

Hip Hing – Ngo Kee Joint Venture

Hong Kong Convention and
Exhibition Centre Expansion
(Previously known as HKCEC
Atrium Link Extension):
*Quarterly Environmental Monitoring
and Audit Report*
(August 2006 - October 2006)

December 2006

Environmental Resources Management


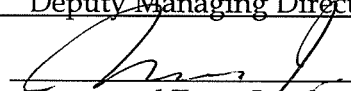
21/F Lincoln House
979 King's Road
Taikoo Place
Island East, Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660
E-mail: post.hk@erm.com
<http://www.erm.com>

Hip Hing – Ngo Kee Joint Venture

Hong Kong Convention and
Exhibition Centre Expansion
(Previously known as HKCEC
Atrium Link Extension):
*Quarterly Environmental Monitoring
and Audit Report*
(August 2006 - October 2006)

December 2006

Reference 0050690

For and on behalf of Environmental Resources Management	
Approved by:	Steve Duckworth
Signed:	
Position:	Deputy Managing Director
Certified by:	 (Environmental Team Leader – Marcus Ip)
Date:	20 December 2006

This report has been prepared by Environmental Resources Management the trading name of '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/it

21 December 2006

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 (Previously known as Hong Kong Convention and Exhibition Center, Atrium Link Extension)
Quarterly EM&A Report for August 2006 to October 2006
(Environmental Permit No. EP-239/2006)

With reference to the captioned document concerning the Quarterly EM&A report for August 2006 to October 2006 received from ERM dated 18 December 2006 together with subsequent amendments received on 19 and 20 December 2006, we are pleased to provide our verification for the document pursuant to condition 3 of the Environmental Permit (EP) No. EP-239/2006.

Yours faithfully,
Nature & Technologies (HK) Limited

Ir Dr Gabriel C K Lam
Managing Director

- 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>3</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>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>EFFECTIVENESS OF MITIGATION MEASURES AND MONITORING</i>	<i>12</i>
<i>5</i>	<i>MONITORING RESULTS</i>	<i>13</i>
<i>5.1</i>	<i>AIR QUALITY</i>	<i>13</i>
<i>5.2</i>	<i>WATER QUALITY</i>	<i>13</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&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>WATER QUALITY</i>	<i>18</i>
<i>7.3</i>	<i>WASTE MANAGEMENT</i>	<i>18</i>
<i>7.4</i>	<i>CONCLUSION OF REVIEW</i>	<i>19</i>
<i>8</i>	<i>CONCLUSION</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	Water Quality Monitoring Locations
Table 3.6	Water Quality Monitoring Parameters & Frequency
Table 3.7	Action and Limit Levels for Water Quality
Table 5.1	Summary of Record of Exceedance recorded in this Quarter
Table 5.2	Quantities of Waste Generated from the Project
Table 6.1	Summary of Non-Compliance
Table 6.2	Summary of Environmental Complaint
Table 8.1	Comparison of the HKAQO and Air Quality Monitoring Results
Table 8.2	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 Month
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	Water Quality Monitoring Results
Annex H	Waste Flow Table
Annex I	Status of Log Book

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) was commenced on 1 August 2006. This is the first quarterly Environmental Monitoring and Audit (EM&A) report presenting the EM&A work carried out during the period from 1 August 2006 to 31 October 2006 in accordance with the EM&A Manual.

Summary of Construction Works undertaken during the Reporting Period

The major construction works taken during the reporting period include mobilization for pre-bored H-piles; excavation for additional trial pit at North Side; erection of catch platform near Expo Drive East; ground investigation works; preparation work for demolition; mobilization for pre-bored H-piles; pre-bored H-piles at southern and northern sides; demolition of abandoned water pump room; mobilization of percussion drill for bored piling at the southern side; mini piles to prepare for temporary marine work platform at the southern side; internal hoarding erection for demolition works; preparation work for dismantling of curtain wall; E&M diversion at northern side; stitch drill for bored pile (BP2) at southern side; dismantling of curtain wall, wall cladding and steel frame and demolition works at Phase II.

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	16 times
1-hour TSP monitoring	48 times
Water quality monitoring	8 times (mid-ebb) 8 times (mid-flood)
Joint environmental site auditing	13 times

Air Quality

Sixteen sets of 24-hour and forty-eight sets of 1-hour TSP monitoring were carried out at the designated monitoring stations (AM1 & AM2) during the reporting period. No exceedance was recorded during the reporting quarter.

Water Quality

Eight sets of water quality measurements, recorded at mid-flood and mid-ebb tides, were carried out at designated monitoring stations of W3, W4 and W5.

Thirty-eight Notifications of Exceedance (NOE) with detailed investigations reports were issued during the reporting quarter for recording water quality monitoring exceedances on dissolved oxygen, turbidity and suspended solids of the monitoring station. Exceedance of Action and Limit Level of dissolved

oxygen, turbidity and suspended solids recorded on 17, 19, 20 and 21 October 2006 was associated with the piling works undertaken near Station 4 and Station 3. The Contractor was requested to rectify the situation immediately and the situation was rectified by the Contractor on 19 October 2006. However, subsequent exceedances recorded on 20 and 21 October 2006 was likely due to silty water from the previous piling works location and the previously unplugged floor slab that had remained behind the silt screen. The exceedances on turbidity and suspended solids recorded after 21 October 2006 was unlikely due to Project works. No further follow-up corrective action was required.

Construction Waste Management

The major construction activities undertaken in the reporting quarter were demolition of existing Atrium Link, land-based piling works and marine piling works. A total of 3,153 tonnes of inert C&D materials (including 5 tonnes materials reused in this Project) and 1,026 tonnes of C&D wastes were generated during the reporting 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.

Environmental Non-conformance

Thirteen weekly joint environmental site audits were carried out by the ET. A non-compliance event related to the insufficient provision of a drip tray for chemical storage was recorded on 23 August 2006. Remedial action was undertaken by the Contractor and the condition was rectified.

No environmental complaints or summons were received during the reporting period.

ERM-Hong Kong, Limited (ERM) was appointed by Hip Hing – Ngo Kee 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 first 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 2006** to **31 October 2006**.

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 the 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) and an Environmental Permit (EP-239/2006) for the works was granted on 12 May 2006. Under the requirements of Condition 3.1 of Environmental Permit EP-239/2006, EM&A programme as set out in the EM&A Manual is required to be implemented.

The construction works commenced on 1 August 2006 and are scheduled to be completed by March 2009.

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*

Construction Activities Undertaken
<ul style="list-style-type: none">• Mobilization for pre-bored H-piles• Excavation for additional trial pit at North Side• Erection of catch platform near Expo Drive East• Additional ground investigation works• Preparation work for demolition• Mobilization for pre-bored H-piles• Pre-bored H-piles at southern and northern sides• Demolition of abandoned water pump room• Mobilization of percussion drill for bored piling at the southern side• Mini piles to prepare for temporary marine work platform at the southern side• Internal hoarding erection for demolition works• Preparation work for dismantling of curtain wall• E&M diversion at northern side• Stitch drill for bored pile (BP2) at southern side• Guide pipe erection for marine pile at sea channel• Trial pit for pile cap TPS2 & 3 at northern side• Corrugated sheet and waterproofing work for west façade hoarding at west facade• Dismantling of curtain wall, wall cladding and steel frame• Demolition works at Phase II

2.4 PROJECT ORGANISATION

The Project organisation 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*

Permit/ Licenses/ Notification	Reference	Validity Period	Remarks
Environmental Permit	EP-239/2006	Throughout the Contract	Permit granted on 12 May 2006
Notification of Construction Works under Air Pollution Control (Construction Dust) Regulation	--	--	Notification on 23 June 2006

Permit/ Licenses/ Notification	Reference	Validity Period	Remarks
Discharge Licence under Water Pollution Control Ordinance	EP860/W10/XY0145	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.
Construction Noise Permit for area inside the Atrium Link	GW-RS0429-06	Valid from 25 July 2006 and will expire on 23 December 2006	-
	GW-RS0487-06	Valid from 21 August 2006 and will expire on 30 December 2006	-
	GW-RS0511-06	Valid from 29 August 2006 and will expire on 27 October 2006	-
	GW-RS0535-06	Valid from 11 September 06 and will expire on 30 January 07)	
	PP-RS0028-06	Valid from 14 September 06 and will expire on 14 November 06	
	GW-RS0646-06	Valid from 28 October 06 and will expire on 31 January 07	
	GW-RS0649-06	Valid from 30 October 06 and will expire on 30 May 07	

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, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
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-5025 A
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-5025 A

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-Test Consultant 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 ± 3 °C; the relative humidity (RH) was 40%; and
- ETS-Test Consultant 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 foul bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully;
- the filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- the swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- then the shelter lid was closed and secured with the aluminum 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 adjust at around 0.6 -1.44 m³/min. The range specified in the EM&A Manual was between 0.6 – 1.7 m³/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-Test Consultant 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 were calibrated using an orifice calibrator. Initial calibration of the dust monitoring equipments were conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVSs using Tisch TE-5025 A Calibration Kit. The calibration records for the HVSs are given in the respective monthly reports.

3.2 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 *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	835852.3	815907.0
W4	Wan Chai Tower/ Revenue Tower/ Immigration Tower Cooling Water Intake ⁽¹⁾	5m below the top of the existing sea wall	835944.1	815885.0
W5	Great Eagle Centre, China Resources Building Cooling Water Intake	5m below the top of the existing sea wall	835963.4	815886.5

Note:

⁽¹⁾ The cooling water intake for Wan Chai Tower / Revenue Tower/ Immigration Tower will be partially relocated to the new pump house adjacent to Station W3 tentatively in September 2006.

3.2.2 Monitoring Parameters, Frequency and Programme

The 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 *Water Quality Monitoring Parameters & Frequency*

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

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⁻¹ 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 Water Quality*

Parameter	Tide	Action Level	Limit Level
Dissolved Oxygen (DO) in mgL ⁻¹	Mid-Ebb	3.26	3.23
	Mid-Flood	3.25	3.14
Suspended Solids (SS) in mgL ⁻¹	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-feet cable. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring station.

Turbidity Measurement Instrument

The turbidity measurements will be carried out on split water sample collected from the same depths of SS samples. A portable and weatherproof turbidity-measuring meter (HANNA model HI93703) will be used in the impact monitoring. It has a photoelectric sensor capable of measuring turbidity between 0-1000 NTU. Response of the sensor will be checked with certified standard turbidity solutions before the start of measurement.

Suspended Solids

Water samples for suspended solids measurement will be 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 will be started within 24 hours after the collection of the water samples, and the testing method of SS will be carried by ETS-Testconsult Ltd (HOKLAS accredited laboratory) in accordance with the APHA 19ed 2540D⁽¹⁾ and the lowest detection limit is 1 mgL⁻¹. The Quality Assurance/Quality Control (QA/QC) procedures will be followed as required by HOKLAS.

Water Depth Detector

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

⁽¹⁾ 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 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 water quality monitoring. The calibration records for the monitoring instruments are given in the respective monthly reports.

IMPLEMENTATION STATUS OF ENVIRONMENTAL PROTECTION REQUIREMENTS

Weekly site inspections were carried out by the ET. Thirteen site inspections were conducted on 2, 8, 16, 23 and 30 August 2006; 6, 15, 20 and 27 September 2006 and 4, 12, 18 and 26 October 2006. The major construction activities undertaken in the reporting quarter were demolition of existing Atrium Link, land based piling works and marine piling works. The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual, except a non-compliance event, as a result of deficiency of the mitigation measures, recorded in the reporting quarter with details given in *Section 7*. The implementation status of environmental mitigation and status of relevant required submissions under the EP are reported as part of the monthly EM&A report⁽¹⁾. Relevant submissions made on these measures and requirements during the reporting period are summarized in *Annex E*.

4.1 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 quarter. Immediate notification was issued to relevant parties when non-compliance event was observed during site auditing and exceedances recorded after receiving the monitoring results. This enabled remedial actions to be taken and preventive measures to be implemented by the Contractor in a timely manner to minimize further impact on the environment. For the above reasons, the EM&A programme is considered effective.

⁽¹⁾ The Monthly EM&A Reports for August, September and October 2006 were submitted to the EPD on 14 September, 16 October and 15 November 2006 respectively.

5.1 AIR QUALITY

The monitoring data at AM1 and AM2 were provided by ETS-Testconsult Ltd. Sixteen sets of 24-hour and forty-eight sets of 1-hour TSP monitoring were carried out at the designated monitoring stations (AM1 & AM2) during the reporting period. 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 24-hour TSP and 1-hour TSP was recorded at the monitoring stations during this quarter. The measured 24-hr TSP at both stations varied in the reporting quarter with the measured TSP levels range from 34 - 105 μgm^{-3} at AM1 and from 29 - 91 μgm^{-3} at AM2.

5.2 WATER QUALITY

Water quality monitoring has been conducted since 17 October 2006 with the installation of temporary marine piles commenced on 16 October 2006. Results of water quality monitoring were provided by ETS-Testconsult Ltd. Eight sets of water quality measurement, recorded at mid-flood and mid-ebb tides, were carried out at the designated monitoring stations W3, W4 and W5. The monitoring data and graphical presentations are summarized in *Annex G*. The monitoring results can also be viewed at the Project EM&A web-site (<http://www.hkcecema.com/index.html>).

Exceedances of water quality parameters including turbidity, dissolved oxygen and suspended solids at the monitoring stations during the reporting month are summarized in *Table 5.1*.

Table 5.1 *Summary of Record of Exceedance of Water Quality Parameters for the Reporting Quarter*

Station	Record of Exceedance
W3	Exceedance of Limit Level of Turbidity on 17, 19, 20, 21, 24, 26 and 28 October 2006 Exceedance of Limit Level of Suspended Solids on 17, 19 and 20 October 2006 Exceedance of Limit Level of Dissolved Oxygen on 21 October 2006 Exceedance of Action Level of Turbidity on 31 October 2006
W4	Exceedance of Limit Level of Dissolved Oxygen on 17 and 21 October 2006 Exceedance of Limit Level of Turbidity on 17, 19, 21, 24, 27 and 28 October 2006 Exceedance of Limit Level of Suspended Solids on 17 and 28 October 2006 Exceedance of Action Level of Turbidity on 20 October 2006
W5	Exceedance of Action Level of Dissolved Oxygen on 17 and 21 October 2006 Exceedance of Limit Level of Turbidity on 17, 19, 20, 21, 24, 26 and 28 October 2006 Exceedance of Limit Level of Suspended Solids on 17, 21, 26 and 28 October 2006 Exceedance of Action Level of Dissolved Oxygen on 19 October 2006

Station	Record of Exceedance
Exceedance of Action Level of Turbidity on 31 October 2006	

Notification of Exceedances with detailed investigation reports were issued to IEC and EPD immediately when the exceedance was identified.

Exceedances of Limit Level of dissolved oxygen, turbidity and suspended solids recorded on 17, 19, 20 and 21 October 2006 was associated with the piling works undertaken near Station 4 and Station 3. Mini-piling and pre-bored H-piling works were conducted in the southern portion of Site near Station 3. Holes were observed on the existing floor slab near Station 3 and some of the holes were not plugged and silty runoff generated from the pre-bored H piling works was allowed to enter the water channel via these holes. Tarpaulin screens above the existing vertical sea wall were provided in the mini-piling area to prevent silty water sprays from entering the water channel, and silty water was observed that had entered the water channel via the gaps between tarpaulin sheets. The Contractor was requested to rectify the condition immediately. The situation was rectified by the Contractor on 19 October 2006. The subsequent exceedances recorded on 20 and 21 October 2006 was likely due to silty water from the previous piling works location and the previously unplugged floor slab that had remained behind the silt screen.

