

**CONTRACT NO: HK/2009/05**

**WANCHAI DEVELOPMENT PHASE II AND CENTRAL  
WANCHAI BYPASS  
SAMPLING, FIELD MEASUREMENT AND TESTING WORK  
(STAGE 1)**

**ENVIRONMENTAL PERMIT NO. EP-356/2009,  
FURTHER ENVIRONMENTAL PERMIT NOS. FEP-01/356/2009,  
FEP-02/356/2009, FEP-03/356/2009 AND FEP-04/356/2009**

**QUARTERLY ENVIRONMENTAL MONITORING  
AND AUDIT REPORT**

**- DECEMBER 2010 – FEBRUARY 2011 -**

**CLIENTS:**

Civil Engineering and Development  
Department  
and

Highways Department

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**CHECKED BY:**



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Raymond Dai  
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**DATE:**

29 March 2011

ENVIRON

Ref.: AACWBIECEM00\_0\_1196L.11

6 April 2011

AECOM Asia Company Limited  
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By Post and Fax (2691 2649)

Attention: Mr. Kelvin CHENG

Dear Sir,

**Re: Wan Chai Development Phase II and Central-Wan Chai Bypass  
Quarterly Environmental Monitoring and Audit Report (December 2010 to  
February 2011) for EP-356/2009, FEP-01/356/2009, FEP-02/356/2009, FEP-  
03/356/2009 and FEP-04/356/2009**

Reference is made to the Environmental Team's submission of the Quarterly Environmental Monitoring and Audit (EM&A) Report for December 2010 to February 2011 dated 29 March 2011.

Please be informed that we have no adverse comments on the captioned submission and thereby write to verify the captioned submission.

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

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**EXECUTIVE SUMMARY**

i. This is the Quarterly Environmental Monitoring and Audit (EM&A) Report – December 2010 to February 2011 prepared for the Project of Wan Chai Development Phase II and Central-Wanchai Bypass under Environmental Permit no. EP-356/2009 and Further Environmental permit nos. FEP-01/356/2009, FEP-02/356/2009, FEP-03/356/2009 and FEP-04/356/2009. This report presents the environmental monitoring and audit findings and information during the period from 28<sup>th</sup> November 2010 to 27<sup>th</sup> February 2011. The cut-off date of reporting is at 27<sup>th</sup> of each reporting quarter.

Construction Activities for the Reported Period

ii. During this reporting period, the principle work activities for Contract no. HY/2009/11 are summarized as below:

**Table I Principle Work Activities for Contract no. HY/2009/11**

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>• Dredging works;</li> <li>• Reclamation works;</li> <li>• Construction &amp; installation of seawall block;</li> <li>• Floating out of caisson seawall;</li> <li>• Construction &amp; installation of seawall block;</li> <li>• Construction of coping;</li> <li>• Pre-casting the caisson seawall (off-site);</li> <li>• Delivery of caisson seawall;</li> <li>• Drainage construction works;</li> <li>• Installation of caisson Seawall; and</li> <li>• Temporary Protection and Precautionary Measures to Existing Island Eastern Corridor Structure</li> </ul>	<ul style="list-style-type: none"> <li>• Dredging works;</li> <li>• Reclamation works;</li> <li>• Construction &amp; installation of seawall block;</li> <li>• Floating out of caisson seawall;</li> <li>• Construction &amp; installation of seawall block;</li> <li>• Construction of coping;</li> <li>• Delivery of caisson seawall,</li> <li>• Drainage construction works and</li> <li>• Installation of caisson Seawall.</li> </ul>	<ul style="list-style-type: none"> <li>• Dredging works;</li> <li>• Reclamation works;</li> <li>• Construction &amp; installation of Seawall Block;</li> <li>• Drainage Construction works; and</li> <li>• Construction of coping</li> </ul>

iii. During this reporting period, the principle work activities for Contract no. HK/2009/01 are summarized as below:

**Table II Principle Work Activities for Contract no. HK/2009/01**

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>• Dredging works had been completed about 46% for the open cut trench of cross harbour water mains;</li> <li>• Manufacturing of Taper-lok flange joint;</li> <li>• Trial pits for determination of connection location at both Wan Chai and Tsui Sha Tsui areas;</li> </ul>	<ul style="list-style-type: none"> <li>• Dredging works for the open cut trench of cross harbour water mains;</li> <li>• Casting of concrete surround to submarine pipelines;</li> <li>• Concrete surrounded submarine pipeline were transported to fabrication yard for field jointing.;</li> <li>• Routine maintenance and clearance works for silt screens;</li> </ul>	<ul style="list-style-type: none"> <li>• Casting of concrete surround to submarine pipelines;</li> <li>• Field jointing for steel pipes for surround pipelines at precast yard;</li> <li>• Joint initial survey at MTR Tsuen Wan Line tunnel (Wan Chai Side);</li> <li>• Trim dredging for cross harbour water mains pipe trench</li> </ul>

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>• Routine maintenance and clearance works for silt screens;</li> <li>• Trial pits for determination of connection location at both Wan Chai and Tsim Sha Tsui areas;</li> <li>• Due to construction of SCL works, preparation works for temporary diversion of Convention Plaza discharge mains area;</li> <li>• 6 pipe piles of P1 Wall had been installed; and</li> <li>• Fabrication of conveyor belt system for filling works at HKCEC water channel reclamation;</li> </ul>	<ul style="list-style-type: none"> <li>• Trial pits for determination of connection location for HKAPA, Great Eagle Centre / Harbour Centre at Wan Chai areas;</li> <li>• Preparation works for temporary diversion of Convention Avenue discharge mains Due to construction of SCL works;</li> <li>• Erection of temporary staging platform was commenced;</li> <li>• Installation of pipe pile PQ4 down to -40mPD was completed;</li> <li>• The fabrication of extra 3 nos. of mud barges; and</li> <li>• Dredging at HKCEC water channel.</li> </ul>	<ul style="list-style-type: none"> <li>• (CHA970 - 1150);</li> <li>• Final joint hydrograph survey checking for cross harbour water mains pipe trench (Pipe line A1 to A10);</li> <li>• Removal of rock fill material and pipe trench excavation at west side sloping seawall of HKCEC extension;</li> <li>• Silt screen routine maintenance for the existing cooling water intake;</li> <li>• Installation of cooling main pipelines at HKCEC West Wing (Zone B1-2);</li> <li>• Preparation and excavation for pipe laying works at HKCEC Area (Zone B1-5);</li> <li>• Preparation and excavation for pipe laying works at Convention Avenue (Zone A4-1);</li> <li>• Construction for temporary diversion of Convention Plaza discharge mains at Convention Avenue (Zone A1-1);</li> <li>• Pump Station Nos. 1, 3, 4 &amp; 5 were approved for stage 1 and all coring s under diameter 350 mm;</li> <li>• Preparation work for E&amp;M first fixing at high level of Pump Station No. 1, 3, 4 &amp; 5;</li> <li>• Dredging work up to CH 160 at HKCEC water channel;</li> <li>• Fabrication of floating pontoon for conveyor belt;</li> <li>• Installation of pipe piles P1 Wall;</li> <li>• Reclamation works at HKCEC; and</li> <li>• Preparation and excavation for pipe laying works at Convention Avenue (both Zone A5-1 and A2-2)</li> </ul>

iv. During this reporting period, the principle work activities for Contract no. HK/2009/02 are summarized as below:

**Table III Principle Work Activities for Contract no. HK/2009/02**

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>• Site clearance;</li> <li>• Dredging in West temporary seawall construction in Area WCR1;</li> <li>• Rock Filling and Reclamation in Area WCR1;</li> <li>• Casting, delivery and installation of precast caisson seawalls, pumping stations and seawall blocks;</li> <li>• Permanent seawall construction;</li> <li>• Drainage diversion of existing 1800mm dia. pipe for WCR1 reclamation;</li> <li>• Road improvement at Junction of Fleming Road and Gloucester Road;</li> <li>• Road modification at Expo Drive East;</li> <li>• Construction of new public toilet and helipad terminal building at Expo Drive East;</li> <li>• Fabrication and delivery of HDPE pipe for submarine outfall;</li> <li>• Installation of 'Z' section of submarine outfall underneath the seawall;</li> <li>• Laying of cooling water mains;</li> <li>• Pre-bored H-piling at proposed WSD Salt Water Pumping Station;</li> <li>• Seawall construction near Expo Drive East;</li> <li>• Tree transplanting;</li> <li>• Establishing public fill sorting facility at TKO;</li> <li>• Testing with trial run of public fill sorting facility at TKO;</li> <li>• Trench excavation for construction of Salt Water Intake Culvert at Wan Shing Street;</li> <li>• Piling at new Wan Chai Ferry Pier;</li> <li>• Installation of building services for public toilet; and</li> <li>• Construction of precast units of</li> </ul>	<ul style="list-style-type: none"> <li>• Site clearance;</li> <li>• Dredging in West temporary seawall construction in Area WCR1;</li> <li>• Rock Filling and Reclamation in Area WCR1;</li> <li>• Permanent seawall construction;</li> <li>• Drainage diversion of existing 1800mm dia. pipe for WCR1 reclamation;</li> <li>• Construction of new public toilet and helipad terminal building at Expo Drive East;</li> <li>• Seawall construction near Expo Drive East;</li> <li>• Tree transplanting;</li> <li>• Piling at new Wan Chai Ferry Pier;</li> <li>• Operation of Public Fill Sorting Facility at TKO 137;</li> <li>• Installation of building services for public toilet;</li> <li>• Construction of precast units of Box Culvert N1, Salt Water Intake Culvert, Drain FRP-N and Cooling Water Discharge Pipe in Area WCR1;</li> <li>• Installation of Cooling Main at China Resources Building;</li> <li>• Driven temporary sheetpiles, erect temporary shoring and excavation at China Resources Building, Great Eagle Centre/Harbour Centre;</li> <li>• Break or remove existing footpath for cooling main work at Great Eagle Centre and Harbour Centre;</li> <li>• Pile road test at WSD Salt Water Pumping Station;</li> <li>• Sheetpiles &amp; Cantilever decking (Left Lane) at Wan Shing Street;</li> <li>• Dredging for Submarine outfall;</li> <li>• Outfall pipe installation for submarine sewage outfall; and</li> <li>• Excavation for WSD Salt Water Pumping Station</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of wall and roof floor slab for new public toilet at Expo Drive East was completed on 1 February 2011.</li> <li>• Construction of basement for new passenger terminal building was ongoing.</li> <li>• Partial demolition of existing ferry pier at Expo Drive East;</li> <li>• Preparation works for seawall modification at Expo Drive East ;</li> <li>• Excavation at Harbour Road and Harbour Centre for cooling mains;</li> <li>• Approximate 24m pipe was laid at Harbour Road;</li> <li>• Breaking DSD's boundary wall;</li> <li>• Driving remaining sheet-piles for excavation and lateral support at WSD Salt Water</li> <li>• Pumping Station;</li> <li>• Excavation for construction of WSD Salt Water Pumping Station;</li> <li>• Driving sheet-piles at Wan Shing Street for WSD Intake Culvert;</li> <li>• Pre-bored sheet-pile for WSD Salt Water Intake Culvert;</li> <li>• Dredging for submarine outfall pipe;</li> <li>• Reclamation at WCR1 area;</li> <li>• Compaction for reclaimed land;</li> <li>• Strengthening for Western Temporary Seawall;</li> <li>• Pre-drilling of bored pile for tunnel structure;</li> <li>• Bored-pile works;</li> <li>• Guide wall for diaphragm wall construction;</li> <li>• 1800 diameter drainage diversion; and</li> <li>• Road work for traffic diversion within pet garden</li> </ul>

December 2010	January 2011	February 2011
<p>Box Culvert N1, Salt Water Intake Culvert, Drain FRP-N and Cooling Water Discharge Pipe in Area WCR1.</p> <ul style="list-style-type: none"> <li>• During this reporting period, the major work activities for Contract no. HY/2009/15 included:</li> <li>• Maintenance dredging works at TCBR4 and TCBR1E for mooring and anchorage rearrangement;</li> <li>• Dredging works at TPCWAE and TCBR1E for seawall;</li> <li>• Marine Site Investigation at TPCBR1E and TPCWAE;</li> <li>• Demolition of Ex-Fireboat Station; and</li> <li>• Erection of the CSHK's Site Office</li> </ul>		

v. Contract no. HY/2009/15 was commenced on 10 November 2010. During this reporting period, the principle work activities for Contract no. HY/2009/15 are summarized as below:

**Table IV Principle Work Activities for Contract no. HY/2009/15**

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>• Maintenance dredging works at TCBR4 and TCBR1E for mooring and anchorage rearrangement;</li> <li>• Dredging works at TPCWAE and TCBR1E for seawall;</li> <li>• Marine Site Investigation at TPCBR1E and TPCWAE;</li> <li>• Demolition of Ex-Fireboat Station; and</li> <li>• Erection of the CSHK's Site Office</li> </ul>	<ul style="list-style-type: none"> <li>• Dredging works at TCBR1W and TPCWAW;</li> <li>• Dredging works at TPCWAE and TCBR1E for seawall;</li> <li>• Type 3 sediments disposal; and</li> <li>• Ground investigation works</li> </ul>	<ul style="list-style-type: none"> <li>• Rock removal at TS4 and TPCWA;</li> <li>• Disposal of Type 3 sediment;</li> <li>• Rock-filling at TS1, seawall block construction at TPCWA; and</li> <li>• Ground investigation and trial pit excavation</li> </ul>

vi. No construction work was undertaken under Contract no. HK/2010/06 during this reporting period.

#### Noise Monitoring

vii. Noise monitoring during day time and evening time were conducted at the M1a, M2b, M3a, M4b and M5b on a weekly basis in the reporting quarter. The limit level exceedances recorded in the reporting quarter are listed below. Investigation found that exceedances were

not related to the Project. Investigation found that exceedances were not related to the Project.

- Seven limit level exceedances at M1a on 6, 14 and 25 December 2010, 4 and 12 January, 17 and 22 February 2011 during the evening time period; and
- One action level exceedance was recorded due to the noise complaint regarding the noise nuisance arising from the 2 barges for filling operation near City Garden at 22:00 on 6 December 2010.

#### Real-time Noise Monitoring

- viii. Real-time noise monitoring at FEHD Hong Kong Transport Section Whitefield Depot and Oil Street Community Centre have been commenced on 5 October 2010 for the filling works of Contract no. HY/2009/11.
- ix. Continuous limit level exceedances were recorded at FEHD Depot from 2025hrs to 2115 hrs on 21 December 2010 and from 2300hrs to 2325 hrs on 23 December 2010. Besides, the frequent limit level exceedances were recorded at Oil Street Community Centre from 19:46 to 21:21 on 7 December 2010. It was checked that there was no construction work near the FEHD station on 21 and 23 December 2010 and only maintenance works was conducted on 7 December 2010. It was anticipated that the noise exceedances were contributed from traffic along Island Eastern Corridor.
- x. Continuous Limit Level exceedances were recorded on 4 February 2011 evening time due to the shooting off the Lunar New Year Fireworks. It was concluded as non-project related exceedances

#### Air Quality Monitoring

- xi. 1hr and 24hr TSP monitoring were conducted at CMA1b, CMA2a and CMA4a in the reporting quarter. No exceedance was recorded during the reporting quarter.

#### Water Quality Monitoring

- xii. Water quality monitoring was conducted at 19 monitoring stations namely WSD7, WSD9, WSD10, WSD15, WSD17, WSD19, WSD20, WSD 21, C1, C2, C3, C4e, C4w, C5e, C5w, C6, C7, C8 and C9 during the reporting period. The water quality monitoring at C6 and C7 were commenced on 9 November 2010.
- xiii. Total 25 exceedances of Turbidity and 34 exceedances of SS were recorded during mid-flood while 4 exceedances of Turbidity and 18 exceedances of SS were recorded during mid-ebb in the reporting period. Investigations were found that the most of exceedances are not related to the Project works except the SS and turbidity exceedances at C8 on 16 and 30 December 2010 at mid-flood tide, C6 on 7 February 2011 at mid-flood and mid-ebb tides and turbidity exceedances recorded at C5e, C5w and WSD21 on 11 February 2011 at mid-flood. The details of the recorded exceedances can be referred to the Section 5.4.

#### Complaints, Notifications of Summons and Successful Prosecutions

xiv. There were two environmental complaints were received on 3 and 6 December 2010 in this reporting period. The complaint received on 3 December 2010 was regarding to the bad odour generated from the dredging plant off North Point. The noise nuisance and visual impact was complained on 6 December 2010 that was arisen from the 2 barges and spot light pointing directly to the complainant flat. No further complaint was received after investigation on 8 December 2010 and follow-up action taken by the Contractor for contract no. HY/2009/11.

xv. Incidents of split bottom hopper barge named Shun Tat 11 (Licence no. B21623V) were recorded near Kwai Shek (200-300m distance) under Contract no. HY/2009/15 on 17 December 2010 and at the location near Cross Harbour Water Mains marine work zone under Contract no. HK/2009/01 on 24 January 2011.

xvi. The hopper barge under Contract no. HY/2009/15 was trapped by a strong current and grounded on shallow rock clusters on 17 December 2010. Jettison of marine sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal) in hopper barge at the scene of incident was needed in order to avoid capsizing of vessel. Contractor informed this incident to EPD on 18 December 2010.

xvii. The ballast tank on the port side of the split hopper barge under Contract no. HK/2009/01 was flooded with water on 24 January 2011. It was towed back to the dredging zone within a short period and immediately opened its hopper to dump the sediment back to the same dredging trench. It is suspected that the hull on the port side might be broken causing ingress of seawater into the ballast tanks. Meanwhile, the barge has been demobilized from the site and currently anchored at To Kwa Wan Typhoon Shelter. The emergency dumping was notified to EPD on 24 January 2011 at 10:00a.m. This barge will not be deployed to the site under HK/2009/01 to dispose the dredged sediment until it has been repaired and inspected by the competent surveyor. These incidents will be kept in view for determining further follow up and remedial measures. All Contractors under EP-356/2009 were reminded to ensure the deployed hopper barge has been adequately checked by qualified person and ensured in good condition before the engagement on site.

## 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-356/2009 and Further Environmental permit nos. FEP-01/356/2009, FEP-02/356/2009, FEP-03/356/2009 and FEP-04/356/2009 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.: AEIAR-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 10.4 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 during the period from 28<sup>th</sup> December 2010 to 27<sup>th</sup> February 2011.

### 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** *Monitoring Requirements* – summarizes all monitoring parameters, monitoring locations, monitoring frequency, duration and action plan.

**Section 4** *Monitoring Results* – summarizes the monitoring results obtained in the reporting period.

**Section 5** *Compliance Audit* – summarizes the auditing of monitoring results, all exceedances environmental parameters.

**Section 6** *Complaints, Notification of summons and Prosecution* – summarizes the cumulative statistics on complaints, notification of summons and prosecution

**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** *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 Designed 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. The Project is located mainly in Wan Chai North, Causeway Bay and North Point, and is demarcated by Gloucester Road and Victoria Park Road to the south, Fenwick Pier Street to the west and Tong Shui Road Interchange to the east, as shown in Figure 2.1.

2.2.2. The study area encompasses existing developments along the Wan Chai, Causeway Bay and North Point shorelines. Major land uses include the Hong Kong Convention & Exhibition Centre (HKCEC) Extension, the Wan Chai Ferry Pier, the ex-Wan Chai Public Cargo Working Area (ex-PCWA), the Royal Hong Kong Yacht Club (RHKYC), the Police Officers' Club, the Causeway Bay Typhoon Shelter (CBTS) and commercial and residential developments.

2.2.3. The scope of the Project comprises:

- Land formation for key transport infrastructure and facilities, including the Trunk Road (i.e. CWB) and the associated slip roads for connection to the Trunk Road and for through traffic from Central to Wan Chai and Causeway Bay. The land formed for the above transport infrastructure will provide opportunities for the development of an attractive waterfront promenade for the enjoyment of the public
- Reprovisioning / protection of the existing facilities and structures affected by the land formation works mentioned above

- Extension, modification, reprovisioning or protection of existing storm water drainage outfalls, sewerage outfalls and watermains affected by the revised land use and land formation works mentioned above
- Upgrading of hinterland storm water drainage system and sewerage system, which would be rendered insufficient by the land formation works mentioned above
- Provision of the ground level roads, flyovers, footbridges, necessary transport facilities and the associated utility services
- Construction of the new waterfront promenade, landscape works and the associated utility services
- The Trunk Road (i.e. CWB) within the study area and the associated slip roads for connection to the Trunk Road.

2.2.4. The project also contains various Schedule 2 DPs that, under the EIAO, 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 (FEP) 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 FEP holders correspondingly.

2.3.2. In the reporting period, Contract no. HY/2009/15 - Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under the Project was commenced on 10 November 2010. 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
HK/2009/01	Wan Chai Development Phase II – Central –Wanchai Bypass at Hong Kong Convention and Exhibition Centre	DP3, DP6	23 July 2010
		DP1, DP2	Pending
HK/2009/02	Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East	DP3, DP5	5 July 2010
		DP1	Pending
HY/2009/11	Wan Chai Development Phase II and Central - Wan Chai Bypass - North Point Reclamation	DP3	17 March 2010
HY/2009/15	Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)	DP3	10 November 2010
HK/2010/06	Wan Chai Development Phase II-Central-Wan Chai Bypass over MTR Tsuen Wan Line	DP3	Anticipated on 22 March 2011

2.3.3. Contract no. HK/2010/06 – Wan Chai Development Phase II-Central-Wan Chai Bypass over MTR Tsuen Wan Line was commenced on 20 January 2011. No construction works were undertaken in the reporting period. The tentative commencement of construction is anticipated on 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 for WDII	Principle Resident Engineer	Mr. Frankie Fan	2587 1778	2587 1877
	Engineer for CWB	Principle Resident Engineer	Mr. Peter Poon	3916 1818	3529 2829

Party	Role	Post	Name	Contact No.	Contact Fax
China Harbour-CRBC Joint Venture	Contractor under Contract no. HY/2009/11	Project Director	Mr. Cho Yu Fun	3157 1086	3157 1085
		Project Manager	Mr. Gregory Wong	3157 1086	
		Site Agent	Mr. Daniel Cheung	3157 1086	
		Environmental Officer	Mr. C. M. Wong	3157 1086	
Chun Wo – Leader Joint Venture	Contractor under Contract no. HK/2009/01	Site Agent	Mr. Paul Yu	9456 9819	2634 1626
		Operation Manager	Lau Yee Ching	9466 3918	
		Construction Manager	David Wong	9653 8635	
		Construction Manager	Wilson Lau	5183 1270	
		Construction Manager	Chan Mui Sang	9864 8615	
		Environmental Officer (Compliance Manager)	Brian Wan	9312 2827	
		Environmental Engineer	Shelton Chan	5395 5470	
Chun Wo – CRGL Joint Venture	Contractor under Contract no. HK/2009/02	Project Manager	Mr. Chan Sing Cho	3658 3002	2827 9996
		Site Agent	Mr. Eric Lam	3658-3048	
		Environmental Officer (Compliance Manager)	Mr. Barry Leung	3658 3031	
		Environmental Engineer	Ms. Flora Ng	3658-3064	
China State Construction Engineering (HK) Ltd.	Contractor under Contract no. HY/2009/15	Project Manager	Mr. M Y Wong	2823 7879	2528 5651
		Site Agent	Mr. K Y Leung	9026 8808	
		Construction Manager	Mr. C K Kwok	9779 2162	
		Assistant Construction Manager (East)	Mr. Gene Cheung	6105 4880	
		Assistant Construction Manager (West)	Mr. Tony Chiu	9090 0606	
		Section Agent (East)	Mr. Jason Chan	9254 1635	
		Section Agent	Mr. Tang Ka	9473 4771	

Party	Role	Post	Name	Contact No.	Contact Fax
		(West)	Tung		
		Environmental Manager	Ms. Anna Yu	9473 1945	
Gammon -Leader JV	Contractor under Contract no. HK/2010/06	Manager	Mr. Simon Tong	9124 2471	2529 2880
		Site Agent	Mr. Book Kin Man	9193 8680	
		Environmental Officer	Mr. Lee Wai Man	9481 6024	
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

## 2.5 Principle Work and Activities

2.5.1. During this reporting period, the principle work activities for Contract no. HY/2009/11 are summarized in **Table 2.4**.

**Table 2.4 Principle Work Activities for Contract no. HY/2009/11**

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>Dredging works;</li> <li>Reclamation works;</li> <li>Construction &amp; installation of seawall block;</li> <li>Floating out of caisson seawall;</li> <li>Construction &amp; installation of seawall block;</li> <li>Construction of coping;</li> <li>Pre-casting the caisson seawall (off-site);</li> <li>Delivery of caisson seawall;</li> <li>Drainage construction works;</li> <li>Installation of caisson Seawall; and</li> <li>Temporary Protection and Precautionary Measures to Existing Island Eastern Corridor Structure</li> </ul>	<ul style="list-style-type: none"> <li>Dredging works;</li> <li>Reclamation works;</li> <li>Construction &amp; installation of seawall block;</li> <li>Floating out of caisson seawall;</li> <li>Construction &amp; installation of seawall block;</li> <li>Construction of coping;</li> <li>Delivery of caisson seawall,</li> <li>Drainage construction works and</li> <li>Installation of caisson Seawall.</li> </ul>	<ul style="list-style-type: none"> <li>Dredging works;</li> <li>Reclamation works;</li> <li>Construction &amp; installation of Seawall Block;</li> <li>Drainage Construction works; and</li> <li>Construction of coping</li> </ul>

2.5.2. During this reporting period, the principle work activities for Contract no. HK/2009/01 are summarized in **Table 2.5**.

**Table 2.5 Principle Work Activities for Contract no. HK/2009/01**

December 2010	January 2011	February 2011
• Dredging works had been	• Dredging works for the open cut	• Casting of concrete surround to

December 2010	January 2011	February 2011
<p>completed about 46% for the open cut trench of cross harbour water mains;</p> <ul style="list-style-type: none"> <li>• Manufacturing of Taper-lok flange joint;</li> <li>• Trial pits for determination of connection location at both Wan Chai and Tsui Sha Tsui areas;</li> <li>• Routine maintenance and clearance works for silt screens;</li> <li>• Trial pits for determination of connection location at both Wan Chai and Tsim Sha Tsui areas;</li> <li>• Due to construction of SCL works, preparation works for temporary diversion of Convention Plaza discharge mains area;</li> <li>• 6 pipe piles of P1 Wall had been installed; and</li> <li>• Fabrication of conveyor belt system for filling works at HKCEC water channel reclamation;</li> </ul>	<p>trench of cross harbour water mains;</p> <ul style="list-style-type: none"> <li>• Casting of concrete surround to submarine pipelines;</li> <li>• Concrete surrounded submarine pipeline were transported to fabrication yard for field jointing.;</li> <li>• Routine maintenance and clearance works for silt screens;</li> <li>• Trial pits for determination of connection location for HKAPA, Great Eagle Centre / Harbour Centre at Wan Chai areas;</li> <li>• Preparation works for temporary diversion of Convention Avenue discharge mains Due to construction of SCL works;</li> <li>• Erection of temporary staging platform was commenced;</li> <li>• Installation of pipe pile PQ4 down to -40mPD was completed;</li> <li>• The fabrication of extra 3 nos. of mud barges; and</li> <li>• Dredging at HKCEC water channel.</li> </ul>	<p>submarine pipelines;</p> <ul style="list-style-type: none"> <li>• Field jointing for steel pipes for surround pipelines at precast yard;</li> <li>• Joint initial survey at MTR Tsuen Wan Line tunnel (Wan Chai Side);.</li> <li>• Trim dredging for cross harbour water mains pipe trench (CHA970 - 1150);</li> <li>• Final joint hydrograph survey checking for cross harbour water mains pipe trench (Pipe line A1 to A10);</li> <li>• Removal of rock fill material and pipe trench excavation at west side sloping seawall of HKCEC extension;</li> <li>• Silt screen routine maintenance for the existing cooling water intake;</li> <li>• Installation of cooling main pipelines at HKCEC West Wing (Zone B1-2);</li> <li>• Preparation and excavation for pipe laying works at HKCEC Area (Zone B1-5);</li> <li>• Preparation and excavation for pipe laying works at Convention Avenue (Zone A4-1);</li> <li>• Construction for temporary diversion of Convention Plaza discharge mains at Convention Avenue (Zone A1-1);</li> <li>• Pump Station Nos. 1, 3, 4 &amp; 5 were approved for stage 1 and all coring s under diameter 350 mm;</li> <li>• Preparation work for E&amp;M first fixing at high level of Pump Station No. 1, 3, 4 &amp; 5;</li> <li>• Dredging work up to CH 160 at HKCEC water channel;</li> <li>• Fabrication of floating pontoon for conveyor belt;</li> <li>• Installation of pipe piles P1 Wall;</li> <li>• Reclamation works at HKCEC; and</li> <li>• Preparation and excavation for</li> </ul>

December 2010	January 2011	February 2011
		pipe laying works at Convention Avenue (both Zone A5-1 and A2-2)

2.5.3. During this reporting period, the principle work activities for Contract no. HK/2009/02 are summarized in **Table 2.6**.

**Table 2.6 Principle Work Activities for Contract no. HK/2009/02**

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>• Site clearance;</li> <li>• Dredging in West temporary seawall construction in Area WCR1;</li> <li>• Rock Filling and Reclamation in Area WCR1;</li> <li>• Casting, delivery and installation of precast caisson seawalls, pumping stations and seawall blocks;</li> <li>• Permanent seawall construction;</li> <li>• Drainage diversion of existing 1800mm dia. pipe for WCR1 reclamation;</li> <li>• Road improvement at Junction of Fleming Road and Gloucester Road;</li> <li>• Road modification at Expo Drive East;</li> <li>• Construction of new public toilet and helipad terminal building at Expo Drive East;</li> <li>• Fabrication and delivery of HDPE pipe for submarine outfall;</li> <li>• Installation of 'Z' section of submarine outfall underneath the seawall;</li> <li>• Laying of cooling water mains;</li> <li>• Pre-bored H-piling at proposed WSD Salt Water Pumping Station;</li> <li>• Seawall construction near Expo Drive East;</li> <li>• Tree transplanting;</li> <li>• Establishing public fill sorting facility at TKO;</li> <li>• Testing with trial run of public fill sorting facility at TKO;</li> </ul>	<ul style="list-style-type: none"> <li>• Site clearance;</li> <li>• Dredging in West temporary seawall construction in Area WCR1;</li> <li>• Rock Filling and Reclamation in Area WCR1;</li> <li>• Permanent seawall construction;</li> <li>• Drainage diversion of existing 1800mm dia. pipe for WCR1 reclamation;</li> <li>• Construction of new public toilet and helipad terminal building at Expo Drive East;</li> <li>• Seawall construction near Expo Drive East;</li> <li>• Tree transplanting;</li> <li>• Piling at new Wan Chai Ferry Pier;</li> <li>• Operation of Public Fill Sorting Facility at TKO 137;</li> <li>• Installation of building services for public toilet;</li> <li>• Construction of precast units of Box Culvert N1, Salt Water Intake Culvert, Drain FRP-N and Cooling Water Discharge Pipe in Area WCR1;</li> <li>• Installation of Cooling Main at China Resources Building;</li> <li>• Driven temporary sheetpiles, erect temporary shoring and excavation at China Resources Building, Great Eagle Centre/Harbour Centre;</li> <li>• Break or remove existing footpath for cooling main work at Great Eagle Centre and Harbour Centre;</li> <li>• Pile road test at WSD Salt</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of wall and roof floor slab for new public toilet at Expo Drive East was completed on 1 February 2011.</li> <li>• Construction of basement for new passenger terminal building was ongoing.</li> <li>• Partial demolition of existing ferry pier at Expo Drive East;</li> <li>• Preparation works for seawall modification at Expo Drive East ;</li> <li>• Excavation at Harbour Road and Harbour Centre for cooling mains;</li> <li>• Approximate 24m pipe was laid at Harbour Road;</li> <li>• Breaking DSD's boundary wall;</li> <li>• Driving remaining sheet-piles for excavation and lateral support at WSD Salt Water</li> <li>• Pumping Station;</li> <li>• Excavation for construction of WSD Salt Water Pumping Station;</li> <li>• Driving sheet-piles at Wan Shing Street for WSD Intake Culvert;</li> <li>• Pre-bored sheet-pile for WSD Salt Water Intake Culvert;</li> <li>• Dredging for submarine outfall pipe;</li> <li>• Reclamation at WCR1 area;</li> <li>• Compaction for reclaimed land;</li> <li>• Strengthening for Western Temporary Seawall;</li> <li>• Pre-drilling of bored pile for tunnel structure;</li> <li>• Bored-pile works;</li> <li>• Guide wall for diaphragm wall construction;</li> </ul>

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>Trench excavation for construction of Salt Water Intake Culvert at Wan Shing Street;</li> <li>Piling at new Wan Chai Ferry Pier;</li> <li>Installation of building services for public toilet; and</li> <li>Construction of precast units of Box Culvert N1, Salt Water Intake Culvert, Drain FRP-N and Cooling Water Discharge Pipe in Area WCR1.</li> <li>During this reporting period, the major work activities for Contract no. HY/2009/15 included:</li> <li>Maintenance dredging works at TCBR4 and TCBR1E for mooring and anchorage rearrangement;</li> <li>Dredging works at TPCWAE and TCBR1E for seawall;</li> <li>Marine Site Investigation at TPCBR1E and TPCWAE;</li> <li>Demolition of Ex-Fireboat Station; and</li> <li>Erection of the CSHK's Site Office</li> </ul>	<ul style="list-style-type: none"> <li>Water Pumping Station;</li> <li>Sheetpiles &amp; Cantilever decking (Left Lane) at Wan Shing Street;</li> <li>Dredging for Submarine outfall;</li> <li>Outfall pipe installation for submarine sewage outfall; and</li> <li>Excavation for WSD Salt Water Pumping Station</li> </ul>	<ul style="list-style-type: none"> <li>1800 diameter drainage diversion; and</li> <li>Road work for traffic diversion within pet garden</li> </ul>

2.5.4. Major construction activities for Contract no. HY/2009/15 was commenced on 10 November 2010. During this reporting period, the principle work activities for Contract no. HY/2009/15 are summarized as below:

**Table 2.7 Principle Work Activities for Contract no. HY/2009/15**

December 2010	January 2011	February 2011
<ul style="list-style-type: none"> <li>Maintenance dredging works at TCBR4 and TCBR1E for mooring and anchorage rearrangement;</li> <li>Dredging works at TPCWAE and TCBR1E for seawall;</li> <li>Marine Site Investigation at TPCBR1E and TPCWAE;</li> <li>Demolition of Ex-Fireboat Station; and</li> <li>Erection of the CSHK's Site Office</li> </ul>	<ul style="list-style-type: none"> <li>Dredging works at TCBR1W and TPCWAW;</li> <li>Dredging works at TPCWAE and TCBR1E for seawall;</li> <li>Type 3 sediments disposal; and</li> <li>Ground investigation works</li> </ul>	<ul style="list-style-type: none"> <li>Rock removal at TS4 and TPCWA;</li> <li>Disposal of Type 3 sediment;</li> <li>Rock-filling at TS1, seawall block construction at TPCWA; and</li> <li>Ground investigation and trial pit excavation</li> </ul>

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- 2.5.5. No construction work was undertaken under Contract no.HK/2010/06 during this reporting period.
- 2.5.6. Implementation status of the recommended mitigation measures during this reporting period is presented in **Appendix 2.1**.

### 3. MONITORING REQUIREMENTS

#### 3.1. Noise Monitoring

##### NOISE MONITORING STATIONS

3.1.1. The noise monitoring stations for the Project are listed and shown in **Table 3.1** and **Figure 3.1**. **Appendix 3.1** shows the established Action/Limit Levels for the monitoring works.

**Table 3.1 Noise Monitoring Stations**

Station	Description
M1a	Harbour Road Sports Centre
M2b	Noon Gun Area
M3a	Tung Lo Wan Fire Station
M4b	Victoria Centre
M5b	City Garden
M6	HK Baptist Church Henrietta Secondary School

##### REAL TIME NOISE MONITORING STATIONS

3.1.1. The noise monitoring stations for the Project are listed and shown in **Table 3.2** and **Figure 3.1**. **Appendix 3.1** shows the established Action/Limit Levels for the monitoring works.

**Table 3.2 Real Time Noise Monitoring Station**

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

3.1.2. 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,  $L_{eq\ (5\ minutes)}$  shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as L10 and L90 shall also be obtained for reference.

3.1.3. 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.

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

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

3.1.2. 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.

### 3.2. Air Monitoring

#### AIR QUALITY MONITORING STATIONS

3.2.1. The air monitoring stations for the Project are listed and shown in **Table 3.3** and **Figure 3.1**. **Appendix 3.1** shows the established Action/Limit Levels for the monitoring works.

**Table 3.3 Air Monitoring Stations**

Station ID	Monitoring Location	Description
CMA1b	Oil Street Community Liaison Centre	North Point
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 Playgrounds opposite to Pedestrian Plaza	Wan Chai
CMA6a	WDII PRE Site Office *	Wan Chai

\* Remarks: As per the ENPC meeting in January 2011, the monitoring stations CMA3a - Future CWB site office at Wanchai Waterfront Promenade and CMA6a - Future AECOM site office at Work Area were renamed as remark.

#### AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

3.2.2. 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.

3.2.3. 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.

3.2.4. 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.

### 3.3. Water Quality Monitoring

3.3.1. The EIA Report has identified that the key water quality impact would be associated with the dredging works during the construction phase. Marine water quality monitoring for dissolved oxygen (DO), suspended solid (SS) and turbidity is therefore recommended to be carried out at selected WSD flushing water intakes. The impact monitoring should be carried out during the proposed dredging works to ensure the compliance with the water quality standards.

#### Water Quality Monitoring Stations

3.3.2. It is proposed to monitor the water quality at 9 WSD salt water intakes and 14 cooling water intakes along the seafront of the Victoria Harbour. The proposed water quality monitoring stations of the Project are shown in **Table 3.4** and **Figure 3.1**. **Appendix 3.1** shows the established Action/Limit Levels for the monitoring works.

**Table 3.4 Marine Water Quality Stations for Water Quality Monitoring**

Station Ref.	Location	Easting	Northing
<b>WSD Salt Water Intake</b>			
WSD7	Kowloon South	834150.0	818300.3
WSD9	Tai Wan	837921.0	818330.0
WSD10	Cha Kwo Ling	841900.9	817700.1
WSD15	Sai Wan Ho	841110.4	816450.1
WSD17	Quarry Bay	839790.3	817032.2
WSD19	Sheung Wan	833415.0	816771.0
WSD20	Kennedy Town	830750.6	816030.3
WSD21	Wan Chai	836220.8	815940.1
RW1	Wan Chai (Reprovision)	836188.8	815911.1
<b>Cooling Water Intake</b>			
C1	HKCEC Extension	835885.6	816223.0
C2	Telecom House	835647.9	815864.4
C3	HKCEC Phase I	835836.2	815910.0
C4e	Wan Chai Tower and Great Eagle Centre (Eastern)	835932.8	815888.2
C4w	Wan Chai Tower and Great Eagle Centre (Western)	835629.8	815889.2

Station Ref.	Location	Easting	Northing
C5e	Sun Hung Kai Centre (Eastern)	836250.1	815932.2
C5w	Sun Hung Kai Centre (Western)	836248.1	815933.2
C6	World Trade Centre	837009.6	815999.3
C7	Windsor House	837193.7	816150.0
C8	City Garden	837970.6	816957.3
C9	Provident Garden	838355.0	817116.6
RC1	Proposed HKAPA Extension	835487.7	815987.7
RC5	Sun Hung Kai Centre (Reprovision)	836291.4	816029.7
RC7	Windsor House (Temporary Dilution)	837245.2	816156.6

#### WATER QUALITY PARAMETERS AND FREQUENCY

3.3.3. Monitoring of dissolved oxygen (DO), turbidity and suspended solids (SS) shall be carried out at WSD flushing water intakes and cooling water intakes. DO and Turbidity are measured in-situ while SS is determined in laboratory.

3.3.4. In association with the water quality parameters, other relevant data shall also be measured, such as monitoring location/position, time, sampling depth, water temperature, pH, salinity, dissolved oxygen (DO) saturation, weather conditions, sea conditions, tidal stage, and any special phenomena and work underway at the construction site etc.

3.3.5. The interval between two sets of monitoring should not be less than 36 hours except where there are exceedances of Action and/or Limit Levels, in which case the monitoring frequency will be increased. **Table 3.5** shows the proposed monitoring frequency and water quality parameters. Duplicate in-situ measurements and water sampling should be carried out in each sampling event. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5m.

**Table 3.5 Marine Water Quality Monitoring Frequency and Parameters**

Activities	Monitoring Frequency <sup>1</sup>	Parameters <sup>2</sup>
During the 4-week baseline monitoring period	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity
During marine construction works	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity
After completion of marine construction works	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity

Notes:

1. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5m.
2. Turbidity should be measured in situ whereas SS should be determined by laboratory.

ENHANCED WATER QUALITY MONITORING IN THE EX-WAN CHAI PUBLIC CARGO WORKING AREA AND THE CAUSEWAY BAY TYPHOON SHELTER

3.3.6. The enhanced water quality monitoring and audit programme is to avoid aggravation of odour nuisance from seawater arising from temporary reclamation in the ex-Wan Chai Public Cargo Working Area and the Causeway Bay Typhoon Shelter.

3.3.7. Dissolved oxygen monitoring at the intakes C6 and C7 in Causeway Bay Typhoon Shelter when there is temporary reclamation in Causeway Bay Typhoon Shelter and at the south-western and south-eastern corners of the ex-Wan Chai Public Cargo Working Area. The proposed water quality monitoring stations of the Project are shown in **Table 3.6** and **Figure 3.1**.

**Table 3.6 Marine Water Quality Stations for Enhanced Water Quality Monitoring**

Station	Location
C6	Excelsior Hotel
C7	Windsor House
Ex-WPCWA-SW	South-western of the ex-Wan Chai Public Cargo Working Area
Ex-WPCWA-SE	South-eastern of the ex-Wan Chai Public Cargo Working Area

3.3.8. The monitoring of dissolved oxygen are to be carried out 3 days per week, at mid-flood and mid-ebb tides for 3 water depths (1m below water surface, mid-depth and 1m above sea bed, except where the water depth less than 6m, the mid-depth may be omitted. If the water depth be less than 3m, only the mid-depth will be monitored).

#### DAILY SS MONITORING AND 24 HOURS TURBIDITY MONITORING SYSTEM

3.3.9. During dredging of the sediment at the south-western corner of the Causeway Bay Typhoon Shelter, daily monitoring of suspended solids and 24 hour monitoring of turbidity at the cooling water intakes (C6 and C7) shall be conducted.

3.3.10. The 24 hours monitoring of turbidity at the cooling water intakes (C6 and C7) shall be established by setting up a continuous water quality monitoring station in front of the intakes during the dredging activities. The monitoring system include the turbidity sensor and data logger which is capable of data capturing at every 5 minutes. The data shall be downloaded daily and compared with the Action and Limit level determined during the baseline water quality monitoring at the cooling water intake locations.

## 4. MONITORING RESULTS

4.0.1. The environmental monitoring will be implemented based on the division of works areas of each designed 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 3.1**. The monitoring results are presented in according to the Individual Contract(s).

### 4.1. Noise Monitoring Results

Contract no. HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

4.1.1. The proposed division of noise monitoring stations for Contract no. HY/2009/11 are summarized in **Table 4.1** below:

**Table 4.1 Noise Monitoring Stations for Contract no. HY/2009/11**

Station	Description
M4b	Victoria Centre
M5b	City Garden

4.1.2. One action level exceedance was recorded due to the noise complaint regarding the noise nuisance arising from the 2 barges for filling operation near City Garden at 22:00 on 6 December 2010. No Limit Level exceedance was recorded in reporting period.

4.1.3. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of graphical presentation can be referred in **Appendix 4.1**.

Contract no. HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC and Contract no. HK/2009/02 - Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East

4.1.4. The proposed division of noise monitoring stations are summarized in **Table 4.2** below.

**Table 4.2 Noise Monitoring Station for Contract nos. HK/2009/01 and HK/2009/02**

Station	Description
M1a	Harbour Road Sports Centre

4.1.5. Seven limit level exceedances at M1a on 6, 14 and 25 December 2010, 4 and 12 January, 17 and 22 February 2011 during construction works at evening time for Contract no. HK/2009/02 in reporting quarter. Major noise source was contributed from Tonnochy Road and water sport competition at Wan Chai Training Swimming Pool. The dredging work was complied with the conditions under valid Construction Noise Permit no. GW-RS0777-10 during the measurement.

Contract no. HY/2009/15 - Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon

Shelter Section)

4.1.6. The noise monitoring for HY/2009/15 was commenced on 10 November 2010. The proposed division of noise monitoring stations are summarized in **Table 4.3** below. No exceedance was recorded in the reporting quarter.

**Table 4.3 Noise Monitoring Station for Contract nos. HY/2009/15**

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

**4.2. Real Time Noise Monitoring Results**Contract no. HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

4.2.1. The proposed division of real time noise monitoring stations are summarized in **Table 4.4** below. Real time noise monitoring for the piling works under contract no. HY/2009/11 was commenced on 5 October 2010.

