Rainy	25.3#	0.0081	1.1372	68.23
29 Sep 09	2.8125	2.8212	1.1372	1.1372	14140.62	14141.62	1.00	128	Rainy	25	0.0087	1.1372	68.23
30 Sep 09	2.8194	2.8246	1.1372	1.1372	14165.62	14166.62	1.00	76	Rainy	27	0.0052	1.1372	68.23
							Min	47					
							Max	157					
							Average	97					

## Meteorological Data Extracted from King's Park Stations of the Hong Kong Observatory

Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Relative Humidity (%)	Total Rainfall (mm)	Wind Direction (Degree)	Average Wind Speed (km/h)
9/2/09	Sunny	29.8	70	0.0	110	11.8
9/4/09	Sunny	29.6	75	0.0	110	9.4
9/5/09	Sunny	29.6	71	0.0	110	10.7
9/7/09	Sunny	29.5	74	0.0	110	10.8
9/9/09	Rainy	28.7	77	48.0	110	11.7
9/11/09	Rainy	27.3	84	13.0	100	15.4
9/14/09	Rainy	27.8	80	46.5	50	19.5
9/16/09	Rainy	27.6	91	20.0	110#	8.8#
9/17/09	Sunny	28.8	84	0.0	280#	6.7#
9/18/09	Sunny	29.5	80	0.0	270	9.6
9/21/09	Rainy	28.6	82	10.0	110	5.1
9/23/09	Sunny	28.4	71	0.0	100	11.5
9/25/09	Sunny	28.7	72	0.0	110	13.3
9/28/09	Rainy	25.3#	88#	53.5#	050#	11.3#
9/29/09	Rainy	25.3	85	34.0	70	14.0
9/30/09	Rainy	26.5	86	60.0	90	8.8

Notes:

# - missing (less than 24 hourly observations a day)

NA - not available

Figure G1 - Measured 24-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM1

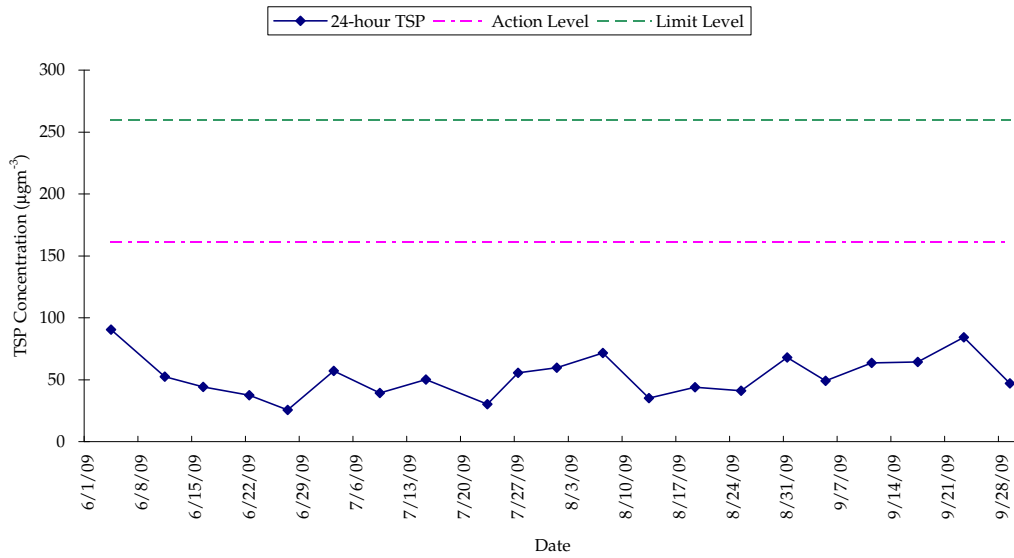


Figure G2 - Measured 24-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM2

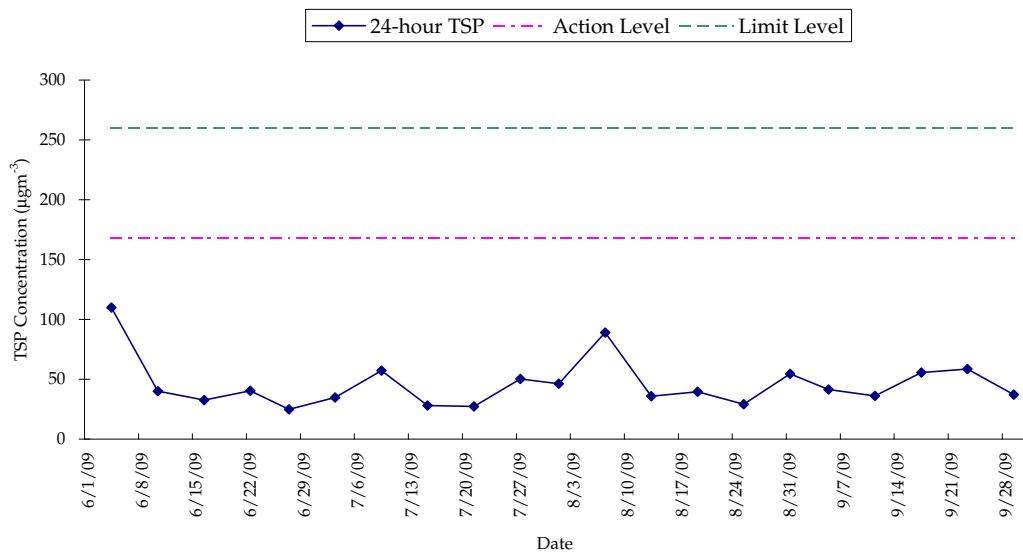


Figure G3 - Measured 1-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM1

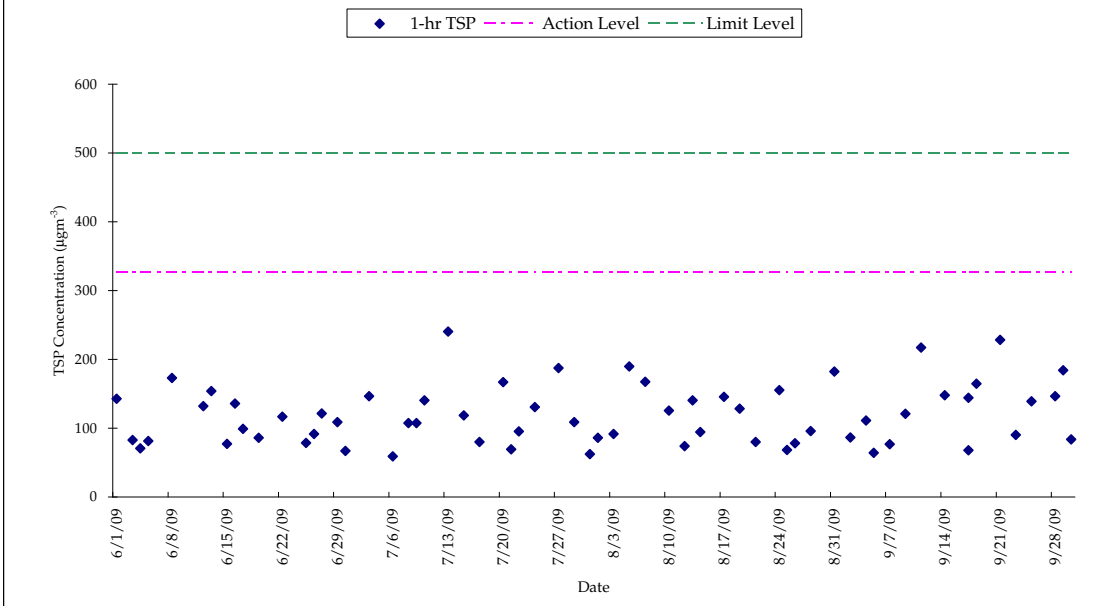
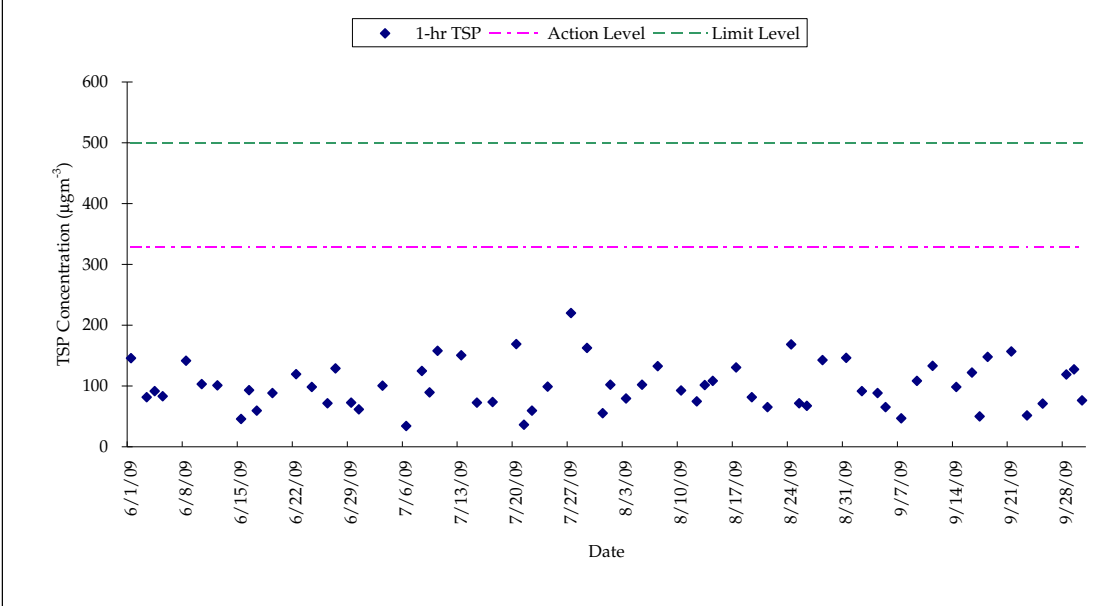
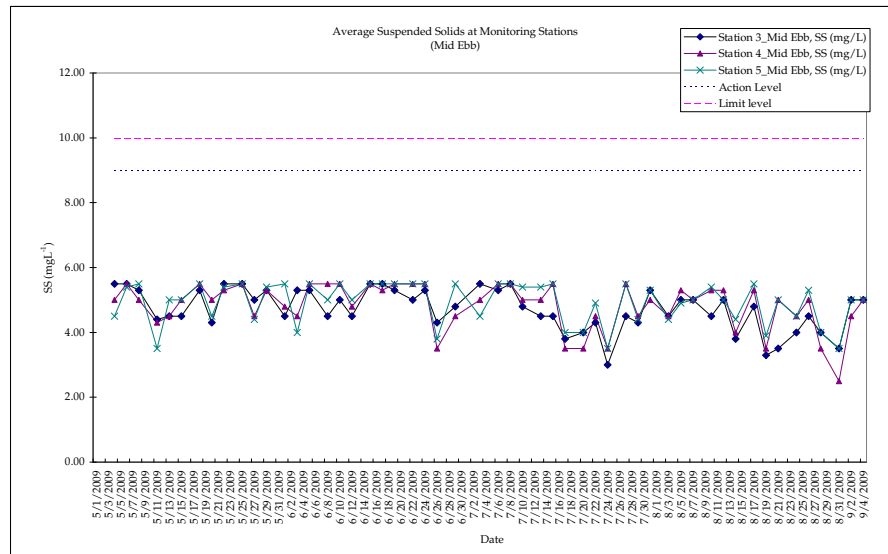
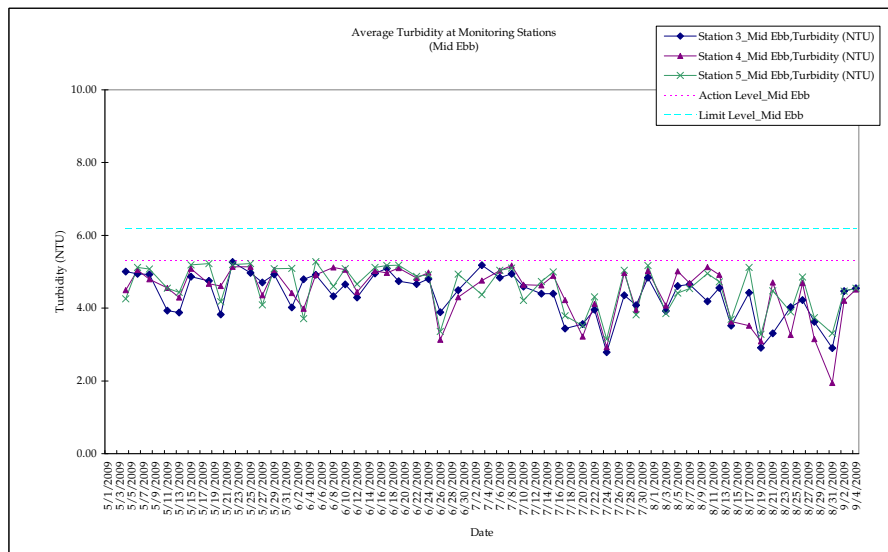
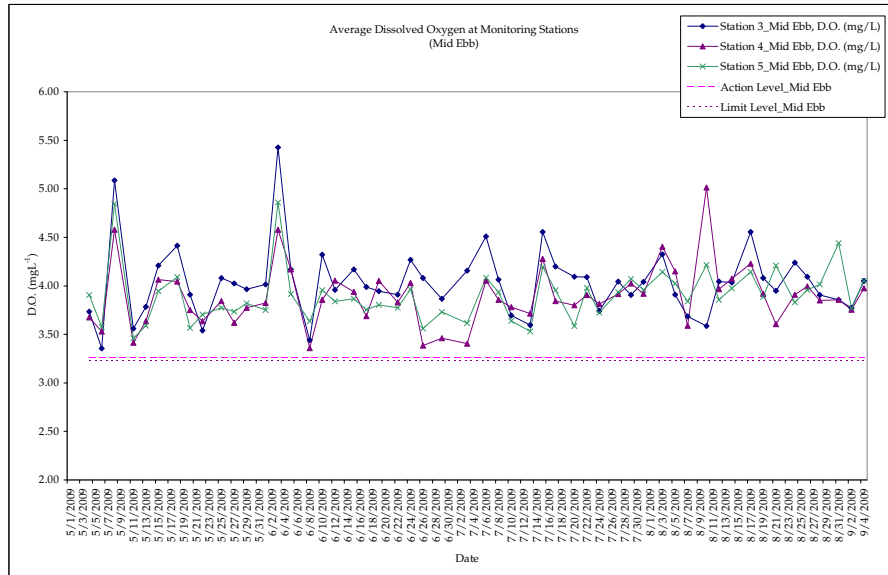