For the exceedances of Limit Level of suspended solids recorded on 26 October 2006, the measured SS level of the water samples taken at Station W5 in mid-flood was marginally exceeding the Action and Limit Levels, but the measured SS levels of the water samples were comparable in both mid-ebb and mid flood tidal cycles. As water outfall is located in the vicinity of Station 5 and therefore it was considered that the water quality was unlikely affected by the Project works.

For the exceedance of Limit Level of suspended solids recorded on 26 October 2006, cleaning of the bar screen of seawater intake No. 5 was observed to be undertaken at about 1100 hours during the day of monitoring. The silty water generated from the cleaning activity was discharged into the silt screen. In addition to the effluents discharged from the water outfalls were observed discharged to the water channel. It was therefore considered that the exceedance was not due to project works.

The water quality exceedances on turbidity recorded after 21 October 2006 was unlikely affected by the Project works and the water quality was considered to be acceptable as the gravimetric measurement of SS in the laboratory, which is considered a more accurate and quantitative measurement, complied with the Action Level. No further follow-up corrective action is therefore required.

The large number of exceedances recorded in the reporting quarter was due to the incident recorded on 17 October 2006. The Contractor was recommended to implement the mitigation measures stipulated in the approved EIA Report and to regularly check the effectiveness of the implemented mitigation measures.

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 – Ngo Kee 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 quarter are summarized in *Table 5.2*.

Table 5.2 *Quantities of Waste Generated from the Project*

Month / Year	Quantity		
	C&D Materials (inert) ^(a)	C&D Wastes (non-inert) ^(b)	Chemical Waste
August 2006	264 tonnes	132 tonnes	0
September 2006	1,509 tonnes	276 tonnes	0
October 2006	1,380 tonnes	618 tonnes	0
Total	3,153 tonnes	1,026 tonnes	0

Notes:

- (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil. 5 tonnes of 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. The C&D wastes other than general refuse were disposed of at SENT Landfill / Tseng Kwan O Area 137 temporary construction waste sorting facility.

The major construction activities undertaken in the reporting quarter were demolition of existing Atrium Link, land-based piling works and marine piling works. A total of 3,153 tonnes of inert C&D materials (including 5 tonnes materials reused in this Project) and 1,026 tonnes of C&D wastes were generated during the reporting 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.

6.1 SUMMARY OF ENVIRONMENTAL EXCEEDANCE

No exceedance of the Action and Limit Levels of 24-hour and 1-hour TSP was recorded at the designated air quality monitoring stations during the reporting period.

Thirty-eight Notification of Exceedance with detailed investigation reports were issued during the reporting period for water quality monitoring exceedances on dissolved oxygen, turbidity and suspended solids at the monitoring stations W3, W4 and W5. Details of the exceedances recorded were presented in *Section 5.1*.

6.2 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

A non-compliance event was recorded on 23 August 2006. The non-compliance event was related to the insufficient provision of a drip tray for oil storage.

The non-compliances were summarised in *Table 6.1* and details are given in *Annex I*.

Table 6.1 *Summary of Non-Compliance*

Date	Non-compliance Event	Action implemented by the Contractor
23 August 2006	Capacity of drip tray for lubricating oils (~15 x 20 Litre drums) was not sufficient. Oil stains were observed around the drip tray indicating occurrence of potential spillage and inadequate housekeeping.	As of 1 September 2006, the Contractor provided additional drip tray to store chemicals and use sands to absorb spillage. No oil stain was observed around the drip tray. The condition was rectified on 30 August 2006.

6.3 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaint was received during the reporting period.

6.4 SUMMARY OF ENVIRONMENTAL SUMMONS AND PROSECUTION

There was no summons or prosecution on environmental matters during the reporting period.

7.1 AIR QUALITY

Since the EIA only have qualitative assessment of dust impact during construction phase, the comparison was made on monitoring results and the Hong Kong Air Quality Objectives (HKAQO) (*Table 8.1*).

Table 7.1 Comparison of the HKAQO and Air Quality Monitoring Results

Month	Monitoring Stations	Corresponding ASR in EIA	HKAQO, $\mu\text{g}/\text{m}^3$	Measured 24 hour TSP Monitoring Results, $\mu\text{g}/\text{m}^3$ ⁽²⁾	
			24 hour ⁽¹⁾	Average	Range
Aug 2006	AM1	AM8	260	56	34 – 76
	AM2	AM6	260	50	29 – 82
Sep 2006	AM1	AM8	260	65	37 – 87
	AM2	AM6	260	62	48 – 85
Oct 2006	AM1	AM8	260	84	62 – 105
	AM2	AM6	260	73	55 – 91
Remarks:					
⁽¹⁾ Only 24 hours TSP monitoring results were compared as there is no maximum allowable concentration of 1 hour TSP in HKAQO.					

The monitoring results show that air quality impacts from construction activities during the reporting period were well below maximum allowable concentration stipulated in the HKAQO. Recommended mitigation measures in *Section 4.24* of EIA were implemented during the reporting period and were considered as effective.

7.2 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 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 quantities of waste generated during the reporting period are presented in *Table 8.2*. 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)	Actual Amount of C&D Materials Recorded ⁽¹⁾ (inert & non-inert)
Demolition of temp. footbridge	585 tonnes	0
Demolition of existing Atrium Link	4,680 tonnes	0
Demolition of temp. working platform	390 tonnes	0
Construction of foundations and pile caps	20,000 tonnes	4,014 tonnes
General Refuse	Insignificant	165 tonnes
Chemical Waste	Small	0
Remark: (1) The actual amount of C&D Materials was recorded since the commencement of construction works in August 2006.		

7.4 ***CONCLUSION OF REVIEW***

The EIA predictions and the monitoring results during the reporting period have been reviewed. The EIA concluded that the proposed HKCEE Atrium expansion 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.

The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 August to 31 October 2006 in accordance with EM&A Manual and the requirement under EP-239/2006.

Sixteen sets of 24-hour and forty-eight sets of 1-hour TSP monitoring were carried out at the designated monitoring stations (AM1 & AM2) during the reporting period. No exceedance was recorded.

Thirty-eight Notifications of Exceedance (NOE) with detailed investigations reports were issued during the reporting quarter for recording water quality monitoring exceedances on dissolved oxygen, turbidity and suspended solids of the monitoring station. Exceedance of Limit Level of dissolved oxygen, turbidity and suspended solids recorded on 17, 19, 20 and 21 October 2006 was associated with the piling works undertaken near Station 4 and Station 3. The Contractor was requested to rectify the situation immediately and the situation was rectified by the Contractor on 19 October 2006. The exceedances recorded on 20 and 21 October 2006 was likely due to silty water from the previous piling works location and the previously unplugged floor slab that had remained behind the silt screen. The exceedances on turbidity and suspended solids recorded after 21 October 2006 was unlikely due to Project works. However, it was observed that there were effluents discharged from nearby water outfalls and bar screen cleaning undertaken by the building management on the day of sampling. No further follow-up corrective action was required.

A non-compliance event was recorded on 23 August 2006. The non-compliance event was related to the insufficient provision of a drip tray for oil storage. The Contractor was immediately requested to provide additional drip trays to store chemicals and use sands to absorb the spillage. The condition was rectified on 30 August 2006. No oil stain was observed around the drip tray.

No complaint and summons/prosecution was received during the reporting period.

The ET will keep track of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Annex A

Locations of Works Areas

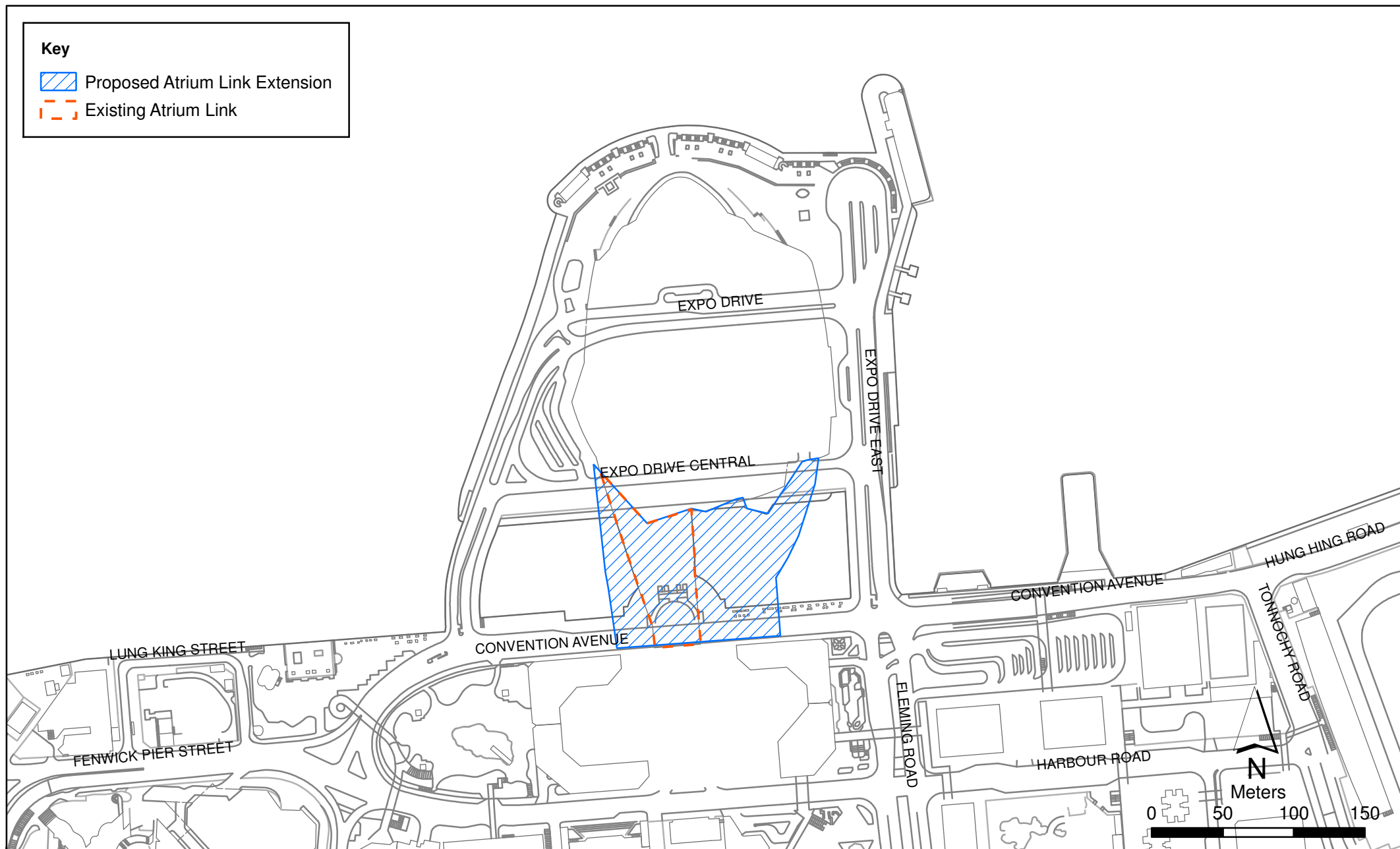
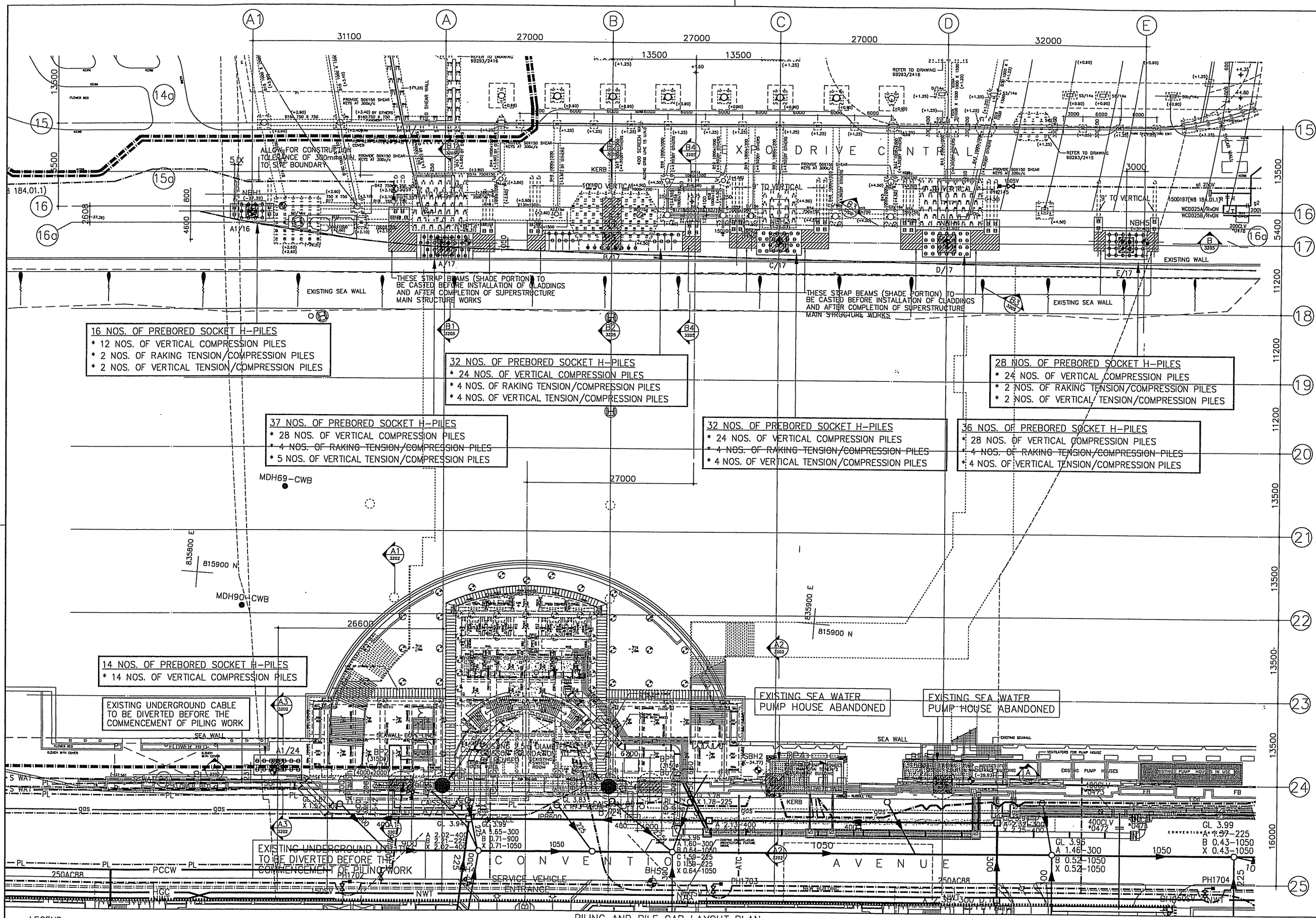


Figure A1

Location of Atrium Link Extension






Annex B

Location of Construction
Activities during the
Reporting Month



B.L.D. REF		
F.S.D. REF		
REVISIONS		
NUMBER	DESCRIPTION	DATE
-	FOR SUBMISSION	9-6-06
A	PIILING FOR COLUMNS A1/24, A16/24, A/24, B/24 & B2/24 REVISED.	20-7-06
	FOR AMENDMENT SUBMISSION	21-7-06
B	PIILING FOR COLUMNS A1/16, A/17, B/17, C/17, D/17 & E/17 REVISED.	25-7-06
	FOR AMENDMENT SUBMISSION	26-7-06
C	REVISE DETAILS FOR BP4, BP5	31-7-06
	FOR AMENDMENT SUBMISSION (MTR)	3-8-06
D	REVISE DETAILS FOR A1/16, A/17, B/17, C/17, D/17 & E/17	4-8-06
	REPLACE SUBMISSION AT 26-7-06	4-8-06
E	FOR SUBMISSION TO CEDD	10-8-06
F	COLUMN A/17 LOCATION REVISED.	18-8-06

AMENDED PLAN

CLIENT		
 香港貿易發展局 Hong Kong Trade Development Council		
MAIN CONTRACTOR		
 Hip Hing - Ngo Kee Joint Venture		
ARCHITECT		
 WONG & OUYANG (HK) LTD ARCHITECTS AND ENGINEERS		
STRUCTURAL ENGINEER		
 WONG & OUYANG (CIVIL STRUCTURAL ENGINEERING) LTD.		
BUILDING SERVICES ENGINEER		
 WONG & OUYANG (BUILDING SERVICES) LTD.		
PROJECT		
HONG KONG CONVENTION & EXHIBITION CENTRE EXPANSION PROJECT		
DRAWING TITLE		
PILING AND PILE CAP LAYOUT PLAN (PREBORED H-PILE AND BORED PILE		
DESIGNER'S SIGNATURE FOR SUBMISSION		
SIGN	DATE	
INDEPENDENT DESIGN CHECKER'S SIGNATURE FOR SUBMISSION		
SIGN	DATE	
DRAWN BY	SIZE	DATE 24-2-06
ENTERED BY	CHK/PAX	PLOT DATE 26-7-06
CHECKED BY	LTV	DATE 26-7-06
SCALE	1:300	PRINT DATE 26-7-06
JOB NUMBER	DRAWING NUMBER	REVISION
2119	3201	F
DO NOT SCALE OFF DRAWING. THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY STATED. ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY WONG & OUYANG (HK) LTD.		