**Table 4.4 Real Time Noise Monitoring Station for Contract no. HY/2009/11**

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

4.2.2. Continuous limit level exceedances were recorded at FEHD Depot from 2025hrs to 2115 hrs on 21 December 2010 and from 2300hrs to 2325 hrs on 23 December 2010. Besides, the frequent limit level exceedances were recorded at Oil Street Community Centre from 19:46 to 21:21 on 7 December 2010. It was checked that there was no construction work near the FEHD station on 21 and 23 December 2010 and only maintenance works was conducted on 7 December 2010. It was anticipated that the noise exceedances were contributed from traffic along Island Eastern Corridor.

4.2.3. Continuous Limit Level exceedances were recorded on 4 February 2011 evening time due to the shooting off the Lunar New Year Fireworks. It was concluded as non-project related exceedances

4.2.4. Details of real time noise monitoring results and graphical presentation can be referred to **Appendix 4.2**

**4.3. Air Monitoring Results**Contract no. HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

4.3.1. The proposed division of air monitoring stations is summarized in **Table 4.5** below.

**Table 4.5 Air Monitoring Stations for Contract no. HY/2009/11**

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

4.3.2. Since the filling work was commenced in mid-August 2010, the 1hr and 24-hr TSP monitoring were commenced on 12 August and 11 August 2010 respectively. Until the commencement of the permanent power supply connection at CMA1b on 22 September 2010, the 24hr TSP at CMA1b was then commenced on 27 September 2010. No exceedance was recorded in the reporting quarter. Details of noise monitoring results and graphical presentation can be referred in **Appendix 4.2**.

Contract no. HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC

4.3.3. Air monitoring will be commenced from the filling work for Contract no. HK/2009/01. The proposed division of air monitoring stations are summarized in ***Table 4.6*** below.

***Table 4.6 Air Monitoring Stations for Contract no. HK/2009/01***

Station	Description
CMA5a	Children Playgrounds opposite to Pedestrian Plaza
CMA6a	WDII PRE Site Office *

\* Remarks: As per the ENPC meeting in January 2011, the monitoring stations CMA6a - Future AECOM site office at Work Area was renamed as remark.

Contract no. HK/2009/02 - Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East

4.3.4. Air monitoring was commenced in mid-January 2011 for the land-filling work for Contract no. HK/2009/02. The proposed division of air monitoring stations is summarized in ***Table 4.7*** below. No exceedance was recorded in the reporting period.

***Table 4.7 Air Monitoring Station for Contract no. HK/2009/02***

Station	Description
CMA4a	Society for the Prevention of Cruelty to Animals

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

4.3.5. Air monitoring will be commenced from the land filling work for Contract no. HY/2009/15. The proposed division of air monitoring stations are summarized in ***Table 4.8*** below.

**Table 4.8 Air Monitoring Station for Contract no. HY/2009/15**

Station	Description
CMA3a	CWB site office at Wanchai Waterfront Promenade

4.3.6. No major dust impact is anticipated to be caused by the site preparation works and dredging works during the reporting quarter. Air monitoring will be commenced from the filling works for Contract no. HK/2009/01 and HY/2009/15. Therefore, no air monitoring was conducted for these two contracts in the reporting period.

#### 4.4. Water Monitoring Results

##### Contract no. HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

4.4.1. Water quality monitoring for Contract no. HY/2009/11 was commenced on 19 March 2010. The proposed division of water monitoring stations for Contract no. HY/2009/11 is summarized in **Table 4.9** below:

**Table 4.9 Water Monitoring Stations for Contract no. HY/2009/11**

Station Ref.	Location	Easting	Northing
<b>WSD Salt Water Intake</b>			
WSD9	Tai Wan	837921.0	818330.0
WSD10	Cha Kwo Ling	841900.9	817700.1
WSD15	Sai Wan Ho	841110.4	816450.1
WSD17	Quarry Bay	839790.3	817032.2
<b>Cooling Water Intake</b>			
C8	City Garden	837970.6	816957.3
C9	Provident Garden	838355.0	817116.6

##### Contract no. HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC

4.4.2. Water quality monitoring for Contract no. HK/2009/01 was commenced on 8 July 2010. The proposed division of water monitoring stations is summarized in **Table 4.10** below.

**Table 4.10 Water Monitoring Stations for Contract no. HK/2009/01**

Station Ref.	Location	Easting	Northing
<b>WSD Salt Water Intake</b>			
WSD7	Kowloon South	834150.0	818300.3
WSD19	Sheung Wan	833415.0	816771.0
WSD20	Kennedy Town	830750.6	816030.3
<b>Cooling Water Intake</b>			
C1	HKCEC Extension	835885.6	816223.0
C2	Telecom House	835647.9	815864.4
C3	HKCEC Phase I	835836.2	815910.0

Station Ref.	Location	Easting	Northing
C4e	Wan Chai Tower and Great Eagle Centre (Eastern)	835932.8	815888.2
C4w	Wan Chai Tower and Great Eagle Centre (Western)	835629.8	815889.2

Contract no. HK/2009/02 - Wan Chai Development Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East

4.4.3. Water quality monitoring for Contract no. HK/2009/02 was commenced on 8 July 2010. The proposed division of water monitoring stations is summarized in **Table 4.11** below.

**Table 4.11 Water Monitoring Stations for Contract no. HK/2009/02**

Station Ref.	Location	Easting	Northing
<b>WSD Salt Water Intake</b>			
WSD21	Wan Chai	836220.8	815940.1
<b>Cooling Water Intake</b>			
C5e	Sun Hung Kai Centre (Eastern)	836250.1	815932.2
C5w	Sun Hung Kai Centre (Western)	836248.1	815933.2

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

4.4.4. Due to the commencement of the maintenance dredging on 10 November 2010, water quality monitoring for Contract no. HY/2009/15 was commenced on 9 November 2010. The proposed division of water monitoring stations is summarized in **Table 4.12** below.

**Table 4.12 Water Monitoring Stations for Contract no. HY/2009/15**

Station Ref.	Location	Easting	Northing
<b>Cooling Water Intake</b>			
C6	Excelsior Hotel	837009.6	815999.3
C7	Windsor House	837193.7	816150

4.4.5. The enhanced water quality monitoring at C6, C7, Ex-WPCWA-SW and Ex-WPCWA-SE was commenced on 13 January 2011. No exceedance was recorded in the reporting period.

4.4.6. During dredging of the sediment at the south-western corner of the Causeway Bay Typhoon Shelter between 15 February and 24 February 2011, daily monitoring of suspended solids and 24 hours monitoring of turbidity at cooling water intakes at C6 was be conducted. No project-related exceedance was recorded.

4.4.7. As per the advised from the RE on 15 February 2011, the maintenance works and suspension of flush water pump system at Windsor House intake (C7) have been carried out between 15 February and 31 March 2011. The installed silt screen at C7 was then removed on 15 February 2011 to facilitate their maintenance works as per the intake owner's request.

Considering the absence of intake pump operation at Windsor House intake (C7), this sensitive receiver was apparently not exist during this period so that no water quality monitoring at C7 for compliance checking was undertaken starting from 15 February in this reporting period.

4.4.8. Due to the access restriction of WSD Salt Water Pumping Stations owing to security reasons and no dredging activities confirmed with the Contractor between 3 February and 6 February 2011 (Chinese Lunar New Year Holiday), the scheduled impact water monitoring on 3 and 4 February 2011 was cancelled.

4.4.9. Water monitoring results measured in this reporting period are reviewed and summarized in **Table 4.13**. Details of water quality monitoring results and graphical presentation can be referred in [Appendix 4.3](#).

**Table 4.13 Summary of Water Quality Monitoring Exceedances in Reporting Quarter**

Contract no.	Water Monitoring Station	Mid-flood						Mid-ebb					
		DO		Turbidity		SS		DO		Turbidity		SS	
		AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
HY/2009/11	WSD9	0	0	0	0	0	0	0	0	0	0	0	0
	WSD10	0	0	0	0	0	0	0	0	0	0	0	1
	WSD15	0	0	0	0	0	0	0	0	0	0	1	3
	WSD17	0	0	0	0	1	0	0	0	0	0	0	0
	C8	0	0	2	4	6	2	0	0	1	1	1	1
	C9	0	0	1	2	6	1	0	0	0	0	1	0
HK/2009/01	WSD19	0	0	0	0	1	0	0	0	0	0	1	1
	WSD20	0	0	1	4	0	6	0	0	0	0	2	0
	WSD7	0	0	0	0	0	0	0	0	1	0	1	1
	C1	0	0	0	0	0	0	0	0	0	0	0	0
	C2	0	0	0	0	0	0	0	0	0	0	0	0
	C3	0	0	0	0	1	0	0	0	0	0	0	0
	C4e	0	0	0	0	0	0	0	0	0	0	0	0
HK/2009/02	C5e	0	0	0	2	3	0	0	0	0	0	0	1
	C5w	0	0	1	1	1	0	0	0	0	0	0	2
	WSD21	0	0	1	0	1	1	0	0	0	0	0	0
HY/2009/15	C6	0	0	2	3	1	2	0	0	0	1	1	0
	C7	0	0	1	0	0	0	0	0	0	0	0	0
<b>Total</b>		0	0	9	16	21	13	0	0	2	2	11	7

4.4.10. The exceedances have been investigated and were considered unlikely to be related to project works except the SS and turbidity exceedances at C8 on 16 and 30 December 2010 at mid-flood tide, C6 on 7 February 2011 at mid-flood and mid-ebb tides and turbidity

exceedances recorded at C5e, C5w and WSD21 on 11 February 2011 at mid-flood. Water monitoring results measured in this reporting period are reviewed and summarized. Details of graphical presentation can be referred in **Appendix 4.2**.

#### 4.5. Waste Monitoring Results

Contract no. HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

4.5.1. No inert and non-inert C&D waste was disposed in this reporting period. Details of the waste flow table are summarized in ***Table 4.14***

***Table 4.14 Details of Waste Disposal for Contract no. HY/2009/11***

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m <sup>3</sup>	NIL	NIL	N/A
Inert C&D materials recycled, m <sup>3</sup>	NIL	NIL	N/A
Non-inert C&D materials disposed, m <sup>3</sup>	NIL	NIL	SENT Landfill
Non-inert C&D materials recycled, m <sup>3</sup>	NIL	NIL	N/A
Chemical waste disposed, kg	N/A	N/A	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m <sup>3</sup>	0 (Bulk Volume)	89,500 (Bulk Volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m <sup>3</sup>	7,800 (Bulk Volume)	125,300 (Bulk Volume)	East of Sha Chau

4.5.2. Contractor clarified that the quantity of Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m<sup>3</sup> in December 2010 shall be 4,800m<sup>3</sup> and cumulative quantity of this type sediment up to February 2011 is 125,300m<sup>3</sup>. It will be also updated in the coming Monthly EM&A Report for March 2011.

4.5.3. There was marine sediment Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal marine sediment disposed in the reporting period. The maximum dredging rate in North Point Shoreline Zone is 1,500m<sup>3</sup> per day in the reporting quarter, which is complied with the criteria listed in Table 2 of FEP-01/356/2009.

Contract no. HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC

4.5.4. Inert and non-inert C&D waste was disposed of for the site preparation works in this reporting period. Details of the waste flow table are summarized in ***Table 4.15***.

**Table 4.15 Details of Waste Disposal for Contract no. HK/2009/01**

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m <sup>3</sup>	2,295.39	3,699.89	TKO134
Inert C&D materials recycled, m <sup>3</sup>	NIL	NIL	N/A
Non-inert C&D materials disposed, m <sup>3</sup>	61.08	166.5	SENT Landfill
Non-inert C&D materials recycled, kg	4438	14,678	N/A
Chemical waste disposed, kg	1,170	1,830	N/A
Marine Sediment (Type 1 – Open Sea Disposal) , m <sup>3</sup>	14,882.2 (Bulk Volume)	67,379.2 (Bulk Volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal) , m <sup>3</sup>	5,799 (Bulk Volume)	12,461 (Bulk Volume)	East of Cha Chau

4.5.5. Checking on the quantity of the non-inert C&D material recycled with Contractor, there were the calculation errors on the quantity reported in past months. Contractor clarified that the non-inert C&D material recycled in kg should be as **Table 4.15a**.

**Table 4.15a Details of Non-inert C&D Material Recycled for Contract no. HK/2009/01**

Month	Non-inert C&D materials recycled, kg
Jul 2010	2890
Aug 2010	0
Sept 2010	0
Oct 2010	150
Nov 2010	7200
Dec 2010	4310
Jan 2011	128
Feb 2011	0
<b>Cumulative Quantity-to-Date</b>	<b>14,678</b>

4.5.6. There were marine sediments Type 1 – Open Sea Disposal and Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal marine sediment disposed in the reporting period. The maximum dredging rate in Cross Harbour Water Mains marine work zone and HKCEC1 subzone under Hong Kong Convention Exhibition Centre (HKCEC) marine work zone are 654m<sup>3</sup> per day, which is complied with the recommended maximum dredging rate per day listed in Table 2 of FEP-02/356/2009.

Contract no. HK/2009/02 - Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East

4.5.7. Inert and non-inert C&D waste was disposed of for the site preparation works in this reporting period. Details of the waste flow table are summarized in **Table 4.16**.

**Table 4.16 Details of Waste Disposal for Contract no. HK/2009/02**

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m <sup>3</sup>	1,149	4,996	TKO137
Inert C&D materials recycled, m <sup>3</sup>	NIL	NIL	N/A
Non-inert C&D materials disposed, m <sup>3</sup>	23.2	63.7	SENT Landfill
Non-inert C&D materials recycled, m <sup>3</sup>	NIL	NIL	N/A
Chemical waste disposed, kg	NIL	NIL	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m <sup>3</sup>	0 (Bulk Volume)	82,257 (Bulk Volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m <sup>3</sup>	10,595 (Bulk Volume)	87,565 (Bulk Volume)	East of Sha Chau

4.5.8. There were marine sediments Type 1 – Open Sea Disposal and Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal marine sediment disposed in the reporting period at a maximum dredging rate 1,260m<sup>3</sup> per day, which is complied with the recommended maximum dredging rate per day in Wan Chai Reclamation (WCR) marine work zone and sub-marine pipeline work zone listed in Table 2 of FEP-03/356/2009.

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

4.5.9. Inert and non-inert C&D waste was disposed of for the site preparation works in this reporting period. Details of the waste flow table are summarized in **Table 4.17**.

**Table 4.17 Details of Waste Disposal for Contract no. HY/2009/15**

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m <sup>3</sup>	3.5	3.5	Tuen Mun Area 38
Inert C&D materials recycled, m <sup>3</sup>	184.0	184.0	To Contract

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
			HY/2009/11
Non-inert C&D materials disposed, m <sup>3</sup>	26.0	30.2	SENT Landfill
Non-inert C&D materials recycled, kg	95	13,530	N/A
Chemical waste disposed, kg	NIL	NIL	N/A
Marine Sediment (Type 1 – Open Sea Disposal) , m <sup>3</sup>	NIL	NIL	N/A
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal) , m <sup>3</sup>	107,487 (Bulk Volume)	119,877 (Bulk Volume)	East of Sha Chau
Marine Sediment (Type 3 – Special Treatment / Disposal contained in Geosynthetic Containers)	2,750 (Bulk Volume)	2,750 (Bulk Volume)	East of Sha Chau

4.5.10. There were marine sediments Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal marine and Type 3 – Special Treatment / Disposal contained in Geosynthetic Containers sediment disposed from the dredging works at TCBR and TPCWA in the reporting period at a maximum dredging rate 3,805m<sup>3</sup> per day, which is complied with the recommended maximum dredging rate per day in Wan Chai Reclamation (WCR) marine work zone and sub-marine pipeline work zone listed in Table 2 of FEP-04/356/2009.

## 5. COMPLIANCE AUDIT

5.0.1. The Event Action Plan for construction noise, air quality and water quality are presented in **Appendix 5.1**.

### 5.1. Noise Monitoring

5.1.1 Seven limit level exceedances at M1a on 6, 14 and 25 December 2010, 4 and 12 January, 17 and 22 February 2011 during construction works at evening time for Contract no. HK/2009/02 in reporting quarter. Major noise source was contributed from Tonnochy Road and water sport competition at Wan Chai Training Swimming Pool. The dredging work was complied with the conditions under valid Construction Noise Permit no. GW-RS0777-10 during the measurement.

5.1.2 One action level exceedance was recorded due to the noise complaint regarding the noise nuisance arising from the 2 barges for filling operation near City Garden at 22:00 on 6 December 2010. No Limit Level exceedance was recorded in reporting period.

### 5.2. Real-time Noise Monitoring

5.2.1 Continuous limit level exceedances were recorded at FEHD Depot from 2025hrs to 2115 hrs on 21 December 2010 and from 2300hrs to 2325 hrs on 23 December 2010. Besides, the frequent limit level exceedances were recorded at Oil Street Community Centre from 19:46 to 21:21 on 7 December 2010. It was checked that there was no construction work near the FEHD station on 21 and 23 December 2010 and only maintenance works was conducted on 7 December 2010. It was anticipated that the noise exceedances were contributed from traffic along Island Eastern Corridor.

5.2.2 Continuous Limit Level exceedances were recorded on 4 February 2011 evening time due to the shooting off the Lunar New Year Fireworks. It was concluded as non-project related exceedances

### 5.3. Air Monitoring

5.3.1. No exceedance was recorded in the reporting quarter.

### 5.4. Water Quality Monitoring

5.4.1. The summary of water quality exceedances recorded in reporting quarter is presented in the **Table 5.1**.

**Table 5.1 Summary of Water Quality Exceedances in the Reporting Quarter**

Contract no.	Water Monitoring Station	Mid-flood						Mid-ebb					
		DO		Turbidity		SS		DO		Turbidity		SS	
		AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
HY/2009/11	WSD9	0	0	0	0	0	0	0	0	0	0	0	0
	WSD10	0	0	0	0	0	0	0	0	0	0	1	0

Contract no.	Water Monitoring Station	Mid-flood						Mid-ebb					
		DO		Turbidity		SS		DO		Turbidity		SS	
		AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
	WSD15	0	0	0	0	0	0	0	0	0	0	1	3
	WSD17	0	0	0	0	1	0	0	0	0	0	0	0
	C8	0	0	2	4	6	2	0	0	1	1	1	1
	C9	0	0	1	2	6	1	0	0	0	0	1	0
HK/2009/01	WSD19	0	0	0	0	1	0	0	0	0	0	1	1
	WSD20	0	0	1	4	0	6	0	0	0	0	2	0
	WSD7	0	0	0	0	0	0	0	0	1	0	1	1
	C1	0	0	0	0	0	0	0	0	0	0	0	0
	C2	0	0	0	0	0	0	0	0	0	0	0	0
	C3	0	0	0	0	1	0	0	0	0	0	0	0
	C4e	0	0	0	0	0	0	0	0	0	0	0	0
	C4w	0	0	0	0	0	1	0	0	0	0	0	0
HK/2009/02	C5e	0	0	0	2	3	0	0	0	0	0	0	1
	C5w	0	0	1	1	1	0	0	0	0	0	2	0
	WSD21	0	0	1	0	1	1	0	0	0	0	0	0
HY/2009/15	C6	0	0	2	3	1	2	0	0	0	1	1	0
	C7	0	0	1	0	0	0	0	0	0	0	0	0
<b>Total</b>		0	0	9	16	21	13	0	0	2	2	11	7

5.4.2. Investigations were found that the most of exceedances are unlikely related to the Project works except the SS and turbidity exceedances at C8 on 16 and 30 December 2010 at mid-flood tide, C6 on 7 February 2011 at mid-flood and mid-ebb tides and turbidity exceedances recorded at C5e, C5w and WSD21 on 11 February 2011 at mid-flood.

5.4.3. Exceedance at C8 on 16 and 30 December 2010 was recorded. Due to intake owner's constraint, delay was experienced in the re-provision of modified frame-type silt screen to protect City Garden intake against potential impact arising from the dredging works and accumulation of pollutants from nearby outfall adjacent to the intake. The exceedances were confirmed related to HY/2009/11 contractor difficulties in the provision of frame type silt screen. Contractor enhanced mitigation measures with a double layer silt curtain on 7 January 2011. No further exceedance was recorded after installation of double layer silt curtain. Close monitoring on contractor mitigation and the variation of water quality results will be maintained.

5.4.4. The turbidity exceedances were recorded at C5e, C5w and WSD21 on 11 Feb 2011 at mid-flood when the local buckling of western sheetpile temporary seawall at WCR1 was recorded in the morning of 11 February 2011. These exceedances were confirmed due to the buckling

of western sheetpile temporary seawall. Contractor had immediately installed the additional silt curtain surround the location of buckling seawall on that day.

5.4.5. Turbidity and SS exceedances at C6 on 7 February 2011 at mid-flood and mid-ebb tides were recorded. Further investigation on 9 Feb 2011 revealed the crack on the silt screen at C6. A crack on silt screen structure leaded to ingress of unscreened polluted water directly to the intake created by frequent vessel movement on shallow water in Causeway Bay Typhoon Shelter. The exceedances were confirmed due to the silt screen defect.

#### **5.5. Site Audit**

5.5.1. There was no non-compliance from the site audits in the reporting period. During environmental site inspections conducted during the reporting quarter, minor deficiencies were noted. However, the Contractor rectified all deficiencies after receipt of notification.

#### **5.6. Review of the Reasons for and the Implications of Non-compliance**

5.6.1. No project-related non-compliance from monitoring was recorded in the reporting period.

#### **5.7. Summary of action taken in the event of and follow-up on non-compliance**

5.7.1. 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.

## 6. COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

6.0.1. There were two environmental complaints were received on 3 and 6 December 2010 in this reporting period. The complaint received on 3 December 2010 was regarding to the bad odour generated from the dredging plant off North Point. The noise nuisance and visual impact was complained on 6 December 2010 that was arisen from the 2 barges and spot light pointing directly to the complainant flat.

6.0.2. The complainant from City Garden complained on the bad odour from the dredging plant off North Point on 3 December 2010 at 01:45. Investigation of the backhoe barge at City garden conducted by ET with RE and Contractor of Contract HY/2009/11 was carried on 8 December 2010. No irritated odour was noted during the site investigation.

6.0.3. The noise and visual complaint was complained on 6 December 2010 by the complainant from the City Garden. It was complained on two barges generating noise at 22:00 on 6 December 2010 in which the noise from filling operation was louder than the traffic noise and visual impact generating due to the spot-light pointing directly to the complainant flat and suspected the filling operation was part of Wanchai Development Phase II. Complainant also raised the same complaint to District Councillor, Mr. Hui on 7 Dec 2010 regarding the night time noise and suspected earlier start of work at 06:30. Complaint also requested for limiting the plant operating hours from 09:00-21:00.

6.0.4. It was checked and confirmed that the two derrick barges were in operation at the time of complaint for placing 400 rockfill onto the excavation trench and for levelling the formation level to receive the pre-cast caisson seawall and flood light on the control mast of derrick barge have no lighting shields for the prevention of glare of flood lights causing visual glare to the complainant at night-time. Besides, construction works was started after 0800hrs on 7 December 2010. It was found that the occasional noise nuisance might be caused by the hitting or scratching onto the rock surface during loading down the grab onto the Grade 400 rockfill. Contractor was advised to minimize the finishing time of placing Grade 400 rockfill at 2100hrs and switch off all unnecessary floodlights apart from the light for the safety and security purpose.

6.0.5. The details of cumulative complaint log and summary of complaints are presented in **Appendix 6.1**.

6.0.6. No notification of summons or prosecution was received in the reporting period. Cumulative statistic on complaints and successful prosecutions are summarized in **Table 6.1** and **Table 6.2** respectively.

**Table 6.1 Cumulative Statistics on Complaints**

Reporting Period	No. of Complaints
Dec 2010 – Feb 2011	2
Project-to-Date	9

**Table 6.2 Cumulative Statistics on Successful Prosecutions**

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this quarter (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>

6.0.7. Incidents of split bottom hopper barge named Shun Tat 11 (Licence no. B21623V) were recorded near Kwai Shek (200-300m distance) under Contract no. HY/2009/15 on 17 December 2010 and at the location near Cross Harbour Water Mains marine work zone under Contract no. HK/2009/01 on 24 January 2011.

6.0.8. The hopper barge under Contract no. HY/2009/15 was trapped by a strong current and grounded on shallow rock clusters on 17 December 2010. Jettison of marine sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal) in hopper barge at the scene of incident was needed in order to avoid capsizing of vessel. Contractor informed this incident to EPD on 18 December 2010.

6.0.9. The ballast tank on the port side of the split hopper barge under Contract no. HK/2009/01 was flooded with water on 24 January 2011. It was towed back to the dredging zone within a short period and immediately opened its hopper to dump the sediment back to the same dredging trench. It is suspected that the hull on the port side might be broken causing ingress of seawater into the ballast tanks. Meanwhile, the barge has been demobilized from the site and currently anchored at To Kwa Wan Typhoon Shelter. The emergency dumping was notified to EPD on 24 January 2011 at 10:00a.m. This barge will not be deployed to the site under HK/2009/01 to dispose the dredged sediment until it has been repaired and inspected by the competent surveyor. These incidents will be kept in view for determining further follow up and remedial measures. All Contractors under EP-356/2009 were reminded to ensure the deployed hopper barge has been adequately checked by qualified person and ensured in good condition before the engagement on site.

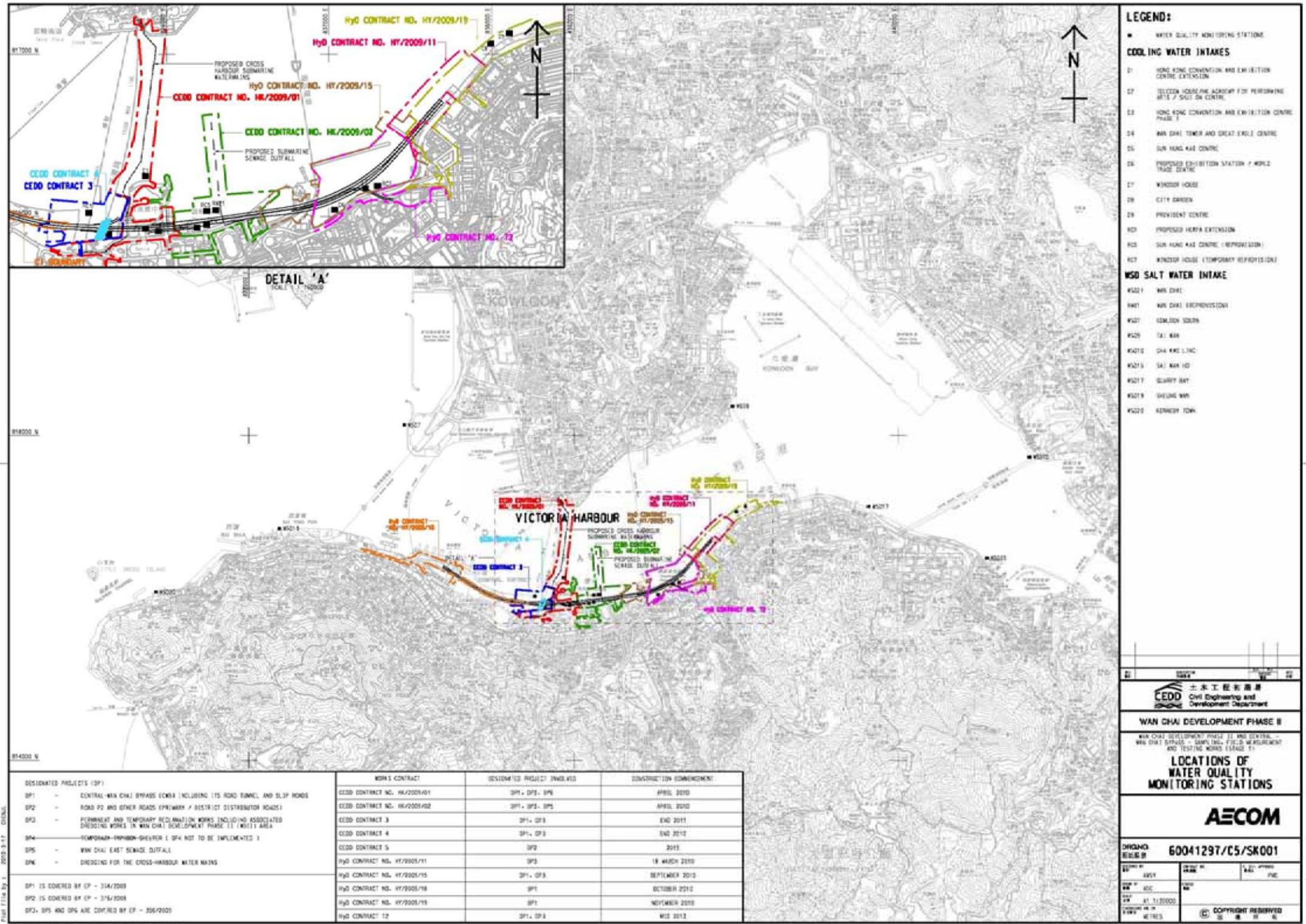
## **7. CUMULATIVE CONSTRUCTION IMPACT DUE TO THE CONCURRENT PROJECTS**

- 7.0.1. According to Condition 3.4 of the EP-356/2009, this section addresses the relevant cumulative construction impact due to the concurrent activities of the current projects including the Central Reclamation, Central-WanChai Bypass and Island Eastern Corridor Link projects.
- 7.0.2. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, the major construction activities under Wan Chai Development Phase II were the dredging and filling works at North Point Reclamation Shoreline Subzone (NPR2E) and (NPR1) respectively, the dredging and filling at submarine sewage pipeline and Wan Chai Reclamation Shoreline Subzone (Submarine sewage pipeline) respectively, dredging at HKCEC3W and cross harbour water mains and dredging at TCBR in the reporting period. The major environmental impact was water quality impact at North Point and Wan Chai.
- 7.0.3. The major environmental impacts generated from the filling work at Central Reclamation Phase III were only located along the coastline of Central and Admiralty. As the recorded project-related exceedances in North Point, Causeway Bay Typhoon Shelter and Wan Chai that was localized interference and far away from the work area of CRIII, it is evaluated the cumulative construction impact from the concurrent projects including Wan Chai Development Phase II and Central Reclamation Phase III was insignificant.

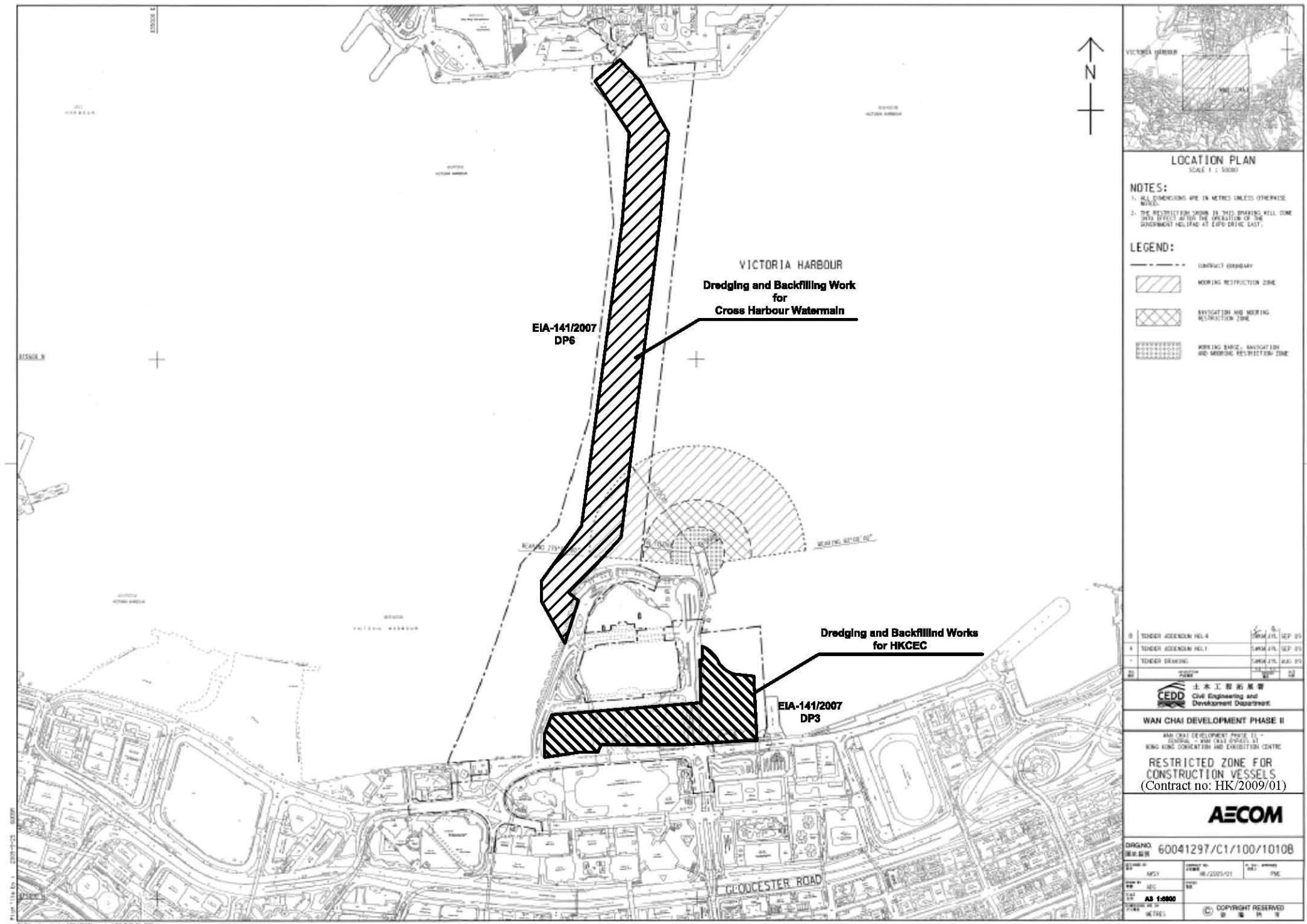
## 8. CONCLUSION

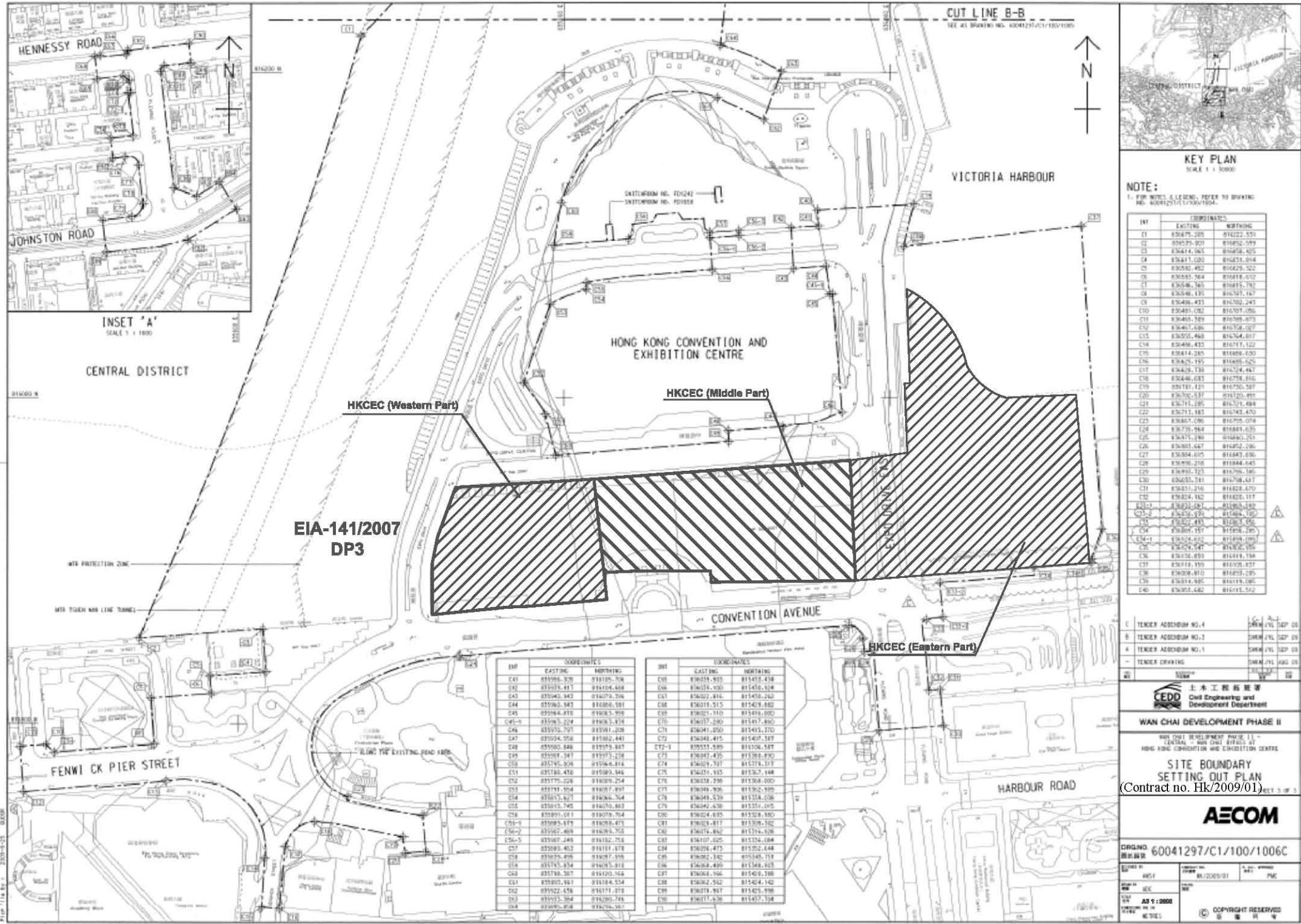
- 8.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.
- 8.0.2. No non-compliances were noted and no prosecutions were received during the reporting quarter.
- 8.0.3. The construction programmes of individual contracts are provided in [Appendix 8.1](#).

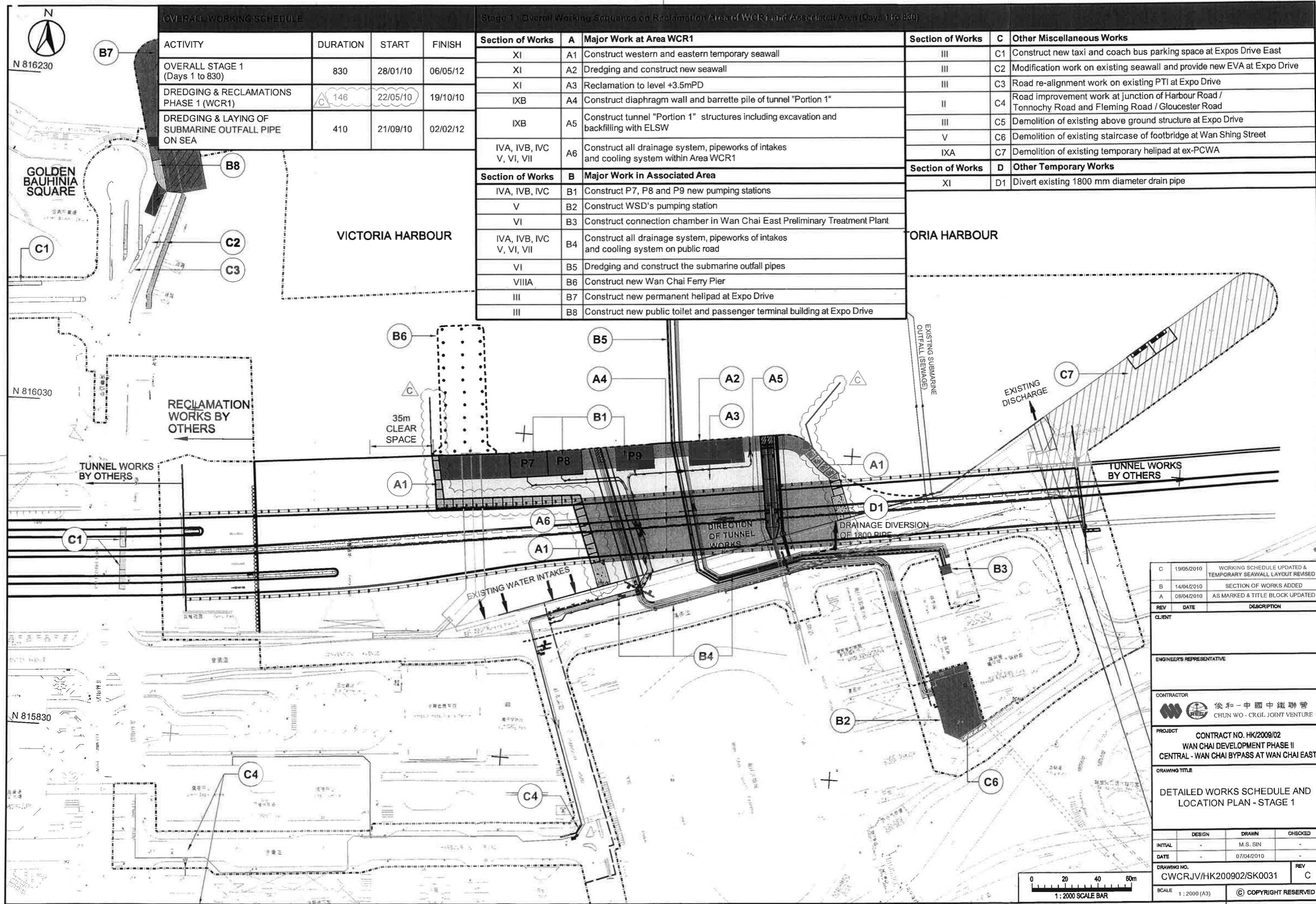
***Figure 2.1******Project Layout***



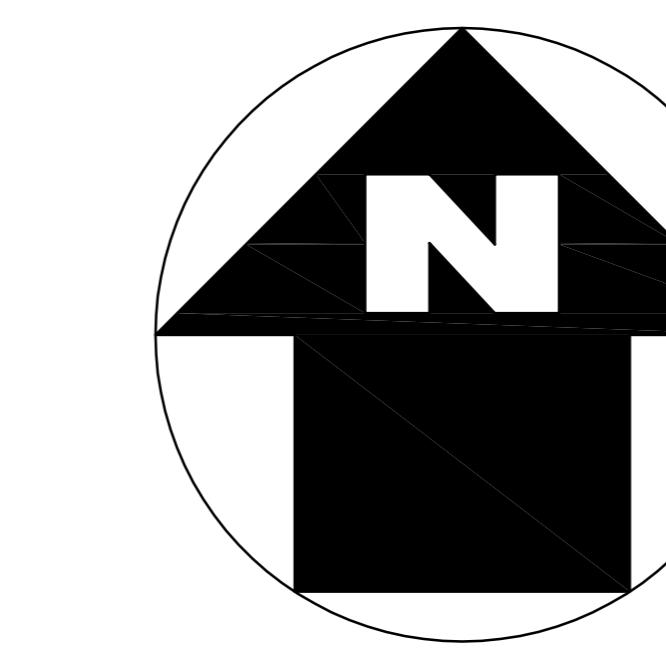








港口  
HARBOUR




LEGEND:

WORKS AREA

DREDGING AREA FOR  
MITIGATION OF ODOUR(DP3)

SITE BOUNDARY



中國建築工程(香港)有限公司  
CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.