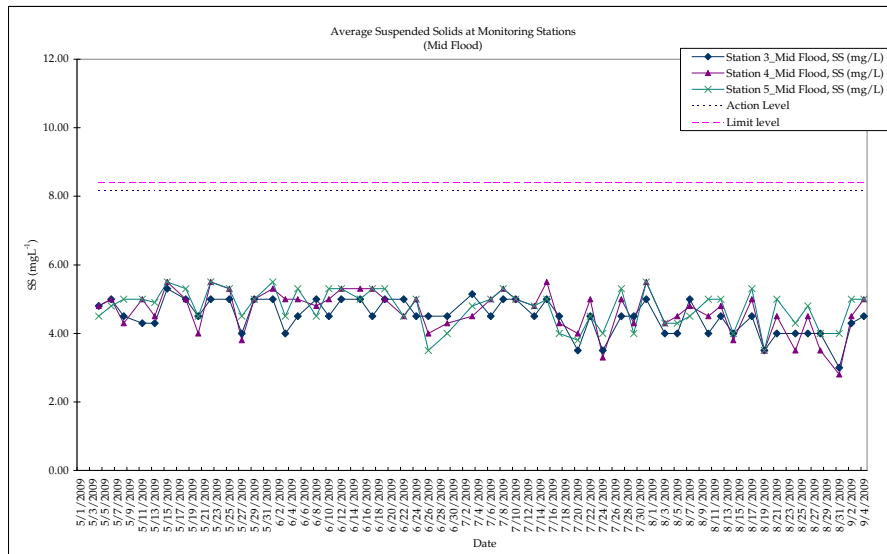
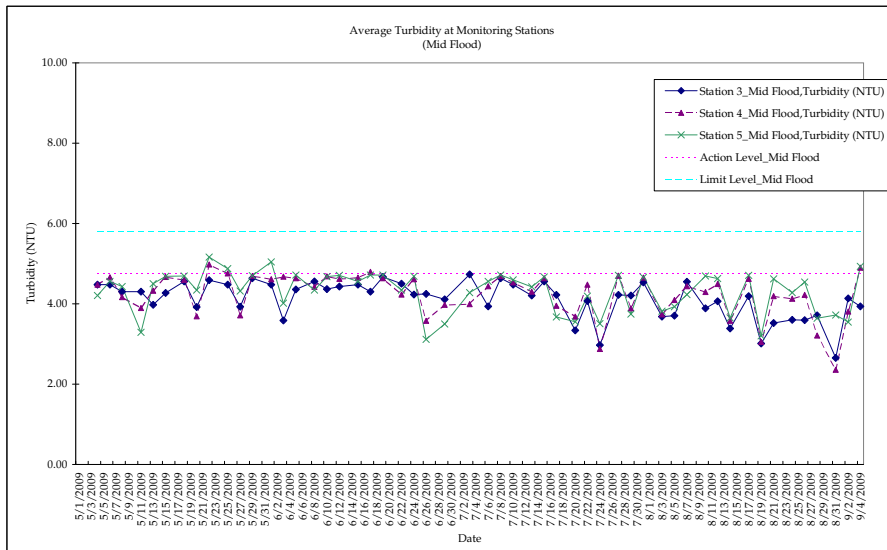
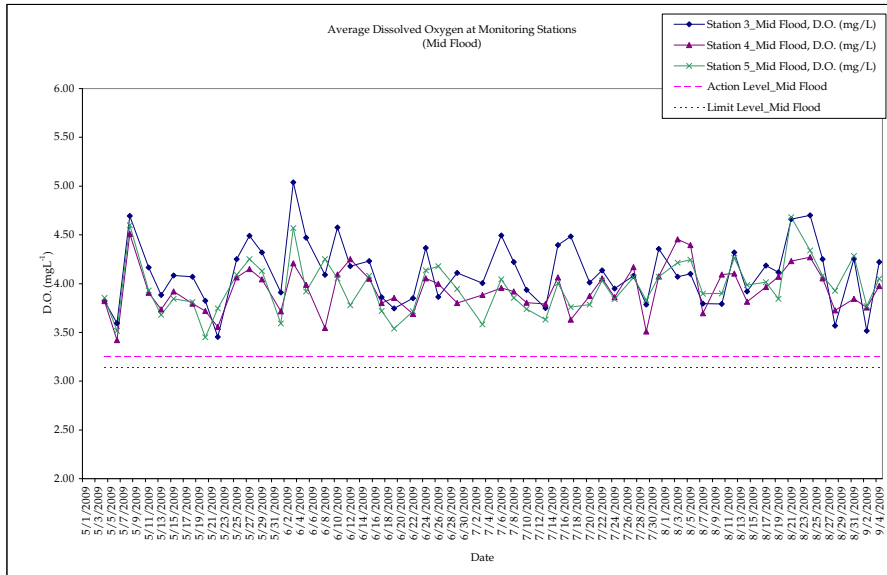
Figure G4 - Measured 1-hour TSP Concentration ( $\mu\text{g}\text{m}^{-3}$ ) at AM2



