



CONTRACT NO: HK/2011/07

WANCHAI DEVELOPMENT PHASE II AND CENTRAL  
WANCHAI BYPASS  
SAMPLING, FIELD MEASUREMENT AND TESTING WORK  
(STAGE 2)

ENVIRONMENTAL PERMIT NO. EP-364/2009/A,  
FURTHER ENVIRONMENTAL PERMIT NOS. FEP-01/364/2009,  
FEP-02/364/2009, FEP-03/364/2009, FEP-05/364/2009/A, FEP-  
06/364/2009/A, FEP-07/364/2009/A AND FEP-08/364/2009/A

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

- JUNE 2012 -

CLIENTS:

Civil Engineering and Development  
Department

and

Highways Department

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CERTIFIED BY:

Raymond Dai  
Environmental Team Leader

DATE:

11 July 2012

Ref.: AACWBIECEM00\_0\_2943L.12

11 July 2012

By Post and Fax (2691 2649)

AECOM Asia Company Limited  
8/F, Tower 2  
Grand Central Plaza  
138 Shatin Rural Committee Road,  
Shatin, New Territories,  
Hong Kong

Attention: Mr. Kelvin CHENG

Dear Sir,

**Re: Wan Chai Development Phase II and Central-Wan Chai Bypass  
Monthly Environmental Monitoring and Audit Report (June 2012)  
for EP-364/2009/A, FEP-01/364/2009, FEP-02/364/2009, FEP-03/364/2009,  
FEP-05/364/2009/A, FEP-06/364/2009/A, FEP-07/364/2009/A and FEP-  
08/364/2009/A**

Reference is made to the Environmental Team's submission of the captioned Monthly Environmental Monitoring and Audit (EM&A) Report for June 2012 dated 11 July 2012.

Please be informed that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 3.4 in the captioned Environmental Permits.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



David Yeung  
Independent Environmental Checker

c.c.	HyD	Mr. Jones Lai	by fax: 2714 5289
	CEDD	Mr. Patrick Keung	by fax: 2577 5040
	AECOM	Mr. Francis Leong / Mr. Stephen Lai	by fax: 2691 2649
	Lam	Mr. Raymond Dai	by fax: 2882 3331

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**EXECUTIVE SUMMARY**

- i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – June 2012 specific for Environmental Permit no. EP-364/2009/A, Further Environmental Permit nos. FEP-01/364/2009, FEP-02-364/2009, FEP-03-364/2009, FEP-05/364/2009/A, FEP-06/364/2009/A, FEP-07/364/2009/A and FEP-08/364/2009/A. The EM &A report is prepared by the Environmental Team (ET) employed under Contract No. HK/2011/07 – Wan Chai Development Phase II and Central Wanchai Bypass – Sampling, Field Measurement and Testing Works (Stage 2). This report presents the environmental monitoring findings and information recorded during the period May to June 2012. The cut-off date of reporting is at 27<sup>th</sup> of each reporting month.
- ii. Contract no. HK/2010/06, Wan Chai Development Phase II - Central - Wan Chai Bypass over MTR Tsuen Wan Line, has submitted an application for Further Environmental Permit under EP-364/2009/A on 21 May 2012 and received Further Environmental Permit - FEP-08/364/2009/A on 15 June 2012.
- iii. Reviewing the works schedule of HY/2009/19, IECL Bridge Demolition from City Garden to Provident Garden will commence in July 2012. “Proposal on The Real Time Noise Monitoring System at RTN3” was submitted and verified by IEC on 21 June 2012.
- iv. In the reporting month, the principal work activities of individual contracts are included as follows:

Contract no. HY/2009/17 - Central - Wan Chai Bypass (CWB) at FEHD Whitfield Depot - Advanced piling works under FEP-03/364/2009

- ELS works for basement construction for pile cap construction.

Contract no. HY/2009/18 - Central - Wan Chai Bypass (CWB) - Central Interchange under FEP-05/364/2009/A

- Trial Pit
- Instrumentation and monitoring works
- Drainage works
- Site investigation and pre-drilling works
- D-wall construction
- Sheet piling
- Grout curtain
- Tree Transplantation
- Earthwork
- Preparation works in existing tunnel
- Stitch coring
- Approach ramp structure works
- Top down slab
- Road works
- Tunnel works

- Excavation and Lateral Support

Contract no. HK/2009/01 - Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre - Tunnel Works under FEP-02/364/2009

- Diaphragm wall construction works for CWB (Stage2)
- Pre-drilling works for CWB (Stage2)
- Pre-bored H piling works for SCL
- Excavation for CWB top slab (Bay1 – Bay 4)
- Waterproofing works for CWB top slab (Bay 1 – Bay 4)
- Excavation and installation of shoring system for construction of exhaust duct structure
- Excavation for SCL top slab construction works
- Construction of SCL top slab (Bay 3)
- Trimming of SCL Diaphragm wall head

Contract no. HK/2009/02 - Wan Chai Development Phase II - Central - Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- Deep excavation works. The excavation level has reached -9.0mPD to -9.8mPD on the eastern and western portion of the site respectively.
- Tunnel Pre-drill work of bored pile at tunnel portion 3 & 4 area.
- Trench excavation for guide wall of Diaphragm wall at tunnel portion 3 & 4 area.
- Guide wall construction for Diaphragm wall at tunnel portion 3 & 4 area.
- Bored pile PC34 and PC35.
- Pre-drill for bored pile and diaphragm wall.
- Handover of Government Heli pad at Tunnel Portion 3&4 and initial Survey at ex-helipad.
- Half bay of bulkhead wall construction

Contract no. HY/2009/15 - Central-Wanchai Bypass – Tunnel (Cau seway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- Diaphragm wall construction works at TS4
- ELS works at TPCWAE
- Cut and cover tunnel construction at TS1
- Night time protection works at CHT
- Cut off wall preparation works at Hung Hing Road and POC

Contract no. HY/2009/19 - Central - Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- Road works at Watson Road
- Fabrication of bored piling platform
- Bored piling (Land)
- Ground contamination assessment
- Pre-drilling works for bored pile and Diaphragm wall
- D-wall Construction (North & South Section)

- Guide wall construction for D-wall / Barette at North side
- Construction works for Box Culvert T
- Construction of socket-H pile for Marine works
- Construction of pre-bored H-pile works for Culvert U
- Installation of sheet pile at D9 location
- Construction of pile cap

Contract no. HK/2010/06 - Wan Chai Development Phase II - Central - Wan Chai Bypass over MTR Tsuen Wan Line under FEP-08/364/2009/A

- Construction of Pre-cast Unit in China

Noise Monitoring

- v. Noise monitoring during daytime was conducted at M1a - Harbour Road Sports Center; M2b - Noon-day gun area; M3a - Tung Lo Wan Fire Station; M4b - Victoria Center; M5b - City Garden, M6 - HK Baptist Church Henrietta Secondary School, M7e and M7w – International Finance Centre Eastern and Western End of Podium on a weekly basis.
- vi. 2 limit level exceedances were recorded at M6 – HK Baptist Church Henrietta Secondary School on 7 and 12 June 2012. After checking contractors' work schedules and investigation found that traffic was the major noise sources contributed in the noise monitoring. The exceedances were considered as non-project related.
- vii. FEHD Hong Kong Transport Section Whitefield Depot commenced external wall renovation from 1 June 2012.
- viii. 24-hour real time noise monitoring was conducted at RTN1 - FEHD Hong Kong Transport Section Whitefield Depot for the piling works in FEHD Whitefield Depot and RTN2 – Tunnel (North Point Section) and Island Eastern Corridor Link. No action and limit level exceedance was recorded in the reporting period.

Air Monitoring

- ix. Due to extension of site boundary by contractor of HY/2009/19, location of air monitoring station CMA1b – Oil Street Community Liaison Centre has been finely adjusted on 21 April 2012.
- x. Due to lack of electricity supply, the 24-hr TSP monitoring at the following stations were rescheduled  
CMA1b: from 6 June 2012 to 7 June 2012  
CMA5a: from 6 June 2012 to 7 June 2012  
CMA2a: from 18 June 2012 to 19 June 2012
- xi. 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted at CMA1b - Oil Street Community Liaison Centre; CMA2a - Causeway Bay Community Center; CMA3a - CWB PRE Site Office Area; CMA4a – Society for the Prevention of Cruelty to Animals; CMA5a - Children Garden opposite to Pedestrian Plaza; M1e and M1w – International Finance Centre eastern and western wing on every six days basis. No action and limit level exceedance were recorded in the reporting period.

Complaints, Notifications of Summons and Successful Prosecutions

- xii. There was no environmental complaint received in this reporting month.

#### Site Inspections and Audit

- xiii. The Environmental Team (ET) conducted weekly site inspections for Contract no. HY/2009/15, HY/2009/17, HY/2009/18, HY/2009/19, HK/2009/01, HK/2009/02 and HK/2010/06 in this reporting period. The Contractors rectified major observations and recommendations made during the audit sessions. No non-conformance was identified during the site inspections.

#### Future Key Issues

- xiv. In the coming reporting month, the principal work activities of individual contracts are anticipated as follows:

#### Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- ELS works for basement construction for pile cap construction.

#### Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

- Trial pit
- Instrumentation and monitoring works
- Drainage works
- Site investigation and pre-drilling works
- D-wall construction
- Sheet piling
- Tree Transplantation
- Earthworks
- Preparation works in existing tunnel
- Approach ramp (trough) structure works
- Top down slab
- Road works
- Tunnel works
- Excavation and Lateral Support
- Pipe-pile works
- Cooling main bridge construction
- Bridge A construction

#### Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- Diaphragm wall construction for CWB tunneling works at Stage2
- Waterproofing works for CWB top slab
- Excavation and installation of shoring system for construction of exhaust duct
- Construction of exhaust duct structure (Bay1)

- Construction of exhaust duct structure (Bay2)
- Load test on SCL pre-bored H-piles works
- Excavation for construction of SCL top slab
- Construction of SCL top slab (Bay 3)
- Construction of SCL top slab (Bay1 and Bay 2)

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- Bored piling, breaking concrete slab and excavation of trial pit at tunnel portion 3 & 4.
- Deep excavation and strut installation works below -9.8mPD for western tunnel portion and below +9.0mPD for eastern tunnel portion.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- Diaphragm wall construction works at TS4
- ELS works at TPCWAE
- Cut and cover tunnel construction at TPCWAE
- Mined tunnel preparation works at TPCWAE and Hung Hing Road

Contract no. HY/2009/19 – Central – Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- Road works at Watson Road
- Laying of 1500 $\phi$  drainage pipe
- Fabrication of bored piling platform
- Bored piling (Land)
- Ground contamination assessment
- Pre-drilling works for bored pile and Diaphragm wall
- D-wall Construction (North & South Section)
- Guide wall construction for D-wall / Barette at North side
- Construction works for Box Culvert T
- Construction of socket-H pile for Marine works
- Construction of pre-bored H-pile works for Culvert U
- Construction of 1500 $\phi$  drainage along D-wall
- Construction of pile cap

Contract no. HK/2010/06 – Wan Chai Development Phase II – Central – Wan Chai Bypass over MTR Tsuen Wan Line under FEP-08/364/2009/A

- Construction of Pre-cast Unit in China

## 1 INTRODUCTION

### 1.1 Scope of the Report

1.1.1. Lam Geotechnics Limited (LGL) has been appointed to work as the Environmental Team (ET) under Environmental Permit no. EP-364/2009A and Further Environmental permit nos. FEP-01/364/2009, FEP-02/364/2009, FEP-03/364/2009, FEP-05/364/2009/A, FEP-06/364/2009/A, FEP-07/364/2009/A and FEP-08/364/2009/A to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Wan Chai Development phase II and Central-Wan Chai Bypass (Register No. : AEIA R-125/2008) and in the EM &A Manual of the approved EIA Report for Central-Wan Chai Bypass and Island Eastern Corridor Link (Register No. AEIAR-014/2001).

1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 10.3 of EM&A Manual and “*Environmental Monitoring and Audit Requirements*” under Particular Specification Section 27.

1.1.3. This report documents the finding of EM&A works for Environmental Permit (EP) no. EP-364/2009/A, Further Environmental Permit (FEP) nos. FEP-01-364/2009, FEP-02/364/2009, FEP-03/364/2009, FEP-05/364/2009/A, FEP-06/364/2009/A, FEP-07/364/2009/A and FEP-08/364/2009/A during the period May to June 2012. The cut-off date of reporting is at 27<sup>th</sup> of each reporting month.

### 1.2 Structure of the Report

**Section 1**      ***Introduction*** – details the scope and structure of the report.

**Section 2**      ***Project Background*** – summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.

**Section 3**      ***Status of Regulatory Compliance*** – summarizes the status of valid Environmental Permits / Licenses during the reporting period.

**Section 4**      ***Monitoring Requirements*** – summarizes all monitoring parameters, monitoring methodology and equipment, monitoring locations, monitoring frequency, criteria and respective event and action plan and monitoring programmes.

**Section 5**      ***Monitoring Results*** – summarizes the monitoring results obtained in the reporting period.

**Section 6**      ***Compliance Audit*** – summarizes the auditing of monitoring results, all exceedances environmental parameters.





- Section 7**      ***Cumulative Construction Impact due to the Concurrent Projects*** – summarizes the relevant cumulative construction impact due to the concurrent activities of the concurrent Projects.
- Section 8**      ***Site Inspection*** – summarizes the findings of weekly site inspections undertaken within the reporting period, with a review of any relevant follow-up actions within the reporting period.
- Section 9**      ***Complaints, Notification of summons and Prosecution*** – summarizes the cumulative statistics on complaints, notification of summons and prosecution
- Section 10**     ***Conclusion***

## 2 PROJECT BACKGROUND

### 2.1 Background

2.1.1. “Wan Chai Development phase II and Central-Wan Chai Bypass” and “Central-Wan Chai Bypass and Island Eastern Corridor Link” (hereafter called “the Project”) are Designated Project (DP) under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). The Environmental Impact Assessment (EIA) Reports for Central-Wan Chai Bypass and Island Eastern Corridor Link (Register No. AEIAR-041/2001) and Wan Chai Development phase II and Central-Wan Chai Bypass (Register No.: AEIAR-125/2008) have been approved on 31 August 2001 and 11 December 2008 respectively.

2.1.2. The key purpose of Wan Chai Development Phase II (WDII) is to provide land at Wan Chai North and North Point for construction of the Central-Wan Chai Bypass and Island Eastern Corridor Link (CWB). Land formed under the project will be developed as a world-class waterfront promenade joining that at the new Central waterfront for public enjoyment.

2.1.3. There is a compelling and present need for the CWB to provide relief to the very congested east-west Connaught Road Central/Harcourt Road / Gloucester Road Corridor (the Corridor) which is currently operating beyond its capacity. The CWB will provide relief to the existing congestion along the Corridor and cater for the anticipated growth of traffic on Hong Kong Island. Without the CWB and its access roads, there will not be sufficient capacity to serve the heavy traffic demands at both strategic and local levels.

### 2.2 Scope of the Project and Site Description

2.2.1. Design and Construction of Central – Wan Chai Bypass and Island Eastern Corridor Link under the Project involves the construction and operation of a trunk road and its road tunnel more than 800m in length between portals that is shown at Figure 2.1.

2.2.2. The study area encompasses existing developments from Central to North Point. The scope of the Central-Wanchai Bypass (CWB) and Island Eastern Corridor Link (IECL) includes:

- A dual three-lane trunk road, approximately 4.5 km in length, and tunnel approximately 3.7 km in length defined from the connection with the existing Rumsey Street Flyover in Central, through to a connection with the existing Island Eastern Corridor to the east of the Causeway Bay Typhoon Shelter (CBTS);
- The Central Interchange near the Rumsey Street Flyover to provide road connections to the Central area;
- Tunnel control buildings and ventilation buildings;
- Slip roads to connect the CWB to the local road system in the Wan Chai North and Causeway Bay area;
- Associated road lighting, road signing, traffic control and surveillance system; and
- Other associated works.

2.2.3. The project also contains various Schedule 2 DPs that, under the EIA O, require Environmental Permits (EPs) to be granted by the DEP before they may be either constructed or operated. **Table 2.1** summarises the five individual DPs under this Project. **Figure 2.1** shows the locations of these Schedule 2 DPs.

**Table 2.1 Schedule 2 Designated Projects under this Project**

Item	Designated Project	EIAO Reference	Reason for inclusion
DP1	Central-Wanchai Bypass (CWB) including its road tunnel and slip roads	Schedule 2, Part I, A.1 and A.7	Trunk road and road tunnel more than 800 m in length
DP2	Road P2 and other roads which are classified as primary/district distributor roads	Schedule 2, Part I, A.1	Primary / district distributor roads
DP3	Reclamation works including associated dredging works	Schedule 2, Part I, C.1 and C.12	Reclamation more than 5 ha in size and a dredging operation less than 100 m from a seawater intake point
DP5	Wan Chai East Sewage Outfall	Schedule 2, Part I, F.5 and F.6	Submarine sewage pipelines with a total diameter more than 1,200 mm and include a submarine sewage outfall
DP6	Dredging for the Cross-harbour Water Mains from Wan Chai to Tsim Sha Tsui	Schedule 2, Part I, C.12	A dredging operation less than 100 m from a seawater intake point

### 2.3 Division of the Project Responsibility

2.3.1. Due to the multi-contract nature of the Project, there are a number of contracts sub-dividing the whole works area into different work areas to be commenced. Contractors of individual contracts will be required by the EP holder to apply Further Environmental Permits such that the impact monitoring stations are sub-divided accordingly to facilitate the implementation of EM&A programme and to streamline the EM & A reporting for individual F EP holders correspondingly.

2.3.2. The details of individual contracts are summarized in **Table 2.2**.

**Table 2.2 Details of Individual Contracts under the Project**

Contract No.	Contract Title	Associated DP(s)	Construction Commencement Date
HY/2009/17	Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works.	DP1	5 October 2010
HY/2009/18	Central – Wan Chai Bypass (CWB) – Central Interchange	DP1 21	April 2011
04/HY/2006	Reconstruction of Bus Terminus near Man Yiu Street and Man Kwong Street	DP1	September 2010 (Completed)
HK/2009/01	Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works	DP1, DP2	25 August 2011
HK/2009/02	Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan	DP1 26	April 2011

Contract No.	Contract Title	Associated DP(s)	Construction Commencement Date
	Central – Wan Chai Bypass at Wan Chai East(CWB Tunnel)		
HY/2009/15	Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)	DP1	13 July 2011
HY/2009/19	Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link	DP1	24 March 2011
HK/2010/06	Wan Chai Development Phase II-Central-Wan Chai Bypass over MTR Tsuen Wan Line	DP3	22 March 2011

## 2.4 Project Organization and Contact Personnel

2.4.1. Civil Engineering and Development Department and Highways Department are the overall project controllers for the Wan Chai Development Phase II and Central-Wan Chai Bypass respectively. For the construction phase of the Project, Project Engineer, Contractor(s), Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.

2.4.2. The proposed project organization and lines of communication with respect to environmental protection works are shown in **Figure 2.2**. Key personnel and contact particulars are summarized in **Table 2.3**:

**Table 2.3 Contact Details of Key Personnel**

Party	Role	Post	Name	Contact No.	Contact Fax
AECOM	Engineer's Representative for WDII	Principal Resident Engineer	Mr. Frankie Fan	2587 1778	2587 1877
	Engineer's Representative for CWB	Principal Resident Engineer	Mr. Peter Poon	3922 8332	3529 2829
Lam Woo & CO., LTD.	Contractor under Contract no. HY/2009/17	Project Manager	Mr. K. S. Law	9090 1378	2566 7522
		Site Agent	Mr. Tony Au	9725 5874	2566 7522
		Sub Agent	Mr. Johnny Wong	9725 5870	2566 7522
Chun Wo – Leader Joint Venture	Contractor under Contract no. HK/2009/01	Joint Venture Board Representative	Mr. PL Yue	2162 9909	2634 1626
		Site Agent	Mr. Paul Yu	9456 9819	
		Sub Agent	Mr. Terry Wong	9757 9846	
		Construction Manager	Mr. Wyman Wong	9627 2467	
		Construction Manager	Mr. Jack Chu	9775 2467	

Party	Role	Post	Name	Contact No.	Contact Fax
		Construction Manager	Mr KK Yuen	9498 1213	
		Construction Manager	Mr. Andy Yu	9648 4896	
		Environmental Officer (Compliance Manager)	Mr. Andy Mak	9103 2370	
		Environmental Supervisor	Ms. Kiwi Chan	6227 8840	
		Environmental Supervisor	Mr. Yeung Sze King	9047 9952	
		Environmental Supervisor	Mr. Les Chow	6692 2423	
Chun Wo – CRGL Joint Venture	Contractor under Contract no. HK/2009/02	Site Agent	Mr. Chan Sing Cho	3658-3002	2827 9996
		Quality & Environmental Manager	Mr. C.P. Ho	3658-3000	
		Environmental Officer	Ms Flora Ng	3658-3064	
Chun Wo - CRGL - MBEC_Joint Venture	Contractor under Contract no. HY/2009/19	Project Manager	Mr. Rayland Lee	3758 8879	2570 8013
		Site Agent	Mr. Cheung Kit Cheung	6909 1555	
		Assistant Site Agent	Mr. Eric Fong	6191 9337	
		Environmental Engineer	Mr. Simon Wong	9281 4346	
		Environmental Manager / Environmental Officer	Mr. M.H. Isa	9884 0810	
		Construction Manager (Marine)	William Luk	9610 1101	
		Construction Manager (Land)	Patrick Cheung	9643 3012	
		Operation Manager (Land)	Yung Kwok Wah	9834 1010	
Leighton Contractors (Asia) Limited	Contractor under Contract no. HY/2009/18	Site Agent	Mr. Brian Gillon	2214 7700	2140 6799
		Deputy Site Agent	Mr. Desmond Sze	2214 7703	
		Environmental Officer	Mr. Anfernee Chow	2214 7721	
		Environmental Supervisor	K. P. Lai	6461 4660	

Party	Role	Post	Name	Contact No.	Contact Fax
		Environmental Supervisor	Ray Cheng	2214 7742	
		Environmental Supervisor	K. W. Lee	6461 4623	
		Environmental Supervisor	Ryan Tsui	2214 7705	
		Environmental Supervisor	Bosco Lee	2214 7711	
China State Construction Engineering (HK) Ltd.	Contractor under Contract no. HY/2009/15	Project Director	Chan Wai Hung	2823 7813	2865 5229
		Site Manager	Mr. P.J. Fan	3557 6368	2566 2192
		Contractor's Representative	Mr. David Lau	3557 6358	
		Head of construction	Mr. Roger Cheung	3557 6371	
		Environmental Officer	Mr. Daniel Sin	3557 6215	
		Environmental Supervisor	Mr. Kelven Yip	3557 6347	
		Environmental Supervisor	Mr. Tim Fung	3557 6349	
Gammon - Leader JV	Contractor under Contract no. HK/2010/06	Project Manager	Mr. Paul Lui	9095 7922	2529 2880
		Site Agent	Mr. Keith Tse	2529 2068	
		Environmental Officer	Mr. Lee Wai Man	9481 6024	
		Environmental Supervisor	Mr. Clement Pang	9735 9200	
ENVIRON Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3743 0788	3548 6988
Lam Geotechnics Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Raymond Dai	2882 3939	2882 3331

2.4.3. In this reporting month, the principal work activities of individual contracts are included as follows:

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- ELS works for basement construction for pile cap construction.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

- Trial Pit
- Instrumentation and monitoring works

- Drainage works
- Site investigation and pre-drilling works
- D-wall construction
- Sheet piling
- Grout curtain
- Tree Transplantation
- Earthwork
- Preparation works in existing tunnel
- Stitch coring
- Approach ramp structure works
- Top down slab
- Road works
- Tunnel works
- Excavation and Lateral Support

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- Diaphragm wall construction works for CWB (Stage2)
- Pre-drilling works for CWB (Stage2)
- Pre-bored H piling works for SCL
- Excavation for CWB top slab (Bay1 – Bay 4)
- Waterproofing works for CWB top slab (Bay 1 – Bay 4)
- Excavation and installation of shoring system for construction of exhaust duct structure
- Excavation for SCL top slab construction works
- Construction of SCL top slab (Bay 3)
- Trimming of SCL Diaphragm wall head

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- Deep excavation works. The excavation level has reached -9.0mPD to -9.8mPD on the eastern and western portion of the site respectively.
- Tunnel Pre-drill work of bored pile at tunnel portion 3 & 4 area.
- Trench excavation for guide wall of Diaphragm wall at tunnel portion 3 & 4 area.
- Guide wall construction for Diaphragm wall at tunnel portion 3 & 4 area.
- Bored pile PC34 and PC35.
- Pre-drill for bored pile and diaphragm wall.
- Handover of Government Helipad at Tunnel Portion 3&4 and initial Survey at helipad.
- Half bay of bulkhead wall construction

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- Diaphragm wall construction works at TS4



- ELS works at TPCWAE
- Cut and cover tunnel construction at TS1
- Night time protection works at CHT
- Cut off wall preparation works at Hung Hing Road and POC

Contract no. HY/2009/19 – Central – Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- Road works at Watson Road
- Fabrication of bored piling platform
- Bored piling (Land)
- Ground contamination assessment
- Pre-drilling works for bored pile and Diaphragm wall
- D-wall Construction (North & South Section)
- Guide wall construction for D-wall / Barette at North side
- Construction works for Box Culvert T
- Construction of socket-H pile for Marine works
- Construction of pre-bored H-pile works for Culvert U
- Installation of sheet pile at D9 location
- Construction of pile cap

Contract no. HK/2010/06 - Wan Chai Development Phase II - Central - Wan Chai Bypass over MTR Tsuen Wan Line under FEP-08/364/2009/A

- Construction of Pre-cast Unit in China

2.4.4. In coming reporting month, the principal work activities of individual contracts are anticipated as follows:

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- ELS works for basement construction for pile cap construction.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

- Trial pit
- Instrumentation and monitoring works
- Drainage works
- Site investigation and pre-drilling works
- D-wall construction
- Sheet piling
- Tree Transplantation
- Earthworks
- Preparation works in existing tunnel
- Approach ramp (trough) structure works
- Top down slab
- Road works

- Tunnel works
- Excavation and Lateral Support
- Pipe-pile works
- Cooling main bridge construction
- Bridge A construction

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- Diaphragm wall construction for CWB tunneling works at Stage2
- Waterproofing works for CWB top slab
- Excavation and installation of shoring system for construction of exhaust duct
- Construction of exhaust duct structure (Bay1)
- Construction of exhaust duct structure (Bay2)
- Load test on SCL pre-bored H-piles works
- Excavation for construction of SCL top slab
- Construction of SCL top slab (Bay 3)
- Construction of SCL top slab (Bay1 and Bay 2)

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- Bored piling, breaking concrete slab and excavation of trial pit at tunnel portion 3 & 4.
- Deep excavation and strut installation works below -9.8mPD for western tunnel portion and below +9.0mPD for eastern tunnel portion.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- Diaphragm wall construction works at TS4
- ELS works at TPCWAE
- Cut and cover tunnel construction at TPCWAE
- Mined tunnel preparation works at TPCWAE and Hung Hing Road

Contract no. HY/2009/19 – Central – Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- Road works at Watson Road
- Laying of 1500 $\phi$  drainage pipe
- Fabrication of bored piling platform
- Bored piling (Land)
- Ground contamination assessment
- Pre-drilling works for bored pile and Diaphragm wall
- D-wall Construction (North & South Section)
- Guide wall construction for D-wall / Barette at North side
- Construction works for Box Culvert T
- Construction of socket-H pile for Marine works
- Construction of pre-bored H-pile works for Culvert U



- Construction of 1500Ø drainage along D-wall
- Construction of pile cap

Contract no. HK/2010/06 - Wan Chai Development Phase II - Central - Wan Chai Bypass over MTR Tsuen Wan Line under FEP-08/364/2009/A

- Construction of Pre-cast Unit in China

### 3 STATUS OF REGULATORY COMPLIANCE

#### 3.1 Status of Environmental Licensing and Permitting under the Project

3.1.1. A summary of the current status on licences and/or permits on environmental protection pertinent to the Project is shown in **Table 3.1**.

**Table 3.1 Summary of the current status on licences and/or permits on environmental protection pertinent to the Project**

Permits and/or Licences	Reference No.	Issued Date	Status
Environmental Permit	EP-356/2009	30 Jul 2009	Valid
Environmental Permit	EP-364/2009	17 Aug 2009	Superseded
Environmental Permit	EP-364/2009/A	4 Aug 2010	Valid
Environmental Permit	EP-376/2009	13 Nov 2010	Valid
Further Environmental Permit	FEP-01/356/2009	18 Feb 2010	Valid
Further Environmental Permit	FEP-02/356/2009	24 Mar 2010	Valid
Further Environmental Permit	FEP-03/356/2009	24 Mar 2010	Valid
Further Environmental Permit	FEP-04/356/2009	15 Nov 2010	Valid
Further Environmental Permit	FEP-05/356/2009	24 Mar 2011	Valid
Further Environmental Permit	FEP-01/364/2009	24 Mar 2010	Valid
Further Environmental Permit	FEP-02/364/2009	21 Apr 2010	Valid
Further Environmental Permit	FEP-03/364/2009	12 July 2010	Valid
Further Environmental Permit	FEP-04/364/2009/A	14 Oct 2010	Surrendered
Further Environmental Permit	FEP-05/364/2009/A	15 Nov 2010	Valid
Further Environmental Permit	FEP-06/364/2009/A	22 Nov 2010	Valid
Further Environmental Permit	FEP-07/364/2009/A	25 Feb 2011	Valid
Further Environmental Permit	FEP-08/364/2009/A	15 June 2012	Valid

3.1.2. Contract no. HK/2010/06, Wan Chai Development Phase II - Central - Wan Chai Bypass over MTR Tsuen Wan Line, has submitted an application for Further Environmental Permit under EP-364/2009/A on 21 May 2012 and received Further Environmental Permit – FEP-08/364/2009/A on 15 June 2012.

3.1.3. Due to the multi-contract nature of the Project, the status of permits and/or licences under the individual contract(s) are presented as below:

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FE HD Whifield Depot – Advanced piling works under FEP-03/364/2009

3.1.4. Summary of the current status of licences and/or permits on environmental protection pertinent and submission under FEP-03/364/2009 for contract no. HY/2009/17 showed in **Table 3.2** and **Table 3.3**.

**Table 3.2 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/17**

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-03/364/2009	12 Jul 2010	N/A	Valid
Notification of Works Under APCO	319348	13 Jul 2010	N/A	Valid
Discharge Licence	WT00007212-2010	5 Aug 2010	5 Aug 2010 – 31 Aug 2015	Valid
Registration as a Waste Producer	5213-151-L2608-05	13 July 2010	N/A	Valid
Billing Account under Waste Disposal Ordinance	7010400	16 Mar 2010	N/A	Valid

**Table 3.3 Summary of submission status under FEP-03/364/2009**

EP Condition	Submission	Date of Submission
Condition 2.6	Management Organization of Main Construction Companies	18 September 2010
Conditions 2.7 and 2.8	Submission of works schedule and location plan	1 September 2010
Condition 2.9	Noise Management Plan	1 September 2010

Contract no. 04/HY/2006 – Reconstruction of Bus Terminus near Man Yiu Street and Man Kwong Street under FEP-04/364/2009/A

3.1.5. The construction works was completed, and the FEP was surrendered by the Contractor on 11 February 2011.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

3.1.6. Summary of the current status of licences and/or permits on environmental protection pertinent and submission under FEP-02/364/2009 for contract no. HK/2009/01 are shown in **Table 3.4** and **Table 3.5**

**Table 3.4 Cumulative Summary of Valid Licences and Permits under Contract no. HK/2009/01**

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-02/356/2009	24 Mar 2010	N/A	Valid
	FEP-02/364/2009	21 Apr 2010	N/A	Valid
Notification of Works Under APCO	313088	6 Jan 2010	N/A	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS1221-11	30 Dec 2011	20 Jan 2012 to 19 Jul 2012	Valid
	GW-RS1227-11	30 Dec 2011	30 Dec 2011 to 26 Jul 2012	Cancelled
	GW-RS0038-12	16 Jan 2012	15 Jan 2012 to 12 Jul 2012	Cancelled
	GW-RS0158-12	24 Feb 2012	24 Feb 2012 to 23 Aug 2012	Valid
	GW-RS0181-12	24 Feb 2012	27 Feb 2012 to 23 Aug 2012	Valid
	GW-RS0213-12	28 Feb 2012	29 Feb 2012 to 27 Aug 2012	Valid
	GW-RS0225-12	02 Mar 2012	14 Mar 2012 to 13 Sep 2012	Valid
	GW-RS0227-12	02 Mar 2012	16 Mar 2012 to 15 Sep 2012	Valid
	GW-RE0174-12	05 Mar 2012	30 Mar 2012 to 29 Sep 2012	Valid
	GW-RS0312-12	28 Mar 2012	30 Mar 2012 to 29 Sep 2012	Valid
	GW-RS0314-12	29 Mar 2012	30 Mar 2012 to 25 Sep 2012	Cancelled
	GW-RS0356-12	03 Apr 2012	11 Apr 2012 to 29 Sep 2012	Valid
	GW-RS0394-12	16 Apr 2012	19 Apr 2012 to 12 Oct 2012	Valid
	GW-RS0459-12 3	May 2012	7 May 2012 to 6 Nov 2012	Cancelled
	GW-RS0460-12	10 May 2012	13 May 2012 to 6 Nov 2012	Valid
	GW-RS0492-12	14 May 2012	15 May 2012 to 3 June 2012	Valid
	GW-RS0514-12	14 May 2012	27 May 2012 to 26 Nov 2012	Valid
	GW-RS0545-12	24 May 2012	26 May 2012 to 25 Nov 2012	Valid
GW-RS0546-12	25 May 2012	26 May 2012 to 25 Nov 2012	Valid	
Discharge Licence	WT00006220-2010	18 Mar 2010	31 Mar 2015	Valid
	WT00009641-2011	24 Jul 2011	31 Jul 2016	Valid
Billing account under Waste Disposal Ordinance	7010069	21 Jan 2010	N/A	Valid
Registration as a Chemical Waste Producer	WPN5213-134-C3585-01	21 Jan 2010	N/A	Valid

**Table 3.5 Summary of submission status under FEP-02/364/2009**

EP Condition	Submission	Date of Submission
Special Conditions, Clause 2.7 & 2.8	Works Schedule and Location Plan	18 May 2011
Special Conditions, Clause 2.6	Environmental Management Organization Chart	18 May 2011
Special Conditions, Clause 2.6	Commencement Date of Works	25 Jun 2011
Special Conditions, Clause 2.9	Noise Management Plan	10 Jun 2011

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- 3.1.7. Summary of the current status of licences and/or permits on environmental protection pertinent and submission under FEP-01/364/2009 for contract no. HK/2009/02 are shown in **Table 3.6** and **Table 3.7**.

**Table 3.6 Cumulative Summary of Valid Licences and Permits under Contract no. HK/2009/02**

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-03/356/2009	24 Mar 2010	N/A	Valid
	FEP-01/364/2009	24 Mar 2010	N/A	Valid
Notification of Works Under APCO	313962	2 Feb 2010	N/A	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS1028-11	3 Nov 2011	7 Dec 2011 to 6 June 2012	Valid (Expired on 6 June 2012)
	GW-RS1111-11	28 Nov 2011	29 Nov 2011 to 28 May 2012	Expired
	GW-RS1116-11	28 Nov 2011	13 Dec 2011 to 12 June 2012	Valid (Expired on 12 June 2012)
	GW-RS1209-11	3 Jan 2012	17 Jan 2012 to 16 July 2012	Valid
	GW-RS0037-12	19 Jan 2012	1 Feb 2012 to 31 July 2012	Valid
	GW-RS0051-12	19 Jan 2012	1 Feb 2012 to 31 July 2012	Valid



Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
	GW-RS0086-12	30 Jan 2012	3 Feb 2012 to 2 Aug 2012	Cancelled
	GW-RS0105-12	3 Feb 2012	10 Feb 2012 to 9 Aug 2012	Valid
	GW-RS0153-12	17 Feb 2012	21 Feb 2012 to 20 Aug 2012	Valid
	GW-RS0233-12	6 Mar 2012	9 Mar 2012 to 8 Sept 2012	Cancelled
	GW-RS0255-12	14 Mar 2012	17 Mar 2012 to 15 Sept 2012	Valid
	GW-RE0283-12	5 Apr 2012	1 May 2012 to 30 Nov 2012	Valid
	GW-RS0298-12	22 Mar 2012	26 Mar 2012 to 25 June 2012	Valid (Expired on 25 June 2012)
	GW-RS0301-12	20 Mar 2012	21 Mar 2012 to 20 Sept 2012	Valid
	GW-RS0303-12	26 Mar 2012	27 Mar 2012 to 27 Sept 2012	Valid
	GW-RS0341-12	3 Apr 2012	28 Apr 2012 to 27 Oct 2012	Valid
	GW-RS0348-12	3 Apr 2012	10 Apr 2012 to 9 Oct 2012	Valid
	GW-RS0380-12	12 Apr 2012	1 May 2012 to 31 Oct 2012	Valid
	GW-RS0388-12	13 Apr 2012	1 May 2012 to 31 Oct 2012	Valid
	GW-RS0418-12	30 Apr 2012	23 May 2012 to 22 Nov 2012	Valid
	GW-RS0420-12	30 Apr 2012	18 May 2012 to 17 Nov 2012	Valid
	GW-RS0423-12	30 Apr 2012	19 May 2012 to 18 Nov 2012	Valid
	GW-RS0427-12	30 Apr 2012	23 May 2012 to 22 Nov 2012	Valid
	GW-RS0445-12	30 Apr 2012	1 May 2012 to 25 Sept 2012	Valid
	GW-RS0467-12	10 May 2012	14 May 2012 to 10 Nov 2012	Valid
	GW-RS0533-12	21 May 2012	21 May 2012 to 10 Nov 2012	Valid
	GW-RS0550-12	25 May 2012	7 June 2012 to 6 Dec 2012	Valid
GW	-RS0611-12	14 June 2012	15 Jun 2012 to 28 Nov 2012	Valid
GW	-RS0633-12	13 June 2012	16 Jun 2012 to 14 Dec 2012	Valid
Construction Noise Permit (CNP) for piling equipment	PP-RS0007-12	27 Mar 2012	28 Mar 2012 to 27 Sept 2012	Valid
Discharge Licence	WT00006249-2010	22 Mar 2010	31 Mar 2015	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
	WT00006436-2010	15 Apr 2010	30 Apr 2015	Valid
	WT00006673-2010	14 May 2010	31 Mar 2015	Valid
	WT00006757-2010	28 May 2010	31 May 2015	Valid
	WT00007129-2010	28 July 2010	31 Jul 2015	Valid
	WT00008982-2011	26 April 2011	30 April 2016	Valid
	WT00009691-2011	1 Aug 2011	31 July 2016	Valid
Billing Account under Waste Disposal Ordinance (Land)	7010255	10 Feb 2010	N/A	Valid
Registration as Chemical Waste Producer (Wan Chai)	WPN5213-135-C3593-01	10 Mar 2010	N/A	Valid
Registration as Chemical Waste Producer (TKO 137)	WPN5213-839-C3593-02	22 Sep 2010	N/A	Valid

**Table 3.7 Summary of submission status under FEP-01/364/2009**

EP Condition	Submission	Date of Submission
Special Conditions, Clause 2.7 & 2.8	Works Schedule and Location Plan	14 Jun 2011
Special Conditions, Clause 2.6	Environmental Management Organization Chart	14 Jun 2011
Special Conditions, Clause 2.6	Commencement Date of Works	21 Jun 2011
Special Conditions, Clause 2.9	Noise Management Plan (Revision A)	13 Jan 2012
Condition 2.11	Landscape Plan (Revision B)	21 Feb 2012
Condition 2.9	Noise Management Plan (Rev.A)	13 Jan 2012

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

3.1.8. Summary of the current status of licences and/or permits on environmental protection pertinent and submission under FEP-05/364/2009A for contract no. HY/2009/18 are shown in Table 3.8 and Table 3.9.

**Table 3.8 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/18**

Permit / Licence / Notification / Approval	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-05/364/2009/A	15 Nov 2010	Permit issued	Valid
Notification of Works Under APCO	322293	07 Oct 2010	Notified	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0261-12	09 Mar 2012	10 Mar 2012 – 09 Sep 2012	Valid
Discharge Licence	WT00008229-2011	13 Jan 2011	25 May 2012	Expired
	WT00012998-2012	25 May 2012	31 Jan 2016	Valid
Registration as a Waste Producer	WPN: 8335-121-L1048-04	17 Dec 2010	N/A	Registration completed
Billing Account under Waste Disposal Ordinance (Land)	Account No.: 7011587	11 Oct 2010	Account approved	Valid

**Table 3.9 Summary of submission status under FEP-05/364/2009/A**

EP Condition	Submission	Date of Submission
Condition 2.9	Noise Management Plan	01 March 2011
Condition 2.10	Landscape Plan (Rev. 5)	12 March 2012

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- 3.1.9. Summary of the current status of licences and/or permits on environmental protection pertinent and submission under FEP-06/364/2009/A for contract no. HY/2009/15 are shown in **Table 3.10** and **Table 3.11**

**Table 3.10 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/15**

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-04/356/2009	22 Nov 2010	N/A	Valid
	FEP-06/364/2009/A	22 Nov 2010	N/A	Valid
Notification of Works Under APCO	321822	24 Sep 2010	N/A	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS1211-11	22 Dec 2011	24 Dec 2011 to 21 Jun 2012	Valid (Expired on 21 Jun 2012)
	GW-RS1149-11	7 Dec 2011	8 Dec 2011 to 7 Jun 2012	Cancelled
	GW-RS0150-12	22 Feb 2012	27 Feb 2012 to 24 Aug 2012	Cancelled
	GW-RS0094-12	1 Feb 2012	3 Feb 2012 to 31 Jul 2012	Valid
	GW-RS0330-12	29 Mar 2012	3 Apr 2012 to 21 Sep 2012	Cancelled
	GW-RS0328-12	30 Mar 2012	1 Apr 2012 to 22 Sep 2012	Valid
	GW-RS0190-12	28 Feb 2012	28 Feb 2012 to 11 Aug 2012	Cancelled
	GW-RS0249-12	10 Feb 2012	9 Mar 2012 to 31 Aug 2012	Valid
	GW-RS0552-12	24 May 2012	25 May 2012 to 20 Oct 2012	Cancelled
	GW-RS0586-12	4 Jun 2012	5 Jun 2012 to 30 Sep 2012	Valid
	GW-RS0695-12	24 Jun 2011	25 Jun 2012 to 21 Dec 2012	Valid
	GW-RS0700-12	26 Jun 2012	26 Jun 2012 to 25 Dec 2012	Valid
	GW-RS0607-12	12 Jun 2012	13 Jun 2012 to 7 Dec 2012	Valid
Registration as a Chemical Waste Producer	WPN: 5213-147-C1169-35	15 Nov 2010	N/A	Valid
Billing Account under Waste Disposal Ordinance	7011553	30 Sep 2010	27 Sep 2010 to 27 Jan 2016	Valid
Water Discharge License (Discharge at TS1)	WT00008780-2011	24 Nov 2011	24 Nov 2011 to 31 Mar 2016	Valid
Water Discharge License (Discharge at Hung Hing Road)	WT00010482-2011	30 Sep 2011	30 Sep 2011 to 30 Sep 2013	Cancelled
Water Discharge License (Discharge at CHT area)	WT00012941-2012	10 May 2012	10 May 2012 to 31 May 2014	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Water Discharge License (Discharge at TPCWAE)	WT00011322-2011	15 Dec 2011	15 Dec 2011 to 31 Dec 2013	Valid
Water Discharge License (Discharge at TS4)	WT00011718-2012	16 Jan 2012	16 Jan 2012 to 31 Jan 2014	Valid

**Table 3.11 Summary of submission status under FEP-06/364/2009/A**

EP Condition	Submission	Date of Submission
Condition 2.6	Management Organization of Main Construction Companies	11 Mar 2011
	Amendment for Management Organization of Main Construction Companies	16 May 2011
Condition 2.7	Works Schedule	15 Mar 2011
Condition 2.8	Location Plan	15 Mar 2011
Condition 2.23	Noise Management Plan	6 May 2011

Contract no. HY/2009/19 – Central – Wan chai Bypass Tunnel ( North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

3.1.10. The current status on licences and/or permits on environmental protection pertinent and submission under FEP-07/364/2009/A for contract no. HY/2009/19 are shown in **Table 3.12** and **Table 3.13**.