PROGRESS PRINT

Progress Summary in August 2006

Description	Location
Excavation for additional trial pit had been completed on 18 Aug 2006.	G/F Northern Side (Between A15-A16 and B15-B16)
Additional ground investigation works will be completed by 25 Aug 2006.	G/F South Side
Mobilization for Prebored H piles.	G/F North Side G/F South Side
Prebored H piles had been commenced on 8 Aug 2006.	(E/17) (A/17) (A1/16) (A1-24)
Erection of catch platform near Expo Drive East (include weld test) had been completed on 21 Aug 2006.	G/F North side (Near East Side)

Progress Summary in September 2006

Description	Location
Preparation work for demolition	Grid 16 level 2-7
Mobilization for Prebored H piles.	G/F North Side G/F South Side
Prebored H piles had been commenced on 8 Aug 2006.	(E/17) (A/17) (A1/16) (A1/24) (B/17) (C/17)
Demolition of abandoned water pump room	G/F South side
Mobilization of percussion drill for bored pile had been commenced	G/F South Side
Mini Piles for marine platform	G/F South Side
Internal Hoarding erection for demolition works	Lv2, 3,5&7
Preparation work for dismantling of curtain wall	Level 2-7 Grid 16
E&M diversion at Grid 16	Level 1

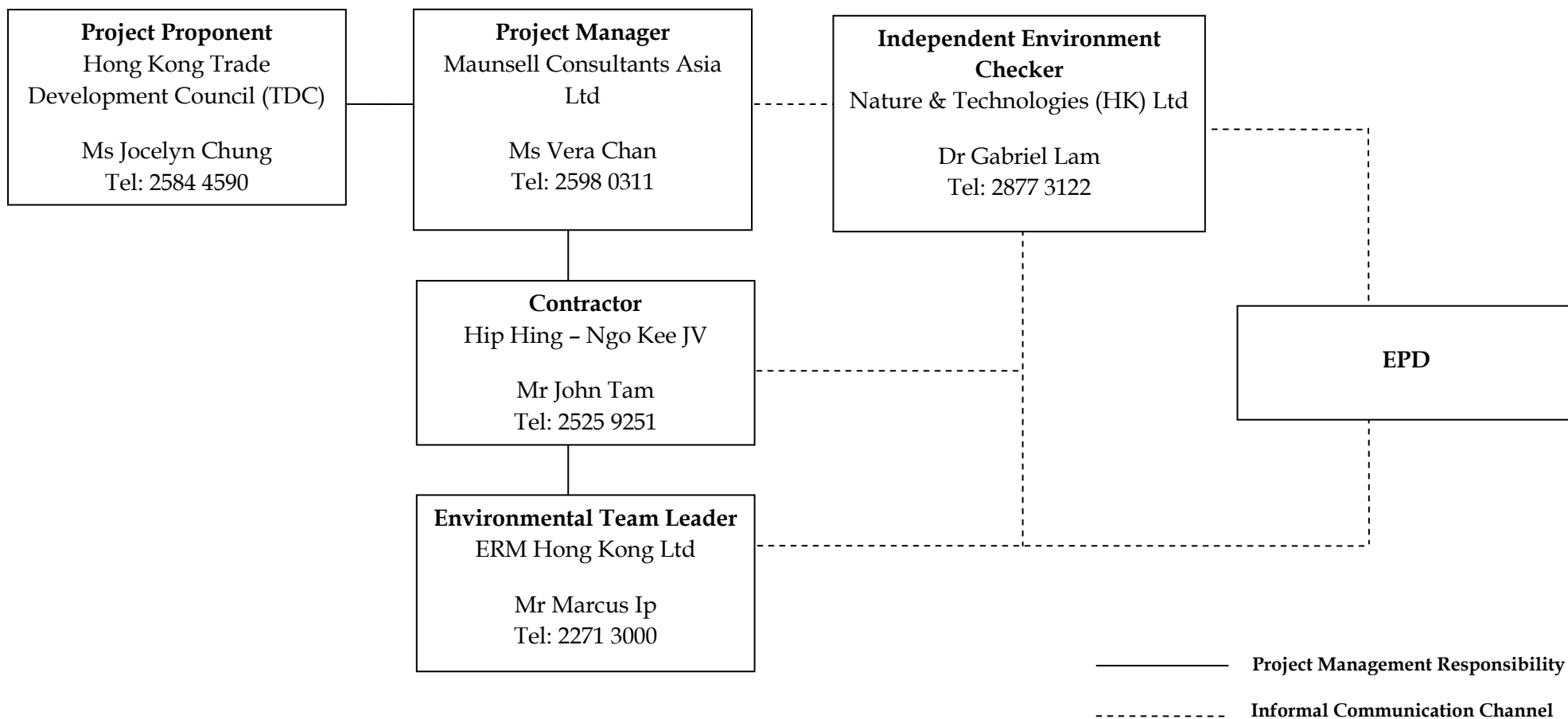
Progress Summary in October 2006

Description	Location
Pre-bored H piles at southern and northern sides	(E17), (A/17), (A1/16), (A1/24), (B/17), (C/17), (D/17)
Demolition of abandoned water pump room	G/F South Side
Stitch drill for bored pile (BP2) at southern side	G/F South Side
Mini piles for marine platform at southern and northern sides	G/F North & South Side (RP20-36)
Guide pipe erection for marine pile at sea channel	Sea Channel
Trial pit for pile cap TPS2 & 3 at northern side	G/F North Side
Corrugated sheet and waterproofing work for west façade hoarding at west facade	West façade
Dismantling of curtain wall, wall cladding and steel frame at Grid 16/B-D and level 2-7	Grid 16/B-D, Level 2-7
Preparation work for demolition at Grid 16/B-D and level 2-7	Grid 16/B-D, Level 2-7
Demolition of Phase II at Grid 16/B-D from upper roof down to Level 2	Grid 16/B-D, Upper roof to Level 2

Annex C

Project Organisation

Project Organization (with contact details)



Annex D

Locations of Air and Water Quality Monitoring Stations

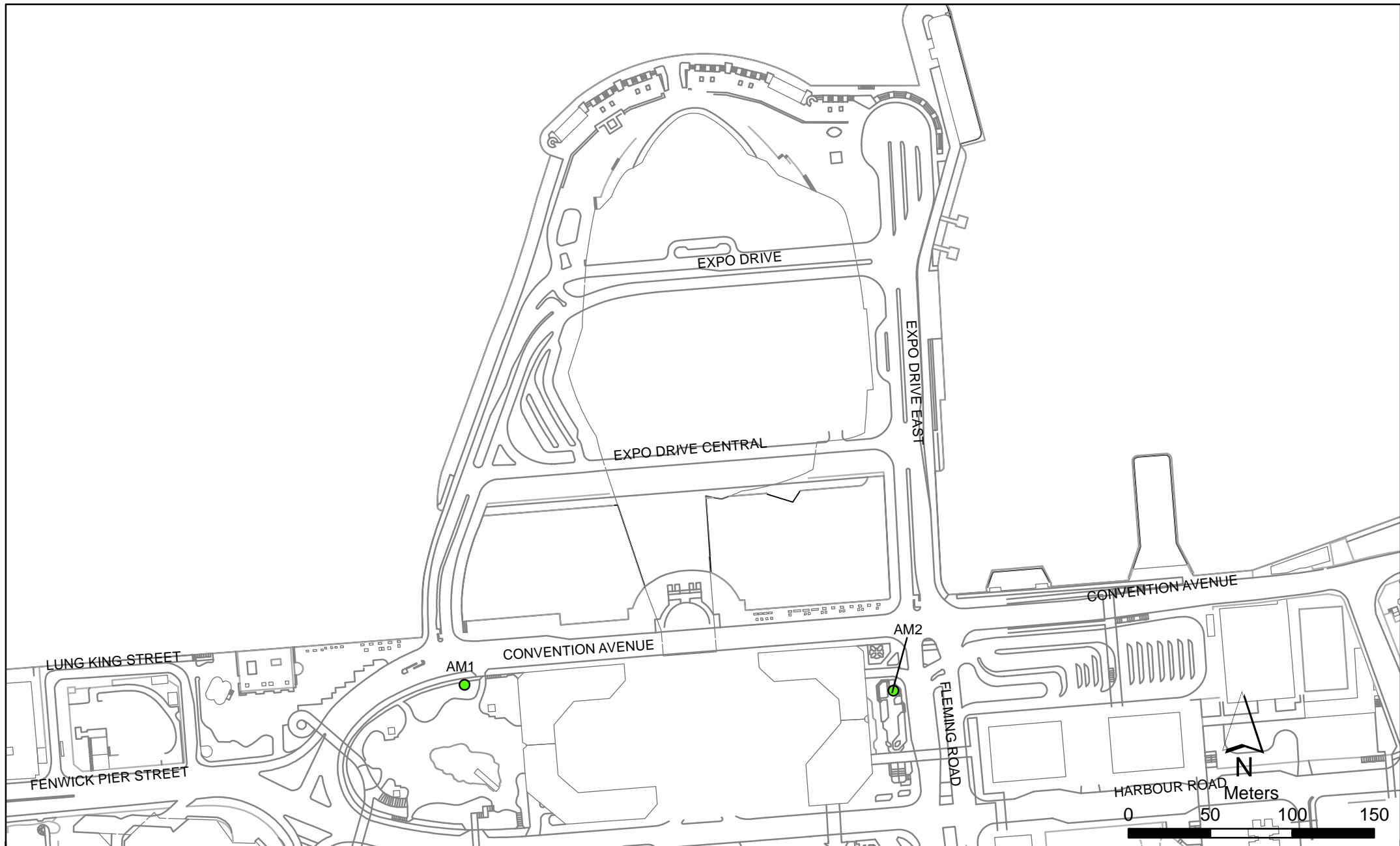


Figure D1

Air Quality Monitoring Station

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 Towe Cooling Water Intake	835944.1	815885.0
5	Great Eagle Centre/China Resources Building Cooling Water Intake	835963.4	815886.5

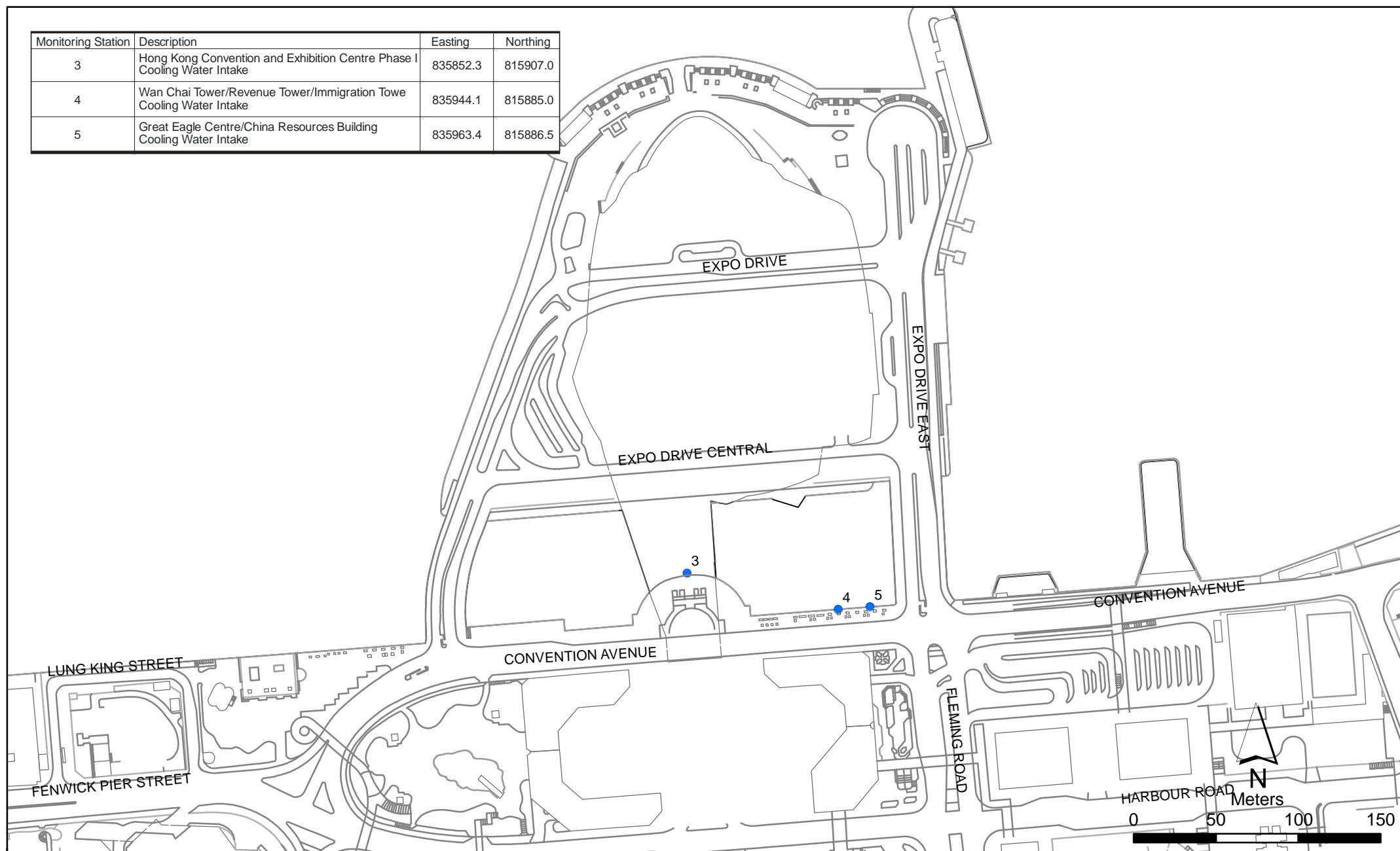
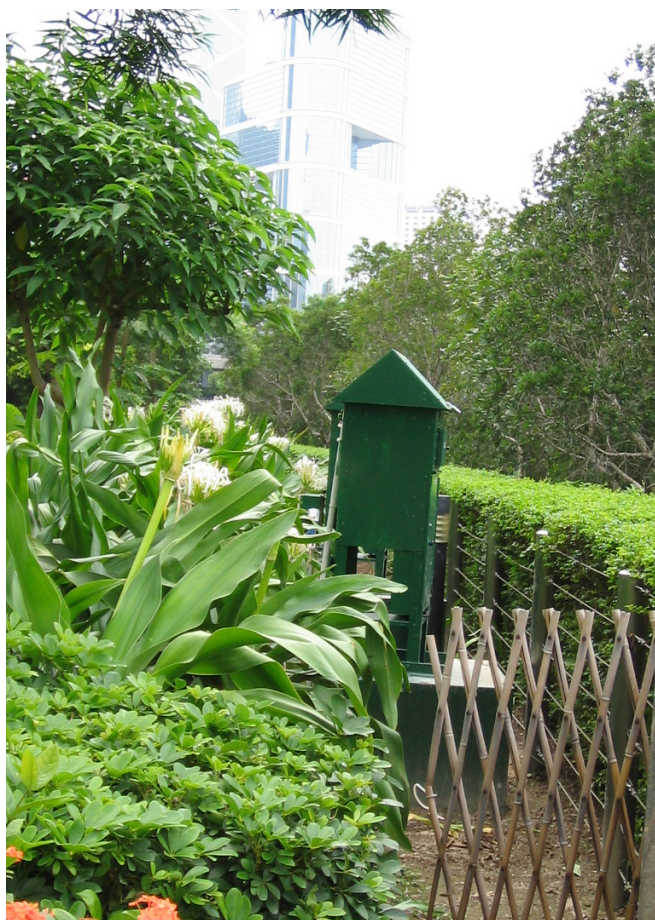