Annex G

## Water Quality Monitoring Results







**Water Quality Monitoring Results for Station 3**

Date	8/3/2009			8/3/2009			8/5/2009			8/5/2009			8/7/2009			8/7/2009			8/10/2009			8/10/2009			8/12/2009			8/12/2009		
Time (hh:mm)	10:55 - 11:06			17:40 - 17:51			11:30 - 11:43			18:00 - 18:14			12:45 - 13:00			07:30 - 07:41			14:15 - 14:28			08:10 - 08:24			15:30 - 15:44			09:30 - 09:43		
Ambient Temperature	33			30			28			26			34			29			31			29			29			29		
Weather	Fine			Cloudy			Cloudy			Rainy			Sunny			Fine			Cloudy			Sunny			Cloudy			Rainy		
Water Depth (m)	9.00			9.30			7.60			8.20			8.40			8.50			7.20			8.00			9.80			10.20		
Monitoring Depth	7.50			7.50			7.50			7.50			7.50			7.50			7.50			7.50			7.50			7.50		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	30.0	29.6	29.8	27.6	27.9	27.8	25.0	24.8	24.9	23.9	24.0	24.0	28.1	28.2	28.2	26.3	26.5	26.4	25.8	25.9	25.9	24.9	24.9	24.9	27.6	27.7	27.7	27.1	27.0	27.1
Salinity (ppt)	31.1	31.4	31.3	29.0	29.2	29.1	31.0	30.9	31.0	30.6	30.8	30.7	28.5	28.8	28.7	27.6	28.0	27.8	30.6	30.8	30.7	30.9	31.0	31.0	28.6	28.7	28.7	28.8	28.7	28.8
D.O. (mg/L)	4.35	4.30	4.3	4.08	4.06	4.1	3.85	3.97	3.9	4.15	4.05	4.1	3.68	3.69	3.7	3.79	3.80	3.8	3.63	3.54	3.6	3.85	3.73	3.8	4.03	4.06	4.0	4.30	4.34	4.3
D.O. Saturation (%)	60.5	59.8	60.2	56.7	56.3	56.5	53.9	55.6	54.8	58.1	56.7	57.4	50.1	50.2	50.2	51.9	52.0	52.0	50.5	49.3	49.9	53.3	51.7	52.5	56.0	56.4	56.2	59.7	60.3	60.0
Turbidity (NTU)	3.95	3.90	3.9	3.69	3.68	3.7	4.58	4.64	4.6	3.69	3.72	3.7	4.64	4.66	4.7	4.55	4.55	4.6	4.23	4.15	4.2	3.85	3.92	3.9	4.60	4.51	4.6	4.03	4.10	4.1
SS* (mg/L)	4.5	4.5	4.5	4.0	4.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.0	4.0	4.0	5.0	5.0	5.0	4.5	4.5	4.5
Remarks	No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			General Earth Works			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.		

\* For the values of suspended solids less than 5mg/L (PQL), the results are for reference only. PQL stands for practical quantitation Limit, or lowest reporting limit, which is estimated from the method detection limit (MDL). Normally PQL is about 5 times the MDL.

**Within Action Level ?**

Date	8/3/2009		
D.O. (mg/L)	Y	Y	Y
Turbidity (NTU)	Y	Y	Y
SS (mg/L)	Y	Y	Y

8/3/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/5/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/5/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/7/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/7/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/10/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/10/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/12/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/12/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

**Within Limit Level ?**

Date	8/3/2009		
D.O. (mg/L)	Y	Y	Y
Turbidity (NTU)	Y	Y	Y
SS (mg/L)	Y	Y	Y

8/3/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/5/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/5/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/7/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/7/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/10/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/10/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/12/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/12/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

**Water Quality Monitoring Results for Station 3**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009		
Time (hh:mm)	17:30 - 17:42			12:30 - 12:42			09:15 - 09:28			17:00 - 17:14			10:50 - 11:02			18:00 - 18:16			12:20 - 12:35			07:30 - 07:43		
Ambient Temperature	29			30			31			31			32			31			34			29		
Weather	Cloudy			Cloudy			Cloudy			Cloudy			Sunny			Fine			Sunny			Sunny		
Water Depth (m)	8.90			9.00			10.20			9.60			8.50			8.90			7.20			8.80		
Monitoring Depth	7.50			7.50			7.50			7.50			7.50			7.50			7.50			7.50		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	25.7	25.7	25.7	26.0	25.9	26.0	27.8	27.7	27.8	28.2	28.2	28.2	28.3	28.4	28.4	28.5	28.6	28.6	28.7	28.6	28.7	25.4	25.6	25.5
Salinity (ppt)	28.0	28.0	28.0	28.1	27.8	28.0	29.0	29.1	29.1	29.2	29.1	29.2	29.4	29.5	29.5	29.8	29.7	29.8	31.0	30.9	31.0	31.4	31.2	31.3
D.O. (mg/L)	4.03	4.04	4.0	3.91	3.93	3.9	4.54	4.57	4.6	4.20	4.17	4.2	4.08	4.08	4.1	4.12	4.11	4.1	3.98	3.92	4.0	4.69	4.63	4.7
D.O. Saturation (%)	53.2	53.4	53.3	51.6	52.0	51.8	62.6	63.0	62.8	57.9	57.5	57.7	57.9	57.8	57.9	58.4	58.2	58.3	55.7	54.8	55.3	65.8	64.9	65.4
Turbidity (NTU)	3.50	3.53	3.5	3.38	3.40	3.4	4.39	4.45	4.4	4.21	4.17	4.2	2.91	2.92	2.9	3.01	3.02	3.0	3.26	3.35	3.3	3.56	3.48	3.5
SS* (mg/L)	3.8	3.8	3.8	4.0	4.0	4.0	4.8	4.8	4.8	4.5	4.5	4.5	3.3	3.3	3.3	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0
Remarks	No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed		

**Within Action Level ?**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	

**Within Limit Level ?**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	

**Water Quality Monitoring Results for Station 3**

Date	8/24/2009			8/24/2009			8/26/2009			8/26/2009			8/28/2009			8/28/2009			8/31/2009			8/31/2009					
Time (hh:mm)	14:30 - 14:46			08:15 - 08:29			16:00 - 16:15			10:15 - 10:29			7:30 - 7:43			18:00 - 18:13			16:50 - 17:01			09:00 - 09:12					
Ambient Temperature	33			29			32			32			28			31			33			31					
Weather	Sunny			Sunny			Sunny			Sunny			Sunny			Fine			Fine			Sunny					
Water Depth (m)	7.00			8.60			10.20			9.60			9.50			7.50			9.70			8.90			9.00		
Monitoring Depth	7.50			7.50			7.50			7.50			7.50			7.50			7.50			7.50			7.50		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	28.2	28.2	28.2	26.8	26.9	26.9	28.8	28.7	28.8	28.2	28.1	28.2	26.7	27.0	26.9	27.4	27.3	27.4	27.6	27.9	27.8	26.5	26.4	26.5	26.5	26.4	26.5
Salinity (ppt)	30.5	30.5	30.5	30.6	30.7	30.7	30.4	30.3	30.4	30.2	30.2	30.2	29.3	29.4	29.4	28.4	28.4	28.4	30.5	30.5	30.5	29.8	29.8	29.8	29.8	29.8	29.8
D.O. (mg/L)	4.25	4.23	4.2	4.72	4.68	4.7	4.12	4.07	4.1	4.23	4.27	4.3	3.90	3.91	3.9	3.57	3.57	3.6	3.84	3.87	3.9	4.25	4.26	4.3	4.25	4.26	4.3
D.O. Saturation (%)	59.6	59.4	59.5	66.3	65.9	66.1	60.5	59.8	60.2	62.1	62.7	62.4	52.7	52.8	52.8	48.2	48.3	48.3	56.2	56.6	56.4	61.6	61.7	61.7	61.6	61.7	61.7
Turbidity (NTU)	4.06	4.00	4.0	3.57	3.64	3.6	4.20	4.25	4.2	3.57	3.62	3.6	3.63	3.62	3.6	3.71	3.71	3.7	2.94	2.86	2.9	2.67	2.63	2.7	2.67	2.63	2.7
SS* (mg/L)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Remarks	General eath work			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.		