**Table 3.12 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/19**

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-07/364/2009/A	25 Feb 2011	N/A	Valid
Notification of Works Under APCO	326160	24 Jan 2011	N/A	Valid
Registration as a Waste Producer	7012306	10 Feb 2011	N/A	Valid
Registration as Chemical Waste Producer	5213-151-C3654-01	24 Mar 2011	N/A	Valid
Application for Vessel Disposal	7012306	21 July 2011	N/A	Valid
Construction Noise Permit (CNP)	GW-RS0180-12	22-Feb-12 (Effective 27-Feb-12)	26-Aug-12	Valid
	GW -RS0507-12	22-May-12 (Effective 24-May-12)	23-Nov-12	Valid
	GW -RS0028-12	18-Jun-12	17-Dec-12	Valid
	GW -RS0286-12	23-Mar-12 (Effective 27-Mar-12)	26-Sep-12	Cancelled

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Water Discharge Licence  WT	WT00010093-2011	31-Aug-11	30-Sep-16	Valid
	00010865-2011	3-Nov-11	30-Nov-16	Valid

**Table 3.13 Summary of submission status under FEP-07/364/2009/A**

EP Condition	Submission	Date of Submission
Condition 2.9	Noise Management Plan	02 Jun 2011
Condition 2.13	Landscape Plan	16 March 2012
Condition 2.9	Noise Management Plan(Rev.2)	28-Oct-11

3.1.11. Summary of the current status of licences and/or permits on environmental protection pertinent and submission under FEP-08/364/2009/A for contract no. HK/2010/06 showed in **Table 3.14** and **Table 3.15**.

**Table 3.14 Cumulative Summary of Valid Licences and Permits under Contract no. HK/2010/06**

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-08/364/2009/A	15 June 2012	N/A	Valid
Notification of Works Under APCO	326344	18 Jan 2011	N/A	Valid

No submission has been made under FEP-08/364/2009/A in this reporting month.

**4 Monitoring Requirements**

**4.1 Noise Monitoring**

NOISE MONITORING STATIONS

4.1.1. The noise monitoring stations for the Project are listed and shown in **Table 4.1** and **Figure 4.1**. **Appendix 4.1** shows the established Action/Limit Levels for the monitoring works.

**Table 4.1 Noise Monitoring Stations**

Station	Description
M1a	Harbour Road Sports Centre
M2b	Noon Gun Area
M3a	Tung Lo Wan Fire Station
M4b Victoria	Centre
M5b Cit	y Garden
M6	HK Baptist Church Henrietta Secondary School
M7e	International Finance Centre (Eastern End of Podium)
M7w	International Finance Centre (Western End of Podium)

REAL TIME NOISE MONITORING STATIONS

4.1.2. Review of feasibility on the real time noise monitoring stations was conducted in July with IEC. Station, RTN1a, Tung Lo Wan fireboat Station was found not appropriate to be a monitoring station for monitoring the IECL Piling works and Demolition after visited.

4.1.3. Reviewing the works schedule of HY/2009/19, IECL Bridge Demolition from City Garden to Provident Garden will commence in July 2012. "Proposal on The Real Time Noise Monitoring System at RTN3" was submitted and verified by IEC on .

4.1.4. The noise monitoring stations for the Project are listed and shown in **Table 4.2** and **Figure 4.1**. **Appendix 4.1** shows the established Action/Limit Levels for the monitoring works.

**Table 4.2 Real Time Noise Monitoring Stations**

District	Station	Description
Tin Hau	RTN1	FEHD Hong Kong Transport Section Whitefield Depot
North Point	RTN2	Oil Street Community Liaison Centre

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

4.1.5. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ).  $L_{eq}$  (30 minutes) shall be used as the monitoring parameter



for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods,  $L_{eq(5 \text{ minutes})}$  shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as  $L_{10}$  and  $L_{90}$  shall also be obtained for reference.

4.1.6. Noise monitoring shall be carried out at all the designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:

- One set of measurements between 0700 and 1900 hours on normal weekdays.

4.1.7. Real time noise shall be carried out at the designated monitoring stations. The following is an initial guide on the regular monitoring frequency for each station on a 24 hours daily basis when noise generating activities are underway:

- One set of measurements between 0700 and 1900 hours on normal weekdays.
- One set of measurements between 1900 and 2300 hours on normal weekdays and 0700 and 2300 hours on public holidays.
- One set of measurements between 2300 and 0700 hours on next day on everyday.

4.1.8. If construction works are extended to include works during the hours of 1900 – 0700 as well as public holidays and Sundays, a additional weekly impact monitoring shall be carried out during respective restricted hours periods. Applicable permits under NCO shall be obtained by the Contractor.

#### MONITORING EQUIPMENT

4.1.9. As referred to in the Technical Memorandum <sup>TM</sup> issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.

4.1.10. Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

4.1.11. The sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency before deployment to the site and during each site visit. Measurements will be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.

**4.2 Air Monitoring**

AIR QUALITY MONITORING STATIONS

4.2.1. The air monitoring stations for the Project are listed and shown in **Table 4.3** and **Figure 4.1**. **Appendix 4.1** shows the established Action/Limit Levels for the monitoring works.

**Table 4.3 Air Monitoring Stations**

Station ID	Monitoring Location	Description
CMA1b	Oil Street Community Liaison Centre	North Point (Re-commenced on 14 November 2011)
CMA2a	Causeway Bay Community Centre	Causeway Bay
CMA3a	CWB PRE Site Office *	Causeway Bay
CMA4a	Society for the Prevention of Cruelty to Animals	Wan Chai
CMA5a	Children Garden opposite to Pedestrian Plaza	Wan Chai
MA1e	International Finance Centre (Eastern End of Podium)	Central
MA1w	International Finance Centre (western End of Podium)	Central

Remarks: As per the ENPC meeting in March 2011, the monitoring stations CMA3a – Future CWB site office at Wanchai Waterfront Promenade was renamed as remark.

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

- 4.2.2. One-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.
- 4.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.
- 4.2.4. For regular impact monitoring, the sampling frequency of at least once in every six-days, shall be strictly observed at all the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs.

## SAMPLING PROCEDURE AND MONITORING EQUIPMENT

4.2.5. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:

- 0.6 – 1.7 m<sup>3</sup> per minute adjustable flow range;
- Equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
- Installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
- Capable of providing a minimum exposed area of 406 cm<sup>2</sup>;
- Flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
- Equipped with a shelter to protect the filter and sampler;
- Incorporated with an electronic mass flow rate controller or other equivalent devices;
- Equipped with a flow recorder for continuous monitoring;
- Provided with a peaked roof inlet;
- Incorporated with a manometer;
- Able to hold and seal the filter paper to the sampler housing at horizontal position;
- Easily changeable filter; and
- Capable of operating continuously for a 24-hour period.

4.2.6. Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standards shall be traceable to the internationally recognized primary standard and be calibrated annually. The concern parties such as IEC shall properly document the calibration data for future reference. All the data should be converted into standard temperature and pressure condition.

## LABORATORY MEASUREMENT / ANALYSIS

4.2.7. A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory should be HOKLAS accredited.

4.2.8. Filter paper of size 8" x 10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hours and be pre-weighed before use for the sampling.

4.2.9. After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.

4.2.10. All the collected samples shall be kept in a good condition for 6 months before disposal.

4.2.11. Current calibration certificates of equipments are presented in **Appendix 4.2**.

## 5.0 MONITORING RESULTS

5.0.1. The environmental monitoring will be implemented based on the division of works areas of each designated project managed under different contracts with separate FEP applied by individual contractors. Overall layout showing work areas of various contracts, latest status of work commencement and monitoring stations is shown in **Figure 2.1** and **Figure 4.1**. The monitoring results are presented in according to the Individual Contract(s).

5.0.2. In the reporting month, the concurrent contracts are as follows:

- Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A
- Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009
- Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A
- Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009
- Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre
- Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East
- Contract no. HK/2010/06 – Wan Chai Development Phase II – Central – Wan Chai Bypass over MTR Tsuen Wan Line

5.0.3. The environment monitoring schedules for reporting month and coming month are presented in **Appendix 5.1**.

### 5.1 Noise Monitoring Results

5.1.1. Monitoring for report of review baseline noise level was performed from 11 April 2011 to 8 June 2011. Then the report was submitted on the 20 June 2011, verified by IEC on 18 July 2011 and was approved by ER by January 2012. The new baseline is used for the noise calculation of this reporting month starting from January 2012.

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

5.1.2. The proposed division of noise monitoring stations for Contract no. HY/2009/17 are summarized in **Table 5.1** below:

**Table 5.1 Noise Monitoring Stations for Contract no. HY/2009/17**

Station	Description
M4b	Victoria Centre

5.1.3. No action or limit level exceedance was recorded during day time period in the reporting month. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

5.1.4. Noise monitoring for the Central Interchange works under contract no. HY/2009/18 was commenced on 22 April 2011. The proposed division of noise monitoring stations for Contract no. HY/2009/18 are summarized in **Table 5.2** below:

**Table 5.2 Noise Monitoring Stations for Contract no. HY/2009/18**

Station	Description
M7e	International Finance Centre (Eastern End of Podium)
M7w	International Finance Centre (Western End of Podium)

5.1.5. No action or limit level exceedance was recorded during day time period in the reporting month.

5.1.6. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009 and Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

5.1.7. The commencement of construction works for Contract no. HK/2009/01 under FEP-02/364/2009 is on 25 August 2011 and HK/2009/02 under FEP-01/364/2009 is on 26 April 2011. The proposed division of noise monitoring stations are summarized in **Table 5.3** below.

**Table 5.3 Noise Monitoring Station for Contract no HK/2009/01 and HK/2009/02**

Station	Description
M1a	Harbour Road Sports Centre

5.1.8. No action or limit level exceedance was recorded in the reporting month. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

5.1.9. The commencement of construction works for Contract no. HY/2009/15 under FEP-06/364/2009/A was on 13 July 2011. Noise monitoring was commenced on 13 July 2011. The proposed divisions of noise monitoring stations are summarized in **Table 5.4** below.

**Table 5.4 Noise Monitoring Stations for Contract no. HY/2009/15**

Station	Description
M2b	Noon Gun Area
M3a	Tung Lo Wan Fire Station

5.1.10. No action or limit level exceedance was recorded in this reporting month.

5.1.11. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

5.1.12. Noise monitoring for the tunnel works under contract no. HY/2009/19 was commenced on 24 April 2011. The proposed division of noise monitoring stations are summarized in **Table 5.5** below.

**Table 5.5 Noise Monitoring Stations for Contract no. HY/2009/19**

Station	Description
M3a	Tung Lo Wan Fire Station
M4b	Victoria Centre
M5b Cit	City Garden
M6	HK Baptist Church Henrietta Secondary School

5.1.13. No action level and two limit level exceedances were recorded on 7 and 12 June 2012 at M6 – HK Baptist Church Henrietta Secondary School in the reporting month.

5.1.14. Major traffic jam and no major work activities were observed during monitoring, the exceedances were considered as non-project related.

5.1.15. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**. Details of the Notification of Exceedance can be referred in **Appendix 6.2**.

## 5.2 Real Time Noise Monitoring Results

5.2.1. FEHD Hong Kong Transport Section Whitfield Depot commenced external wall renovation from 1 June 2012.

5.2.2. No construction activity was conducted during night time period (2300 to 0700) in this reporting month.

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009 and Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

5.2.3. The proposed division of noise monitoring stations are summarized in **Table 5.6** below. Real time noise monitoring for the piling works under contract no. HY/2009/17 was commenced on 5 October 2010

**Table 5.6 Real Time Noise Monitoring Stations for Contract no. HY/2009/17**

Location ID	District	Description
RTN1	Tin Hau	FEHD Hong Kong Transport Section Whitefield Depot

*Real time noise monitoring results and graphical presentation during night time period are for information only.*

5.2.4. No action and limit level exceedance were recorded in the reporting period. Real time noise monitoring results measured in this reporting period are reviewed and summarized. Details of real time noise monitoring results and graphical presentation can be referred to **Appendix 5.4**.

5.2.5. The proposed division of noise monitoring stations are summarized in **Table 5.7** below. Real time noise monitoring for major construction works under contract no. HY/2009/19 was commenced on 24 April 2011.

**Table 5.7 Real Time Noise Monitoring Stations for Contract no. HY/2009/19**

Location ID	District	Description
RTN1	Tin Hau	FEHD Hong Kong Transport Section Whitefield Depot
RTN2	North Point	Oil Street Community Liaison Center

*Real time noise monitoring results and graphical presentation during night time period are for information only.*

5.2.6. No action and limit level exceedance were recorded in the reporting period. Real time noise monitoring results measured in this reporting period are reviewed and summarized. Details of real time noise monitoring results and graphical presentation can be referred to **Appendix 5.4**.

### 5.3 Air Monitoring Results

5.3.1 Due to extension of site boundary by contractor of HY/2009/19, location of air monitoring station CMA1b – Oil Street Community Liaison Centre has been finely adjusted on 21 April 2012.

5.3.2 Due to lack of electricity supply, the 24-hr TSP monitoring at the following stations were rescheduled:

CMA1b: from 6 June 2012 to 7 June 2012  
 CMA5a: from 6 June 2012 to 7 June 2012



CMA2a: from 18 June 2012 to 19 June 2012

5.3.3 The data for the rescheduled air monitoring for CMA1b, dated 30 April 2012, will be presented in the next monthly report (May 2012).

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

5.3.4 The proposed division of air monitoring stations are summarized in **Table 5.8** below. Air monitoring for the piling works under contract no. HY/2009/17 was commenced on 8 October 2010.

**Table 5.8 Air Monitoring Station for Contract no. HY/2009/17**

Station	Description
CMA1b	Oil Street Community Liaison Centre
CMA2a	Causeway Bay Community Centre

5.3.5 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

5.3.6 Air monitoring for the Central Interchange works under contract no. HY/2009/18 was commenced on 21 April 2011. The proposed division of air monitoring stations are summarized in **Table 5.9** below.

**Table 5.9 Air Monitoring Stations for Contract no. HY/2009/18**

Station	Description
MA1e	International Finance Centre (Eastern End of Podium)
MA1w	International Finance Centre (Western End of Podium)

5.3.7 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

5.3.8 The commencement of construction works for Contract no. HK/2009/01 under FEP-02/364/2009 is on 25 August 2011. Air quality monitoring was commenced on 25 August 2011. The proposed division of air monitoring stations are summarized in **Table 5.10** below.



**Table 5.10 Air Monitoring Station for Contract no. HK/2009/01**

Station	Description
CMA5a	Children Playgrounds opposite to Pedestrian Plaza

5.3.9 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

5.3.10 The commencement of construction works for HK/2009/02 under FEP-01/364/2009 is on 26 April 2011. The proposed division of air monitoring stations are summarized in **Table 5.11** below.

**Table 5.11 Air Monitoring Station for Contract no. HK/2009/02**

Station	Description
CMA4a	Society for the Prevention of Cruelty to Animals

5.3.11 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

5.3.12 The commencement of construction works for Contract no. HY/2009/15 under FEP-06/364/2009/A was on 13 July 2011. Air quality monitoring was commenced on 14 July 2011. The proposed division of air monitoring stations are summarized in **Table 5.12** below.

**Table 5.12 Air Monitoring Station for Contract no. HY/2009/15**

Station	Description
CMA3a	CWB PRE Site Office

5.3.13 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HY/2009/19 – Central – Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

5.3.14 The proposed division of air monitoring stations are summarized in **Table 5.13** below. Air monitoring for the tunnel works under contract no. HY/2009/19 was commenced on 26 April 2011.

**Table 5.13 Air Monitoring Stations for Contract no. HY/2009/19**

Station	Description
CMA1b	Oil St Community Liaison Centre
CMA2a	Causeway Bay Community Centre

5.3.15 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

**Waste Monitoring Results**

Contract no. HY/2009/17 –Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

5.4.1. No Inert and non-inert C&D wastes were disposed in the reporting month. Details of the waste flow table are summarized in **Table 5.14**

**Table 5.14 Details of Waste Disposal for Contract no. HY/2009/17**

Waste Type	Quantity this month, m <sup>3</sup>	Cumulative Quantity-to-Date, m <sup>3</sup>	Disposal / Dumping Grounds
Inert C&D materials disposed	NIL NIL		N/A
Inert C&D materials recycled	NIL 135	4.82	N/A
Non-inert C&D materials disposed	NIL NIL		N/A
Non-inert C&D materials recycled	NIL NIL		N/A
Chemical waste disposed	N/A N/A N/A		

Contract nos. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

5.4.2. Inert and non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.15**.

**Table 5.15 Details of Waste Disposal for Contract no. HK/2009/01**

Waste Type	Quantity this month, m <sup>3</sup>	Cumulative-to-Date, m <sup>3</sup>	Disposal / Dumping Grounds
Inert C&D materials disposed	113.77 19,28	5.22	TKO137, TM38
Inert C&D materials recycled	NIL 389.9	6	N/A
Non-inert C&D materials disposed	87.08 798		SENT Landfill
Non-inert C&D materials recycled	10,776 147,1	00	N/A

Waste Type	Quantity this month, m <sup>3</sup>	Cumulative-to-Date, m <sup>3</sup>	Disposal / Dumping Grounds
Chemical waste disposed	380 6,510		N/A

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

5.4.3. Inert C&D & non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.16**.

**Table 5.16 Details of Waste Disposal for Contract no. HK/2009/02**

Waste Type*	Quantity this month, m <sup>3</sup>	Cumulative-to-Date, m <sup>3</sup>	Disposal / Dumping Grounds
Inert C&D materials disposed	19,376	159,506	TKO137, TM 38
Inert C&D materials recycled	NIL NIL		N/A
Non-inert C&D materials disposed	39 323		SENT Landfill
Non-inert C&D materials recycled	NIL NIL		N/A
Chemical waste disposed (kg)	NIL 4,186		N/A

Remarks Contractor clarified and updated waste flow table for the reporting month of April

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

5.4.4. Inert C&D and non-inert C&D waste was disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.17**.

**Table 5.17 Details of Waste Disposal for Contract no. HY/2009/18**

Waste Type*	Quantity this month, m <sup>3</sup>	Cumulative-to-Date, m <sup>3</sup>	Disposal / Dumping Grounds
Inert C&D materials disposed	3,267	35,202	T.K.O. 137, TM 38
Inert C&D materials recycled	1,183 9,146		N/A
Non-inert C&D materials disposed	37 348		SENT Landfill
Non-inert C&D materials recycled (tonnes)	0.3 40.6		N/A
Chemical waste disposed (kg)	760 2,985		N/A

Remarks Contractor clarified and updated waste flow table for the reporting month of April

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

5.4.5. Inert & Non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.18**.

**Table 5.18 Details of Waste Disposal for Contract no. HY/2009/15**

Waste Type*	Quantity this month, m <sup>3</sup>	Cumulative-to-Date, m <sup>3</sup>	Disposal / Dumping Grounds
Inert C&D materials disposed	307.8	141,959.5	Tuen Mun Area 38
27,38	1.7	124,166.2	TKO137 FB
Inert C&D materials recycled	NIL 415.9		HY/2009/11 ex-PCWA TS4
Non-inert C&D materials disposed	84.9 315.6		SENT Landfill
Non-inert C&D materials recycled	6.6 376.5		Xun Xiang Metalware Skylight Recycle (paper)
Chemical waste disposed	1,800 10,00	0	Dunwell Group

Remarks Contractor clarified and updated waste flow table for the reporting month of January and the cumulative sum of inert C&D materials has been updated in the March to May 2012 Quarterly Report.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

5.4.6. Inert and Non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.19**.

**Table 5.19 Details of Waste Disposal for Contract no. HY/2009/19**

Waste Type*	Quantity this month, m <sup>3</sup>	Cumulative-to-Date, m <sup>3</sup>	Disposal / Dumping Grounds
Inert C&D materials disposed	21,064.78 106,6	83.22	N/A
Inert C&D materials recycled	0 1,801.9	1	N/A
Non-inert C&D materials disposed	22.86 484.2	5	SENT Landfill
Non-inert C&D materials recycled	0.11 42.81		N/A
Chemical waste disposed	0 4.13		N/A

Remarks Contractor clarified and updated waste flow table for the reporting month of April

Contract no. HK/2010/06 Wan Chai Development Phase II - Central-Wan Chai Bypass over MTR Tsuen Wan Line under FEP-08/364/2009/A

5.4.7. No inert and Non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.20**.

**Table 5.20 Details of Waste Disposal for Contract no. HK/2010/06**

Waste Type*	Quantity this month, m <sup>3</sup>	Cumulative-to-Date, m <sup>3</sup>	Disposal / Dumping Grounds
Inert C&D materials disposed	NIL NIL		TM38
Inert C&D materials recycled	NIL NIL		N/A
Non-inert C&D materials disposed	NIL NIL		N/A
Non-inert C&D materials recycled	NIL NIL		Recyclers
Chemical waste disposed	NIL NIL		N/A

## 6 Compliance Audit

6.0.1. The Event Action Plan for construction noise, air qualities are presented in **Appendix 6.1**.

### 6.1 Noise Monitoring

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

6.1.1. No exceedance was recorded in the reporting month.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

6.1.2. No exceedance was recorded in the reporting month.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention Exhibition Centre – Tunnel Works under FEP-02/364/2009

6.1.3. No exceedance was recorded in the reporting month.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

6.1.4. No exceedance was recorded in the reporting month.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

6.1.5. No exceedance was recorded in the reporting month.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

6.1.6. No action level and two limit level exceedances were recorded at M6 – HK Baptist Church Henrietta Secondary School on 7 and 12 June 2012 in the reporting month. Investigation found that major traffic noise was contributed in the noise monitoring and not related to the Project.

Real Time Noise Monitoring

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

6.1.7. No exceedance was recorded in the reporting month.

Contract no. HY/2009/19 – Central – Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

6.1.8. No exceedance was recorded in the reporting month.

## 6.2 Air Monitoring

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

6.2.1. No exceedance was recorded in the reporting month.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

6.2.2. No exceedance was recorded in the reporting month.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

6.2.3. No exceedance was recorded in the reporting month.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

6.2.4. No exceedance was recorded in the reporting month.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) FEP-06/364/2009/A

6.2.5. No exceedance was recorded in the reporting month.

Contract no. HY/2009/19 – Central – Wan Chai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

6.2.1. No exceedance was recorded in the reporting month.

## 6.3 Review of the Reasons for and the Implications of Non-compliance

6.3.1. There was no non-compliance from the site audits in the reporting period. The observations and recommendations made in each individual site audit session were presented in Section 8.

6.3.2. No project-related non-compliance from monitoring was recorded in the reporting month.

## 6.4 Summary of action taken in the event of and follow-up on non-compliance

6.4.1. There was no particular action taken since no project-related non-compliance was recorded from the site audits and environmental monitoring in the reporting period.

## **7 Cumulative Construction Impact due to the Concurrent Projects**

- 7.0.1. According to Condition 3.4 of the EP-364/2009/A, this section addresses the relevant cumulative construction impact due to the concurrent activities of the current projects including the Central Reclamation Phase III (CRIII), Wan Chai Development Phase II (WDII), Central-WanChai Bypass (CWB), Island Eastern Corridor Link projects (IECL) and Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel).
- 7.0.2. According to the Monthly EM&A report (May 2012) of Central Reclamation Phase III (CRIII), filling works, building construction works and pipe works were performed in the May 2012 reporting month. The water quality monitoring was completed in October 2011 and no exceedance was recorded for air and noise monitoring. It can be concluded that cumulative construction impact due to the concurrent activities of the current projects with the Central Reclamation Phase III (CRIII) was insignificant.
- 7.0.3. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, the major construction activity under Wan Chai Development Phase II was marine works at HKCEC areas, cross-harbour Watermains, Fresh Watermains, Cooling Watermains and Salt Watermains Installations, tunnel works at Wan Chai East, diaphragm wall construction at TS4; dredging at TS2; deep excavation at TS1 and TPCWAE TCBR1W. Advanced piling works at FEHD Whitfield Depot, Central Interchange, and diaphragm wall construction at North Point area. The major environmental impact was water quality impact at Causeway Bay and Wan Chai. Land-based construction activity were Diaphragm wall construction at TS4, Diaphragm wall construction at TS1 and TPCWAE TCBR1W, piling works at FEHD Whitfield Depot, Diaphragm wall at Central and North Point and tunnel works at Wan Chai East in the reporting month.
- 7.0.4. The major environmental impacts generated from advanced piling works at FEHD Whitfield Depot were undertaken and Diaphragm wall construction at Central and tunnel works at Wan Chai East, IECL and Causeway Bay typhoon shelter in the reporting month. No significant air impact was anticipated in the reporting month. Besides, no Project-related exceedance was recorded during the environmental monitoring events in the reporting month. Thus, it is evaluated that the cumulative construction impact from the concurrent projects including Wan Chai Development Phase II was insignificant.



**8 Environmental Site Audit**

8.0.1. During this reporting month, weekly environmental site audits were conducted for Contracts no. HY/2 009/15, HY/2009/17, HY/2 009/18, HY/20 09/19, HK/2009/01, HK/20 09/02 and HK/2010/06. No non-conformance was identified during the site audits.

8.0.2. Five site inspections for Contract no. HY/2009/15 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.1**.

**Table 8.1 Summary of Environmental Inspections for Contract no. HY/2009/15**

Date	Item	Observations	Action taken by Contractor	Outcome
29-May-12	120529_01	Oil should be removed as chemical waste and steps should be taken to avoid leakage in to sea (treatment plant at TPCWAE)	Oil was removed.	Completion as observed on 5-Jun-12
5-Jun-12	120605_01	Cares should be taken to avoid mud getting out of site area and muddy trial should be cleared. (Gate of TS4, outside POC)	Muddy trail was cleared.	Completion as observed on 12-Jun-12
12-Jun-12	120612_01	Protection around public gully should be provided to prevent runoff. (Outside POC)	Sandbags were provided around the public gullies.	Completion as observed on 19-Jun-12
12-Jun-12	120612_02	Cement bags should be covered with tarpaulin sheet (Barge at TPCWAE)	Cement bags were covered with tarpaulin sheet.	Completion as observed on 19-Jun-12
12-Jun-12	120612_03	Floating refuse should be removed regularly (TS1, by sedimentation tank)	Floating refuse were collected	Completion as observed on 19-Jun-12
19-Jun-12	120619_01	Muddy water was observed to be pumping into sea. Actions should be taken to avoid improper discharge.	Pipe discharging muddy water was removed from discharge point and placed into pumping well.	Completion as observed on 26-Jun-12
26-Jun-12	12 0626_01	Handheld breakers should have valid NEL displayed while in use (TS1)	Handheld breakers were removed offsite.	Completion as observed on 3-Jul-12
26-Jun-12	120626_02	Cement mixing should be performed in sheltered area (TS1)	Cement mixing activities were removed from open area.	Completion as observed on 3-Jul-12
26-Jun-12	120626_03	Effective wheel wash area should be provided so that wheels are washed and do not carry mud off site. (Gate of TS4/ME4)	Mud was cleared from wheel wash area.	Completion as observed on 3-Jul-12
26-Jun-12	120626_04	Proper labeling and adequate drip trays should be provided for drums	Drums were removed site.	Completion as observed on 3-Jul-12

8.0.3. Four site inspections for Contract no. HY/2009/18 was carried out during this reporting period. No observation was found in the reporting month.

8.0.4. Four site inspections for Contract no. HY/2009/19 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.2**.

**Table 8.2 Summary of Environmental Inspections for Contract no. HY/2009/19**

Item	Date	Observations	Action taken by Contractor	Outcome
120530_01	30-May-12	Adequate drip tray should be provided for oil drums (Portion III and all platforms)	Drip trays were provided for oil drums.	Completion as observed on 6-Jun-12
120530_02	30-May-12	Hole at drip tray should be plugged and oil plus contaminated soils should be removed as chemical waste (portion III)	Hole at drip tray was filled.	Completion as observed on 13-Jun-12
120530_03	30-May-12	Proper labeling should be given to chemical/oil drums and adequate storage area should be provided (platforms, portion III)	MSDS was provided showing the drums were containing material that does not need labeling, drip tray was also provided.	Completion as observed on 13-Jun-12
120606_01	6-Jun-12	Adequate drip trays should be provided for oil drums (Portion III)	Hole at drip tray was filled.	Completion as observed on 13-Jun-12
120606_02	6-Jun-12	Gaps and holes on platforms should be protected to avoid runoff into sea.	Sandbags were used to fill the holes and gaps were filled.	Completion as observed on 13-Jun-12
120613_01	13-Jun-12	Tree protection zone should be free of construction activities (Portion III).	Tree was transplanted on 19-Jun-12.	Completion as observed on 20-Jun-12
120613_02	13-Jun-12	Cement bags should be covered with tarpaulin sheet (Portion III).	Cement bags were covered with plastic sheets.	Completion as observed on 20-Jun-12
120620_01	20-Jun-12	Adequate drip trays should be provided for oil drums. (Portion III)	Oil drums were removed from site.	Completion as observed on 27-Jun-12
120627_01	27-Jun-12	Proper labelling and adequate drip tray should be provided for drums (Box culvert T1 at Watson Road)	Drum was removed from site.	Completion as observed on 4-Jul-12
120627_02	27-Jun-12	Effective noise blankets should be erected on working platforms (all platforms)	No actions were performed	Follow-up observed on 4-Jul-12

8.0.5. Five site inspections for Contract no. HK/2009/01 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.3**.

**Table 8.3 Summary of Environmental Inspections for Contract no. HK/2009/01**

Item	Date	Observations	Action taken by Contractor	Outcome
120530_01	30-May-12	The muddy water was observed on the roadside from wheel washing facilities which should be cleaned (Water Channel)	Muddy water was removed from roadside.	Completion as observed on 6-June-12
120606_01	6-Jun-12	The discharge should be treated before discharge to the manhole (Opposite to Grand Hyatt)	Discharge at manhole was stopped and diverted to treatment facilities.	Completion as observed on 13-June-12
120606_01	6-Jun-12	Drip trays should be provided for oil drums (Water Channel)	Drip tray was provided for oil drums.	Completion as observed on 13-June-12
120606_01	6-Jun-12	The muddy water was observed outside the silt curtain, which should be maintained properly to prevent the leakage of the muddy water. (Water Channel)	Better maintenance of silt curtain.	Completion as observed on 13-June-12
120613_01	13-Jun-12	The spillage of water from sedimentation tank was observed which should be repaired or replaced by new one (Opposite to site office)	Sedimentation tank was repaired.	Completion as observed on 20-June-12
120613_02	13-Jun-12	The leakage of fuel oil was observed on the floor which should be removed and disposed as chemical waste (Opposite to site office)	Oil leakage was removed.	Completion as observed on 20-June-12
120613_03	13-Jun-12	The muddy water was discharging from sedimentation tank, the silt inside the tank should be cleaned regularly (TST)	Silt was cleared from sedimentation tank.	Completion as observed on 20-June-12
120613_04	13-Jun-12	The muddy water was observed outside the site area which should be removed (VIP area)	Muddy water was removed.	Completion as observed on 20-June-12
120620_01	20-Jun-12	The bentonite bags should be covered by tarpaulin sheet completely (Water Channel)	Bentonite bags were covered.	Completion as observed on 27-June-12
120620_02	20-Jun-12	The oil stain was observed on ground which should be removed and disposed as chemical waste (B2, opposite to site office)	Oil stain was removed.	Completion as observed on 27-June-12
120627_01	27-Jun-12	The silt curtain should be provided for rockfilling in HKCEC channel. (Water Channel)	Silt curtain was provided	Completion as observed on 4-Jul-12

8.0.6. Four site inspections for Contract no. HK/2009/02 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.4**.

**Table 8.4 Summary of Environmental Inspections for Contract no. HK/2009/02**

Item	Date	Observations	Action taken by Contractor	Outcome
120531_01	31-May-12	Drip tray should be provided for oil drum (small ex-pet garden)	Drip tray was provided for oil drum.	Completion as observed on 7-June-12
120531_02	31-May-12	The bentonite bags should be covered by tarpaulin sheet (Gate 2)	Bentonite bags were covered by tarpaulin sheet.	Completion as observed on 7-June-12
120607_01	7-Jun-12	Drip trays should be provided for oil drums and the drain hole should be plugged properly. (Harbour Road, WCR1)	Drip tray was provided for oil drum and all drain holes were plugged.	Completion as observed on 14-June-12
120607_02	7-Jun-12	The leakage of water from the pipe to the roadside was observed which should be removed and the pipe should be repaired. (Harbour Road)	Pipe was repaired and water leakage was removed.	Completion as observed on 14-June-12
120614_01	14-Jun-12	The muddy water was observed from the site boundary on the road which should be removed (small ex-pet garden)	Muddy water was removed from road.	Completion as observed on 20-June-12
120614_02	14-Jun-12	The floating debris should be cleaned regularly (small ex-pet garden)	Floating debris was collected.	Completion as observed on 20-June-12
120614_03	14-Jun-12	The stagnant water was observed within the site area which should be removed (WCR1, WSD pumping station)	Stagnant water was removed.	Completion as observed on 20-June-12
120614_04	14-Jun-12	The muddy water from the excavation pit was discharged directly which should not be allowed and should be treated prior to discharge. (WCR1)	Muddy water was diverted to treatment before discharge.	Completion as observed on 20-June-12
120620_01	20-Jun-12	The oil stain was observed on the floor which should be removed and disposed as chemical waste (WCR1)	Oil stain was removed.	Completion as observed on 28-June-12

- 8.0.7. Five site inspections for Contract no. HY/2009/17 were carried out during this reporting period. No observation was found in the reporting month.
- 8.0.8. Five site inspections for Contract no. HK/2010/06 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.5**.

**Table 8.5 Summary of Environmental Inspections for Contract no. HK/2010/06**

Item	Date	Observations	Action taken by Contractor	Outcome
120604_01	4-Jun-12	The equipments and materials in the drip tray should be removed and the accumulated water should be removed and disposed as chemical waste (2e)	Equipments, materials and water were removed from drip tray.	Completion as observed on 11-June-12
120611_01	11-Jun-12	The oil stain was observed on	Oil leakage was	Completion as



Item	Date	Observations	Action taken by Contractor	Outcome
		the platform which should be removed and disposed as chemical waste (2e and 2w)	removed. ob	served on 21-Jun-12
120611_02	11-Jun-12	The stagnant water and silt accumulated on the U-channel should be removed (2w)	Stagnant water and silt was removed.	Completion as observed on 21-Jun-12
120625_01	25-Jun-12	The oil stains was observed on the platform which should be removed and disposed as chemical waste (Eastern Platform)	Oil stain was removed as chemical waste.	Completion as observed on 3-Jul-12

**9 COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION**

- 9.0.1. No environmental complaint was received in the reporting period.
- 9.0.2. The details of cumulative complaint log and updated summary of complaints are presented in **Appendix 9.1**
- 9.0.3. Cumulative statistic on complaints and successful prosecutions are summarized in **Table 9.1** and **Table 9.2** respectively.

**Table 9.1 Cumulative Statistics on Complaints**

Reporting Period	No. of Complaints
June 12	0
Sep 10 to May 12	20
<b>Total</b>	<b>20</b>

**Table 9.2 Cumulative Statistics on Successful Prosecutions**

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this month (Offence Date)	Cumulative No. Project-to-Date
Air -		0	0
Noise -		0	0
Water -		0	0
Waste -		0	0
<b>Total</b>	<b>-</b>	<b>0</b>	<b>0</b>

**TABLE 10. CONCLUSION**

10.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.

10.0.2. The scheduled construction activities and the recommended mitigation measures for the coming month are listed in **Table 10.1**. The construction programmes of individual contracts are provided in **Appendix 10.1**.

**Table 10.1 Summary of Key Construction Activities of Individual Contract(s) to be commenced in Coming Reporting Month**

Contract No.	Key Construction Works	Recommended Mitigation Measures
HY/2009/15	<ul style="list-style-type: none"> <li>• Diaphragm wall construction works at TS4</li> <li>• ELS works at TPCWAE</li> <li>• Cut and cover tunnel construction at TPCWAE</li> <li>• Mined tunnel preparation works at TPCWAE and Hung Hing Road</li> </ul>	<ul style="list-style-type: none"> <li>• Watering any dust generating activities</li> <li>• Checking all drip trays frequently and clear any stagnant water and mud inside it.</li> <li>• Noise control measures shall be provided during restricted hours.</li> </ul>
HY/2009/17	<ul style="list-style-type: none"> <li>• ELS works for basement construction for pile cap construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Noise barrier shall be implemented; and</li> <li>• Watering any dust generating activities</li> </ul>

<p>HY/2009/18</p>	<ul style="list-style-type: none"> <li>• Trial pit</li> <li>• Instrumentation and monitoring works</li> <li>• Drainage works</li> <li>• Site investigation and pre-drilling works</li> <li>• D-wall construction</li> <li>• Sheet piling</li> <li>• Tree Transplantation</li> <li>• Earthworks</li> <li>• Preparation works in existing tunnel</li> <li>• Approach ramp (through) structure works</li> <li>• Top down slab</li> <li>• Road works</li> <li>• Tunnel works</li> <li>• Excavation and Lateral Support</li> <li>• Pipe-pile works</li> <li>• Cooling main bridge construction</li> <li>• Bridge A construction</li> </ul>	<ul style="list-style-type: none"> <li>• Noise barrier shall be implemented; and</li> <li>• Noise level shall be controlled by reducing piling rate and no. of plants working in parallel.</li> <li>• Dust control during dust generating works</li> <li>• Provide protection works to ensure no runoff out of site area or direct discharge into public drainage system.</li> </ul>
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<p>HY2009/19</p>	<ul style="list-style-type: none"> <li>• Road works at Watson Road</li> <li>• Laying od 1500φ drainage pipe</li> <li>• Fabrication o f bo red p iling platform</li> <li>• Bored piling (Land)</li> <li>• Ground con tamination assessment</li> <li>• Pre-drilling works for bored pile and Diaphragm wall</li> <li>• D-wall Cons truction (N orth &amp; South Section)</li> <li>• Guide w all c onstruction f or D - wall / Barette at North side</li> <li>• Construction w orks for Bo x Culvert T</li> <li>• Construct i on of s ocket-H pil e for Marine works</li> <li>• Construction of pre-bored H-pile works for Culvert U</li> <li>• Construction of 1500Ø drainage along D-wall</li> <li>• Construction of pile cap</li> </ul>	<ul style="list-style-type: none"> <li>• Noise level shall be controlled by reducing the pilling operation rate.</li> <li>• Noise bar rier sh all be implemented.</li> <li>• Dust con trol du ring dust generating works</li> <li>• Provide protection w orks a nd adequate dr ainage s ystem to ensure n o d irect discharge into public dr ainage s ystem o r th e sea.</li> </ul>
<p>HK2009/01</p>	<ul style="list-style-type: none"> <li>• Diaphragm wall construction for CWB tunneling works at Stage2</li> <li>• Waterproofing wo rks fo r CWB top slab</li> <li>• Excavation an d installation of shoring system for co nstruction of exhaust dust</li> <li>• Construction o f exhau st du ct structure (Bay1)</li> <li>• Construction o f exhau st du ct structure (Bay2)</li> <li>• Load test on SCL pr e-bored H-piles works</li> <li>• Excavation f or c onstruction of SCL top slab</li> <li>• Construction of S CL top sl ab (Bay 3)</li> <li>• Construction of S CL top sl ab (Bay1 and Bay 2)</li> </ul>	<ul style="list-style-type: none"> <li>• Noise level shall be controlled by reducing no . of pla nts working in parallel.</li> <li>• Well m aintained e nclosures for grouting and be ntonite m ixing plants.</li> <li>• Provide protection w orks a nd adequate dr ainage s ystem to ensure n o d irect discharge into public dr ainage s ystem o r th e sea.</li> </ul>

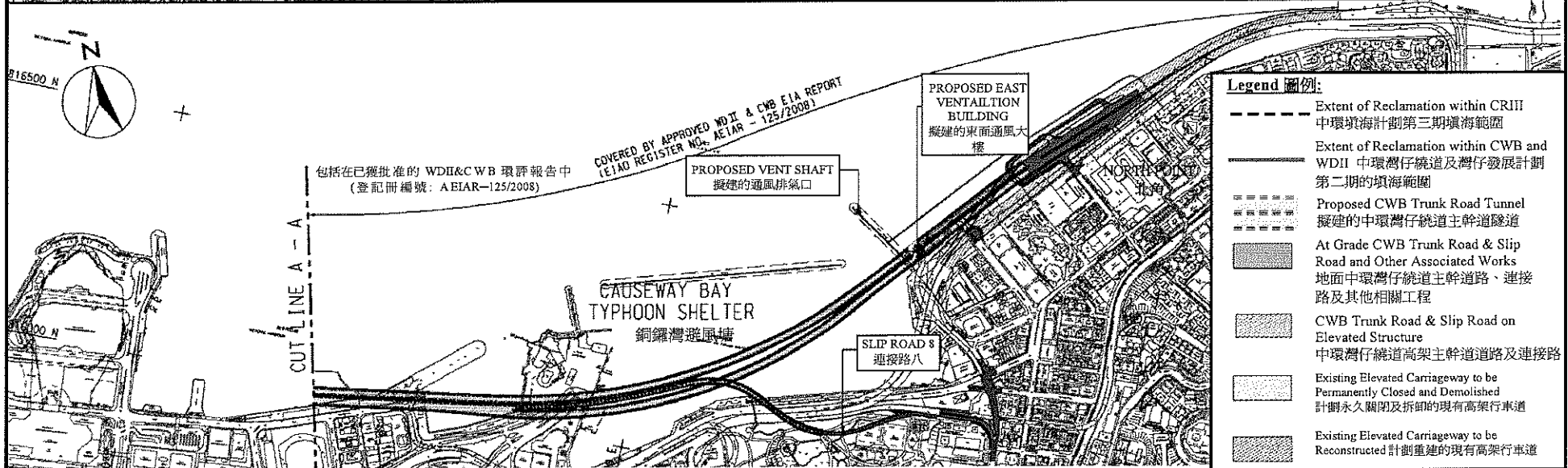
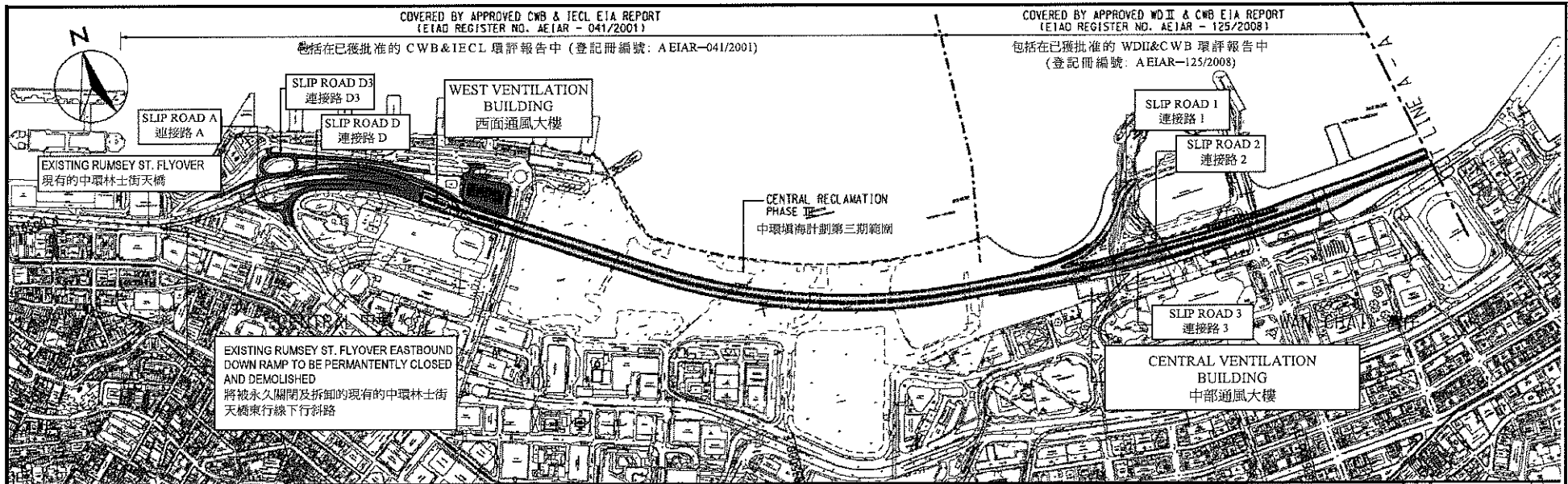
HK/2009/02	<ul style="list-style-type: none"> <li>• Bored piling, breaking concrete slab and excavation of trial pit at tunnel portion 3 &amp; 4.</li> <li>• Deep excavation and structure installation works below -9.8mPD for western tunnel portion and below +9.0mPD for eastern tunnel portion.</li> </ul>	<ul style="list-style-type: none"> <li>• Well maintain the enclosures for grouting and bentonite mixing plants.</li> <li>• Dust control during dust generating works</li> <li>• Provide protection works to ensure no runoff out of site area or direct discharge into public drainage system.</li> </ul>
HK/2010/06	<ul style="list-style-type: none"> <li>• Construction of Pre-cast Unit in China</li> </ul>	<ul style="list-style-type: none"> <li>• Air pollution control during transportation</li> </ul>

10.0.3. The construction works of Contract no. 04/HY/2006 – Reconstruction of Bus Terminus near Man Yiu Street and Man Kwong Street under FEP-04/364/2009/A was completed, and the FEP was surrendered by the Contractor on 11 February 2011.