Figure D2

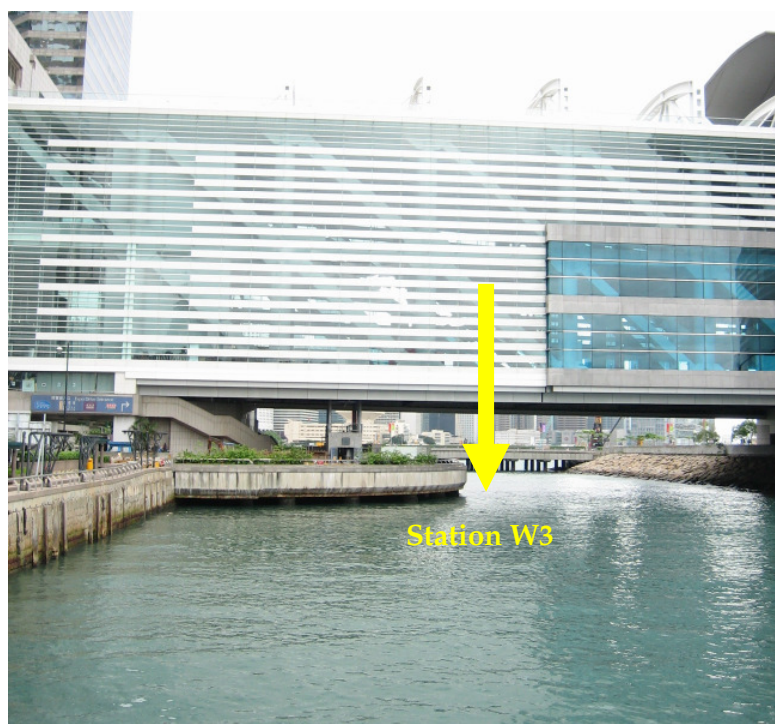
Marine Water Quality Monitoring Station



Air Quality Monitoring Station (AM1)



Air Quality Monitoring Station (AM2)



Water Quality Monitoring Location – Station W3



Water Quality Monitoring Location – Stations W4 and W5

Annex E

Summary of Implementation Status

Annex E - Summary of Environmental Protection / Mitigation Activities

Environmental Permit No. EP-239/2006

EP Condition Ref	Submission	Action Required by the Permit Holder	Implementation Status
Measures for Mitigating Water Quality Impact			
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.
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	Revised design drawing was submitted to the EPD on 2/11/06
Measures for Mitigating Air Quality Impact			
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	---
Measures for Mitigating Landscape and Visual Impact			
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	---
2.10	Details of each landscape and visual mitigation measures package (incl plans)	2 weeks before implementation of a particular mitigation package	---
3.2	Baseline Monitoring Report	One week before the commencement of construction	Report was submitted to the EPD on 24 Jul 06 and comments from the EPD was received on 3 Aug 06. Revised report was submitted to EPD on 17 Aug 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"> • skip hoist for material transport should be totally enclosed by impervious sheeting; • every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site; • 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; • 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; • 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; • all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet; • the height from which excavated materials dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading; • 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 • 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. 	Work site / during construction	√

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)	Measures not required until commencement of operational phase
Air Quality	Monitoring of NO ₂ 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"> only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program; mobile plant, if any, should be sited as far from NSRs as possible; 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; 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 material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities; <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"> • choose quieter plant such as those which have been effectively silenced; • include noise levels specification when ordering new plant; • locate fixed plant away from any NSRs as far as practicable; • locate fixed plant in plant rooms with thick walls or specially designed enclosure; • locate noisy machines in basement or a completely separate building; and • develop and implement a regularly scheduled plant maintenance programme in order to maintain controlled level of noise. 	Plant Room / Design and Operation Stage	Relevant design and plant procurement procedures to commence at a later 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 2.6 of the EIA report 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	Only Stage 1 marine piling works have commenced and relevant environmental measures were implemented
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	√

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	√
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	◇

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	√

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	√
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.</p> <p>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	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.	Works areas / construction period	√
Water Quality	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	Works areas / construction period	√

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"> • suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; • chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and • storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 		
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"> • the use of less or smaller construction plants may be specified to reduce the disturbance to the seabed; • temporary sewerage system should be designed to prevent wastewater from entering the storm system and sea; • temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works; • stockpiling of construction materials and dusty materials should be covered and located away from any water courses; • construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers; • construction activities, which generate large amount of 	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"> • 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; • construction effluent, site run-off and sewage should be properly collected and/or treated; • proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/sea; and • supervisory staff should be assigned to station on site to closely supervise and monitor the works. 		
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	Relevant works have yet to be commenced / completed
<i>Construction Phase</i>			
Waste	<p>Recommendations for good site practices during the construction activities include:</p> <ul style="list-style-type: none"> • nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all Wastes generated at the site; • training of site personnel in proper waste management and chemical handling procedures; • provision of sufficient waste disposal points and regular collection of waste; • appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. 	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"> • sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (ie soil, broken concrete, metal, etc); • segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or 	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"> 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; proper storage and site practices to minimize the potential for damage to contamination of construction materials; and plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste. 		
Waste	<p><u>General Refuse</u></p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&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	√
Waste	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> In order to minimize the impact resulting from collection and transportation of C&D material for off-site disposal, the C&D material from the following construction activities should be reused and recycled as far as possible to reduce the net amount of C&D material generated from the Project; a Waste Management Plan should be prepared in accordance with ETWB TCW No. 19/2005; a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed; in order to monitor the disposal of C&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 	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"> the large amount of C&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. 		
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	Mitigation measures to be implemented during operational phase
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	Mitigation measures to be implemented during operational phase
Landscape & Visual	Appearance and view considerations: (a) avoid industrial feel of building service elements;	Entire proposed works and adjacent hotels	Mitigation measures to be implemented during operational phase

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	Mitigation measures to be implemented during operational phase
Landscape & Visual	Reinstatement of existing waterfront public footpaths along Convention Avenue and the existing open spaces near Fenwick Street.	Convention Avenue and Fenwick Street	Mitigation measures to be implemented during operational phase

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 – Ngo Kee JV
- Δ Deficiency of Mitigation Measures but rectified by Hip Hing – Ngo Kee JV