Highways Department  
CONTRACT NO. HY/2009/15  
CENTRAL-WAN CHAI BYPASS -TUNNEL  
(CAUSEWAY BAY TYPHOON  
SHELTER SECTION)

TITLE  
LOCATION PLAN OF WORKS AREA

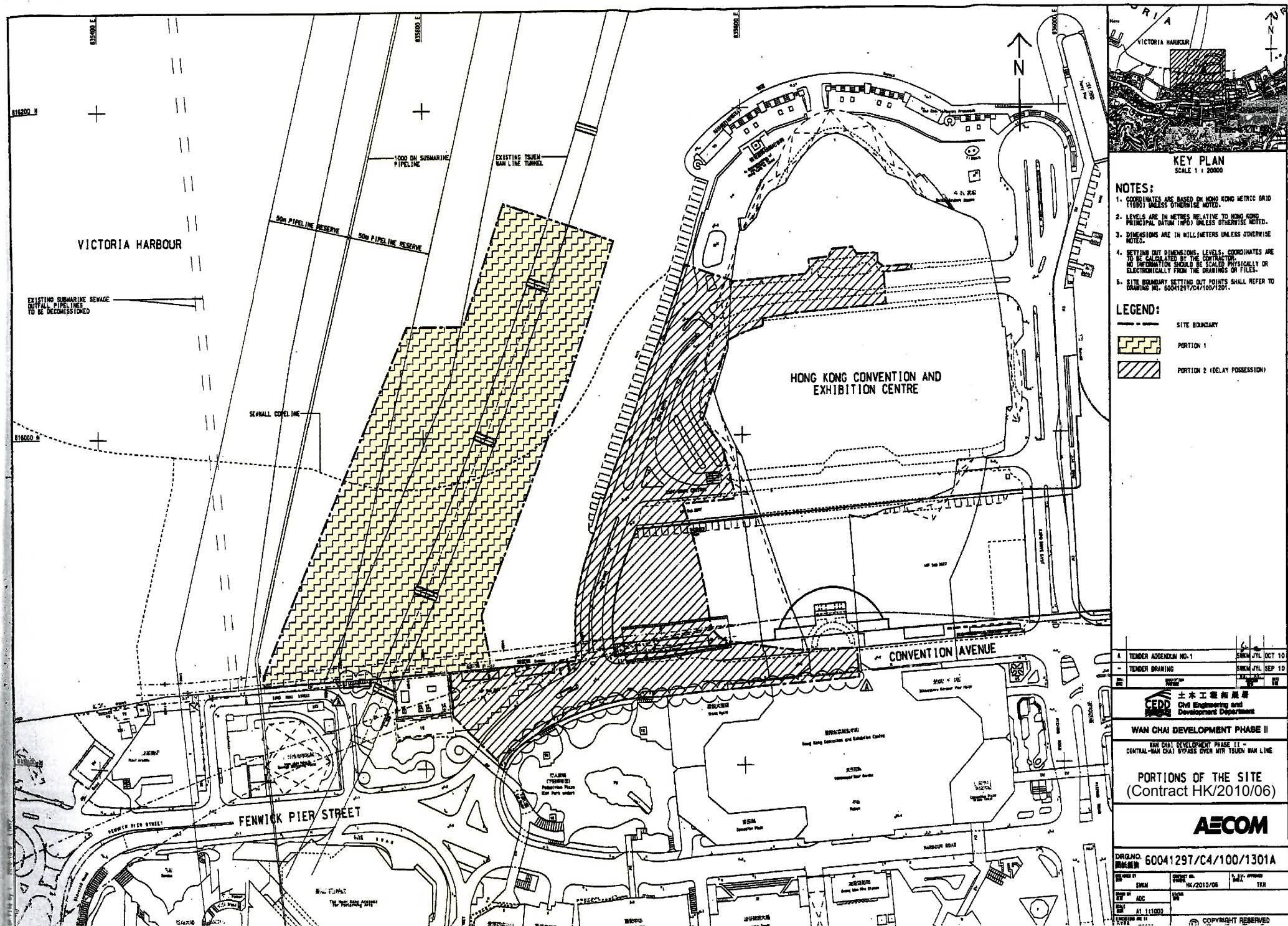
DRG. NO.  
CWB/T/EPD/001B

SCALE  
1:1000 @ A0

STATUS  
DIMENSIONS ARE IN  
MILLIMETERS

COPYRIGHT RESERVED

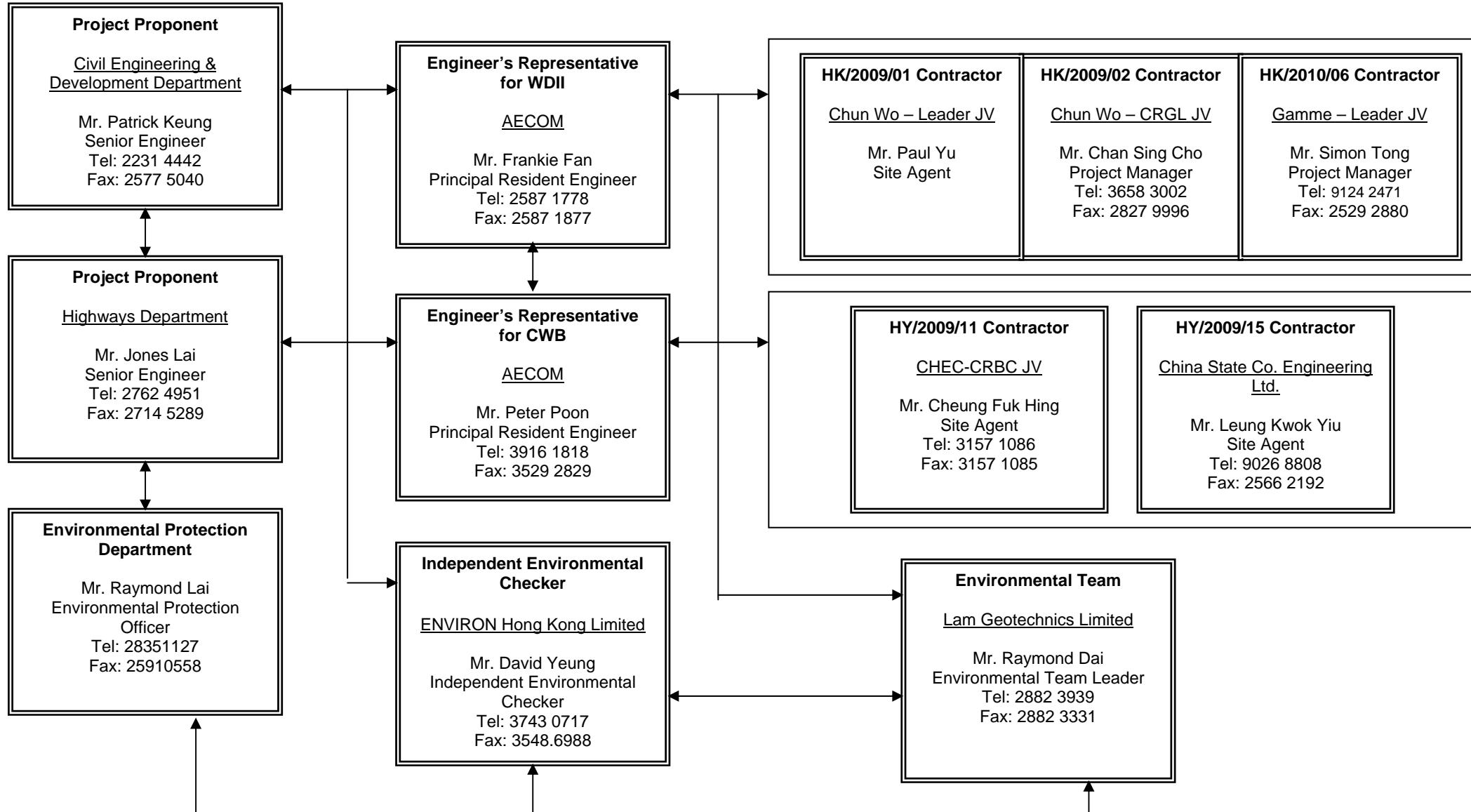
維多利亞公園  
Victoria Park



***Figure 2.2***

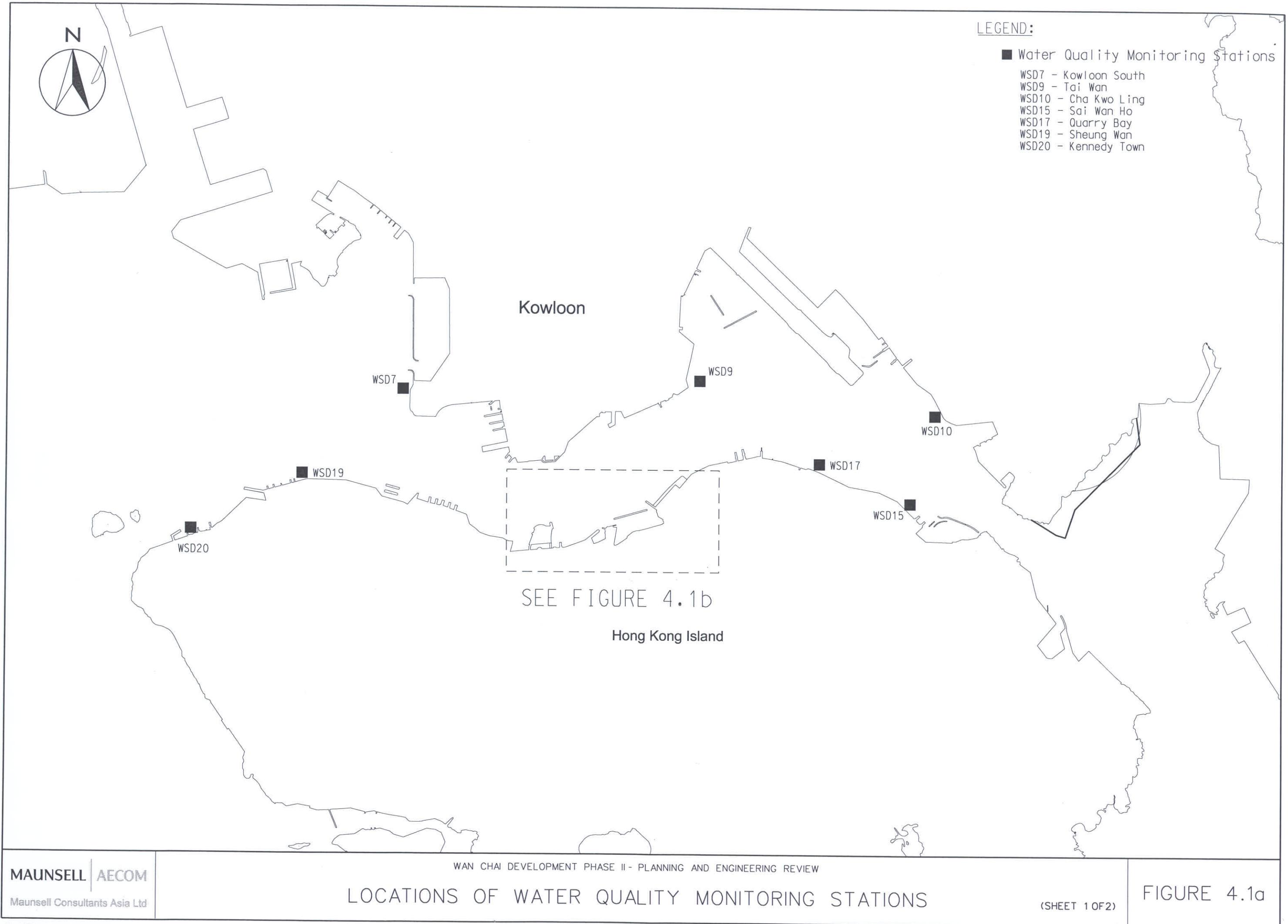
***Project Organization Chart***

### Project Organization Chart



***Figure 3.1***

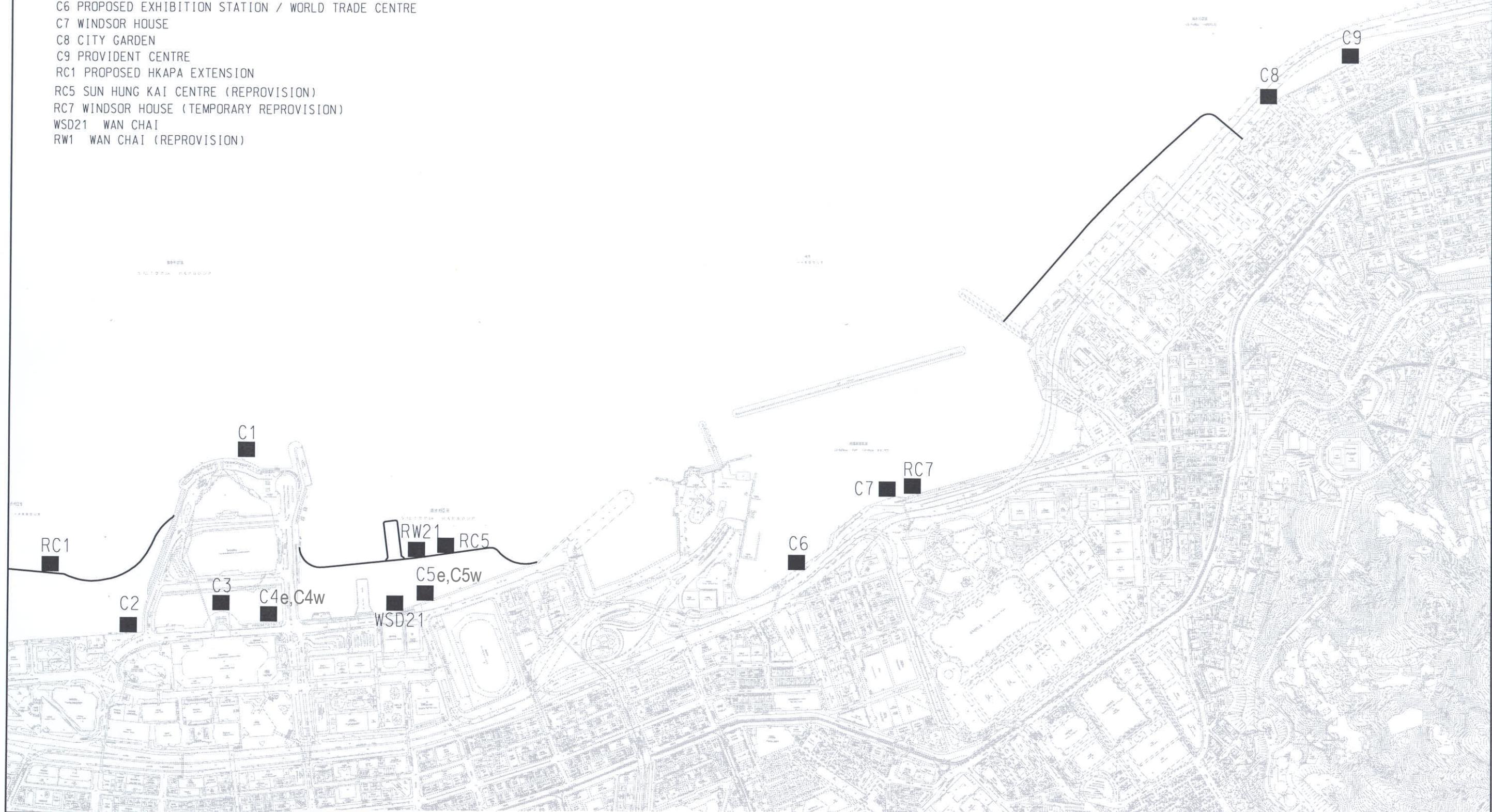
***Locations of Monitoring Stations***

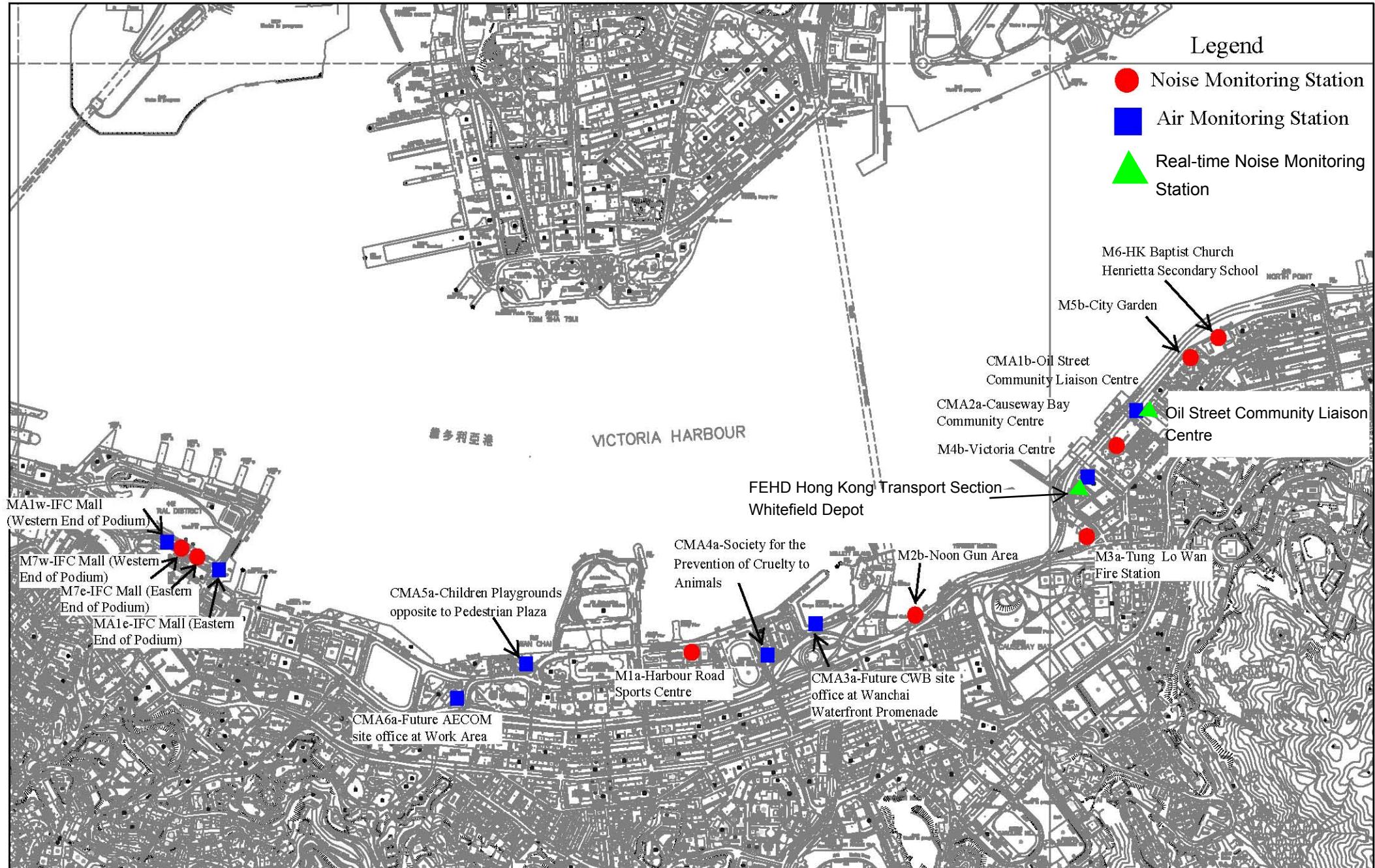


LEGEND:

WATER QUALITY MONITORING STATIONS

- C1 HONG KONG CONVENTION AND EXHIBITION CENTRE EXTENSION
- C2 TELECOM HOUSE/HK ACADEMY FOR PERFORMING/ SHUI ON CENTRE
- C3 HONG KONG CONVENTION AND EXHIBITION CENTRE PHASE I
- C4 WAN CHAI TOWER AND GREAT EAGLE CENTRE
- C5 SUN HUNG KAI CENTRE
- C6 PROPOSED EXHIBITION STATION / WORLD TRADE CENTRE
- C7 WINDSOR HOUSE
- C8 CITY GARDEN
- C9 PROVIDENT CENTRE
- RC1 PROPOSED HKAPA EXTENSION
- RC5 SUN HUNG KAI CENTRE (REPROVISION)
- RC7 WINDSOR HOUSE (TEMPORARY REPROVISION)
- WSD21 WAN CHAI
- RW1 WAN CHAI (REPROVISION)





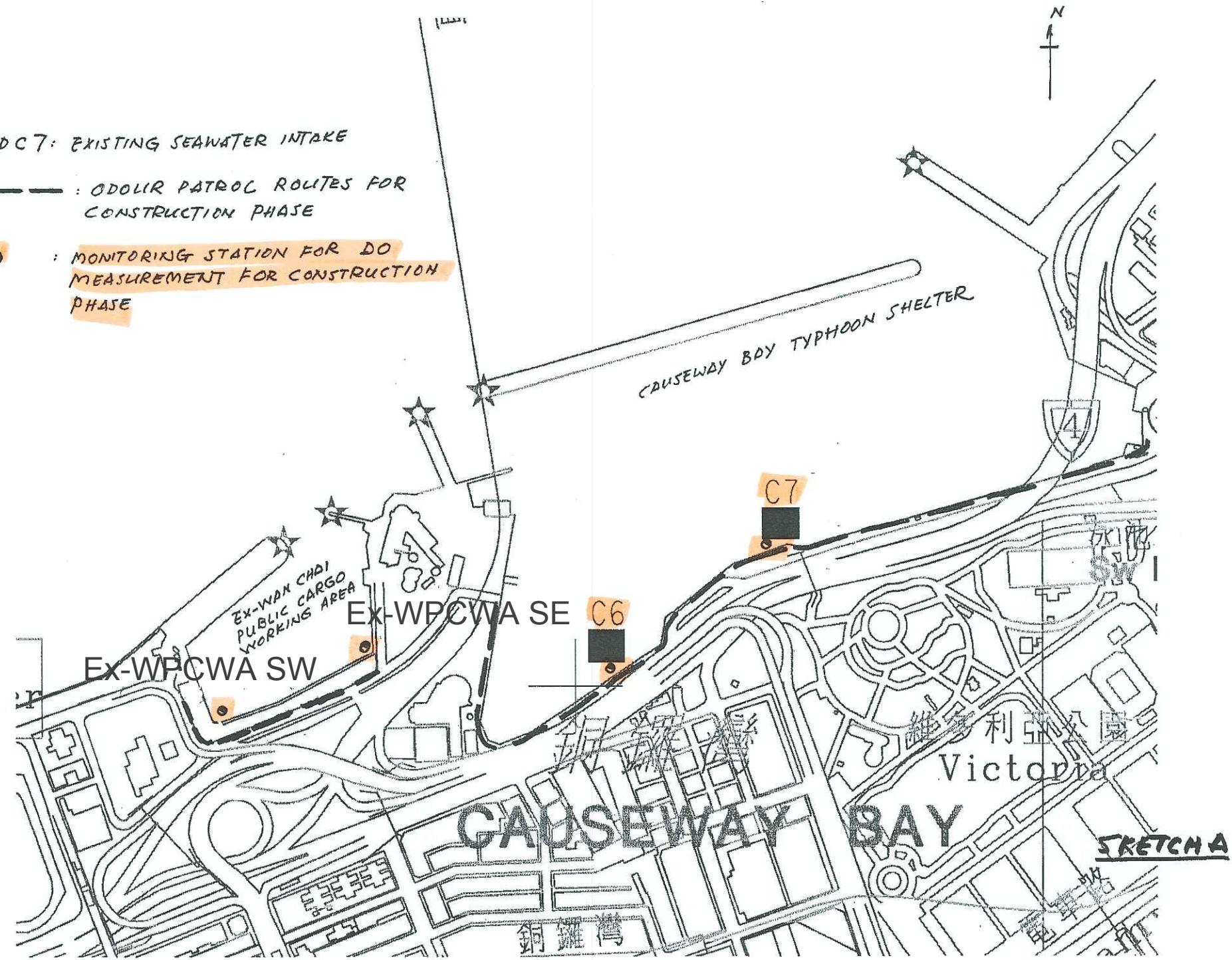
lam

Location plan of Environmental Monitoring Stations

C6 AND C7: EXISTING SEAWATER INTAKE

— — — : ODOUR PATROL ROUTES FOR CONSTRUCTION PHASE

● : MONITORING STATION FOR DO MEASUREMENT FOR CONSTRUCTION PHASE



### **Appendix 2.1**

#### ***Environmental Mitigation Implementation Schedule***

Environmental Mitigation Implementation Schedule

**Implementation Schedule for Air Quality Control**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines				
				Des	C	O	Dec					
<b>Construction Phase</b>												
<i>For the Whole Project</i>												
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	<p>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.</p> <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		√							

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.5.6	For the dredging activities carried out in the vicinity of Police Officers' Club, the dredging operation will be restricted to only 1 small close grab dredger to minimise the odour impact during the dredging activity. The dredging rate should be reduced as much as practicable for the area in close proximity to the Police Officers' Club. The sediments contain highly contaminated mud which may be disposed with the use of geosynthetic containers (details shall refer to Section 6), grab dredger has to be used for filling up the geosynthetic containers on barges. The dredging rate for the removal of the sediments at the south-west corner of the typhoon shelter shall be slowed down or restricted to specific non-popular hours in weekdays when it is necessary during construction.	Corner of CBTS/implementation of harbour-front enhancement	CEDD <sup>1</sup>		√			EIAO-TM
S3.8.8	Carry out dredging at the corner of CBTS to remove the sediment and clean the slime attached on the CBTS shoreline seawall	Corner of CBTS & CBTS shoreline seawall/implementation of harbour-front enhancement	CEDD <sup>2</sup>		√			EIAO-TM
<b>Operation Phase</b>								
<i>For the Whole Project</i>								

<sup>1</sup> CEDD will identify an implementation agent.

<sup>2</sup> CEDD will identify an implementation agent.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.10.2	Monthly (from July to September) monitoring of odour impacts, for a period of 5 years, is proposed during the operational phase of the Project to ascertain the effectiveness of the Enhancement Package over time, and to monitor any ongoing odour impacts at the ASRs.	Planned ASRs (CBTS Breakwater)/First 5-year period of operation phase	CEDD <sup>1</sup>			√		EIAO-TM
<b>For DP1 – CWB (Within the Project Boundary)</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	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

## Appendix 2.1

**Table A13.2 Implementation Schedule for Noise Control**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines				
				Des	C	O	Dec					
<b>Construction Phase</b>												
<i>For the Whole Project</i>												

## Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S4.9.4	<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
<i>For DP1 – CWB (Within the Project Boundary)</i>								

## Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S4.8.3 – S4.8.5	<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> <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>	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
<i>For DP2 – WDII Major Roads (Road P2)</i>								
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks:	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
<i>For DP3 – Reclamation Works</i>								
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment for the following task:	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO

## Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
<b>For DP5 – Wan Chai East Sewage Outfall</b>								
S4.8.3 – S4.8.4	<p>Use of quiet powered mechanical equipment for the following tasks:</p> <ul style="list-style-type: none"> <li>Submarine pipelines (marine section)</li> </ul> <p>Use of quiet powered mechanical equipment and movable noise barrier for the following tasks:</p> <ul style="list-style-type: none"> <li>Installation of a new pipeline (land section)</li> </ul>	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
<b>For DP6 – Cross-Harbour Water Mains from Wan Chai to Tsim Sha Tsui</b>								
S4.8.3 – S4.8.4	<p>Use of quiet powered mechanical equipment for the following tasks:</p> <ul style="list-style-type: none"> <li>Submarine pipelines (marine section)</li> <li></li> </ul>	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines				
				Des	C	O	Dec					
<b>Operation Phase</b>												
<b>For DP1 – CWB (Within the Project Boundary)</b>												

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S4.8.14 – S4.8.18	<ul style="list-style-type: none"> <li>For Existing NSRs</li> <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 3m cantilever inclined at 45° with transparent panel on the eastbound slip road to the IEC</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> <p>For Future/Planned NSRs</p> <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> </ul>	<p>Near North Point / Before commencement of operation of road project</p> <p>In between the Electric Centre (next to City Garden) and CDA(1) site / Before occupation of Planned NSRs in CDA and CDA(1) sites.</p>	HyD	√	√	√		EIAO-TM

Appendix 2.1

EIA 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>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>	Near Causeway Bay Fire Station / During detailed design of the re-provisioned Tin Hau Temple	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.

Appendix 2.1

**Table A13.3 Implementation Schedule for Water Quality Control**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines				
				Des	C	O	Dec					
<b>Construction Phase</b>												
<i>For DP3 – Reclamation Works, DP5 (Wan Chai East Sewage Outfall), DP6 (Cross-Harbour Water Mains from Wan Chai to Tsim Sha Tsui), DP1 – CWB (within the Project Boundary)</i>												
S5.8	A phased reclamation approach is planned for the WDII. Containment of fill within each of the reclamation phases by seawalls is proposed, with the seawall constructed first (above high water mark) with filling carried out behind the completed seawalls. Any gaps that may need to be provided for marine access will be shielded by silt curtains to control sediment plume dispersion away from the site. Filling for seawall construction should be carried out behind the silt curtain	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO				
S5.8	Dredging shall be carried out by closed grab dredger for the following works: <ul style="list-style-type: none"> <li>• Seawall construction in all the reclamation areas;</li> <li>• Construction of the CWB Tunnel</li> <li>• Construction of the proposed WSD water mains; and</li> <li>• Construction of the proposed Wan Chai East sewage outfall pipelines.</li> </ul>	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO				
S5.8, Figure 5.3	Dredging for the Wan Chai East sewage outfall pipelines shall not be carried out concurrently with the following activities: <ul style="list-style-type: none"> <li>• Dredging along the proposed cross-harbour water mains;</li> <li>• Dredging along the seawall in the Wan Chai Reclamation (WCR) zone (area between HKCEC Extension and PCWA).</li> </ul>	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO				

**Appendix 2.1**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines																										
				Des	C	O	Dec																											
<b>Construction Phase</b>																																		
<i>For DP3 – Reclamation Works, DP5 (Wan Chai East Sewage Outfall), DP6 (Cross-Harbour Water Mains from Wan Chai to Tsim Sha Tsui), DP1 – CWB (within the Project Boundary)</i>																																		
S5.8	The water body behind the temporary reclamations within the Causeway Bay typhoon shelter shall not be fully enclosed.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO																										
S5.8	As a mitigation measure, to avoid the accumulation of water borne pollutants within the temporary embayment between CRIII and HKCEC1, an impermeable barrier, suspended from a floating boom on the water surface and extending down to the seabed, will be erected by the contractor before the HKCEC1 commences. The barrier will channel the stormwater discharge flows from Culvert L to the outside of the embayment. The contractor will maintain this barrier until the reclamation works in HKCEC2W are carried out and the new Culvert L extension is constructed.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO																										
S5.8, Figure 5.3	The total dredging rates in each of the marine works zones shall not be more than the maximum production rates stated in the table below. These are the production rates without considering the effect of silt curtain.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO																										
<table border="1"> <thead> <tr> <th rowspan="2">Reclamation Area</th> <th colspan="2">Maximum Dredging Rate</th> <th rowspan="2">Maximum Dredging Rate (m<sup>3</sup> per week)</th> </tr> <tr> <th>m<sup>3</sup> per day</th> <th>m<sup>3</sup> per hour (for 16 hrs per day)</th> </tr> </thead> <tbody> <tr> <td><b>Dredging along seawall or breakwater</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>North Point Shoreline Zone (NPR)</td> <td>6,000</td> <td>375</td> <td>42,000</td> </tr> <tr> <td>Causeway Bay</td> <td>1,500</td> <td>94</td> <td>10,500</td> </tr> <tr> <td>Shoreline Zone</td> <td>6,000</td> <td>375</td> <td>42,000</td> </tr> <tr> <td>PCWA Zone</td> <td>5,000</td> <td>313</td> <td>35,000</td> </tr> </tbody> </table>									Reclamation Area	Maximum Dredging Rate		Maximum Dredging Rate (m <sup>3</sup> per week)	m <sup>3</sup> per day	m <sup>3</sup> per hour (for 16 hrs per day)	<b>Dredging along seawall or breakwater</b>				North Point Shoreline Zone (NPR)	6,000	375	42,000	Causeway Bay	1,500	94	10,500	Shoreline Zone	6,000	375	42,000	PCWA Zone	5,000	313	35,000
Reclamation Area	Maximum Dredging Rate		Maximum Dredging Rate (m <sup>3</sup> per week)																															
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**Appendix 2.1**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines																						
				Des	C	O	Dec																							
	<table border="1"> <tr><td>Wan Chai Shoreline Zone (WCR)</td><td>6,000</td><td>375</td><td>42,000</td></tr> <tr><td>HKCEC Shoreline Zone (HKCEC)</td><td>HKCEC Stage 1 &amp; 3</td><td>1,500</td><td>94</td><td>10,500</td></tr> <tr><td></td><td>HKCEC Stage 2 (HKCEC)</td><td>6,000</td><td>375</td><td>42,000</td></tr> <tr><td>Cross Harbour Water Mains</td><td></td><td>1,500</td><td>94</td><td>10,500</td></tr> <tr><td>Wan Chai East Submarine Sewage Pipeline</td><td></td><td>1,500</td><td>94</td><td>10,500</td></tr> </table> <p>Note: 1,500 m<sup>3</sup> per day shall be applied for construction of the western seawall of WCR1.</p>	Wan Chai Shoreline Zone (WCR)	6,000	375	42,000	HKCEC Shoreline Zone (HKCEC)	HKCEC Stage 1 & 3	1,500	94	10,500		HKCEC Stage 2 (HKCEC)	6,000	375	42,000	Cross Harbour Water Mains		1,500	94	10,500	Wan Chai East Submarine Sewage Pipeline		1,500	94	10,500					
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S5.8, Figure 5.3	Dredging along the seawall at WCR1 shall be undertaken initially at 1,500m <sup>3</sup> per day for construction of the western seawall (which is in close proximity of the WSD intake), followed by partial seawall construction at the western seawall (above high water mark) to protect the adjacent intakes as much as possible from further dredging activities.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO																						
S5.8, Figure 5.3	For dredging within the Causeway Bay typhoon shelter, seawall shall be partially constructed to protect the nearby seawater intakes from further dredging activities. For example, at TCBR1W, the southern and eastern seawalls shall be constructed first (above high water mark) so that the seawater intakes at the inner water would be protected from the impacts from the remaining dredging activities along the northern boundary.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO																						
S5.8, Figure 5.3	Silt curtains shall be deployed around the closed grab dredgers during seawall dredging and seawall trench filling in the areas of HKCEC, WCR, TCBR and NP.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO																						
S5.8, Figure 5.3	Silt screens shall be applied to seawater intakes at interim construction stages as stated below:	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO																						
	<table border="1"> <tr><th>Interim Construction Stage</th><th>Location of Applications</th></tr> <tr><td>Scenario 2A in early 2009 with concurrent dredging activities at HKCEC, WCR, TPCWA,</td><td>WSD saltwater intakes at Sai Wan Ho, Quarry Bay, Sheung Wan, Wan Chai, Kowloon South</td></tr> <tr><td></td><td>Cooling water intakes for Hong Kong Convention and Exhibition Centre Extension, Hong Kong</td></tr> </table>			Interim Construction Stage	Location of Applications	Scenario 2A in early 2009 with concurrent dredging activities at HKCEC, WCR, TPCWA,	WSD saltwater intakes at Sai Wan Ho, Quarry Bay, Sheung Wan, Wan Chai, Kowloon South		Cooling water intakes for Hong Kong Convention and Exhibition Centre Extension, Hong Kong																					
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				Des	C	O	Dec							
	<table border="1"> <tr><td>TBW, NP and Water Mains Zone</td><td>Convention and Exhibition Centre Phase I, Telecom House / HK Academy for Performing Arts / Shun On Centre, Wan Chai Tower / Revenue Tower / Immigration Tower and Sun Hung Kai Centre</td></tr> <tr><td>Scenario 2B in late 2009/2010 with concurrent dredging activities at Sewage Pipelines Zone and TCBR.</td><td>WSD saltwater intakes at Sheung Wan, Wan Chai Cooling water intakes for Queensway Government Offices, Excelsior Hotel, World Trade Centre and Windsor House.</td></tr> <tr><td>Scenario 2C in 2011 with concurrent dredging activities at HKCEC and TCBR.</td><td>WSD saltwater intakes at Sheung Wan and Reprovisioned WSD Wan Chai saltwater intake. Cooling water intakes for MTR South, Excelsior Hotel &amp; World Trade Centre and reprovisioned Windsor House.</td></tr> </table>	TBW, NP and Water Mains Zone	Convention and Exhibition Centre Phase I, Telecom House / HK Academy for Performing Arts / Shun On Centre, Wan Chai Tower / Revenue Tower / Immigration Tower and Sun Hung Kai Centre	Scenario 2B in late 2009/2010 with concurrent dredging activities at Sewage Pipelines Zone and TCBR.	WSD saltwater intakes at Sheung Wan, Wan Chai Cooling water intakes for Queensway Government Offices, Excelsior Hotel, World Trade Centre and Windsor House.	Scenario 2C in 2011 with concurrent dredging activities at HKCEC and TCBR.	WSD saltwater intakes at Sheung Wan and Reprovisioned WSD Wan Chai saltwater intake. Cooling water intakes for MTR South, Excelsior Hotel & World Trade Centre and reprovisioned Windsor House.							
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S5.8	Other mitigation measures include: <ul style="list-style-type: none"> <li>mechanical grabs, if used, shall be designed and maintained to avoid spillage and sealed tightly while being lifted. For dredging of any contaminated mud, closed watertight grabs must be used;</li> <li>all vessels shall be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;</li> <li>all hopper barges and dredgers shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>construction activities shall not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds;</li> <li>loading of barges and hoppers shall be controlled to prevent splashing of dredged material into the surrounding water. Barges or hoppers shall not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation; and</li> </ul>	Work site / During the construction period	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)						

Appendix 2.1

EIA 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>before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain.</li> </ul>							
S5.8	<p>Silt screens are recommended to be deployed at the seawater intakes during the reclamation works period. Installation of silt screens at the seawater intake points may cause a potential for accumulation and trapping of pollutants, floating debris and refuse behind the silt screens and may lead to potential water quality deterioration at the seawater intake points. Major sources of pollutants and floating refuse include the runoff and storm water discharges from the nearby coastal areas. As a mitigation measure to avoid the pollutant and refuse entrapment problems and to ensure that the impact monitoring results are representative, regular maintenance of the silt screens and refuse collection shall be performed at the monitoring stations at regular intervals on a daily basis. The Contractor shall be responsible for keeping the water behind the silt screen free from floating rubbish and debris during the impact monitoring period.</p>	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S5.8	<p>Dredging of contaminated mud is recommended as a mitigation measures for control of operational odour impact from the Causeway Bay typhoon shelter. In recognition of the potential impacts caused by dredging activities close to the seawater intakes, only 1 small close grab dredger shall be operated within the typhoon shelter (for the dredging to mitigate odour impact) at any time to minimize the potential impact. Double silt curtains shall be deployed to fully enclose the closed grab dredger during the dredging operation. In addition, an impermeable barrier, suspended from a floating boom on the water surface and extended down to the seabed, shall be erected to isolate the adjacent intakes as much as possible from dredging activities. For example, if dredging is to be carried out at the southwest corner of the typhoon shelter, physical barriers shall be erected to west of the cooling water intake for Excelsior Hotel so that the intake would be shielded from most of the SS generated from the dredging operation to the west of the intake. For area in close proximity of the cooling water intake point, the dredging rate shall be reduced as much as practicable. Site audit and water quality monitoring shall be carried out at the seawater intakes during the dredging operations. Daily monitoring of SS at the cooling water intake shall be carried out, and 24 hour monitoring of turbidity at the intakes shall be implemented during the dredging activities. If the monitoring results indicate that the dredging operation has caused significant changes in water quality conditions at the seawater intakes, appropriate actions shall be taken to stop the dredging and mitigation measures such as slowing down the dredging rate shall be implemented.</p>	Causeway Bay typhoon shelter/Implementation of harbour-front enhancement.	CEDD <sup>3</sup>		√			WPCO

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
<b>For the Whole Project</b>								
S5.8	<ul style="list-style-type: none"> <li>Construction Runoff and Drainage</li> <li>use of sediment traps, wheel washing facilities for vehicles leaving the site, and adequate maintenance of drainage systems to prevent flooding and overflow;</li> <li>Permanent drainage channels shall incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94;</li> <li>a sediment tank constructed from pre-formed individual cells of approximately 6 - 8 m<sup>3</sup> capacity can be used for settling ground water prior to disposal;</li> <li>oil interceptors shall be provided in the drainage system for the tunnels and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor shall have a bypass to prevent flushing during periods of heavy rain;</li> <li>precautions and actions to be taken when a rainstorm is imminent or forecast, and during or after rainstorms. Particular attention shall be paid to the control of any silty surface runoff during storm events;</li> <li>on-site drainage system shall be installed prior to the commencement of other construction activities. Sediment traps shall be installed in order to minimise the sediment loading of the effluent prior to discharge;</li> <li>All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge shall be adequately designed for the controlled release of storm flows. All sediment control measures shall be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage shall be reinstated to its original condition when the construction work is finished or the temporary diversion is no longer</li> </ul>	<ul style="list-style-type: none"> <li>Work site / During the construction period</li> </ul>	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)

<sup>3</sup> CEDD will identify an implementation agent.

## Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	required.							
	<ul style="list-style-type: none"> <li>All fuel tanks and store areas shall be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity.</li> </ul>							
	<ul style="list-style-type: none"> <li>Minimum distances of 100 m shall be maintained between the storm water discharges and the existing or planned WSD flushing water intakes during construction phase.</li> </ul>							
S5.8	<i>Sewage from Construction Work Force</i>							
S5.8	Construction work force sewage discharges on site shall be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage shall be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Work site / During the construction period	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)
S5.8	<i>Floating Debris and Refuse</i>							
S5.8	Collection and removal of floating refuse shall be performed at regular intervals on a daily basis. The contractor shall be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Work site and adjacent water / During the construction period	Contractor		√			WPCO

## Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S5.8	<p><i>Storm Water Discharges</i></p> <p>Minimum distances of 100 m shall be maintained between the existing or planned stormwater discharges and the existing or planned WSD flushing water intakes.</p>	Work site and adjacent water / During the design and construction period.	Contractor	✓	✓			WPCO
<b>Operation Phase</b>								
<b>DPI – CWB (within the Project Boundary)</b>								
S5.8	<p>For the operation of CWB, a surface water drainage system would be provided to collect road runoff. The following operation stage mitigation measures are recommended to ensure road runoff would comply with the TM under the WPCO:</p> <ul style="list-style-type: none"> <li>The drainage from tunnel sections shall be directed through petrol interceptors to remove oil and grease before being discharged to the nearby foul water manholes.</li> <li>Petrol interceptors shall be regularly cleaned and maintained in good working condition.</li> <li>Oily contents of the petrol interceptors shall be properly handled and disposed of, in compliance with the requirements of the Waste Disposal Ordinance.</li> <li>Sewage arising from ancillary facilities of CWB (for examples, car park,</li> </ul>	CWB/During design and operational period	HyD/TD <sup>3</sup>	✓		✓		WPCO

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>control room, ventilation and administration buildings and tunnel portals) shall be connected to public sewerage system. Sufficient capacity in public sewerage shall be made available to the proposed facilities.</p> <ul style="list-style-type: none"> <li>Road drainage shall also be provided with adequately designed silt trap to minimize discharge of silty runoff.</li> <li>The design of the operational stage mitigation measures for CWB shall take into account the guidelines published in ProPECC PN 5/93 "Drainage Plans subject to Comment by the EPD." All operational discharges from the CWB into drainage or sewerage systems are required to be licensed by EPD under the WPCO.</li> </ul>							

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

<sup>3</sup> if employ Management, Operation and Maintenance (MOM) Contract

Appendix 2.1

**Table A13.4 Implementation Schedule for Waste Management**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines				
				Des	C	O	Dec					
<b>Construction Phase</b>												
<i>For DP3 – Reclamation Works</i>												
S6.7.2	<b>Marine Sediments</b>  The dredged marine sediments would be loaded onto barges, transported to and disposed of at the designated disposal sites at South of Cheung Chau, East of Ninepin, East of Tung Lung Chau, South of Tsing Yi or East of Sha Chau to be allocated by the MFC depending on their level of contamination or at other disposal sites after consultation with the MFC and EPD. In accordance with the ETWB TCW No. 34/2002, the contaminated material must be dredged and transported with great care. The mitigation measures recommended in Section 5 of the EIA Report shall be incorporated. The dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the Type 2 confined marine disposal contaminated mud pit.	Work site / During the construction period	Contractor	✓				ETWB TCW No. 34/2002				
S6.7.3	Based on the biological screening results, the Category H ( $>10x$ LCEL) sediment which failed the biological testing would require Type 3 special disposal. The volume of Category H sediment from the Causeway Bay typhoon shelter which would require special disposal arrangements is estimated to be approximately 0.05 Mm <sup>3</sup> . A feasible containment method is proposed whereby the dredged sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal.											

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.7.5	It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, at least 3 months prior to the dredging contract being tendered							
S6.7.6	During transportation and disposal of the dredged marine sediments requiring Type 1 and Type 2 disposal, the following measures shall be taken to minimise potential impacts on water quality:							
	<ul style="list-style-type: none"> <li>Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.</li> </ul>							

Appendix 2.1

EIA 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>Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.</li> <li>Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.</li> </ul>							
S6.6.12	<b>Floating Refuse</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 13.3.	Work site / During the construction period	Contractor		√			
<b><u>For the Whole Project</u></b>								

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.7.7	<b>Good Site Practices</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)

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.7.8	<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	√	√			

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.7.10	<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)
S6.7.11	<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 CWTW 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>
S6.7.12	<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

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.7.13	In order to monitor the disposal of public fill and C&D waste at public filling 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
S6.7.14	<i>Bentonite Slurry</i>  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: <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

#### Appendix 2.1

**Table A13.5 Implementation Schedule for Land Contamination**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines				
				Des	C	O	Dec					
<b>Construction Phase</b>												
<i>For the Whole Project</i>												
S.12.6	<ul style="list-style-type: none"><li>• The contaminated site shall be cleaned up before commencement of site clearance and construction work at the concerned area which may disturb the ground.</li></ul>	A King Marine / Before commencement of construction activities at A King Marine.	Project proponent for the re-provisioned Tin Hau Temple	√				<i>"Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops"</i> published by EPD, HKSAR  EPD ProPECC Note No. 3/94				
S7.10	During soil remediation works, the Contractor for the excavation works shall take note of the following points for excavation: <ul style="list-style-type: none"><li>• Excavation profiles must be properly designed and executed;</li><li>• In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means;</li><li>• Quantities of soil to be excavated must be estimated;</li><li>• It maybe necessary to split quantities of soil according to soil type, degree and nature of contamination.</li><li>• Temporary storage of soil at intermediate depot or on-site</li></ul>	A King Marine / During soil remediation works	Contractor	√				Air Pollution Control Ordinance  Noise Control Ordinance  Waste Disposal Ordinance  Waste Disposal (Chemical Waste) (General) Regulation				

#### Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	maybe required. The storage site shall include protection facilities for leaching into the ground. eg. Liner maybe required.							
	<ul style="list-style-type: none"> <li>Supply of suitable clean backfill materials is needed after excavation.</li> <li>Care must be taken of existing buildings and utilities.</li> <li>Precautions must be taken to control of ground settlement</li> <li>Speed controls for vehicles shall be imposed on dusty site areas.</li> <li>Vehicle wheel and body washing facilities at the site's exit points shall be established and used.</li> </ul> <p>The following environmental mitigation measures shall be strictly followed during the operation and/or maintenance of the CS/S facilities:</p>							Water Pollution Control Ordinance

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p><i>Air Quality Mitigation Measures</i></p> <ul style="list-style-type: none"> <li>The loading, unloading, handling, transfer or storage of cement shall be carried out in an enclosed system.</li> <li>The loading, unloading, handling, transfer or storage of other materials which may generate airborne dust emissions such as untreated soil and oversize materials sorted out from the screening plant and stabilized soil stockpiled in the designated handling area, shall be carried out in such a manner to prevent or minimise dust emissions. These materials shall be adequately wetted prior to and during the loading, unloading and handling operations.</li> <li>All practicable measures, including speed controls for vehicles, shall be taken to prevent or minimize the dust emission caused by vehicle movement.</li> <li>Tarpaulin or low permeable sheet shall be put on dusty vehicle loads transported between site locations.</li> </ul>							
	<p><i>Noise Mitigation Measures</i></p> <ul style="list-style-type: none"> <li>The mixing facilities shall be sited as far as practicable to the nearby noise sensitive receivers.</li> <li>Simultaneous operation of mixing facilities and other equipment shall be avoided.</li> <li>Mixing process and other associated material handling activities shall be properly scheduled to minimise potential cumulative noise impact on the nearby noise sensitive receivers.</li> <li>Construction Noise Permit shall be applied for the operation of powered mechanical equipment during restricted hours (if any).</li> </ul>							

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p><b>Water Quality Mitigation Measures</b></p> <ul style="list-style-type: none"> <li>Stockpile of untreated soil shall be covered as far as practicable to prevent the contaminated material from leaching out. The leachate shall be discharged following the requirements of WPCO.</li> </ul> <p><b>Waste Mitigation Measures</b></p> <ul style="list-style-type: none"> <li>Treated oversize materials will be used as filling material for backfilling within the site. Sorted materials of size smaller than 5 cm will be collected and transferred to the mixing plant for further decontamination treatment.</li> <li>Stabilized soils shall be broken into suitable size for backfilling or reuse on site.</li> <li>A high standard of housekeeping shall be maintained within the mixing plant area.</li> <li>If necessary, there shall be clear and separated areas for stockpiling of untreated and treated materials.</li> </ul>							

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

## Appendix 2.1

**Table A13.6 Implementation Schedule for Marine Ecology**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines				
				Des	C	O	Dec					
<b>Construction Phase</b>												
<b>For the Whole Project - Schedule 3 DP</b>												
S.9.7.2	Alternative design of the Trunk Road constructed in tunnel shall be adopted to avoid permanent reclamation in CBTS and ex-PWCA Basin.	-	CEDD/HyD	√				EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.				
<b>For DP3 – Reclamation Works</b>												
S.9.7.3	Translocation of those potentially affected coral colonies to the nearby suitable habitats such as Junk Bay is recommended. A detailed translocation plan (including translocation methodology, monitoring of transplanted corals, etc.) should be drafted and approval by AFCD during the detailed design stage of the Project.	Ex-PCWA Basin and along seawall next to a public pier which is about 250 m away from the CBTS	CEDD/HyD	√				EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.				

## Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S.9.7.4	<p>During dredging and filling operations, a number of mitigation measures to control water quality shall be adopted to confine sediment plume within reclamation area and protect marine fauna in proximity to the reclamation. The mitigation measures include the following:</p> <ul style="list-style-type: none"> <li>• Installation of silt curtains during dredging activities</li> <li>• Use of tightly-closed grab dredger</li> <li>• Reduction of dredging rate</li> <li>• Control of grab descending speed</li> <li>• Construction of leading edges of seawall in the early stages of the reclamation works</li> </ul>	Work site / during construction phase	Contractor		√			EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.
	• Adoption of multiple-phase construction schedule							

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S.9.7.6	<p>To minimize potential disturbance impacts on the foraging ardeid population in the CBTS, particularly in the area near the A King Shipyard, appropriate mitigation measures shall be adopted particularly during the construction phase. The following measures are recommended:</p> <ul style="list-style-type: none"> <li>• Use of Quiet Mechanical Plant during the construction phase shall be adopted wherever possible.</li> <li>• Adoption of multiple-phase construction schedule.</li> <li>• General measures to reduce noise generated during the construction phase (see noise impact assessment) shall be effectively implemented.</li> </ul>	Work site / during construction phase	Contractor		√			EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.
S.9.7.7	Seawalls shall be constructed in advance around the reclamation areas within the area of the CBTS to screen adjacent feeding ground from construction phase activities, reduce noise disturbance to the associated seabirds and also to restrict access to this habitat adjacent to works areas by ship traffic.	Work site / during construction phase	Contractor		√			EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.
S.9.7.8	Loss of artificial seawall habitats shall be reinstated by the construction of about 1 km vertical wave absorbing seawall along the coastlines of the new reclamation around the HKCEC and at North Point. The new seawalls are expected to provide large area of hard substrata for settlement and recruitment of intertidal fauna similar to those previously recorded from existing intertidal habitats.	Work site / during construction phase	Contractor		√			EIAO TM Annex 16 (Section 8.4) & EIAO Guidance Note No. 3/2002.

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

Appendix 2.1

**Table A13.7 Implementation Schedule for Landscape and Visual**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines				
				Des	C	O	Dec					
<b>Construction Phase</b>												
<i>For the Whole Project</i>												
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				
<i>For DP1 – CWB (Within the Project Boundary)</i>												
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				

**Appendix 2.1**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Table 10.5	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		√			EIAO TM
<i>For DP2 – WDII Major Roads (Road P2)</i>								
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
<i>For DP3 – Reclamation Works</i>								
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
<i>For DP5 – Wan Chai East Sewage Outfall</i>								
Refer to EIA-058/2001 Table 10.13	CM2 Minimisation of works areas.	Work site / During Construction Phase	Contractor		√			EIAO TM
Refer to EIA-058/2001 Table 10.13	CM3 Erection of decorative hoardings.	Work site / During Construction Phase	Contractor		√			EIAO TM

**Appendix 2.1**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Refer to EIA-058/2001 Table 10.13	CM4 Control night-time lighting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Refer to EIA-058/2001 Table 10.13	CM5 Minimisation of disruption to public by effective programming of the works.	Work site / During Construction Phase	Contractor		√			EIAO TM
<b>For DP6 – Cross-Harbour Water Mains from Wan Chai to Tsim Sha Tsui</b>								
Refer to EIA-058/2001 Table 10.13	CM2 Minimisation of works areas.	Work site / During Construction Phase	Contractor		√			EIAO TM
Refer to EIA-058/2001 Table 10.13	CM3 Erection of decorative hoardings.	Work site / During Construction Phase	Contractor		√			EIAO TM
Refer to EIA-058/2001 Table 10.13	CM4 Control night-time lighting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Refer to EIA-058/2001 Table 10.13	CM5 Minimisation of disruption to public by effective programming of the works.	Work site / During Construction Phase	Contractor		√			EIAO TM
<b>Operation Phase</b>								
<b>For the Whole Project - Schedule 3 DP</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	CEDD/HyD	√	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM2 Shrub and Climbing Plants to soften proposed structures.	Work site / During Design Stage and Operation Phases	CEDD/HyD	√	√	√		ETWB TCW 2/2004

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
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	CEDD/HyD/	√	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM4 Aesthetic design of proposed waterfront promenade.	Work site / During Design Stage and Operation Phases	CEDD <sup>4</sup>	√	√	√		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	CEDD/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	CEDD/HyD	√	√	√		ETWB TCW 2/2004
<b>For DP1 – CWB (Within the Project Boundary)</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	OM2 Shrub and Climbing Plants to soften proposed structures	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
<b>For DP2 – WDII Major Roads (Road P2)</b>								

<sup>4</sup> CEDD will identify an implementation agent

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
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	CEDD/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	CEDD/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	CEDD/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	CEDD/HyD		√	√		ETWB TCW 2/2004
<b>For DP3 – Reclamation Works</b>								
Table 10.6, Figure 10.5.1- 10.5.5	OM4 Aesthetic design of proposed waterfront promenade.	Work site / During Design Stage and Operation Phases	CEDD <sup>5</sup>	√	√	√		ETWB TCW 2/2004

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

<sup>5</sup> CEDD will identify an implementation agent

### ***Appendix 3.1***

#### ***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) <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
CMA1a <sup>Note 2</sup>	320.1	500	176.7	260
CMA2a	323.4	500	169.5	260
CMA3 <sup>Note 2</sup>	311.3	500	171.0	260
CMA4a	312.5	500	171.2	260
CMA5 <sup>Note 2</sup>	332.0	500	181.0	260
CMA6 <sup>Note 2</sup>	300.1	500	187.3	260
MA1b	325.1	500	173.4	260

*Note 2:*

- As per facing owner's rejection in allowing the implementation of long-term air quality impact monitoring at their premises, alternative monitoring stations and justification will be proposed for IEC verification and EPD approval.

#### *Action and Limit Level for Water Monitoring*

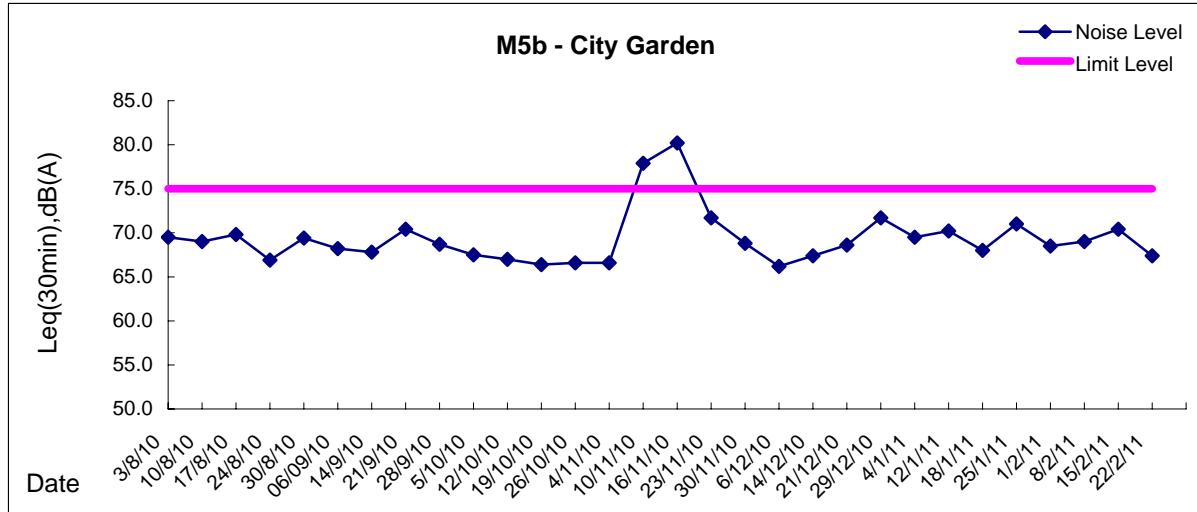
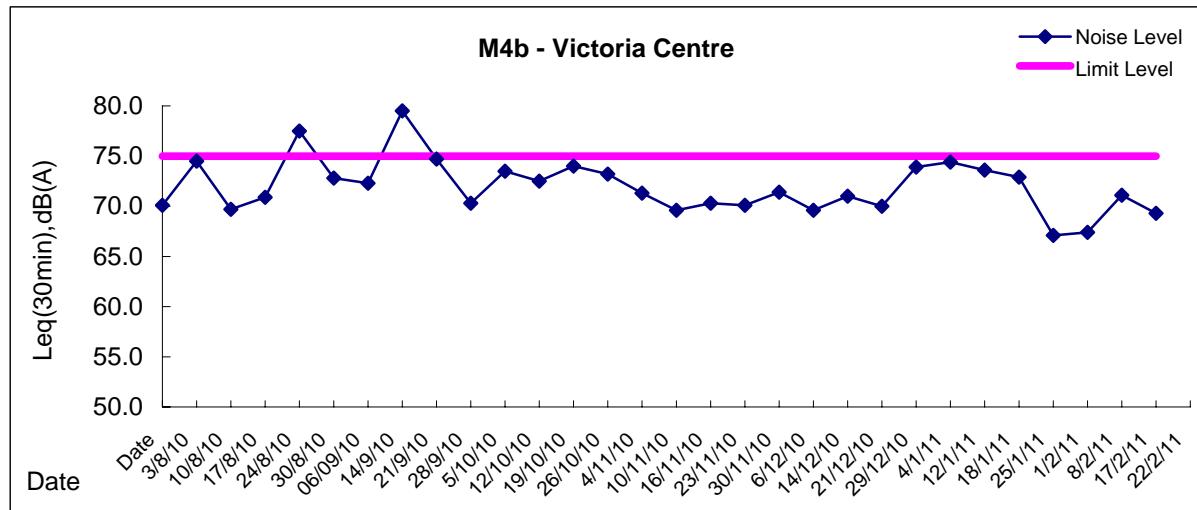
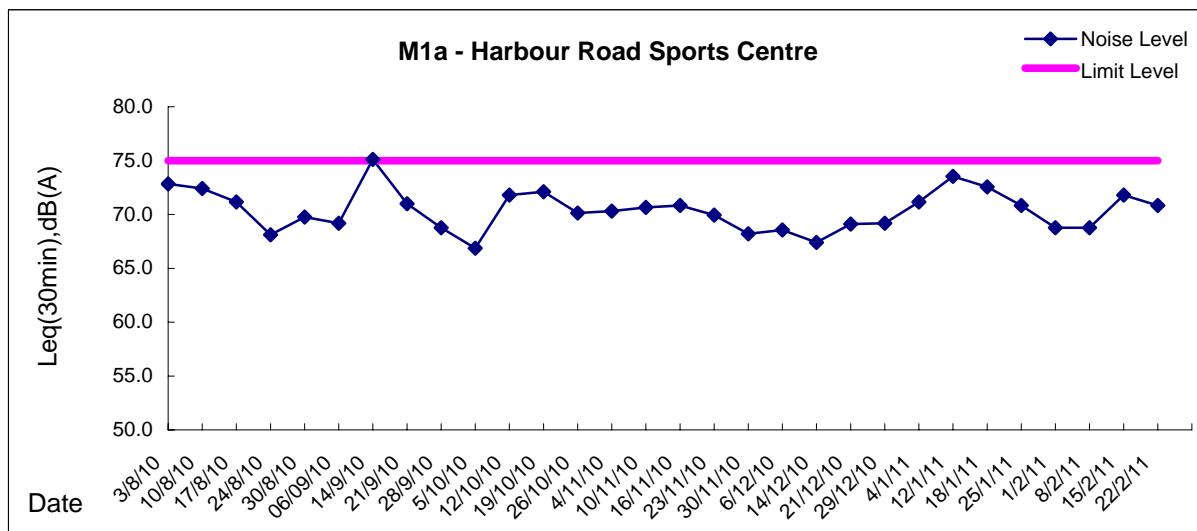
Parameter	Action Level	Limit Level
<b>WSD Salt Water Intakes</b>		
SS in mg/L	13.00	14.43
Turbidity in NTU	8.04	9.49
DO in mg/L	3.66	3.28
<b>Cooling Water Intakes</b>		
SS in mg/L	15.00	22.13
Turbidity in NTU	9.10	10.25
DO in mg/L	3.36	2.73

***Appendix 4.1***

***Noise Monitoring Graphical Presentations***

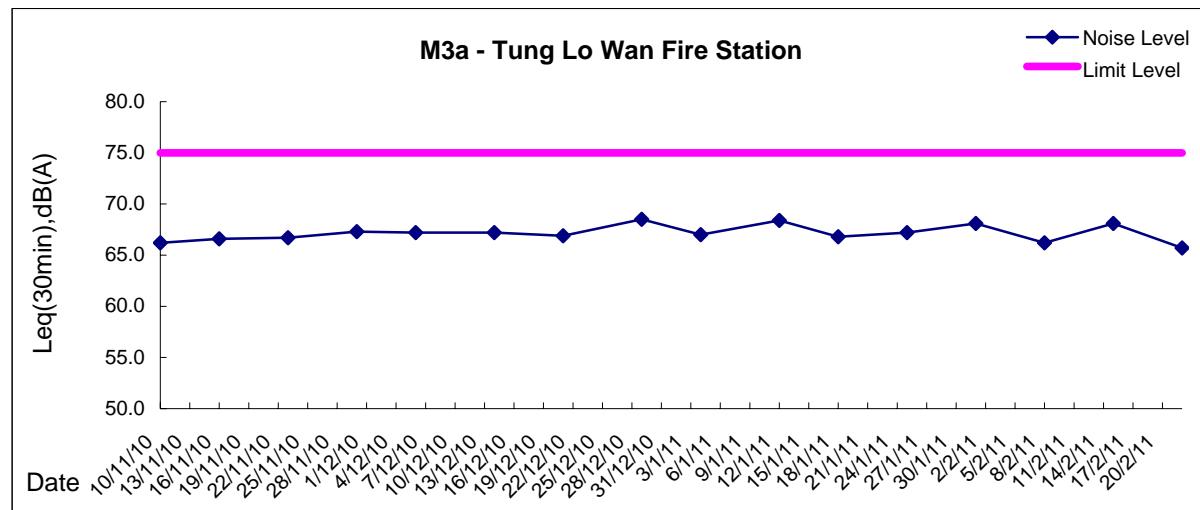
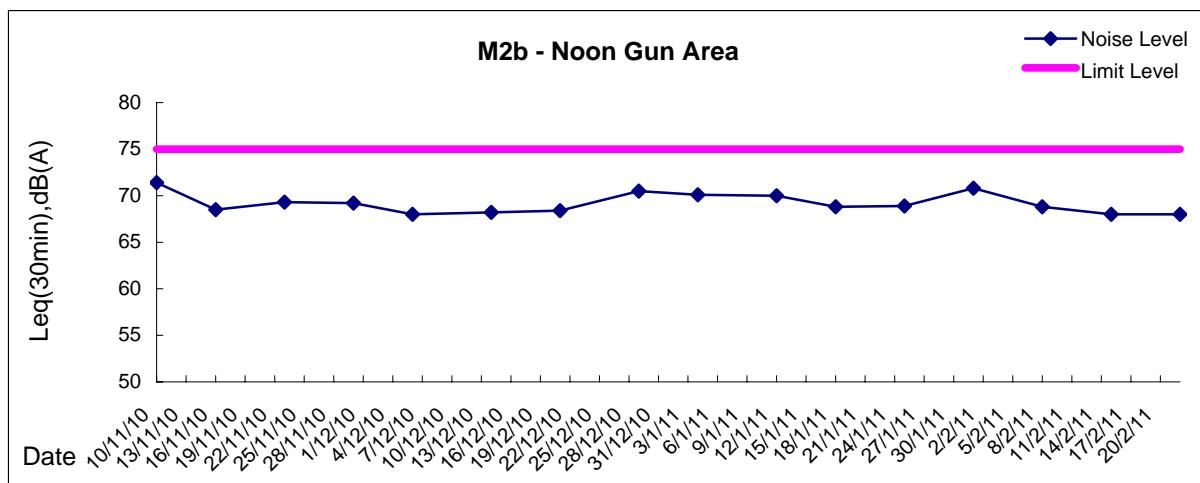
## Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)



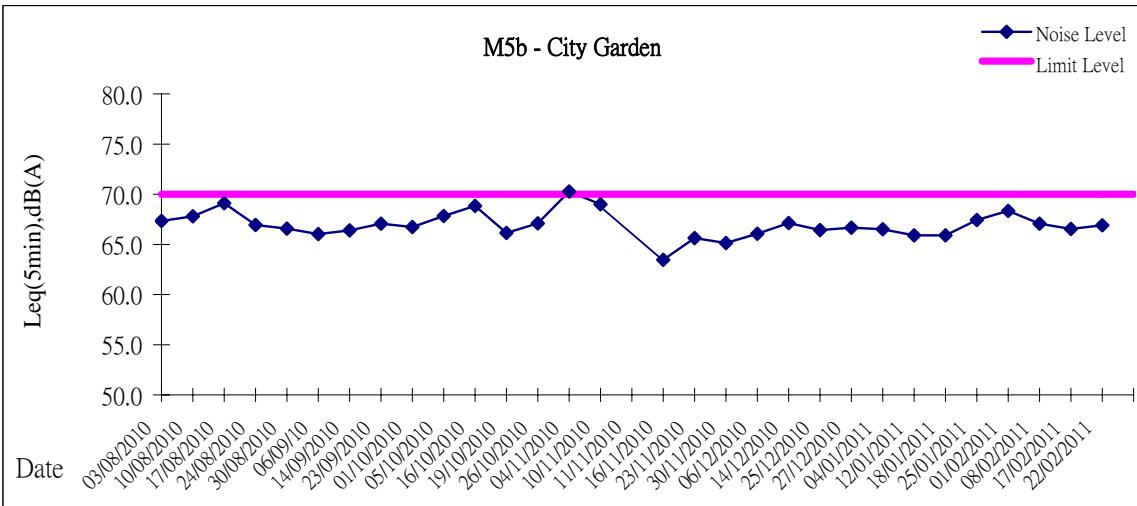
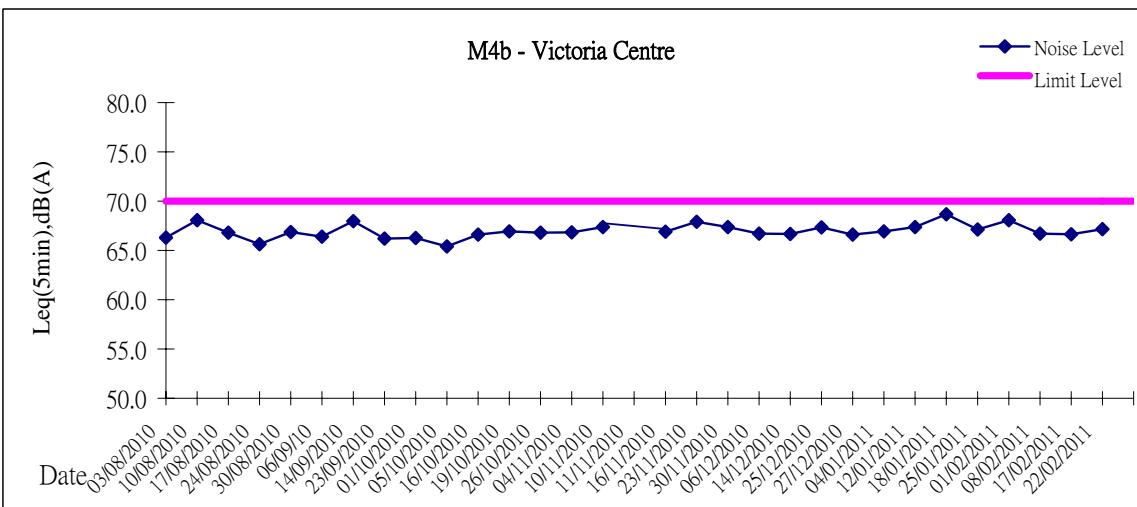
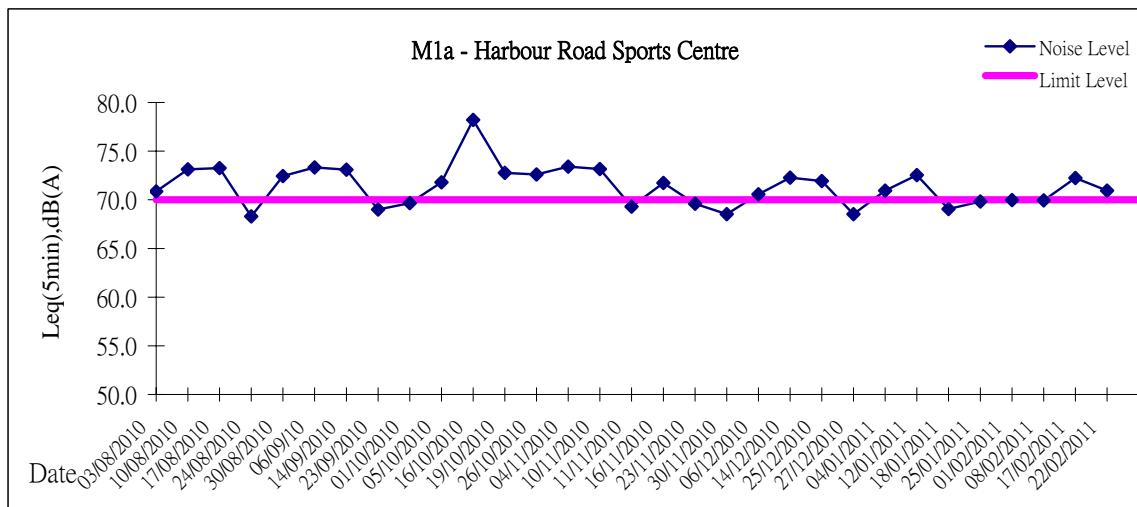
## Graphic Presentation of Noise Monitoring Result

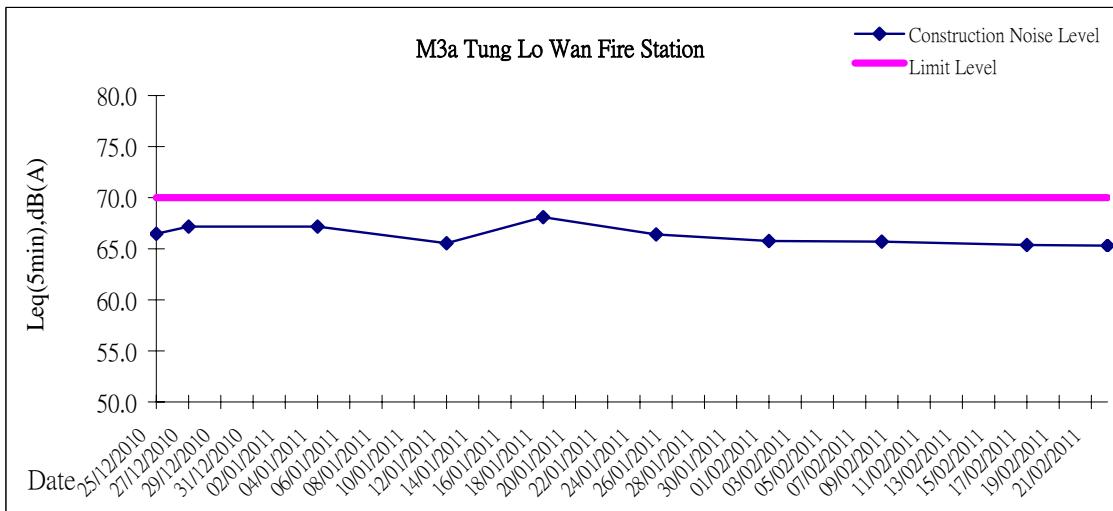
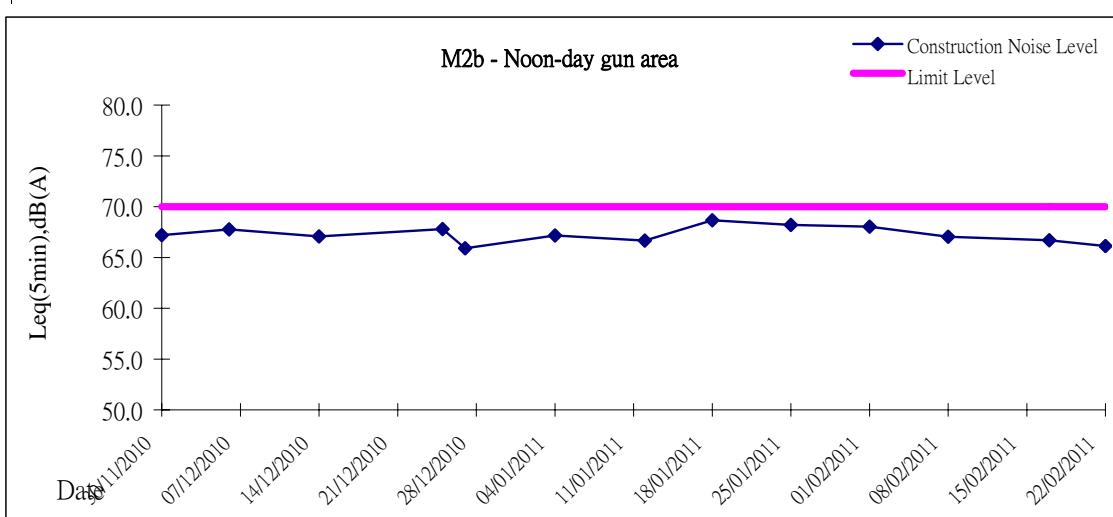
Day Time (0700 - 1900hrs on normal weekdays)



## Graphic Presentation of Noise Monitoring Result

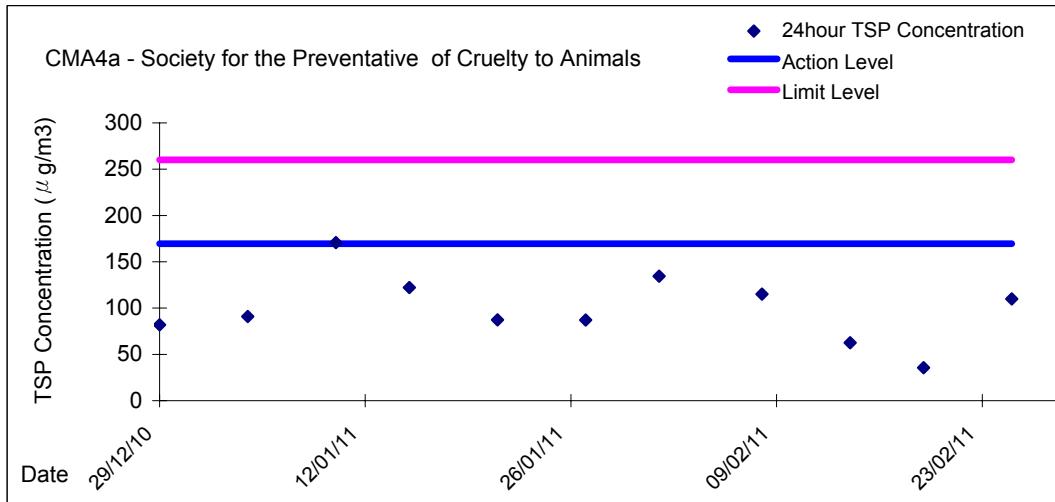
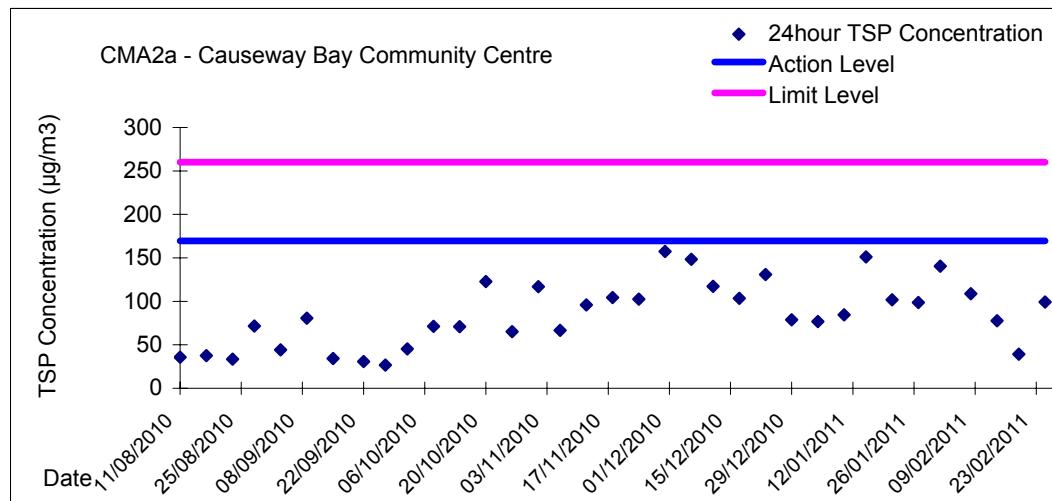
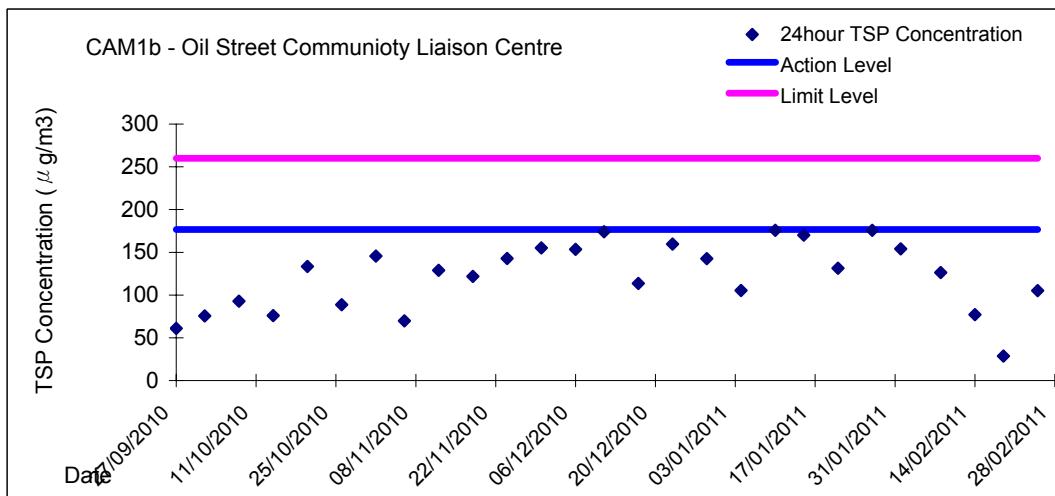
Restricted Time (1900 - 2300 hrs on normal weekdays and 0700-2300 on holiday)



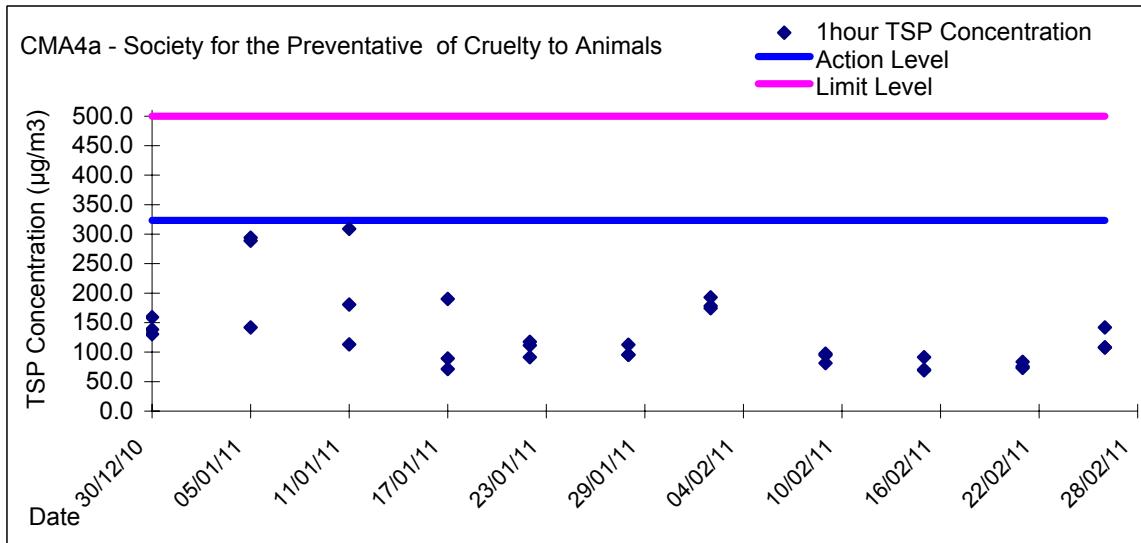
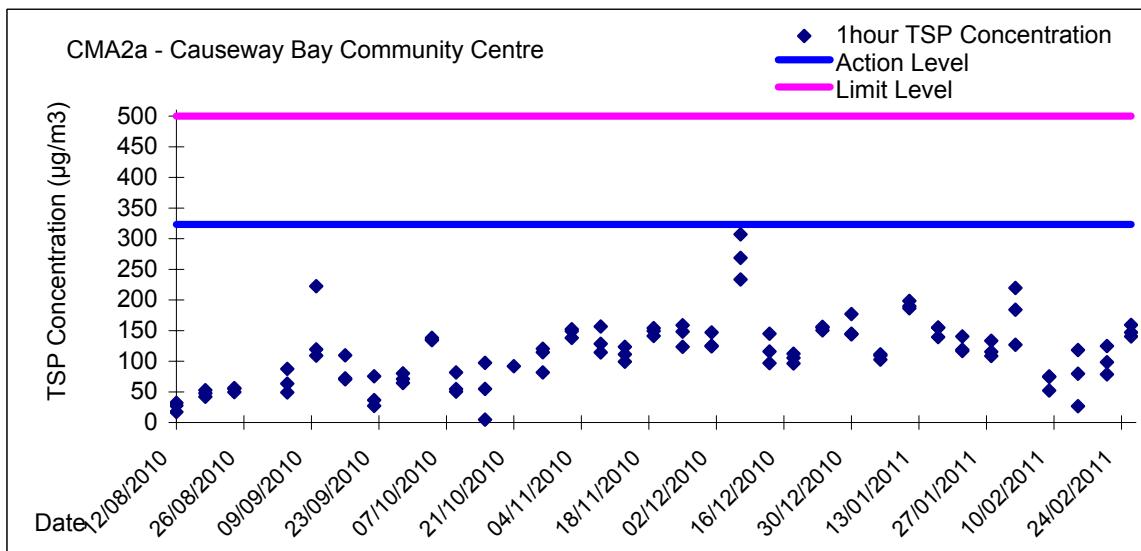
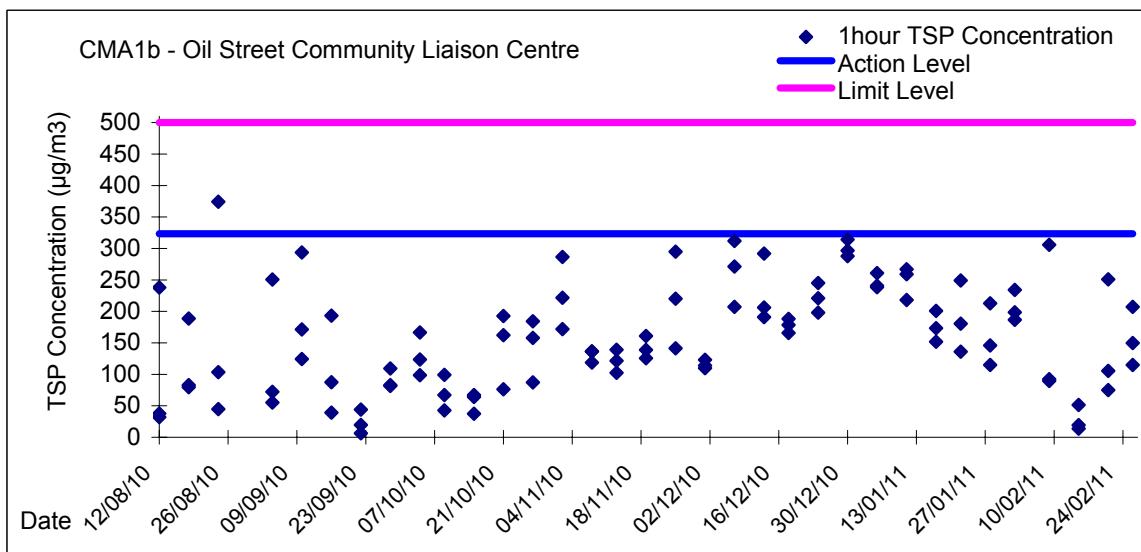
**Graphic Presentation of Noise Monitoring Result****Restricted Time (1900 - 2300 hrs on normal weekdays and 0700-2300 on holiday)**

**Appendix 4.2**  
***Air Quality Monitoring Graphical Presentations***

## Graphic Presentation of 24 hour TSP Result

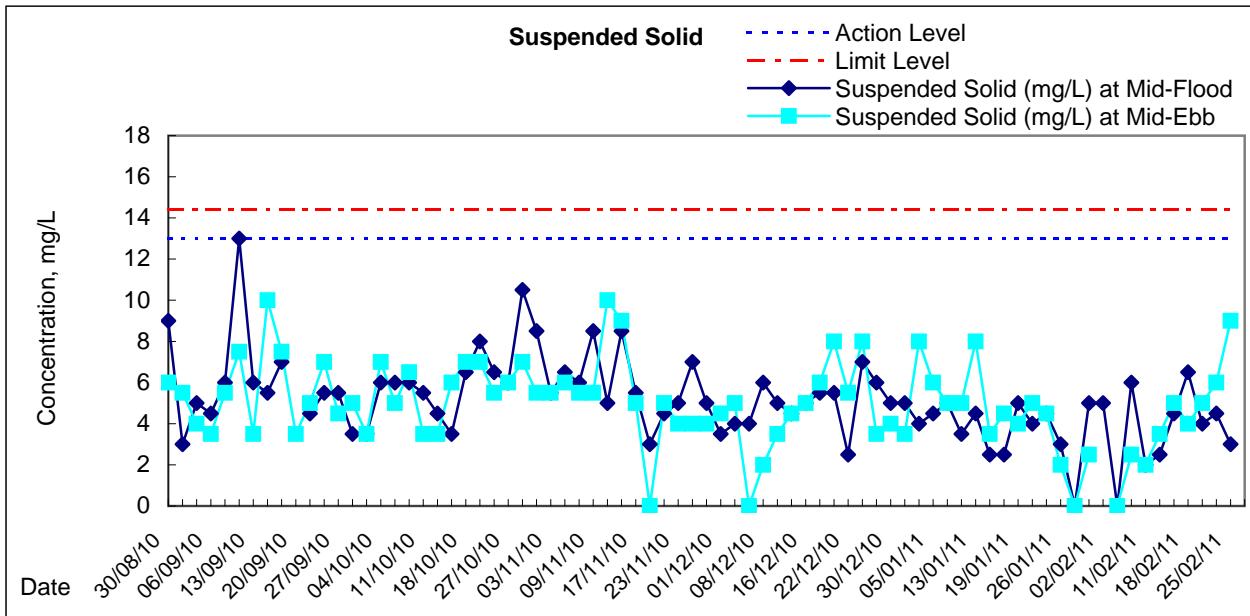
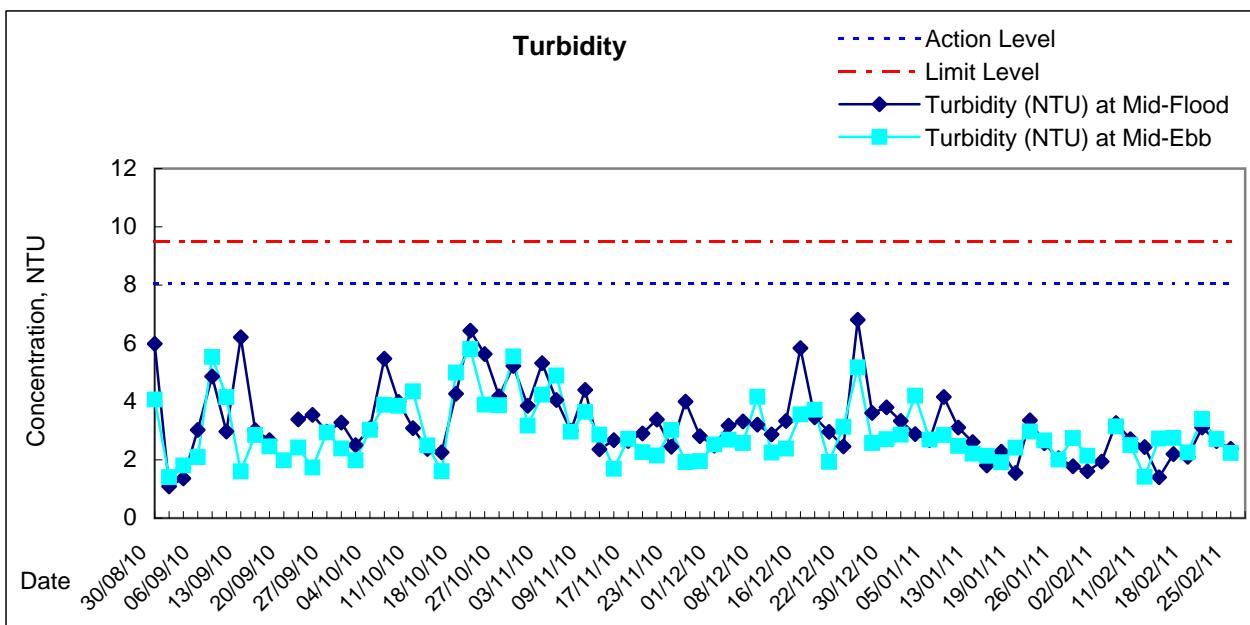
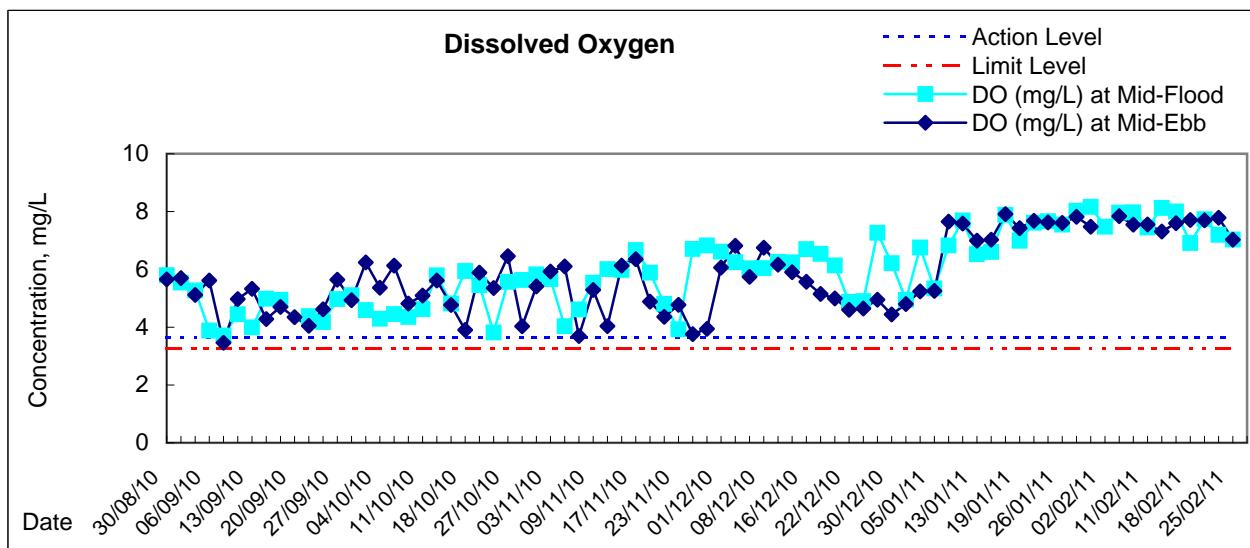