***Figure 2.1***

***Project Layout***

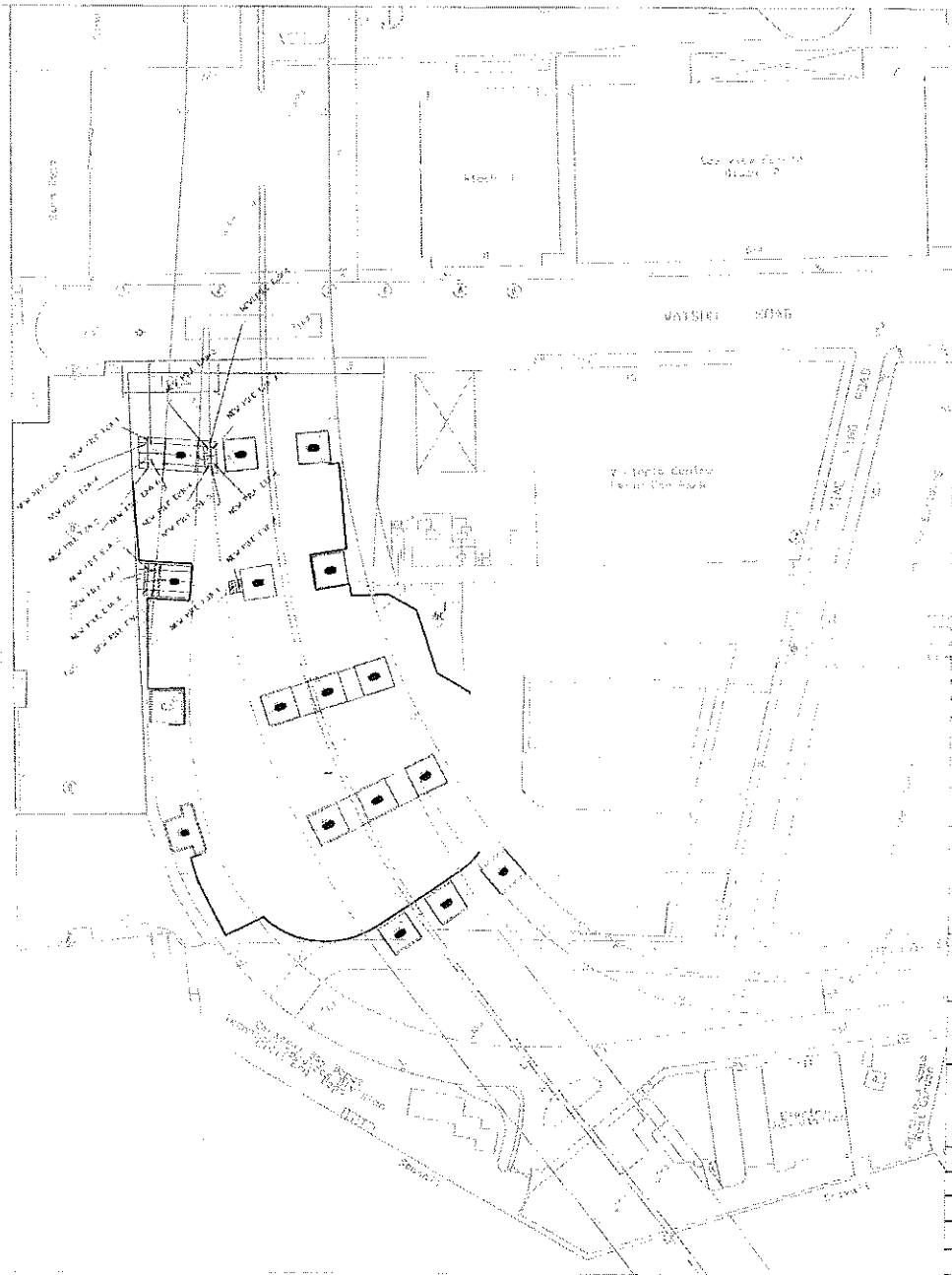


**Project Title: Central-Wanchai Bypass (CWB) Including Its Road Tunnel and Slip Roads**  
**工程項目名稱: 中環灣仔繞道包括其行車隧道及連接路**

**Environmental Permit No.: EP-364/2009/A**  
**環境許可證編號: EP-364/2009/A**

**Figure 1: Location of the Project**  
**圖 1: 工程項目位置**

(This figure was prepared based on Figure 1.1 of the Application for Environmental Permit (Application No.: AEP-364/2009))  
 (本圖是根據環境許可證的申請(申請書編號 AEP-364/2009 圖 1.1 編製)



Drawn by: [Name] / [Date] / [Scale]

Checked by: [Name] / [Date] / [Scale]

REV.	DATE	DESCRIPTION	CHK BY	AUTH BY

Highways Department 路政署  
Major Works Project Management Office

CENTRAL - WAN CHAI BYPASS AND IEC LIN

PWP ITEM NO. 579 TH  
工程項目編號

Project: CENTRAL - WAN CHAI BYPASS - ADD WATER DEPOT RE-PROVISIONING WORKS



Drawing Title: [Title]

Contractor: LAM WOO & COMPANY LIMITED

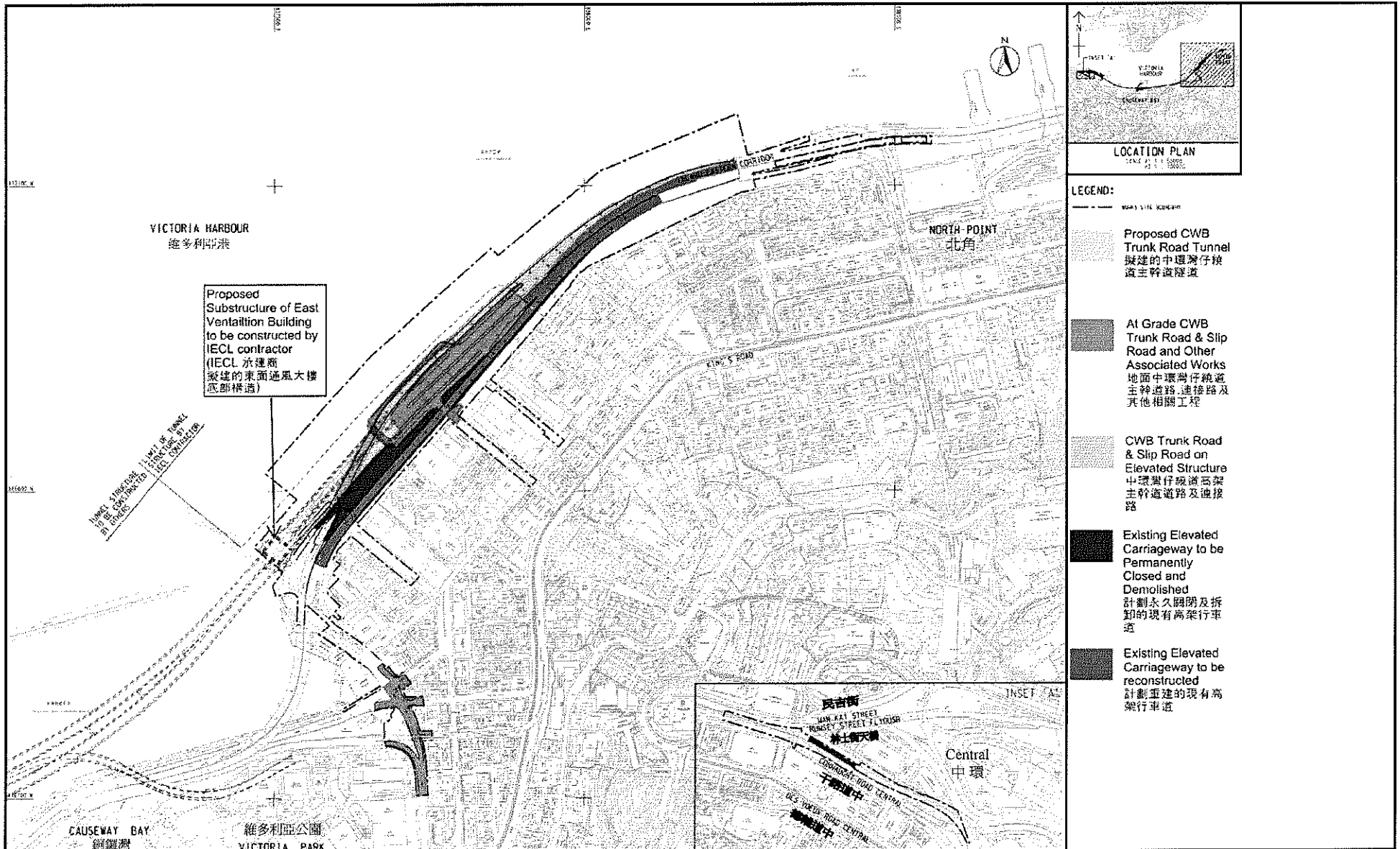
DRAWING NO. 0000

SURVEY DATE: 2008

DRAWN BY: KEN

CHECKED BY: [Name]

SCALE: 1:100 SHEET: 1



Project Title: Central-Wanchai Bypass (CWB) – Tunnel (North Point Section) and Island Eastern Corridor Link  
 工程項目名稱：中環灣仔繞道—北角段隧道及東區走廊連接路  
 Environmental Permit No. : FEP-07-364/2009/A  
 環境許可證編號 : FEP-07-364/2009/A

Figure 1b: General Layout Plan  
 圖 1b: 工程項目佈局圖

(This figure was prepared based on Sketch No. 60095653/IEC/DF0006 of Application for Further Environmental Permit (Application No.: FEP-120/2011))  
 (本圖是根據申請新的環境許可證 (申請書編號 FEP-120/2011) 圖 60095653/IEC/DF0006 編製)

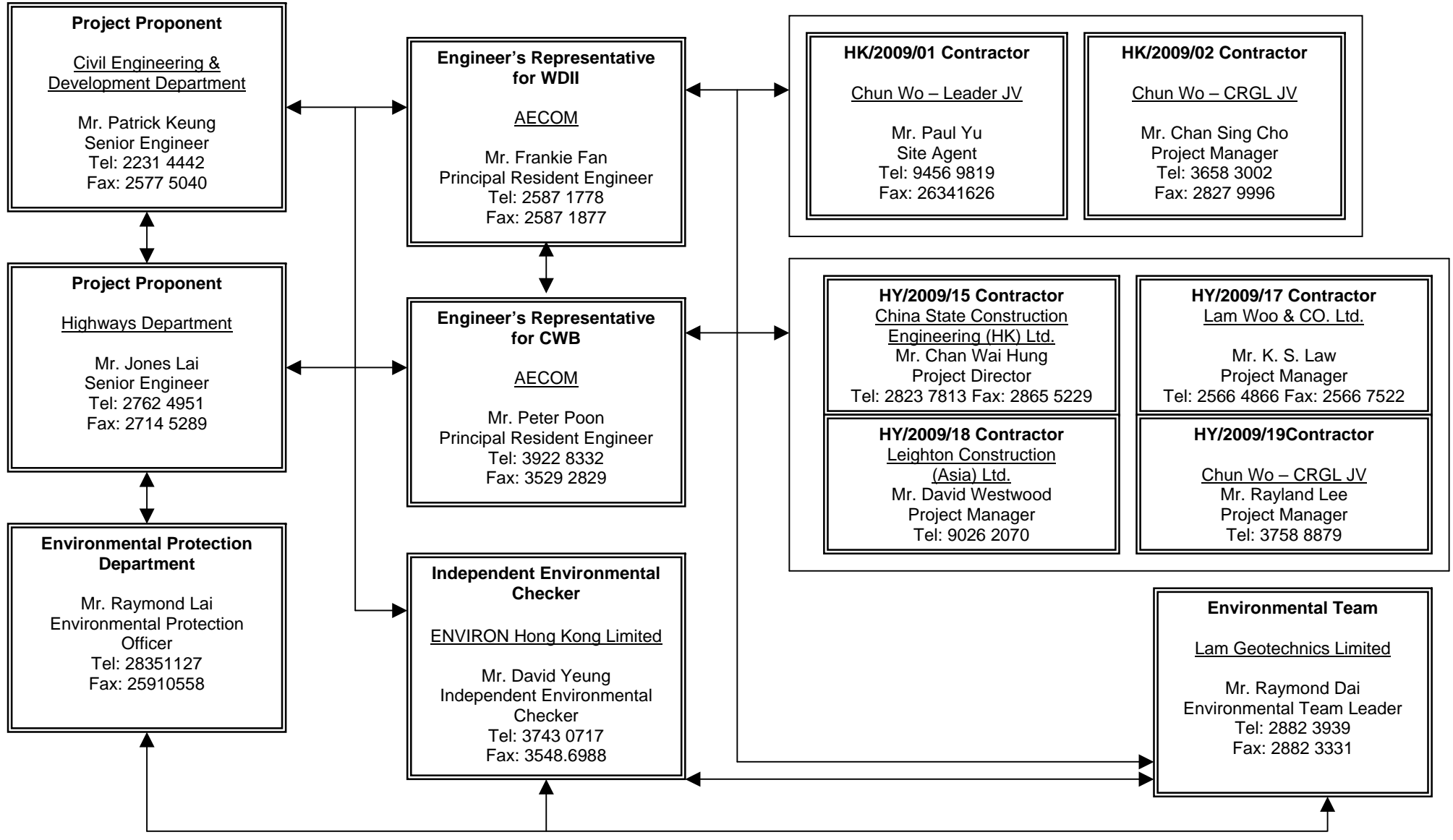


***Figure 2.2***

***Project Organization Chart***



**Project Organization Chart**

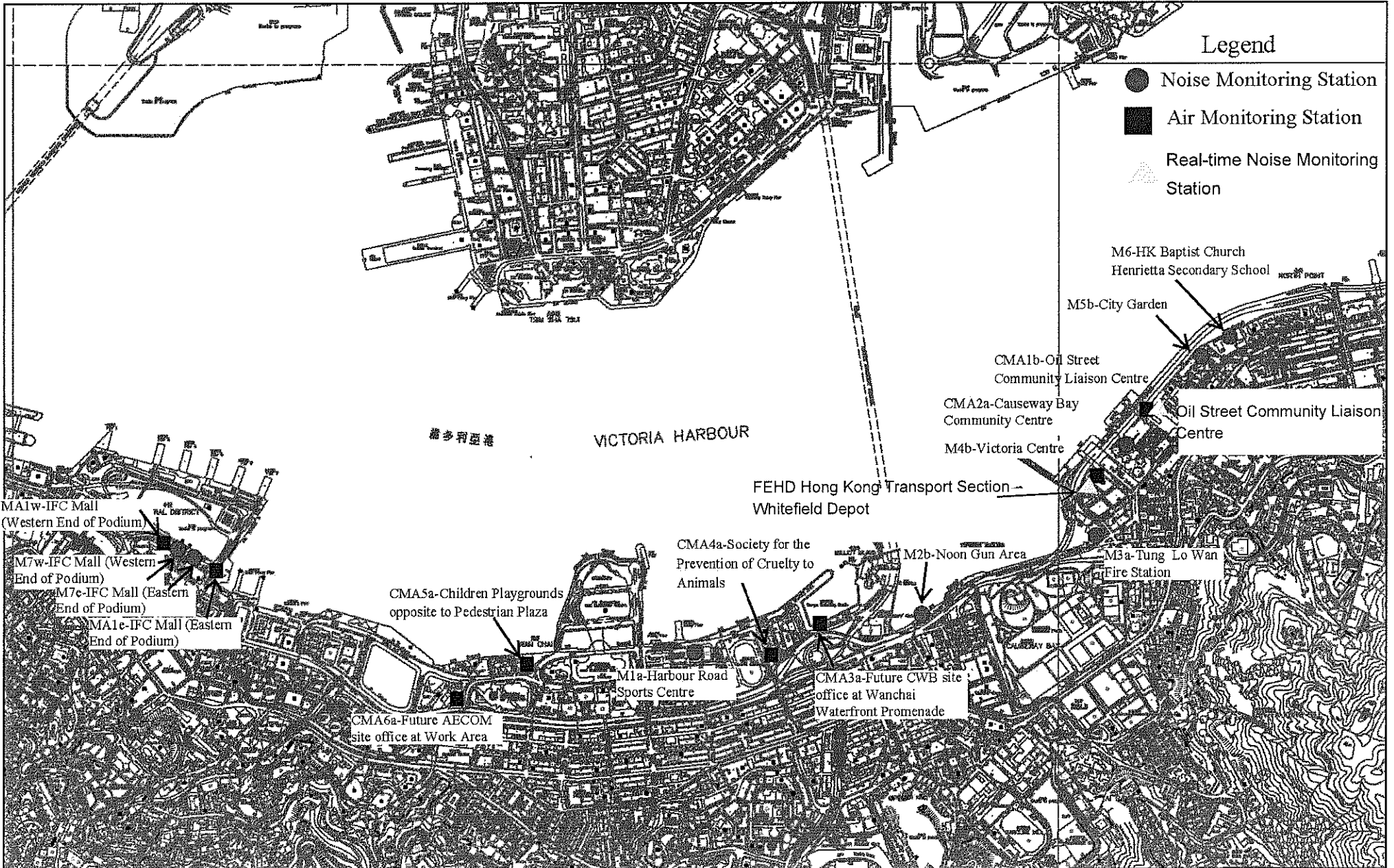






***Figure 4.1***

***Locations of Monitoring Stations***

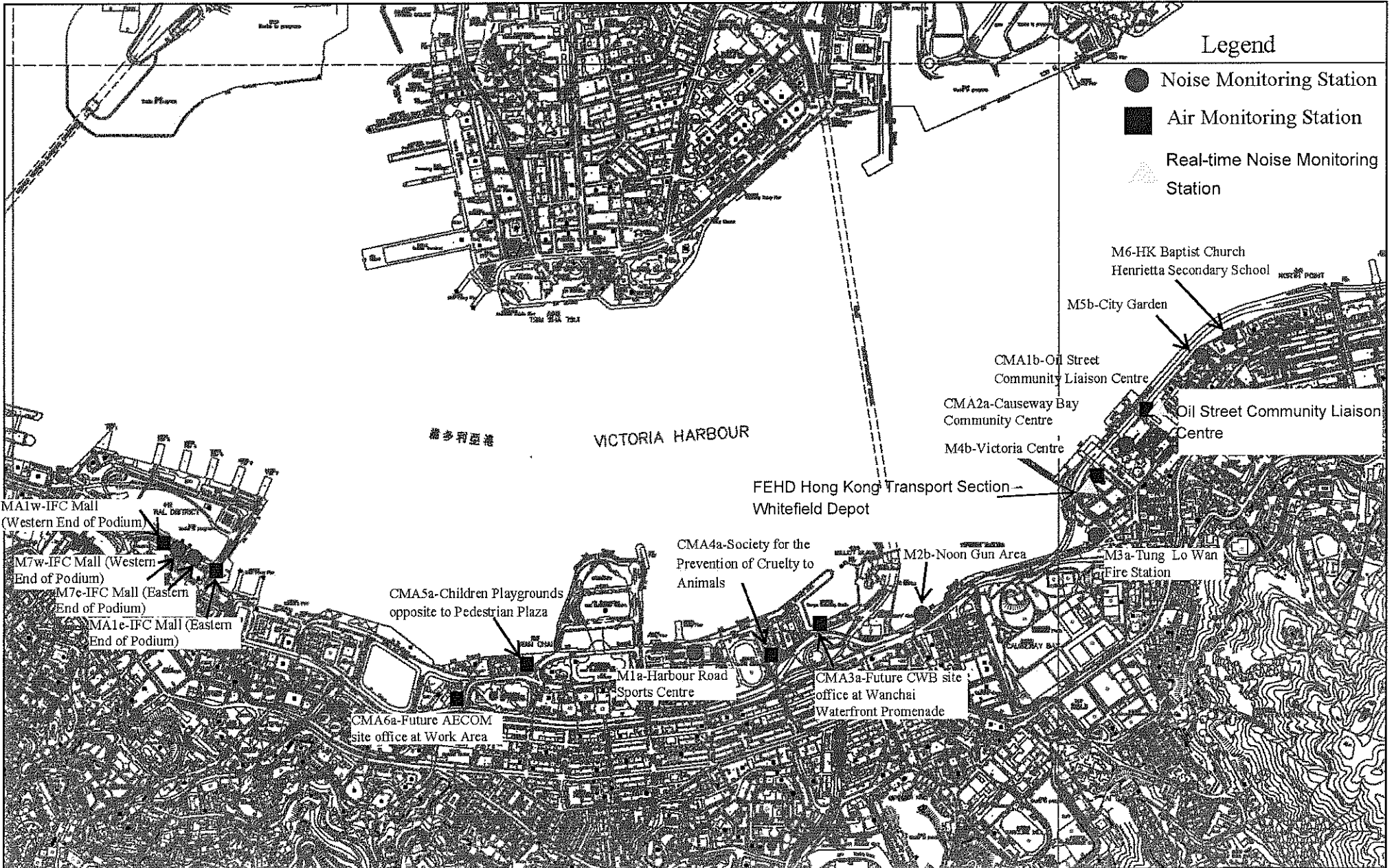


Legend

- Noise Monitoring Station
- Air Monitoring Station
- ▲ Real-time Noise Monitoring Station



Location plan of Environmental Monitoring Stations



Legend

- Noise Monitoring Station
- Air Monitoring Station
- ▲ Real-time Noise Monitoring Station



Location plan of Environmental Monitoring Stations



***Appendix 3.1***

***Environmental Mitigation Implementation Schedule***

**IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES****Table A.1 Implementation Schedule for Air Quality Control**

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
<b>Construction Phase</b>								
S3.6.5	Four times a day watering of the work site with active operations.	Work site / during construction	Contractor		√			EIAO-TM
S3.8.1	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimise cumulative dust impacts. <ul style="list-style-type: none"> <li>Strictly limit the truck speed on site to below 10 km per hour and water spraying to keep the haul roads in wet condition;</li> <li>Watering during excavation and material handling;</li> <li>Provision of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary; and</li> <li>Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</li> </ul>	Work site / during construction	Contractor		√			
<b>Operational Phase</b>								
S3.6.53 – S3.6.54	The design parameters of the East and Central Ventilation Buildings as set in Tables 3.10 and 3.11 of Volume 1 of the WDII & CWB EIA Report.	East and Central Ventilation Buildings / During operation of the Trunk Road	HyD			√		
S3.10.2	Air quality monitoring for the operation performance of the East Ventilation Building and associated East Vent Shaft will be conducted.	East Vent Shaft / During operation of the East Ventilation Building and associated East Vent Shaft	HyD			√		EIAO-TM

\* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

**Table A.2 Implementation Schedule for Noise Control**

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
<b>Construction Phase</b>								
S4.9.3	<p>Good Site Practice:</p> <ul style="list-style-type: none"> <li>Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.</li> <li>Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.</li> <li>Mobile plant, if any, shall be sited as far away from NSRs as possible.</li> <li>Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.</li> <li>Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.</li> <li>Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.</li> </ul>	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
S4.8.1 – S4.8.11	<p>Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks:</p> <ul style="list-style-type: none"> <li>Slip road 8 tunnel</li> <li>Construction of diaphragm wall and substructures of the tunnel approach ramp</li> <li>Excavation</li> <li>Construction of slabs</li> <li>Backfill</li> </ul>	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<ul style="list-style-type: none"> <li>Demolition and construction of substructures for the IEC</li> <li>Demolition works of existing piers and crossheads of the marine section of the existing IEC</li> </ul> <p>Use of PME grouping for the following tasks:</p> <ul style="list-style-type: none"> <li>At-grade road construction</li> <li>Substructure for IECL connection</li> </ul>							
<b>Operation Phase</b>								
S4.8.12 – S4.8.23	<p>For Existing NSRs</p> <ul style="list-style-type: none"> <li>about 235m length of noise semi-enclosure with transparent panel covering the westbound slip road from the IEC</li> <li>about 230m length of noise semi-enclosure with transparent panel covering the main carriageways (eastbound and westbound) of the CWB and IEC</li> <li>about 135m length of 5.5m high cantilevered noise barrier with 4.5m cantilever inclined at 45° with transparent panel on the eastbound slip road to the IEC (amended under EP-364/2009/A)</li> <li>about 95m length of 5.5m high cantilevered noise barrier with 1m cantilever inclined at 45° with transparent panel on the eastbound slip road to the IEC</li> <li>about 350m length of 3.5m high vertical noise barrier with transparent panel on the eastbound slip road to the IEC</li> <li>low noise road surfacing for the trunk road (except tunnel section and beneath the landscaped deck at the eastern portal area)) with speed limit of 70 km/hour</li> </ul>	Near North Point / Before commencement of operation of road project	HyD	√	√	√		EIAO-TM

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	For Future/Planned NSRs <ul style="list-style-type: none"> <li>• about 265m length of noise semi-enclosure with transparent panel covering the westbound slip road from the IEC</li> <li>• The openable windows of the temple, if any, should be orientated so as to avoid direct line of sight to the existing Victoria Park Road as far as practicable.</li> </ul>	In between the Electric Centre (next to City Garden) and CDA(1) site / Before occupation of Planned NSRs in CDA and CDA(1) sites.  Near Causeway Bay Fire Station / During detailed design of the re-provisioned Tin Hau Temple	HyD  Project Proponent for the re-provisioned Tin Hau Temple	√	√ #			

\* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

# Only the steel frame for this section of noise semi-enclosure would be erected in advance during the construction of the westbound slip road.



**Table A.4 Implementation Schedule for Waste Management**

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
<b>Construction Phase</b>								
S6.5.14	<b><i>Floating Refuse</i></b> During the construction phase, the project proponent's contractor will be responsible for the collection of any refuse within their works area. Floating booms will be provided on the water surface to confine the refuse from the working barges as well as to avoid the accumulation of pollutants within temporary embayment as mentioned in Table D9.3.	Work site / During the construction period	Contractor		√			
S6.6.1	<b><i>Good Site Practices</i></b> Recommendations for good site practices during the construction activities include: <ul style="list-style-type: none"> <li>• nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;</li> <li>• training of site personnel in proper waste management and chemical waste handling procedures;</li> <li>• provision of sufficient waste disposal points and regular collection for disposal;</li> <li>• appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;</li> <li>• regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and</li> <li>• a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).</li> </ul>	Work site / During the construction period	Contractor		√			Waste Disposal Ordinance (Cap.354)

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.6.2	<p><i>Waste Reduction Measures</i></p> <p>Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>• segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>• to encourage collection of aluminium cans, PET bottles and paper, separate labelled bins shall be provided to segregate these wastes from other general refuse generated by the work force;</li> <li>• any unused chemicals or those with remaining functional capacity shall be recycled;</li> <li>• use of reusable non-timber formwork, such as in casting the tunnel box sections, to reduce the amount of C&amp;D material.</li> <li>• prior to disposal of C&amp;D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;</li> <li>• proper storage and site practices to minimise the potential for damage or contamination of construction materials; and</li> <li>• plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.</li> </ul>	Work site / During planning and design stage, and construction stage	Contractor	√	√			

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.6.4	<p><i>General Refuse</i></p> <p>General refuse shall be stored in enclosed bins or compaction units separate from C&amp;D material. A licensed waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&amp;D material.</p> <p>A collection area shall be provided where wastes can be stored and loaded prior to removal from site. An enclosed and covered area is recommended to reduce the occurrence of 'wind blow' light material.</p>	Work site / During the construction period	Contractor		√			Public Health and Municipal Services Ordinance (Cap. 132)
S6.6.5	<p><i>Chemical Wastes</i></p> <p>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) shall be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals shall be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p>	Work site / During the construction period	Contractor		√			<p>Waste Disposal (Chemical Waste) (General) Regulation</p> <p>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</p>
S6.6.6	<p><i>Construction and Demolition Material</i></p> <p>C&amp;D material shall be sorted on-site into inert C&amp;D material (that is, public fill) and C&amp;D waste. All the suitable inert C&amp;D material shall be broken down to 250 mm in size for reuse as public fill in the WDII reclamation. C&amp;D waste, such as wood, glass, plastic, steel and other metals shall be reused or recycled and, as a last resort, disposed of to landfill. A suitable area shall be designated to facilitate the sorting process and a temporary stockpiling area will be required for the separated materials.</p>	Work site / During the construction period	Contractor		√			ETWB TCW No. 33/2002, 31/2004, 19/2005

WDH & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.6.7	In order to monitor the disposal of public fill and C&D waste at public fill reception facilities and landfills, respectively, and to control fly tipping, a trip-ticket system shall be included as one of the contractual requirements and implemented by the Environmental Team undertaking the environmental monitoring and audit work. An Independent Environment Checker shall be responsible for auditing the results of the system.	Work site / During the construction period	Contractor and Independent Environmental Checker		√			ETWB TCW No. 31/2004
S6.6.8	<p><i>Bentonite Slurry</i></p> <p>The disposal of residual used bentonite slurry shall follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage" and listed as follows:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• If the used bentonite slurry is intended to be disposed of through the public drainage system, it shall be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the Technical Memorandum of Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.</li> <li>• If the used bentonite slurry is intended to be disposed to public fill reception facilities, it will be mixed with dry soil on site before disposal.</li> </ul>	Work site / During the construction period	Contractor		√			ProPECC PN 1/94

\* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

**Table A.5 Implementation Schedule for Land Contamination**

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
<b>Construction and Operation Phase</b>								
S.7.1.1	As no potential contaminative land uses were identified within the Study Area, adverse land contamination impacts associated with the construction and operation of the Project is not expected. As such, environmental protection and mitigation measures are considered not necessary and will not be covered in this EM&A Manual.	-	-					-

\* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

**Table A.7 Implementation Schedule for Landscape and Visual**

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
<b>Construction Phase</b>								
Table 10.5	CM1 Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM2 Existing trees to be retained on site shall be carefully protected during construction.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM3 Trees unavoidably affected by the works shall be transplanted where practical.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM4 Compensatory tree planting shall be provided to compensate for felled trees.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM5 Control of night-time lighting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Table 10.5	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		√			EIAO TM
<b>Operation Phase</b>								
Table 10.6, Figure 10.5.1-10.5.5	OM1 Aesthetic design of buildings and road-related structures, including viaducts, vent buildings, subways, footbridges and noise barriers and enclosure.	Work site / During Design Stage and Operation Phases	HyD	√	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM3 Buffer Tree and Shrub Planting to screen proposed roads and associated structures.	Work site / During Design Stage and Operation Phases	HyD	√	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM5 Aesthetic streetscape design.	Work site / During Design Stage and Operation Phases	HyD	√	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM6 Aesthetic design of roadside amenity areas.	Work site / During Design Stage and Operation Phases	HyD	√	√	√		ETWB TCW 2/2004

\*Des - Design, C - Construction, O - Operation, and Dec - Decommissioning



***Appendix 4.1***

***Action and Limit Level***



**Action and Limit Level**

*Action and Limit Level for Noise Monitoring*

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received.	75 dB(A)/ 70 dB(A)/ 65 dB(A) <sup>Note 1</sup>

Note 1:

- 70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.
- If works are to be carried out during the restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

*Action and Limit Level for Air Monitoring*

Monitoring Location	1-hour TSP Level in $\mu\text{g}/\text{m}^3$		24-hour TSP Level in $\mu\text{g}/\text{m}^3$	
	Action Level	Limit Level	Action Level	Limit Level
CMA1b	320.1	500	176.7	260
CMA2a	323.4	500	169.5	260
CMA3a	311.3	500	171.0	260
CMA4a	312.5	500	171.2	260
CMA5a	332.0	500	181.0	260
MA1e	325.1	500	173.4	260
MA1w	325.1	500	173.4	260





***Appendix 4.2***

***Copies of Calibration Certificates***



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
 VILLAGE OF CLEVELAND, OH 45002  
 513.467.9000  
 877.263.7610 TOLL FREE  
 513.467.9009 FAX  
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jul 11, 2011 Rootmeter S/N 0438320 Ta (K) - 298  
 Operator Tisch Orifice I.D. - 0005 Pa (mm) - 749.3

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3710	3.2	2.00
2	NA	NA	1.00	0.9730	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8300	8.8	5.50
5	NA	NA	1.00	0.6860	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9817	0.7160	1.4042	0.9957	0.7263	0.8919
0.9775	1.0046	1.9859	0.9915	1.0190	1.2613
0.9754	1.1225	2.2203	0.9894	1.1385	1.4101
0.9743	1.1739	2.3286	0.9882	1.1907	1.4790
0.9690	1.4126	2.8084	0.9829	1.4328	1.7837
Qstd slope (m) = 2.01593			Qa slope (m) = 1.26234		
intercept (b) = -0.03978			intercept (b) = -0.02526		
coefficient (r) = 0.99999			coefficient (r) = 0.99999		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

$$Vstd = \text{Diff. Vol} \left[ \frac{Pa - \text{Diff. Hg}}{760} \right] \left( \frac{298}{Ta} \right)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} \left[ \frac{Pa - \text{Diff Hg}}{Pa} \right]$$

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

$$Qstd = 1/m \left\{ \left[ \text{SQRT} \left( \text{H2O} \left( \frac{Pa}{760} \right) \left( \frac{298}{Ta} \right) \right) \right] - b \right\}$$

$$Qa = 1/m \left\{ \left[ \text{SQRT} \left( \text{H2O} \left( \frac{Ta}{Pa} \right) \right) \right] - b \right\}$$



# Calibration Certificate

Certificate No. **13784**

Page 1 of 4 Pages

**Customer :** Lam Geotechnics Limited

**Address :** 11/F., Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong

**Order No. :** Q11569

**Date of receipt :** 6-Jul-11

## Item Tested

**Description :** Sound Level Meter

**Manufacturer :** B&K

**Model :** 2250

**Serial No. :** 2722311

## Test Conditions

**Date of Test :** 6-Jul-11

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

## Test Results

All results were within the IEC 651 Type 1, IEC 804 Type 1 & IEC 1260 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

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

The test equipment used for calibration are traceable to International System of Units (SI).  
The test results apply to the above Unit-Under-Test only

**Calibrated by :** 

P. F. Wong

**Approved by :** 

Dorothy Cheuk

This Certificate is issued by:  
Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.  
Tel: 2425 8801 Fax: 2425 8646

**Date:** 6-Jul-11



# Calibration Certificate

Certificate No. 13784

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Results :

## 1. SPL

UUT Setting				Applied Value (dB)	UUT Reading (dB)
Range	Freq. Wgt.	Time Const.	Center Freq.		
20 - 140	A (SPL)	Fast	--	94.0	93.9
		Slow	--		93.9
	C (SPL)	Fast	--	94.0	93.9
	A (SPL)	Fast	--	114.0	113.8
		Slow	--		113.8
	C (SPL)	Fast	--	114.0	113.8
	--	1/1 – Oct/Fast	1 kHz	94.0	93.8
				114.0	113.7
	--	1/3 – Oct/Fast	1 kHz	94.0	93.7
				114.0	113.6

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.1$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

Uncertainty :  $\pm 0.01$  dB

## 3. Linearity

Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec.
20~140	84.0	83.9	0.0	$\pm 0.4$ dB
	94.0	93.9 (Ref.)	--	
	95.0	95.0	+0.1	$\pm 0.2$ dB

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 13784

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## 4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.8	- 39.4 dB, $\pm 1.5$ dB
63 Hz	-26.5	- 26.2 dB, $\pm 1.5$ dB
125 Hz	-16.5	- 16.1 dB, $\pm 1$ dB
250 Hz	-9.0	- 8.6 dB, $\pm 1$ dB
500 Hz	-3.5	- 3.2 dB, $\pm 1$ dB
1 kHz	0.0 (Ref)	0 dB, $\pm 1$ dB
2 kHz	+1.1	+ 1.2 dB, $\pm 1$ dB
4 kHz	+1.1	+ 1.0 dB, $\pm 1$ dB
8 kHz	-1.3	- 1.1 dB, + 1.5 dB $\sim$ -3 dB
16 kHz	-5.9	- 6.6 dB, + 3 dB $\sim$ - $\infty$

Uncertainty :  $\pm 0.1$  dB

## 5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	--	--
1/10	40.0	40.1	$\pm 0.5$ dB
1/10 <sup>2</sup>	40.0	40.0	
1/10 <sup>3</sup>	40.0	40.0	$\pm 1.0$ dB
1/10 <sup>4</sup>	40.0	40.0	

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 13784

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## 6. Filter Characteristics

### 6.1 1/1 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec. (dB)
125 Hz	-64.2	< - 61
250 Hz	-44.9	< - 42
500 Hz	-21.1	< - 17.5
707 Hz	-3.8	- 2 ~ - 5
1 kHz (Ref)	--	--
1.414 kHz	-3.6	- 2 ~ - 5
2 kHz	-20.9	< - 17.5
4 kHz	-56.0	< - 42
8 kHz	-86.0	< - 61

Uncertainty :  $\pm 0.25$  dB

### 6.2 1/3 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec.(dB)
326 Hz	-64.9	< - 61
530 Hz	-48.1	< - 42
772 Hz	-23.6	< - 17.5
891 Hz	-3.9	+ 0.3 ~ - 5.0
1 kHz (Ref)	--	--
1.122 kHz	-3.9	+ 0.3 ~ - 5.0
1.296 kHz	-23.7	< - 17.5
1.887 kHz	-48.8	< - 42
3.070 kHz	-70.4	< - 61

Uncertainty :  $\pm 0.25$  dB

Remarks : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric pressure : 996 hPa.

----- END -----



# Calibration Certificate

Certificate No. 13813

Page 1 of 4 Pages

**Customer :** Lam Geotechnics Limited

**Address :** 11/F., Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong

**Order No. :** Q11569

**Date of receipt :** 7-Jul-11

## Item Tested

**Description :** Sound Level Meter

**Manufacturer :** B&K

**Model :** 2250

**Serial No. :** 2722310

## Test Conditions

**Date of Test :** 8-Jul-11

**Supply Voltage :** --

**Ambient Temperature :**  $(23 \pm 3)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 25) \%$

## Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

## Test Results

All results were within the IEC 651 Type 1, IEC 804 Type 1 & IEC 1260 Class 1 specification.

The results are shown in the attached page(s).


Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	07279	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

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

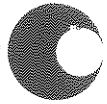
The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

**Calibrated by :**   
P. F. Wong

**Approved by :**   
Dorothy Cheuk

**Date:** 8-Jul-11



# Calibration Certificate

Certificate No. **13813**

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Results :

## 1. SPL

UUT Setting				Applied Value (dB)	UUT Reading (dB)
Range	Freq. Wgt.	Time Const.	Center Freq.		
20 - 140	A (SPL)	Fast	--	94.0	93.8
		Slow	--		93.8
	C (SPL)	Fast	--	94.0	93.9
	A (SPL)	Fast	--	114.0	113.7
		Slow	--		113.7
	C (SPL)	Fast	--	114.0	113.7
	--	1/1 - Oct/Fast	1 kHz	94.0	93.8
				114.0	113.7
	--	1/3 - Oct/Fast	1 kHz	94.0	93.8
				114.0	113.7

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.2$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

Uncertainty :  $\pm 0.01$  dB

## 3. Linearity

Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.8	0.0	$\pm 0.4$ dB
	94.0	93.8 (Ref.)	--	
	95.0	94.8	0.0	$\pm 0.2$ dB

Uncertainty :  $\pm 0.1$  dB





# Calibration Certificate

Certificate No. 13813

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## 4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.9	- 39.4 dB, $\pm 1.5$ dB
63 Hz	-26.6	- 26.2 dB, $\pm 1.5$ dB
125 Hz	-16.5	- 16.1 dB, $\pm 1$ dB
250 Hz	-9.0	- 8.6 dB, $\pm 1$ dB
500 Hz	-3.5	- 3.2 dB, $\pm 1$ dB
1 kHz	0.0 (Ref)	0 dB, $\pm 1$ dB
2 kHz	+1.4	+ 1.2 dB, $\pm 1$ dB
4 kHz	+1.2	+ 1.0 dB, $\pm 1$ dB
8 kHz	-1.2	- 1.1 dB, + 1.5 dB $\sim$ -3 dB
16 kHz	-5.8	- 6.6 dB, + 3 dB $\sim$ - $\infty$

Uncertainty :  $\pm 0.1$  dB

## 5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	--	--
1/10	40.0	40.0	$\pm 0.5$ dB
1/10 <sup>2</sup>	40.0	39.9	$\pm 1.0$ dB
1/10 <sup>3</sup>	40.0	40.0	
1/10 <sup>4</sup>	40.0	40.0	

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 13813

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## 6. Filter Characteristics

### 6.1 1/1 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec. (dB)
125 Hz	-64.2	< - 61
250 Hz	-44.9	< - 42
500 Hz	-21.0	< - 17.5
707 Hz	-3.8	- 2 ~ - 5
1 kHz (Ref)	--	--
1.414 kHz	-3.5	- 2 ~ - 5
2 kHz	-20.8	< - 17.5
4 kHz	-55.9	< - 42
8 kHz	-85.7	< - 61

Uncertainty :  $\pm 0.25$  dB

### 6.2 1/3 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec.(dB)
326 Hz	-63.6	< - 61
530 Hz	-47.9	< - 42
772 Hz	-23.5	< - 17.5
891 Hz	-3.7	+ 0.3 ~ - 5.0
1 kHz (Ref)	--	--
1.122 kHz	-3.6	+ 0.3 ~ - 5.0
1.296 kHz	-23.4	< - 17.5
1.887 kHz	-48.1	< - 42
3.070 kHz	-69.8	< - 61

Uncertainty :  $\pm 0.25$  dB

Remarks : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric pressure : 1 000 hPa.

----- END -----



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : MA1w  
 Equipment no. : EL080

Calibration Date : 17-Apr-12  
 Calibration Due Date : 17-Jun-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7538	55	55.0461
2	5.0	5.0	10.0	1.5897	46	46.0386
3	3.7	3.7	7.4	1.3703	40	40.0335
4	2.4	2.4	4.8	1.1074	26	26.0218
5	1.5	1.5	3.0	0.8796	17	17.0143

By Linear Regression of Y on X

Slope, m = 43.0956      Intercept, b = -20.9244  
 Correlation Coefficient\* = 0.9964  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam  
 Date : 17-Apr-12

Checked by : Derek Lo  
 Date : 17-Apr-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : MA1w  
 Equipment no. : EL080

Calibration Date : 15-Jun-12  
 Calibration Due Date : 15-Aug-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	303	Kelvin	Pressure, P <sub>a</sub>
			1010 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7352	58	57.4257
2	5.0	5.0	10.0	1.5728	48	47.5247
3	3.6	3.6	7.2	1.3376	38	37.6237
4	2.4	2.4	4.8	1.0958	25	24.7525
5	1.4	1.4	2.8	0.8416	14	13.8614

By Linear Regression of Y on X

Slope, m = 48.3881      Intercept, b = -27.4698  
 Correlation Coefficient\* = 0.9987  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam  
 Date : 15-Jun-12

Checked by : Derek Lo  
 Date : 15-Jun-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : MA1e Calibration Date : 17-Apr-12  
 Equipment no. : EL455 Calibration Due Date : 17-Jun-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.2	6.2	12.4	1.7680	61	61.0511
2	5.1	5.1	10.2	1.6053	52	52.0436
3	4.0	4.0	8.0	1.4239	43	43.0361
4	2.5	2.5	5.0	1.1299	30	30.0252
5	1.6	1.6	3.2	0.9078	21	21.0176

By Linear Regression of Y on X

Slope, m = 46.2523 Intercept, b = -21.7915  
 Correlation Coefficient\* = 0.9984  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 17-Apr-12 Date : 17-Apr-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : MA1e Calibration Date : 15-Jun-12  
 Equipment no. : EL455 Calibration Due Date : 15-Aug-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	303	Kelvin	Pressure, P <sub>a</sub>
			1010 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.2	6.2	12.4	1.7492	61	60.3960
2	5.1	5.1	10.2	1.5883	53	52.4752
3	4.0	4.0	8.0	1.4089	43	42.5742
4	2.6	2.6	5.2	1.1397	30	29.7030
5	1.6	1.6	3.2	0.8983	20	19.8020

By Linear Regression of Y on X

Slope, m = 48.1600 Intercept, b = -24.3572  
 Correlation Coefficient\* = 0.9988  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 15-Jun-12 Date : 15-Jun-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA5a Calibration Date : 17-Apr-12  
 Equipment no. : EL380 Calibration Due Date : 17-Jun-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7538	57	57.0478
2	4.9	4.9	9.8	1.5739	52	52.0436
3	3.7	3.7	7.4	1.3703	45	45.0377
4	2.4	2.4	4.8	1.1074	35	35.0293
5	1.5	1.5	3.0	0.8796	27	27.0226

By Linear Regression of Y on X

Slope, m = 34.9050 Intercept, b = -3.4321  
 Correlation Coefficient\* = 0.9989  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 17-Apr-12 Date : 17-Apr-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA5a  
 Equipment no. : EL380

Calibration Date : 15-Jun-12  
 Calibration Due Date : 15-Aug-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	303	Kelvin	Pressure, P <sub>a</sub>
			1010 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.7211	58	57.4257
2	5.0	5.0	10.0	1.5728	52	51.4851
3	3.7	3.7	7.4	1.3558	44	43.5643
4	2.4	2.4	4.8	1.0958	35	34.6535
5	1.4	1.4	2.8	0.8416	26	25.7426

By Linear Regression of Y on X

Slope, m = 35.7743      Intercept, b = -4.5550  
 Correlation Coefficient\* = 0.9997  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam  
 Date : 15-Jun-12

Checked by : Derek Lo  
 Date : 15-Jun-12





Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA4a Calibration Date : 17-Apr-12  
 Equipment no. : EL390 Calibration Due Date : 17-Jun-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	528	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.3118	60	45.1135
2	4.9	4.9	9.8	1.1873	53	39.8502
3	3.6	3.6	7.2	1.0205	44	33.0832
4	2.4	2.4	4.8	0.8369	35	26.3162
5	1.4	1.4	2.8	0.6438	27	20.3011

By Linear Regression of Y on X

Slope, m = 37.3022 Intercept, b = -4.3719  
 Correlation Coefficient\* = 0.9982  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 17-Apr-12 Date : 17-Apr-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA4a Calibration Date : 15-Jun-12  
 Equipment no. : EL390 Calibration Due Date : 15-Aug-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	303	Kelvin	Pressure, P <sub>a</sub>
			1010 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	5.9	5.9	11.8	1.7068	60	59.4059
2	4.9	4.9	9.8	1.5572	53	52.4752
3	3.5	3.5	7.0	1.3192	44	43.5643
4	2.4	2.4	4.8	1.0958	35	34.6535
5	1.4	1.4	2.8	0.8416	26	25.7426

By Linear Regression of Y on X

Slope, m = 38.7214 Intercept, b = -7.3288  
 Correlation Coefficient\* = 0.9992  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 15-Jun-12 Date : 15-Jun-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA3a Calibration Date : 17-Apr-12  
 Equipment no. : EL888 Calibration Due Date : 17-Jun-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	5.8	5.8	11.6	1.7106	47	47.0394
2	4.6	4.6	9.2	1.5256	41	41.0344
3	3.7	3.7	7.4	1.3703	35	35.0293
4	2.4	2.4	4.8	1.1074	24	24.0201
5	1.5	1.5	3.0	0.8796	14	14.0117

By Linear Regression of Y on X

Slope, m = 40.1015 Intercept, b = -20.6552  
 Correlation Coefficient\* = 0.9985  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 17-Apr-12 Date : 17-Apr-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA3a Calibration Date : 15-Jun-12  
 Equipment no. : EL888 Calibration Due Date : 15-Aug-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	303	Kelvin	Pressure, P <sub>a</sub>
			1010 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.7211	48	47.5247
2	4.7	4.7	9.4	1.5255	41	40.5940
3	3.8	3.8	7.6	1.3737	34	33.6634
4	2.4	2.4	4.8	1.0958	24	23.7624
5	1.6	1.6	3.2	0.8983	15	14.8515

By Linear Regression of Y on X

Slope, m = 39.5332 Intercept, b = -20.2184  
 Correlation Coefficient\* = 0.9991  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 15-Jun-12 Date : 15-Jun-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA2a  
 Equipment no. : EL449

Calibration Date : 17-Apr-12  
 Calibration Due Date : 17-Jun-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( \frac{H \times P_a}{1013.3 \times 298 / T_a} \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.2	6.2	12.4	1.7680	52	52.0436
2	5.1	5.1	10.2	1.6053	44	44.0369
3	4.0	4.0	8.0	1.4239	37	37.0310
4	2.5	2.5	5.0	1.1299	26	26.0218
5	1.5	1.5	3.0	0.8796	14	14.0117

By Linear Regression of Y on X

Slope, m = 41.6997      Intercept, b = -22.1386  
 Correlation Coefficient\* = 0.9988  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam  
 Date : 17-Apr-12

Checked by : Derek Lo  
 Date : 17-Apr-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA2a Calibration Date : 15-Jun-12  
 Equipment no. : EL449 Calibration Due Date : 15-Aug-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	303	Kelvin	Pressure, P <sub>a</sub>
			1010 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.2	6.2	12.4	1.7492	53	52.4752
2	5.1	5.1	10.2	1.5883	45	44.5544
3	4.0	4.0	8.0	1.4089	38	37.6237
4	2.5	2.5	5.0	1.1179	26	25.7426
5	1.6	1.6	3.2	0.8983	15	14.8515

By Linear Regression of Y on X

Slope, m = 43.2622 Intercept, b = -23.4638  
 Correlation Coefficient\* = 0.9991  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 15-Jun-12 Date : 15-Jun-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA1b  
 Equipment no. : EL452

Calibration Date : 17-Apr-12  
 Calibration Due Date : 17-Jun-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.7395	62	62.0520
2	5.0	5.0	10.0	1.5897	54	54.0453
3	3.9	3.9	7.8	1.4063	47	47.0394
4	2.5	2.5	5.0	1.1299	36	36.0302
5	1.5	1.5	3.0	0.8796	25	25.0210

By Linear Regression of Y on X

Slope, m = 42.1038      Intercept, b = -11.9605  
 Correlation Coefficient\* = 0.9990  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam  
 Date : 17-Apr-12

Checked by : Derek Lo  
 Date : 17-Apr-12



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA1b Calibration Date : 15-Jun-12  
 Equipment no. : EL452 Calibration Due Date : 15-Aug-12

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	303	Kelvin	Pressure, P <sub>a</sub>
			1010 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01593
		Intercept, b <sub>c</sub>	-0.03978
Last Calibration Date	11-Jul-11	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7352	62	61.3861
2	5.0	5.0	10.0	1.5728	54	53.4653
3	3.9	3.9	7.8	1.3914	45	44.5544
4	2.4	2.4	4.8	1.0958	35	34.6535
5	1.5	1.5	3.0	0.8704	26	25.7426

By Linear Regression of Y on X

Slope, m = 40.4856 Intercept, b = -10.0119  
 Correlation Coefficient\* = 0.9970  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Sam Lam Checked by : Derek Lo  
 Date : 15-Jun-12 Date : 15-Jun-12





# Calibration Certificate

Certificate No. **20138**

Page 1 of 2 Pages

**Customer :** Lam Geotechnics Limited

**Address :** 11/F., Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong

**Order No. :** Q13147

**Date of receipt :** 10-Jan-12

## Item Tested

**Description :** Sound Level Calibrator (EL469)

**Manufacturer :** ACO

**Model :** --

**Serial No. :** 050213

## Test Conditions

**Date of Test :** 11-Jan-12

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure: F21, Z02.

## Test Results

All results were within the IEC 942 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:


<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	13535	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR
S041	Universal Counter	15610	SCL-HKSAR
S206	Sound Level Meter	16338	SCL-HKSAR

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

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

**Calibrated by :**   
P. F. Wong

**Approved by :**   
Dorothy Cheuk

**Date:** 11-Jan-12

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646



# Calibration Certificate

Certificate No. 20138

Page 2 of 2 Pages

Results :

## 1. Level

UUT Nominal Value (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94	94.20	± 0.3 dB

The above measured values are the mean of 3 measurements.

Uncertainty : ± 0.1 dB

## 2. Frequency

UUT Nominal Value	Measured Value	IEC 942 Class 1 Spec.
1 kHz	0.984 kHz	± 2 %

Uncertainty : ± 3.6 x 10<sup>-6</sup>

## 3. Level Stability : 0.0 dB

IEC 942 Class 1 Spec. : ± 0.1 dB

Uncertainty : ± 0.01 dB

## 4. Total Harmonic Distortion : < 2.8 %

IEC 942 Class 1 Spec. : < 3 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

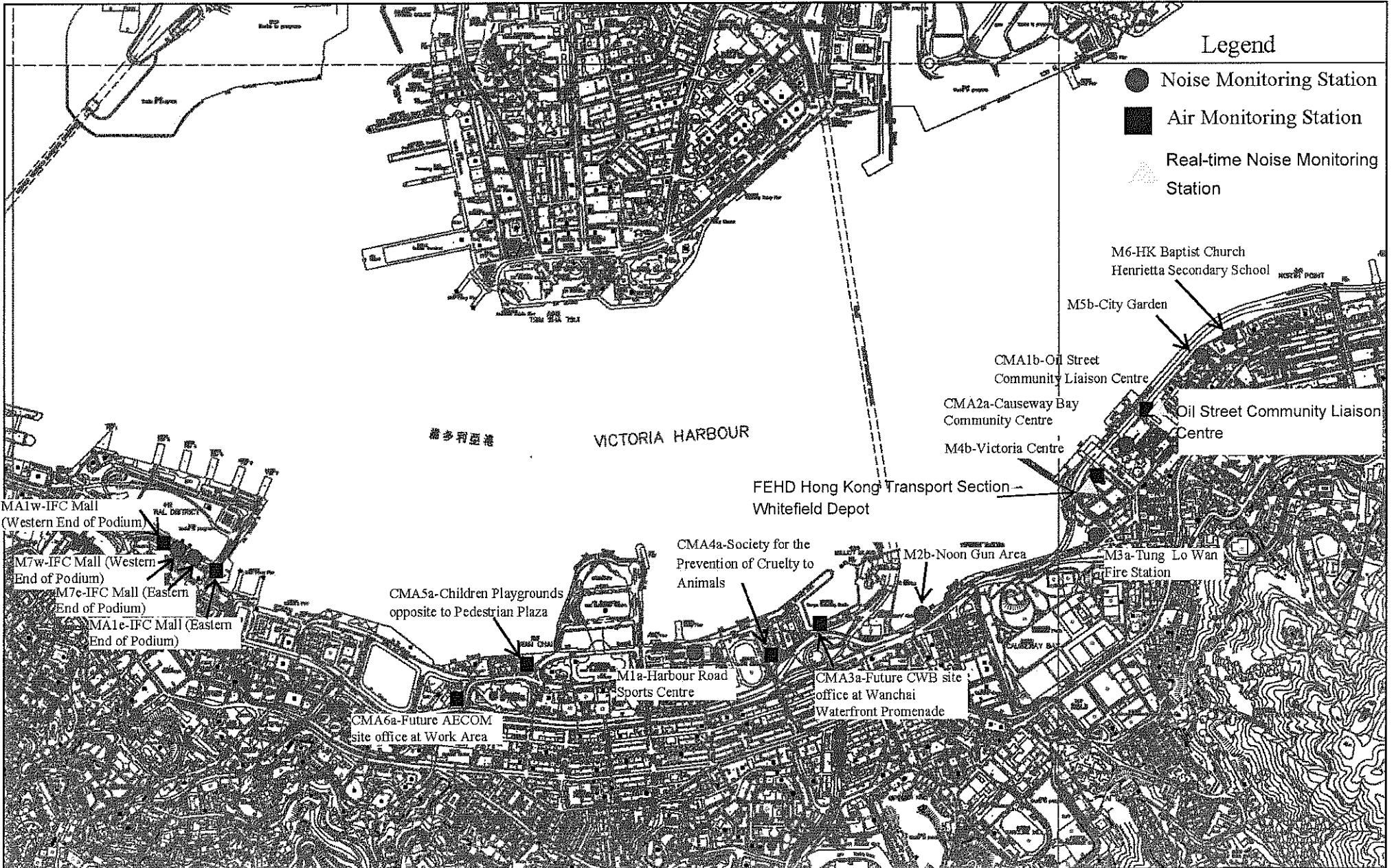
3. Atmospheric Pressure : 1 020 hPa.

----- END -----



***Appendix 5.1***

***Monitoring Schedules for Reporting Month and Coming Reporting Month***



Legend

- Noise Monitoring Station
- Air Monitoring Station
- ▲ Real-time Noise Monitoring Station



Location plan of Environmental Monitoring Stations



***Appendix 5.2***

***Noise Monitoring Results and Graphical Presentations***



**Noise Monitoring Result**

**Day Time (0700 - 1900hrs on normal weekdays)**

Location: M1a - Harbour Road Sports Centre

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
29/05/12	11:20	Cloudy	72.2	74.1	66.6	72	72	75
07/06/12	15:28	Fine	71.3	73.7	66.5	72	71	75
12/06/12	08:06	Cloudy	72.2	74.9	67.1	72	72	75
21/06/12	11:00	Fine	71.2	74.3	66.1	72	71	75
26/06/12	08:10	Fine	71.9	74.7	66.9	72	72	75

Location: M2b - Noon-day gun area

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
29/05/12	15:40	Cloudy	70.5	71.8	68.9	68	67	75
07/06/12	16:15	Fine	68.7	69.9	67.2	68	62	75
12/06/12	08:58	Cloudy	69.7	70.9	68.0	68	66	75
21/06/12	13:00	Cloudy	69.8	71.4	68.1	68	66	75
26/06/12	09:04	Cloudy	69.9	71.3	68.0	68	66	75

Location: M3a - Tung Lo Wan Fire Station

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
29/05/12	10:28	Cloudy	67.3	69.0	64.8	69	67	75
07/06/12	10:38	Fine	72.8	74.2	68.1	69	71	75
12/06/12	09:40	Cloudy	67.3	69.1	64.8	69	67	75
21/06/12	13:56	Cloudy	66.8	68.7	64.1	69	67	75
26/06/12	13:28	Cloudy	67.1	68.9	64.5	69	67	75

Location: M4b - Victoria Centre

Date	Time	Weather	Measurement Noise Level			Baseline Noise Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30min)								
29/05/12	09:42	Cloudy	69.4	70.7	67.4	67	65	75
07/06/12	11:21	Cloudy	73.4	75.6	69.8	67	72	75
12/06/12	10:28	Cloudy	72.5	73.7	70.9	67	71	75
21/06/12	14:35	Cloudy	69.6	70.7	68.2	67	66	75
26/06/12	14:11	Cloudy	71.6	73.2	69.4	67	70	75

Location: M5b - City Garden

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30min)								
29/05/12	08:08	Cloudy	71.6	72.8	70.1	68	69	75
07/06/12	13:00	Fine	70.6	71.8	69.3	68	67	75
12/06/12	11:10	Fine	71.0	72.3	69.2	68	68	75
21/06/12	15:20	Cloudy	70.4	71.2	69.1	68	67	75
26/06/12	14:59	Cloudy	73.2	74.3	71.2	68	72	75

Location: M6 - HK Baptist Church Henrietta Secondary School

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
29/05/12	08:55	Cloudy	73.0	74.4	71.3	71	69	70
07/06/12	13:44	Fine	72.7	74.2	69.2	71	68	65
12/06/12	16:23	Cloudy	73.8	74.9	72.2	71	71	65
21/06/12	16:37	Cloudy	72.9	74.0	71.3	71	69	70
26/06/12	15:44	Cloudy	73.4	74.6	71.7	71	70	70



**Noise Monitoring Result**

**Day Time (0700 - 1900hrs on normal weekdays)**

Location: M7e - International Finance Centre (Eastern End of Podium)

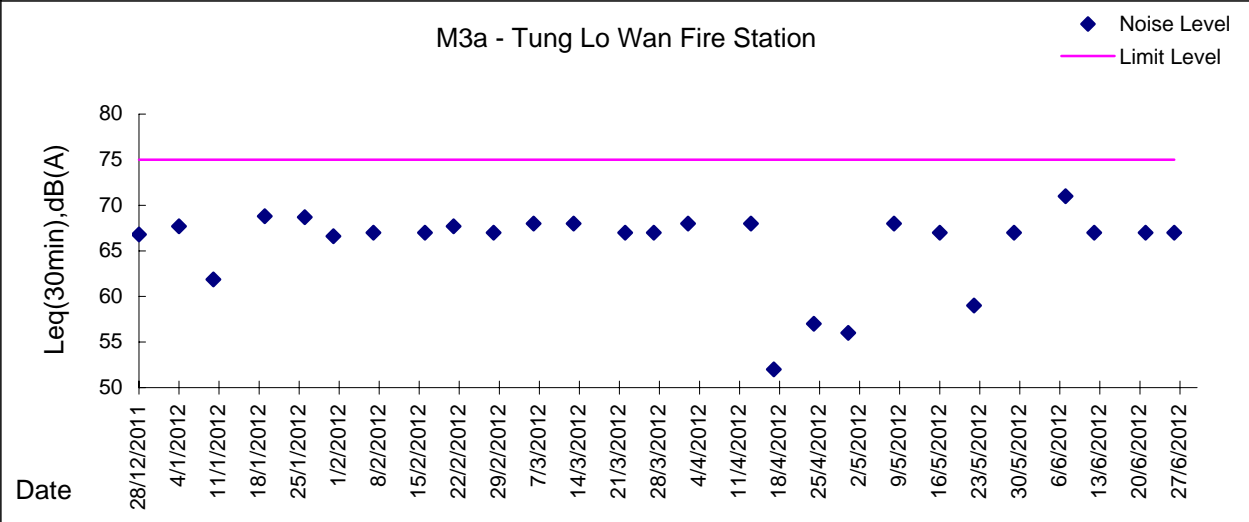
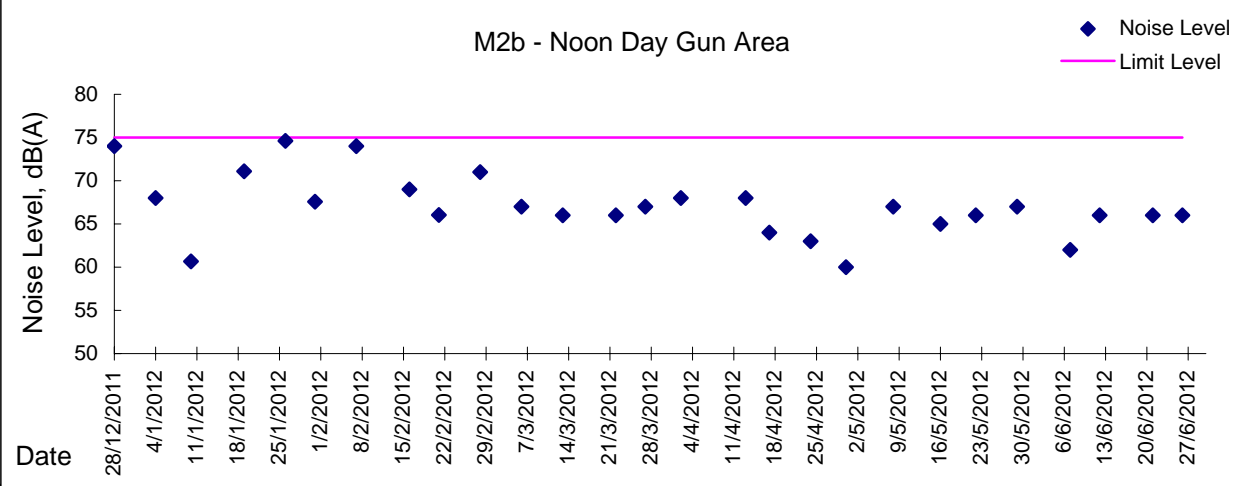
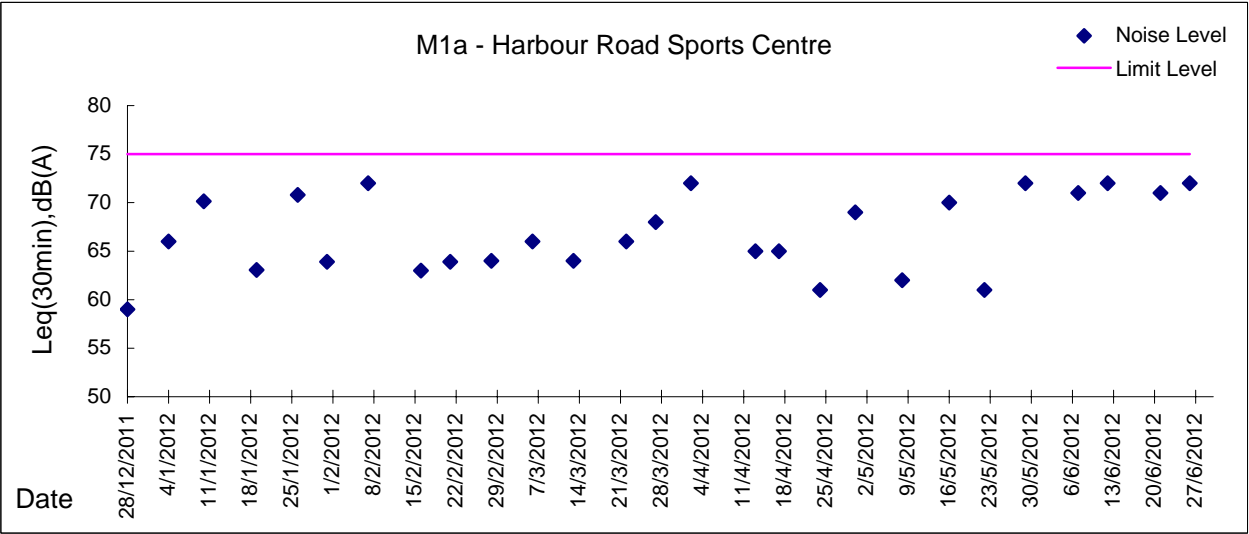
Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
29/05/12	13:41	Cloudy	71.6	72.8	70.1	67	70	75
07/06/12	18:15	Cloudy	69.2	70.8	66.4	67	65	75
12/06/12	14:45	Cloudy	74.9	77.6	72.0	67	74	75
21/06/12	09:28	Fine	71.0	72.1	69.1	67	69	75
26/06/12	10:08	Cloudy	72.5	74.0	70.2	67	71	75

Location: M7w - International Finance Centre (Western End of Podium)

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
29/05/12	14:25	Cloudy	66.2	67.9	64.2	69	66	75
07/06/12	17:33	Cloudy	65.1	66.1	63.1	69	65	75
12/06/12	14:02	Cloudy	66.3	67.5	64.2	69	66	75
21/06/12	08:45	Fine	67.2	68.1	65.8	69	67	75
26/06/12	11:00	Cloudy	68.3	69.7	66.2	69	68	75



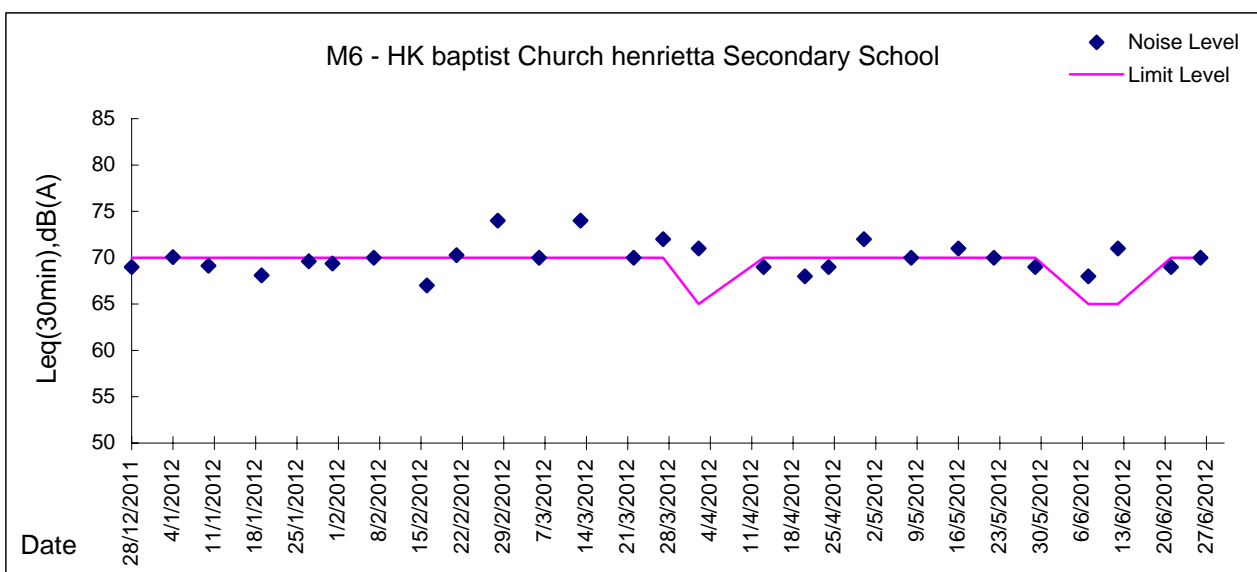
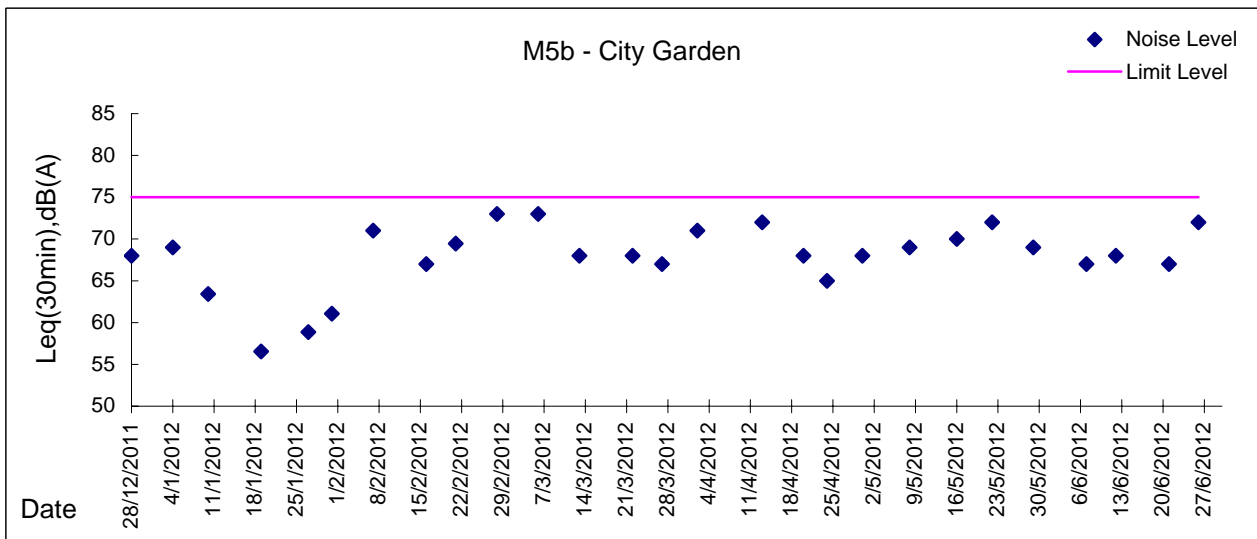
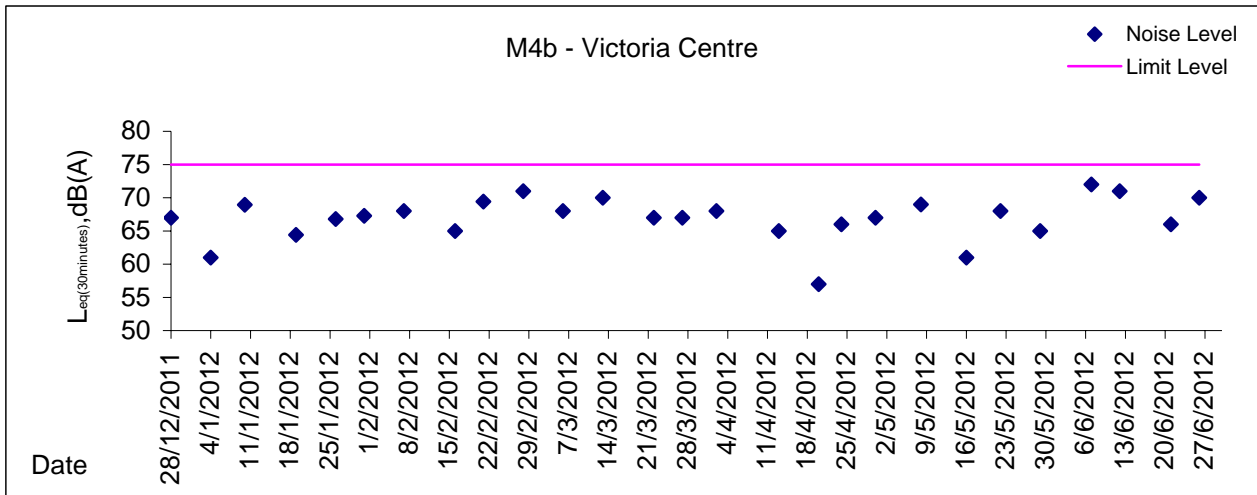
**Graphic Presentation of Noise Monitoring Result**  
**Day Time (0700 - 1900hrs on normal weekdays)**





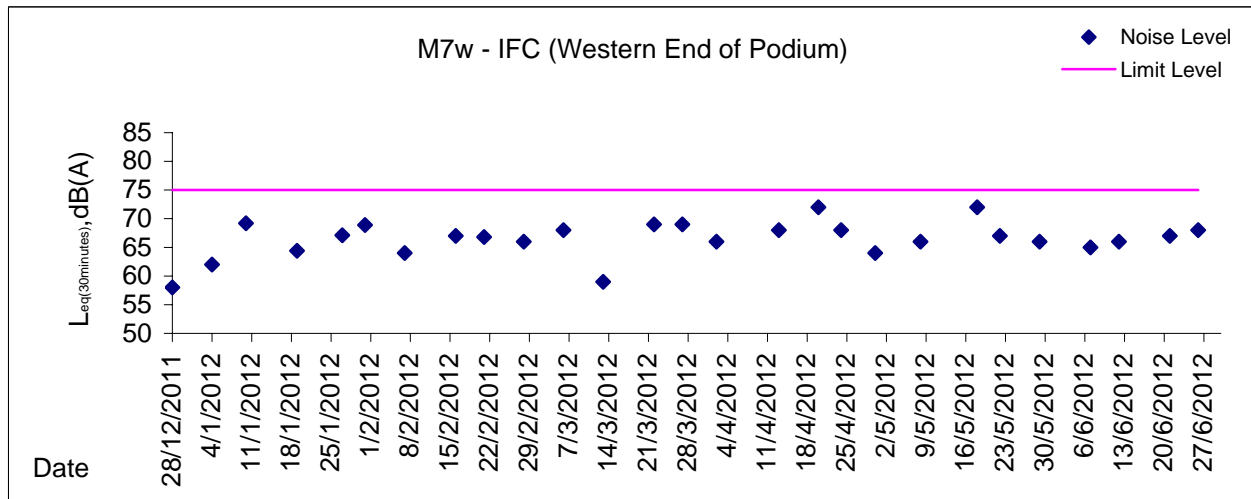
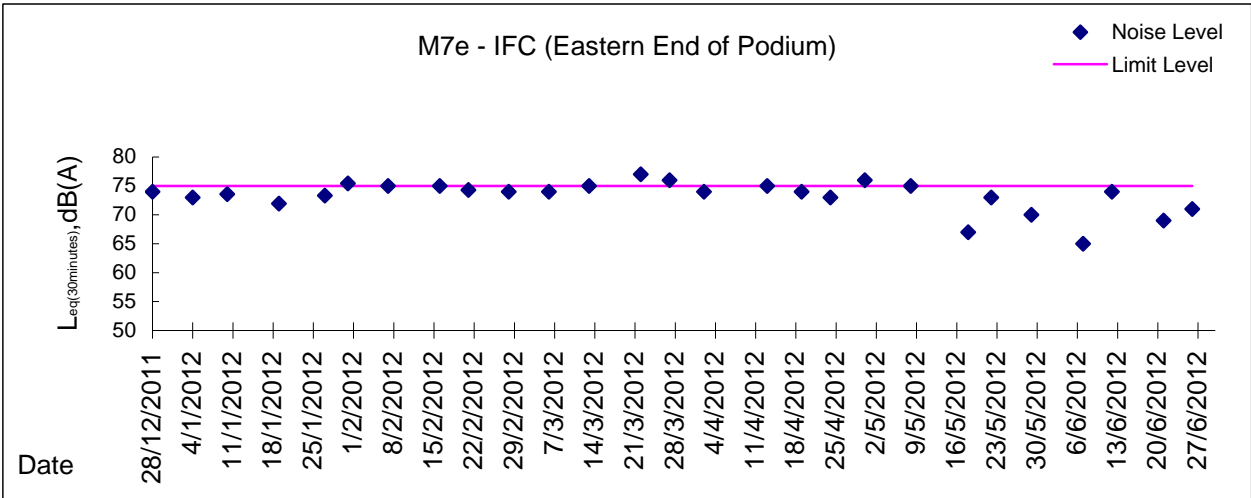


**Graphic Presentation of Noise Monitoring Result**  
**Day Time (0700 - 1900hrs on normal weekdays)**





**Graphic Presentation of Noise Monitoring Result**  
**Day Time (0700 - 1900hrs on normal weekdays)**





***Appendix 5.3***

***Air Quality Monitoring Results and Graphical Presentations***



Location: CMA1b - Oil St Community Liaison Centre

Report on 24-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 176.7

Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
31-May-12	8:00	Fine	002863	2.7732	2.9368	1094.76	1118.77	24.01	1.09	1.09	1.09	1575	104
7-Jun-12	16:10	Fine	003081	2.8110	2.9116	1138.80	1162.80	24.00	1.18	0.49	0.84	1205	83
12-Jun-12	8:00	Cloudy	003047	2.8055	2.9171	1162.80	1186.79	23.99	1.18	1.18	1.18	1700	66
18-Jun-12	8:00	Cloudy	002821	2.7706	2.8752	1189.79	1213.79	24.00	1.13	1.18	1.16	1665	63
22-Jun-12	8:00	Cloudy	003044	2.7992	2.9059	1216.79	1240.79	24.00	1.00	1.09	1.05	1507	71

\* Due to lack of electricity supply, the 24 hr-TSP was rescheduled from 6 June 2012 to 7 June 2012

Report on 1-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 320.1

Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
1-Jun-12	8:28	Fine	002828	2.7990	2.8164	1118.77	1119.77	1.00	1.19	1.14	1.16	70	250
1-Jun-12	9:51	Fine	002826	2.7892	2.8017	1119.77	1120.77	1.00	1.16	1.14	1.15	69	181
1-Jun-12	11:00	Fine	002824	2.7813	2.7961	1120.77	1121.77	1.00	1.14	1.14	1.14	68	217
7-Jun-12	13:00	Fine	002853	2.7687	2.7802	1135.80	1136.80	1.00	1.18	1.07	1.12	67	170
7-Jun-12	14:02	Fine	003071	2.8188	2.8295	1136.80	1137.80	1.00	1.34	1.34	1.34	81	133
7-Jun-12	15:05	Fine	003082	2.7908	2.8005	1137.80	1138.80	1.00	1.16	1.18	1.17	70	138
13-Jun-12	8:18	Cloudy	002830	2.7774	2.7811	1186.79	1187.79	1.00	1.18	1.16	1.17	70	53
13-Jun-12	9:31	Cloudy	002911	2.7561	2.7596	1187.79	1188.79	1.00	1.18	1.18	1.18	71	49
13-Jun-12	10:39	Cloudy	002589	2.7634	2.7661	1188.79	1189.79	1.00	1.20	1.18	1.19	72	38
19-Jun-12	8:11	Cloudy	002819	2.7891	2.7940	1213.79	1214.79	1.00	1.18	1.18	1.18	71	69
19-Jun-12	9:29	Cloudy	002816	2.7864	2.7897	1214.79	1215.79	1.00	1.18	1.22	1.20	72	46
19-Jun-12	10:31	Cloudy	002813	2.7495	2.7552	1215.79	1216.79	1.00	1.20	1.18	1.19	71	80
25-Jun-12	8:45	Fine	003039	2.8025	2.8120	1240.79	1241.79	1.00	1.19	1.19	1.19	71	133
25-Jun-12	9:52	Fine	003037	2.8194	2.8309	1241.79	1242.79	1.00	1.19	1.19	1.19	71	161
25-Jun-12	10:55	Fine	003035	2.7969	2.8091	1242.79	1243.79	1.00	1.19	1.19	1.19	71	171



Location: CMA2a - Causeway Bay Community Centre

Report on 24-hour TSP monitoring  
 Action Level ( $\mu\text{g}/\text{m}^3$ ) - 169.5  
 Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
31-May-12	8:00	Fine	002864	2.7717	2.8976	10819.32	10843.32	24.00	1.36	1.40	1.38	1985	63
6-Jun-12	8:00	Fine	002855	2.7604	2.8848	10846.36	10870.36	24.00	1.40	1.40	1.40	2013	62
12-Jun-12	8:00	Cloudy	003070	2.8185	2.9679	10873.36	10897.35	23.99	1.42	1.42	1.42	2045	73
19-Jun-12	8:00	Cloudy	002820	2.7879	2.8817	10900.35	10924.35	24.00	1.42	1.42	1.42	2042	46
22-Jun-12	8:00	Cloudy	003043	2.7996	2.9730	10927.35	10951.35	24.00	1.36	1.38	1.37	1969	88

\* Due to lack of electricity supply, the 24 hr-TSP was rescheduled from 18 June 2012 to 19 June 2012