Annex F

24-hour and 1-hour TSP Monitoring Results

Figure 1 - Measured 24-hour TSP Concentration (μgm^{-3}) at AM1

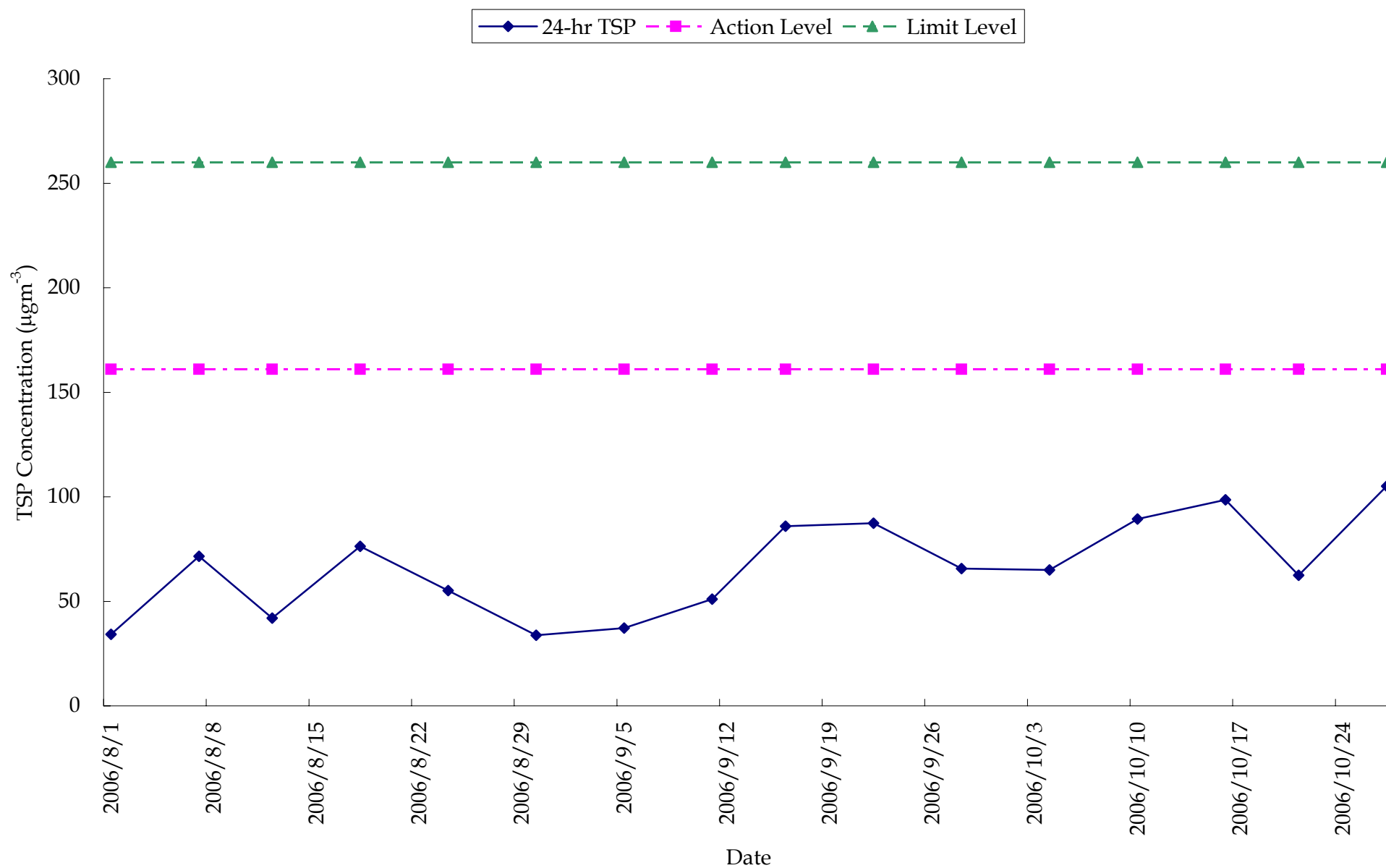


Figure 2 - Measured 24-hour TSP Concentration (μgm^{-3}) at AM2

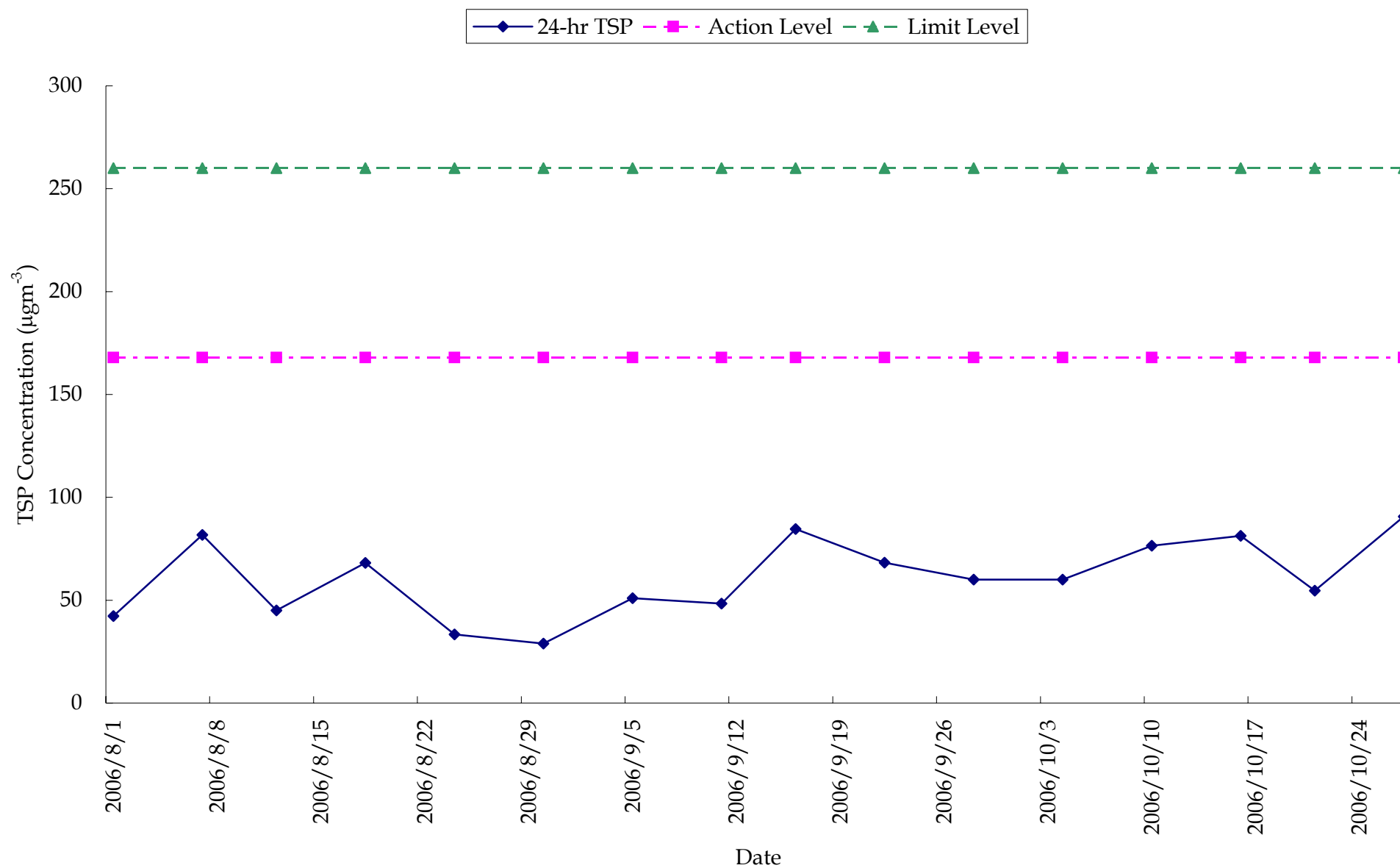


Figure 3 - Measured 1-hour TSP Concentration (μgm^{-3}) at AM1

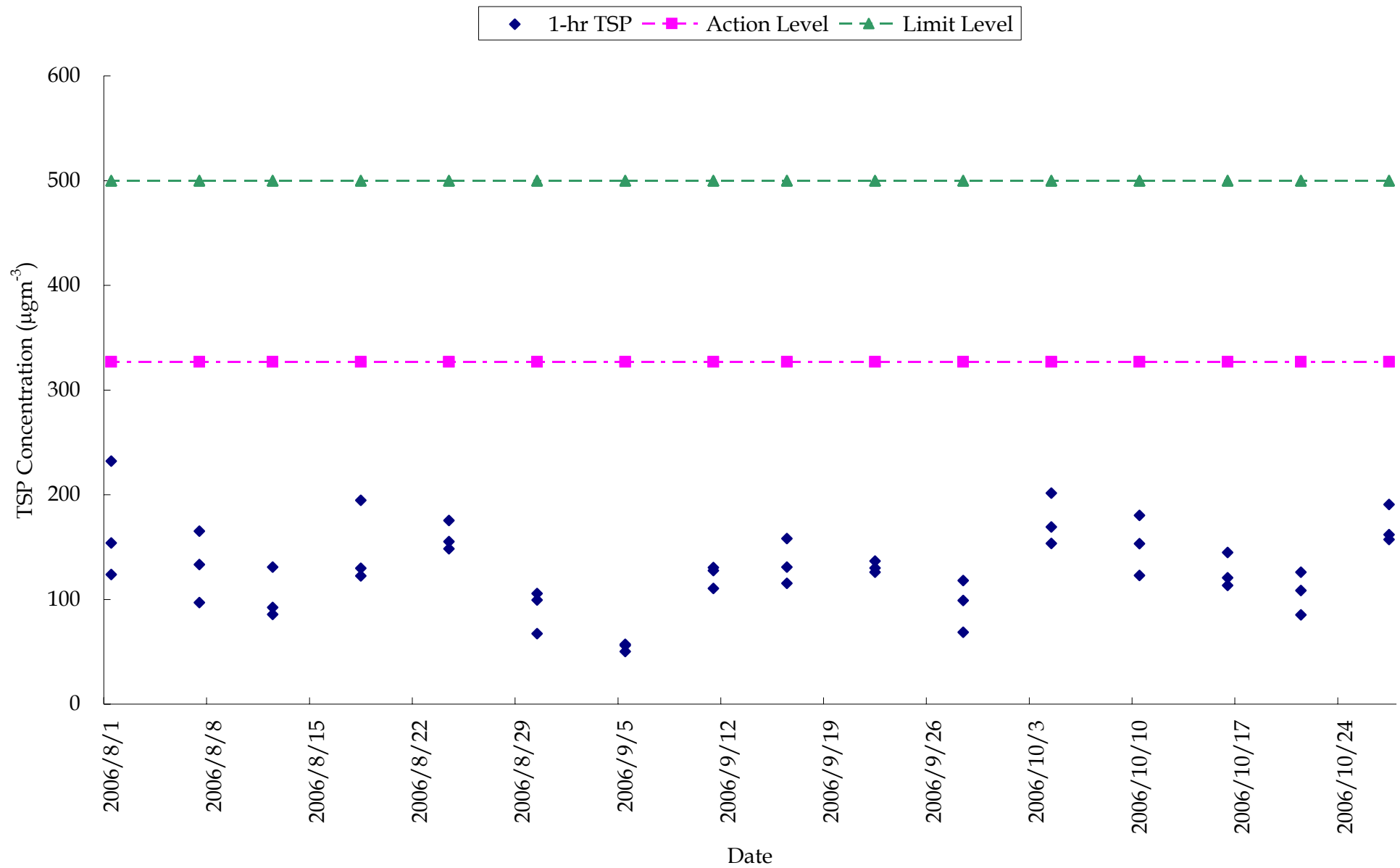
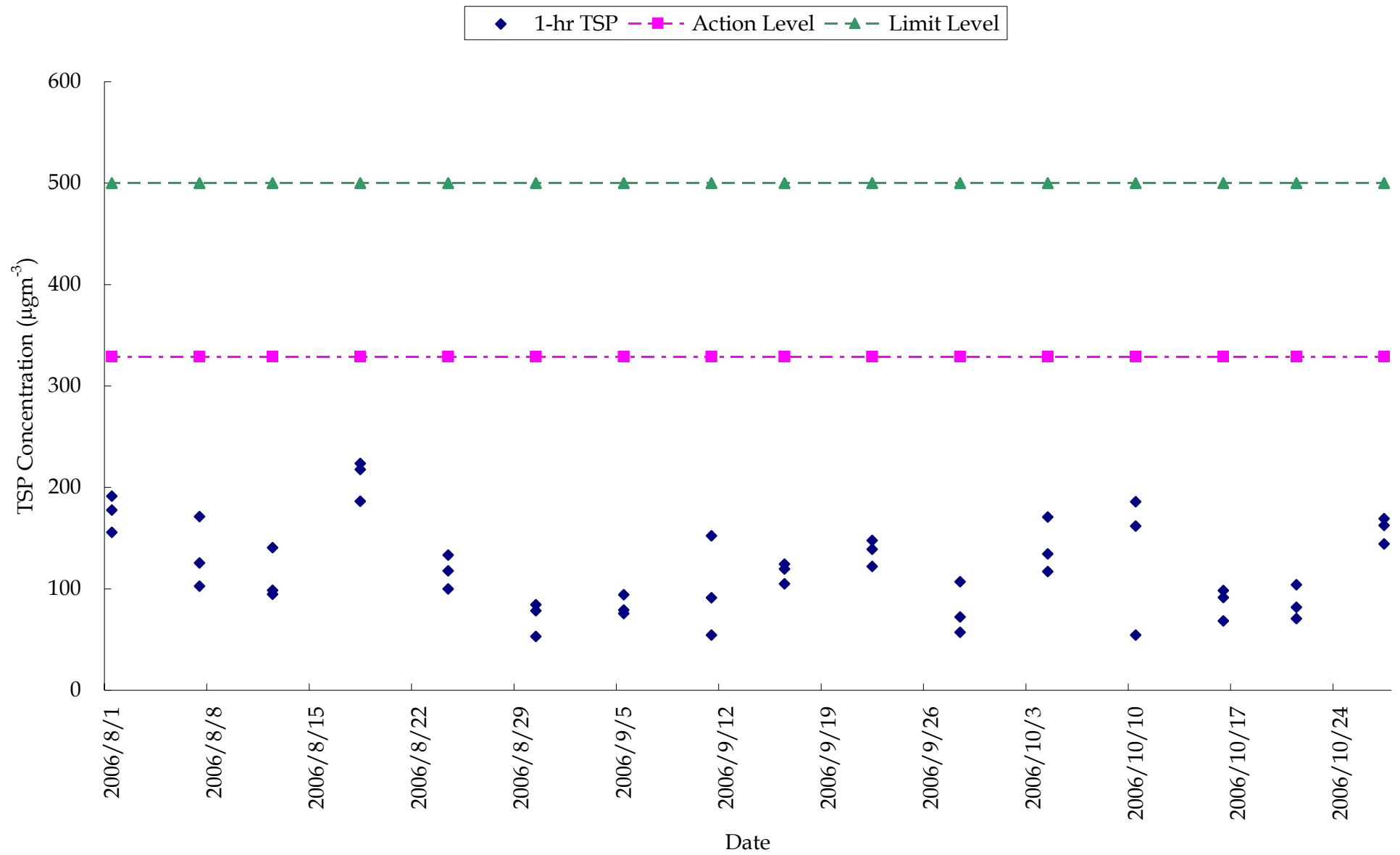


Figure 4 - Measured 1-hour TSP Concentration (μgm^{-3}) at AM2



24-hr TSP Monitoring Results

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

Date	Filter Weight (g)		Flow Rate (m³/min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m³/min)	Total vol. (m³)
	Initial	Final	Initial	Final	Initial	Final							
01-Aug-06	2.9138	2.9611	0.96	0.96	9349.5	9373.5	24.0	34	Sunny	29.4	0.0473	0.96	1382.4
07-Aug-06	2.9122	2.9998	0.85	0.85	9373.5	9397.5	24.0	72	Sunny	27.8	0.0876	0.85	1224.0
12-Aug-06	2.9188	2.9702	0.85	0.85	9397.5	9421.5	24.0	42	Sunny	29.2	0.0514	0.85	1224.0
18-Aug-06	2.9203	3.0138	0.85	0.85	9421.5	9445.5	24.0	76	Sunny	30.6	0.0935	0.85	1225.0
24-Aug-06	2.9040	2.9715	0.85	0.85	9445.5	9469.5	24.0	55	Rainy	27.6	0.0675	0.85	1224.0
30-Aug-06	2.9103	2.9482	0.78	0.78	9469.5	9493.5	24.0	34	Sunny	29.2	0.0379	0.78	1123.2
								Min	34				
								Max	76				
								Average	56				

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

Date	Filter Weight (g)		Flow Rate (m³/min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m³/min)	Total vol. (m³)
	Initial	Final	Initial	Final	Initial	Final							
01-Aug-06	2.9079	2.9957	1.44	1.44	8788.0	8812.0	24.0	42	Sunny	29.4	0.0878	1.44	2073.6
07-Aug-06	2.9318	3.0930	1.37	1.37	8812.0	8836.0	24.0	82	Sunny	27.8	0.1612	1.37	1972.8
12-Aug-06	2.9085	2.9987	1.39	1.39	8836.0	8860.0	24.0	45	Sunny	29.2	0.0902	1.39	2001.6
18-Aug-06	2.9118	3.0532	1.44	1.44	8860.0	8884.0	24.0	68	Sunny	30.6	0.1414	1.44	2074.5
24-Aug-06	2.8988	2.9680	1.44	1.44	8884.0	8908.0	24.0	33	Rainy	27.6	0.0692	1.44	2073.6
30-Aug-06	2.8763	2.9376	1.47	1.47	8908.0	8932.0	24.0	29	Sunny	29.2	0.0613	1.47	2116.8
								Min	29				
								Max	82				
								Average	50				

24-hr TSP Monitoring Results

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
01-Aug-06	2.9106	2.9181	1.01	1.01	10487.7	10488.7	1.0	124	Sunny	29.4	0.0075	1.01	60.6
01-Aug-06	2.9236	2.9332	1.04	1.04	10488.7	10489.7	1.0	154	Sunny	29.4	0.0096	1.04	62.4
01-Aug-06	2.9281	2.9430	1.07	1.07	10489.7	10490.7	1.0	232	Sunny	29.4	0.0149	1.07	64.2
07-Aug-06	2.9063	2.9127	1.10	1.10	10490.7	10491.7	1.0	97	Sunny	27.8	0.0064	1.10	66.0
07-Aug-06	2.9485	2.9594	1.10	1.10	10491.7	10492.7	1.0	165	Sunny	27.8	0.0109	1.10	66.0
07-Aug-06	2.9672	2.9760	1.10	1.10	10492.7	10493.7	1.0	133	Sunny	27.8	0.0088	1.10	66.0
12-Aug-06	2.9082	2.9137	1.07	1.07	10493.7	10494.7	1.0	86	Sunny	29.2	0.0055	1.07	64.2
12-Aug-06	2.9115	2.9199	1.07	1.07	10494.7	10495.7	1.0	131	Sunny	29.2	0.0084	1.07	64.2
12-Aug-06	2.9039	2.9100	1.10	1.10	10495.7	10496.7	1.0	92	Sunny	29.2	0.0061	1.10	66.0
18-Aug-06	2.9182	2.9265	1.13	1.13	10497.1	10498.1	1.0	122	Sunny	30.6	0.0083	1.13	67.8
18-Aug-06	2.9029	2.9117	1.13	1.13	10498.1	10499.1	1.0	130	Sunny	30.6	0.0088	1.13	67.8
18-Aug-06	2.9119	2.9251	1.13	1.13	10499.1	10500.1	1.0	195	Sunny	30.6	0.0132	1.13	67.8
24-Aug-06	2.9271	2.9369	1.10	1.10	10500.1	10501.1	1.0	148	Rainy	27.6	0.0098	1.10	66.0
24-Aug-06	2.9148	2.9267	1.13	1.13	10501.1	10501.1	1.0	176	Rainy	27.6	0.0119	1.13	67.8
24-Aug-06	2.8848	2.8956	1.16	1.16	10502.1	10503.1	1.0	155	Rainy	27.6	0.0108	1.16	69.6
30-Aug-06	2.9214	2.9256	1.04	1.04	10503.1	10504.1	1.0	67	Sunny	29.2	0.0042	1.04	62.4
30-Aug-06	2.9303	2.9367	1.01	1.01	10504.1	10505.1	1.0	106	Sunny	29.2	0.0064	1.01	60.6
30-Aug-06	2.9240	2.9302	1.04	1.04	10505.1	10506.1	1.0	99	Sunny	29.2	0.0062	1.04	62.4
								Min	67				
								Max	232				
								Average	134				

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
01-Aug-06	2.8989	2.9074	0.91	0.91	8388.0	8389.0	1.0	156	Sunny	29.4	0.0085	0.91	54.6
01-Aug-06	2.9054	2.9151	0.91	0.91	8389.0	8390.0	1.0	178	Sunny	29.4	0.0097	0.91	54.6
01-Aug-06	2.8709	2.8810	0.88	0.88	8390.0	8391.0	1.0	191	Sunny	29.4	0.0101	0.88	52.8
07-Aug-06	2.9148	2.9193	0.73	0.73	8391.0	8392.0	1.0	103	Sunny	27.8	0.0045	0.73	43.8
07-Aug-06	2.9292	2.9367	0.73	0.73	8392.0	8393.0	1.0	171	Sunny	27.8	0.0075	0.73	43.8
07-Aug-06	2.9055	2.9110	0.73	0.73	8393.0	8394.0	1.0	126	Sunny	27.8	0.0055	0.73	43.8
12-Aug-06	2.9210	2.9260	0.88	0.88	8394.0	8395.0	1.0	95	Sunny	29.2	0.0050	0.88	52.8
12-Aug-06	2.9147	2.9222	0.88	0.88	8395.0	8396.0	1.0	141	Sunny	29.2	0.0075	0.88	53.3
12-Aug-06	2.9179	2.9231	0.88	0.88	8396.0	8397.0	1.0	98	Sunny	29.2	0.0052	0.88	52.8
18-Aug-06	2.9111	2.9222	0.85	0.85	8397.0	8398.0	1.0	218	Sunny	30.6	0.0111	0.85	51.0
18-Aug-06	2.9029	2.9124	0.85	0.85	8398.0	8399.0	1.0	186	Sunny	30.6	0.0095	0.85	51.0
18-Aug-06	2.9026	2.9140	0.85	0.85	8399.0	8400.0	1.0	224	Sunny	30.6	0.0114	0.85	51.0
24-Aug-06	2.9173	2.9224	0.85	0.85	8400.0	8401.0	1.0	100	Rainy	27.6	0.0051	0.85	51.0
24-Aug-06	2.9055	2.9123	0.85	0.85	8401.0	8402.0	1.0	133	Rainy	27.6	0.0068	0.85	51.0
24-Aug-06	2.9103	2.9163	0.85	0.85	8402.0	8403.0	1.0	118	Rainy	27.6	0.0060	0.85	51.0
30-Aug-06	2.9123	2.9151	0.88	0.88	8403.0	8404.0	1.0	53	Sunny	29.2	0.0028	0.88	52.8
30-Aug-06	2.8853	2.8896	0.85	0.85	8404.0	8405.0	1.0	84	Sunny	29.2	0.0043	0.85	51.0
30-Aug-06	2.8914	2.8954	0.85	0.85	8405.0	8406.0	1.0	78	Sunny	29.2	0.0040	0.85	51.0
								Min	53				
								Max	224				
								Average	136				