**Within Action Level ?**

Date	8/24/2009			8/24/2009			8/26/2009			8/26/2009			8/28/2009			8/28/2009			8/31/2009			8/31/2009					
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Within Limit Level ?**

Date	8/24/2009			8/24/2009			8/26/2009			8/26/2009			8/28/2009			8/28/2009			8/31/2009			8/31/2009					
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Water Quality Monitoring Results for Station 4**

Date	8/3/2009			8/3/2009			8/5/2009			8/5/2009			8/7/2009			8/7/2009			8/10/2009			8/10/2009			8/12/2009			8/12/2009		
Time (hh:mm)	11:11 - 11:25			17:55 - 18:08			11:52 - 12:06			18:22 - 18:35			13:04 - 13:16			07:45 - 07:56			14:36 - 14:49			08:32 - 08:45			15:50 - 16:03			09:50 - 10:03		
Ambient Temperature	33			30			28			26			34			29			31			29			29			29		
Weather	Fine			Cloudy			Cloudy			Rainy			Sunny			Fine			Cloudy			Sunny			Cloudy			Rainy		
Water Depth (m)	4.20			4.40			3.80			4.40			3.30			3.40			4.00			4.80			4.20			4.40		
Monitoring Depth	5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	29.2	29.2	29.2	28.0	28.1	28.1	24.6	24.6	24.6	24.2	24.1	24.2	26.6	26.5	26.6	26.2	26.1	26.2	26.2	26.2	26.2	25.1	25.0	25.1	28.0	27.9	28.0	27.4	27.3	27.4
Salinity (ppt)	31.6	31.7	31.7	29.3	29.6	29.5	31.4	31.4	31.4	31.1	31.1	31.1	29.0	29.1	29.1	27.5	27.3	27.4	31.1	31.1	31.1	31.4	31.3	31.4	29.5	29.4	29.5	29.4	29.3	29.4
D.O. (mg/L)	4.40	4.41	4.4	4.45	4.46	4.5	4.22	4.08	4.2	4.30	4.49	4.4	3.58	3.60	3.6	3.71	3.68	3.7	4.95	5.08	5.0	4.06	4.13	4.1	3.95	3.98	4.0	4.12	4.09	4.1
D.O. Saturation (%)	61.2	61.3	61.3	61.9	62.0	62.0	59.1	57.2	58.2	60.2	62.8	61.5	49.0	49.3	49.2	50.8	50.2	50.5	68.9	70.7	69.8	56.2	57.2	56.7	54.9	55.3	55.1	57.2	56.8	57.0
Turbidity (NTU)	4.06	4.08	4.1	3.74	3.73	3.7	4.97	5.06	5.0	4.05	4.14	4.1	4.69	4.69	4.7	4.48	4.40	4.4	5.09	5.17	5.1	4.25	4.34	4.3	4.89	4.94	4.9	4.52	4.47	4.5
SS* (mg/L)	4.5	4.5	4.5	4.3	4.3	4.3	5.3	5.3	5.3	4.5	4.5	4.5	5.0	5.0	5.0	4.8	4.8	4.8	5.3	5.3	5.3	4.5	4.5	4.5	5.3	5.3	5.3	4.8	4.8	4.8
Remarks	No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			General Earth Works			No construction activities were observed			No construction activities were observed			No construction activities were observed		

\* For the values of suspended solids less than 5mg/L (POL), the results are for reference only. POL stands for practical quantitation Limit, or lowest reporting limit, which is estimated from the method detection limit (MDL). Normally POL is about 5 tim

**Within Action Level ?**

Date	8/3/2009	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	Y	Y
SS (mg/L)	Y	Y

8/3/2009	
Y	Y
Y	Y
Y	Y

8/5/2009	
Y	Y
Y	Y
Y	Y

8/5/2009	
Y	Y
Y	Y
Y	Y

8/7/2009	
Y	Y
Y	Y
Y	Y

8/7/2009	
Y	Y
Y	Y
Y	Y

8/10/2009	
Y	Y
Y	Y
Y	Y

8/10/2009	
Y	Y
Y	Y
Y	Y

8/12/2009	
Y	Y
Y	Y
Y	Y

8/12/2009	
Y	Y
Y	Y
Y	Y

**Within Limit Level ?**

Date	8/3/2009	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	Y	Y
SS (mg/L)	Y	Y

8/3/2009	
Y	Y
Y	Y
Y	Y

8/5/2009	
Y	Y
Y	Y
Y	Y

8/5/2009	
Y	Y
Y	Y
Y	Y

8/7/2009	
Y	Y
Y	Y
Y	Y

8/7/2009	
Y	Y
Y	Y
Y	Y

8/10/2009	
Y	Y
Y	Y
Y	Y

8/10/2009	
Y	Y
Y	Y
Y	Y

8/12/2009	
Y	Y
Y	Y
Y	Y

8/12/2009	
Y	Y
Y	Y
Y	Y

**Water Quality Monitoring Results for Station 4**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009			8/24/2009			8/24/2009			8/26/2009		
Time (hh:mm)	17:47 - 18:00			12:47 - 13:00			09:35 - 09:48			17:22 - 17:32			11:06 - 11:20			18:20 - 18:33			12:42 - 12:56			07:48 - 08:00			14:52 - 15:05			08:34 - 08:48			16:22 - 16:35		
Ambient Temperature	29			30			31			31			32			31			34			29			33			29			32		
Weather	Cloudy			Cloudy			Cloudy			Cloudy			Sunny			Fine			Sunny			Sunny			Sunny			Sunny			Sunny		
Water Depth (m)	3.80			4.00			4.40			4.20			4.00			4.70			3.60			4.60			3.50			4.70			4.40		
Monitoring Depth	5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	25.8	25.8	25.8	25.8	25.8	25.8	28.1	28.2	28.2	28.4	28.5	28.5	28.7	28.6	28.7	29.0	29.0	29.0	28.4	28.4	28.4	25.2	25.2	25.2	27.9	27.8	27.9	25.3	25.3	25.3	28.9	28.8	28.9
Salinity (ppt)	27.6	27.8	27.7	28.3	28.3	28.3	29.4	29.3	29.4	29.4	29.5	29.5	29.8	29.9	29.9	30.2	30.3	30.3	30.8	30.9	30.9	30.9	31.0	31.0	31.0	31.2	31.1	31.4	31.3	31.4	30.9	30.8	30.9
D.O. (mg/L)	4.09	4.06	4.1	3.81	3.82	3.8	4.21	4.25	4.2	3.98	3.95	4.0	3.94	3.90	3.9	4.07	4.07	4.1	3.64	3.57	3.6	4.25	4.21	4.2	3.93	3.89	3.9	4.28	4.26	4.3	4.02	3.97	4.0
D.O. Saturation (%)	54.0	53.4	53.7	50.3	50.5	50.4	58.0	58.6	58.3	54.5	54.1	54.3	55.9	55.3	55.6	57.6	57.6	57.6	50.9	49.9	50.4	59.6	59.0	59.3	55.1	54.7	54.9	60.1	59.9	60.0	59.0	58.3	58.7
Turbidity (NTU)	3.64	3.63	3.6	3.56	3.59	3.6	2.06	4.98	3.5	4.64	4.60	4.6	3.08	3.10	3.1	3.05	3.05	3.1	4.68	4.73	4.7	4.14	4.25	4.2	3.29	3.23	3.3	4.08	4.17	4.1	4.67	4.71	4.7
SS* (mg/L)	4.0	4.0	4.0	3.8	3.8	3.8	5.3	5.3	5.3	5.0	5.0	5.0	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5	5.0	5.0	5.0
Remarks	No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed			General earth work			No construction activities were observed.			No construction activities were observed.		