Report on 1-hour TSP monitoring  
 Action Level ( $\mu\text{g}/\text{m}^3$ ) - 323.4  
 Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
1-Jun-12	8:50	Fine	002827	2.7880	2.7979	10843.32	10844.32	1.00	1.40	1.40	1.40	84	118
1-Jun-12	10:00	Fine	002825	2.7794	2.7903	10844.32	10845.32	1.00	1.40	1.40	1.40	84	130
1-Jun-12	11:00	Fine	002823	2.7827	2.7948	10845.36	10846.36	1.00	1.40	1.40	1.40	84	144
7-Jun-12	8:00	Fine	002854	2.7796	2.7847	10870.36	10871.36	1.00	1.35	1.35	1.35	81	63
7-Jun-12	9:17	Fine	002852	2.7830	2.7900	10871.36	10872.36	1.00	1.40	1.40	1.40	84	83
7-Jun-12	11:00	Fine	002851	2.7834	2.7922	10872.36	10873.36	1.00	1.40	1.40	1.40	84	105
13-Jun-12	8:29	Cloudy	002912	2.7722	2.7758	10897.35	10898.35	1.00	1.35	1.40	1.37	82	44
13-Jun-12	9:41	Cloudy	002590	2.7306	2.7360	10898.35	10899.35	1.00	1.35	1.42	1.39	83	65
13-Jun-12	10:48	Cloudy	002588	2.7703	2.7789	10899.35	10900.35	1.00	1.40	1.42	1.41	84	102
19-Jun-12	8:23	Cloudy	002818	2.7907	2.7962	10924.35	10925.35	1.00	1.35	1.39	1.37	82	67
19-Jun-12	9:34	Cloudy	002815	2.7561	2.7629	10925.35	10926.35	1.00	1.35	1.42	1.38	83	82
19-Jun-12	10:39	Cloudy	003046	2.8002	2.8068	10926.35	10927.35	1.00	1.39	1.39	1.39	84	79
25-Jun-12	8:35	Fine	003040	2.7870	2.8034	10951.35	10952.35	1.00	1.38	1.38	1.38	83	198
25-Jun-12	9:40	Fine	003038	2.8096	2.8250	10952.35	10953.35	1.00	1.42	1.38	1.40	84	183
25-Jun-12	10:45	Fine	003036	2.8092	2.8258	10953.35	10954.35	1.00	1.42	1.38	1.40	84	198



Location: CMA3a - CWB PRE Site Office Area

Report on 24-hour TSP monitoring  
 Action Level ( $\mu\text{g}/\text{m}^3$ ) - 171  
 Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
31-May-12	8:00	Fine	002716	2.8030	2.9592	11514.85	11538.86	24.01	1.52	1.59	1.55	2236	70
6-Jun-12	8:00	Fine	002885	2.7893	2.9461	11541.86	11565.84	23.98	1.56	1.56	1.56	2244	70
12-Jun-12	8:00	Cloudy	003125	2.7556	2.8897	11568.84	11592.84	24.00	1.51	1.51	1.51	2176	62
18-Jun-12	8:00	Cloudy	003053	2.8004	2.9259	11595.84	11619.84	24.00	1.53	1.51	1.52	2190	57
22-Jun-12	8:00	Cloudy	003003	2.7673	2.9082	11622.84	11646.84	24.00	1.47	1.47	1.47	2123	66

Report on 1-hour TSP monitoring  
 Action Level ( $\mu\text{g}/\text{m}^3$ ) - 311.3  
 Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
1-Jun-12	8:27	Cloudy	002645	2.7722	2.7859	11538.86	11539.86	1.00	1.52	1.52	1.52	91	151
1-Jun-12	9:30	Cloudy	002634	2.7888	2.8023	11539.86	11540.86	1.00	1.52	1.52	1.52	91	148
1-Jun-12	10:32	Cloudy	002633	2.7951	2.8080	11540.86	11541.86	1.00	1.47	1.47	1.47	88	146
7-Jun-12	9:48	Fine	003112	2.8143	2.8237	11565.84	11566.84	1.00	1.56	1.51	1.54	92	102
7-Jun-12	10:58	Fine	003137	2.7670	2.7763	11566.84	11567.84	1.00	1.56	1.56	1.56	94	99
7-Jun-12	13:00	Fine	003136	2.7521	2.7627	11567.84	11568.84	1.00	1.56	1.56	1.56	94	113
13-Jun-12	9:33	Cloudy	003059	2.8001	2.8036	11592.84	11593.84	1.00	1.49	1.49	1.49	89	39
13-Jun-12	10:44	Cloudy	003057	2.8033	2.8094	11593.84	11594.84	1.00	1.51	1.51	1.51	91	67
13-Jun-12	13:00	Cloudy	003056	2.7818	2.7875	11594.84	11595.84	1.00	1.51	1.51	1.51	91	63
19-Jun-12	13:32	Cloudy	003009	2.7496	2.7584	11619.84	11620.84	1.00	1.46	1.46	1.46	88	100
19-Jun-12	14:42	Cloudy	003007	2.7536	2.7624	11620.84	11621.84	1.00	1.51	1.46	1.48	89	99
19-Jun-12	15:49	Cloudy	003006	2.7760	2.7842	11621.84	11622.84	1.00	1.46	1.46	1.46	88	94
25-Jun-12	8:41	Fine	002473	2.7063	2.7245	11646.84	11647.84	1.00	1.47	1.47	1.47	88	206
25-Jun-12	9:43	Fine	002471	2.7490	2.7675	11647.84	11648.84	1.00	1.47	1.47	1.47	88	209
25-Jun-12	10:45	Fine	002261	2.8022	2.8213	11648.84	11649.84	1.00	1.47	1.47	1.47	88	216



Location: CMA4a - SPCA

Report on 24-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 171.2  
Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
31-May-12	8:00	Fine	002717	2.8021	2.9404	15040.14	15064.15	24.01	1.09	1.14	1.12	1607	86
6-Jun-12	8:00	Fine	002886	2.7851	2.8908	15067.15	15091.15	24.00	1.14	1.14	1.14	1638	65
12-Jun-12	8:00	Cloudy	003126	2.7368	2.8703	15094.15	15118.14	23.99	1.14	1.14	1.14	1635	82
18-Jun-12	8:00	Cloudy	003054	2.8166	2.8763	15121.14	15145.14	24.00	0.83	0.83	0.83	1194	50
22-Jun-12	8:00	Cloudy	003002	2.7527	2.8572	15148.14	15172.14	24.00	1.17	1.17	1.17	1688	62

Report on 1-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 312.5  
Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
1-Jun-12	8:42	Fine	002889	2.7877	2.7967	15064.15	15065.15	1.00	1.14	1.14	1.14	69	131
1-Jun-12	9:43	Fine	002888	2.7738	2.7816	15065.15	15066.15	1.00	0.99	0.99	0.99	59	131
1-Jun-12	10:45	Fine	002887	2.7855	2.7948	15066.15	15067.15	1.00	1.09	1.14	1.12	67	139
7-Jun-12	9:36	Fine	003113	2.7974	2.8008	15091.15	15092.15	1.00	1.14	1.14	1.14	68	50
7-Jun-12	10:42	Fine	003111	2.7749	2.7800	15092.15	15093.15	1.00	1.14	1.14	1.14	68	75
7-Jun-12	13:00	Fine	003135	2.7559	2.7616	15093.15	15094.15	1.00	1.14	1.14	1.14	68	83
13-Jun-12	9:20	Cloudy	003060	2.7747	2.7802	15118.14	15119.14	1.00	1.16	1.14	1.15	69	80
13-Jun-12	10:30	Cloudy	003058	2.8004	2.8048	15119.14	15120.14	1.00	1.14	1.14	1.14	68	64
13-Jun-12	13:00	Cloudy	003055	2.7997	2.8043	15120.14	15121.14	1.00	1.09	1.14	1.11	67	69
19-Jun-12	13:45	Cloudy	003008	2.7757	2.7805	15145.14	15146.14	1.00	1.11	1.11	1.11	66	72
19-Jun-12	14:52	Cloudy	003005	2.7666	2.7703	15146.14	15147.14	1.00	1.11	1.08	1.10	66	56
19-Jun-12	15:58	Cloudy	003004	2.7634	2.7677	15147.14	15148.14	1.00	1.08	1.08	1.08	65	66
25-Jun-12	8:50	Fine	002474	2.7196	2.7346	15172.14	15173.14	1.00	1.17	1.17	1.17	70	213
25-Jun-12	9:53	Fine	002387	2.8177	2.8330	15173.14	15174.14	1.00	1.17	1.17	1.17	70	218
25-Jun-12	10:57	Fine	002472	2.7317	2.7463	15174.14	15175.14	1.00	1.17	1.17	1.17	70	208



Location: CMA5a - Children Garden opposite to Pedestrian Plaza

Report on 24-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 181  
Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
31-May-12	8:00	Fine	002829	2.7697	2.9276	16027.43	16051.43	24.00	1.44	1.44	1.44	2071	76
7-Jun-12	17:45	Fine	003127	2.7585	2.8529	16059.94	16083.93	23.99	1.46	1.46	1.46	2104	45
12-Jun-12	8:00	Fine	003011	2.7592	2.9563	16083.93	16107.93	24.00	1.46	1.46	1.46	2104	94
18-Jun-12	8:00	Cloudy	002967	2.7676	2.9076	16110.93	16134.93	24.00	1.46	1.46	1.46	2099	67
22-Jun-12	8:00	Cloudy	003049	2.8341	3.0105	16137.93	16161.93	24.00	1.46	1.46	1.46	2098	84

\* Due to lack of electricity supply, the 24 hr-TSP was rescheduled from 6 June 2012 to 7 June 2012

Report on 1-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 332  
Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
1-Jun-12	10:27	Fine	003138	2.7546	2.7703	16051.43	16052.43	1.00	1.47	1.47	1.47	88	178
1-Jun-12	13:00	Fine	003122	2.7536	2.7630	16052.43	16053.43	1.00	1.47	1.47	1.47	88	107
1-Jun-12	14:22	Fine	003120	2.7499	2.7578	16053.43	16054.43	1.00	1.44	1.44	1.44	86	91
7-Jun-12	13:25	Fine	003113	2.7672	2.7790	16056.94	16057.94	1.00	1.41	1.41	1.41	84	140
7-Jun-12	14:48	Fine	003131	2.7516	2.7612	16057.94	16058.94	1.00	1.43	1.43	1.43	86	112
7-Jun-12	16:00	Fine	003132	2.7543	2.7654	16058.94	16059.94	1.00	1.46	1.46	1.46	88	127
13-Jun-12	9:10	Cloudy	003013	2.7530	2.7596	16107.93	16108.93	1.00	1.44	1.44	1.44	86	77
13-Jun-12	13:18	Cloudy	002991	2.7672	2.7729	16108.93	16109.93	1.00	1.46	1.46	1.46	88	65
13-Jun-12	14:24	Cloudy	002989	2.7736	2.7767	16109.93	16110.93	1.00	1.46	1.46	1.46	88	35
19-Jun-12	9:20	Cloudy	003052	2.8073	2.8217	16134.93	16135.93	1.00	1.46	1.46	1.46	87	165
19-Jun-12	10:48	Cloudy	002034	2.8084	2.8236	16135.93	16136.93	1.00	1.46	1.46	1.46	87	174
19-Jun-12	14:59	Cloudy	003024	2.8102	2.8275	16136.93	16137.93	1.00	1.46	1.46	1.46	87	198
25-Jun-12	8:38	Fine	003041	2.8210	2.8324	16162.93	16163.93	1.00	1.46	1.46	1.46	87	130
25-Jun-12	9:55	Fine	003022	2.8228	2.8336	16162.93	16163.93	1.00	1.19	1.19	1.19	71	151
25-Jun-12	10:58	Fine	003020	2.8226	2.8359	16163.93	16164.93	1.00	1.46	1.46	1.46	87	152





Location: MA1e - International Finance Centre (Eastern Wing)

Report on 24-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 173.4

Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
31-May-12	8:00	Fine	002856	2.7606	2.8509	8721.18	8745.18	24.00	1.30	1.30	1.30	1869	48
6-Jun-12	8:00	Fine	002993	2.7696	2.8584	8748.10	8772.10	24.00	1.29	1.29	1.29	1864	48
12-Jun-12	8:00	Cloudy	003067	2.8102	2.9191	8775.10	8799.10	24.00	1.31	1.30	1.30	1878	58
18-Jun-12	8:00	Cloudy	002878	2.7829	2.8578	8801.85	8825.85	24.00	1.29	1.31	1.30	1875	40
22-Jun-12	8:00	Cloudy	002982	2.7689	2.8789	8828.85	8852.85	24.00	1.30	1.30	1.30	1866	59

Report on 1-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 325.1

Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
1-Jun-12	13:40	Fine	002999	2.7635	2.7709	8745.10	8746.10	1.00	1.24	1.24	1.24	74	100
1-Jun-12	14:50	Fine	002997	2.7802	2.7868	8746.10	8747.10	1.00	1.19	1.26	1.23	74	90
1-Jun-12	15:58	Fine	002995	2.7705	2.7791	8747.10	8748.10	1.00	1.30	1.30	1.30	78	110
7-Jun-12	8:15	Fine	003064	2.8090	2.8131	8772.10	8773.10	1.00	1.27	1.27	1.27	76	54
7-Jun-12	9:20	Fine	003065	2.8198	2.8255	8773.10	8774.10	1.00	1.27	1.27	1.27	76	75
7-Jun-12	10:25	Fine	003068	2.7937	2.7991	8774.10	8775.10	1.00	1.27	1.27	1.27	76	71
13-Jun-12	13:30	Cloudy	002882	2.7812	2.7823	8799.10	8800.10	1.00	1.21	1.21	1.21	73	15
13-Jun-12	14:35	Cloudy	002881	2.7833	2.7842	8800.10	8801.10	1.00	1.25	1.21	1.23	74	12
13-Jun-12	15:38	Cloudy	002880	2.7774	2.7785	8801.10	8802.10	1.00	1.25	1.25	1.25	75	15
19-Jun-12	13:46	Cloudy	002986	2.7632	2.7741	8825.85	8826.85	1.00	1.29	1.29	1.29	78	141
19-Jun-12	15:13	Cloudy	002984	2.7812	2.7900	8826.85	8827.85	1.00	1.29	1.29	1.29	78	114
19-Jun-12	16:52	Cloudy	002983	2.7719	2.7843	8827.85	8828.85	1.00	1.29	1.29	1.29	78	160
25-Jun-12	8:30	Fine	003080	2.8127	2.8230	8852.85	8853.85	1.00	1.30	1.30	1.30	78	132
25-Jun-12	9:35	Fine	003073	2.8123	2.8235	8853.85	8854.85	1.00	1.30	1.30	1.30	78	144
25-Jun-12	10:38	Fine	003074	2.8077	2.8185	8854.85	8855.85	1.00	1.30	1.30	1.30	78	139



Location: MA1w - International Finance Centre (Western Wing)

Report on 24-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 173.4

Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
31-May-12	8:00	Fine	002865	2.7797	2.8838	11837.72	11861.73	24.01	1.28	1.37	1.33	1913	54
6-Jun-12	8:00	Fine	002994	2.7655	2.8529	11864.73	11888.73	24.00	1.32	1.32	1.32	1908	46
12-Jun-12	8:00	Cloudy	003066	2.7878	2.8813	11891.73	11915.73	24.00	1.41	1.68	1.55	2225	42
18-Jun-12	8:00	Cloudy	002875	2.7938	2.8710	11918.33	11942.33	24.00	1.37	1.19	1.28	1841	42
22-Jun-12	8:00	Cloudy	003072	2.8262	2.9506	11945.97	11969.97	24.00	1.39	1.18	1.29	1854	67

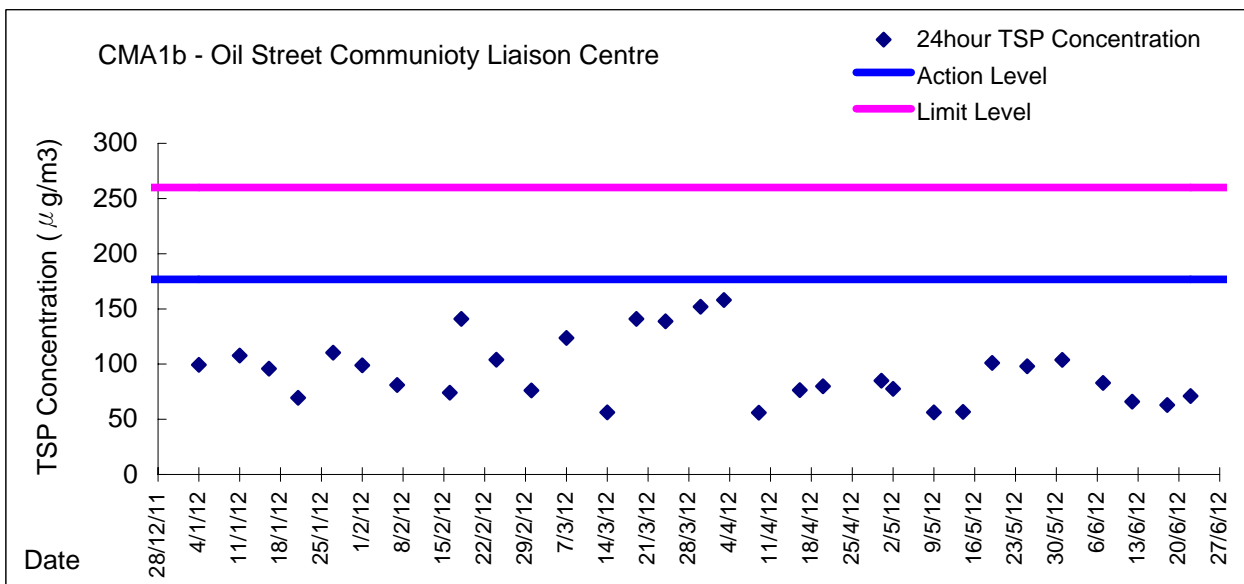
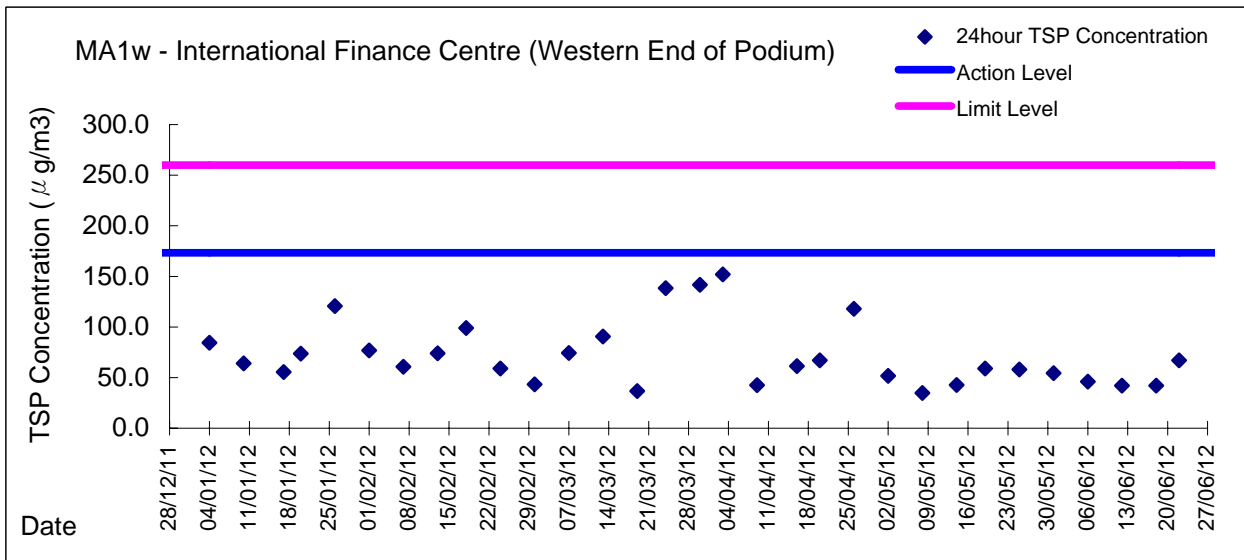
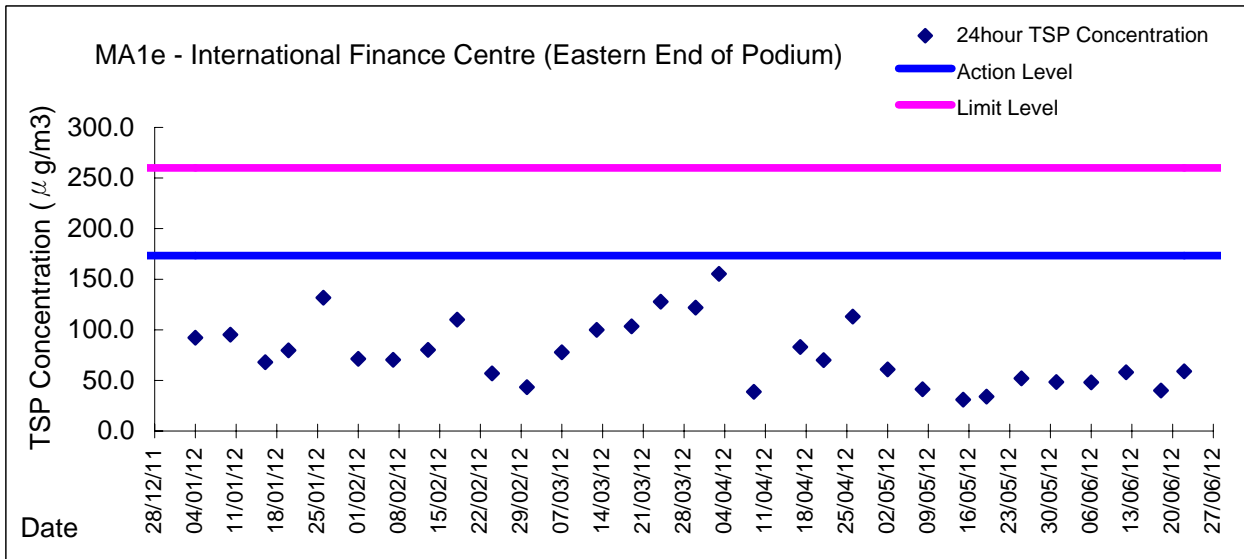
Report on 1-hour TSP monitoring

Action Level ( $\mu\text{g}/\text{m}^3$ ) - 325.1

Limit Level ( $\mu\text{g}/\text{m}^3$ ) - 500

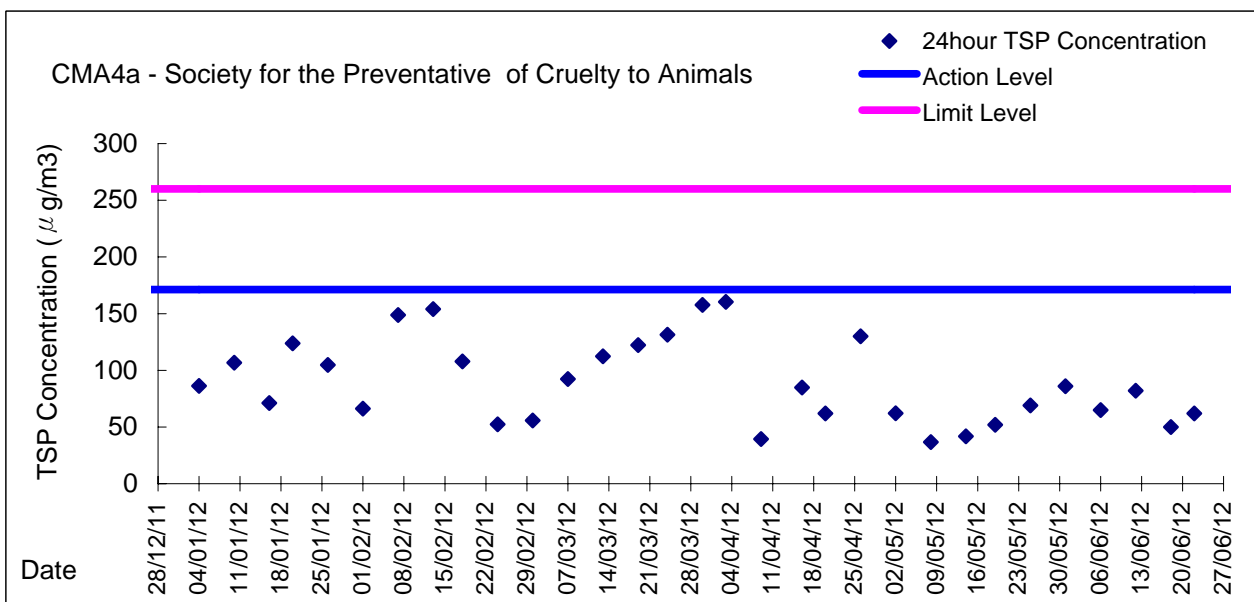
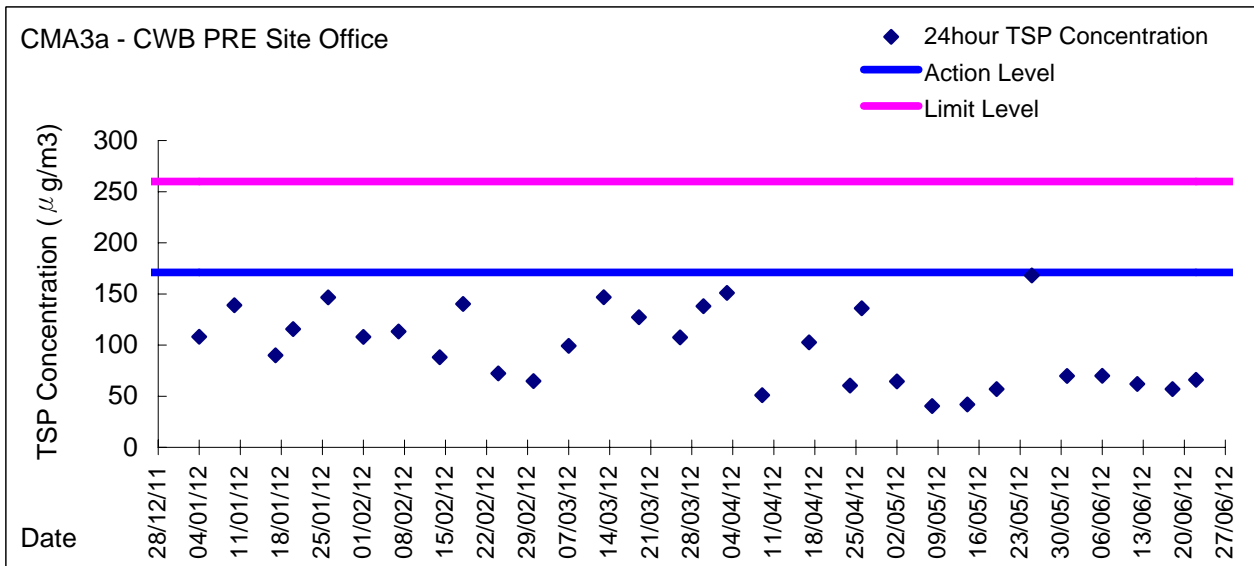
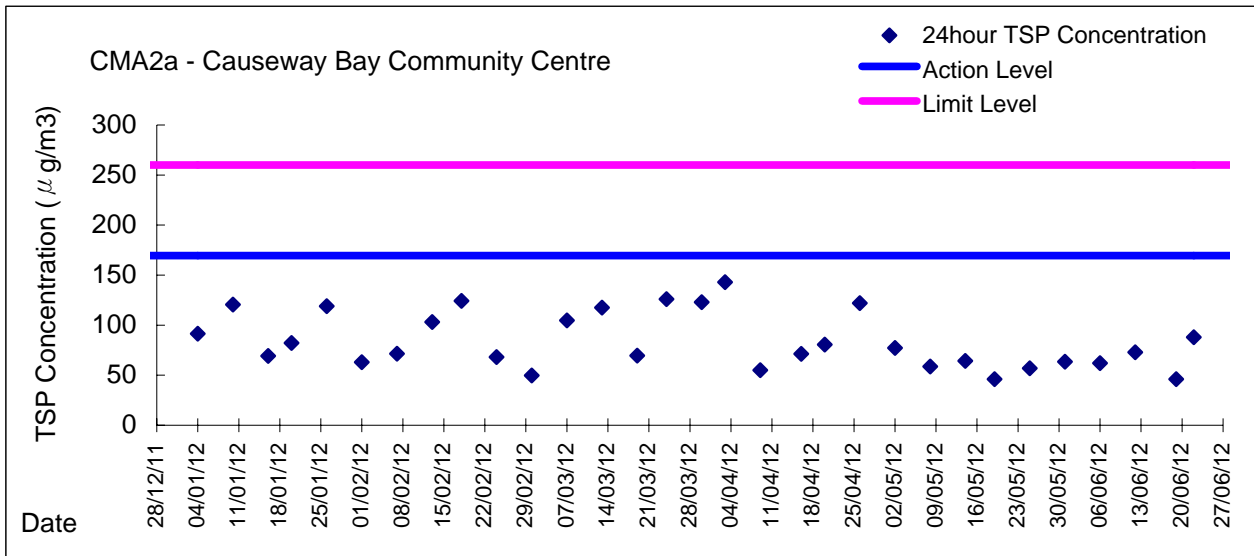
Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, $\text{m}^3/\text{min}$			Total Volume, $\text{m}^3$	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, $Q_{si}$	Final, $Q_{sf}$	Average		
1-Jun-12	13:31	Fine	003000	2.7628	2.7698	11861.73	11862.73	1.00	1.37	1.33	1.35	81	86
1-Jun-12	14:35	Fine	002998	2.7703	2.7769	11862.73	11863.73	1.00	1.24	1.20	1.22	73	90
1-Jun-12	15:40	Fine	002996	2.7765	2.7844	11863.73	11864.73	1.00	1.35	1.33	1.34	80	98
7-Jun-12	8:00	Fine	003085	2.8057	2.8098	11888.73	11889.73	1.00	1.19	1.25	1.22	73	56
7-Jun-12	9:10	Fine	003084	2.8020	2.8065	11889.73	11890.73	1.00	1.15	1.51	1.33	80	56
7-Jun-12	10:20	Fine	003083	2.8038	2.8097	11890.73	11891.73	1.00	1.28	1.36	1.32	79	75
13-Jun-12	13:46	Cloudy	002879	2.8063	2.8099	11915.73	11916.73	1.00	1.24	1.24	1.24	74	48
13-Jun-12	14:49	Cloudy	002877	2.8023	2.8059	11916.73	11917.73	1.00	1.33	1.33	1.33	80	45
13-Jun-12	15:53	Cloudy	002876	2.7831	2.7876	11917.73	11918.73	1.00	1.28	1.28	1.28	77	59
19-Jun-12	14:05	Cloudy	002985	2.7818	2.7939	11942.33	11943.33	1.00	1.36	1.32	1.34	81	150
19-Jun-12	15:07	Cloudy	002979	2.7797	2.7902	11943.33	11944.33	1.00	1.34	1.32	1.33	80	131
19-Jun-12	16:09	Cloudy	002981	2.7773	2.7894	11944.33	11945.33	1.00	1.32	1.32	1.32	79	153
25-Jun-12	8:40	Fine	003079	2.7977	2.8068	11969.97	11970.97	1.00	1.43	1.41	1.42	85	107
25-Jun-12	9:45	Fine	003069	2.8268	2.8354	11970.97	11971.97	1.00	1.41	1.41	1.41	85	101
25-Jun-12	10:50	Fine	003075	2.8223	2.8304	11971.97	11972.97	1.00	1.39	1.41	1.40	84	96

**Graphic Presentation of 24 hour TSP Result**



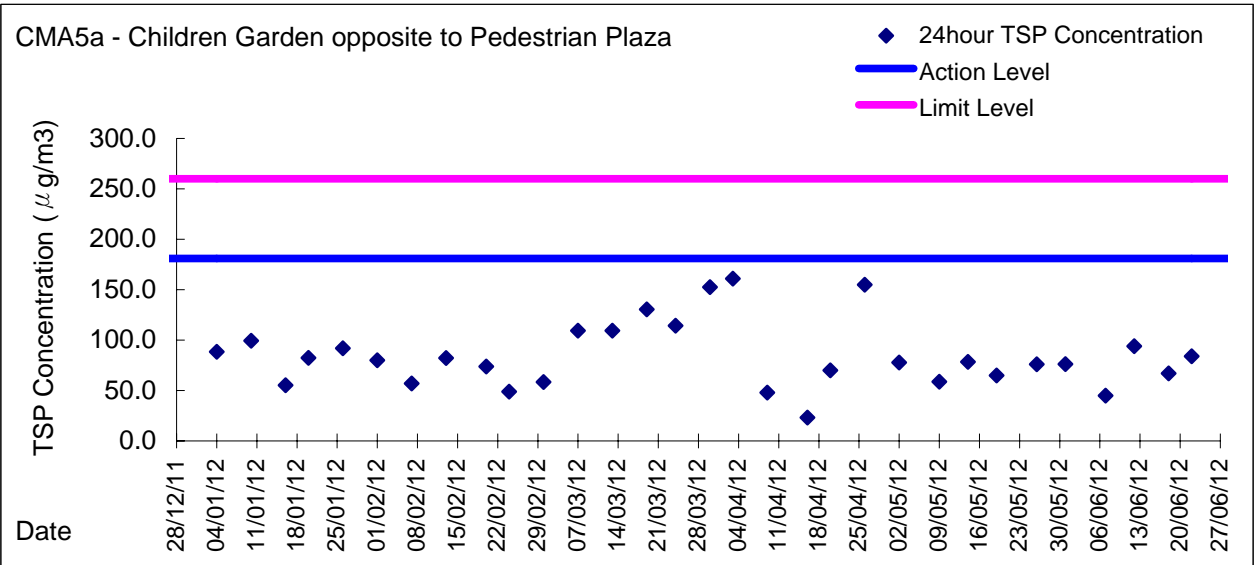


Graphic Presentation of 24 hour TSP Result

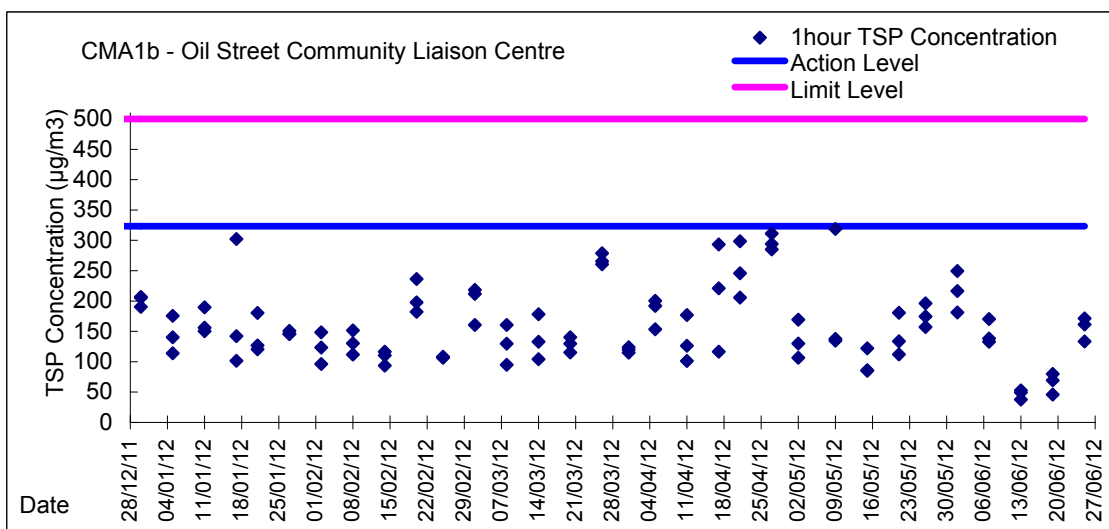
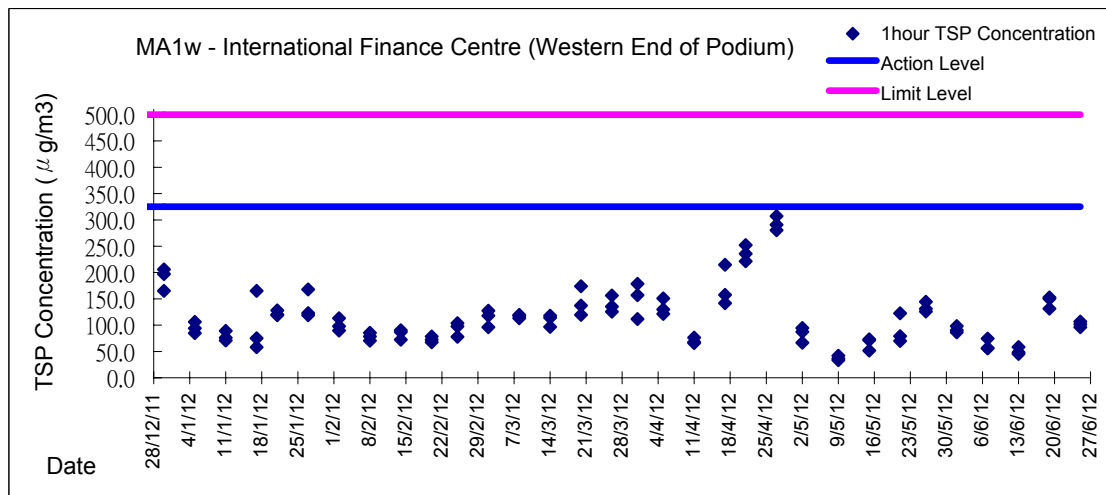
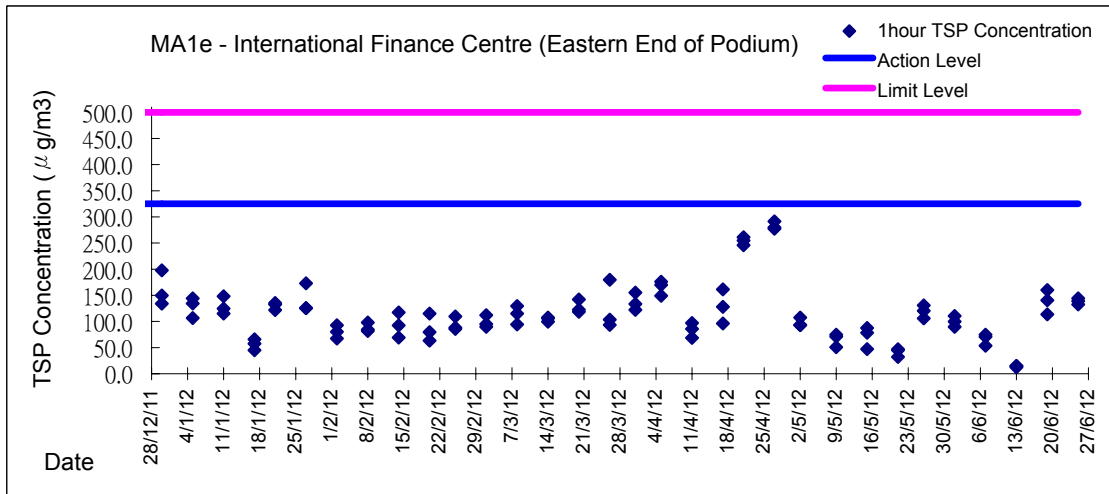




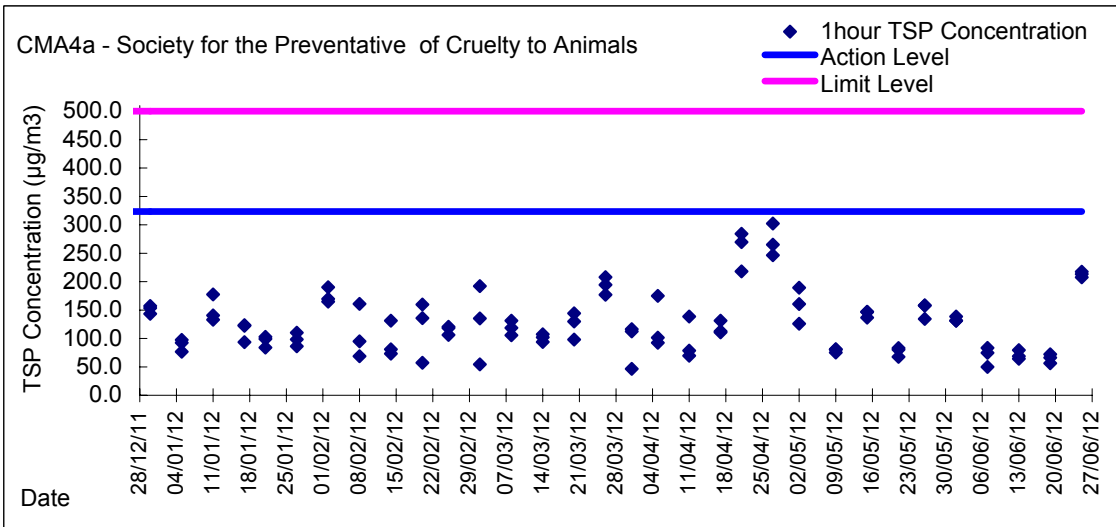
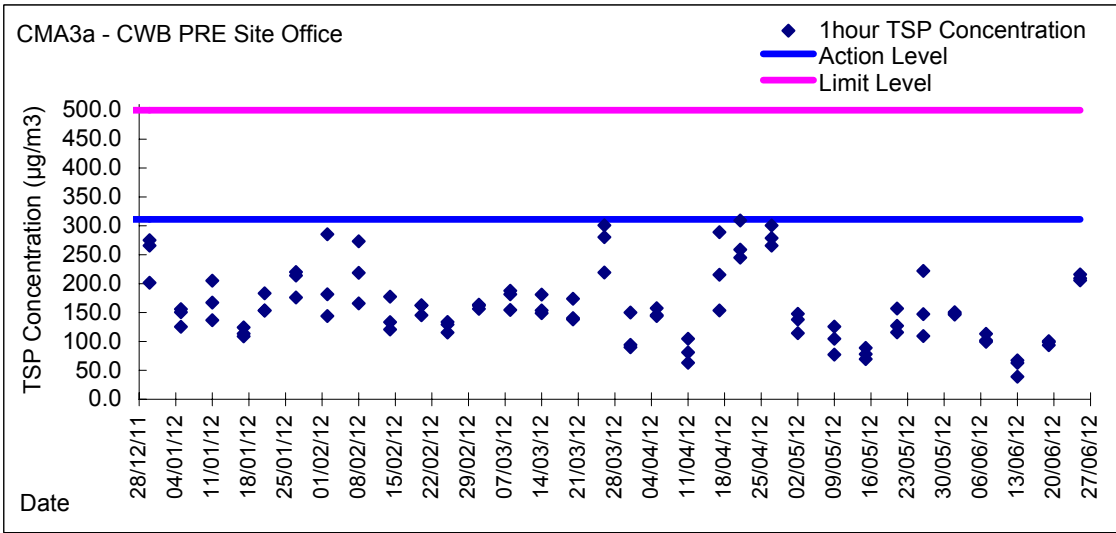
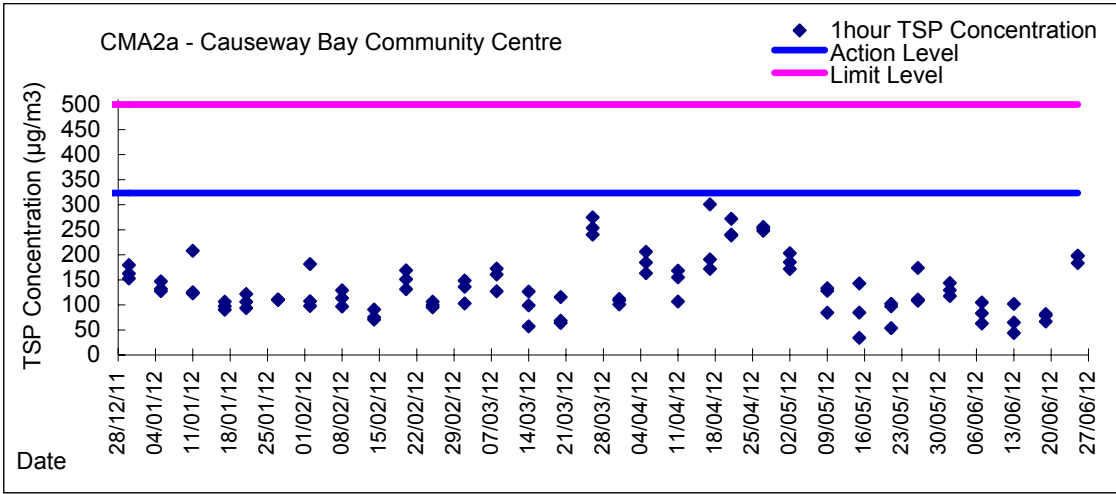
Graphic Presentation of 24 hour TSP Result