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

Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Relative Humidity (%)	Total Rainfall (mm)	Wind Direction
01-Aug-06	Sunny	29.4	12.0	76.0	0	East
07-Aug-06	Sunny	27.8	4.0	82.0	0.1	West
12-Aug-06	Sunny	29.2	12.0	83.0	0	East
18-Aug-06	Sunny	30.6	10.0	77.0	0	West
24-Aug-06	Rainy	27.6	12.0	90.5	38.8	East
30-Aug-06	Sunny	29.2	12.0	75.5	0	West

24-hr TSP Monitoring Results

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
05-Sep-06	2.8972	2.9514	1.01	1.01	10509.1	10533.1	24.0	37	Rainy	28.9	0.0542	1.01	1455.0
11-Sep-06	2.8711	2.9479	1.04	1.04	10536.1	10560.1	24.0	51	Sunny	24.4	0.0768	1.04	1502.7
16-Sep-06	2.8916	3.0209	1.04	1.04	10563.1	10587.1	24.0	86	Sunny	26.7	0.1293	1.04	1504.0
22-Sep-06	2.8941	3.0175	0.98	0.98	10590.1	10614.1	24.0	87	Sunny	26.8	0.1234	0.98	1412.6
28-Sep-06	2.8762	2.9690	0.98	0.98	10617.1	10641.1	24.0	66	Sunny	25.9	0.0928	0.98	1412.6
								Min	37				
								Max	87				
								Average	65				

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
05-Sep-06	2.9081	2.9843	1.04	1.04	8935.0	8958.9	24.0	51	Rainy	28.9	0.0762	1.04	1495.1
11-Sep-06	2.8944	2.9688	1.07	1.07	8961.9	8985.9	24.0	48	Sunny	24.4	0.0744	1.07	1538.7
16-Sep-06	2.8790	3.0456	1.37	1.37	8988.9	9012.9	24.0	85	Sunny	26.7	0.1666	1.37	1967.9
22-Sep-06	2.9060	3.0349	1.31	1.31	9015.9	9039.9	24.0	68	Sunny	26.8	0.1289	1.31	1889.3
28-Sep-06	2.8751	2.9909	1.34	1.34	9042.9	9066.9	24.0	60	Sunny	25.9	0.1158	1.34	1928.2
								Min	48				
								Max	85				
								Average	62				

24-hr TSP Monitoring Results

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
05-Sep-06	2.9090	2.9119	0.98	0.98	10506.1	10507.1	1.0	50	Rainy	28.9	0.0029	0.98	57.6
05-Sep-06	2.9056	2.9091	1.04	1.04	10507.1	10508.1	1.0	56	Rainy	28.9	0.0035	1.04	62.4
05-Sep-06	2.9213	2.9250	1.08	1.08	10508.1	10509.1	1.0	57	Rainy	28.9	0.0037	1.08	64.8
11-Sep-06	2.8994	2.9063	1.04	1.04	10533.1	10534.1	1.0	111	Sunny	24.4	0.0069	1.04	62.4
11-Sep-06	2.8936	2.9011	0.98	0.98	10534.1	10535.1	1.0	128	Sunny	24.4	0.0075	0.98	58.8
11-Sep-06	2.9241	2.9320	1.01	1.01	10535.1	10536.1	1.0	130	Sunny	24.4	0.0079	1.01	60.6
16-Sep-06	2.8796	2.8895	1.04	1.04	10560.1	10561.1	1.0	158	Sunny	26.7	0.0099	1.04	62.6
16-Sep-06	2.8921	2.8991	1.01	1.01	10561.1	10562.1	1.0	115	Sunny	26.7	0.0070	1.01	60.7
16-Sep-06	2.8690	2.8772	1.04	1.04	10562.1	10563.1	1.0	131	Sunny	26.7	0.0082	1.04	62.6
22-Sep-06	2.8892	2.8971	1.04	1.04	10587.1	10588.1	1.0	126	Sunny	26.8	0.0079	1.04	62.6
22-Sep-06	2.9012	2.9095	1.01	1.01	10588.1	10589.1	1.0	137	Sunny	26.8	0.0083	1.01	60.7
22-Sep-06	2.8954	2.9033	1.01	1.01	10589.1	10590.1	1.0	130	Sunny	26.8	0.0079	1.01	60.7
28-Sep-06	2.8736	2.8810	1.04	1.04	10614.1	10615.1	1.0	118	Sunny	25.9	0.0074	1.04	62.6
28-Sep-06	2.8986	2.9029	1.04	1.04	10615.1	10616.1	1.0	69	Sunny	25.9	0.0043	1.04	62.6
28-Sep-06	2.8886	2.8948	1.04	1.04	10616.1	10617.1	1.0	99	Sunny	25.9	0.0062	1.04	62.6
								Min	50				
								Max	130				
								Average	89				

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
05-Sep-06	2.9065	2.9110	0.99	0.99	8932.0	8933.0	1.0	76	Rainy	28.9	0.0045	0.99	59.4
05-Sep-06	2.9180	2.9227	0.99	0.99	8933.0	8934.0	1.0	79	Rainy	28.9	0.0047	0.99	59.4
05-Sep-06	2.8928	2.8984	0.99	0.99	8934.0	8935.0	1.0	94	Rainy	28.9	0.0056	0.99	59.4
11-Sep-06	2.8942	2.9037	1.04	1.04	8958.9	8959.9	1.0	152	Sunny	24.4	0.0095	1.04	62.4
11-Sep-06	2.9096	2.9153	1.04	1.04	8959.9	8960.9	1.0	91	Sunny	24.4	0.0057	1.04	62.4
11-Sep-06	2.8860	2.8894	1.04	1.04	8960.9	8961.9	1.0	54	Sunny	24.4	0.0034	1.04	62.4
16-Sep-06	2.8902	2.9002	1.34	1.34	8985.9	8986.9	1.0	124	Sunny	26.7	0.0100	1.34	80.3
16-Sep-06	2.9157	2.9243	1.37	1.37	8986.9	8987.9	1.0	105	Sunny	26.7	0.0086	1.37	82.0
16-Sep-06	2.9078	2.9174	1.34	1.34	8987.9	8988.9	1.0	119	Sunny	26.7	0.0096	1.34	80.3
22-Sep-06	2.8985	2.9085	1.37	1.37	9012.9	9013.9	1.0	122	Sunny	26.8	0.0100	1.37	82.0
22-Sep-06	2.8747	2.8868	1.37	1.37	9013.9	9014.9	1.0	148	Sunny	26.8	0.0121	1.37	82.0
22-Sep-06	2.8853	2.8967	1.37	1.37	9014.9	9015.9	1.0	139	Sunny	26.8	0.0114	1.37	82.0
28-Sep-06	2.8846	2.8932	1.34	1.34	9039.9	9040.9	1.0	107	Sunny	25.9	0.0086	1.34	80.3
28-Sep-06	2.8805	2.8851	1.34	1.34	9040.9	9041.9	1.0	57	Sunny	25.9	0.0046	1.34	80.3
28-Sep-06	2.8634	2.8692	1.34	1.34	9041.9	9042.9	1.0	72	Sunny	25.9	0.0058	1.34	80.3
								Min	54				
								Max	152				
								Average	91				

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

Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Relative Humidity (%)	Total Rainfall (mm)	Wind Direction
05-Sep-06	Rainy	28.9	6.0	79.5	3.2	W
11-Sep-06	Sunny	24.4	12.0	75.5	0	NE
16-Sep-06	Sunny	26.7	8.0	76.0	0	NE
22-Sep-06	Sunny	26.8	10.0	72.5	0	E
28-Sep-06	Sunny	25.9	12.0	71.0	0	E

24-hour TSP Monitoring Results

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
04-Oct-06	2.8632	2.9551	0.98	0.98	10644.1	10668.1	24.0	65	Cloudy	26.8	0.0919	0.98	1412.6
10-Oct-06	2.8907	3.0250	1.04	1.04	10671.1	10695.1	24.0	89	Sunny	25.8	0.1343	1.04	1503.4
16-Oct-06	2.8963	3.0399	1.01	1.01	10698.1	10722.1	24.0	99	Rainy	25.5	0.1436	1.01	1457.3
21-Oct-06	2.8698	2.9637	1.04	1.04	10725.1	10749.1	24.0	62	Sunny	25.7	0.0939	1.04	1503.4
27-Oct-06	2.8756	3.0376	1.07	1.07	10752.1	10776.1	24.0	105	Sunny	24.9	0.1620	1.07	1540.8
								Min	62				
								Max	105				
								Average	84				

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
04-Oct-06	2.8751	2.9909	1.34	1.34	9069.9	9093.9	24.0	60	Cloudy	26.8	0.1158	1.34	1928.2
10-Oct-06	2.8679	3.0243	1.42	1.42	9096.9	9120.9	24.0	76	Sunny	25.8	0.1564	1.42	2044.8
16-Oct-06	2.9005	3.0635	1.39	1.39	9123.9	9147.9	24.0	81	Rainy	25.5	0.1630	1.39	2005.9
21-Oct-06	2.8746	2.9928	1.50	1.50	9150.9	9174.9	24.0	55	Sunny	25.7	0.1182	1.50	2161.4
27-Oct-06	2.8734	3.0594	1.43	1.43	9177.9	9201.9	24.0	91	Sunny	24.9	0.1860	1.43	2052.0
								Min	55				
								Max	91				
								Average	73				

1-hour TSP Monitoring Results

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
04-Oct-06	2.8679	2.8778	1.08	1.08	10641.1	10642.1	1.0	153	Cloudy	26.8	0.0099	1.08	64.5
04-Oct-06	2.8512	2.8642	1.08	1.08	10642.1	10643.1	1.0	202	Cloudy	26.8	0.0130	1.08	64.5
04-Oct-06	2.8691	2.8797	1.04	1.04	10643.1	10644.1	1.0	169	Cloudy	26.8	0.0106	1.04	62.6
10-Oct-06	2.8874	2.8987	1.04	1.04	10668.1	10669.1	1.0	180	Sunny	25.8	0.0113	1.04	62.6
10-Oct-06	2.8955	2.9051	1.04	1.04	10669.1	10670.1	1.0	153	Sunny	25.8	0.0096	1.04	62.6
10-Oct-06	2.8821	2.8898	1.04	1.04	10670.1	10671.1	1.0	123	Sunny	25.8	0.0077	1.04	62.6
16-Oct-06	2.8893	2.8981	1.01	1.01	10695.1	10696.1	1.0	145	Rainy	25.5	0.0088	1.01	60.7
16-Oct-06	2.8837	2.8908	1.04	1.04	10696.1	10697.1	1.0	113	Rainy	25.5	0.0071	1.04	62.6
16-Oct-06	2.8993	2.9064	0.98	0.98	10697.1	10698.1	1.0	121	Rainy	25.5	0.0071	0.98	58.9
21-Oct-06	2.9018	2.9097	1.04	1.04	10722.1	10723.1	1.0	126	Sunny	25.7	0.0079	1.04	62.6
21-Oct-06	2.8740	2.8808	1.04	1.04	10723.1	10724.1	1.0	109	Sunny	25.7	0.0068	1.04	62.6
21-Oct-06	2.8782	2.8829	0.92	0.92	10724.1	10725.1	1.0	85	Sunny	25.7	0.0047	0.92	55.1
27-Oct-06	2.8608	2.8734	1.10	1.10	10749.1	10750.1	1.0	191	Sunny	24.9	0.0126	1.10	66.1
27-Oct-06	2.8472	2.8573	1.07	1.07	10750.1	10751.1	1.0	157	Sunny	24.9	0.0101	1.07	64.2
27-Oct-06	2.8596	2.8700	1.07	1.07	10751.1	10752.1	1.0	162	Sunny	24.9	0.0104	1.07	64.2
								Min	85				
								Max	202				
								Average	146				

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

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Ave. Air Temp. (°C)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final							
04-Oct-06	2.8677	2.8785	1.34	1.34	9066.9	9067.9	1.0	134	Cloudy	26.8	0.0108	1.34	80.3
04-Oct-06	2.8617	2.8711	1.34	1.34	9067.9	9068.9	1.0	117	Cloudy	26.8	0.0094	1.34	80.3
04-Oct-06	2.8728	2.8868	1.37	1.37	9068.9	9069.9	1.0	171	Cloudy	26.8	0.0140	1.37	82.0
10-Oct-06	2.8743	2.8859	1.04	1.04	8958.9	8959.9	1.0	186	Sunny	25.8	0.0116	1.04	62.4
10-Oct-06	2.8769	2.8870	1.04	1.04	8959.9	8960.9	1.0	162	Sunny	25.8	0.0101	1.04	62.4
10-Oct-06	2.8860	2.8894	1.04	1.04	8960.9	8961.9	1.0	54	Sunny	25.8	0.0034	1.04	62.4
16-Oct-06	2.8799	2.8878	1.34	1.34	9120.9	9121.9	1.0	98	Rainy	25.5	0.0079	1.34	80.3
16-Oct-06	2.8975	2.9031	1.37	1.37	9121.9	9122.9	1.0	68	Rainy	25.5	0.0056	1.37	82.0
16-Oct-06	2.8786	2.8861	1.37	1.37	9122.9	9123.9	1.0	92	Rainy	25.5	0.0075	1.37	82.0
21-Oct-06	2.8795	2.8882	1.39	1.39	9147.9	9148.9	1.0	104	Sunny	25.7	0.0087	1.39	83.6
21-Oct-06	2.8897	2.8956	1.39	1.39	9148.9	9149.9	1.0	71	Sunny	25.7	0.0059	1.39	83.6
21-Oct-06	2.8727	2.8798	1.45	1.45	9149.9	9150.9	1.0	82	Sunny	25.7	0.0071	1.45	86.8
27-Oct-06	2.8985	2.9127	1.40	1.40	9174.9	9175.9	1.0	169	Sunny	24.9	0.0142	1.40	83.9
27-Oct-06	2.8803	2.8924	1.40	1.40	9175.9	9176.9	1.0	144	Sunny	24.9	0.0121	1.40	83.9
27-Oct-06	2.8777	2.8916	1.43	1.43	9176.9	9177.9	1.0	163	Sunny	24.9	0.0139	1.43	85.5
								Min	54				
								Max	186				
								Average	121				

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

Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Relative Humidity (%)	Total Rainfall (mm)	Wind Direction
04-Oct-06	Cloudy	26.8	6.0	73.0	0	W
10-Oct-06	Sunny	25.8	6.3	76.0	0	E
16-Oct-06	Rainy	25.5	10.5	84.0	23.5	E
21-Oct-06	Sunny	25.7	9.0	78.0	0	E
27-Oct-06	Sunny	24.9	7.5	68.0	0	NE

Annex G

Water Quality Monitoring Results

Figure I1 - Water Quality Monitoring Results (Mid Ebb)