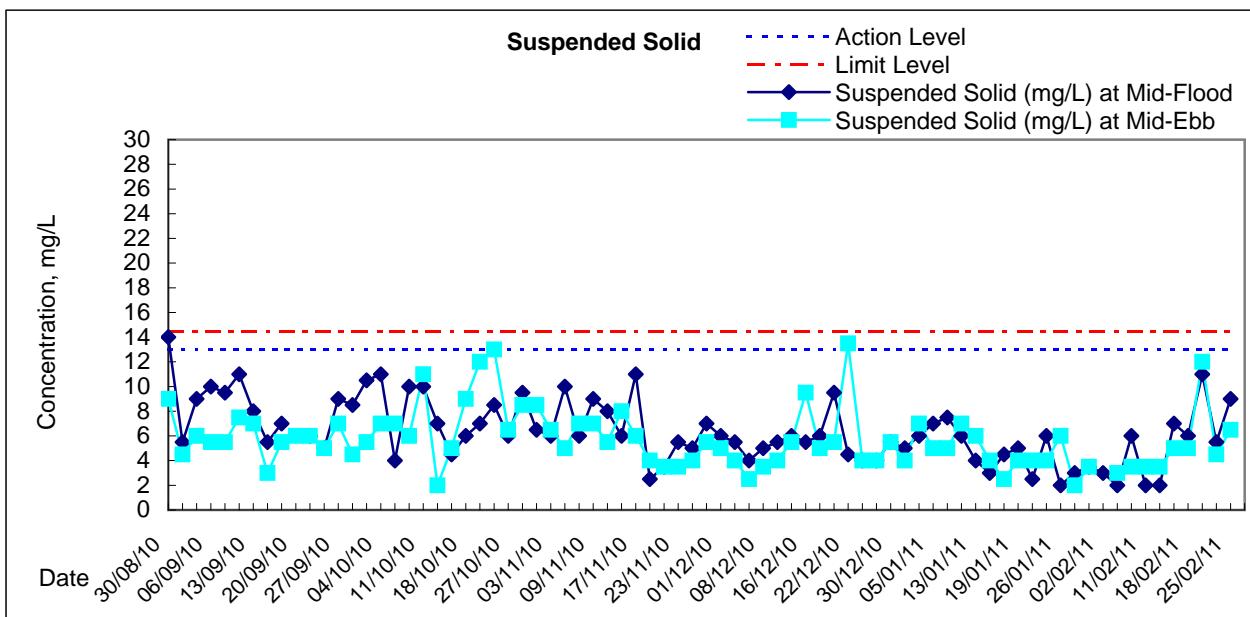
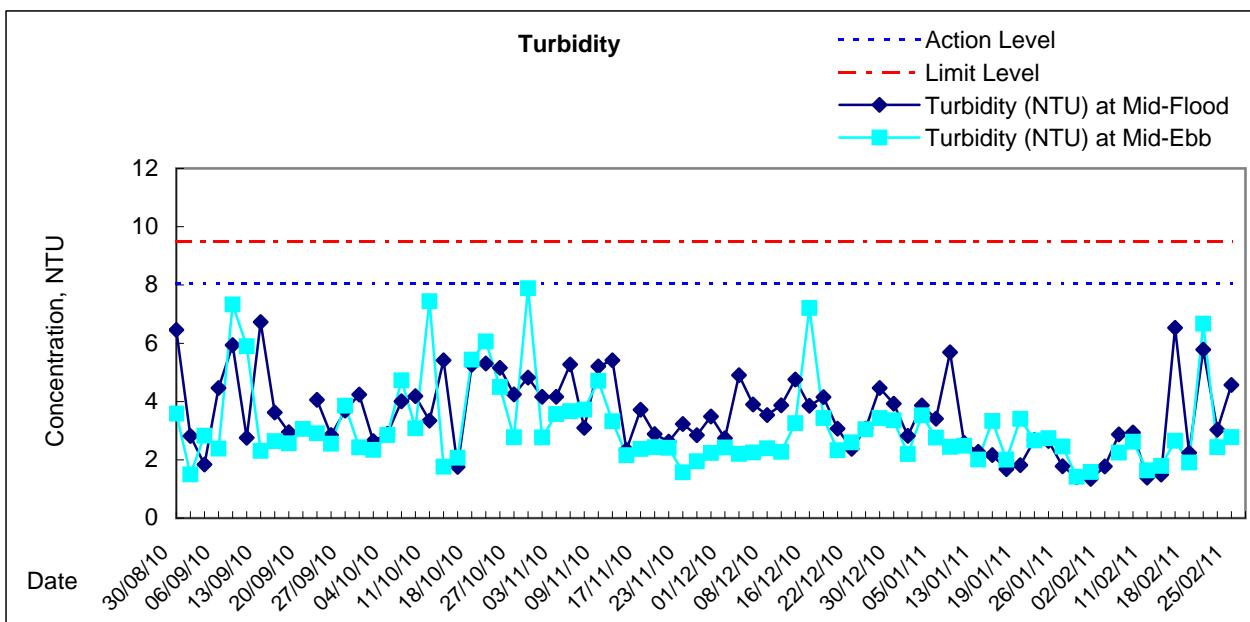
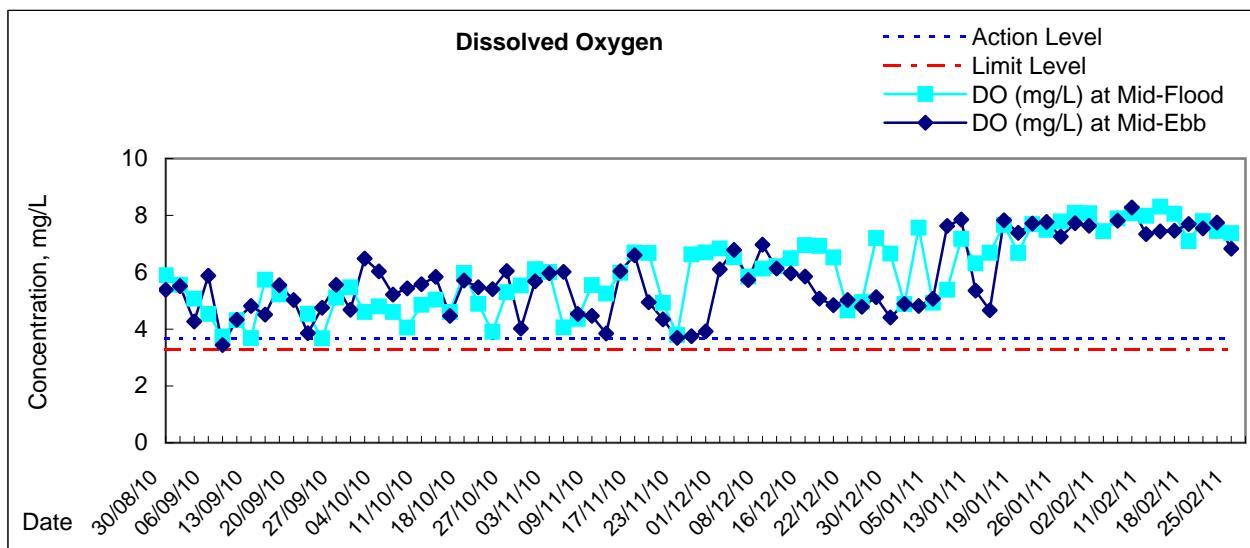
## Graphic Presentation of 1 hour TSP Result

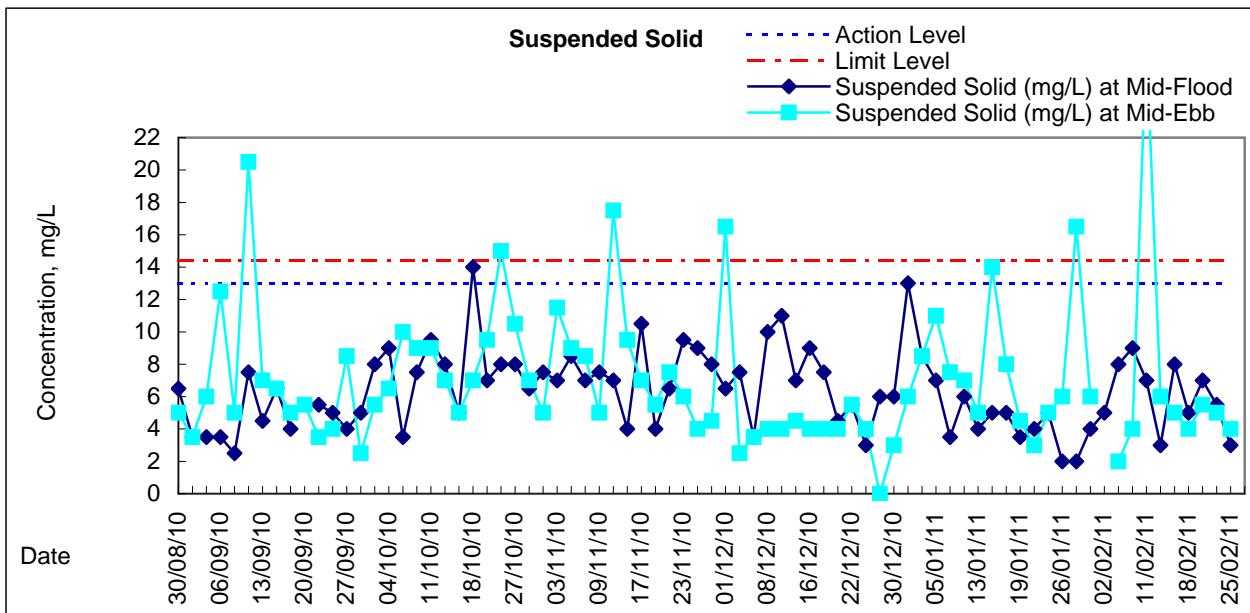
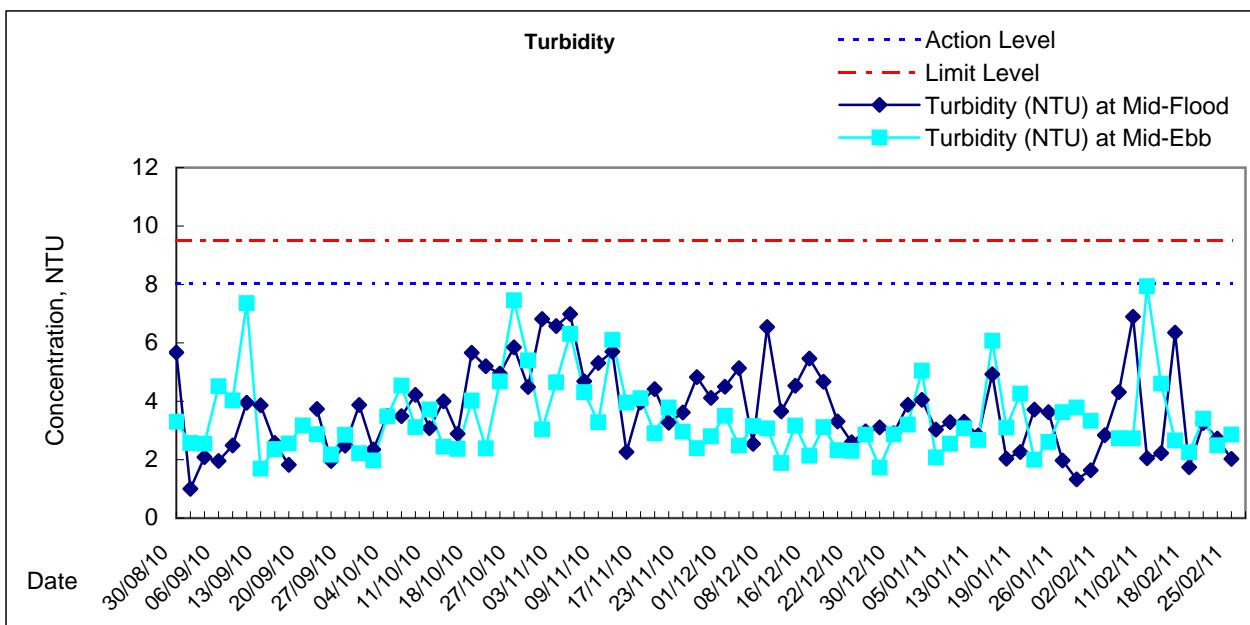
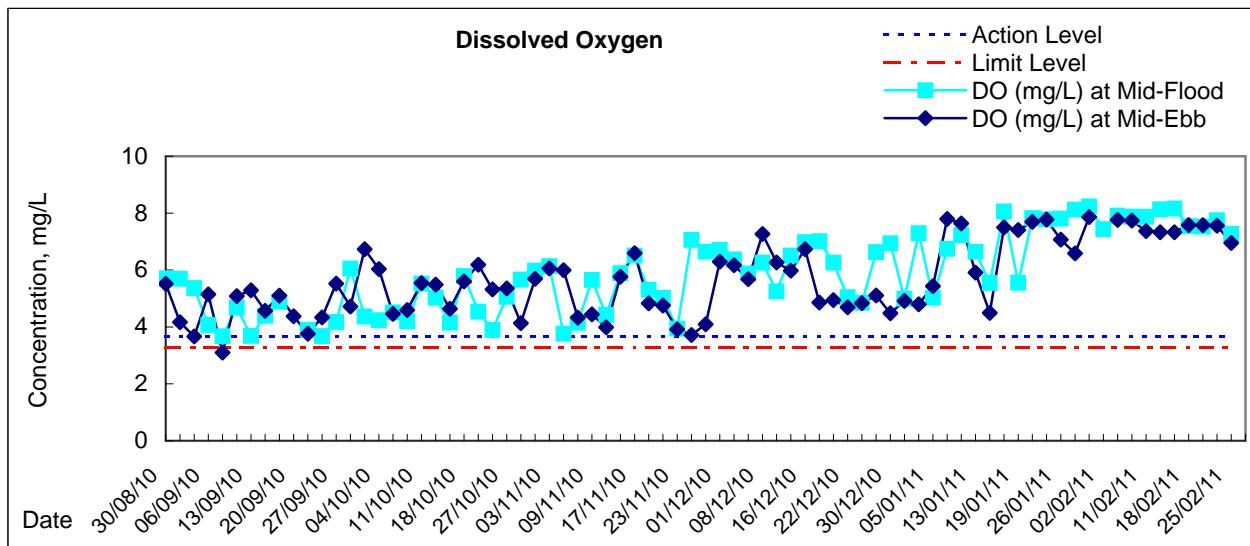


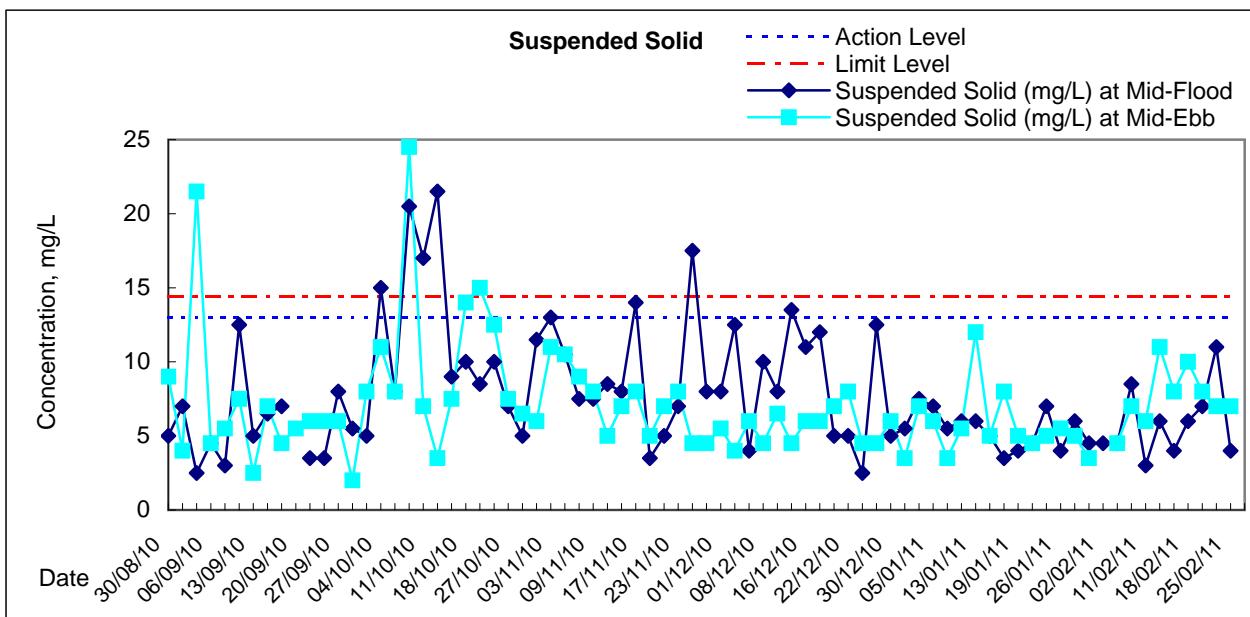
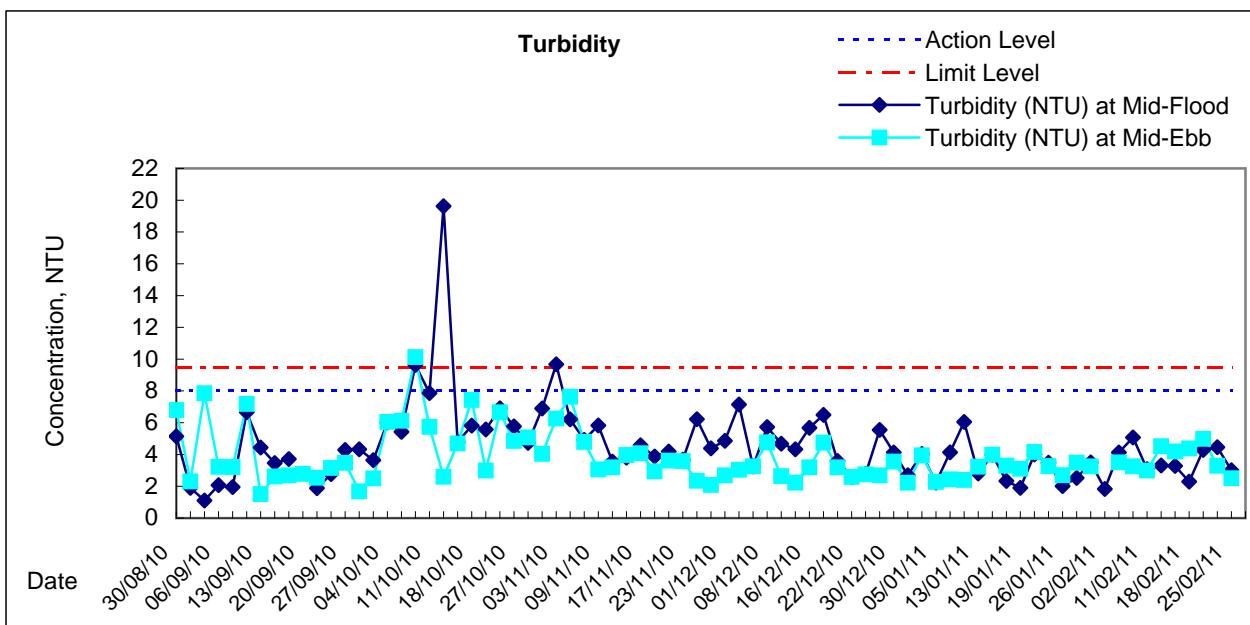
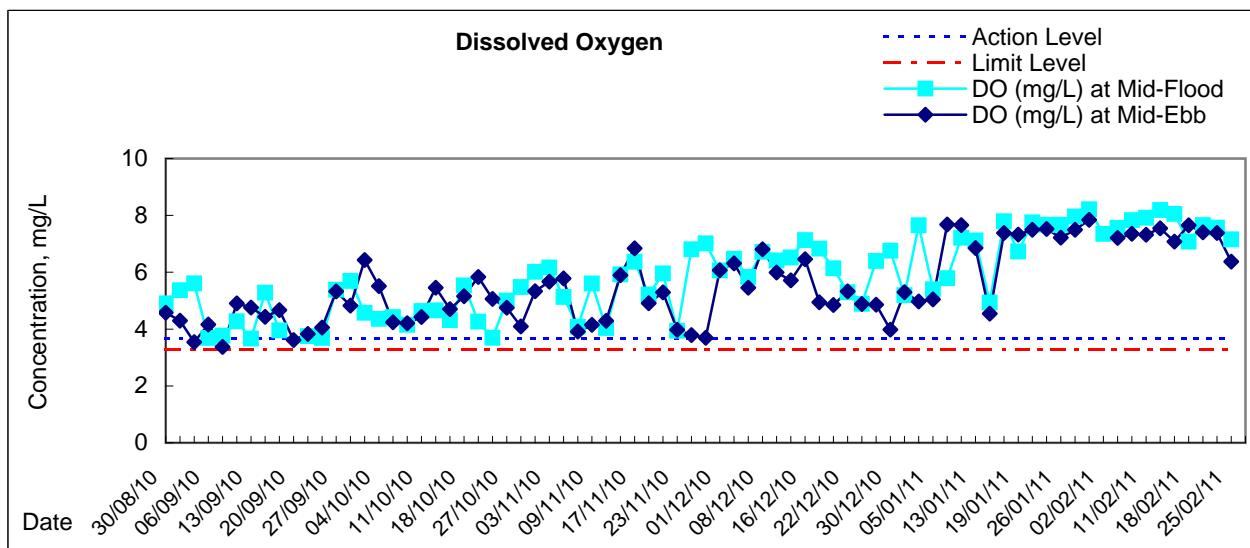
### ***Appendix 4.3***

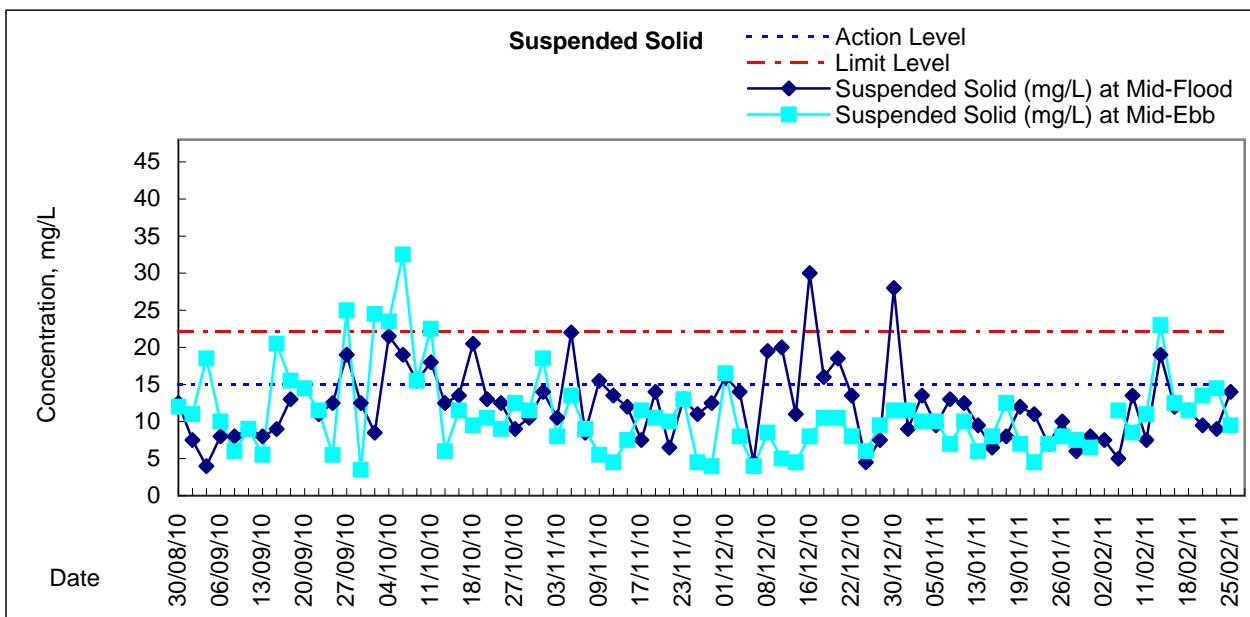
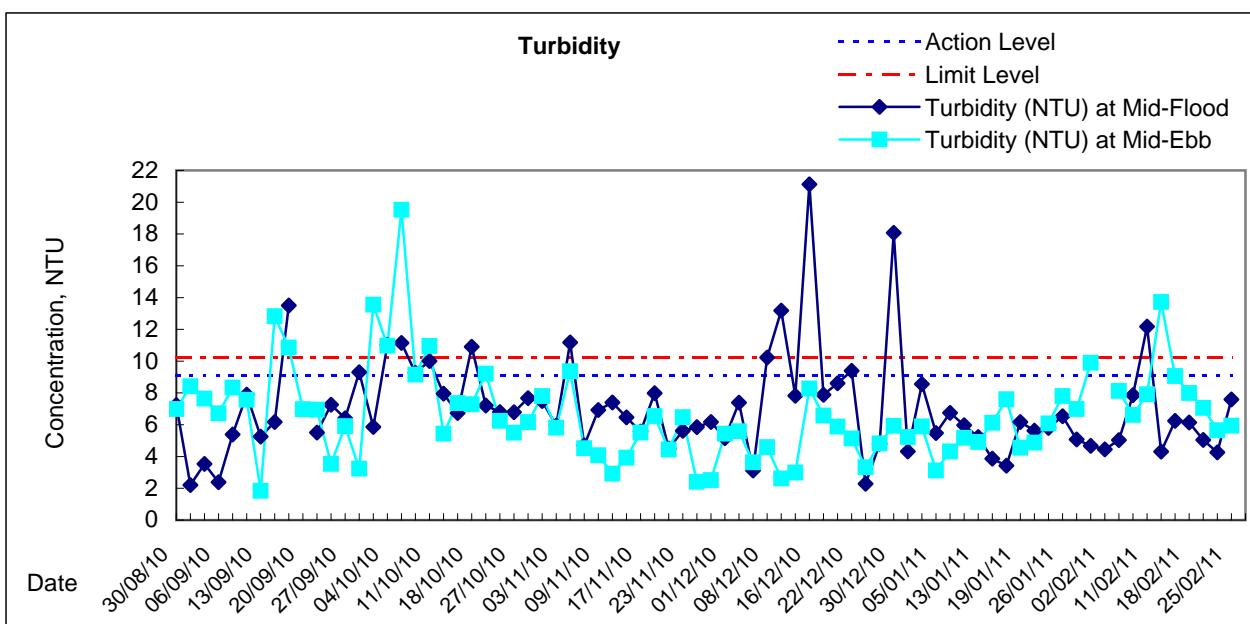
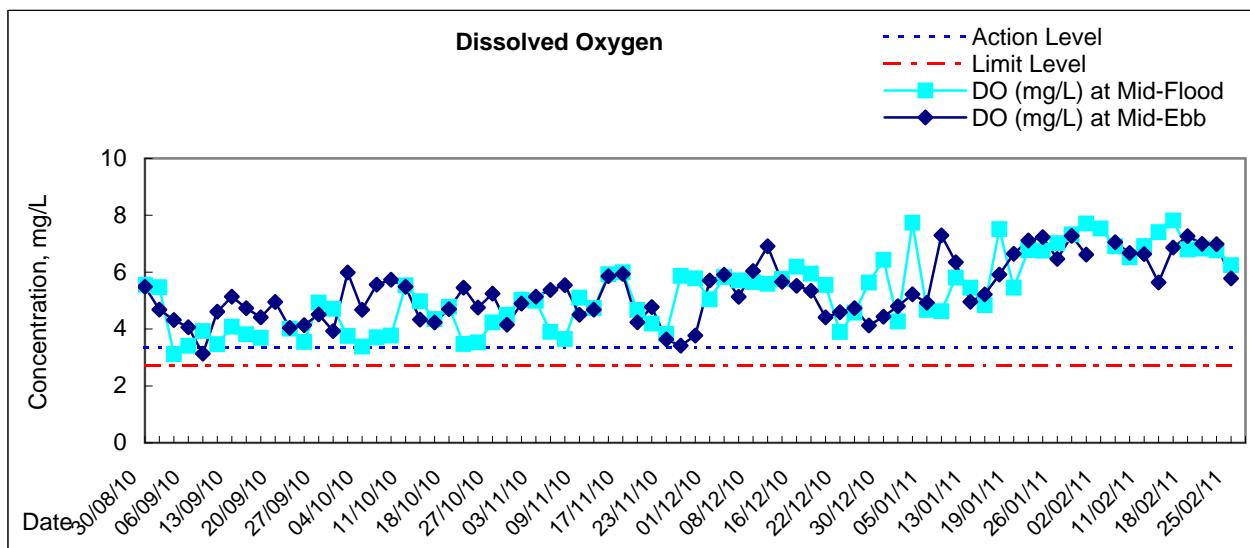
#### ***Water Quality Monitoring Graphical Presentations***

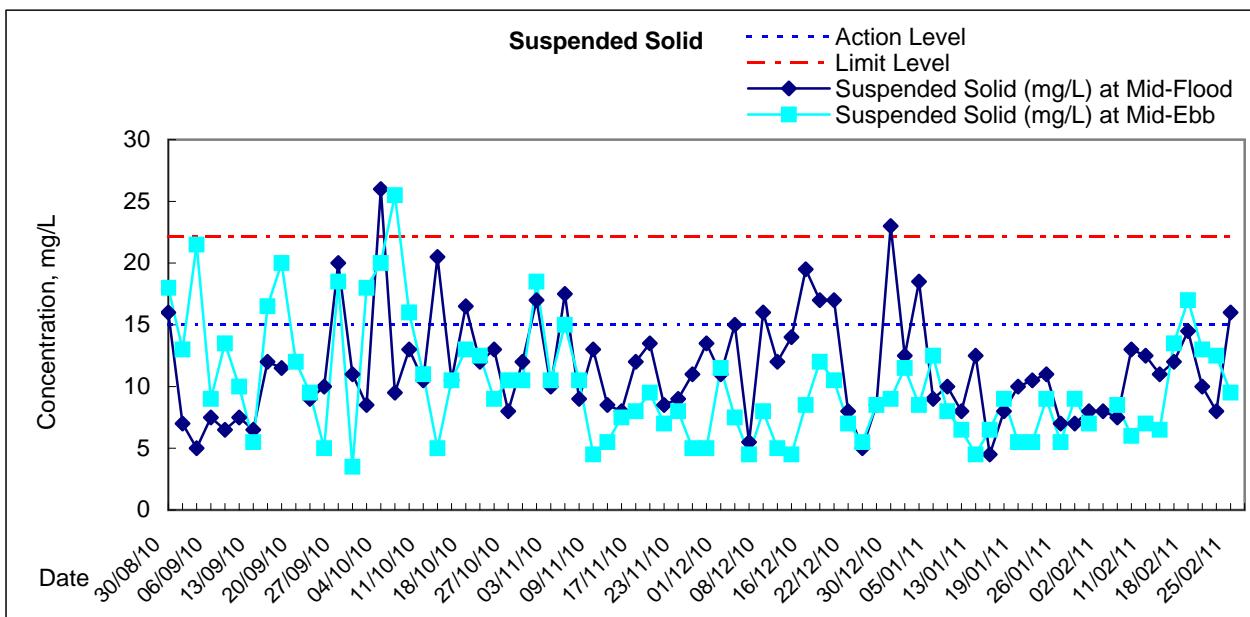
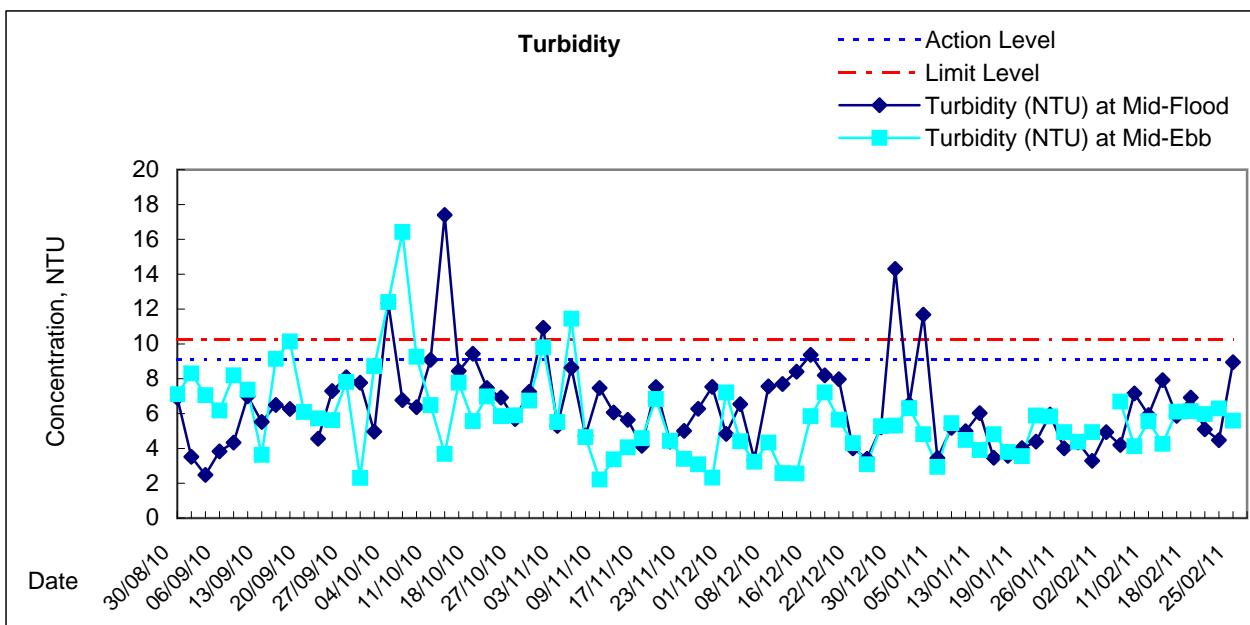
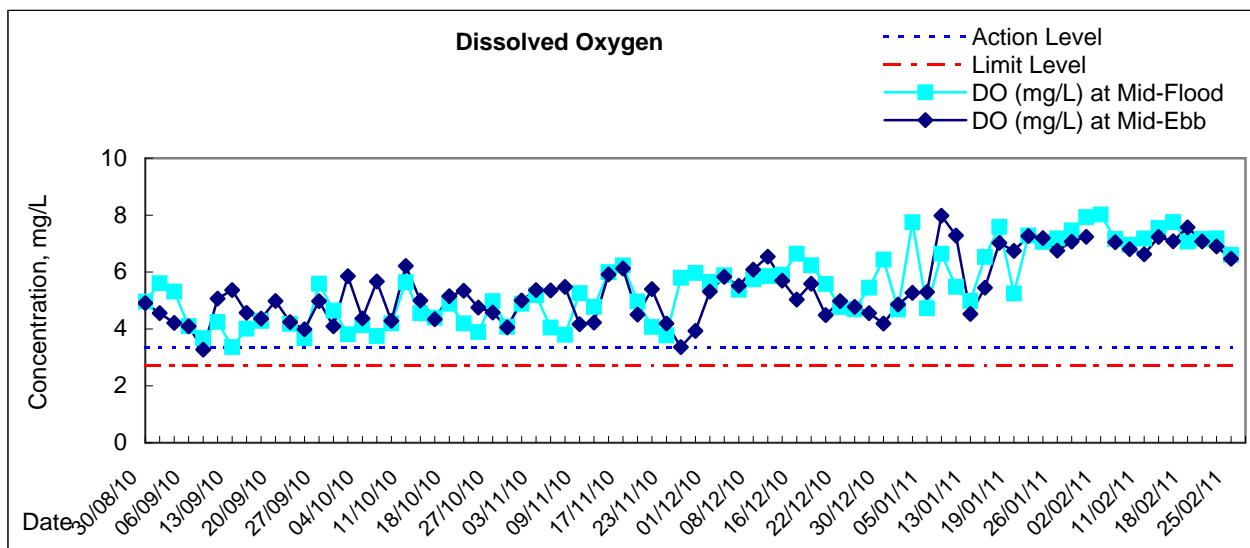


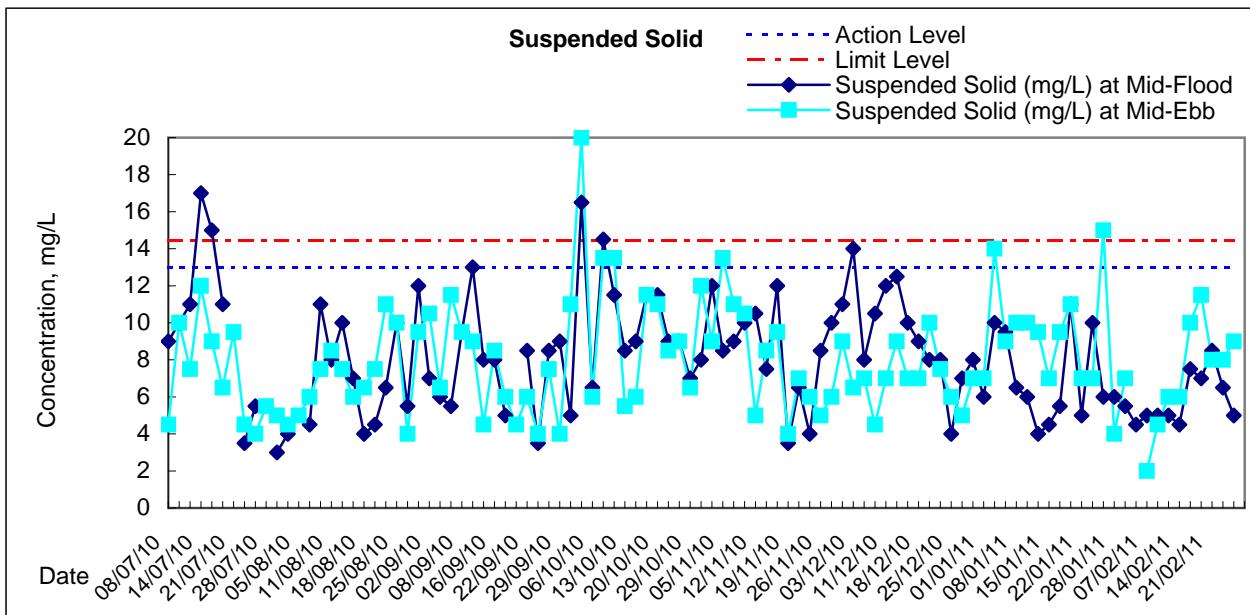
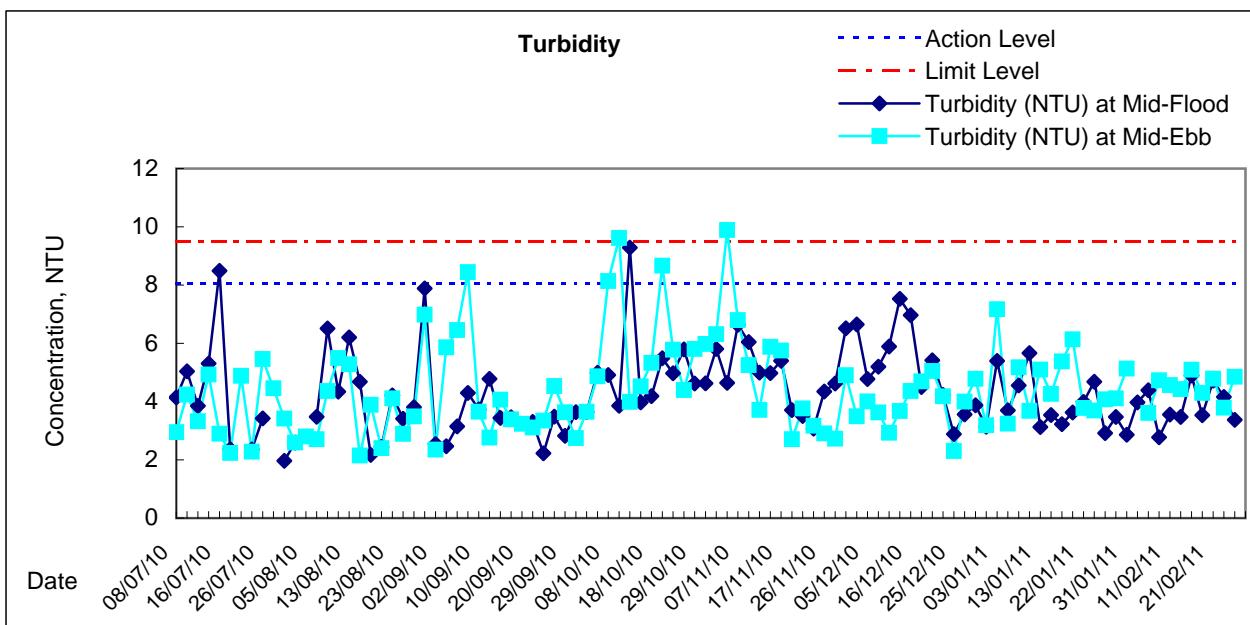
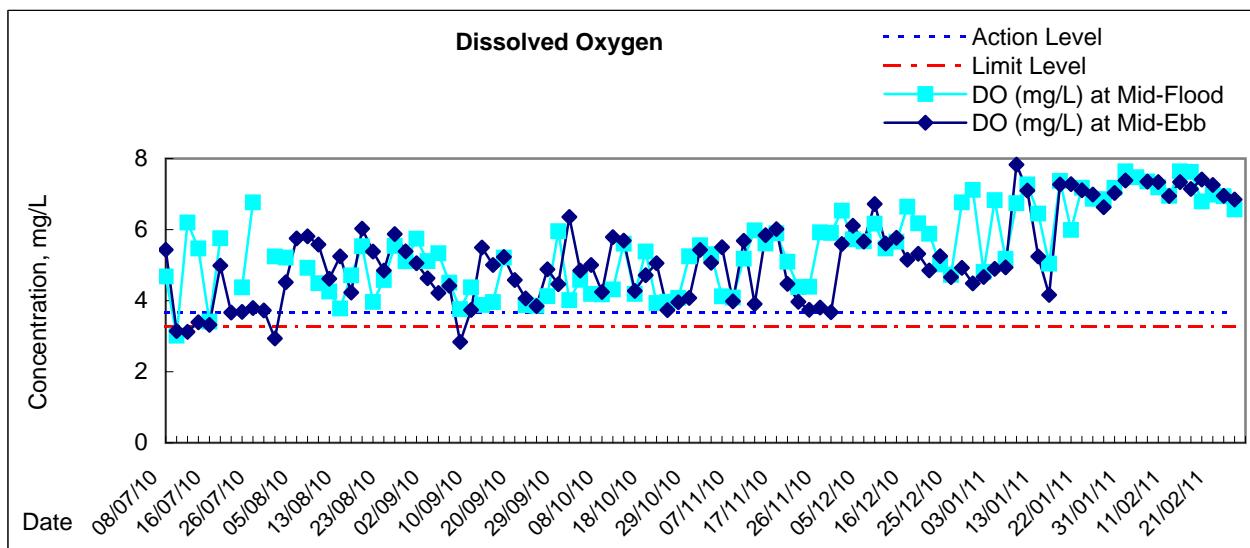