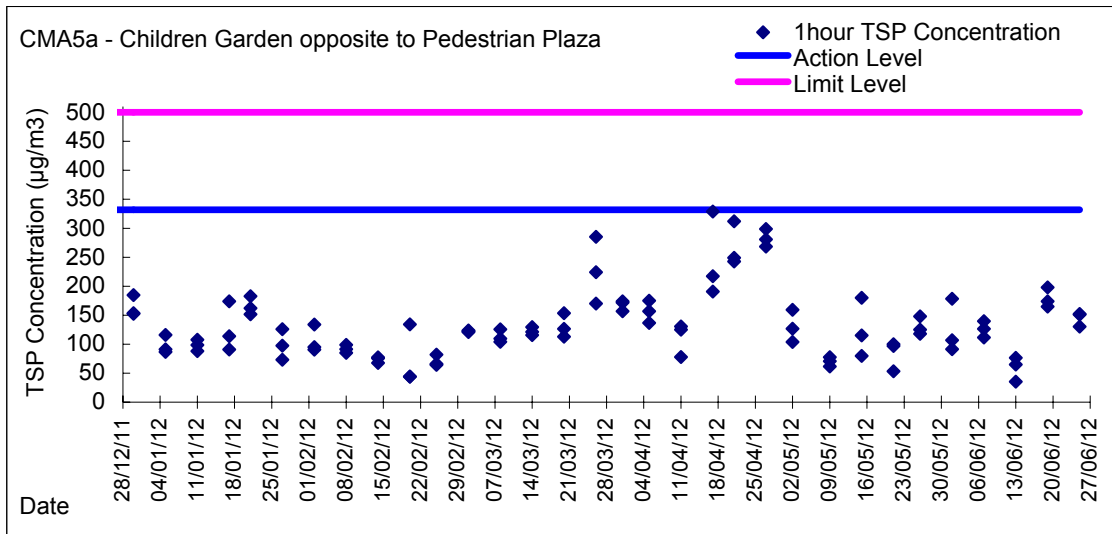
Graphic Presentation of 1 hour TSP Result



**Graphic Presentation of 1 hour TSP Result**



**Graphic Presentation of 1 hour TSP Result**







***Appendix 5.4***  
***Real Time Noise Monitoring Results and Graphical Presentations***



















Real-time Noise Data RTN1 (FEHD Hong Kong Transport Section Whitefield Depot)

23/6/2012 2:06	61.2	24/6/2012 3:16	60.7	25/6/2012 4:26	58.4
23/6/2012 2:11	61.5	24/6/2012 3:21	60.7	25/6/2012 4:31	59.4
23/6/2012 2:16	61.5	24/6/2012 3:26	60.6	25/6/2012 4:36	57.6
23/6/2012 2:21	61.4	24/6/2012 3:31	62.0	25/6/2012 4:41	58.7
23/6/2012 2:26	61.3	24/6/2012 3:36	60.6	25/6/2012 4:46	59.0
23/6/2012 2:31	61.5	24/6/2012 3:41	60.7	25/6/2012 4:51	58.4
23/6/2012 2:36	60.4	24/6/2012 3:46	60.5	25/6/2012 4:56	58.9
23/6/2012 2:41	61.3	24/6/2012 3:51	60.8	25/6/2012 5:01	59.4
23/6/2012 2:46	60.7	24/6/2012 3:56	60.4	25/6/2012 5:06	58.2
23/6/2012 2:51	61.5	24/6/2012 4:01	59.7	25/6/2012 5:11	58.3
23/6/2012 2:56	60.1	24/6/2012 4:06	60.5	25/6/2012 5:16	59.1
23/6/2012 3:01	61.6	24/6/2012 4:11	60.1	25/6/2012 5:21	59.6
23/6/2012 3:06	60.6	24/6/2012 4:16	60.5	25/6/2012 5:26	59.2
23/6/2012 3:11	61.4	24/6/2012 4:21	62.0	25/6/2012 5:31	59.7
23/6/2012 3:16	61.1	24/6/2012 4:26	60.6	25/6/2012 5:36	60.4
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23/6/2012 3:41	60.3	24/6/2012 4:51	60.1	25/6/2012 6:01	61.5
23/6/2012 3:46	60.6	24/6/2012 4:56	60.6	25/6/2012 6:06	61.5
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23/6/2012 3:56	60.6	24/6/2012 5:06	60.0	25/6/2012 6:16	62.6
23/6/2012 4:01	59.8	24/6/2012 5:11	61.0	25/6/2012 6:21	62.9
23/6/2012 4:06	60.7	24/6/2012 5:16	60.5	25/6/2012 6:26	62.6
23/6/2012 4:11	60.1	24/6/2012 5:21	60.1	25/6/2012 6:31	62.9
23/6/2012 4:16	60.5	24/6/2012 5:26	59.8	25/6/2012 6:36	63.0
23/6/2012 4:21	60.3	24/6/2012 5:31	60.5	25/6/2012 6:41	63.9
23/6/2012 4:26	60.4	24/6/2012 5:36	60.2	25/6/2012 6:46	65.0
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23/6/2012 4:51	59.6	24/6/2012 6:01	61.1	25/6/2012 23:11	62.5
23/6/2012 4:56	59.4	24/6/2012 6:06	61.2	25/6/2012 23:16	63.4
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23/6/2012 5:11	60.3	24/6/2012 6:21	62.0	25/6/2012 23:31	61.9
23/6/2012 5:16	59.9	24/6/2012 6:26	63.0	25/6/2012 23:36	62.8
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23/6/2012 5:36	61.1	24/6/2012 6:46	62.6	25/6/2012 23:56	62.8
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23/6/2012 6:16	61.8	24/6/2012 23:26	62.7	26/6/2012 0:36	61.4
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23/6/2012 23:26	64.1	25/6/2012 0:36	61.2	26/6/2012 1:46	60.9
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23/6/2012 23:36	63.9	25/6/2012 0:46	62.2	26/6/2012 1:56	60.6
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24/6/2012 1:16	61.4	25/6/2012 2:26	59.9	26/6/2012 3:36	57.8
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24/6/2012 1:31	61.4	25/6/2012 2:41	58.7	26/6/2012 3:51	58.9
24/6/2012 1:36	61.2	25/6/2012 2:46	59.1	26/6/2012 3:56	58.4
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24/6/2012 1:46	61.2	25/6/2012 2:56	57.8	26/6/2012 4:06	58.1
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24/6/2012 3:11	60.4	25/6/2012 4:21	58.6	26/6/2012 5:31	59.7

27/6/2012 6:46 63.8  
 27/6/2012 6:51 64.1  
 27/6/2012 6:56 64.3  
 \*Exceedance recorded during monitoring compliance check with NCO















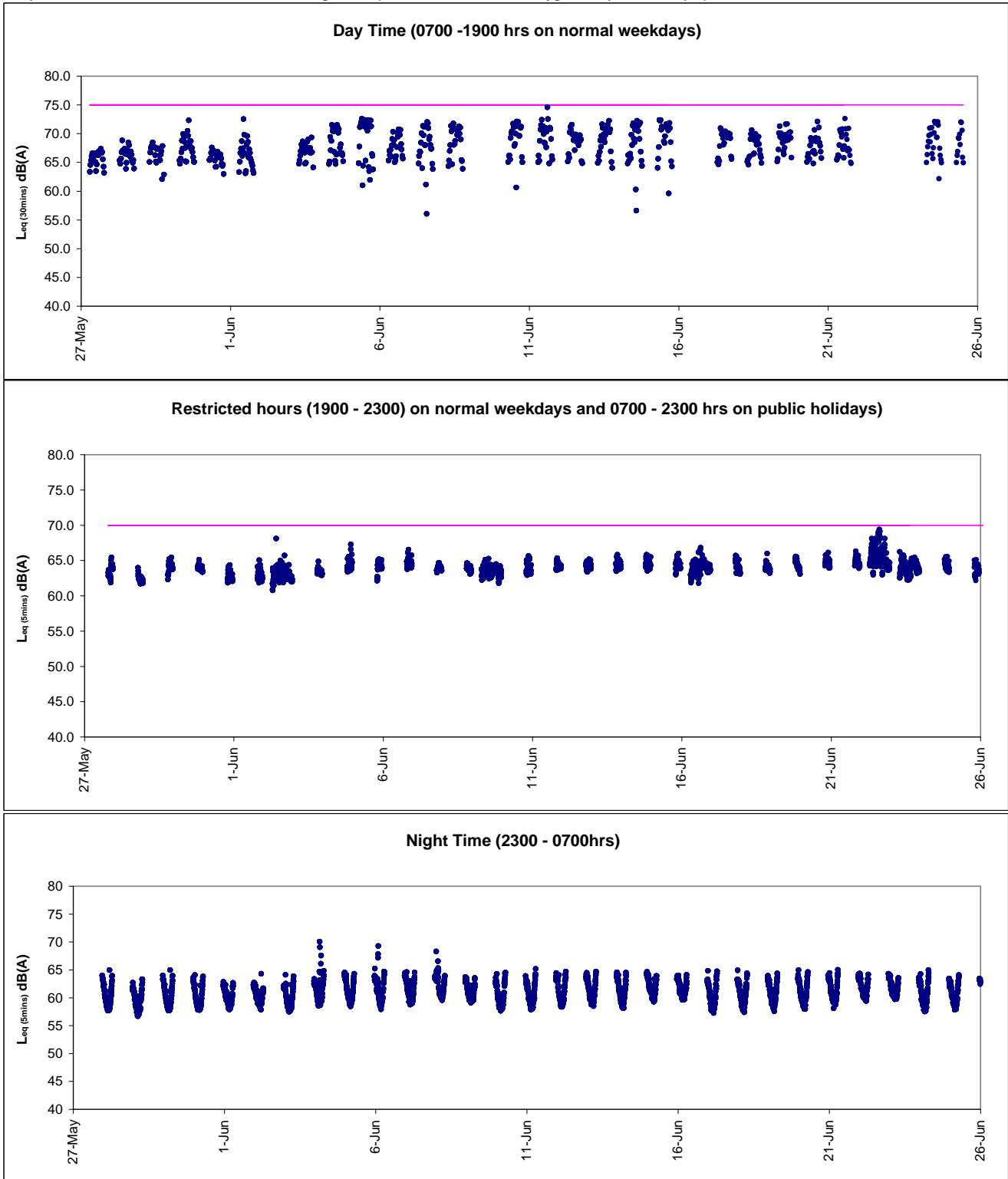






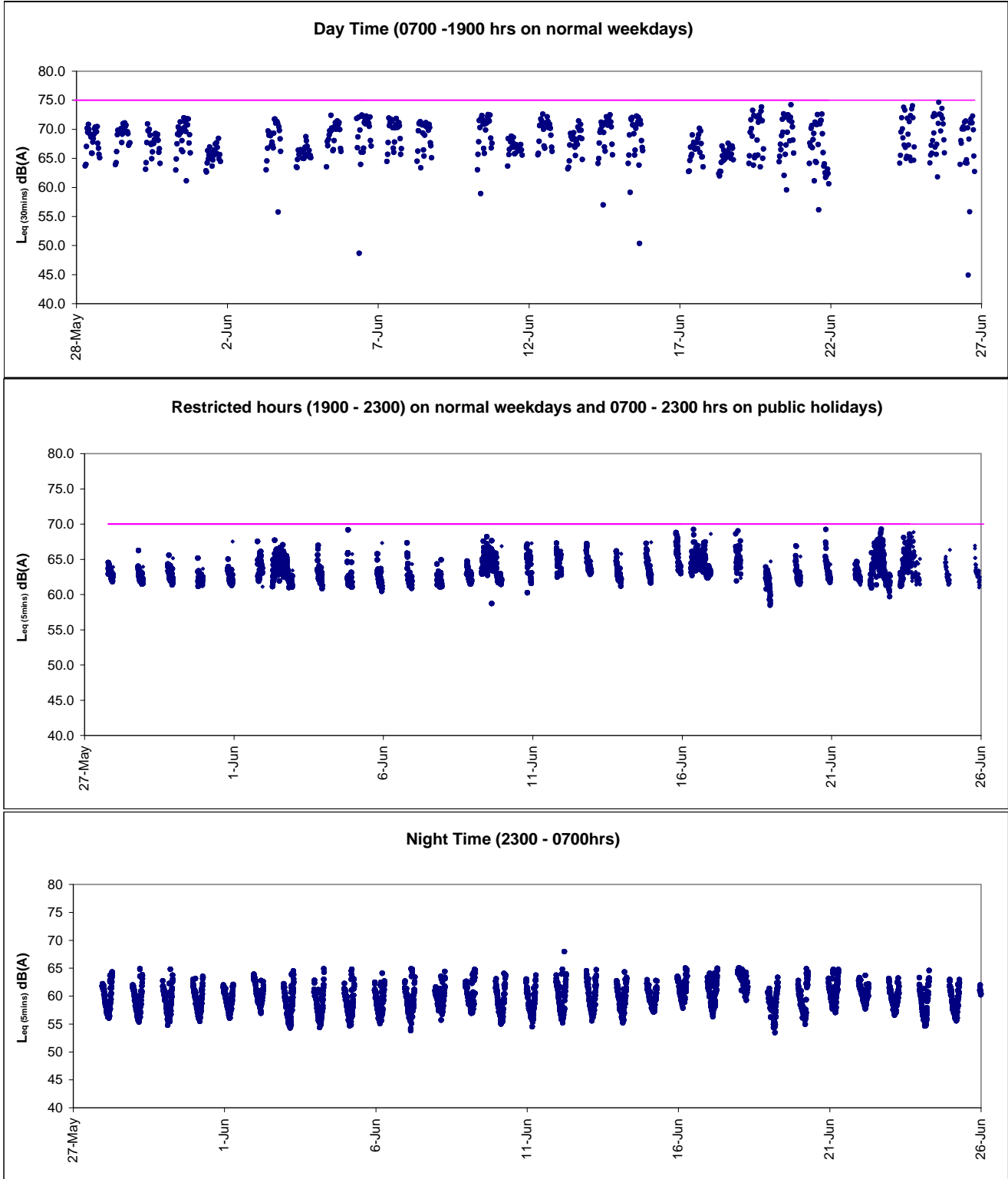


Graphic Presentation of Real Time Noise Monitoring Result (Food and Environmental Hygiene Department Depot)





Graphic Presentation of Real Time Noise Monitoring Result (Oil Street Community Liaison Center)





***Appendix 6.1***

*Event Action Plans*



Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"><li>1. Notify ER, IEC and Contractor;</li><li>2. Carry out investigation;</li><li>3. Report the results of investigation to the IEC, ER and Contractor;</li><li>4. Discuss with the IEC and Contractor on remedial measures required;</li><li>5. Increase monitoring frequency to check mitigation effectiveness.</li></ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"><li>1. Review the investigation results submitted by the ET;</li><li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li><li>3. Advise the ER on the effectiveness of the proposed remedial measures.</li></ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"><li>1. Confirm receipt of notification of failure in writing;</li><li>2. Notify Contractor;</li><li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li><li>4. Supervise the implementation of remedial measures.</li></ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"><li>1. Submit noise mitigation proposals to IEC and ER;</li><li>2. Implement noise mitigation proposals.</li></ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit Level being exceeded	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurements to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contractor's working procedures;</li> <li>6. Discuss with the IEC, Contractor and ER on remedial measures required;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. (The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Submit further proposal if problem still not under control;</li> <li>5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>





**Event / Action Plan for Construction Air Quality**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Notify Contractor.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Rectify any unacceptable practice;</li> <li>Amend working methods if appropriate.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>Identify source;</li> <li>Inform IEC and ER;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Repeat measurements to confirm findings;</li> <li>Increase monitoring frequency to daily;</li> <li>Discuss with IEC and Contractor on remedial actions required;</li> <li>If exceedance continues, arrange meeting with IEC and ER;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ET on the effectiveness of the proposed remedial measures;</li> <li>Supervise Implementation of remedial measures.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial measures properly implemented.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Submit proposals for remedial to ER within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>Identify source, investigate the causes of exceedance and propose remedial measures; Inform ER, Contractor and EPD;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Supervise implementation of remedial measures.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial measures properly implemented.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>Notify IEC, ER, Contractor and EPD;</li> <li>Identify source;</li> <li>Repeat measurement to confirm findings;</li> <li>Increase monitoring frequency to daily;</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>Ensure remedial measures properly implemented;</li> <li>If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol> (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Resubmit proposals if problem still not under control;</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)</li> </ol>



***Appendix 6.2***

*Summary for Notification of Exceedance*



Ref. No.	Date	Time	Location	Construction Noise Level	Unit	Action Level	Limit Level	Follow-up action
X 10N093	7-Jun-12	13:44	M6 - HK baptist Church henrietta Secondary School	68	Leq(30-min)	when one documented complaint was received.	65	<p><b>Possible reason:</b> No construction activity and traffic nearby was observed during monitoring. Traffic noise contributed as a major noise source during monitoring.</p> <p><b>Action taken / to be taken:</b> Reviewed the trend of noise measurement results and analysis of contractor's working procedure. Review the baseline noise level at this monitoring station.</p> <p><b>Remarks / Other Obs:</b> No construction work for Contract no. HY/2009/19 was conducted during the measurement; it is concluded that the exceedance was not due to the Project but to traffic noise nearby.</p>
X 10N094	12-Jun-12	16:23	M6 - HK baptist Church henrietta Secondary School	71	Leq(30-min)	when one documented complaint was received.	65	<p><b>Possible reason:</b> No construction activity and traffic nearby was observed during monitoring. Traffic noise contributed as a major noise source during monitoring.</p> <p><b>Action taken / to be taken:</b> Reviewed the trend of noise measurement results and analysis of contractor's working procedure. Review the baseline noise level at this monitoring station.</p> <p><b>Remarks / Other Obs:</b> No construction work for Contract no. HY/2009/19 was conducted during the measurement; it is concluded that the exceedance was not due to the Project but to traffic noise nearby.</p>



***Appendix 9.1***

*Complaint Log*

**Environmental Complaints Log**

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
110723a	23/07/2011	Ms. Law at Victoria Centre by ICC no. 1-303887687	North Point	She concerned that Highways Department published a notice in their Management Office about construction works will be conducted from 0700 hours to 2300 hours during July to December 2011 including Saturday, Sunday and public holiday.	1) It was referred by AECOM to ET on 28 July 2011 2) RSS confirmed that the notice was prepared by Victoria Centre 'a Management office to their resident and the advice was only given on the extension construction works (for Contract HY/2009/15) to 7am-9pm Monday to Saturday except Public Holidays and Sundays. 3) As a mitigation measure to minimize the noise nuisance in the vicinity of the residents, rock breaking activities will be started at 8am and is expected to be completed by mid-August 2011. 4) No noise exceedance was recorded at construction noise monitoring station at Victoria Centre on 19 and 25 July 2011 during daytime and evening time period while breaking and excavation works were observed during monitoring. 5) In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. The complainant was satisfied with the arrangement and no further complaint was received after proposed measures.	Closed
110723b	23/07/2011	Ms. Yau at Block 2, Victoria Centre by ICC no. 1-304013959	North Point	Reclamation work was conducted at Causeway Bay Typhoon Shelter at 7am on 23 July 2011. She complained that the works shall be started later to minimize the noise nuisance to the vicinity of the residents in early morning	1) It was referred by AECOM to ET on 8 August 2011 2) RSS confirmed to start the rock breaking activities for Contract HY/2009/15 at 8am as a mitigation measure to minimize the noise nuisance in the vicinity of the residents. 3) With reference to the construction noise monitoring at Victoria Centre, no exceedance was recorded on 19 and 25 July 2011 during daytime while breaking and excavation works were undertaken during monitoring 4) In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. The complainant was satisfied with the arrangement and no further complaint was received after proposed measures.	Closed
110727a	27/07/2011	Mr. Law from Victoria Centre Management Office by ICC no. 1-304616162	North Point	It was complained by Mr. Law from Victoria Centre Management Office on 27 July 2011 regarding construction noise generated by the construction operations of	1) It was referred by AECOM to ET on 28 July 2011 2) RSS confirmed to start the rock breaking activities for Contract HY/2009/15 at 8am as a mitigation measure to minimize the noise nuisance in the vicinity of the residents. 3) No noise exceedance was recorded at construction noise monitoring station at Victoria Centre on 25 July and	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
				Central-Wanchai Bypass at noon rather than in morning at 7am.	4 August 2011 during daytime and evening time period while breaking and excavation works were observed during monitoring. 5) In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. No further complaint from complainant was received after proposed the mitigation measure.	
110727b	27/07/2011	Ms. Chiu by ICC no.1-304615409	North Point	Noise nuisance from the excavation works for the Highways Department adjacent to the Victoria Centre was conducted from 7am	1) It was referred by AECOM to ET on 28 July 2011 2) With reference to the construction noise monitoring at Vitoria Centre, no exceedance was recorded on 25 July and 4 and 10 August 2011 during daytime while breaking and excavation works were undertaken during monitoring. 3) As a mitigation measure to minimize the noise nuisance in the vicinity of the residents, rock breaking activities will be started at 8am.	Closed
	07/08/2011				4) However, complainant did not satisfy with the response on the noise nuisance from the rock-breaking during morning in front of Victoria Centre and then further complaint via 1823 on 7 August 2011. 5) Highways contacted the complainant on 15 August 2011 that the noisy rock breaking operation had been completed.  <i>Remarks: There will be counted as two complaints in this complaint log.</i>	
110730	30/07/2011	Mr. Tsui by ICC no. 1-305074350	Central	Construction noise generated by operations of Central-Interchange which is near the spa room at Four-Season Hotel. Also, the complaint enquired the commencement time of the construction on Saturday.	1) It was referred by AECOM to ET on 1 August 2011. 2) RSS confirmed that noisy plants from 2 vibratory hammers have been conducted in alternating manner for piling and drilling works for diaphragm wall construction. 3) With reference to the construction noise monitoring at IFC Western End of Podium, no exceedance was recorded on 4 August 2011 during monitoring while sheet piling works were undertaken during monitoring. 4) In order to reduce the noise impact to nearby noise sensitive receivers, Contractor has been implemented the following noise mitigation measures: - Erection of acoustic lining at the hoarding next to Four Seasons Hotel; - Temporary noise barrier with extended acoustic lining; - Reduced in plant such that only have one vibration hammer operating at the west side near Four	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					Seasons Hotel instead of 2 5) In conclusion, it was related to the construction works under Contract HY/2009/18 and mitigation measure was provided. The complainant was satisfied with the arrangement and no further complaint was received after proposed measures.	
110810	10/08/2011	Mr. Yip by ICC no. 1 – 306740207	North Point	Muddy water was discharged from work site to the seafront near Oil Street during heavy rain. The environmental protection measures were not good enough and are needed to rectify.	1) It was referred by AECOM to ET on 17 August 2011. 2) Confirmed with RE, Muddy water was caused by a heap of earth being washed to the sea by heavy rain. The heap of earth was referred as a small stockpile placed close to the seafront in front of Oil Street within the site area under handover transition period from contract HY/2009/11 to contract HY/2009/19. The necessary mitigation measures to protect the small stockpile against rainfall were missing at the time of complaint. 3) Due to the missing of mitigation measures to protect the small stockpile during handover transition period, loose material was washed into the harbour when heavy rain came. Muddy water was formed and dispersed in the sea that caused the water quality and visual concern to the public. The complaint was considered as valid. 4) Contractors were advised to relocate the loose materials away from the coastline as far as practicable. Any loose material placed which needed to be placed near the coastline shall be properly compacted or covered as appropriate. To avoid any further environmental deficiency, Contractors shall ensure all necessary environmental mitigation measures will not be missing during site area handover.	Closed
110817	17/08/2011	ICC no. 1-307657681	North Point	Visual impact generated by light from a large amount of spot-lights on the barge during mid-night nearby City Garden.	1) It was referred by AECOM to ET on 23 August 2011 2) RSS confirmed that some non-essential lights were turned on during night-time period which caused the nuisance to the nearby residents. In addition, absence of lighting shields at flood lights results in visual glare to the complaint at night-time. 3) Follow-up action had been taken by contractor that switches off all non-essential lights to minimized nuisance to the nearby residents. The complainant satisfied to the practice and no further complaint was received after that.	Closed
110826	26/08/2011	Grand Hyatt and a complainant by ICC	Wan Chai	Construction noise and vibration nuisance generated from the works at Convention Avenue and inside the HKCEC1	1) Confirmed with the Resident Site Staff that the construction works were referred to the Contractor HK/2009/01. 2) The Excavator mounted breaker at Convention Avenue	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
				reclamation area.	and Drilling rig at HKCEC1 reclamation area were the dominant construction noise source during this period. 3) The drilling rig at HKCEC1 reclamation area and excavator mounted breaker at Convention Avenue were then temporary suspended after received the complaint. 4) Investigation revealed that the erected noise barrier (4m cantilevered movable noise barrier for the drilling rig and 1m movable noise barrier for the excavator mounted breaker) were not located close to the plants to provide adequate noise screening. 5) Contractor was advised to avoid concurrent operation of construction plants at site. Further enhancement of movable noise barriers at HKCEC1 and providing noise enclosure for the excavator mounted breaker at Convention Avenue are needed. 6) Further site investigation and checking on 31 August and 7 September 2011 revealed that the implemented noise mitigation measures were in proper and minimize the noise impact.	
110826A	26/08/2011	A complaint letter from Mr. Au of Cayley Property of City Garden	North Point	Harbor front adjacent to their water intake suction which caused 3 times of system breakdown of the sea water pump on 9, 22 and 25 August 2011.	1) It was referred by AECOM to ET on 29 August 2011 2) Confirmed with the Resident Site Staff that the construction works were referred to the Contractors HY/2009/11 and HY/2009/19. 3) The pump is located on the site area of HY/2009/19 4) A temporary garbage defender was installed on 23 July 2011 by HY/2009/11 and the shape of the defender was adjusted on 8 August 2011 in order to exclude the outfall. 5) An ad hoc inspection of the effectiveness of garbage defender was conducted with RSS (CWB project team), contractor of HY/200911 and HY/2009/19 and IEC on 29 August 2011. Inspection report of it was submitted to RSS on 19 September 2011. 5) Daily cleaning near the water intake was conducted twice a day by contractor HY/2009/19. 6) In response to City Garden request, the contractors have set up the temporary garbage defender in function and collect the floating refuses, but cannot eliminate all refuses, in particular the refuse come from sea bed from entering the intake. 6) According to the complaint letter from Cayley Property, the outcomes of the preventive measures were not complying with their expectation. 7) During on-site inspection, floating refuses observed	Closed





Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					<p>occasionally outside the garbage defender. No conclusion could be made for the source of these floating refuses. On the other hand, some of the floating refuses were observed immigrating in the protective zone during investigation</p> <p>8) All daily cleaning actions had been taken by contractor to minimize floating refuse inside the construction site. It was noted that the intake (land side) is open access to public, so that many activities such as fishing, feeding fish were conducted there even though a notice has already hoisted. Also, tripping of rubbish by the passers-by could result in a lot of rubbish accumulated around the intake point.</p> <p>9) Referring to the record provided by CPML, there were a lot of nylon/ plastic bags and nylon wire mesh that matched those rubbishes generated from the public activities.</p> <p>10) Contractors have fulfilled the requirement of site cleanness and no exceedance was recorded during Water Quality Monitoring. It is consider the cause of this complaint is not related to project and environmental issue in this project as well. No more complaint received after ad-hoc inspection</p>	
111014	14/10/2011	The complainant, Ms. Tam complained via hotline 1823	Wan Chai	The polluted fumes and exhaust from the excavation by sub-contractor of CEDD on pedestrian way outside no.25 Harbour Road (in front of the Harbour Centre)	<p>1) RSS notified ET to carry out investigation on 17 October 2011.</p> <p>2) ET confirmed with the Resident Site Staff that the location of the excavator was within site area of Contract no. HK/2009/02 undertaking the water cooling main reprovision works along the Harbour Road. The plants including the excavator have been checked before using at the site. However, the polluted fumes and exhausted from the excavator was caused due to insufficient maintenance of the plant after using at site.</p> <p>3) After receiving the complaint, the excavator was then removal off-site for checking and maintenance works on 17 October 2011.</p> <p>4) Contractor was reminded to enhance regular checking and maintenance to all plants at site.</p> <p>5) RSS has replied to the complainant on the arrangement of the measures taken on 17 October 2011. Complainant was satisfied with the response and follow-up action taken by the Contractor.</p>	Closed
111104	04/11/2011	Mr. Liu from	Wan Chai	Complain about a tree near the	<p>1) ET confirmed with the Resident Site Staff that</p>	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
		LCSD complained via Contractor Complaint Hotline		site of pipe installation works outside Wan Chai Swimming Pool at Harbour Road, the status is not healthy and roof ball of two trees inside the site near Renaissance Hong Kong Harbour View Hotel at Convention Avenue were half cut.	<ul style="list-style-type: none"><li>• A tree near the site of pipe installation works outside Wan Chai Swimming Pool at Harbour Road is the Tree no. TA1122 under Contract no. HK/2009/02. Leaves of a branch of this tree were shrivelled.</li><li>• Two trees inside the site near Renaissance Hong Kong Harbour View Hotel at Convention Avenue are the tree nos. A160 and A161 under Contract no. HK/2009/01. Part of roof ball of these two trees was covered by the metal plate.</li></ul> 2) Independent Tree Specialists for these two inspected the trees. Contractor HK/2009/01 has taken the measure as recommend downgrading the soil level around the trunk base. Reinstating of the ground works will be conducted in mid-December 2011. For the tree no. TA1122 under Contract no. HK/2009/02, the brown leaves were removed and fenced the tree with orange net is provided to prevent damage of tree trunk by construction works. The distance between the tree and the edge of the trench is kept approximate 2m. Two Contractors were reminded to carry out regular watering to the trees within their site area.	
111106	06/11/2011	Police officer	Wan Chai	Construction noise generated from the site at about 6:30 a.m on 6 November 2011 and require to stop the machine operation	<ol style="list-style-type: none"><li>1) According to the information reported by Contractor, one BC cutter and hoist were operated for Diaphragm Wall construction of Shatin-Central Link to inspect bentonite pipes and ensure no damages and all the joints are tightened in good position. Then, the subcontractor for Diaphragm wall, SAMBO Korean foreman stopped the engine of the BC cutter immediately. The police officer recorded the details and HKID number of the foreman and then left. Due to the different language communication between the police officer and the Korean foreman, no CNP was checked by the police officer.</li><li>2) ET confirmed with the Resident Site Staff that same issue was also raised out by RSS at about 7:00a.m on the same day. Besides, it was confirmed that there is no valid Construction Noise Permit for the conducted construction works in the period between 2300 and 0700.</li><li>3) Due to insufficient communication between Contractor HK/2009/01 and their Korean Sub-contractor, Korean Sub-contractor had not notified to Contractor before carrying out the inspection of the BC cutter, hoists and</li></ol>	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					bentonite pipes at about 6:00a.m to ensure no damages and all the pipe joints should be tightened and in good position. 4) Contractor was advised to enhance the communication between Contractor and sub-contractor and provide sufficient environmental training to all foreman and operators on restricted hour operation. Furthermore, Construction Noise Permit should be checked and in place for the construction works during restricted hour 5) This complaint was considered in relation to the conducted construction works during restricted hours without valid Construction Noise Permit. No more construction works were conducted during night time period. The construction works will be conducted in accordance with the time period stated in valid CNP. This complaint will be kept in view of any follow-up action from the relevant government activities.	
111212	12/12/2011	The complainant, Mr Tsui from IFCII's management office complained via hotline 1823	Central	A visual impact complaint from hotline 1823 was received by ET on 9 January 2011 (ICC Ref. No.: ICC#1-333037096 dated on 12 December 2011). The complaint, Mr Tsui was reported that visual nuisance caused by lighting in the construction site during night time.	1) RSS notified ET on 9 Jan 2012. 2) ET confirmed with the Resident Site Staff that A joint inspection was conducted by Mr Tsui and contractor on that night to see whether there is any improvement. 3) Due to safety reason, igniting enough lights should not be avoided in construction site. However, the light sources were not directed away from pointing to the sensitive receiver and results in visual glare to the complainant. 4) Confirmed with the Resident Site Staff the complainant was satisfied the new arrangement of the lights with contractor after the joint inspection. No further complaint received after that.	Closed
111220	20/12/2011	The complainant, Ms. Poon complained via hotline 1823 (ICC Ref. No.: ICC#1-334683841)	North Point	Construction air and noise nuisance generated that many trucks carrying construction materials driving along Watson Road and Oil Street and possibly entering/leaving the construction site near the IEC during 0800 to 1900 hours.	1) RSS notified ET on 22 Dec 2011. 2) ET confirmed with the Resident Site Staff that the complainant cannot identify whether the trucks were working under the CWB project or not. 3) The dominant construction air and noise nuisances were emitted by the trucks along Oil Street and Waston Road, however, this is the public road for all vehicles. Reviewing the air quality monitoring and noise monitoring results. No exceedance was recorded during this period. 4) Confirmed with the Resident Site Staff that they provided a contact no. for any future enquiries regarding	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					CWB project to the complainant and she was satisfied on the arrangement and no further complaint was received after that.	
111230	30/12/2011	Residents of Harbour Heights	North Point	Construction air and noise nuisance generated by construction vehicles were found parked illegally at King Wah Road and lining up at Oil Street without the engine turning off.	1) RSS notified ET on 6 January 2011. 2) ET confirmed with the Resident Site Staff that a number of construction activities are concurrently proceeding in the vicinity of Oil Street, King Wah Street and a private development project in King Wah Street 3) The dominant construction air and noise nuisances were emitted by the trucks along Oil Street and King Wah Road, however, this is the public road for all vehicles. Reviewing the results of air quality monitoring station (CMA1b) and noise monitoring (M4b). No exceedance was recorded during this period. Site inspections for HY/2009/19 were conducted on 4 January 2012. The condition of the site access at Oil Street and the public road nearby were found satisfactory. It is noted that HyD also allow and encourage their contractors to maximize the use of marine access, where available, to work sites, so as to minimize burdening nearby public roads. When land trips are unavoidable, they require contractors to tidy up their construction vehicles before leaving works sites. No contractor under CWB project parked their vehicles illegally at King Wah Street, and HyD still reminded them not to commit such offence. 4) According to HyD's staff replied the complaint letter on 10 January 2012, there is a private development project under construction at King Wah Road. To access these works sites, construction vehicles have to use public roads nearby. No further complaint received after HyD's reply.	Closed
120118	18/01/2012	N/A	North Point	A complaint regarding a tree located in front of Victoria Centre under IECL was covered by one meter mud without any protection. The complainant concerns the health of the tree in such condition.	1) RSS notified ET on 20 January 2012. 2) ET confirmed with the Resident Site Staff that The tree is inside the site area of HY/2009/19 and The Botanical name of the tree is Ficus superba var. japonica and the I.D. of the tree is UT48 3) According to the information provided by RSS on 20 Jan 2012, the tree shall be felled that has been approved by DLO on 29 August 2011. Moreover, the tree was felled	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					by contractor on 19 January 2012. 4) No further complaint received after HyD's reply.	
120305	03/03/2012	Resident of Harbour Heights complained via hotline 1823 (ICC Ref. No.: ICC#1-344632511)	North Point	A complaint regarding excessive noise from construction sites of CWB was observed outside Harbour Heights from Monday to Saturday before 8am. The plants were frequently turned on before 7:30am creating nuisance. The complainant requested a speedy follow-up and reply from relevant department.	1) RSS notified ET on 5 March 2012. 2) ET confirmed with the Resident Site Staff that PME for diaphragm wall construction started to operate at about 7:30am whilst the other PME, including those for land bored piling work, started to operate after 8am. 3) After reviewing the results of noise monitoring (M4b), no exceedance was recorded during daytime period and the noise level were below 75dB(A). Site inspection for HY/2009/19 was conducted on 7 March 2012. The condition of noise mitigation measures near Harbour Heights was found satisfactory. RSS confirmed that no operation was active before 7:00am everyday. The suspected nuisance was to be considered caused by the PME for diaphragm wall construction. A surprise check was performed on 13 March 2012 by RSS. It was found that no noisy PME was in operation by Contractor of HY/2009/19 before 8am, and the construction noise level was minimal and not disturbing. The noise level and operation time both complied with statutory requirements set up in NCO. 4) Complainant called ICC on 8 March 2012 to confirm HyD has provided a response. No further complaint was received after the response.	Closed
120405	05/04/2012	N/A	North Point	A complaint regarding excessive noise from construction sites of CBTS was observed daily before 7:30am except on public holidays, and the noise source was mainly from piling works. The complainant requested that construction works should start after 8:30am to avoid nuisance to nearby residents and a speedy follow-up and reply.	1) RSS notified ET on 5 April 2012. 2) ET confirmed with the Resident Site Staff that no piling works were performed during the concerned period. 3) After reviewing the results of noise monitoring (M2b and M3a), no exceedance was recorded during daytime period and the noise level was below 75dB(A). Site inspection for HY/2009/15 was conducted on 10 April 2012. The condition of noise mitigation measures around CBTS was found satisfactory. RSS confirmed that no pilings were performed during the concerned period. The major works included drilling, diaphragm wall construction and excavations. 4) HyD made a reply to the complainant on 16 April	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					2012 via 1823. HyD replied that the current works at CBTS were drilling, diaphragm wall construction and deep excavations. In order to minimize the noise generated from the above works, the Contractor had erected temporary noise barriers and provided noise blankets on plants. RSS would continue to work with the Contractor on the effectiveness of the environmental mitigation measures implemented on site. No further complaint was received after the response.	
120415	15/04/2012	The complainant Ms. Law, resident of Fu Lee Loy Mansion, complained via hotline 1823 (ICC Ref. No.: 1-351021108)	North Point	A complaint regarding excessive noise generated from a HyD project that is located at the connection point of CWB and IEC affecting nearby residents. Lately during the middle of the night (around 00:00 to 05:00), low frequency noise, which possibly came from the operating power generator and the barges which were parked along the Oil Street work site, were making a nuisance to the complainant and residents nearby. The complainant requested that relevant department should follow-up.	<ol style="list-style-type: none"><li>1) RSS notified ET on 17 April 2012.</li><li>2) ET confirmed with the Resident Site Staff that there was no operation of power generators for HY/2009/19 and HY/2009/17 (HY/2009/11 had no physical work on site) during the concerned period. Although there were a few barges mooring at the seafront of HY/2009/19, they were not in operation and hence no operational noise would be emitted.</li><li>3) After reviewing the results of noise monitoring (M4b and M5b), no exceedance was recorded during day time period and the noise level was below 75dB(A). Site inspection for HY/2009/19 was conducted on 18 April 2012. The condition of noise mitigation measures near Harbour Heights were found satisfactory. RSS confirmed that no operation of power generators for HY/2009/19 and HY/2009/17 (HY/2009/11 had no physical work on site) during the concerned period. Although there were a few barges mooring at the seafront of HY/2009/19, they were not in operation and hence no operational noise would be emitted.</li><li>4) HyD made a reply to the complainant on 30 April 2012 via email. HyD replied that the current works near Oil Street, North Point, included CWB tunnel works, IEC connections and associated foundation works. According to RSS records, no operations were performed during the early hours of March and April at Oil Street and the waterbody nearby, and so it was believed that the noise nuisance was not generated from the CWB project. Despite that, RSS would continue to monitor the Contractor on the operations and effectiveness of the environmental mitigation measures implemented on site, as not to affect daily life of local residents nearby. No further complaint was received after the response.</li></ol>	Closed



***Appendix 10.1***

*Construction Programme of Individual Contracts*

Activity Name	Original Duration	Planned Start	Planned Finish	2011				2012				2013				2014				2015				2016	
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		
<b>HY/2009/15 - CWB TUNNEL (CBTS SECTION)</b>																									
<b>SUBMISSIONS COMPLYING WITH EPs</b>																									
EM&A Manual ( rely on the Master EP's submission EP-364/2009/A Condition 2.9)																									
Baseline Monitoring Report (rely on the Master EP's submission EP-364/2009 Condition 3.3)																									
Monthly EM&A (rely on the masters EP's Submission, EP-364/2009/A Condition 3.4)																									
A dedicated website (rely on the master EP's submission, EP-364/2009/A Condition 4.2)																									
Management organization of main construction companies (FEP Condition 2.6)	1d	02-Oct-10	02-Oct-10																						
Work Schedule (FEP Condition 2.7)	1d	27-Oct-10	27-Oct-10																						
Location Plan (FEP Condition 2.8)	1d	27-Oct-10	27-Oct-10																						
Noise Management plan (FEP Condition 2.9)	1d	27-Oct-10	27-Oct-10																						
Landscape plan (FEP condition 2.10)	1d	31-Jan-11	31-Jan-11																						
<b>EAST VENTILATION ADIT</b>																									
CCT @ Portion 1, 2, 4, 6, 22	1315d	27-Sep-10	03-May-14																						
EV Adit @ Portion 4-Advance Works	526d	27-Sep-10	05-Mar-12																						
EV Adit Portion 1, 2, 6, 22	26d	22-Dec-11	16-Jan-12																						
EV Adit-based on Conforming Design	323d	15-Feb-12	02-Jan-13																						
<b>TCBR1E (TS1 Area)</b>																									
Diaphragm Wall Construction (incl. SI, & tests after completion)	107d	26-Apr-11	10-Aug-11																						
Excavation & Lateral Support, ELS	99d	16-Jul-11	22-Oct-11																						
Cut & Cover Tunnel Construction (incl. backfill)	78d	22-Oct-11	07-Jan-12																						
OHVD and Cable Trough (access from Portion 22)	76d	18-Dec-13	03-Mar-14																						
<b>TCBR2 + TCBR3 (TS2 Area)</b>																									
Diaphragm Wall Construction	118d	06-Jul-12	31-Oct-12																						
Excavation & Lateral Support, ELS	248d	06-Jul-12	10-Mar-13																						
Cut & Cover Tunnel Construction	164d	11-Mar-13	21-Aug-13																						
OHVD Cable Trough (Access from Portion 22)	150d	05-Aug-13	01-Jan-14																						
<b>TCBR1W (TS4 Area)</b>																									
Diaphragm Wall Construction	148d	28-Jun-11	22-Nov-11																						
Excavation & Lateral Support, ELS	319d	26-Jun-11	11-May-12																						
Landing Steps - Demolition/Reconstruct as footpath	40d	28-Jun-11	23-Aug-11																						

- ◆ Milestone
- ◆ Milestone
- ▨ Remaining Work
- ▨ Critical Remaining Work
- ▨ Actual Work

1 of 2

**China State Construction Engineering (Hong Kong) Ltd.**

**Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel**

**( CBTS Section)**

Prepared by William Caluza			
Date	Revision	Checked	Approved
14-Mar-11	Revision C	ST	KL
	File: GC01a		
	(Layout:HY/2009/15: CWB - Summary)		