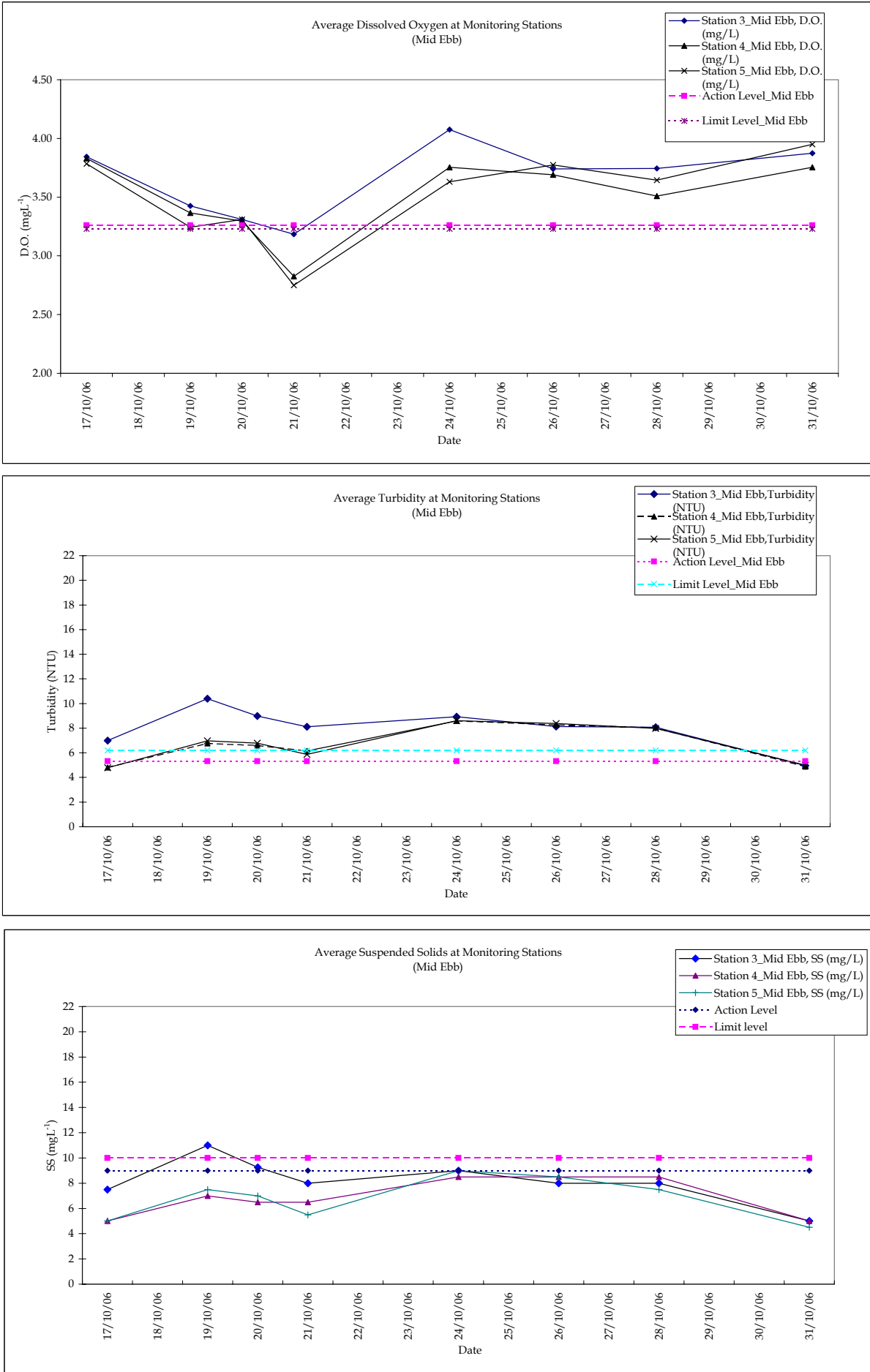
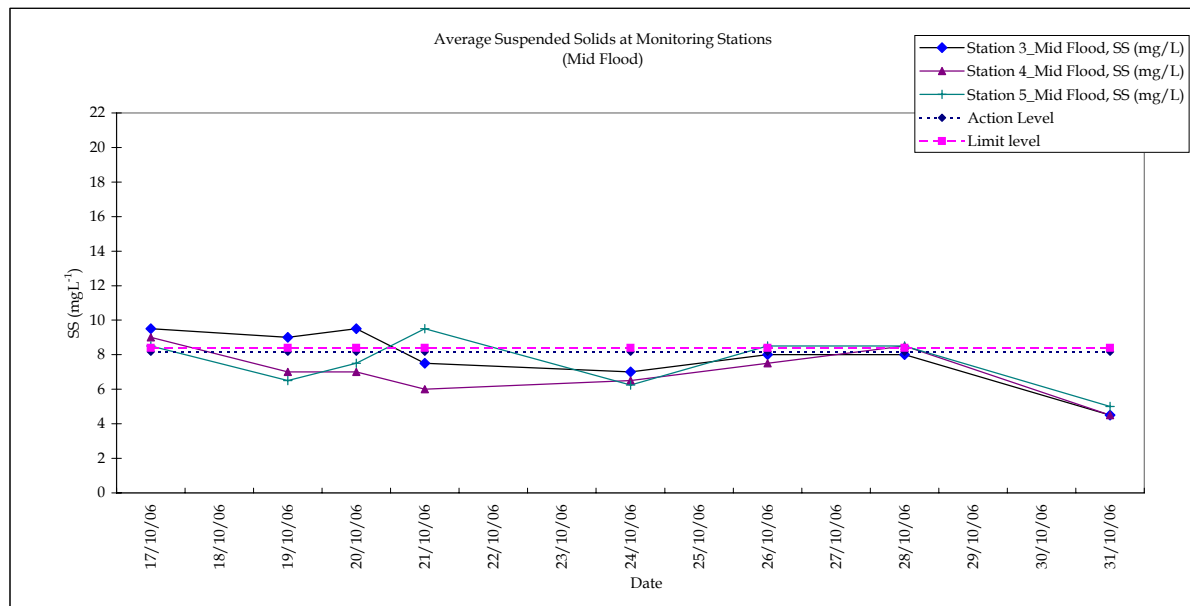
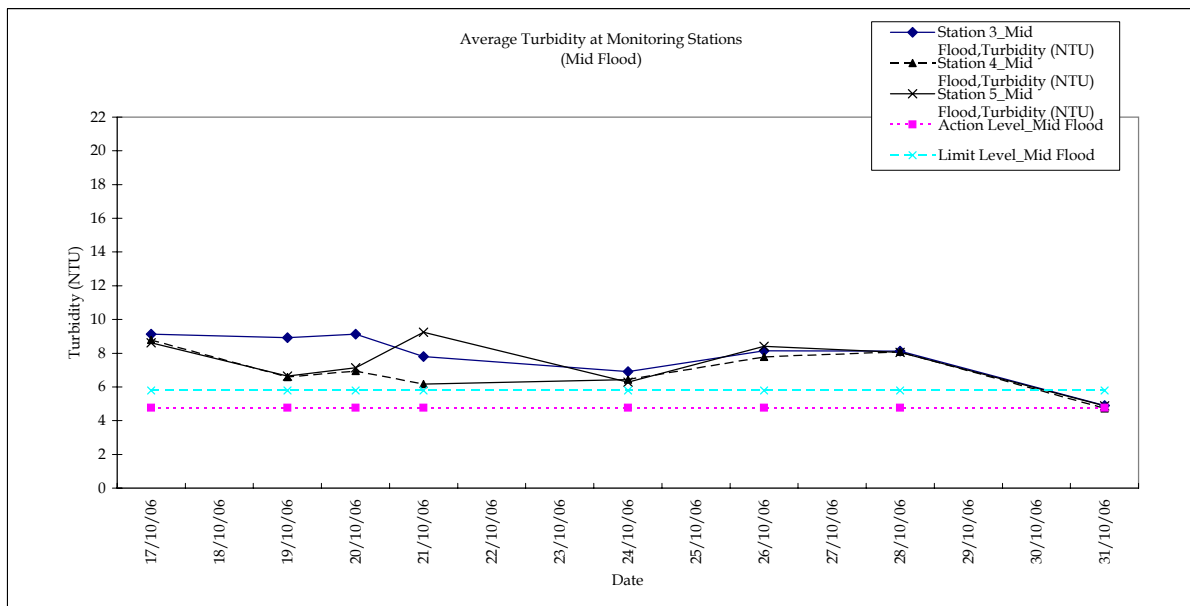
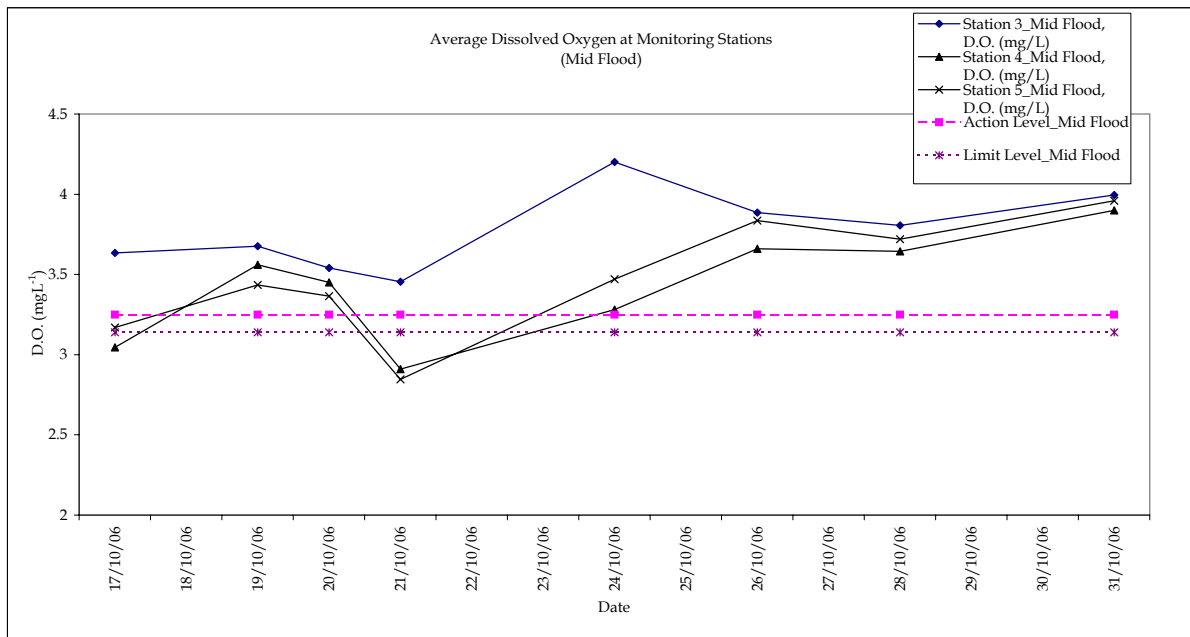


Figure I2 - Water Quality Monitoring Results (Mid Flood)



Water Quality Monitoring Results for Station 3

Date	17/10/06			17/10/06			19/10/06			19/10/06			20/10/06			20/10/06			21/10/06			21/10/06		
Time (hh:mm)	09:50 - 10:03			17:20 - 17:35			11:31 - 11:46			17:58 - 18:13			11:31 - 11:46			18:00 - 18:15			11:15 - 11:30			17:05 - 17:20		
Ambient Temperature	30			30			30			30			29			29			29			27		
Weather	Cloudy			Cloudy			Cloudy			Cloudy			Sunny			Sunny			Sunny			Cloudy		
Water Depth (m)	8.80			9.20			8.00			7.60			8.20			7.90			8.10			7.80		
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)	27.2	27.2	27.2	27.6	27.5	27.6	27.4	27.4	27.4	27.8	27.8	27.8	27.3	27.3	27.3	27.8	27.8	27.8	27.4	27.4	27.4	27.3	27.3	27.3
Salinity (ppt)	31.8	31.7	31.8	31.8	31.9	31.9	31.9	32.0	32.0	32.1	32.1	32.1	31.6	31.8	31.7	32.0	32.1	32.1	31.7	31.7	31.7	31.7	31.8	31.8
D.O. (mg/L)	3.83	3.86	3.8	3.62	3.65	3.6	3.42	3.43	3.4	3.69	3.66	3.7	3.30	3.32	3.3	3.52	3.56	3.5	3.19	3.18	3.2	3.45	3.46	3.5
D.O. Saturation (%)	57.4	57.9	57.7	54.7	55.1	54.9	51.4	51.4	51.4	55.3	54.8	55.1	48.6	48.7	48.7	52.0	52.7	52.4	49.1	49.2	49.2	52.0	52.1	52.1
Turbidity (NTU)	7.03	6.97	7.0	9.12	9.13	9.1	10.80	9.99	10.4	8.92	8.94	8.9	8.96	9.00	9.0	9.12	9.14	9.1	8.10	8.12	8.1	7.94	7.68	7.8
SS* (mg/L)	7.5	7.5	7.5	9.5	9.5	9.5	11.0	11.0	11.0	9.0	9.0	9.0	9.0	9.5	9.3	9.5	9.5	9.5	8.0	8.0	8.0	7.5	7.5	7.5
Remarks	Pre-bored H pile works			Pre-bored H pile works			No construction activities were observed			No construction activities were observed			General earth works			General earth works			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 times the MDL.

Within Action Level ?

Date	17/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	N	N
SS (mg/L)	Y	Y

17/10/06	
Y	Y
N	N
N	N

19/10/06	
Y	Y
N	N
N	N

19/10/06	
Y	Y
N	N
N	N

20/10/06	
Y	Y
N	N
Y	N

20/10/06	
Y	Y
N	N
N	N

21/10/06	
N	N
N	N
Y	Y

21/10/06	
Y	Y
N	N
Y	Y

Within Limit Level ?

Date	17/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	N	N
SS (mg/L)	Y	Y

17/10/06	
Y	Y
N	N
N	N

19/10/06	
Y	Y
N	N
N	N

19/10/06	
Y	Y
N	N
N	N

20/10/06	
Y	Y
N	N
Y	Y

20/10/06	
Y	Y
N	N
N	N

21/10/06	
N	N
N	N
Y	Y

21/10/06	
Y	Y
N	N
Y	Y

Water Quality Monitoring Results for Station 3

Date	24/10/06			24/10/06			26/10/06			26/10/06			28/10/06			28/10/06			31/10/06			31/10/06		
Time (hh:mm)	18:42 - 18:59			14:16 - 14:35			18:30 - 18:45			09:15 - 09:30			09:38 - 09:53			16:05 - 16:20			08:35 - 08:50			15:53 - 16:08		
Ambient Temperature	29			29			28			29			29			29			28			28		
Weather	Fine			Fine			Cloudy			Sunny			Sunny			Sunny			Fine			Fine		
Water Depth (m)	8.90			8.20			8.00			8.20			8.00			8.20			7.90			8.20		
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)	26.9	27.0	27.0	27.2	27.2	27.2	27.4	27.6	27.5	27.4	27.4	27.4	27.4	27.4	27.4	27.6	27.6	27.6	27.2	27.2	27.2	27.4	27.4	27.4
Salinity (ppt)	31.8	31.9	31.9	31.7	31.8	31.8	31.8	32.0	31.9	32.0	31.9	32.0	31.6	31.7	31.7	31.7	31.6	31.7	31.0	31.2	31.1	32.0	31.8	31.9
D.O. (mg/L)	3.93	4.22	4.1	4.22	4.18	4.2	3.67	3.81	3.7	3.87	3.90	3.9	3.69	3.80	3.7	3.87	3.74	3.8	3.82	3.93	3.9	3.97	4.02	4.0
D.O. Saturation (%)	60.0	58.3	59.2	63.4	61.9	62.7	53.6	55.3	54.5	56.5	56.9	56.7	55.7	57.4	56.6	58.1	56.1	57.1	57.6	59.3	58.5	59.9	60.7	60.3
Turbidity (NTU)	8.90	8.96	8.9	6.87	6.94	6.9	8.17	8.09	8.1	8.05	8.24	8.1	8.10	8.06	8.1	8.13	8.11	8.1	4.97	4.94	5.0	4.86	4.93	4.9
SS* (mg/L)	9.0	9.0	9.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	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 eath work			General eath work		

Within Action Level ?