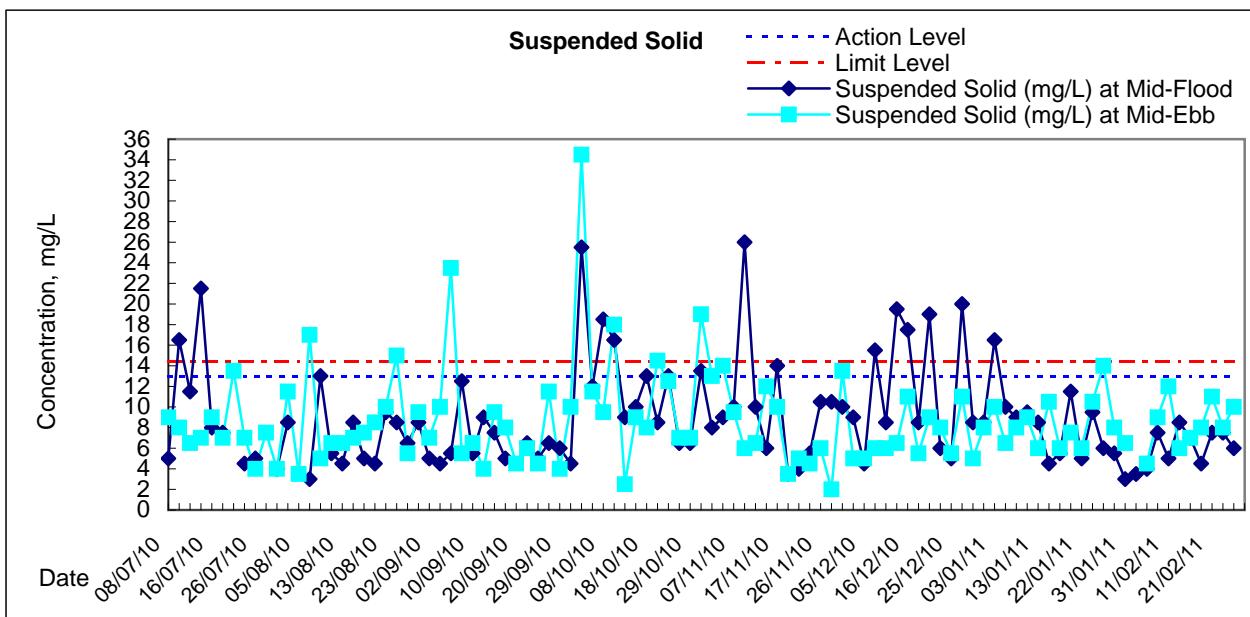
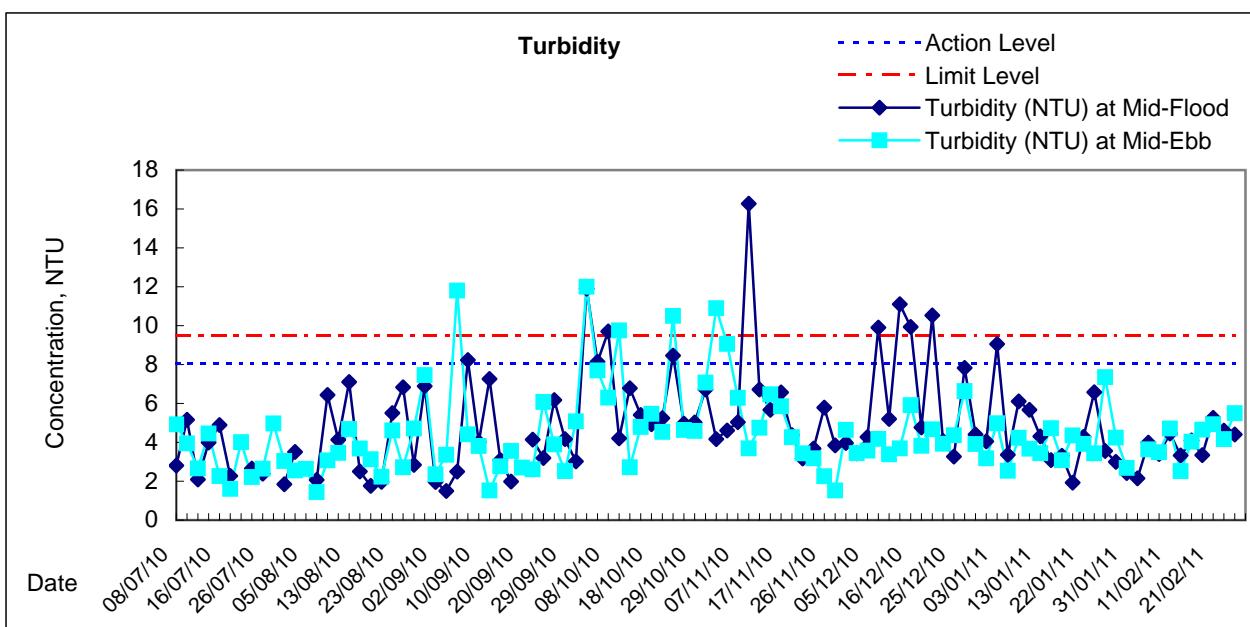
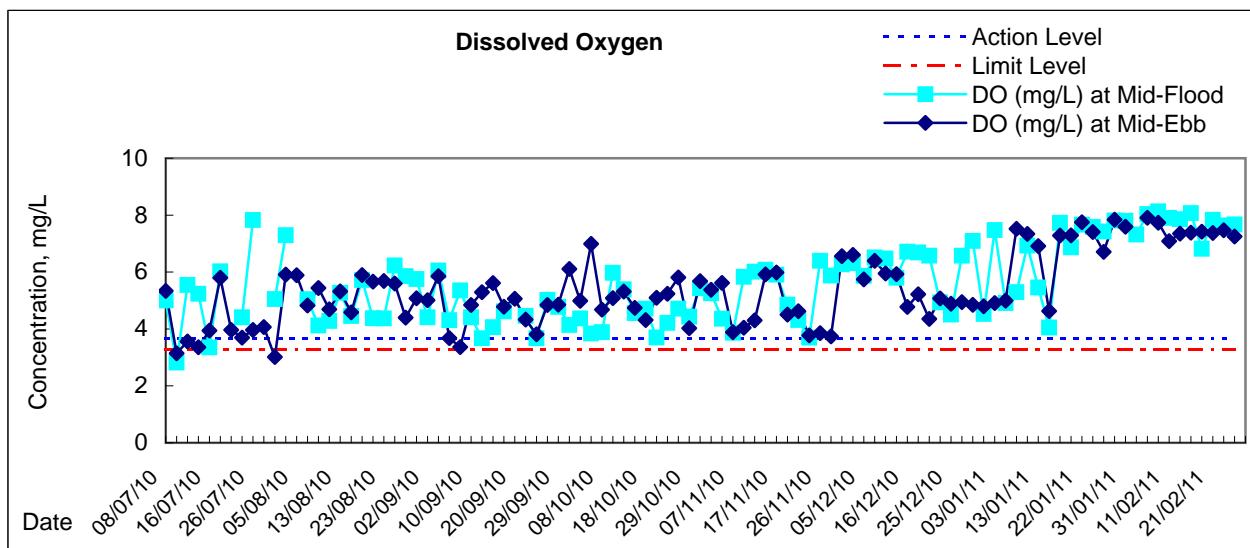


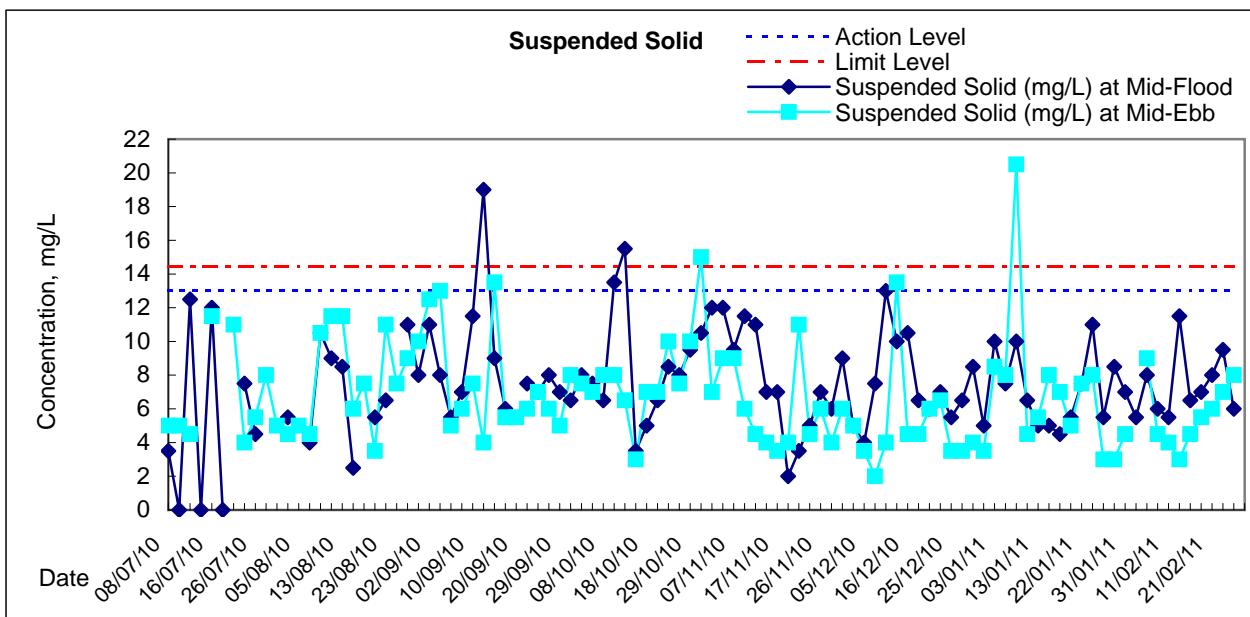
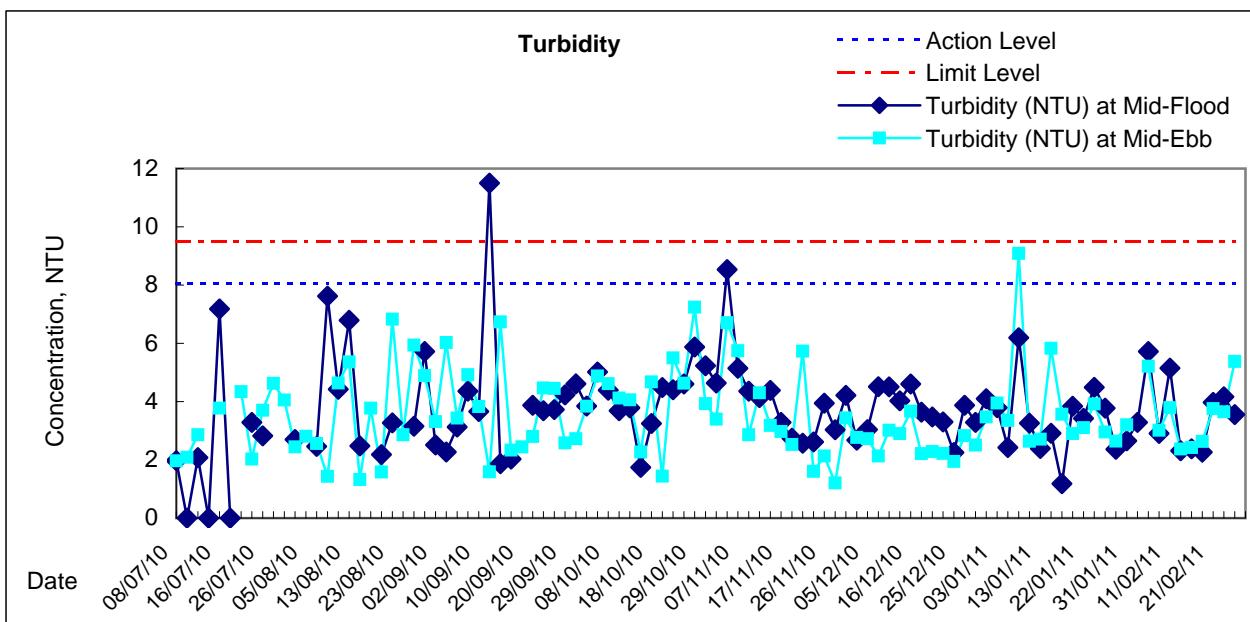
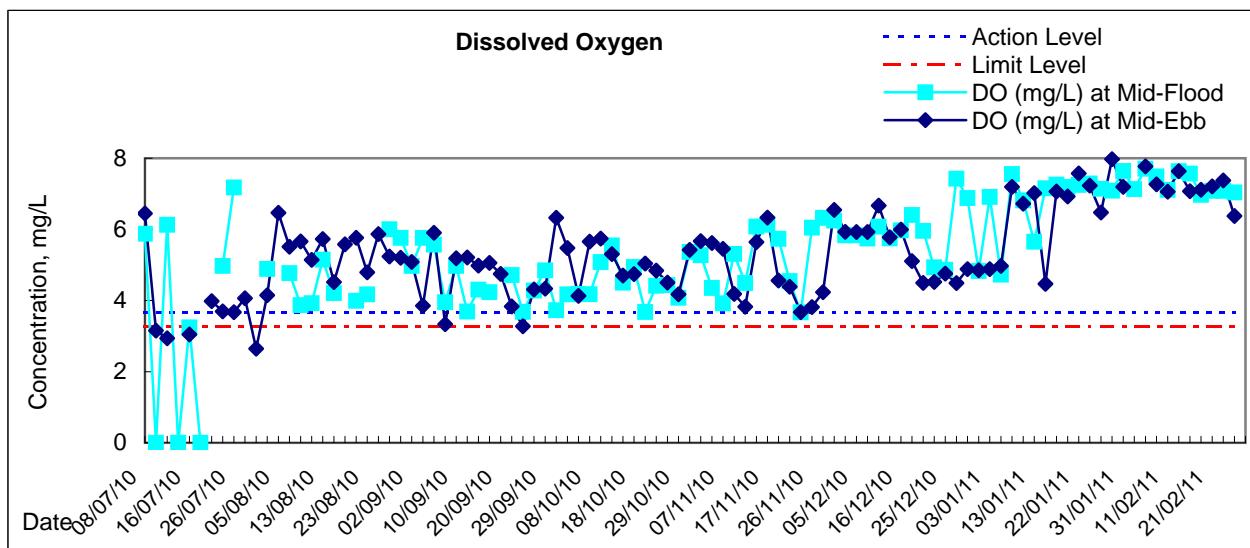


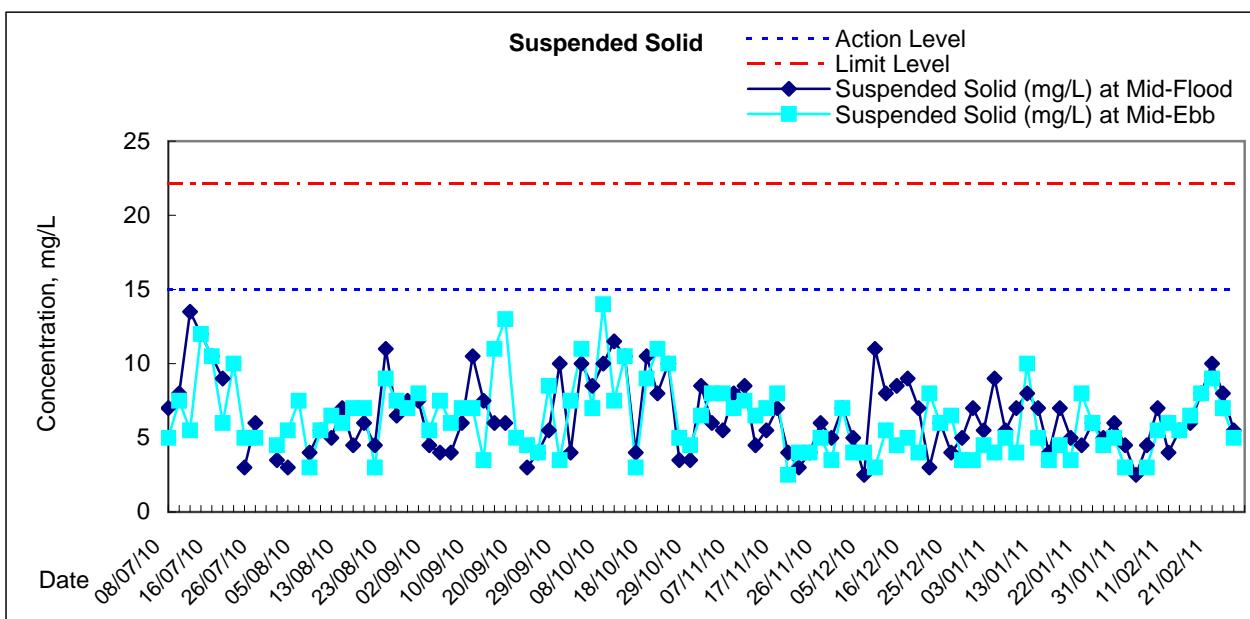
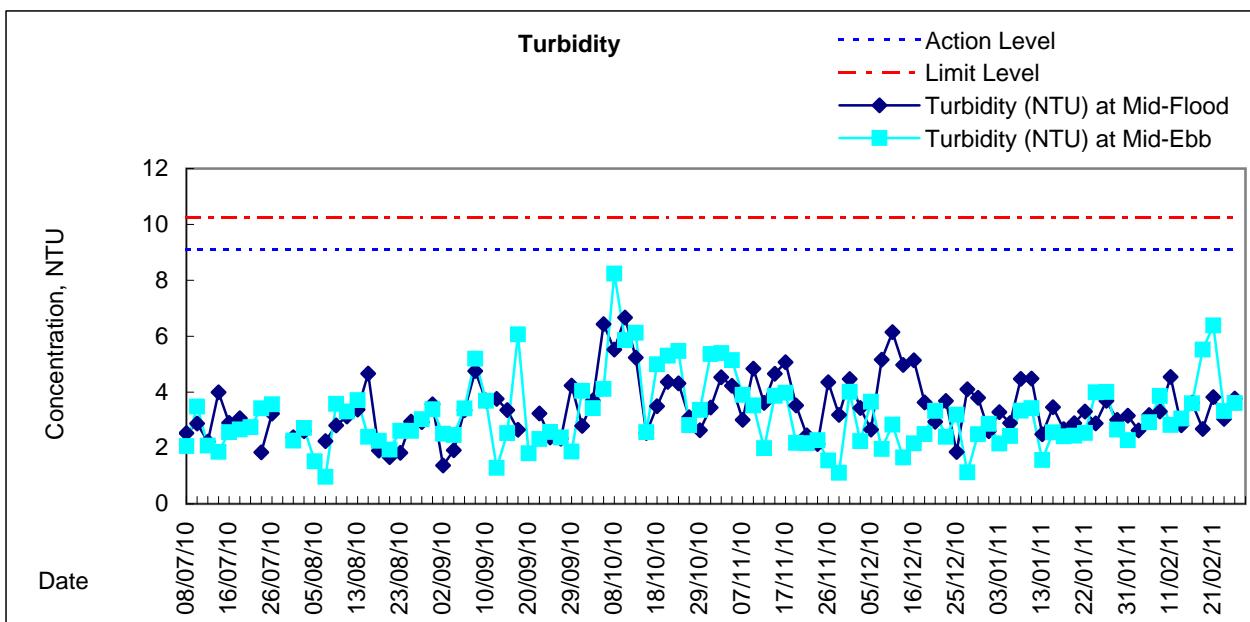
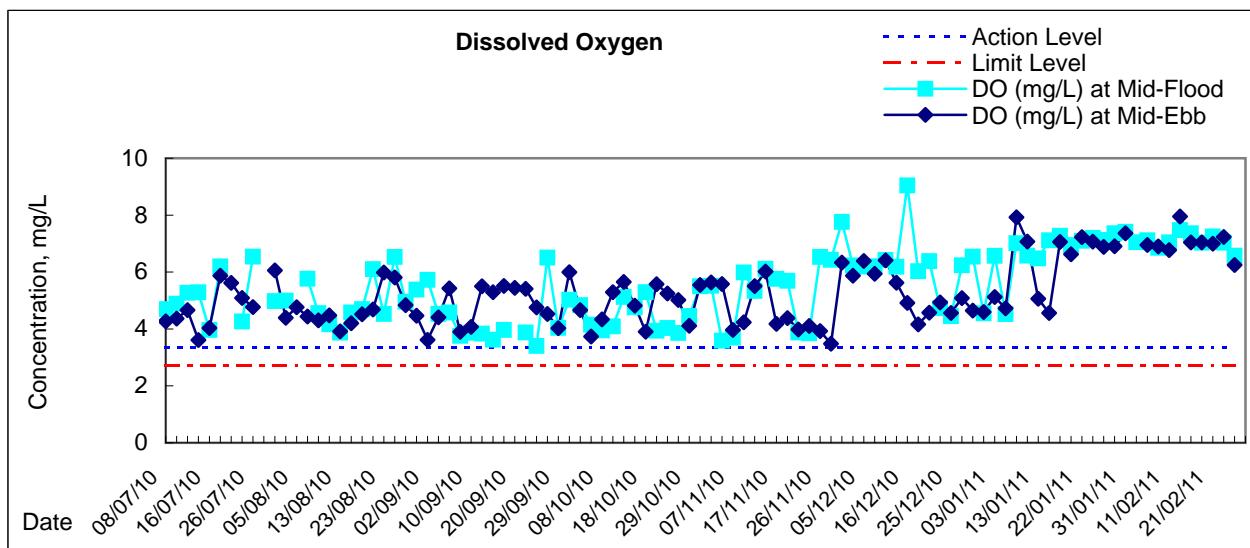


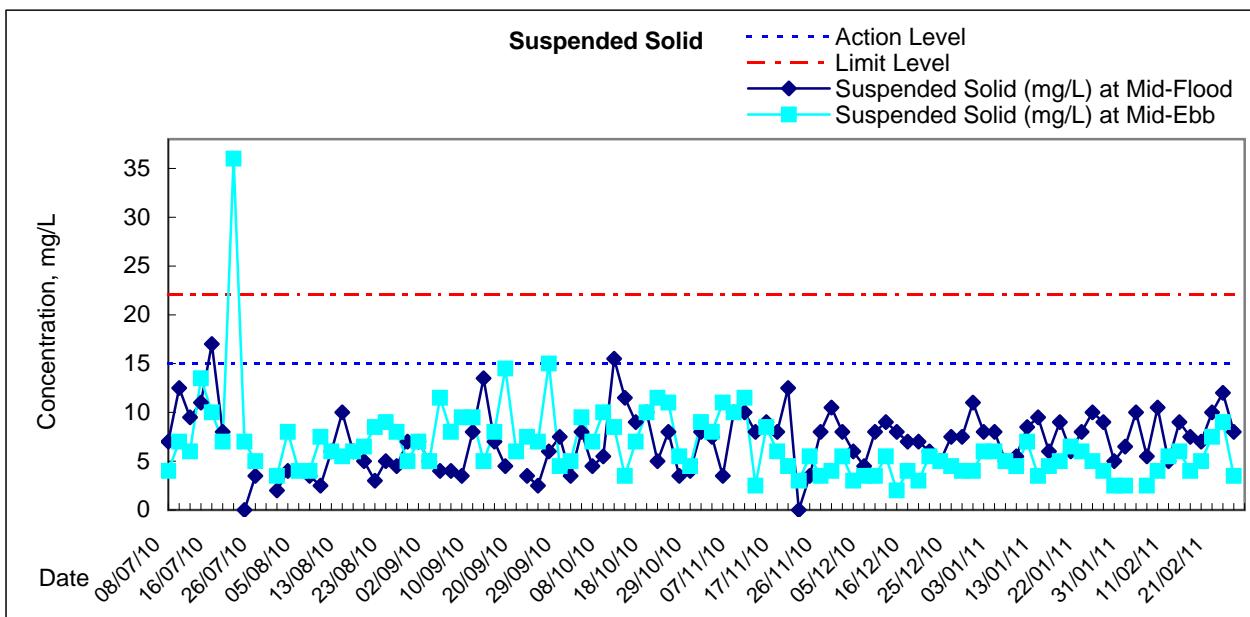
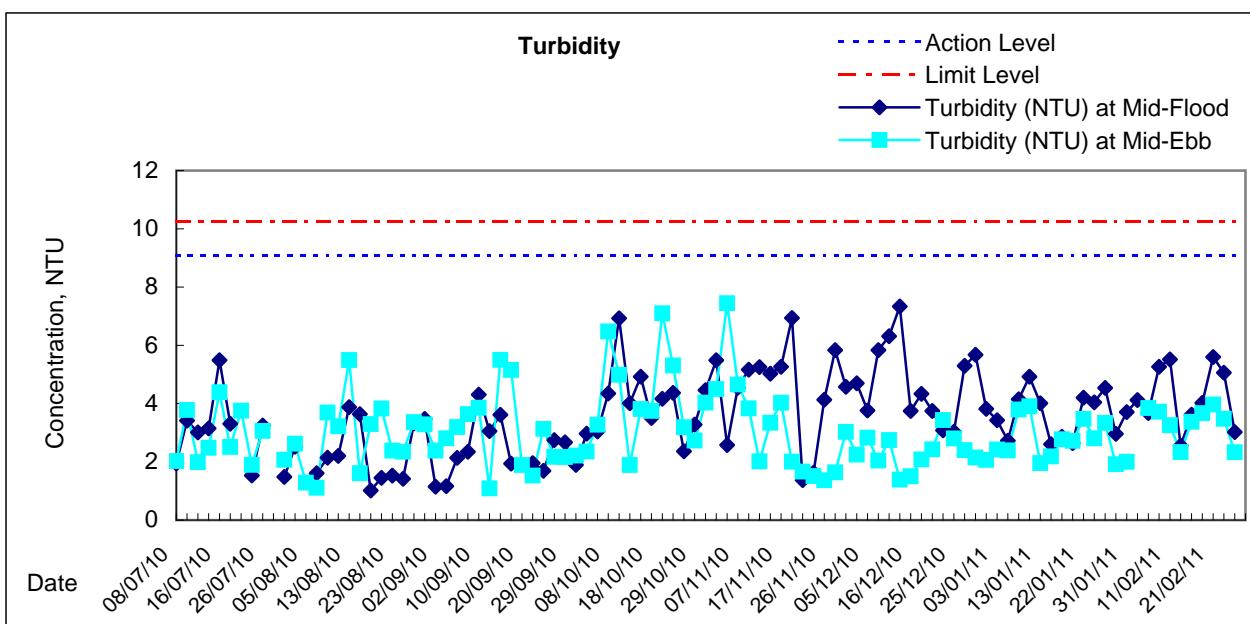
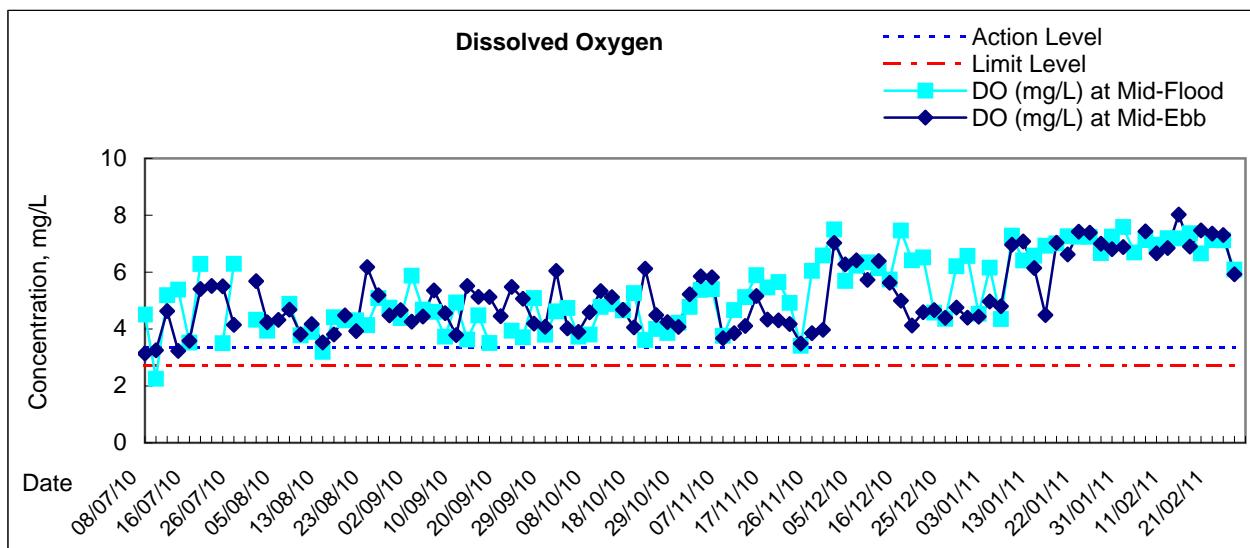


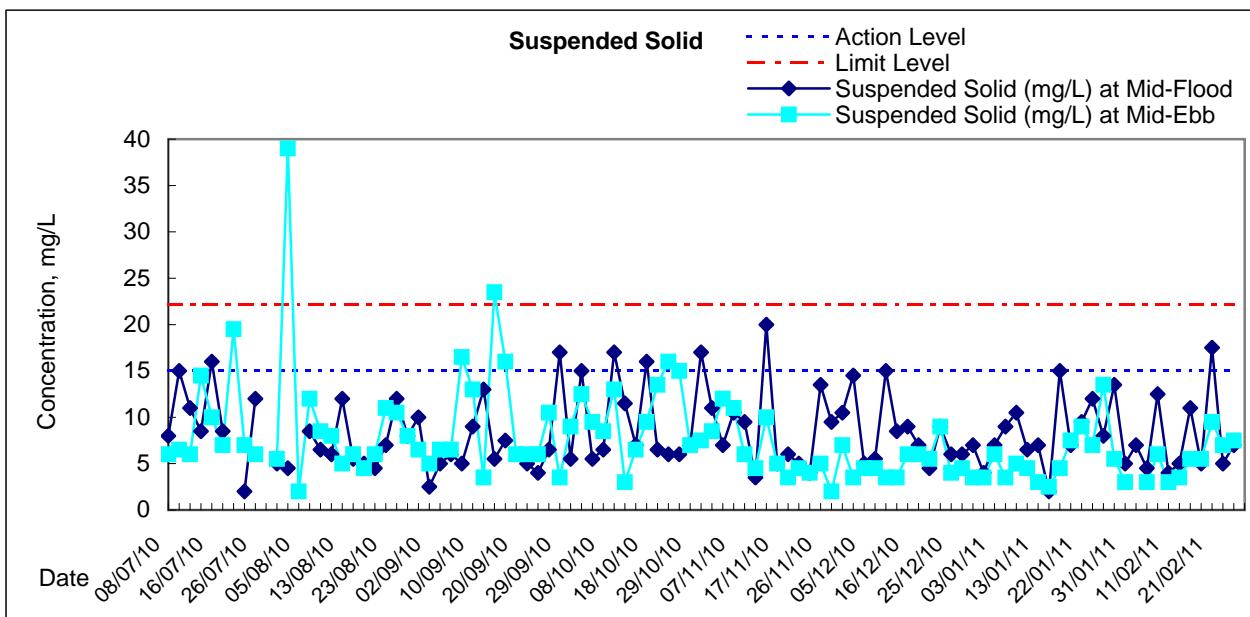
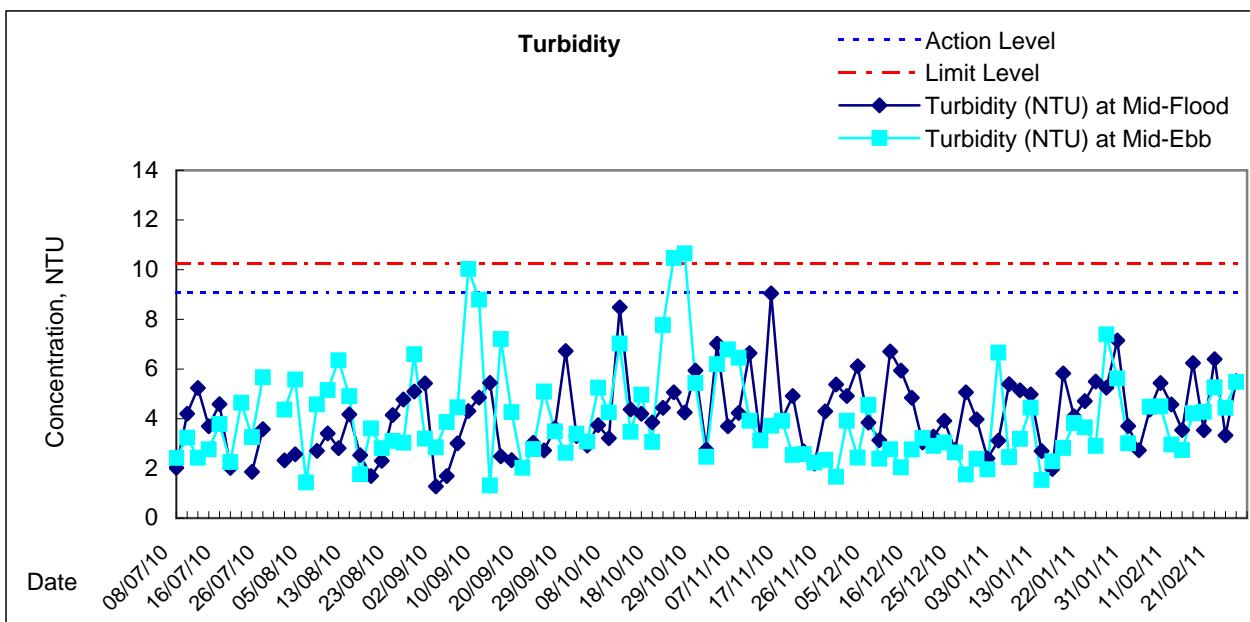
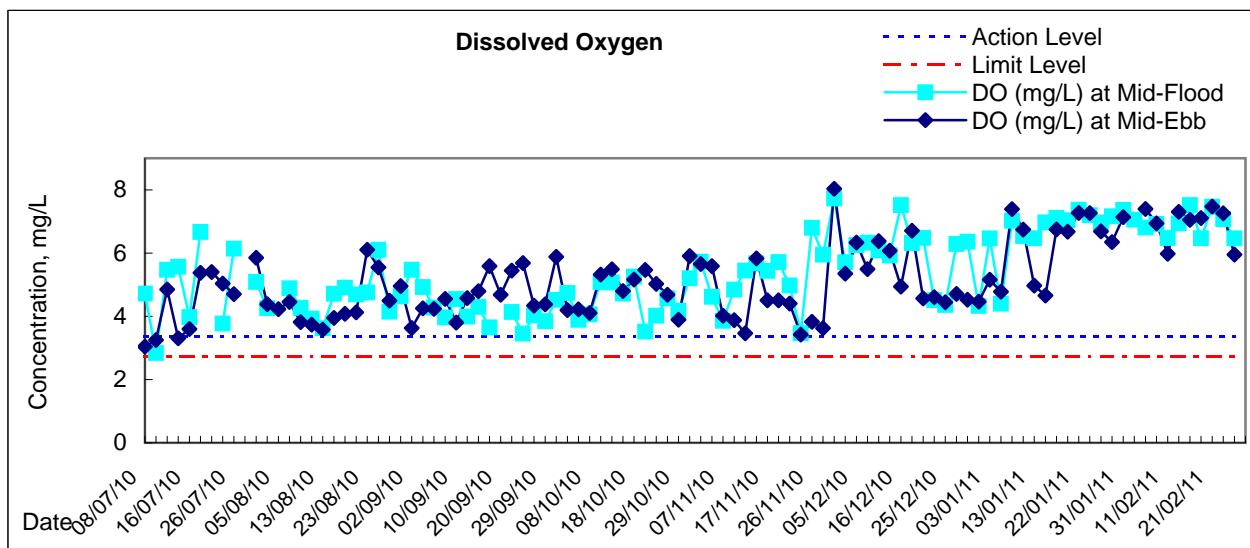


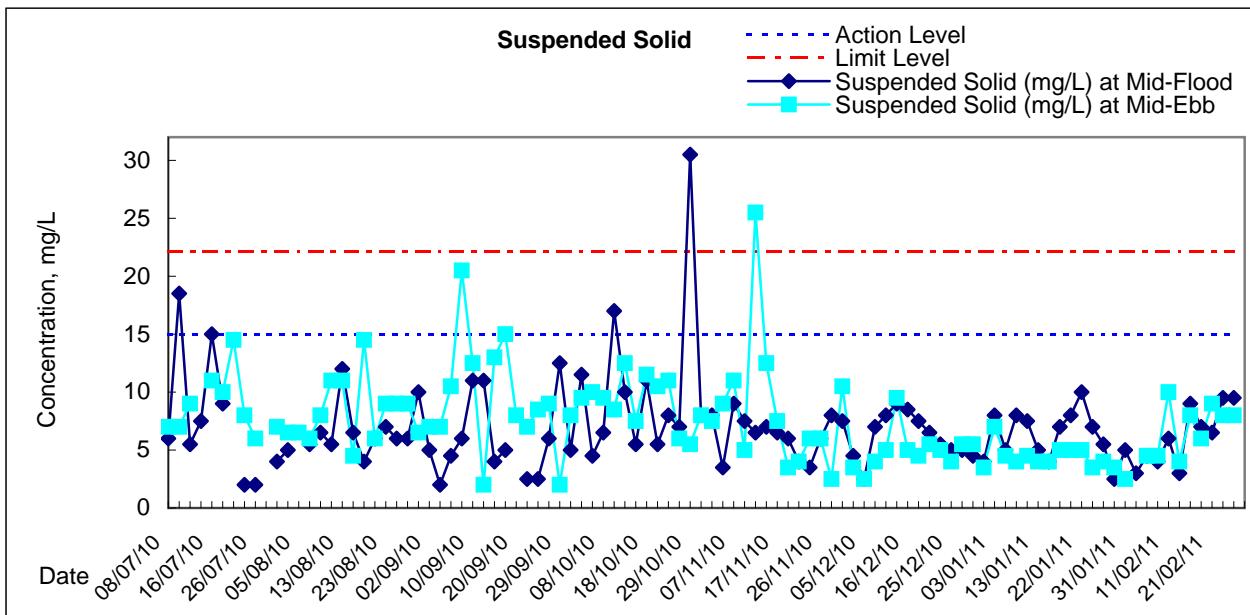
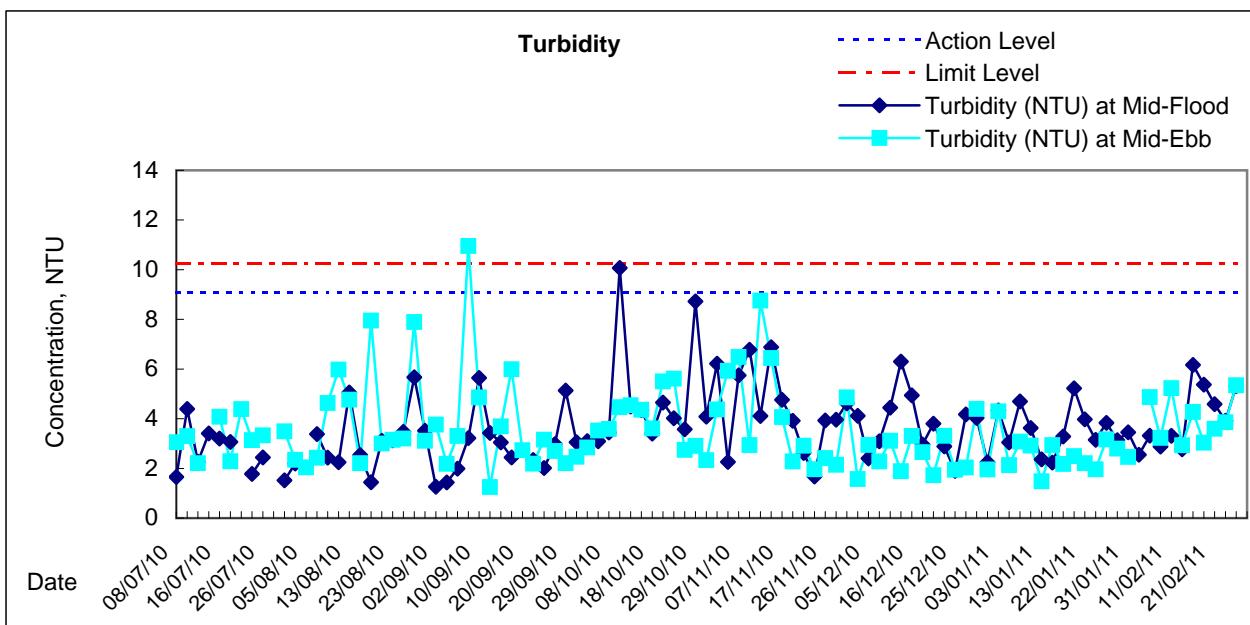
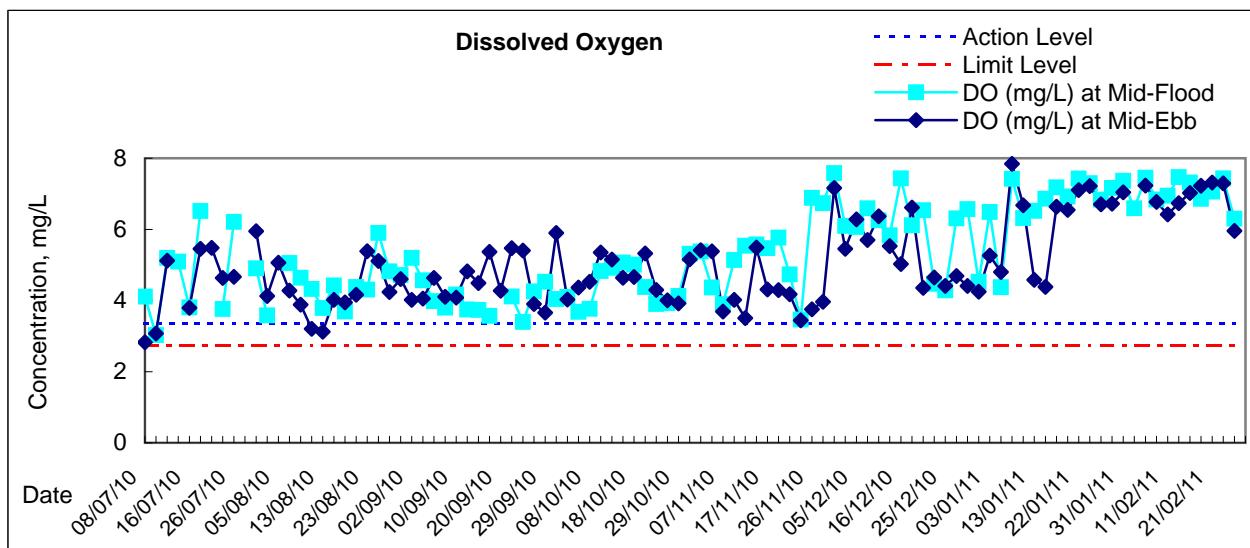


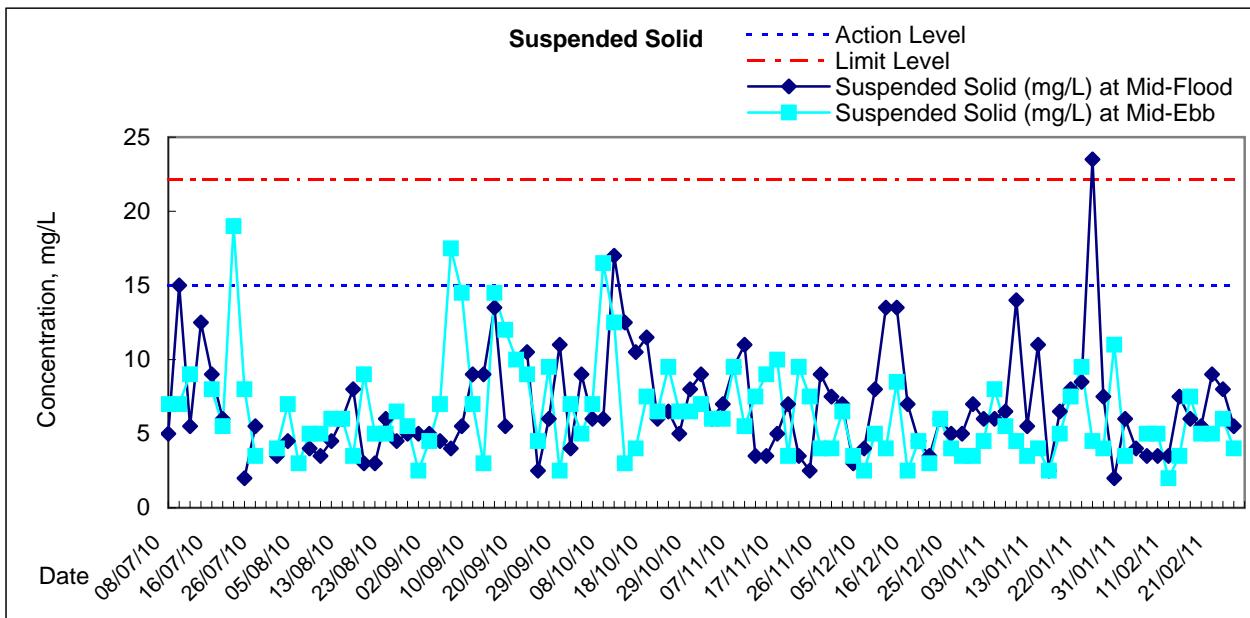
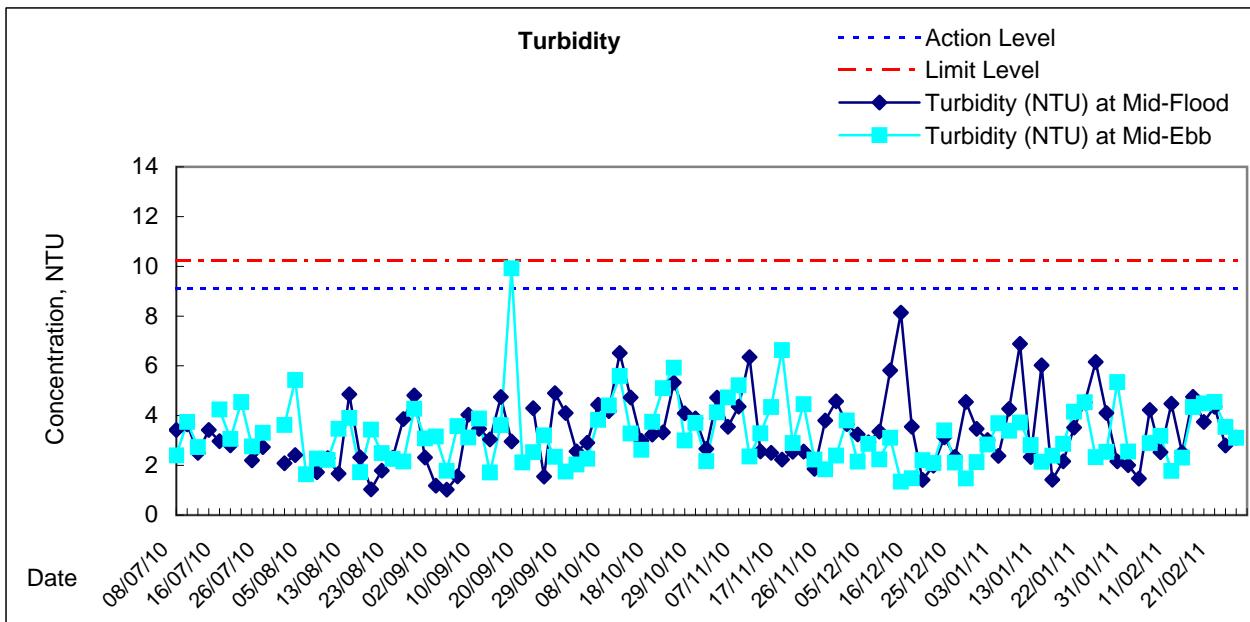
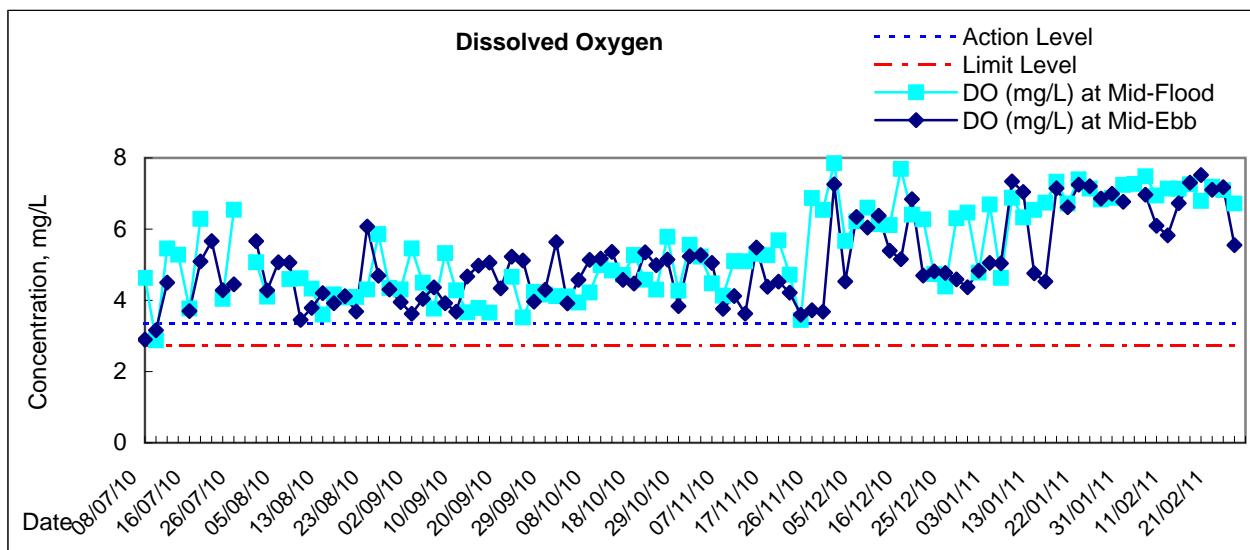