**中國建築工程(香港)有限公司**

CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD



Activity Name	Original Duration	Planned Start	Planned Finish	2011					2012				2013				2014				2015				2016	
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Rock Excavation	235d	25-Apr-12	15-Dec-12																							
ME4-Diaphragm Wall	114d	10-May-12	19-Oct-12																							
AS Logistics Area for Mined Tunneling Works	174d	01-Jun-12	07-Feb-13																							
ME4-ELS Works	212d	01-Jun-12	02-Apr-13																							
SCL Entrusted Works	291d	18-Jul-12	08-Sep-13																							
Cut & Cover Tunnel Construction (w/o TS4 +)	111d	17-Dec-12	06-Apr-13																							
ME4-RC Structure	146d	28-Jan-13	21-Aug-13																							
OHVD and Cable Trough (Access from TZ5/TPCWAE/TPCWAW)	180d	17-Jun-13	13-Dec-13																							
<b>MINED TUNNEL</b>																										
CHT Protection Works @ location A, B, C	342d	27-Sep-10	01-Feb-12																							
Tunnel works from West Portal (access from TPCWAE& TZ5	418d	12-Mar-12	30-Oct-13																							
Tunnel Works from East Portal (Access from TS4 Area)	214d	30-Mar-12	01-Feb-13																							
Tunnel OHVD & Cable Trough	384d	02-Dec-13	22-May-15																							
<b>TPCWAE</b>																										
Drainage Diversion works along Hung Hing Road (Portion 19)	176d	15-Oct-10	24-Jun-11																							
Diaphragm Wall Construction	147d	20-May-11	13-Oct-11																							
Excavation & Lateral Support, ELS	421d	20-May-11	13-Jul-12																							
Rock Excavation	208d	12-Mar-12	03-Oct-12																							
AS Logistics Area for Mined Tunneling works	342d	12-May-12	18-Apr-13																							
Cut & Cover Tunnel Construction	130d	28-Jan-13	06-Jun-13																							
OHVD and Cable Trough (Access from TZ5/TPCWAW)	182d	18-Feb-15	18-Aug-15																							
<b>TPCWAW &amp; PORTION 11</b>																										
Diaphragm Wall Construction + Portion 11	222d	25-Oct-13	03-Jun-14																							
Excavation & Lateral Support, ELS	478d	25-Oct-13	14-Feb-15																							
Cut & Cover Tunnel Construction	143d	30-Dec-14	21-May-15																							
OHVD and Cable Trough Installation (Access from Portion 11)	235d	22-May-15	11-Jan-16																							

- ◆ ◆ Milestone
- ◆ ◆ Milestone
- ▨ Remaining Work
- ▨ Critical Remaining Work
- ▨ Actual Work

2 of 2

**China State Construction Engineering (Hong Kong) Ltd.**

**Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel**

**(CBTS Section)**

Prepared by William Caluza			
Date	Revision	Checked	Approved
14-Mar-11	Revision C	ST	KL
	File: 0001a		
	(Layout: HY/2009/15: CWB - Summary)		







Data Date: 20-Aug-11  
 Print Date: 29-Aug-11  
 CCP3-2

### HY/2009/18 Central - Wan Chai Bypass (Central Interchange)

TASK filter: HL



Activity Name	Start	Finish	Total Float	2011												2012												2013												2014												2015												2016												2017											
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>CWB - Central Interchange</b>																																																																																							
<b>HIGH LEVEL PROGRAMME</b>																																																																																							
<b>DATE FOR COMMENCEMENT &amp; COMPLETION</b>																																																																																							
Contract Commencement	21-Sep-10 A	03-Jan-11 A																																																																																					
Contract Construction Completion		30-Jan-16	365																																																																																				
Contract DLP and Establishment Works Completion		29-Jan-17	0																																																																																				
<b>PRELIMINARIES</b>																																																																																							
Preliminary Submissions / Approvals	21-Sep-10 A	03-Jan-11 A																																																																																					
Commence Site Mobilisation	03-Jan-11 A																																																																																						
Mobilise, Hoarding & Site Clearance	03-Jan-11 A	14-May-11 A																																																																																					
<b>PORTION IV WORKS</b>																																																																																							
<b>CWB Tunnel CH1480 to CH1580</b>																																																																																							
Site Investigation	11-May-11 A	15-Sep-11	28																																																																																				
Construct Guide Walls	27-Jun-11 A	30-Sep-11	20																																																																																				
Construct D-Wall / Barrettes	26-Aug-11	19-Apr-12	20																																																																																				
ELS Works	20-Apr-12	11-Oct-12	19																																																																																				
Construct CWB Tunnel & Ventilation Building	12-Oct-12	21-Jun-13	19																																																																																				
Works inside CWB Tunnel	22-Jun-13	24-Sep-13	18																																																																																				
KD-8 Complete		13-Oct-13*	0																																																																																				
<b>CWB Tunnel CH1580 to CH1646</b>																																																																																							
Construction Diversion for Finance Street	05-Sep-11	22-Oct-11	42																																																																																				
East End of Finance St. Closed		23-Oct-11	219																																																																																				
Site Investigation	30-Jul-11 A	09-Dec-11	126																																																																																				
Construct Guide Walls	30-Jul-11 A	04-Jan-12	97																																																																																				
Construct D-Wall / Barrettes	19-Mar-12	30-Jul-12	18																																																																																				
ELS Works	31-Jul-12	19-Dec-12	22																																																																																				
Construct CWB Tunnel	20-Dec-12	16-Apr-13	20																																																																																				
Works inside CWB Tunnel	10-Aug-13	13-Dec-13	161																																																																																				
KD-7 Complete		23-May-14*	0																																																																																				
<b>CWB Tunnel CH1646 to CH1685</b>																																																																																							
Man Yiu St. Diverted (Possess Portion IIA, IIB)	01-Feb-12	01-Feb-12	52																																																																																				
Site Clearance & Divert Existing Utilities	01-Feb-12	29-Mar-12	60																																																																																				
Site Investigation	30-Mar-12	04-May-12	54																																																																																				
Sheet Pile / Pipe Pile / Grouting	26-Mar-12	29-May-12	63																																																																																				
Construct Guide Walls	05-May-12	02-Jun-12	55																																																																																				
Construct Barrettes	04-Jun-12	04-Jul-12	52																																																																																				
Temporary Works to Support C/W Pipes	30-May-12	25-Jun-12	61																																																																																				
ELS Works	05-Jul-12	08-Dec-12	56																																																																																				
Demolish & Reconstruct CWB Tunnel	07-Dec-12	08-Mar-13	59																																																																																				
Works Inside CWB Tunnel	22-Jun-13	23-Oct-13	212																																																																																				
<b>Surface Works</b>																																																																																							
Backfill, U/G Services, Roadworks & Landscaping	25-Jan-13	11-Jan-14	295																																																																																				
KD-6 Complete		03-Nov-14*	0																																																																																				
<b>PORTION III WORKS</b>																																																																																							
<b>CWB Tunnel CH1685 to CH1704</b>																																																																																							
Access to CR/II Works Area	01-Sep-11		56																																																																																				
Works Area within CR/II Preparation	01-Sep-11	31-Dec-11	61																																																																																				
Site Investigation	01-Feb-12	13-Mar-12	374																																																																																				
Construct Guide Walls	29-Feb-12	30-Mar-12	379																																																																																				
Construct D-Wall / Barrettes (thru old seawall)	31-Mar-12	12-Sep-12	376																																																																																				
Construct Man Yiu Street Temporary Diversion	24-Nov-11	31-Jan-12	52																																																																																				
ELS Works	13-Sep-12	19-Dec-12	377																																																																																				
Construct CWB Tunnel (excl. roof slab)	20-Dec-12	23-Mar-13	375																																																																																				
Break into Existing CWB Tunnel	25-Mar-13	25-Apr-13	377																																																																																				
Construct CWB Tunnel Roof Slab	09-Jul-13	19-Aug-13	304																																																																																				
Works inside CWB Tunnel	20-Aug-13	05-Nov-13	269																																																																																				
<b>CWB Tunnel CH1704 to CH1825</b>																																																																																							
KD-4 Complete		01-Aug-14*	0																																																																																				
Works inside CWB Tunnel	16-Oct-12	09-Oct-13	271																																																																																				
<b>CWB Tunnel CH1825 to CH2600</b>																																																																																							
Works inside CWB Tunnel	10-Apr-12	02-Sep-13	100																																																																																				
KD-5 Complete		31-Jan-14*	0																																																																																				
<b>Surface Works</b>																																																																																							
Road P1 Roadworks & Landscaping	20-Aug-13	19-Mar-14	324																																																																																				
Man Yiu St. Widening Roadworks & Landscaping	31-Jul-13	27-Nov-13	415																																																																																				
KD-3 Complete		06-Feb-15*	0																																																																																				
<b>PORTION V WORKS</b>																																																																																							
<b>Mobilization, Set up, Utilities Diversion, Tree</b>																																																																																							
Mobilization, Set up, Utilities Diversion, Tree	03-Jan-11 A	03-Jun-11 A																																																																																					
Construct Trough B Structure - Phase 1	20-May-11 A	04-Aug-12	587																																																																																				
Construct Trough B Structure - Phase 2b	12-Oct-11	06-Sep-13	335																																																																																				
Temporary Drainage Diversion	15-Jul-13	23-Oct-13	19																																																																																				
Construct Trough B Structure - Phase 2a	24-Oct-13	26-Jul-14	33																																																																																				
Construct Trough B Structure - West End Portion	21-Jul-14	15-Oct-14	19																																																																																				
Portion VI Access Date	12-Nov-12		322																																																																																				
Man Kwong St. WB Widening	12-Nov-12	05-Apr-13	320																																																																																				
Construct Retaining Wall D	29-Jul-13	20-Dec-13	90																																																																																				
Remaining Roadworks & Landscaping	16-Nov-13	15-Jul-14	111																																																																																				
KD-9 Complete		03-Nov-14*	0																																																																																				
<b>PORTION VI WORKS</b>																																																																																							
<b>Portion VI Access Date</b>																																																																																							
Portion VI Access Date	12-Nov-12		219																																																																																				
Man Kwong St. WB Widening	12-Nov-12	05-Apr-13	209																																																																																				
Retaining Walls F	15-Oct-14	02-Jun-15	95																																																																																				
Retaining Walls G	12-Nov-12	12-Oct-13	693																																																																																				
Bridge B	12-Nov-12	25-Aug-14	523																																																																																				
Trough A	21-Dec-13	14-Oct-14	83																																																																																				
Elevated Layby at Runsey St. Flyover	23-Apr-14	29-Jul-15	165																																																																																				
Bridge A	12-Nov-12	01-Aug-14	157																																																																																				
Open Stp Road D / Man Po St.		14-Oct-14	638																																																																																				
Retaining Wall A & B	15-Oct-14	16-Jun-15	91																																																																																				
Remaining U/G Services, Roadworks & Landscaping	07-Nov-14	14-Sep-15	82																																																																																				
KD-10 Complete		30-Jan-16*	0																																																																																				
KD-16 Complete		30-Jan-16*	0																																																																																				
Landscaping Establishment (Last Area)	15-Sep-15	13-Sep-16	138																																																																																				
KD-15 Complete		29-Jan-17	0																																																																																				

Data Date: 20-Apr-12  
 Print Date: 25-Apr-12

# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.

Activity ID	Activity Name	Original Durati...	Start	Finish	Total Float	2012			
						Apr	May	Jun	Jul

**Updated 2012-04-20 CWB - Central Interchange (2011-12-23) Revised Detailed Wo...**

## PRELIMINARIES

### Access Dates & Milestones

#### Portion Possession Dates

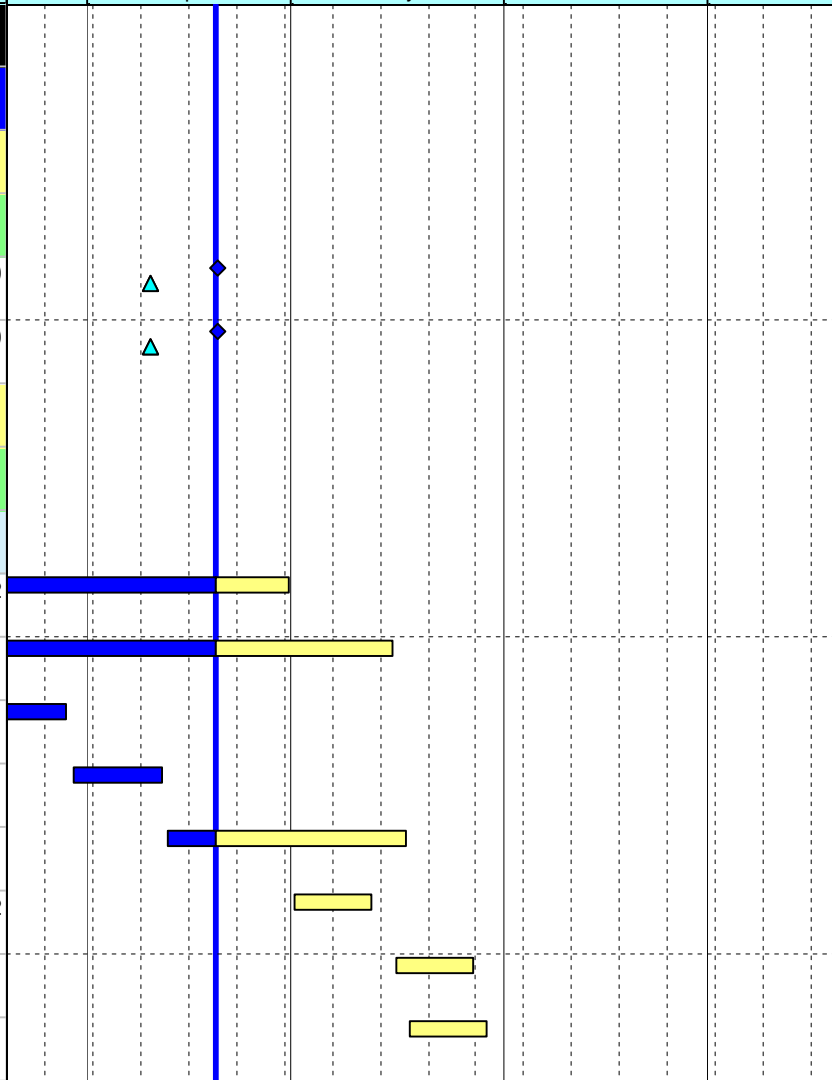
1285	Portion III B Available (DAY-567)	0	20-Apr-12*		-10				
1295	Portion III C Available (DAY-567)	0	20-Apr-12*		-10				

### Submissions & Approvals

#### Specified Plans

#### MTRC Impact Assessment Report

1558	Resubmit MTRC Impact Assessment Report - Cut & CoverTunnel	28	17-Feb-12 A	30-Apr-12	92				
1501	Resubmit MTRC Impact Assessment Report - Phase 2	12	19-Feb-12 A	15-May-12	138				
1371	Resubmit MTRC Impact Assessment Report - MYS Tunnel	28	25-Feb-12 A	29-Mar-12 A					
1534	MTRC Impact Assessment Report - Engineer / MTRC Review & Comment	12	30-Mar-12 A	12-Apr-12 A					
1535	Resubmit MTRC Impact Assessment Report - MYS Tunnel	28	13-Apr-12 A	17-May-12	121				
1559	MTRC Impact Assessment Report - Engineer / MTRC Review & Comment (Cut & Cover)	12	01-May-12	12-May-12	92				
1504	MTRC Impact Assessment Report - Engineer / MTRC Review & Comment (Phase 2)	12	16-May-12	27-May-12	138				
1553	MTRC Impact Assessment Report - Engineer / MTRC Review & Comment (MYS)	12	18-May-12	29-May-12	121				



- ◆ Current Milestone
- Critical Remaining Work
- ▬ Level of Effort
- ▬ Remaining Work
- ▲ Baseline Milestone
- ▬ Project Baseline
- ▬ Actual Work

## Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

Project ID: U019  
 Baseline: DCP3-3  
 Layout: Update Three Month Rolling U018  
 Page 1 of 12

U019 Programme Update 19 (Apr 2012)			
Date	Revision	Checked	Approv...
21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS

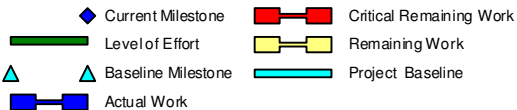


# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.

Activity ID	Activity Name	Original Durati...	Start	Finish	Total Float	2012					
						Apr	May	Jun	Jul		
<b>Traffic</b>											
<b>Temporary Traffic Management</b>											
1404	TTM - Revise & Resubmit	18	15-Mar-12 A	11-Apr-12 A							
1415	TTM - Engineer / 16th TMLG Review & Approve	19	12-Apr-12 A	18-Apr-12 A							
1416	TTM - Revise & Resubmit	18	19-Apr-12 A	07-May-12	366						
14230	TTM - Engineer / 17th TMLG Review & Approve	19	08-May-12	26-May-12	366						
14231	TTM - Revise & Resubmit	18	27-May-12	13-Jun-12	366						
<b>Utility Protection and Diversions</b>											
1191	Utilities - Coordination for Diversion - PCCW	200	03-Dec-10 A	25-Apr-12	320						
1192	Utilities - Coordination for Diversion - CATV	200	03-Dec-10 A	25-Apr-12	320						
1193	Utilities - Coordination for Diversion - HGC	200	03-Dec-10 A	25-Apr-12	320						
1194	Utilities - Coordination for Diversion - HEC	200	03-Dec-10 A	25-Apr-12	541						
1196	Utilities - Coordination for Diversion - WSD	389	03-Dec-10 A	25-Apr-12	819						
1197	Utilities - Coordination for Diversion - WT&T	200	03-Dec-10 A	25-Apr-12	320						
1198	Utilities - Coordination for Diversion - Towngas	203	03-Dec-10 A	22-Apr-12	323						
<b>Design</b>											
<b>Cost Saving Design (Contractor's Alternative Design)</b>											



## Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

Project ID: U019  
 Baseline: DCP3-3  
 Layout: Update Three Month Rolling U018  
 Page 2 of 12

U019 Programme Update 19 (Apr 2012)			
Date	Revision	Checked	Approv...
21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS

Data Date: 20-Apr-12  
Print Date: 25-Apr-12

# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.

Activity ID	Activity Name	Original Durati...	Start	Finish	Total Float	2012				
						Apr	May	Jun	Jul	
3728	CSD - Engineer Review & Approve Alternative Design	28	27-Jan-11 A	25-Apr-12	1740					
<b>Temporary Works Design</b>										
<b>ELS - Approach Ramp (Trough and Retaining Walls)</b>										
1578	ELS - ELS Trough and Retaining Walls Re-Submit Design - Phase 2	12	19-Feb-12 A	15-May-12	138					
1596	ELS - Resubmit Trough Construction Method Statement	12	17-Mar-12 A	28-Mar-12 A						
1597	ELS - Trough Construction Method Statement Engineer Review & Comment	12	29-Mar-12 A	11-Apr-12 A						
1579	ELS - ELS Trough and Retaining Walls Engineer Review & Approve - Phase 2	12	16-May-12	27-May-12	138					
<b>Utilities Support Bridge (Man Yiu Street)</b>										
1602	USB - Resubmit Cooling Water Main Bridge Design	28	16-Mar-12 A	12-Apr-12 A						
1603	USB - Cooling Water Main Bridge Engineer Review & Approval	28	12-Apr-12 A	17-May-12	108					
<b>ELS - CWB / Ventilation Building Portion (CH1480 - CH1580)</b>										
1498	ELS - ELS CWB / Top Down Slab Method Statement Engineer Review & Approval	28	09-Mar-12 A	06-May-12	8					
1130	ELS - ELS CWB / Ventilation Building Resubmit Method Statement	15	15-Mar-12 A	10-Apr-12 A						
1529	ELS - ELS CWB / Ventilation Building Engineer Review & Approval	28	17-Mar-12 A	30-Apr-12	14					
1556	ELS - ELS CWB / Vent Building - Engineer Issue Design Change Instruction Ref. CWB/AL/05/06/11/0005/0005/0005/0005/0005/0005	0		29-Mar-12 A						
1557	ELS - ELS CWB / Vent Building - ELS Design Re-Submission (Based On Design Change)	28	30-Mar-12 A	26-Apr-12	1739					
1132	ELS - ELS CWB / Ventilation Building Engineer Method Statement Review & Approval	28	11-Apr-12 A	29-Apr-12	22					

- Current Milestone
- Critical Remaining Work
- Level of Effort
- Remaining Work
- Baseline Milestone
- Project Baseline
- Actual Work

## Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

Project ID: U019  
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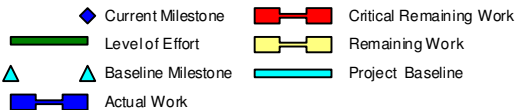
U019 Programme Update 19 (Apr 2012)			
Date	Revision	Checked	Approv...
21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS

# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.

Activity ID	Activity Name	Original Durati...	Start	Finish	Total Float	2012				
						Apr	May	Jun	Jul	
<b>ELS - CWB Man Yiu Street Portion &amp; Tunnel Modification Works (CH1646 - CH1685)</b>										
3932	ELS - ELS CWB Man Yiu Street Portion Design Resubmission	15	25-Feb-12 A	29-Mar-12 A		█				
1593	ELS - ELS CWB Man Yiu Street Portion Method Statement Resubmission	28	14-Mar-12 A	17-May-12	105	█	█			
3933	ELS - ELS CWB Man Yiu Street Portion Engineer Review & Approve	28	30-Mar-12 A	12-Apr-12 A		█				
1581	ELS - ELS CWB Man Yiu Street Portion Design Resubmission	15	13-Apr-12 A	04-May-12	28		█			
1582	ELS - ELS CWB Man Yiu Street Portion Engineer Review & Approve	28	05-May-12	01-Jun-12	28			█		
1595	ELS - ELS CWB Man Yiu Street Portion Engineer Review & Approve	28	18-May-12	14-Jun-12	105			█		
<b>ELS - CWB Cut &amp; Cover Portion (CH1580 - CH1646)</b>										
1497	ELS - ELS CWB CH1580-CH1646 Portion Re-submit Design	15	17-Feb-12 A	30-Apr-12	17	█	█			
3937	ELS - ELS CWB CH1580-CH1646 Portion Prepare Method Statement	15	01-May-12	15-May-12	17		█			
1496	ELS - ELS CWB CH1580-CH1646 Portion Re-submit Design Engineer Review & Comment	12	01-May-12	12-May-12	48		█			
3939	ELS - ELS CWB CH1580-CH1646 Portion Method Statement Engineer Review & Approval	28	16-May-12	12-Jun-12	17		█	█		
<b>ELS - CWB CRIII Portion (CH1685 - CH1704)</b>										
1604	ELS - ELS CRIII Portion Resubmit Design	28	25-Feb-12 A	29-Mar-12 A		█				
1605	ELS - ELS CRIII Portion Engineer Review & Approve	28	30-Mar-12 A	12-Apr-12 A		█				
1606	ELS - ELS CRIII Portion Resubmit Design	28	12-Apr-12 A	04-May-12	471		█			
3943	ELS - ELS CRIII Portion Prepare Method Statement	15	20-Apr-12	04-May-12	471		█			



## Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

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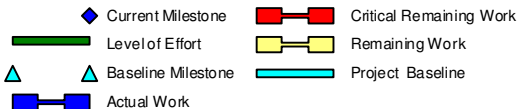
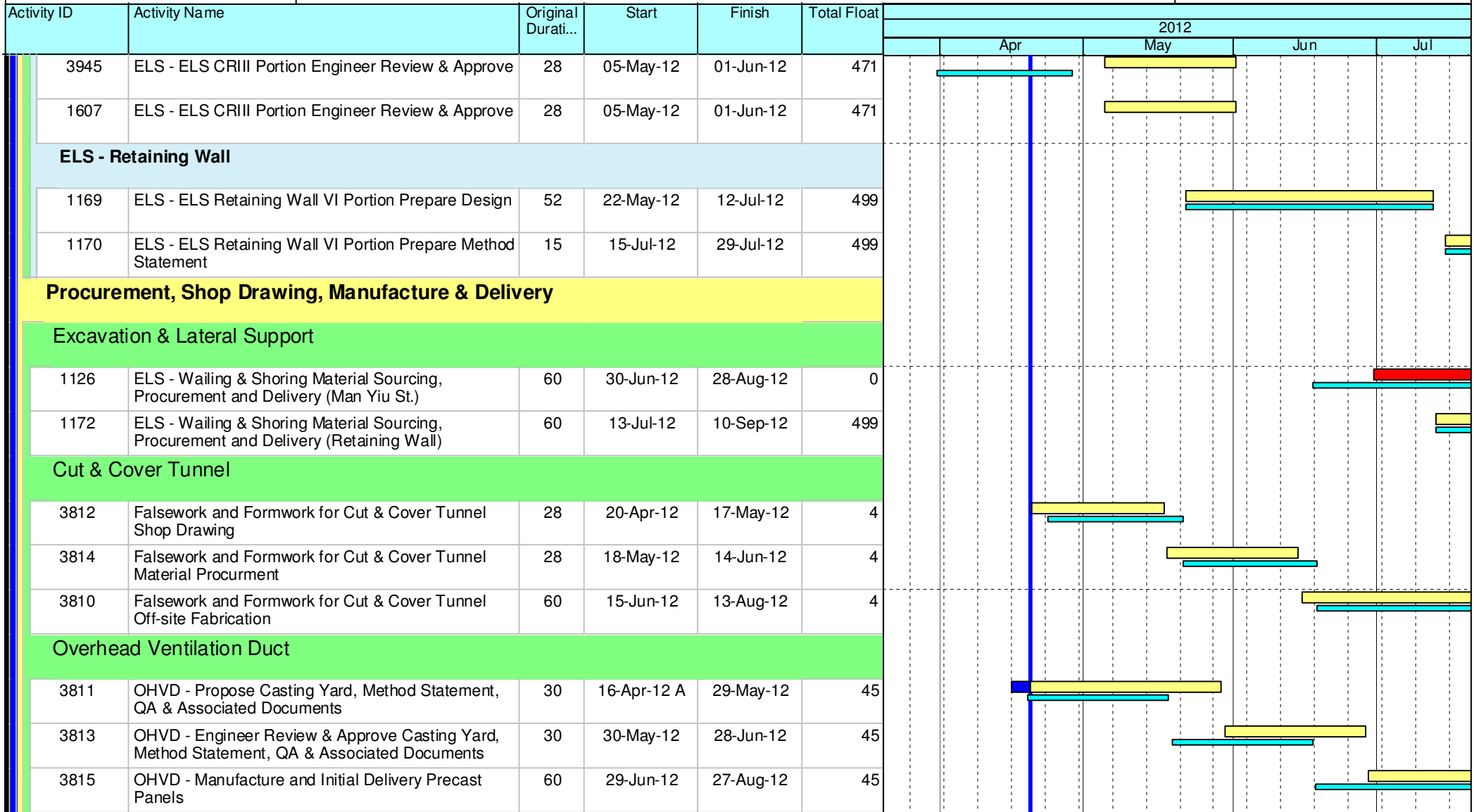
U019 Programme Update 19 (Apr 2012)			
Date	Revision	Checked	Approv...
21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS



# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.



## Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

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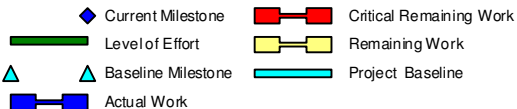
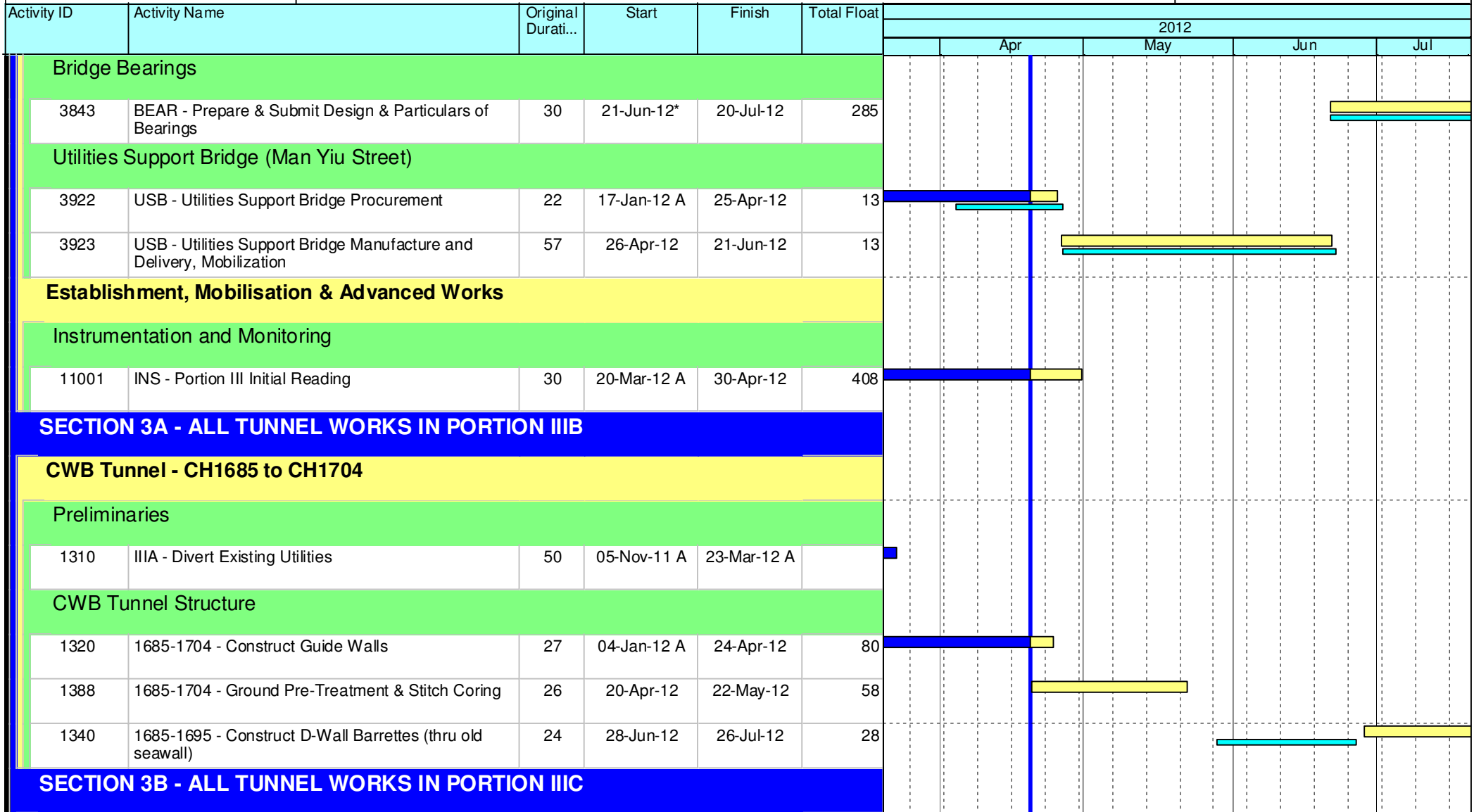
U019 Programme Update 19 (Apr 2012)			
Date	Revision	Checked	Approv...
21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS

Data Date: 20-Apr-12  
 Print Date: 25-Apr-12

## HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.



### Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

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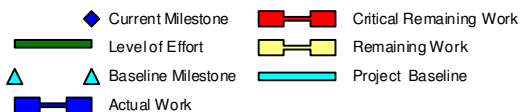
U019 Programme Update 19 (Apr 2012)			
Date	Revision	Checked	Approv...
21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS

# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.

Activity ID	Activity Name	Original Durati...	Start	Finish	Total Float	2012				
						Apr	May	Jun	Jul	
<b>CWB Tunnel - CH1825 to CH2600</b>										
<b>CWB Tunnel Internal Works</b>										
1368	1825-2600 - Access Available via Roof Opening at CH1700	0		20-Apr-12	38					
1370	2213-2600 - Construct Insitu Roof Kickers	78	20-Apr-12	24-Jul-12	38					
<b>SECTION 4B - ALL TUNNEL WORKS IN PORTION IVC, IVD, IVE &amp; IVF</b>										
<b>CWB Tunnel - CH1480 to CH1580</b>										
<b>Preliminaries</b>										
1379	IVC - Temp. Divert Finance St.	12	20-Apr-12	05-May-12	51					
1346	IVC - Reinstate Drainage along Finance Street (Stage 2)	26	07-May-12	05-Jun-12	51					
1352	IVC - Reinstate Finance Street (Stage2 Area)	12	06-Jun-12	19-Jun-12	51					
<b>CWB Tunnel Structure</b>										
11006	1480-1580 - Construct D-Wall / Barrettes (Exclude W2D11)	74	27-Sep-11 A	20-Mar-12 A						
1571	1480-1580 - Sonic Test, Interface Core Test & Full Core Test	24	02-Dec-11 A	24-Apr-12	15					
1409	1480-1580 - Construct D-Wall (W2D11)	10	05-Mar-12 A	20-Mar-12 A						
1468	1480-1580 - Construct D-Wall (W2D18)	10	07-Mar-12 A	20-Mar-12 A						
1411	1480-1580 - Slurry Wall (Ch1480)	15	08-Mar-12 A	30-Mar-12 A						
1491	1480-1580 - Installation of Pump Well	24	09-Mar-12 A	20-Apr-12 A						



## Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

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21-Mar-12	U018	RC	DS

# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.

Activity ID	Activity Name	Original Durati...	Start	Finish	Total Float	2012				
						Apr	May	Jun	Jul	
1408	1480-1580 - Construct D-Wall (W2D8)	11	17-Mar-12 A	31-Mar-12 A						
1575	1480-1580 - Slurry Wall (Ch1580)	14	10-Apr-12 A	23-Apr-12	4					
1347	1480-1580 - Excavate for Top Slabs	18	18-Apr-12 A	08-May-12	5					
1572	1480-1580 - Pump Test	12	24-Apr-12	09-May-12	4					
1349	1480-1580 - Construct Top Slabs	24	09-May-12	05-Jun-12	5					
1580	1480-1580 - Excavate & Lateral Support to Bottom of CWB Tunnel(1480-1600)	100	10-May-12	05-Sep-12	4					
11300	1480-1580 - Excavate 1st Layer	36	10-May-12	20-Jun-12	4					
11320	1480-1580 - Erect 1st Layer Support	33	30-May-12	09-Jul-12	4					
1517	1480-1580 - Excavate 2nd Layer	15	10-Jul-12	26-Jul-12	4					
1519	1480-1580 - Erect 2nd Layer Support	15	17-Jul-12	02-Aug-12	4					

## SECTION 4A - ALL TUNNEL WORKS IN PORTION IVA, IVB, IVG & IVH

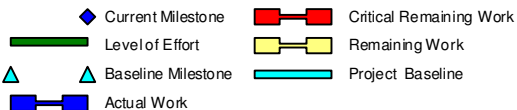
### CWB Tunnel - CH1580 to CH1646

#### Preliminaries

1657	IVA & IVG - Divert Existing Utilities WSD, HGC	26	03-Apr-12 A	10-Apr-12 A						
1566	IVA & IVG - Divert Existing Utilities HEC (Changeover)	29	20-Apr-12	25-May-12	0					

#### CWB Tunnel Structure

1663	1580-1646 - Pre-drilling (Site Investigation) W1D20 - W1D30, BC12 - BC15	30	30-Jul-11 A	30-Mar-12 A						
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## Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

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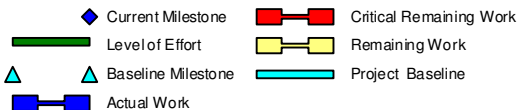
U019 Programme Update 19 (Apr 2012)			
Date	Revision	Checked	Approv...
21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS

# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.

Activity ID	Activity Name	Original Durati...	Start	Finish	Total Float	2012				
						Apr	May	Jun	Jul	
1664	1580-1646 - Construct Guide Walls W1D20 - W1D30, BC12 - BC15	48	30-Jul-11 A	24-Apr-12	29					
1341	1580-1646 - Construct Guide Walls (W2D20 - W2D30) Exclude W2D28	18	12-Dec-11 A	24-Apr-12	41					
1665	1580 - 1646 - Construct D-Wall / Barrettes 1600 - 1646	46	09-Jan-12 A	13-Jun-12	0					
1387	1580 - 1646 - Construct Utilities Bridges	26	08-Mar-12 A	02-Apr-12 A						
1482	1580 - 1646 - Construct D-Wall (W1D24)	5	19-Mar-12 A	24-Mar-12 A						
1487	1580 - 1646 - Construct D-Wall (W2D23)	12	20-Mar-12 A	03-Apr-12 A						
1485	1580 - 1646 - Construct D-Wall (W2D20)	6	22-Mar-12 A	28-Mar-12 A						
1483	1580 - 1646 - Construct D-Wall (W1D23)	14	27-Mar-12 A	19-Apr-12 A						
1488	1580 - 1646 - Construct D-Wall (W2D19)	6	29-Mar-12 A	05-Apr-12 A						
1509	1580 - 1646 - Construct D-Wall (BC13)	16	29-Mar-12 A	05-May-12	1					
1511	1580 - 1646 - Construct D-Wall (BC12)	16	11-Apr-12 A	27-Apr-12	6					
1515	1580 - 1646 - Construct D-Wall (BC11)	14	30-Apr-12	16-May-12	24					
1513	1580 - 1646 - Construct D-Wall (BC14)	12	07-May-12	19-May-12	1					
1666	1580-1646 - Slurry Wall	24	16-May-12	12-Jun-12	1					
1567	1580 - 1646 - Construct D-Wall (W1D30)	8	26-May-12	04-Jun-12	0					
1568	1580 - 1646 - Construct D-Wall (W1D28)	8	29-May-12	06-Jun-12	0					
1569	1580 - 1646 - Construct D-Wall (W1D29)	8	31-May-12	08-Jun-12	0					



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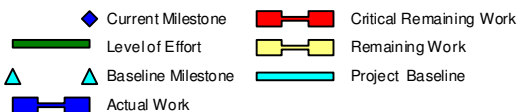
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21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS

## HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.

Activity ID	Activity Name	Original Durati...	Start	Finish	Total Float	2012					
						Apr	May	Jun	Jul		
1573	1580 - 1646 - Construct D-Wall (W2D30)	8	02-Jun-12	11-Jun-12	77						
1574	1580 - 1646 - Construct D-Wall (W2D29)	8	05-Jun-12	13-Jun-12	77						
1667	1580-1646 - Sonic Test, Interface Core Test & Full Core Test	24	14-Jun-12	13-Jul-12	25						
1668	1580-1646 - Pump Test	12	14-Jun-12	28-Jun-12	1						
1391	1580-1646 - Excavate Top Slab	18	29-Jun-12	20-Jul-12	1						
<b>CWB Tunnel - CH1646 to CH1685</b>											
<b>CWB Tunnel Structure</b>											
2540	1646-1685 - Pre-drilling (Site Investigation)	25	15-Dec-11 A	23-Apr-12	9						
2550	1646-1685 - Construct Guide Walls	25	20-Apr-12	21-May-12	4						
1389	1646-1685 - Ground Treatment	12	24-Apr-12	09-May-12	14						
2560	1646-1685 - Construct Barrettes BC16-BC18, BC21, BC22	27	26-May-12	27-Jun-12	0						
1561	1646-1685 - Construct Barrettes BC21	12	26-May-12	08-Jun-12	0						
1562	1646-1685 - Construct Barrettes BC22	12	30-May-12	12-Jun-12	66						
1563	1646-1685 - Construct Barrettes BC16	12	04-Jun-12	16-Jun-12	66						
1564	1646-1685 - Construct Barrettes BC17	12	08-Jun-12	21-Jun-12	66						
2705	1646-1685 - Install Pipe/Sheet Pile Wall	50	09-Jun-12	08-Aug-12	0						
1565	1646-1685 - Construct Barrettes BC18	12	13-Jun-12	27-Jun-12	66						



### Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

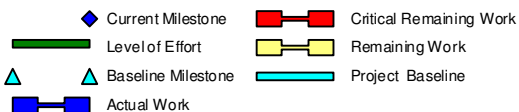
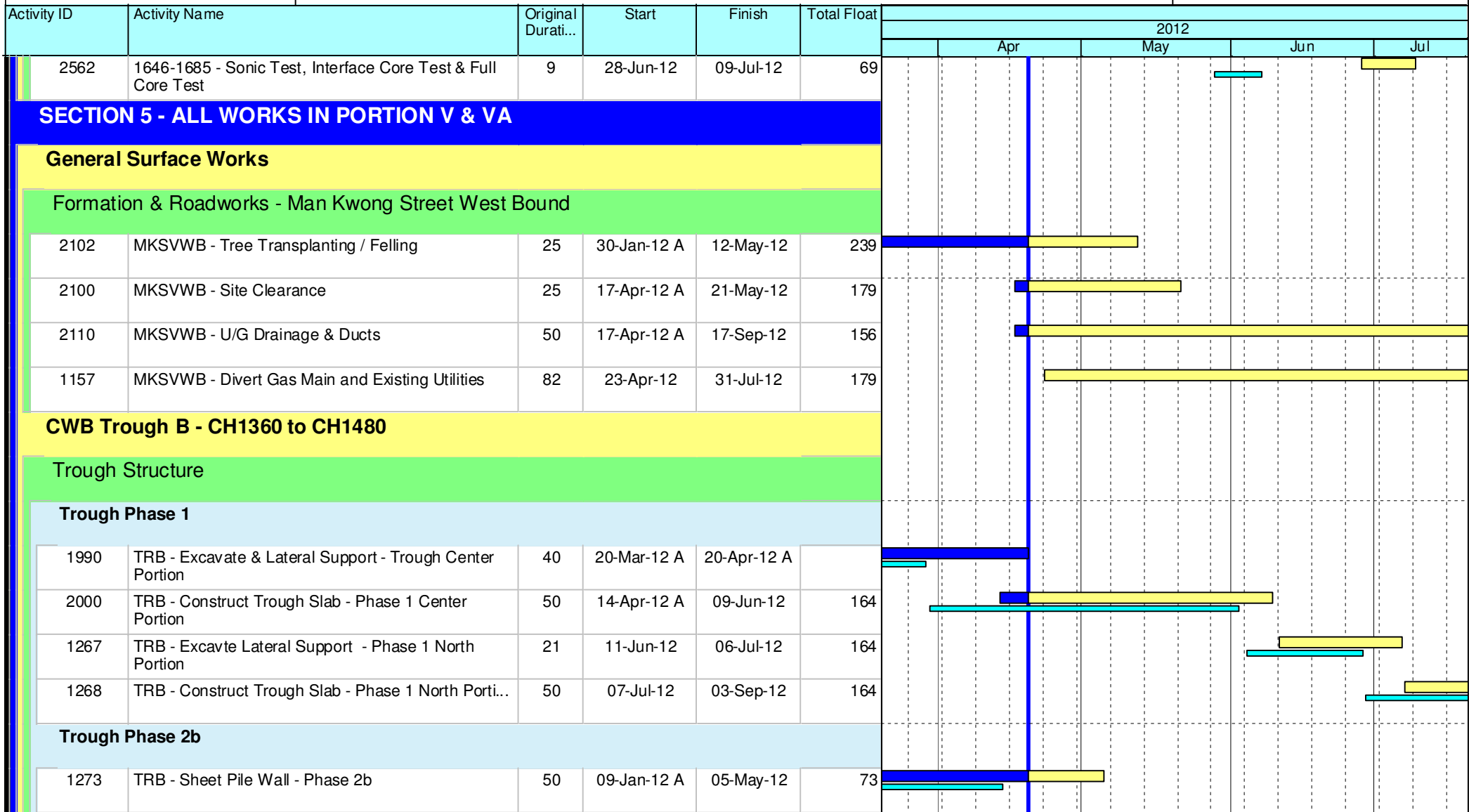
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U019 Programme Update 19 (Apr 2012)			
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21-Apr-12	U019	RC	DS
21-Mar-12	U018	RC	DS

# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



TASK filters: 3 Months, Not HL.