**Within Action Level ?**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009			8/24/2009			8/24/2009			8/26/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Within Limit Level ?**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009			8/24/2009			8/24/2009			8/26/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Water Quality Monitoring Results for Station 4**

Date	8/26/2009			8/28/2009			8/28/2009			8/31/2009			8/31/2009		
Time (hh:mm)	10:36 - 10:50			7:48 - 8:01			18:17 - 18:31			17:06 - 17:20			09:16 - 09:30		
Ambient Temperature	32			28			31			33			31		
Weather	Sunny			Sunny			Fine			Fine			Sunny		
Water Depth (m)	4.00			4.50			5.20			4.00			4.20		
Monitoring Depth	5.00			5.00			5.00			5.00			5.00		
Tide	Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	28.4	28.5	28.5	27.1	27.1	27.1	27.5	27.7	27.6	28.1	28.4	28.3	26.8	26.8	26.8
Salinity (ppt)	30.8	30.7	30.8	29.1	28.9	29.0	28.8	28.7	28.8	30.8	30.8	30.8	29.6	29.6	29.6
D.O. (mg/L)	4.07	4.04	4.1	3.85	3.85	3.9	3.71	3.74	3.7	3.83	3.88	3.9	3.87	3.82	3.8
D.O. Saturation (%)	59.8	59.3	59.6	52.0	52.0	52.0	50.1	50.5	50.3	56.0	56.9	56.5	56.0	55.0	55.5
Turbidity (NTU)	4.20	4.24	4.2	3.14	3.15	3.1	3.21	3.22	3.2	1.98	1.90	1.9	2.40	2.32	2.4
SS* (mg/L)	4.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	3.5	2.5	2.5	2.5	2.8	2.8	2.8
Remarks	No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.		

**Within Action Level ?**

Date	8/26/2009		
D.O. (mg/L)	Y	Y	Y
Turbidity (NTU)	Y	Y	Y
SS (mg/L)	Y	Y	Y

8/28/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/28/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/31/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/31/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

**Within Limit Level ?**

Date	8/26/2009		
D.O. (mg/L)	Y	Y	Y
Turbidity (NTU)	Y	Y	Y
SS (mg/L)	Y	Y	Y

8/28/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/28/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/31/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

8/31/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

Water Quality Monitoring Results for Station 3												
Date	9/2/2009			9/2/2009			9/4/2009			9/4/2009		
Time (hh:mm)	11:30 - 11:43			18:00 - 18:14			11:30 - 11:44			18:00 - 18:14		
Ambient Temperature	32			29			32			32		
Weather	Sunny			Fine			Cloudy			Cloudy		
Water Depth (m)	7.20			8.40			10.20			9.60		
Monitoring Depth	7.50			7.50			7.50			7.50		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	27.4	27.5	27.5	26.2	26.2	26.2	28.4	28.5	28.5	28.5	28.4	28.5
Salinity (ppt)	30.6	30.6	30.6	31.2	31.0	31.1	30.2	30.1	30.2	30.2	30.2	30.2
D.O. (mg/L)	3.46	3.57	3.5	4.16	4.28	4.2	4.20	4.24	4.2	4.52	4.47	4.5
D.O. Saturation (%)	48.5	50.1	49.3	58.6	60.2	59.4	61.7	62.3	62.0	66.4	65.7	66.1
Turbidity (NTU)	3.92	4.08	4.0	4.18	4.09	4.1	4.25	4.30	4.3	3.96	3.91	3.9
SS* (mg/L)	4.3	4.3	4.3	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Remarks	General eath work			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.		

Colour "N"

\* For the values of suspended solids less than 5mg/L (PQL), the results are for reference only. PQL stands for practical quantitation Limit, or lowest reporting limit, which is estimated from the method detection limit (MDL). Normally PQL is about 5 times the MDL.

Within Action Level ?

Date	9/2/2009		
D.O. (mg/L)	Y	Y	Y
Turbidity (NTU)	Y	Y	Y
SS (mg/L)	Y	Y	Y

9/2/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

9/4/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

9/4/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

Within Limit Level ?

Date	9/2/2009		
D.O. (mg/L)	Y	Y	Y
Turbidity (NTU)	Y	Y	Y
SS (mg/L)	Y	Y	Y

9/2/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

9/4/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

9/4/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

**Water Quality Monitoring Results for Station 4**

Date	9/2/2009			9/2/2009			9/4/2009			9/4/2009		
Time (hh:mm)	11:49 - 12:03			19:20 - 19:33			11:52 - 12:05			19:22 - 19:35		
Ambient Temperature	32			29			32			32		
Weather	Sunny			Fine			Cloudy			Cloudy		
Water Depth (m)	3.00			4.20			4.40			4.00		
Monitoring Depth	5.00			5.00			5.00			5.00		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	27.8	27.8	27.8	26.7	26.5	26.6	28.8	28.7	28.8	28.9	28.9	28.9
Salinity (ppt)	30.8	30.9	30.9	31.0	31.0	31.0	30.7	30.8	30.8	30.8	30.9	30.9
D.O. (mg/L)	3.82	3.69	3.8	3.99	3.93	4.0	3.99	3.96	4.0	4.16	4.12	4.1
D.O. Saturation (%)	53.6	52.7	53.2	56.2	55.4	55.8	58.6	58.2	58.4	60.7	60.1	60.4
Turbidity (NTU)	4.17	4.24	4.2	3.75	3.86	3.8	4.50	4.53	4.5	4.87	4.93	4.9
SS* (mg/L)	4.5	4.5	4.5	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Remarks	No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.		