Date	24/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	N	N
SS (mg/L)	Y	Y

24/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
Y	Y

31/10/06	
Y	Y
Y	Y
Y	Y

31/10/06	
Y	Y
N	N
Y	Y

Within Limit Level ?

Date	24/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	N	N
SS (mg/L)	Y	Y

24/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
Y	Y

31/10/06	
Y	Y
Y	Y
Y	Y

31/10/06	
Y	Y
Y	Y
Y	Y

Water Quality Monitoring Results for Station 4

Date	17/10/06			17/10/06			19/10/06			19/10/06			20/10/06			20/10/06			21/10/06			21/10/06		
Time (hh:mm)	09:38 - 09:50			17:00 - 17:15			11:06 - 11:21			17:33 - 17:48			11:06 - 11:21			17:35 - 17:50			11:30 - 11:45			17:20 - 17:35		
Ambient Temperature	30			30			30			30			29			29			29			27		
Weather	Cloudy			Cloudy			Cloudy			Cloudy			Sunny			Sunny			Sunny			Cloudy		
Water Depth (m)	4.40			4.80			4.10			4.20			4.10			4.20			4.00			4.30		
Monitoring Depth	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		
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)	27.2	27.2	27.2	27.4	27.4	27.4	27.2	27.2	27.2	27.6	27.6	27.6	27.3	27.3	27.3	27.0	27.2	27.1	27.4	27.4	27.4	27.4	27.3	27.4
Salinity (ppt)	31.8	31.8	31.8	31.7	31.7	31.7	32.0	32.1	32.1	32.0	32.0	32.0	31.6	31.7	31.7	31.6	31.8	31.7	31.6	31.7	31.7	31.7	31.7	31.7
D.O. (mg/L)	3.85	3.81	3.8	3.06	3.03	3.0	3.35	3.38	3.4	3.58	3.54	3.6	3.29	3.30	3.3	3.47	3.43	3.5	2.82	2.83	2.8	2.87	2.95	2.9
D.O. Saturation (%)	57.5	57.0	57.3	46.2	45.8	46.0	49.1	49.5	49.3	53.3	52.7	53.0	48.8	48.9	48.9	51.1	50.4	50.8	43.6	43.8	43.7	43.3	44.8	44.1
Turbidity (NTU)	4.55	5.06	4.8	8.79	8.80	8.8	6.78	6.76	6.8	6.59	6.60	6.6	6.58	6.59	6.6	6.93	6.95	6.9	6.10	6.20	6.2	6.31	6.01	6.2
SS* (mg/L)	5.0	5.0	5.0	9.0	9.0	9.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	7.0	7.0	7.0	6.5	6.5	6.5	6.0	6.0	6.0
Remarks	Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling 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	17/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	Y	Y
SS (mg/L)	Y	Y

17/10/06	
N	N
N	N
N	N

19/10/06	
Y	Y
N	N
Y	Y

19/10/06	
Y	Y
N	N
Y	Y

20/10/06	
Y	Y
N	N
Y	Y

20/10/06	
Y	Y
N	N
Y	Y

21/10/06	
N	N
N	N
Y	Y

21/10/06	
N	N
N	N
Y	Y

Within Limit Level ?

Date	17/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	Y	Y
SS (mg/L)	Y	Y

17/10/06	
N	N
N	N
N	N

19/10/06	
Y	Y
N	N
Y	Y

19/10/06	
Y	Y
N	N
Y	Y

20/10/06	
Y	Y
N	N
Y	Y

20/10/06	
Y	Y
N	N
Y	Y

21/10/06	
N	N
Y	N
Y	Y

21/10/06	
N	N
N	N
Y	Y

Water Quality Monitoring Results for Station 4

Date	24/10/06			24/10/06			26/10/06			26/10/06			28/10/06			28/10/06			31/10/06			31/10/06		
Time (hh:mm)	18:25 - 18:38			13:53 - 14:10			18:12 - 18:28			09:35 - 09:50			09:17 - 09:35			15:47 - 16:02			08:17 - 08:32			15:36 - 15:50		
Ambient Temperature	29			29			28			29			29			29			28			28		
Weather	Fine			Fine			Cloudy			Sunny			Sunny			Sunny			Fine			Fine		
Water Depth (m)	4.80			3.00			4.00			4.20			4.00			4.10			4.30			4.70		
Monitoring Depth	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		
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)	27.4	27.4	27.4	27.4	27.4	27.4	27.6	27.6	27.6	27.2	27.4	27.3	27.4	27.4	27.4	27.6	27.6	27.6	27.2	27.2	27.2	27.4	27.4	27.4
Salinity (ppt)	31.8	31.6	31.7	31.9	31.8	31.9	31.6	31.7	31.7	31.7	31.8	31.8	31.6	31.7	31.7	31.6	31.7	31.7	31.0	29.8	30.4	31.1	31.0	31.1
D.O. (mg/L)	3.74	3.77	3.8	3.30	3.26	3.3	3.68	3.70	3.7	3.72	3.60	3.7	3.54	3.48	3.5	3.70	3.59	3.6	3.90	3.61	3.8	3.87	3.93	3.9
D.O. Saturation (%)	57.7	58.9	58.3	49.8	49.1	49.5	53.7	54.0	53.9	54.3	52.2	53.3	53.5	52.5	53.0	55.9	54.2	55.1	58.3	55.3	56.8	58.4	58.9	58.7
Turbidity (NTU)	8.57	8.60	8.6	6.40	6.47	6.4	8.16	8.37	8.3	7.77	7.80	7.8	8.03	8.05	8.0	8.07	8.10	8.1	4.87	4.90	4.9	4.72	4.74	4.7
SS* (mg/L)	8.5	8.5	8.5	6.5	6.5	6.5	8.5	8.5	8.5	7.5	7.5	7.5	8.5	8.5	8.5	8.5	8.5	8.5	5.0	5.0	5.0	4.5	4.5	4.5
Remarks	Lifting activities were observed			Piling work in progress			Piling work in progress			Lifting activities were observed, piling work in progress			Lifting activities was observed			Lifting activities were observed			Lifting activities was observed			Lifting activities was observed		

Within Action Level ?

Date	24/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	N	N
SS (mg/L)	Y	Y

24/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
N	N

31/10/06	
Y	Y
Y	Y
Y	Y

31/10/06	
Y	Y
Y	Y
Y	Y

Within Limit Level ?

Date	24/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	N	N
SS (mg/L)	Y	Y

24/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
N	N

31/10/06	
Y	Y
Y	Y
Y	Y

31/10/06	
Y	Y
Y	Y
Y	Y

Water Quality Monitoring Results for Station 5

Date	17/10/06			17/10/06			19/10/06			19/10/06			20/10/06			20/10/06			21/10/06			21/10/06		
Time (hh:mm)	09:18 - 09:33			16:40 - 16:55			10:46 - 11:01			17:13 - 17:28			10:46 - 11:01			17:15 - 17:30			11:45 - 12:00			17:35 - 17:50		
Ambient Temperature	30			30			30			30			29			29			29			27		
Weather	Cloudy			Cloudy			Cloudy			Cloudy			Sunny			Sunny			Sunny			Cloudy		
Water Depth (m)	4.20			4.60			4.00			4.00			4.20			4.00			4.10			4.30		
Monitoring Depth	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		
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)	27.2	27.2	27.2	27.6	27.6	27.6	27.2	27.2	27.2	27.6	27.6	27.6	27.3	27.3	27.3	27.0	27.2	27.1	27.4	27.4	27.4	27.4	27.4	27.4
Salinity (ppt)	31.6	31.7	31.7	31.6	31.7	31.7	32.0	32.1	32.1	32.1	32.1	32.1	31.8	31.9	31.9	31.9	32.1	32.0	31.7	31.8	31.8	31.7	31.6	31.7
D.O. (mg/L)	3.77	3.80	3.8	3.15	3.19	3.2	3.24	3.25	3.2	3.42	3.45	3.4	3.30	3.32	3.3	3.38	3.35	3.4	2.76	2.74	2.8	2.82	2.87	2.8
D.O. Saturation (%)	56.5	57.2	56.9	47.5	48.0	47.8	48.0	48.2	48.1	50.9	51.4	51.2	48.8	48.9	48.9	49.6	49.3	49.5	39.8	40.1	40.0	43.0	43.4	43.2
Turbidity (NTU)	4.80	4.79	4.8	8.62	8.63	8.6	7.00	6.95	7.0	6.63	6.65	6.6	6.58	7.00	6.8	7.13	7.15	7.1	5.87	5.86	5.9	9.33	9.15	9.2
SS* (mg/L)	5.0	5.0	5.0	8.5	8.5	8.5	7.5	7.5	7.5	6.5	6.5	6.5	7.0	7.0	7.0	7.5	7.5	7.5	5.5	5.5	5.5	9.5	9.5	9.5
Remarks	Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling works			Mini-piling 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	17/10/06			17/10/06			19/10/06			19/10/06			20/10/06			20/10/06			21/10/06			21/10/06		
D.O. (mg/L)	Y	Y	Y	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Turbidity (NTU)	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SS (mg/L)	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N

Within Limit Level ?

Date	17/10/06			17/10/06			19/10/06			19/10/06			20/10/06			20/10/06			21/10/06			21/10/06		
D.O. (mg/L)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Turbidity (NTU)	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	N	N	N
SS (mg/L)	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N

Water Quality Monitoring Results for Station 5

Date	24/10/06			24/10/06			26/10/06			26/10/06			28/10/06			28/10/06			31/10/06			31/10/06		
Time (hh:mm)	18:00 - 18:22			13:30 - 13:49			17:45 - 18:00			09:55 - 10:10			09:00 - 09:15			15:30 - 15:45			08:00 - 08:15			15:19 - 15:34		
Ambient Temperature	29			29			28			29			29			29			28			28		
Weather	Fine			Fine			Cloudy			Sunny			Sunny			Sunny			Fine			Fine		
Water Depth (m)	4.60			4.30			4.20			4.40			3.90			4.20			4.20			4.40		
Monitoring Depth	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		
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)	27.6	27.6	27.6	27.4	27.4	27.4	27.6	27.6	27.6	27.4	27.4	27.4	27.4	27.3	27.4	27.6	27.5	27.6	27.2	27.2	27.2	27.4	27.3	27.4
Salinity (ppt)	31.7	31.8	31.8	31.7	31.6	31.7	32.0	32.1	32.1	31.8	31.9	31.9	31.7	31.8	31.8	31.6	31.7	31.7	29.6	29.7	29.7	31.0	31.2	31.1
D.O. (mg/L)	3.75	3.51	3.6	3.48	3.46	3.5	3.76	3.79	3.8	3.88	3.79	3.8	3.59	3.70	3.6	3.68	3.76	3.7	3.91	3.99	4.0	4.00	3.92	4.0
D.O. Saturation (%)	56.3	53.7	55.0	52.7	52.6	52.7	54.5	55.0	54.8	56.6	55.0	55.8	54.2	55.9	55.1	55.6	56.8	56.2	58.4	60.2	59.3	60.1	59.1	59.6
Turbidity (NTU)	8.65	8.58	8.6	6.22	6.35	6.3	8.30	8.45	8.4	8.42	8.40	8.4	7.96	8.00	8.0	8.03	8.05	8.0	4.92	5.09	5.0	4.87	4.89	4.9
SS* (mg/L)	9.0	9.0	9.0	6.5	6.0	6.3	8.5	8.5	8.5	8.5	8.5	8.5	7.5	7.5	7.5	8.5	8.5	8.5	4.5	4.5	4.5	5.0	5.0	5.0
Remarks	General earth work			General earth 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		

Within Action Level ?

Date	24/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	N	N
SS (mg/L)	Y	Y

24/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
N	N

28/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
N	N

31/10/06	
Y	Y
Y	Y
Y	Y

31/10/06	
Y	Y
N	N
Y	Y

Within Limit Level ?

Date	24/10/06	
D.O. (mg/L)	Y	Y
Turbidity (NTU)	N	N
SS (mg/L)	Y	Y

24/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
Y	Y

26/10/06	
Y	Y
N	N
N	N

28/10/06	
Y	Y
N	N
Y	Y

28/10/06	
Y	Y
N	N
N	N

31/10/06	
Y	Y
Y	Y
Y	Y

31/10/06	
Y	Y
Y	Y
Y	Y

Annex H

Waste Flow Table

HKCEC – Atrium Link Extension Project

Name of Project Proponent: HKTDC

Project Commencement Date: 1 Aug 2006

Construction Completion Date: March 2009

Monthly Summary Waste Flow Table for Year 2006

Year	Actual Quantities of inert C&D Materials (in 10 ³ Kg) ⁽¹⁾					Actual Quantities of C&D Wastes (in 10 ³ Kg) ⁽⁴⁾									
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Steel Materials				Paper/cardboard packaging		Chemical Waste		General refuse	Other waste
						Demolition of existing Atrium Link		Demolition of existing Atrium Link							
	(a)	(b)	(c)	(d)	(a)-(b)-(c)-(d)	Disposal	Recycle	Disposal	Recycle	Recycle	Disposal	Recycle	Disposal	Disposal	Disposal
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
August	264	0	1	0	263	0	0	0	0	0	1	0	0	50	81
September	1509 ⁽²⁾	0	2	0	1507	0	0	0	0	0	1	0	0	60	215
October	1380	0	2 ⁽³⁾	0	1378	0	30 ⁽⁵⁾	0	0	0	1	0	0	55	532 ⁽⁶⁾
November	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
December	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	3153	0	5	0	3148	0	30	0	0	0	3	-	0	165	828

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

⁽²⁾ Inert C&D material mainly generated from construction of foundation.

⁽³⁾ Reused for building bunds and making sand bags.

⁽⁴⁾ 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.

⁽⁵⁾ Waste from demolition of steel structure from HKCEC (Phase 2).

⁽⁶⁾ Wastes including 532 tonnes of waste due to additional and alternation (A&A) works of HKCEC including demolition of E&M equipment and finishing materials (eg tiles).

Annex I

Status of Log Book

Table I1 *Non-compliance recorded during site audit on 23 August 2006*

Date of Site Audit	Non-compliance Item Observed	Follow-up Action	Action implemented by the Contractor
23 August 2006	<p>Non-compliance with the recommendation in the approved EIA Report with respect to ProPECC Practice Note 1/94. Details as follows:</p> <ul style="list-style-type: none"> Capacity of drip tray for lubricating oils (~15 x 20 Litre drums) was not sufficient. Oil stains were observed around the drip tray indicating occurrence of potential spillage and inadequate housekeeping. 	<p>The Contractor was immediately requested on site to implement the following measures:</p> <ul style="list-style-type: none"> The Contractor was reminded that oils and chemicals should be stored within containments which shall have a capacity not less than 110% of the largest tank capacity and regularly drained of rain water. 	<p>As of 1 September 2006, the Contractor provided additional drip tray and sands to store chemicals to avoid spillage. No oil stain was observed around the drip tray.</p> <p>The condition was rectified on 30 August 2006.</p>