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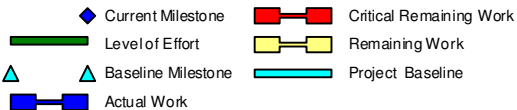
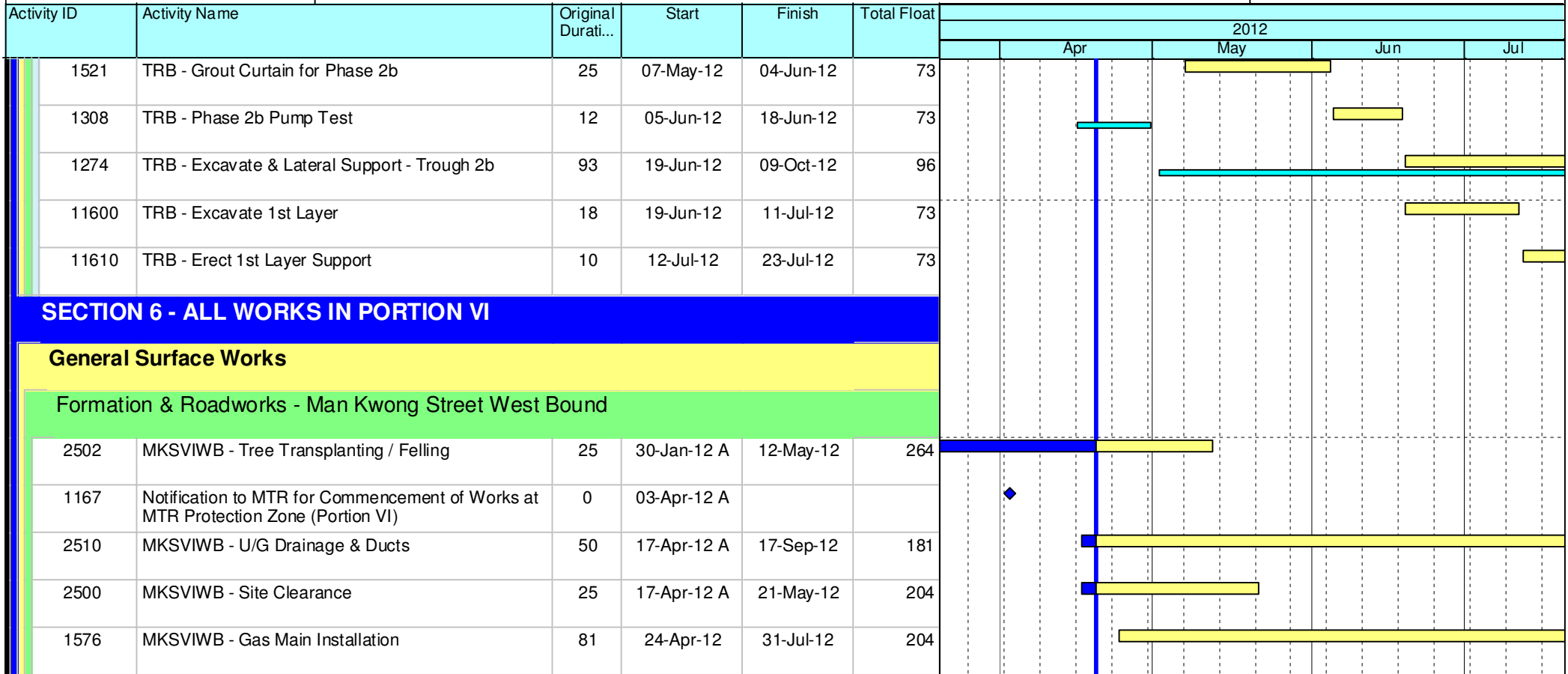
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U019 Programme Update 19 (Apr 2012)			
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# HY/2009/18 Central - Wan Chai Bypass (Central Interchange)



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## Leighton Contractors (Asia) Limited Programme Update 19 (Apr 2012) THREE MONTH ROLLING

Project ID: U019  
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U019 Programme Update 19 (Apr 2012)			
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21-Mar-12	U018	RC	DS

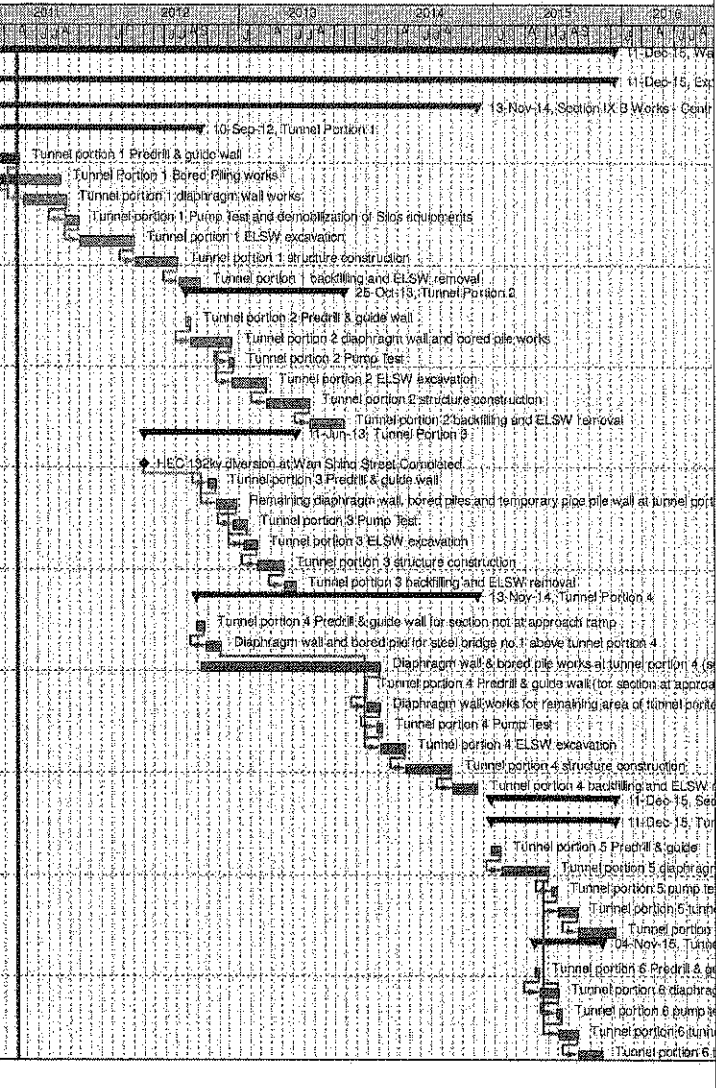




Wan Chai Development Phase II - Central - Wan Chai  
Bypass at Wan Chai East CONTRACT HK/2009/02

CHUN WO - CRGL JV

Activity ID	Activity Name	OD	Start	Finish	% Planned	2011	2012	2013	2014	2015	2016
<b>Wan Chai Development Phase II - Central - Wan Chai Bypass at Wan Chai East</b>											
<b>Expanded and More Detailed Initial Works Programme</b>											
Section IX B Works - Central - Wan Chai Bypass Tunnel Structure from chainage 3400 to eastern tunnel											
<b>Tunnel Portion 1</b>											
S9B-T1-0005	Tunnel portion 1 Predrill & guide wall	10	18-Feb-11	13-Apr-11	40%						
S9B-T1-0007	Tunnel Portion 1 Bored Piling works	105	09-Feb-11	08-Aug-11	0%						
S9B-T1-0010	Tunnel portion 1 diaphragm wall works	105	26-Apr-11	27-Aug-11	0%						
S9B-T1-0015	Tunnel portion 1 Pump Test and demobilization of Slos equipments	35	20-Aug-11	30-Sep-11	0%						
S9B-T1-0020	Tunnel portion 1 ELSW excavation	130	03-Oct-11	07-Mar-12	0%						
S9B-T1-0030	Tunnel portion 1 structure construction	100	09-Mar-12	09-Jul-12	0%						
S9B-T1-0040	Tunnel portion 1 backfilling and ELSW removal	54	10-Jul-12	10-Sep-12	0%						
<b>Tunnel Portion 2</b>											
S9B-T2-0105	Tunnel portion 2 Predrill & guide wall	10	02-Aug-12	13-Aug-12	0%						
S9B-T2-0010	Tunnel portion 2 diaphragm wall and bored pile works	100	14-Aug-12	10-Dec-12	0%						
S9B-T2-0015	Tunnel portion 2 Pump Test	14	03-Dec-12	18-Dec-12	0%						
S9B-T2-0020	Tunnel portion 2 ELSW excavation	80	11-Dec-12	19-Mar-13	0%						
S9B-T2-0030	Tunnel portion 2 structure construction	100	20-Mar-13	22-Jul-13	0%						
S9B-T2-0040	Tunnel portion 2 backfilling and ELSW removal	80	23-Jul-13	25-Oct-13	0%						
<b>Tunnel Portion 3</b>											
S9B-T3-0005	HEC 132kv diversion at Wan Shing Street Completed	0	01-Apr-12*		0%						
S9B-T3-0008	Tunnel portion 3 Predrill & guide wall	20	02-Oct-12	25-Oct-12	0%						
S9B-T3-0010	Remaining diaphragm wall, bored piles and temporary pipe pile wall at tunnel portion 3	50	25-Oct-12	22-Dec-12	0%						
S9B-T3-0015	Tunnel portion 3 Pump Test	30	15-Dec-12	22-Jan-13	0%						
S9B-T3-0020	Tunnel portion 3 ELSW excavation	30	15-Jan-13	20-Feb-13	0%						
S9B-T3-0030	Tunnel portion 3 structure construction	80	21-Feb-13	06-May-13	0%						
S9B-T3-0040	Tunnel portion 3 backfilling and ELSW removal	30	07-May-13	11-Jun-13	0%						
<b>Tunnel Portion 4</b>											
S9B-T4-0005	Tunnel portion 4 Predrill & guide wall for section not at approach ramp	21	30-Aug-12	22-Sep-12	0%						
S9B-T4-0010	Diaphragm wall and bored pile for steel bridge no.1 above tunnel portion 4	40	24-Sep-12	10-Nov-12	0%						
S9B-T4-0020	Diaphragm wall & bored pile works at tunnel portion 4 (section not at approach ramp)	420	11-Sep-12	05-Feb-14	0%						
S9B-T4-0025	Tunnel portion 4 Predrill & guide wall (for section at approach ramp)	5	23-Dec-13	30-Dec-13	0%						
S9B-T4-0030	Diaphragm wall works for remaining area of tunnel portion 4 (for section at approach ramp)	30	31-Dec-13	06-Feb-14	0%						
S9B-T4-0035	Tunnel portion 4 Pump Test	14	28-Jan-14	14-Feb-14	0%						
S9B-T4-0040	Tunnel portion 4 ELSW excavation	60	07-Feb-14	19-Apr-14	0%						
S9B-T4-0050	Tunnel portion 4 structure construction	110	22-Apr-14	01-Sep-14	0%						
S9B-T4-0060	Tunnel portion 4 backfilling and ELSW removal	60	02-Sep-14	13-Nov-14	0%						
Section X Works - Central - Wan Chai Bypass Tunnel Structure from western tunnel to chainage 3400											
<b>Tunnel Portion 5</b>											
S10-T5-0005	Tunnel portion 5 Predrill & guide	21	23-Dec-14	19-Jan-15	0%						
S10-T5-0010	Tunnel portion 5 diaphragm wall & bored pile works	110	20-Jan-15	04-Jun-15	0%						
S10-T5-0015	Tunnel portion 5 pump test	14	13-Jun-15	30-Jun-15	0%						
S10-T5-0020	Tunnel portion 5 tunnel ELSW excavation	45	04-Jul-15	25-Aug-15	0%						
S10-T5-0030	Tunnel portion 5 tunnel structure construction	90	26-Aug-15	11-Dec-15	0%						
<b>Tunnel Portion 6</b>											
S10-T6-0040	Tunnel portion 6 Predrill & guide	12	24-Apr-15	08-May-15	0%						
S10-T6-0050	Tunnel portion 6 diaphragm wall & bored pile works at Area 10	45	09-May-15	09-Jul-15	0%						
S10-T6-0055	Tunnel portion 6 pump test	14	25-Jun-15	11-Jul-15	0%						
S10-T6-0060	Tunnel portion 6 tunnel ELSW excavation at Area 10	45	04-Jul-15	26-Aug-15	0%						
S10-T6-0070	Tunnel portion 6 tunnel structure construction at Area 10	58	26-Aug-15	04-Nov-15	0%						



CEDD CONTRACT NO. HK/2009/02  
 Wan Chai Development Phase II - Central Wan Chai Bypass at Wan Chai East (Contract 2)  
 Revised Programme dated 7 April 2011

Date	Revision	Checked	Approved
07-Apr-11		KT	KY

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Activity ID	Activity Name	Rem Dur	Start	Finish	2012															
					May					June					July				August	
					23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06
<b>3MRP - MAY 2012 to AUG 2012</b>																				
<b>01 - CONTRACT DATES</b>																				
<b>01.2 - Possession of Site</b>																				
0120-2600	Possession to Portion VIIIA	0	29-Jul-12*																◆ Possession to Portion VIIIA	
0120-2700	Possession to Portion VIIIB	0	29-Jul-12*																◆ Possession to Portion VIIIB	
0120-2800	Possession to Portion IXA	0	29-Jul-12*																◆ Possession to Portion IXA	
0120-2900	Possession to Portion IXB	0	29-Jul-12*																◆ Possession to Portion IXB	
<b>02 - PRE-CONSTRUCTION WORKS</b>																				
<b>02.2 - Contractor's Submission</b>																				
0220-1250	Concrete Ready Mix/Design Mix - Concrete Plant Trials & Approval	8	04-Aug-11 A	28-May-12															Concrete Ready Mix/Design Mix - Concrete Plant Trials & Approval	
0220-1260	Drainage Pipes & Materials - Submission	7	15-Sep-11 A	27-May-12															Drainage Pipes & Materials - Submission	
0220-1270	Drainage Pipes & Materials - ER Review/Comment	14	28-May-12	10-Jun-12															Drainage Pipes & Materials - ER Review/Comment	
0220-1280	Drainage Pipes & Materials - Resubmission	7	11-Jun-12	17-Jun-12															Drainage Pipes & Materials - Resubmission	
0220-1290	Drainage Pipes & Materials - ER Approval	14	18-Jun-12	01-Jul-12															Drainage Pipes & Materials - ER Approval	
0220-1300	Drainage Pipes & Materials - Procurement & Delivery	14	25-Jun-12	08-Jul-12															Drainage Pipes & Materials - Procurement & Delivery	
0220-1360	Tunnel Structures Materials - Submission	28	02-Jul-12*	29-Jul-12															Tunnel Structures Materials - Submission	
0220-1370	Tunnel Structures Materials - ER Review/Comment	28	30-Jul-12	26-Aug-12															Tunnel Structures Materials - ER Review/Comment	
0220-1460	Bridge Bearing - Submission	15	10-Oct-11 A	16-Jul-12															Bridge Bearing - Submission	
0220-1470	Bridge Bearing - ER Review/Comment	28	17-Jul-12	13-Aug-12															Bridge Bearing - ER Review/Comment	
<b>02.3 - Method Statement / Shop Drawings</b>																				
0230-1133	MS Marine Piling - Resubmission (low headroom)	0	19-Apr-12 A	11-May-12 A															MS Marine Piling - Resubmission (low headroom)	
0230-1134	MS Marine Piling - ER Approval (low headroom)	14	12-May-12 A	03-Jun-12															MS Marine Piling - ER Approval (low headroom)	
0230-1260	MS Cut & Cover Tunnel - Submission	14	21-Mar-12 A	03-Jun-12															MS Cut & Cover Tunnel - Submission	
0230-1270	MS Cut & Cover Tunnel - ER Review & Comment	28	04-Jun-12	01-Jul-12															MS Cut & Cover Tunnel - ER Review & Comment	
0230-1280	MS Cut & Cover Tunnel - Resubmission	28	02-Jul-12	29-Jul-12															MS Cut & Cover Tunnel - Resubmission	
0230-1290	MS Cut & Cover Tunnel - ER Approval	28	30-Jul-12	26-Aug-12															MS Cut & Cover Tunnel - ER Approval	
0230-1340	MS Pre-cast Segment Bridge - Submission	28	01-Aug-12*	28-Aug-12															MS Pre-cast Segment Bridge - Submission	
0230-1460	MS Stressing/Destressing Tendons - Submission	28	01-Aug-12*	28-Aug-12															MS Stressing/Destressing Tendons - Submission	
0230-1560	MS Precasting of Bridge Segment & Beam - Resubmission	24	07-May-12 A	13-Jun-12															MS Precasting of Bridge Segment & Beam - Resubmission	
0230-1570	MS Precasting of Bridge Segment & Beam - ER Approval	28	14-Jun-12	11-Jul-12															MS Precasting of Bridge Segment & Beam - ER Approval	
0230-1700	MS Temporary Bridge TA - Submission	28	01-Aug-12*	28-Aug-12															MS Temporary Bridge TA - Submission	
<b>02.4 - Contractor's Design and Build Items</b>																				
0240-1010	Temp Bridge "TA" Design - Prep & Submit	48	16-Dec-11 A	07-Jul-12															Temp Bridge "TA" Design - Prep & Submit	
0240-1020	Temp Bridge "TA" Design - ER review and comment	28	08-Jul-12	04-Aug-12															Temp Bridge "TA" Design - ER review and comment	
0240-1030	Temp Bridge "TA" Design - Resubmission	60	05-Aug-12	03-Oct-12															Temp Bridge "TA" Design - Resubmission	
0240-1041	Temp Bridge "TD" Design - Prep & Submit	120	01-Aug-12*	28-Nov-12															Temp Bridge "TD" Design - Prep & Submit	
0240-1090	Int. Noise Enclosure Design - Public Consultation	60	29-Jul-11 A	19-Jul-12															Int. Noise Enclosure Design - Public Consultation	
0240-1095	Int. Noise Enclosure Design - ACABAS/ER Consultation/Submission	72	16-Dec-11 A	31-Jul-12															Int. Noise Enclosure Design - ACABAS/ER Consultation/Submission	
0240-1100	Int. Noise Enclosure Design - ER review & comment	28	01-Aug-12	28-Aug-12															Int. Noise Enclosure Design - ER review & comment	
0240-1120	Noise Barrier Design - Public Consultation	60	29-Jul-11 A	19-Jul-12															Noise Barrier Design - Public Consultation	
0240-1122	Noise Barrier Design - ACABAS/ER Consultation/Submission	72	16-Dec-11 A	31-Jul-12															Noise Barrier Design - ACABAS/ER Consultation/Submission	
0240-1124	Noise Barrier Design - ER review & comment	28	01-Aug-12	28-Aug-12															Noise Barrier Design - ER review & comment	
0240-1130	Perm. Noise Enclosure Design - Public Consultation	150	14-Feb-12 A	17-Oct-12															Perm. Noise Enclosure Design - Public Consultation	
0240-1135	Perm. Noise Enclosure Design - ACABAS/ER Consultation/Submission	90	13-Jun-12	10-Sep-12															Perm. Noise Enclosure Design - ACABAS/ER Consultation/Submission	

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3MRP

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Activity ID	Activity Name	Rem Dur	Start	Finish	2012															
					May					June					July				August	
					23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06
0240-1260	Landscaping Design - Public Consultation	180	12-Aug-12	07-Feb-13																
<b>02.5 - Bridge Segment/Beam Off-site Precasting</b>																				
0250-1010	Segment/Beam - Procurement of Precasting Yard	0	27-Feb-12 A	30-Apr-12 A																
0250-1020	Segment/Beam - Precast Yard Site Clearance	0	02-May-12 A	20-May-12 A																
0250-1030	Segment/Beam - Precast Yard Establishment Works	42	21-May-12	01-Jul-12																
0250-1100	Segment/Beam - Geometry Control Design Approval	48	14-Dec-11 A	07-Jul-12																
0250-1050	Segment/Beam - Mould Fabrication	42	08-Jun-12	19-Jul-12																
0250-1040	Segment/Beam - Precast Yard Set-up Survey Station	18	14-Jun-12	01-Jul-12																
0250-1060	Segment/Beam - Precasting of 1st Segment / Trial Segment	12	20-Jul-12	31-Jul-12																
0250-1500	Ready for Mass Production of Bridge Segment/Beam	0		31-Jul-12																
0250-1600	Bridge Precast Segment Casting & Delivery for E/B Bridge	280	01-Aug-12	07-May-13																
<b>05 - SECTION 2 &amp; 2A OF THE WORKS</b>																				
<b>05.1 - Cut &amp; Cover Tunnel Ch 4855-4932 (APS Footprint)</b>																				
<b>05.1.1 - D-Wall Construction</b>																				
0511-1010	Site Survey & Setting Out (Portion VIIIA and IXA)	3	30-Jul-12	01-Aug-12																
0511-1020	Site Establishment (Portion VIIIA and IXA)	28	30-Jul-12	30-Aug-12																
0511-1030	D-wall N46-N51 Pre-drilling (6 nos@6d - 3 rigs)	12	31-Jul-12	13-Aug-12																
0511-1060	D-wall S48-S55 + BC39 Pre-drilling (9 nos@3d - 3 rigs)	15	31-Jul-12	16-Aug-12																
<b>05.2 - Cut &amp; Cover Tunnel Ch 4932-5149</b>																				
<b>05.2.1 - D-Wall Construction</b>																				
0521-1790.10	D-wall Panel N74A (6m - 590cu.m)	10	01-Jun-12*	12-Jun-12																
0521-1990.53	Existing Utilities Diversion for S81 to S84	15	21-May-12	06-Jun-12																
0521-1990.63	Guide Wall Construction for S81 to S84	9	07-Jun-12	16-Jun-12																
0521-1990.12	D-wall South Panel S100	0	21-Apr-12 A	08-May-12 A																
0521-1990.13	D-wall South Panel S95	0	11-Apr-12 A	03-May-12 A																
0521-1990.14	D-wall South Panel S112	0	05-Apr-12 A	24-Apr-12 A																
0521-1990.15	D-wall South Panel S106	0	23-Mar-12 A	27-Apr-12 A																
0521-1990.16	D-wall South Panel S113	0	26-Apr-12 A	11-May-12 A																
0521-1990.21	D-wall South Panel S92	0	24-Apr-12 A	19-May-12 A																
0521-1990.22	D-wall South Panel S86	0	17-Apr-12 A	04-May-12 A																
0521-1990.23	D-wall South Panel S90	0	20-Apr-12 A	15-May-12 A																
0521-1990.29	D-wall South Panel S85	7	14-May-12 A	28-May-12																
0521-1990.25	D-wall South Panel S93	9	26-May-12	05-Jun-12																
0521-1990.28	D-wall South Panel S88	9	02-Jun-12	12-Jun-12																
0521-1990.26	D-wall South Panel S89	9	13-Jun-12	22-Jun-12																
0521-1990.33	D-wall South Panel S81	9	20-Jun-12	30-Jun-12																
0521-1990.20	D-wall South Panel S83	9	03-Jul-12	12-Jul-12																
0521-1990.27	D-wall South Panel S84	9	11-Jul-12	20-Jul-12																
0521-1990.24	D-wall South Panel S82	9	19-Jul-12	28-Jul-12																
0521-1945.10	Temp Bulk Headhead TBW1	6	03-Jul-12	09-Jul-12																
0521-1945.15	Temp Bulk Headhead TBW3	6	10-Jul-12	16-Jul-12																
0521-1945.20	Temp Bulk Headhead TBW5	6	17-Jul-12	23-Jul-12																
0521-1945.25	Temp Bulk Headhead TBW2	6	24-Jul-12	30-Jul-12																
0521-1945.30	Temp Bulk Headhead TBW4	6	31-Jul-12	06-Aug-12																

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Activity ID	Activity Name	Rem Dur	Start	Finish	2012															
					May					June					July				August	
					23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06
0521-1800.20	D-wall N65-N70 Pre-drilling (6 nos. - 1 rig@6d/hole)	0	02-Apr-12 A	19-May-12 A	D-wall N65-N70 Pre-drilling (6 nos. - 1 rig@6d/hole)															
0521-1810	D-wall N59-N70 Grouting for Existing Seawall Rubble Mound	14	27-Apr-12 A	05-Jun-12	D-wall N59-N70 Grouting for Existing Seawall Rubble Mound															
0521-1820	D-wall N59-N70 Guide Wall	14	09-Apr-12 A	05-Jun-12	D-wall N59-N70 Guide Wall															
0521-1840	D-wall N52-N58 Pre-drilling (7 nos@6d - 2 rig)	9	09-Apr-12 A	30-May-12	D-wall N52-N58 Pre-drilling (7 nos@6d - 2 rig)															
0521-1850	D-wall N52-N58 Grouting for Existing Seawall Rubble Mound	14	03-May-12 A	05-Jun-12	D-wall N52-N58 Grouting for Existing Seawall Rubble Mound															
0521-1860	D-wall N52-N58 Guide Wall	12	31-May-12	13-Jun-12	D-wall N52-N58 Guide Wall															
0521-1830.15	D-wall Panel N69 (6m - 621cu.m)	10	09-May-12 A	31-May-12	D-wall Panel N69 (6m - 621cu.m)															
0521-1830.10	D-wall Panel N70 (6m - 630cu.m)	10	01-Jun-12	12-Jun-12	D-wall Panel N70 (6m - 630cu.m)															
0521-1830.25	D-wall Panel N67 (3.95m - 409cu.m)	10	13-Jun-12	25-Jun-12	D-wall Panel N67 (3.95m - 409cu.m)															
0521-1835.10	D-wall Panel N54 (3.77m - 355cu.m)	10	14-Jun-12	26-Jun-12	D-wall Panel N54 (3.77m - 355cu.m)															
0521-1830.35	D-wall Panel N65 (5.7m - 590cu.m)	10	22-Jun-12	05-Jul-12	D-wall Panel N65 (5.7m - 590cu.m)															
0521-1835.15	D-wall Panel N59 (5.6m - 529cu.m)	10	25-Jun-12	06-Jul-12	D-wall Panel N59 (5.6m - 529cu.m)															
0521-1830.20	D-wall Panel N68 (3.95m - 409cu.m)	10	04-Jul-12	14-Jul-12	D-wall Panel N68 (3.95m - 409cu.m)															
0521-1835.20	D-wall Panel N52 (5.6m - 529cu.m)	10	05-Jul-12	16-Jul-12	D-wall Panel N52 (5.6m - 529cu.m)															
0521-1830.30	D-wall Panel N66 (4.75m - 492cu.m)	10	13-Jul-12	24-Jul-12	D-wall Panel N66 (4.75m - 492cu.m)															
0521-1835.25	D-wall Panel N63 (5.6m - 529cu.m)	10	14-Jul-12	25-Jul-12	D-wall Panel N63 (5.6m - 529cu.m)															
0521-1835.30	D-wall Panel N58 (5.6m - 529cu.m)	10	24-Jul-12	03-Aug-12	D-wall Panel N58 (5.6m - 529cu.m)															
0521-1835.35	D-wall Panel N62 (5.6m - 529cu.m)	10	02-Aug-12	13-Aug-12	D-wall Panel N62 (5.6m - 529cu.m)															
0521-1835.40	D-wall Panel N55 (5.6m - 529cu.m)	10	11-Aug-12	22-Aug-12	D-wall Panel N55 (5.6m - 529cu.m)															
0521-2070	D-wall S66-S77 Guide Wall	11	16-May-12 A	02-Jun-12	D-wall S66-S77 Guide Wall															
0521-1990.42	D-wall South Panel S75	10	26-May-12	07-Jun-12	D-wall South Panel S75															
0521-1990.36	D-wall South Panel S70	10	07-Jun-12	19-Jun-12	D-wall South Panel S70															
0521-1990.39	D-wall South Panel S73	10	19-Jun-12	03-Jul-12	D-wall South Panel S73															
0521-1990.43	D-wall South Panel S77	10	03-Jul-12	14-Jul-12	D-wall South Panel S77															
0521-1990.34	D-wall South Panel S68	10	11-Jul-12	23-Jul-12	D-wall South Panel S68															
0521-1990.40	D-wall South Panel S74	10	19-Jul-12	31-Jul-12	D-wall South Panel S74															
0521-1990.35	D-wall South Panel S69	10	27-Jul-12	08-Aug-12	D-wall South Panel S69															
0521-1990.38	D-wall South Panel S72	10	04-Aug-12	16-Aug-12	D-wall South Panel S72															
0521-2090	D-wall S60-S65 Pre-drilling	18	27-Feb-12 A	03-Jul-12	D-wall S60-S65 Pre-drilling															
0521-2100	D-wall S60-S65 Guide Wall	15	04-Jul-12	20-Jul-12	D-wall S60-S65 Guide Wall															
0521-2130	D-wall S56-S59 Guide Wall	15	12-Jul-12	28-Jul-12	D-wall S56-S59 Guide Wall															
<b>05.2.2 - Barrette Construction</b>																				
0522-2210.64	Barrette Pile BC64	0	12-Apr-12 A	09-May-12 A	Barrette Pile BC64															
0522-2210.68	Barrette Pile BC68	0	29-Mar-12 A	30-Apr-12 A	Barrette Pile BC68															
0522-2210.57	Barrette Pile BC57	5	07-May-12 A	25-May-12	Barrette Pile BC57															
0522-2210.61	Barrette Pile BC61	9	21-May-12	30-May-12	Barrette Pile BC61															
0522-2210.63	Barrette Pile BC63	1	19-Mar-12 A	21-May-12	Barrette Pile BC63															
0522-2210.65	Barrette Pile BC65	9	24-May-12	02-Jun-12	Barrette Pile BC65															
0522-2210.66	Barrette Pile BC66	9	01-Jun-12	11-Jun-12	Barrette Pile BC66															
0522-2210.70	Barrette Pile BC62	10	09-Jun-12	20-Jun-12	Barrette Pile BC62															
0522-2210.55	Barrette Pile BC55	9	18-Jun-12	28-Jun-12	Barrette Pile BC55															
0522-2210.58	Barrette Pile BC58	9	27-Jun-12	07-Jul-12	Barrette Pile BC58															
0522-2210.59	Barrette Pile BC59	9	06-Jul-12	16-Jul-12	Barrette Pile BC59															
0522-2210.56	Barrette Pile BC56	9	14-Jul-12	24-Jul-12	Barrette Pile BC56															

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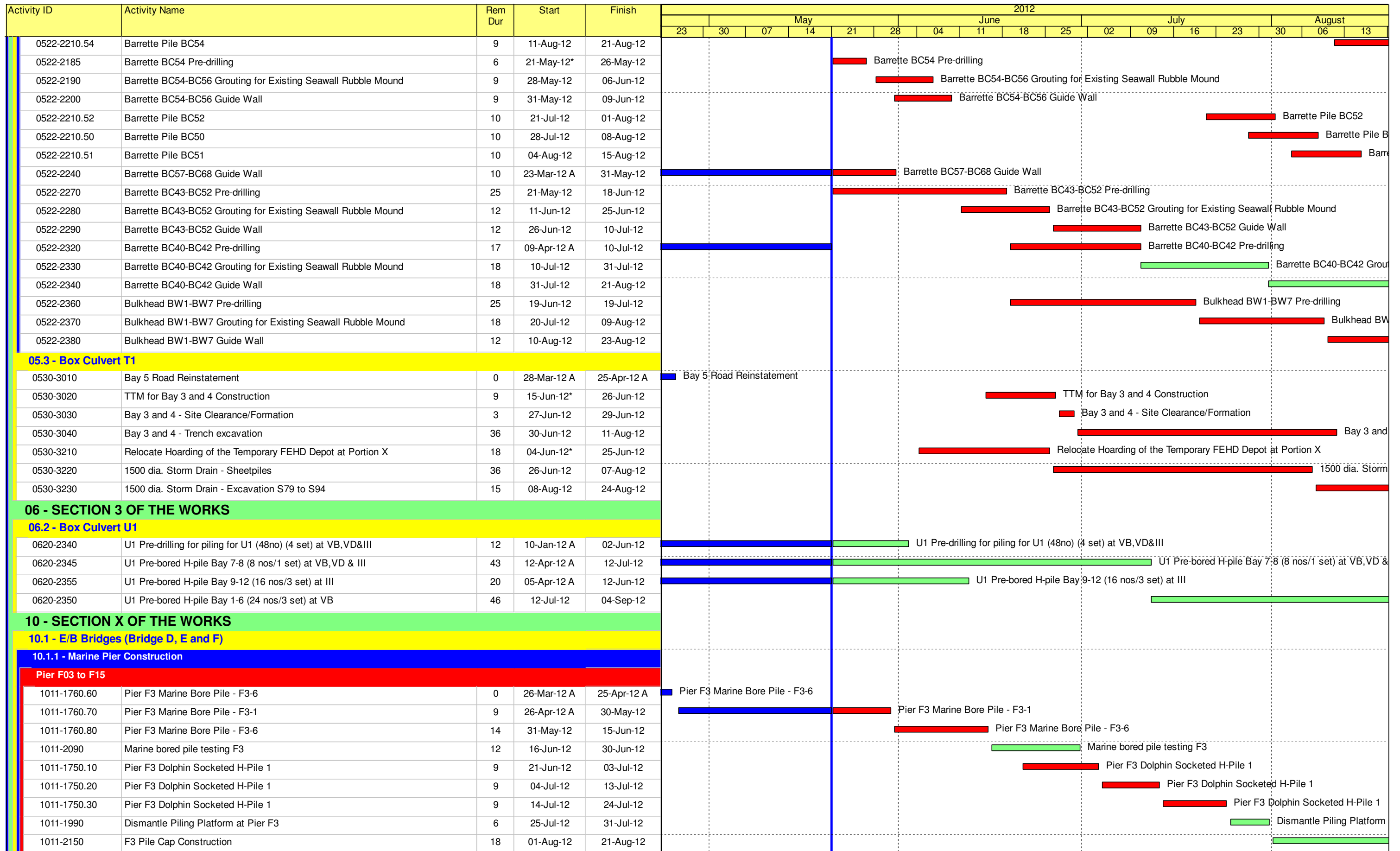
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Activity ID	Activity Name	Rem Dur	Start	Finish	2012															
					May				June				July				August			
					23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06
1011-1782.60	Pier F14 Dolphin Socketed H-Pile 6	7	08-Jun-12	15-Jun-12	Pier F14 Dolphin Socketed H-Pile 6															
<b>Pier F01 to F02</b>																				
1011-2580	Erect Piling Platform pier F1B	0	06-Feb-12 A	03-May-12 A	Erect Piling Platform pier F1B															
1011-2620	Pre-drilling pier F1B	0	04-May-12 A	18-May-12 A	Pre-drilling pier F1B															
1011-2590	Erect Piling Platform pier F1A	14	16-Apr-12 A	05-Jun-12	Erect Piling Platform pier F1A															
1011-2630	Pre-drilling pier F1A	9	06-Jun-12	15-Jun-12	Pre-drilling pier F1A															
1011-2750	Marine bored pile F1A-4	14	16-Jun-12	04-Jul-12	Marine bored pile F1A-4															
1011-2751	Marine bored pile F1A-2	14	05-Jul-12	20-Jul-12	Marine bored pile F1A-2															
1011-2752	Marine bored pile F1A-1	14	21-Jul-12	06-Aug-12	Marine bored pile F1A-1															
1011-2753	Marine bored pile F1A-3	14	07-Aug-12	22-Aug-12	Marine bored pile F1A-3															
1011-2780	Marine bored pile F1B-4	12	19-May-12 A	02-Jun-12	Marine bored pile F1B-4															
1011-2781	Marine bored pile F1B-2	14	04-Jun-12	19-Jun-12	Marine bored pile F1B-2															
1011-2782	Marine bored pile F1B-1	14	20-Jun-12	07-Jul-12	Marine bored pile F1B-1															
1011-2783	Marine bored pile F1B3	14	09-Jul-12	24-Jul-12	Marine bored pile F1B3															
1011-2570	Erect Piling Platform pier F2A	18	05-Apr-12 A	09-Jun-12	Erect Piling Platform pier F2A															
1011-2610	Pre-drilling pier F2A	9	11-Jun-12	20-Jun-12	Pre-drilling pier F2A															
1011-2740	Marine bored pile F2A-4	14	21-Jun-12	09-Jul-12	Marine bored pile F2A-4															
1011-2741	Marine bored pile F2A-2	14	10-Jul-12	25-Jul-12	Marine bored pile F2A-2															
1011-2742	Marine bored pile F2A-1	14	26-Jul-12	10-Aug-12	Marine bored pile F2A-1															
1011-2743	Marine bored pile F2A-3	14	11-Aug-12	27-Aug-12	Marine bored pile F2A-3															
1011-2770	Marine bored pile F2B-1, F2B-2 and F2B-4	7	28-Mar-12 A	28-May-12	Marine bored pile F2B-1, F2B-2 and F2B-4															
1011-2772	Marine bored pile F2B-3	14	29-May-12	13-Jun-12	Marine bored pile F2B-3															
1011-2790	Marine bored pile testing F1B and F2B	18	25-Jul-12	14-Aug-12	Marine bored pile testing F1B and F2B															
<b>10.1.2 - Land Pier Construction</b>																				
<b>Abutment D12</b>																				
1012-1074	Abutment E/B Bridge Bored Pile D12-4	0	18-Apr-12 A	27-Apr-12 A	Abutment E/B Bridge Bored Pile D12-4															
1012-1090	Abutment D12 E/B Bridge Bored Pile Testing	18	21-May-12	09-Jun-12	Abutment D12 E/B Bridge Bored Pile Testing															
1012-1220	Abutment D12 construction (E/B Bridge)	42	11-Jun-12	31-Jul-12	Abutment D12 construction (E/B Bridge)															
<b>Pier D08 to D11</b>																				
1012-1030.05	Complete Relocation of FEHD Hoarding at Portion III	0		04-Jun-12*	◆ Complete Relocation of FEHD Hoarding at Portion III															
1012-1030.10	Pier D08 Bored Pile D8-1	12	04-Jun-12	18-Jun-12	Pier D08 Bored Pile D8-1															
1012-1030.20	Pier D08 Bored Pile D8-6	12	18-Jun-12	04-Jul-12	Pier D08 Bored Pile D8-6															
1012-1030.30	Pier D08 Bored Pile D8-2	12	04-Jul-12	18-Jul-12	Pier D08 Bored Pile D8-2															
1012-1030.40	Pier D08 Bored Pile D8-5	12	18-Jul-12	01-Aug-12	Pier D08 Bored Pile D8-5															
1012-1030.50	Pier D08 Bored Pile D8-3	12	01-Aug-12	15-Aug-12	Pier D08 Bored Pile D8-3															
1012-1040.60	Pier D09 Bored Pile D9-6	0	16-Apr-12 A	27-Apr-12 A	Pier D09 Bored Pile D9-6															
1012-1130	Pier D09 Construct Pile Cap	18	21-May-12	09-Jun-12	Pier D09 Construct Pile Cap															
1012-1140	Pier D09 Construct Pier/Column	12	11-Jun-12	25-Jun-12	Pier D09 Construct Pier/Column															
1012-1150	Pier D09 Construct Crosshead	18	26-Jun-12	17-Jul-12	Pier D09 Construct Crosshead															
1012-1050.50	Pier D10 Bored Pile D10-1	0	16-Apr-12 A	27-Apr-12 A	Pier D10 Bored Pile D10-1															
1012-1050.60	Pier D10 Bored Pile D10-4	0	28-Apr-12 A	12-May-12 A	Pier D10 Bored Pile D10-4															
1012-1060.40	Pier D11 Bored Pile D11-6	0	14-Apr-12 A	27-Apr-12 A	Pier D11 Bored Pile D11-6															
1012-1060.50	Pier D11 Bored Pile D11-4	0	28-Apr-12 A	11-May-12 A	Pier D11 Bored Pile D11-4															
1012-1060.60	Pier D11 Bored Pile D11-3	0	07-May-12 A	17-May-12 A	Pier D11 Bored Pile D11-3															

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**Three Month Rolling Programme (21 MAY 2012 to 20 AUG 2012)**







3MRP

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Activity ID	Activity Name	Rem Dur	Start	Finish	2012																
					May					June					July				August		
					23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13
1012-1190	Pier D11 Construct Pile Cap	18	11-Jun-12	03-Jul-12															Pier D11 Construct Pile Cap		
1012-1200	Pier D11 Construct Pier/Column	12	04-Jul-12	17-Jul-12															Pier D11 Construct Pier/Column		
1012-1210	Pier D11 Construct Crosshead	18	18-Jul-12	07-Aug-12															Pier D11 Construct Crosshead		
<b>Pier D05 to D07</b>																					
1012-1290.20	Pier D05 Bored Pile D05-1	13	02-Dec-11 A	30-Jul-12															Pier D05 Bored Pile D05-1		
1012-1300	Pier D05/D06/D07 Bored Piles Testing	18	30-Jul-12	20-Aug-12															Pier D05/D06/D07 Bored Piles Testing		
1012-1270	Pier D07 Bored Piles (6 piles)	108	03-Jul-12*	07-Nov-12															Pier D07 Bored Piles (6 piles)		
<b>10.1.3 - E/B Bridge Construction</b>																					
<b>Bridge D3</b>																					
1013-1000.10	Segment and Beam Launching - Procurement of Sub-contractor	14	21-Jan-12 A	05-Jun-12															Segment and Beam Launching - Procurement of Sub-contractor		
1013-1000.20	Segment and Beam Launching - Submit Design Launching Girder	26	14-May-12 A	19-Jun-12															Segment and Beam Launching - Submit Design Launching Girder		
1013-1000.30	Segment and Beam Launching - Approve Design Launching Girder	28	20-Jun-12	24-Jul-12															Segment and Beam Launching - Approve Design Launching Girder		
1013-1010	Segment and Beam Launching - Fabricate & Deliver Launching Girder	98	25-Jul-12	17-Nov-12															Segment and Beam Launching - Fabricate & Deliver Launching Girder		
<b>10.3 - Middle Bridge (Bridge F)</b>																					
<b>10.3.1 - Pier Construction</b>																					
<b>Abutment D12</b>																					
1031-1040	Bored Piles (4 nos) at D12 at III (for F1B1)	47	07-May-12 A	16-Jul-12															Bored Piles (4 nos) at D12 at III (for F1B1)		

 Remaining Level of Effort  
 Actual Level of Effort  
 Actual Work  
 Remaining Work  
 Critical Remaining Work  
 Milestone

**Contract HY/2009/19**  
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