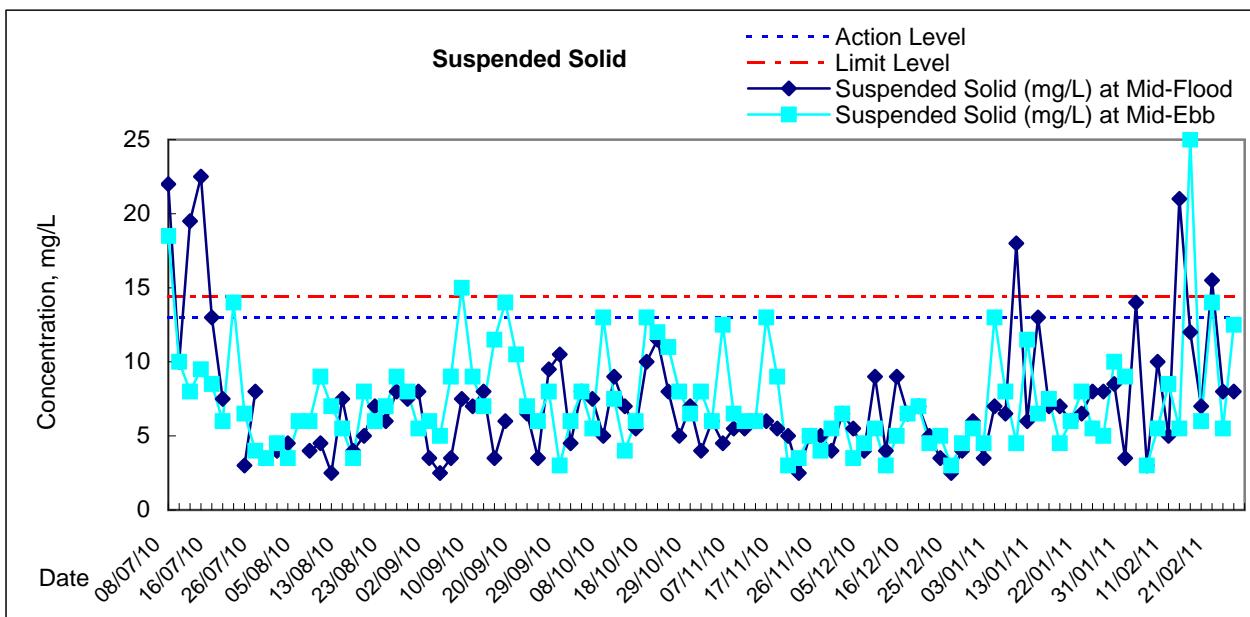
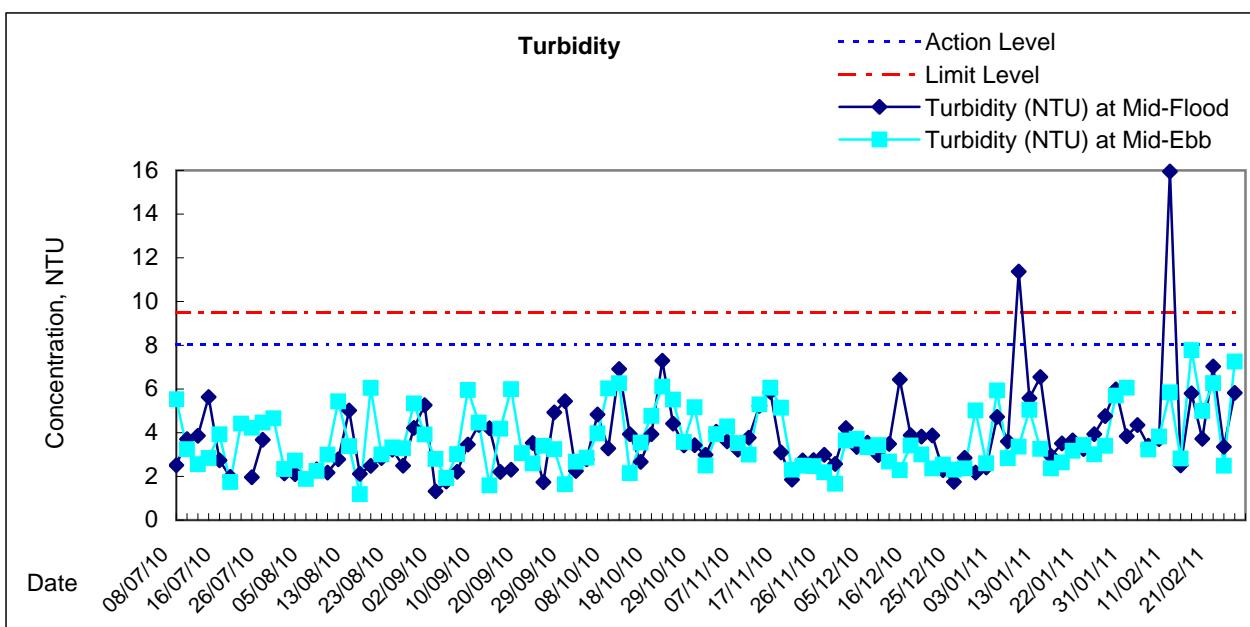
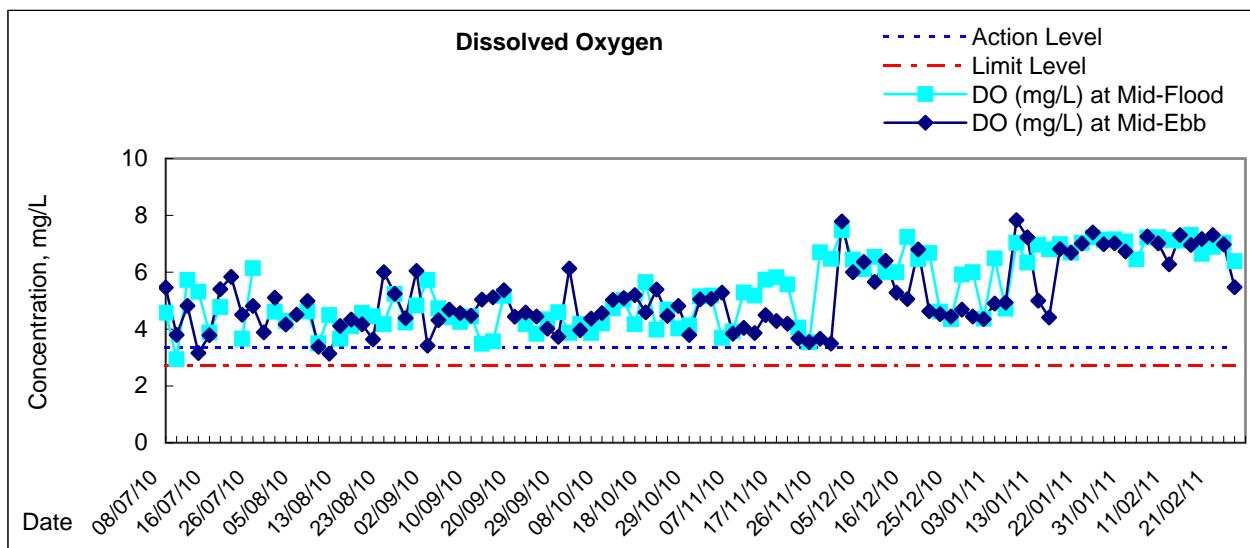


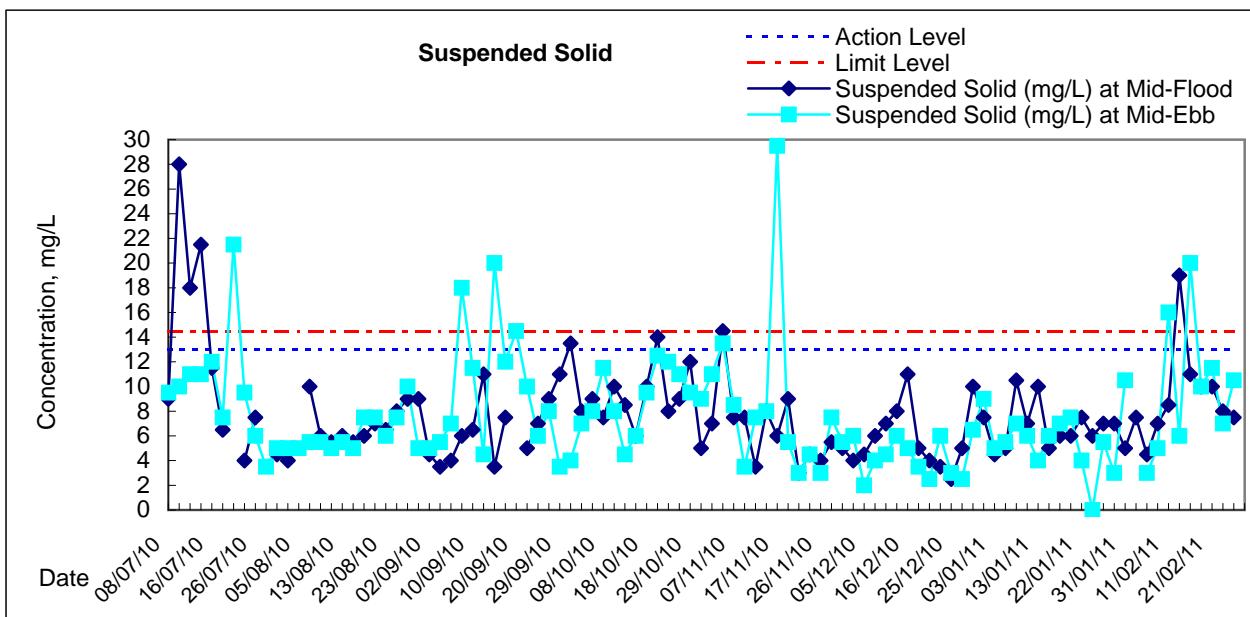
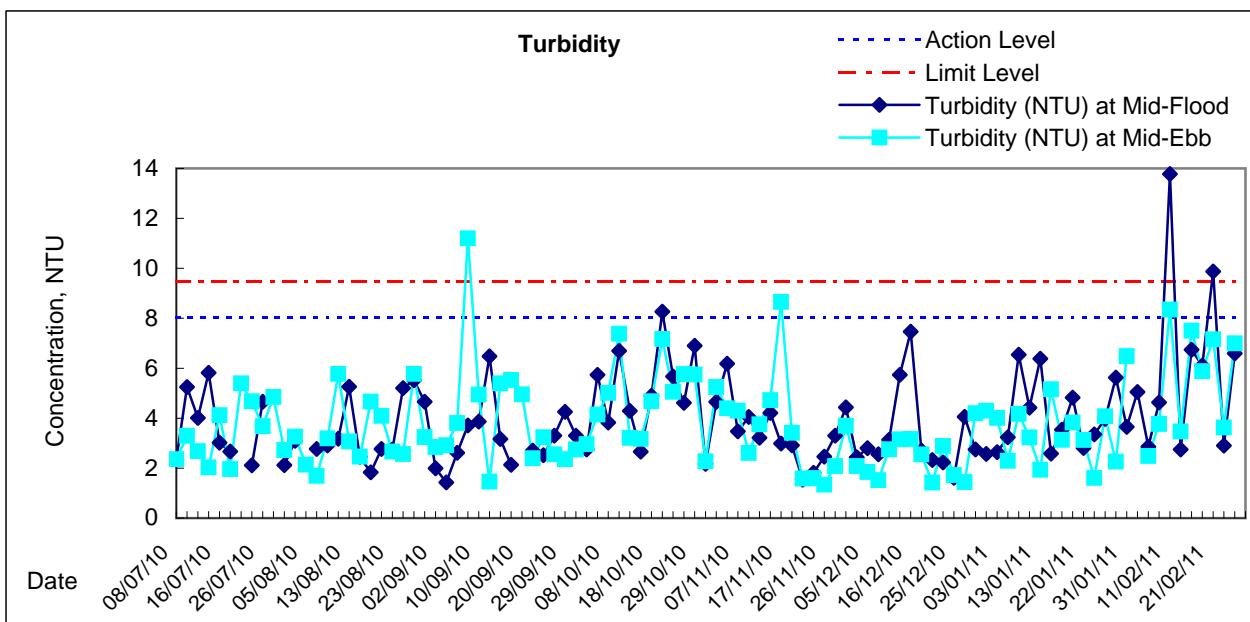
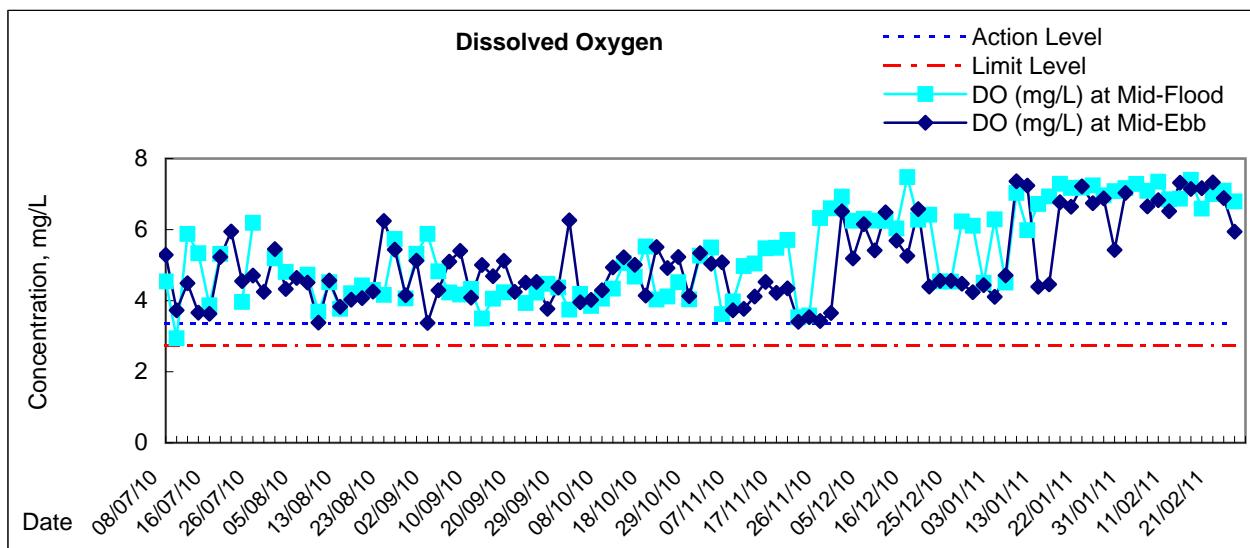


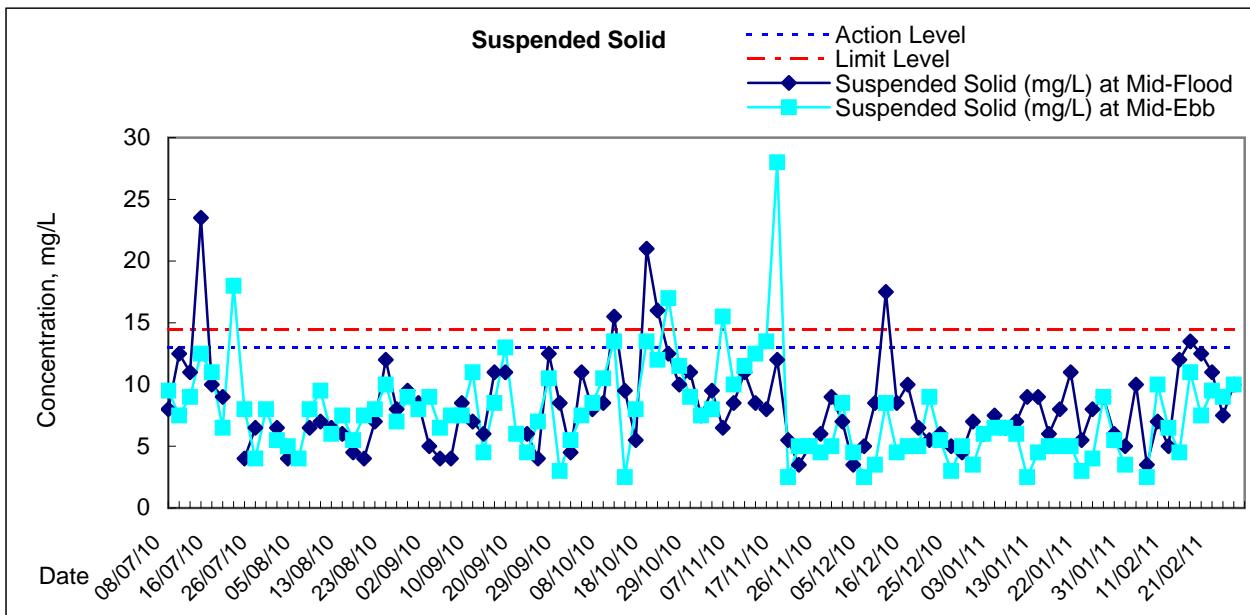
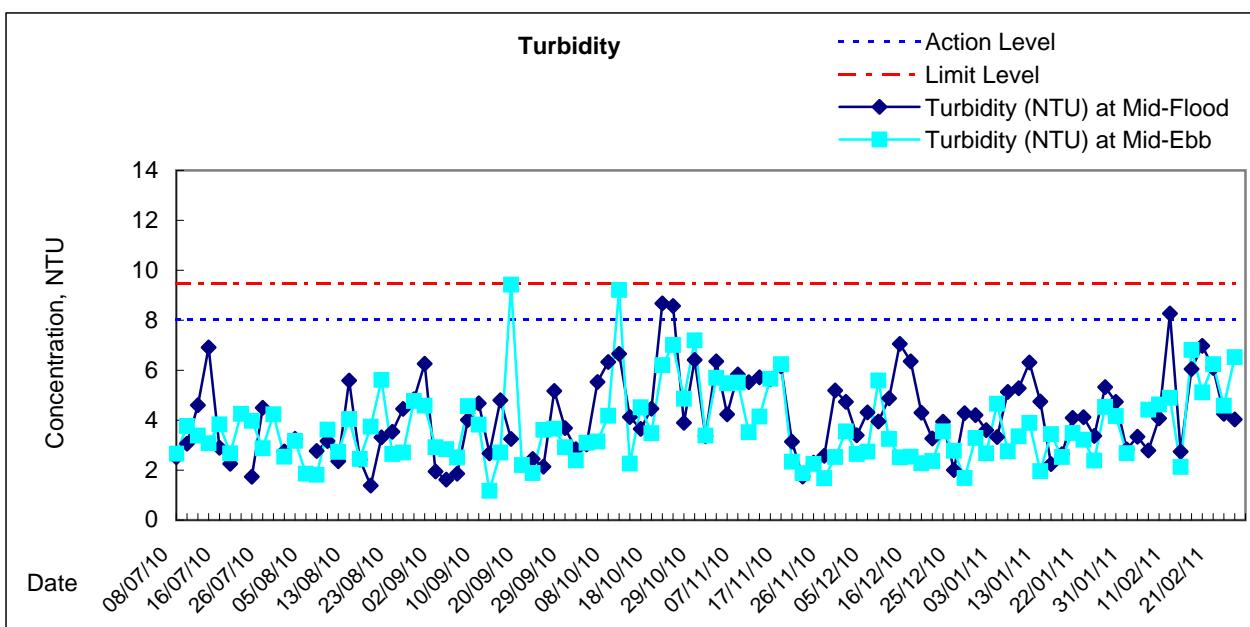
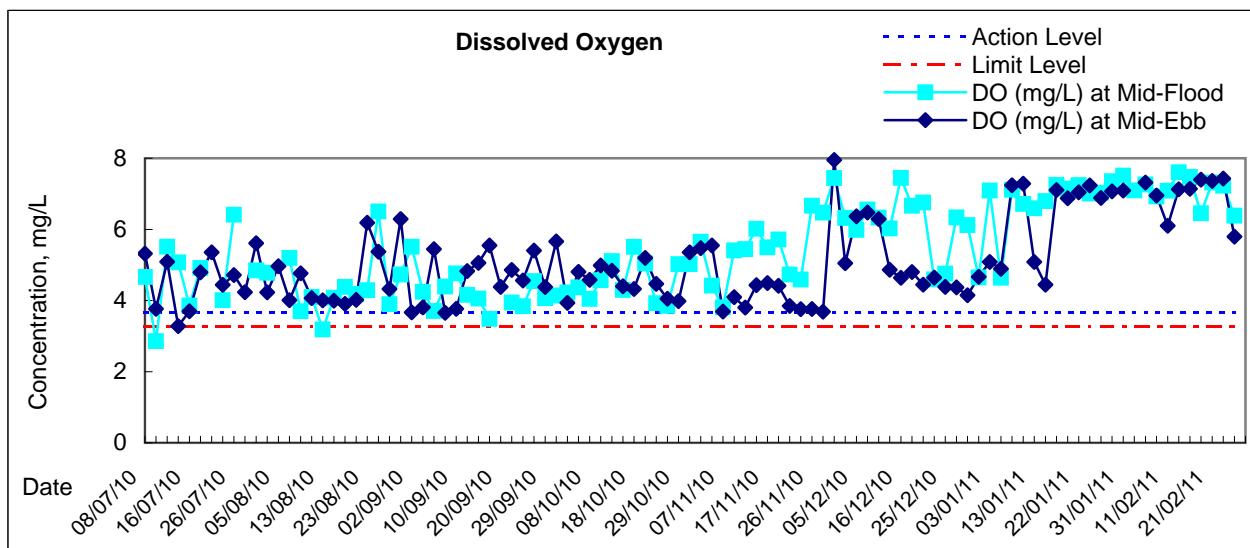


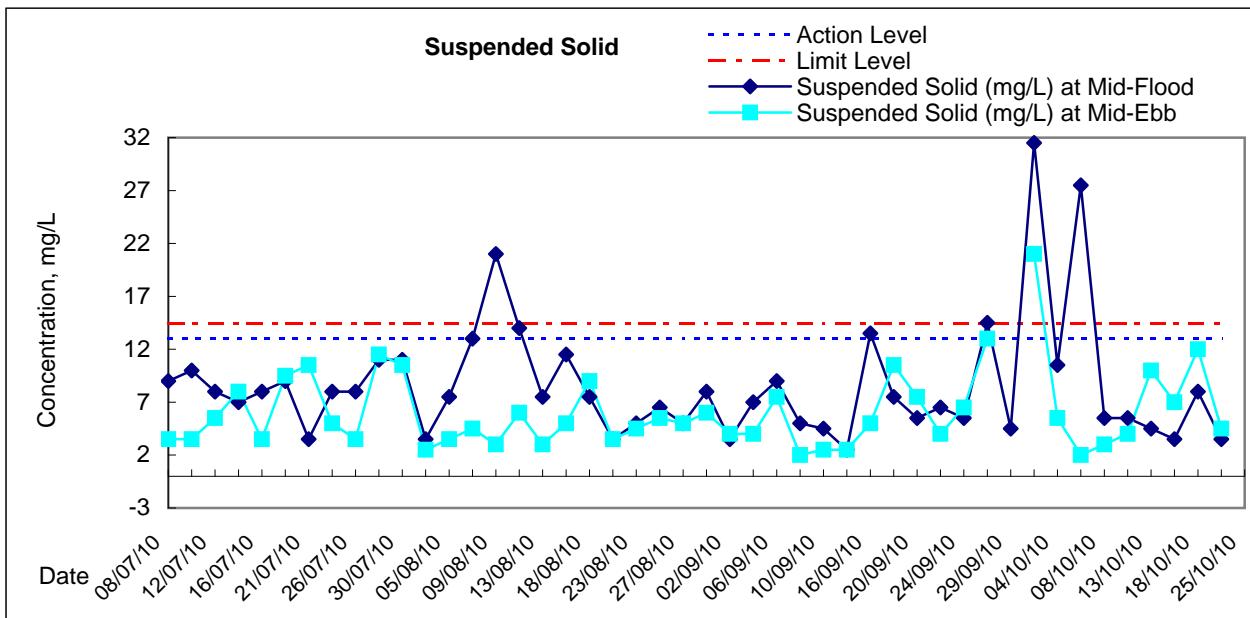
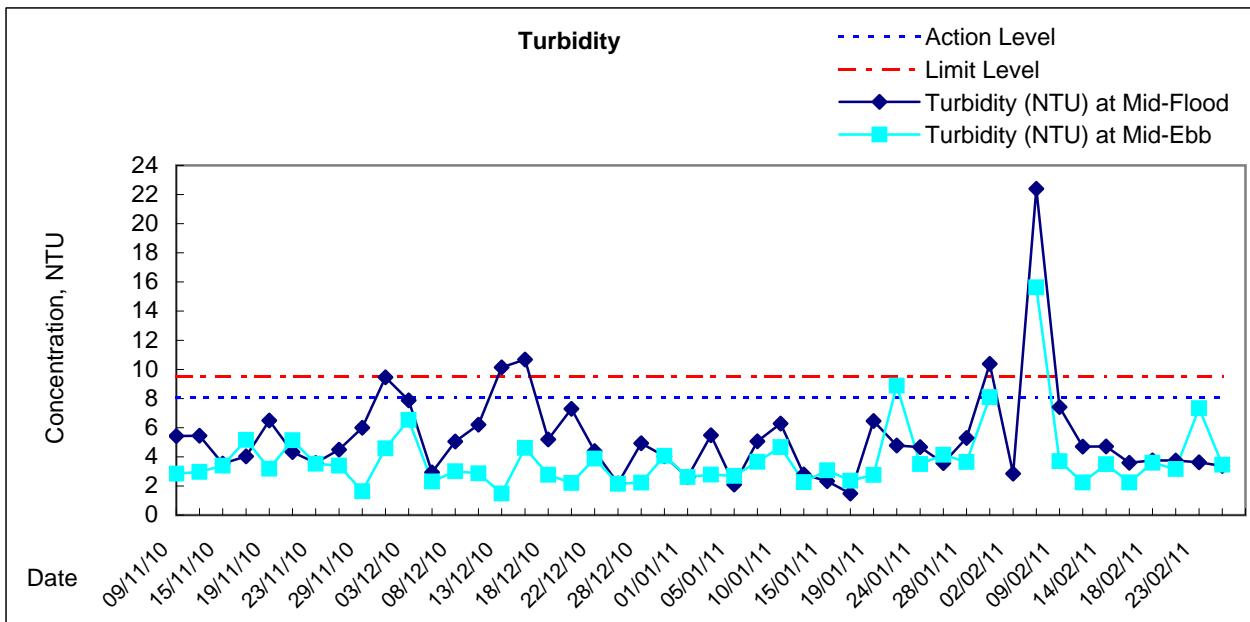
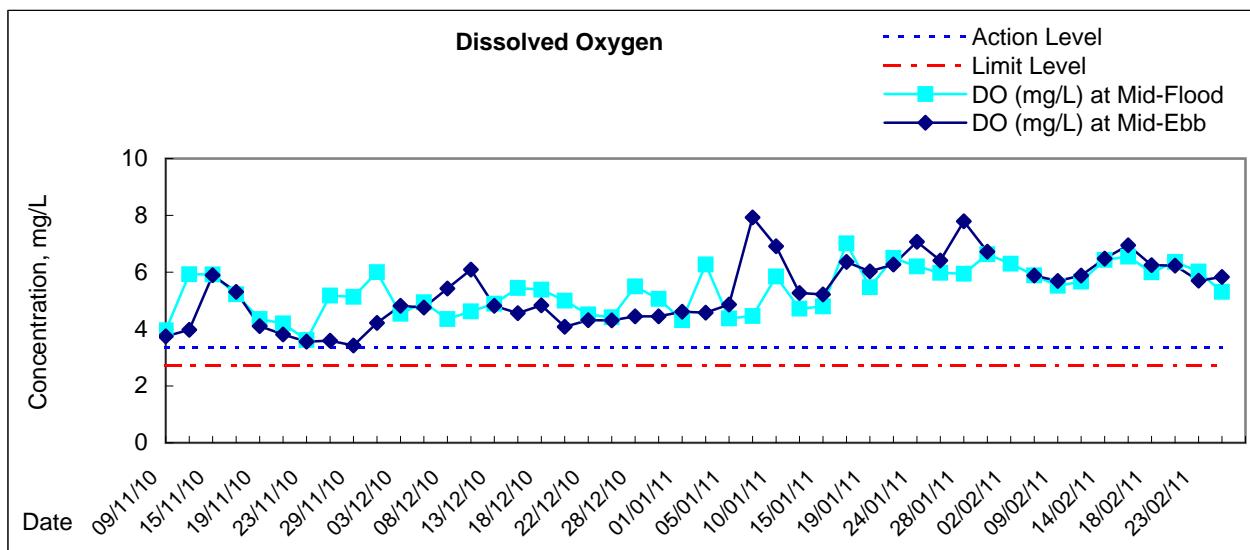


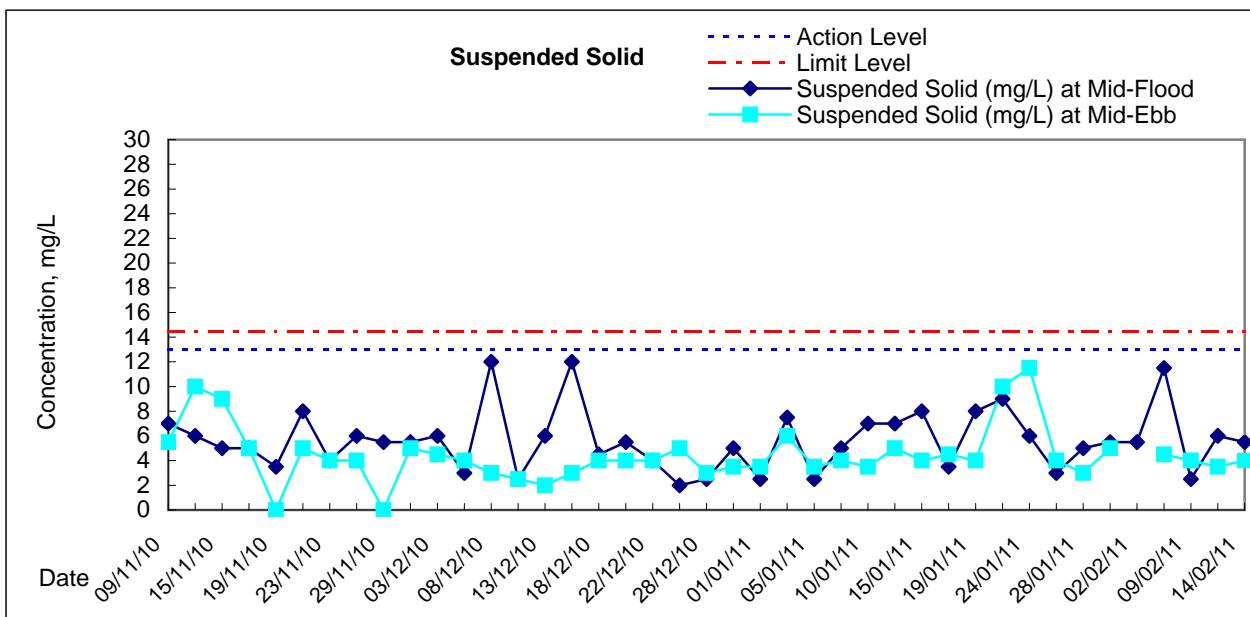
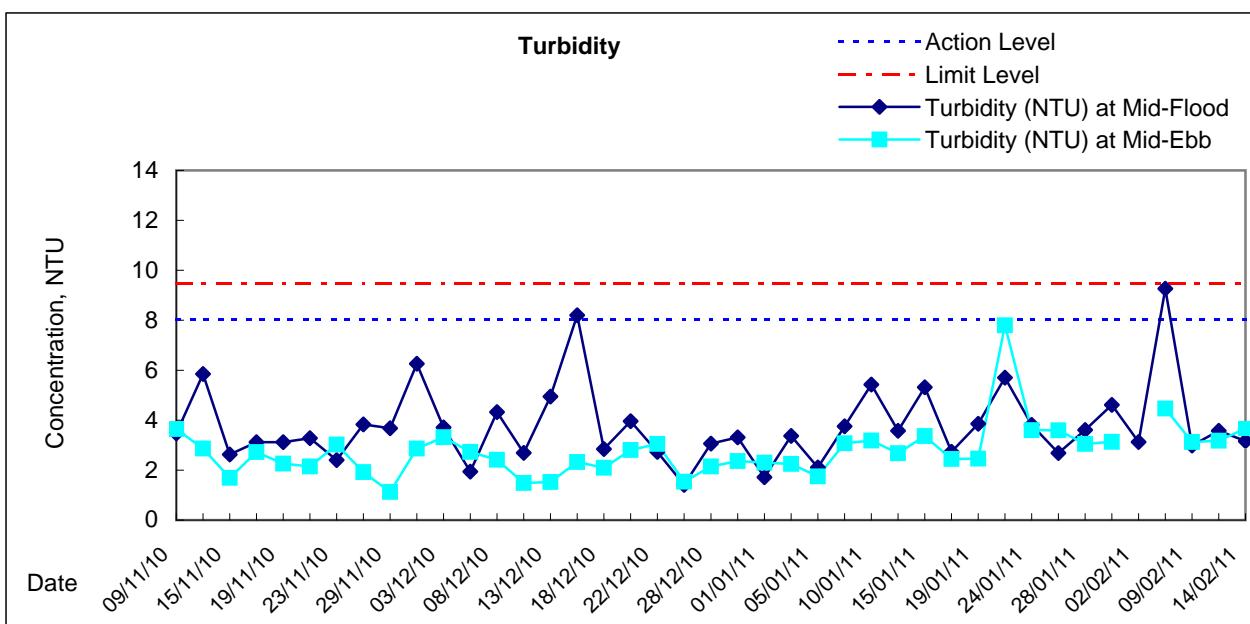
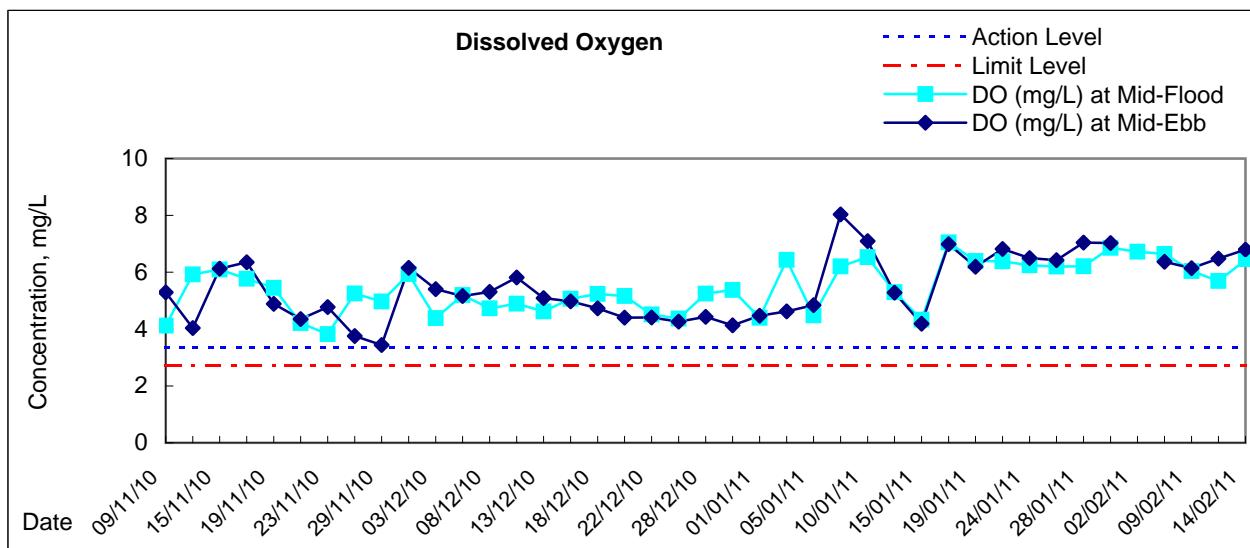




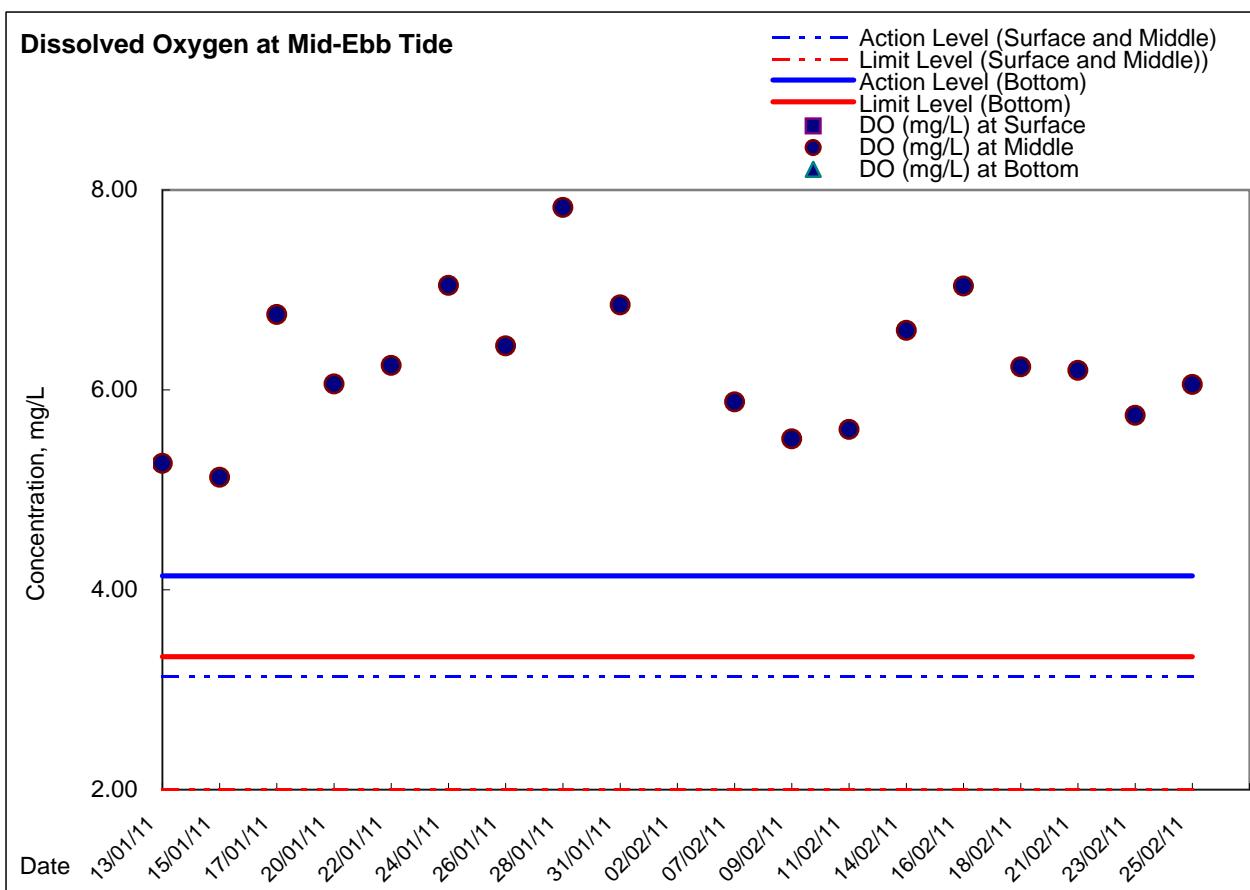
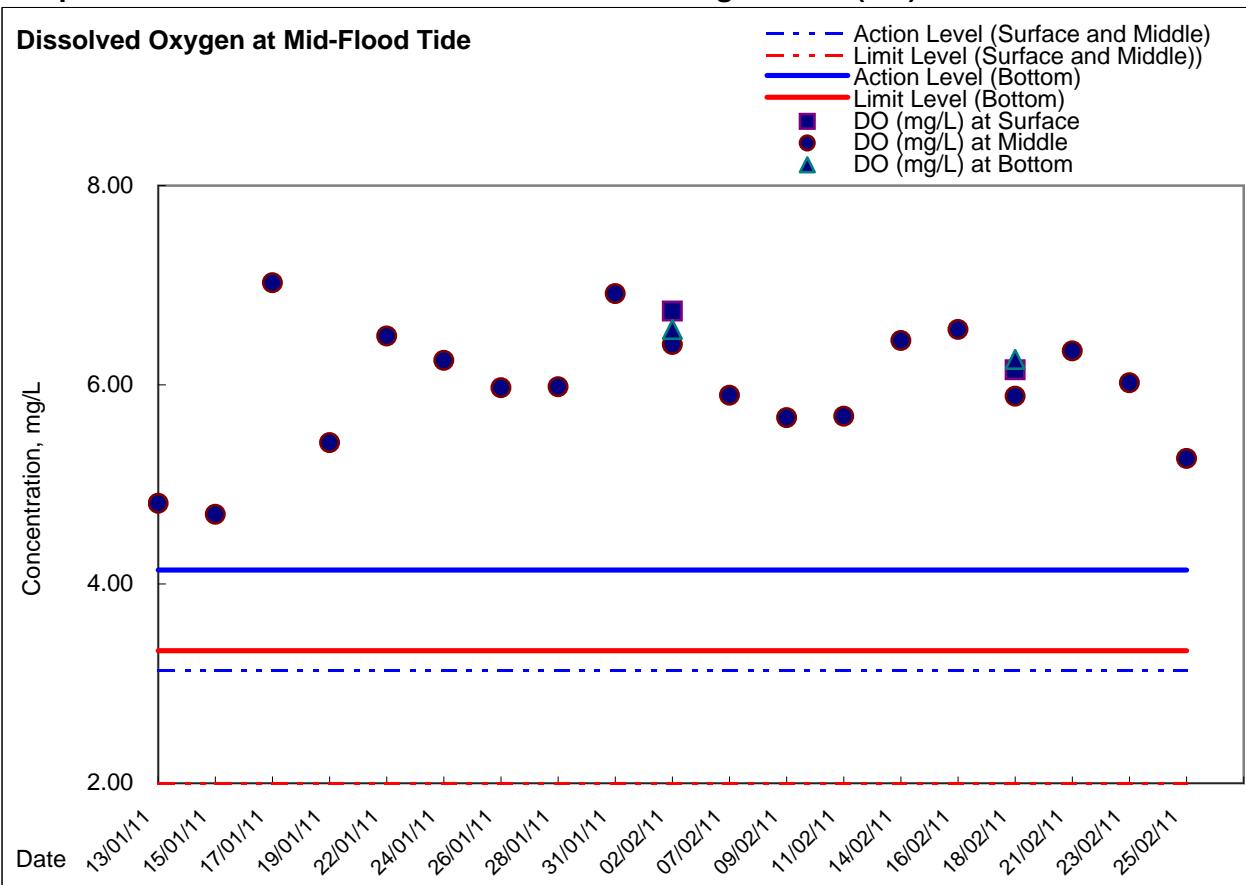