Colour "N"

\* For the values of suspended solids less than 5mg/L (PQL), the results are for reference only. PQL stands for practical quantitation Limit, or lowest reporting limit, which is estimated from the method detection limit (MDL). Normally PQL is about 5 tim

**Within Action Level ?**

Date	9/2/2009	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	Y	Y
SS (mg/L)	Y	Y

9/2/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

9/4/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

9/4/2009		
Y	Y	Y
N	N	N
Y	Y	Y

**Within Limit Level ?**

Date	9/2/2009	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	Y	Y
SS (mg/L)	Y	Y

9/2/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

9/4/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y

9/4/2009		
Y	Y	Y
Y	Y	Y
Y	Y	Y



**Water Quality Monitoring Results for Station 5**

Date	8/3/2009			8/3/2009			8/5/2009			8/5/2009			8/7/2009			8/7/2009			8/10/2009			8/10/2009			8/12/2009			8/12/2009		
Time (hh:mm)	11:31 - 11:43			18:13 - 18:24			12:10 - 12:23			18:40 - 18:54			13:21 - 13:32			08:03 - 08:15			14:54 - 15:07			08:50 - 09:03			16:06 - 16:20			10:16 - 10:30		
Ambient Temperature	33			30			28			26			34			29			31			29			29			29		
Weather	Fine			Cloudy			Cloudy			Rainy			Sunny			Fine			Cloudy			Sunny			Cloudy			Rainy		
Water Depth (m)	4.30			4.00			3.60			4.20			3.20			3.60			3.80			4.60			4.40			4.60		
Monitoring Depth	5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	29.4	29.3	29.4	28.2	28.2	28.2	24.7	24.6	24.7	24.1	24.1	24.1	26.6	26.7	26.7	26.6	26.7	26.7	26.1	26.1	26.1	24.6	24.7	24.7	28.1	28.0	28.1	27.4	27.4	27.4
Salinity (ppt)	31.5	32.0	31.8	28.8	28.7	28.8	31.5	31.5	31.5	31.2	31.3	31.3	29.4	29.5	29.5	27.2	27.3	27.3	31.3	31.2	31.3	31.2	31.2	31.2	29.5	29.5	29.5	29.4	29.4	29.4
D.O. (mg/L)	4.14	4.15	4.1	4.21	4.22	4.2	4.09	3.96	4.0	4.22	4.27	4.2	3.84	3.84	3.8	3.89	3.90	3.9	4.27	4.16	4.2	3.92	3.88	3.9	3.87	3.84	3.9	4.25	4.28	4.3
D.O. Saturation (%)	57.5	57.6	57.6	58.5	58.6	58.6	57.3	55.5	56.4	59.0	59.7	59.4	52.6	52.7	52.7	53.3	53.4	53.4	59.4	57.9	59.7	54.3	53.7	54.0	53.7	53.3	53.5	58.6	59.0	58.8
Turbidity (NTU)	3.85	3.86	3.9	3.81	3.82	3.8	4.35	4.48	4.4	3.88	3.97	3.9	4.55	4.53	4.5	4.21	4.25	4.2	4.89	5.02	5.0	4.62	4.76	4.7	4.75	4.69	4.7	4.66	4.60	4.6
SS* (mg/L)	4.3	4.5	4.4	4.3	4.3	4.3	4.8	5.0	4.9	4.3	4.3	4.3	5.0	5.0	5.0	4.5	4.5	4.5	5.3	5.5	5.4	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Remarks	No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			General Earth Works			No construction activities were observed.			General Earth Works			General Earth Works		

\* For the values of suspended solids less than 5mg/L (PQL), the results are for reference only. PQL stands for practical quantitation Limit, or lowest reporting limit, which is estimated from the method detection limit (MDL). Normally PQL is about 5 tim

**Within Action Level ?**

Date	8/3/2009			8/3/2009			8/5/2009			8/5/2009			8/7/2009			8/7/2009			8/10/2009			8/10/2009			8/12/2009			8/12/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Within Limit Level ?**

Date	8/3/2009			8/3/2009			8/5/2009			8/5/2009			8/7/2009			8/7/2009			8/10/2009			8/10/2009			8/12/2009			8/12/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Water Quality Monitoring Results for Station 5**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009			8/24/2009			8/24/2009		
Time (hh:mm)	18:05 - 18:18			13:06 - 13:20			09:51 - 10:05			17:38 - 17:51			11:25 - 11:38			18:38 - 18:52			13:02 - 13:16			08:05 - 08:16			15:10 - 15:24			08:53 - 09:08		
Ambient Temperature	29			30			31			31			32			31			34			29			33			29		
Weather	Cloudy			Cloudy			Cloudy			Cloudy			Sunny			Fine			Sunny			Sunny			Sunny			Sunny		
Water Depth (m)	4.00			4.10			4.60			4.00			3.90			4.80			3.60			4.60			3.50			4.60		
Monitoring Depth	5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00			5.00		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	25.8	26.0	25.9	26.1	26.1	26.1	28.2	28.2	28.2	28.5	28.4	28.5	28.6	28.8	28.7	28.4	28.7	28.6	28.5	28.6	28.6	25.7	25.8	25.8	27.7	27.7	27.7	25.7	25.8	25.8
Salinity (ppt)	27.8	27.4	27.6	28.2	28.2	28.2	29.4	29.5	29.5	29.5	29.5	29.5	30.0	29.6	29.8	30.4	30.4	30.4	30.7	30.7	30.7	31.1	31.1	31.1	30.0	30.0	30.0	31.1	31.1	31.1
D.O. (mg/L)	3.97	3.98	4.0	3.98	3.99	4.0	4.17	4.12	4.1	4.02	4.01	4.0	3.90	3.87	3.9	3.85	3.84	3.8	4.23	4.19	4.2	4.71	4.65	4.7	3.84	3.82	3.8	4.36	4.32	4.3
D.O. Saturation (%)	52.4	52.5	52.5	52.5	52.6	52.6	57.5	56.8	57.2	55.4	54.9	55.2	55.4	54.8	55.1	54.4	54.3	54.4	59.2	58.6	59.9	66.0	65.2	65.6	53.9	53.7	53.8	61.3	60.9	61.1
Turbidity (NTU)	3.71	3.67	3.7	3.65	3.65	3.7	5.10	5.14	5.1	4.70	4.72	4.7	3.30	3.26	3.3	3.21	3.20	3.2	4.50	4.46	4.5	4.57	4.68	4.6	3.86	3.93	3.9	4.31	4.25	4.3
SS* (mg/L)	4.3	4.5	4.4	4.0	4.0	4.0	5.5	5.5	5.5	5.3	5.3	5.3	3.8	4.0	3.9	3.5	3.5	3.5	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.3	4.3	4.3
Remarks	No construction activities were observed			No construction activities were observed			Removal of Pilings			Removal of Pilings			No construction activities were observed.			No construction activities were observed.			General Earth Works			No construction activities were observed.			No construction activities were observed.			General Earth Works		

**Within Action Level ?**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009			8/24/2009			8/24/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Within Limit Level ?**

Date	8/14/2009			8/14/2009			8/17/2009			8/17/2009			8/19/2009			8/19/2009			8/21/2009			8/21/2009			8/24/2009			8/24/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Water Quality Monitoring Results for Station 5**

Date	8/26/2009			8/28/2009			8/28/2009			8/28/2009			8/31/2009			8/31/2009		
Time (hh:mm)	16:38 - 16:51			10:53 - 11:06			08:06 - 08:19			18:36 - 18:50			17:25 - 17:37			09:35 - 09:47		
Ambient Temperature	32			32			28			31			33			31		
Weather	Sunny			Sunny			Sunny			Fine			Fine			Sunny		
Water Depth (m)	4.60			4.20			5.00			5.40			3.60			4.40		
Monitoring Depth	5.00			5.00			5.00			5.00			5.00			5.00		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	28.9	28.9	28.9	28.5	28.5	28.5	26.5	26.6	26.6	27.5	27.5	27.5	28.4	28.0	28.2	26.9	26.8	26.9
Salinity (ppt)	30.9	31.0	31.0	30.9	30.8	30.9	29.0	28.8	28.9	29.1	29.2	29.2	30.6	30.1	30.4	29.6	29.7	29.7
D.O. (mg/L)	3.94	3.98	4.0	4.10	4.06	4.1	4.01	4.02	4.0	3.95	3.90	3.9	4.47	4.41	4.4	4.29	4.28	4.3
D.O. Saturation (%)	57.9	58.5	58.2	60.2	59.6	59.9	54.1	54.3	54.2	53.3	52.7	53.0	64.7	64.0	64.4	62.1	62.4	62.3
Turbidity (NTU)	4.89	4.82	4.9	4.50	4.58	4.5	3.71	3.76	3.7	3.64	3.64	3.6	3.34	3.27	3.3	3.70	3.75	3.7
SS* (mg/L)	5.3	5.3	5.3	4.8	4.8	4.8	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	4.0	4.0	4.0
Remarks	Piling Removal Work			Piling Removal Work			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.			No construction activities were observed.		

**Within Action Level ?**

Date	8/26/2009			8/26/2009			8/28/2009			8/28/2009			8/31/2009			8/31/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Within Limit Level ?**

Date	8/26/2009			8/26/2009			8/28/2009			8/28/2009			8/31/2009			8/31/2009		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Turbidity (NTU)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SS (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Water Quality Monitoring Results for Station 5**

Date	9/2/2009			9/2/2009			9/4/2009			9/4/2009		
Time (hh:mm)	12:08 - 12:22			18:38 - 18:52			12:08 - 12:21			18:38 - 18:41		
Ambient Temperature	32			29			32			32		
Weather	Sunny			Fine			Cloudy			Cloudy		
Water Depth (m)	3.20			4.40			4.60			4.20		
Monitoring Depth	5.00			5.00			5.00			5.00		
Tide	Mid-Ebb			Mid-Flood			Mid-Ebb			Mid-Flood		
Trial	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average	Trial 1	Trial 2	Average
Water Temperature (°C)	27.9	27.9	27.9	26.5	26.5	26.5	28.8	28.7	28.8	28.9	28.8	28.9
Salinity (ppt)	30.5	30.4	30.5	31.0	30.8	30.9	30.8	30.9	30.9	30.9	30.9	30.9
D.O. (mg/L)	3.73	3.81	3.8	4.05	3.97	4.0	4.03	4.07	4.1	4.17	4.14	4.2
D.O. Saturation (%)	52.3	53.4	52.9	57.0	55.9	56.5	58.8	59.4	59.1	60.8	60.4	60.6
Turbidity (NTU)	4.50	4.43	4.5	3.60	3.49	3.5	4.58	4.51	4.5	4.90	4.97	4.9
SS* (mg/L)	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	5.5
Remarks	No construction activities were observed			No construction activities were observed			No construction activities were observed			No construction activities were observed		

Colour "N"

\* For the values of suspended solids less than 5mg/L (PQL), the results are for reference only. PQL stands for practical quantitation Limit, or lowest reporting limit, which is estimated from the method detection limit (MDL). Normally PQL is about 5 tim



**Within Action Level ?**

Date	9/2/2009	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	Y	Y
SS (mg/L)	Y	Y

9/2/2009	
Y	Y
Y	Y
Y	Y

9/4/2009	
Y	Y
Y	Y
Y	Y

9/4/2009	
Y	Y
N	N
Y	Y

**Within Limit Level ?**

Date	9/2/2009	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	Y	Y
SS (mg/L)	Y	Y

9/2/2009	
Y	Y
Y	Y
Y	Y

9/4/2009	
Y	Y
Y	Y
Y	Y

9/4/2009	
Y	Y
Y	Y
Y	Y

Annex H

## Waste Flow Table

## HKCEC – Expansion Project

**Name of Project Proponent: HKTDC**

**Project Commencement Date: 1 August 2006**

**Construction Completion Date: October 2009**

### Monthly Summary Waste Flow Table for Year 2009

Year	Actual Quantities of inert C&D Materials (in 10 <sup>3</sup> Kg) <sup>(1)(2)</sup>					Actual Quantities of C&D Wastes (in 10 <sup>3</sup> Kg) <sup>(4)</sup>									
	Total Quantity Generated	Broken Concrete <sup>(3)</sup>	Reused in the Contract	Reused in other Projects <sup>(3)</sup>	Disposed as Public Fill	Steel Materials				Paper/cardboard packaging		Chemical Waste (L)		General refuse	Other waste <sup>(6)</sup>
						Demolition of existing Atrium Link		Demolition of existing working platform		Recycle	Disposal	Recycle	Disposal	Disposal	Disposal
						Recycle	Disposal	Recycle	Disposal						
(a)	(b)	(c)	(d)	(a)-(b)-(c)-(d)	Recycle	Disposal	Recycle	Disposal	Recycle	Disposal	Recycle	Disposal	Disposal	Disposal	
January	485.8	0	0	0	485.8	6 <sup>(5)</sup>	0	0	0	0.3	0.05	0	0	815	370.5
February	105.0	0	0	0	105.0	0	0	0	0	0.3	0.05	0	0	1610	586.5
March	305.0	0	0	0	305.0	0	0	3.0	0	0.3	0.05	0	0	927.5	250.8
April	200.0	0	0	0	200.0	0	0	3.0	0	0.3	0.02	0	0	312.5	210.5
May	825.0	0	0	0	825.0	0	0	3.0	0	0.3	0.02	0	0	115	105
June	400.0	0	0	0	400.0	0	0	3.0	0	0.3	0.01	0	0	100	80
July	350	0	0	0	350	0	0	3.0	0	0.3	0.01	0	0	80	60
August	100	0	0	0	100	0	0	2.0	0	0.3	0.01	0	0	50	50
Sep	50	0	0	0	50	0	0	0	0	0.1	0.01	0	0	20	20
October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
November <sup>(7)</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
December															
<b>Total</b>	2821	0	0	0	2821	6 <sup>(5)</sup>	0	17	0	2.5	0.23	0	0	3840.0	1733

Note: <sup>(1)</sup> Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.

<sup>(2)</sup> Inert C&D material mainly generated from demolition of atrium link.

<sup>(3)</sup> Broken concrete fro recycling into aggregates.

<sup>(4)</sup> C&D wastes include steel materials generated from demolition, paper / cardboard packaging waste, chemical waste and other wastes such as general refuse. Wastes other than general refuse will be disposed of at Tsung Kwan O Area 137 temporary construction waste sorting facility.

<sup>(5)</sup> Waste from demolition of steel structure at existing Atrium Link of HKCEC (Phase 2).

<sup>(6)</sup> Wastes include materials associated with additional and alternation (A&A) works of HKCEC (e.g. demolition of E&M equipment and finishing materials, bamboo scaffolding) and piling works.

<sup>(7)</sup> Waste data over the period of 1 to 4 November 2009 is presented.