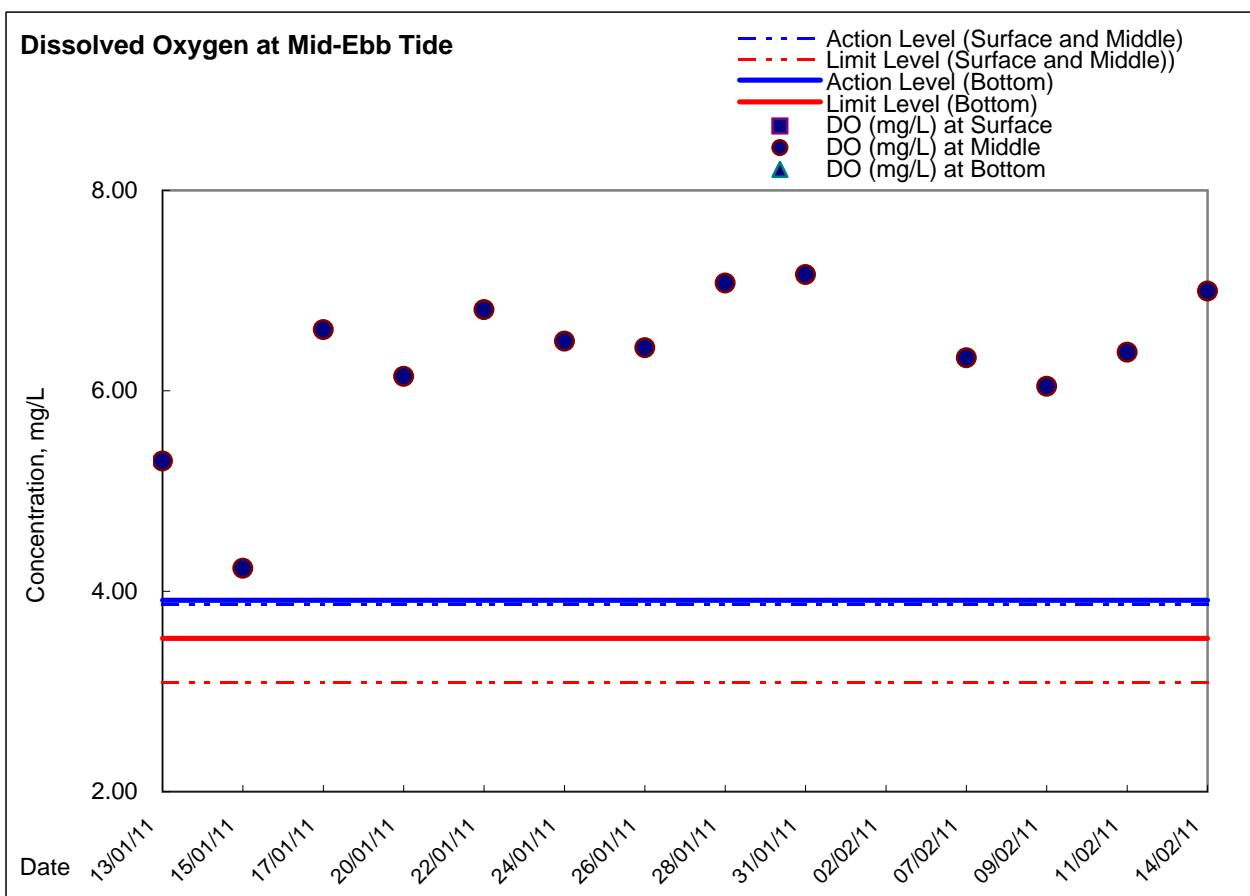
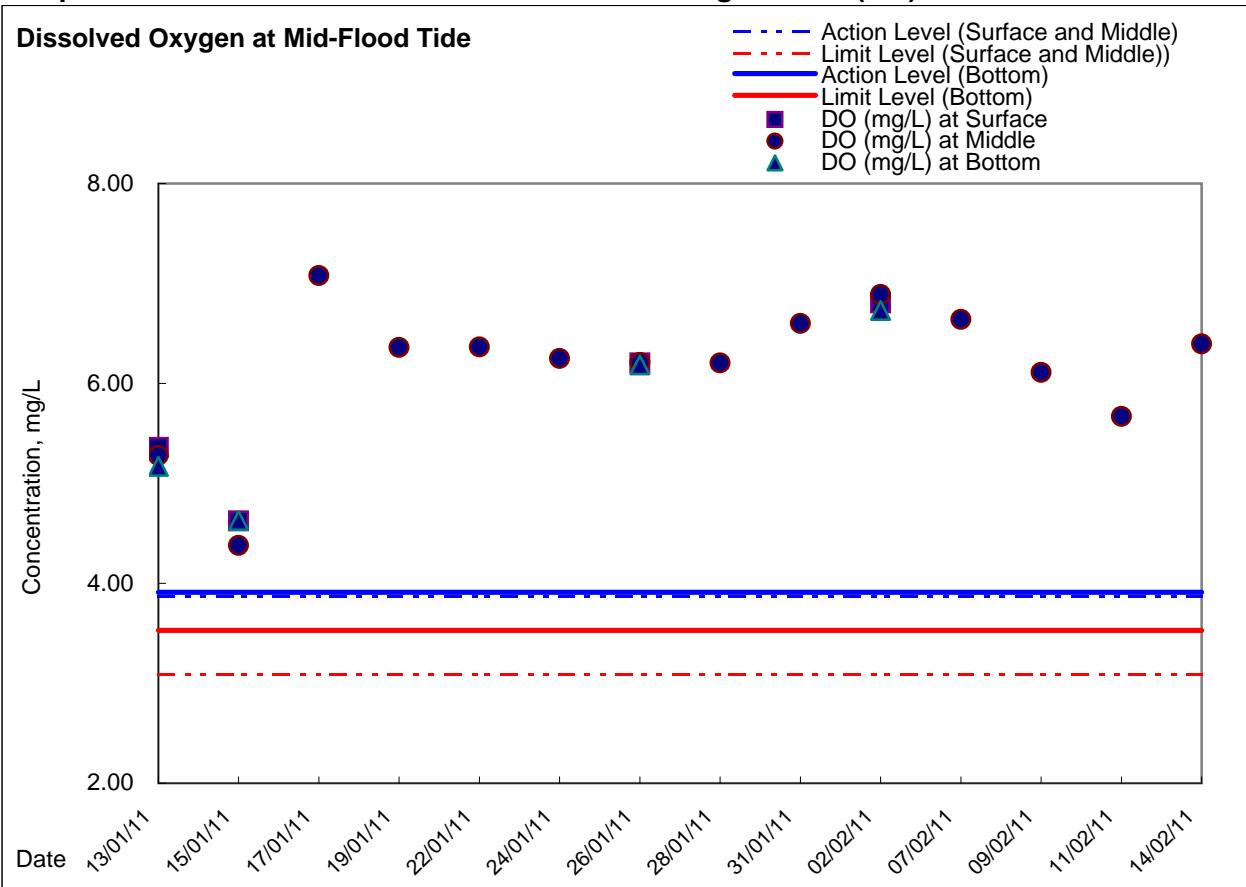




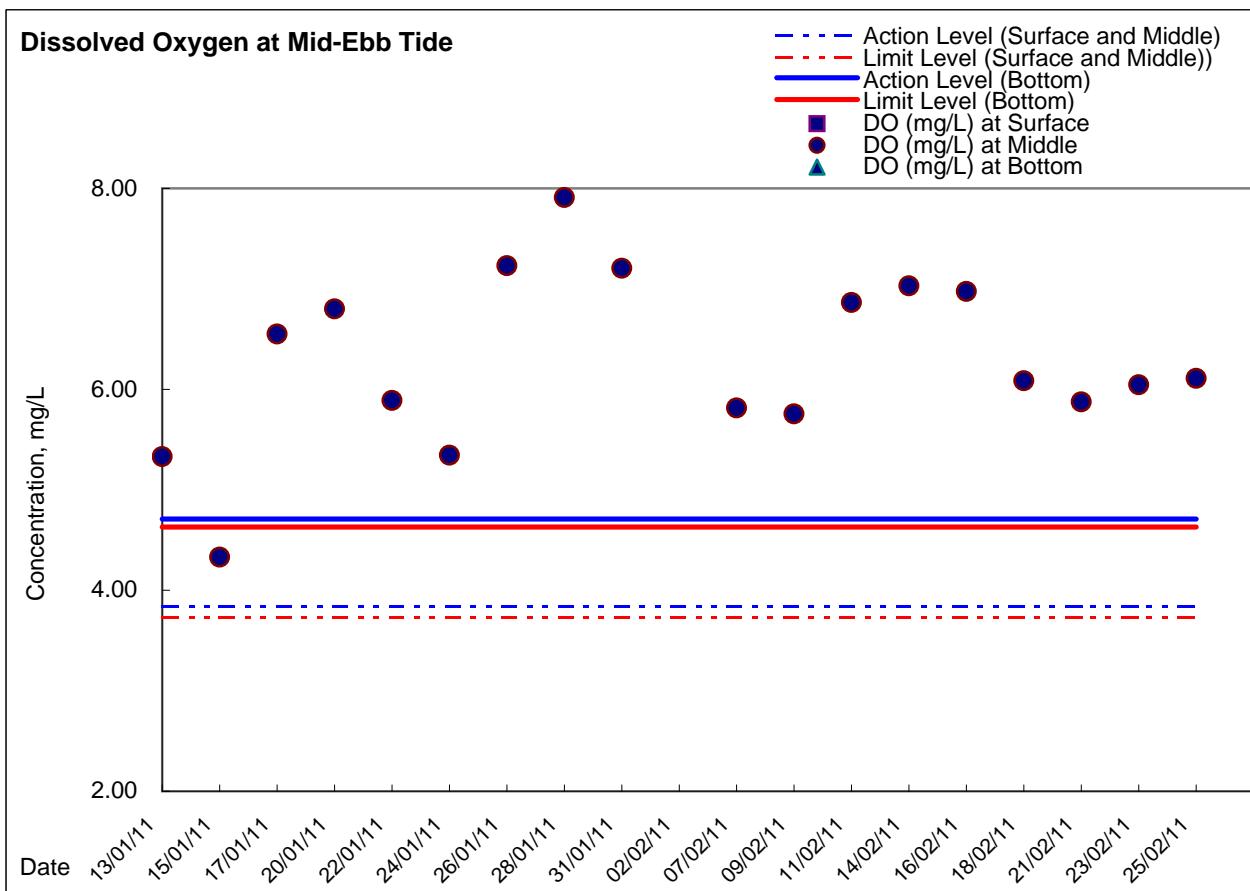
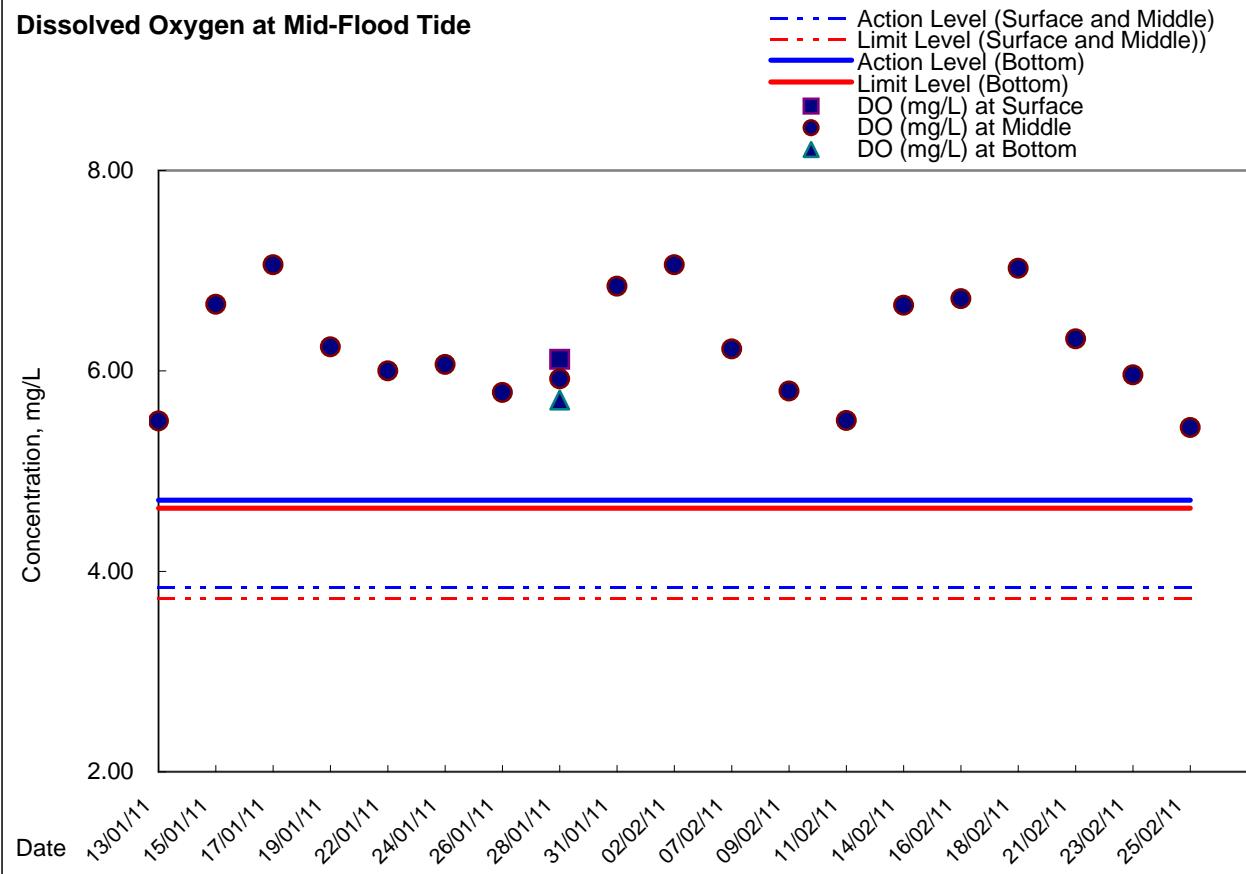
## Graphic Presentation of Enhanced Water Monitoring Results (DO) at C6 - Excelsior Hotel



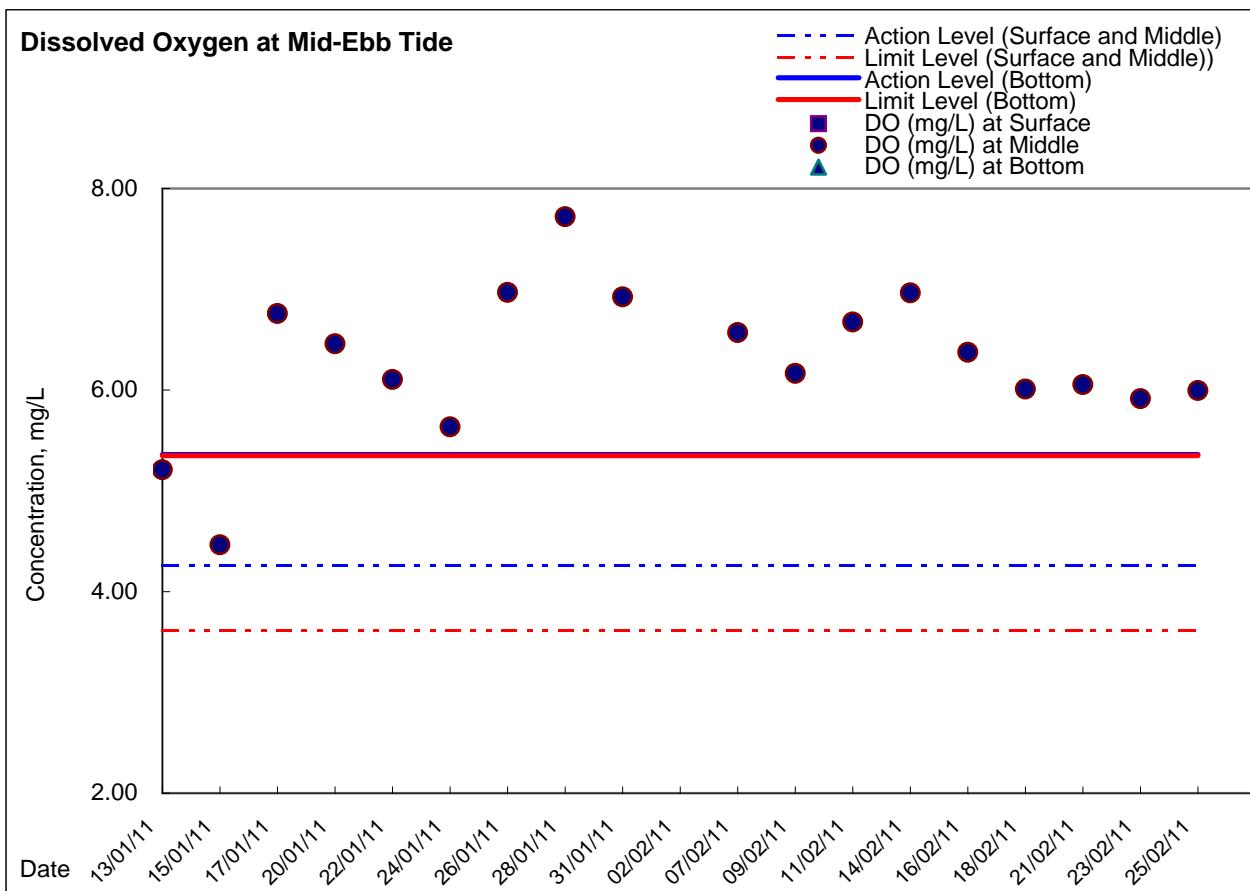
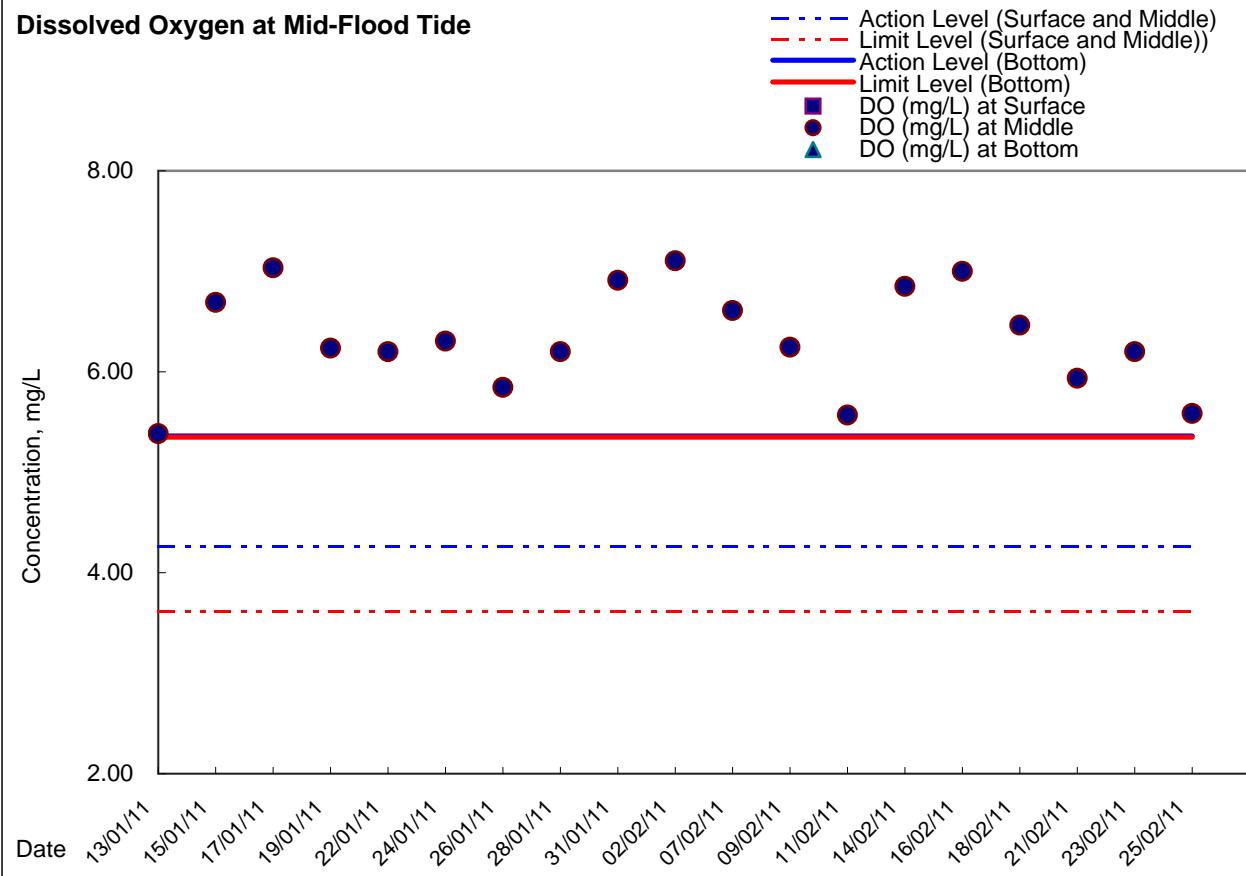
### Graphic Presentation of Enhanced Water Monitoring Results (DO) at C7 - Windsor House



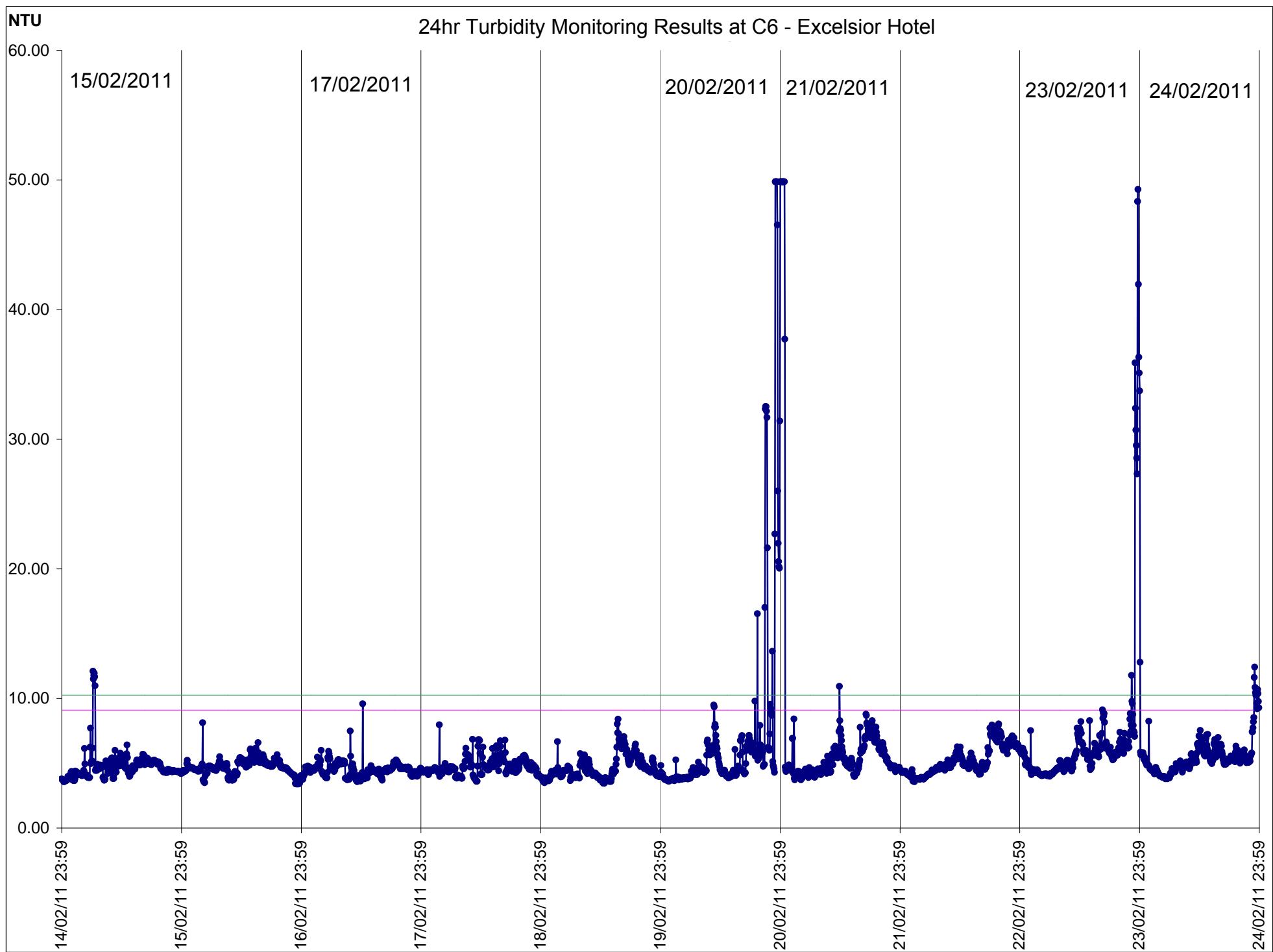
Graphic Presentation of Enhanced Water Monitoring Results (DO) at Ex-WPCWA SW  
 - South-western corners of ex-Public Cargo Works Area



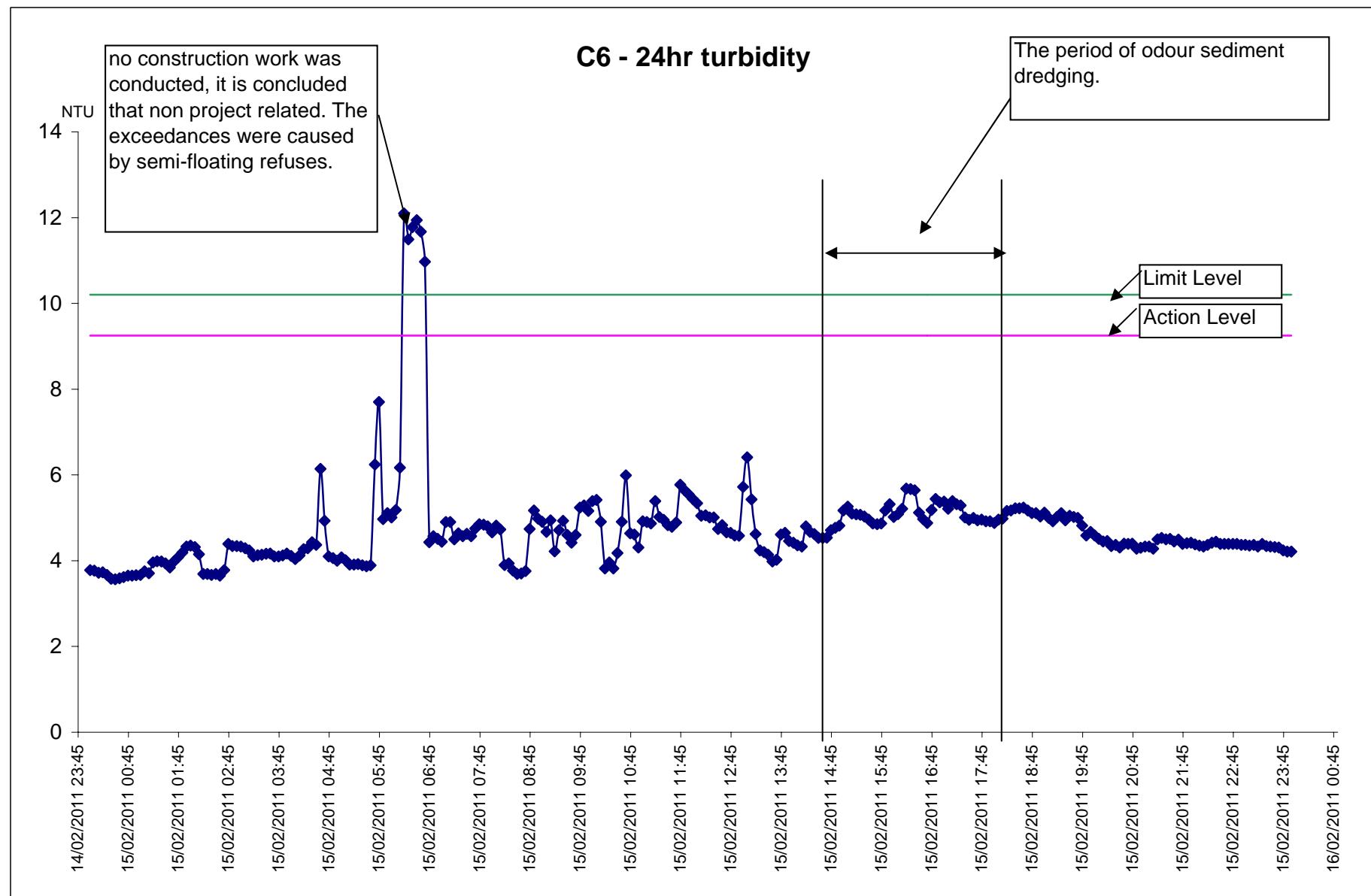
Graphic Presentation of Enhanced Water Monitoring Results (DO) at Ex-WPCWA SE  
- South-eastern corners of ex-Public Cargo Works Area



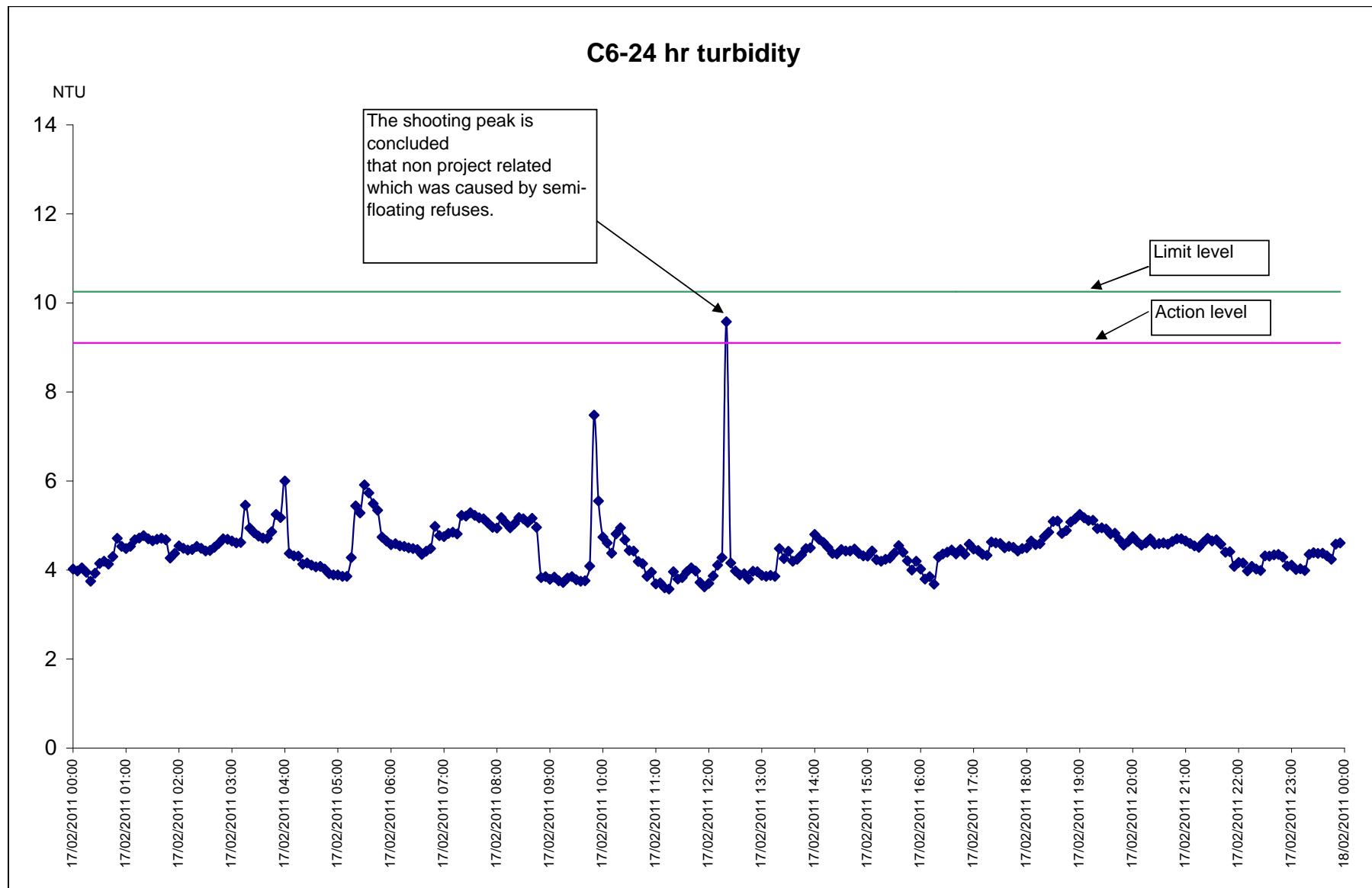
Station Reference	Date and Time	Mid-Flood		Action Level	Limit Level		
		Suspended Solids					
		mg/L					
		Value	Average				
C6 Excelsior Hotel	15/2/11 16:30	6 4	5.00	15.00	22.13		
	16/2/11 16:30	7 6	6.50	15.00	22.13		
	17/2/11 13:25	4 15	9.50	15.00	22.13		
	18/2/11 11:00	3 4	3.50	15.00	22.13		
	19/2/11 9:00	11 12	11.50	15.00	22.13		
	20/2/11 14:00	5 14	9.50	15.00	22.13		
	21/2/11 10:00	6 6	6.00	15.00	22.13		
	22/2/11 11:00	7 6	6.50	15.00	22.13		
	23/2/11 10:20	6 6	6.00	15.00	22.13		
	24/2/11 11:00	7 8	7.50	15.00	22.13		



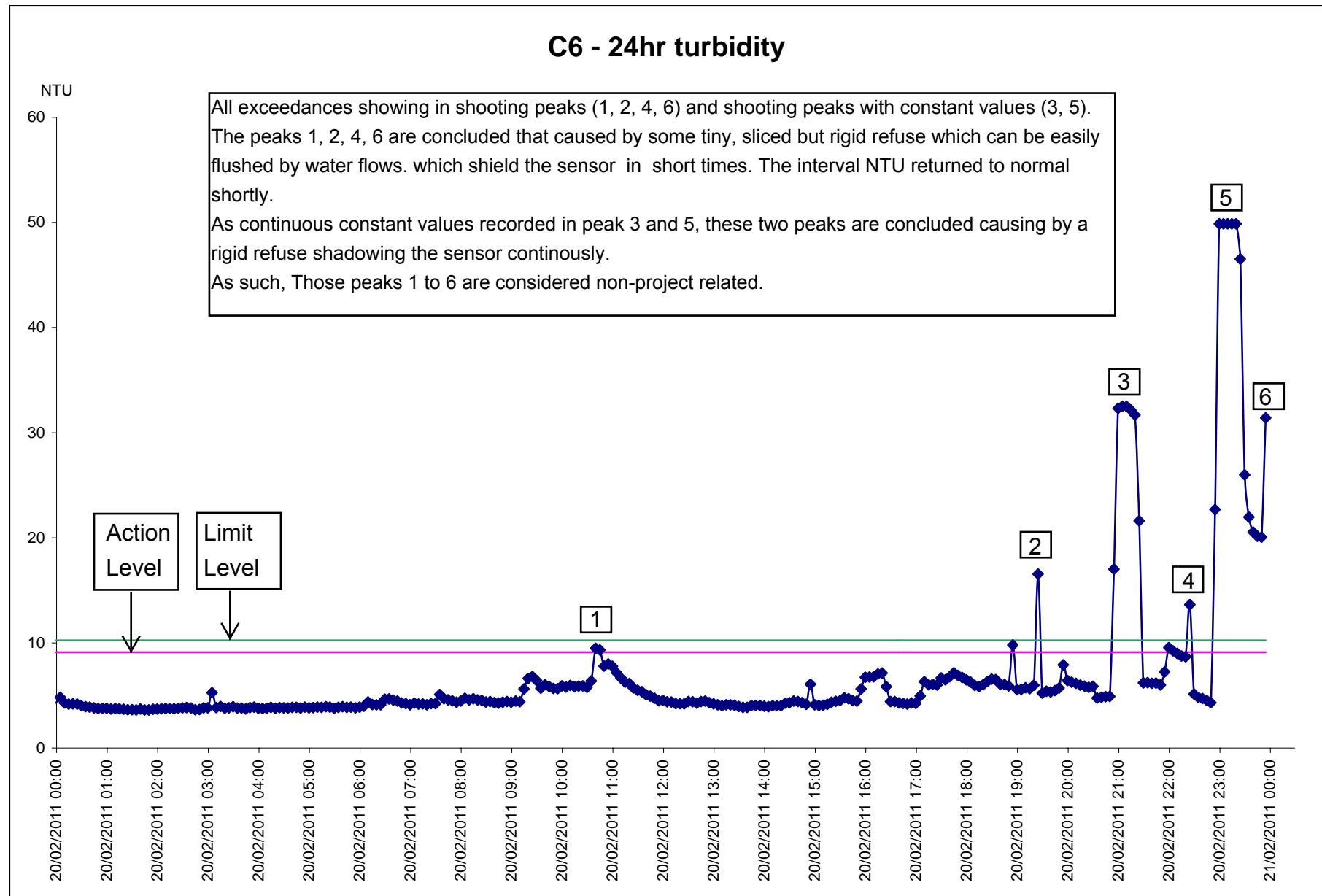
15/02/2011



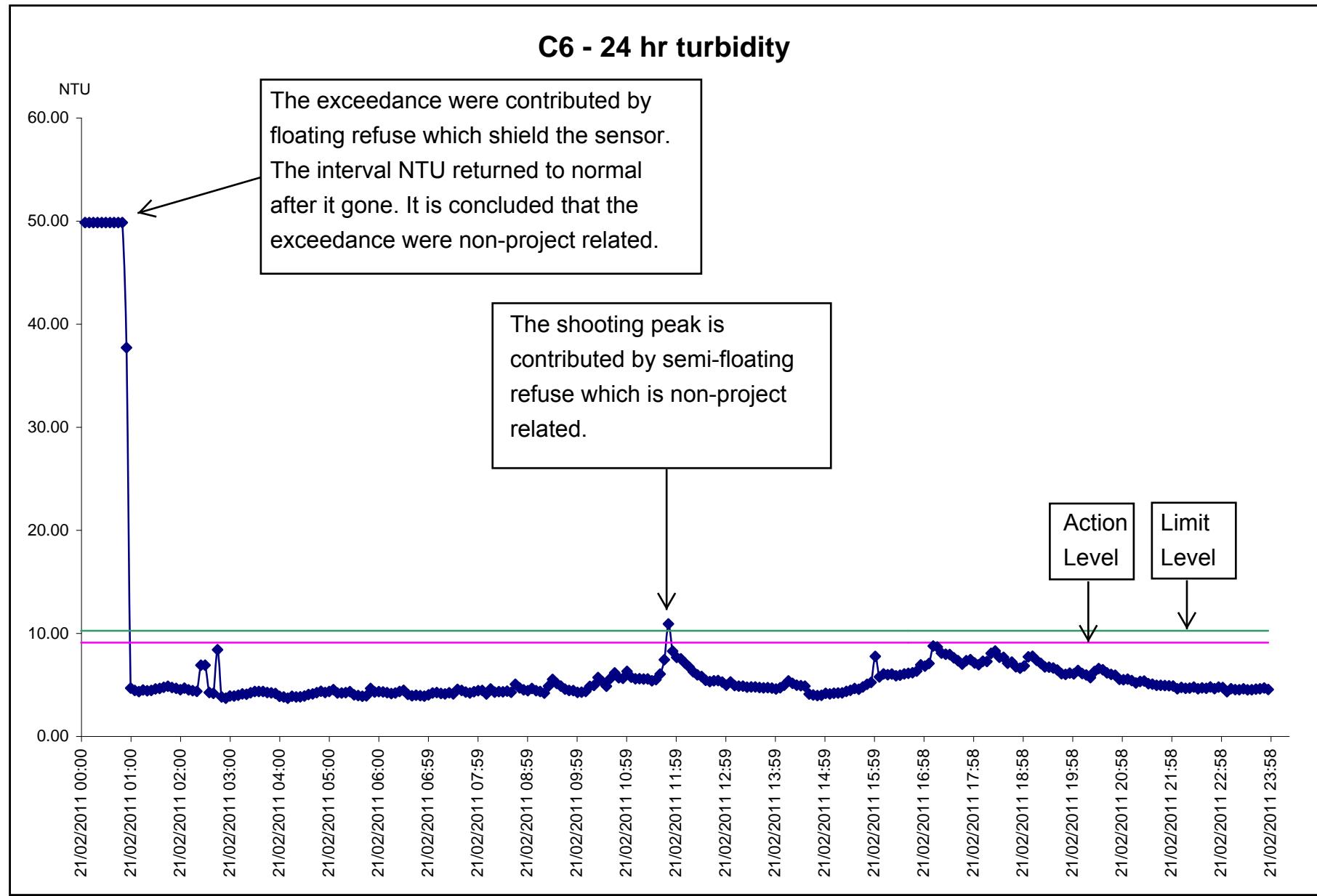
17/02/2011



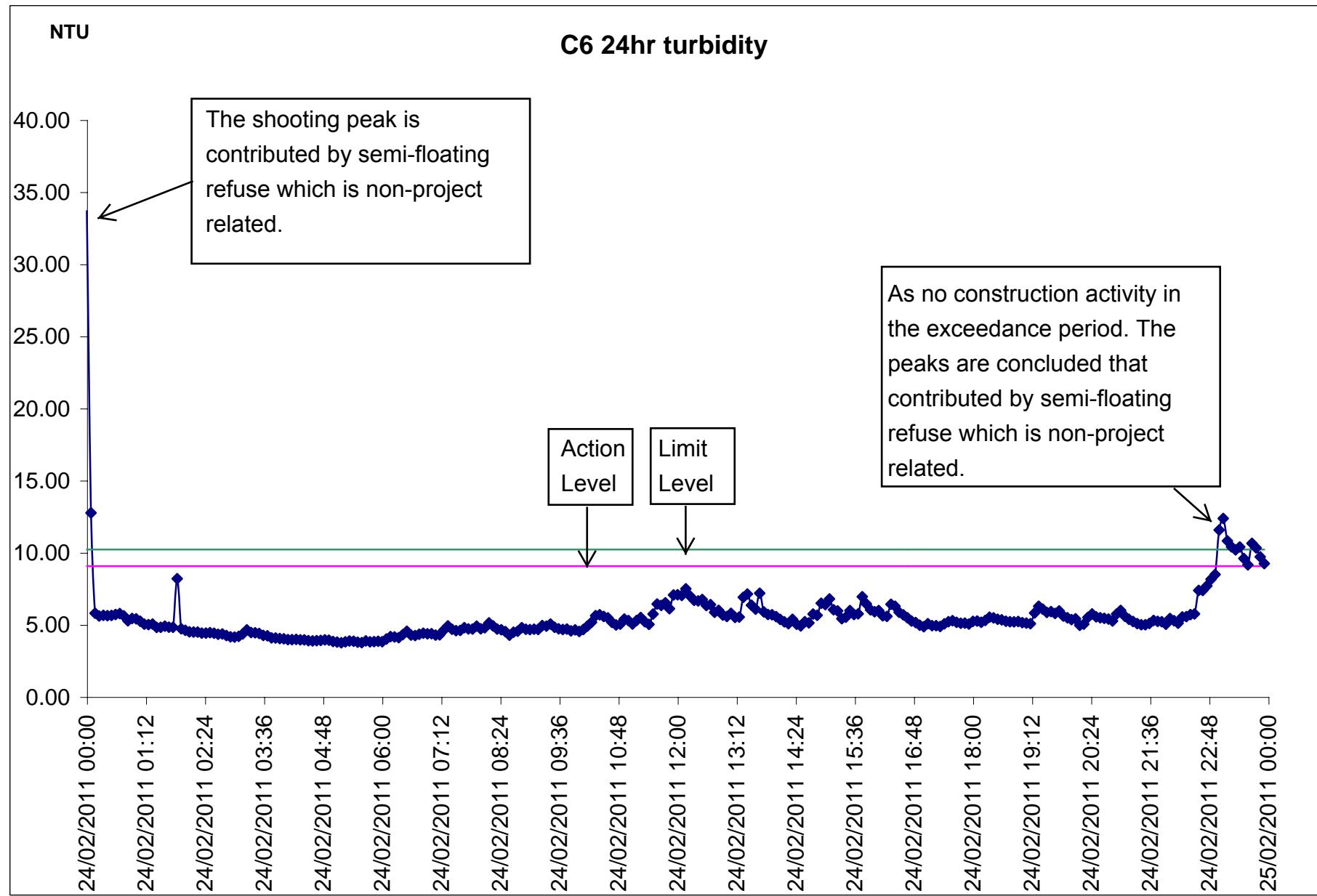
20/02/2011



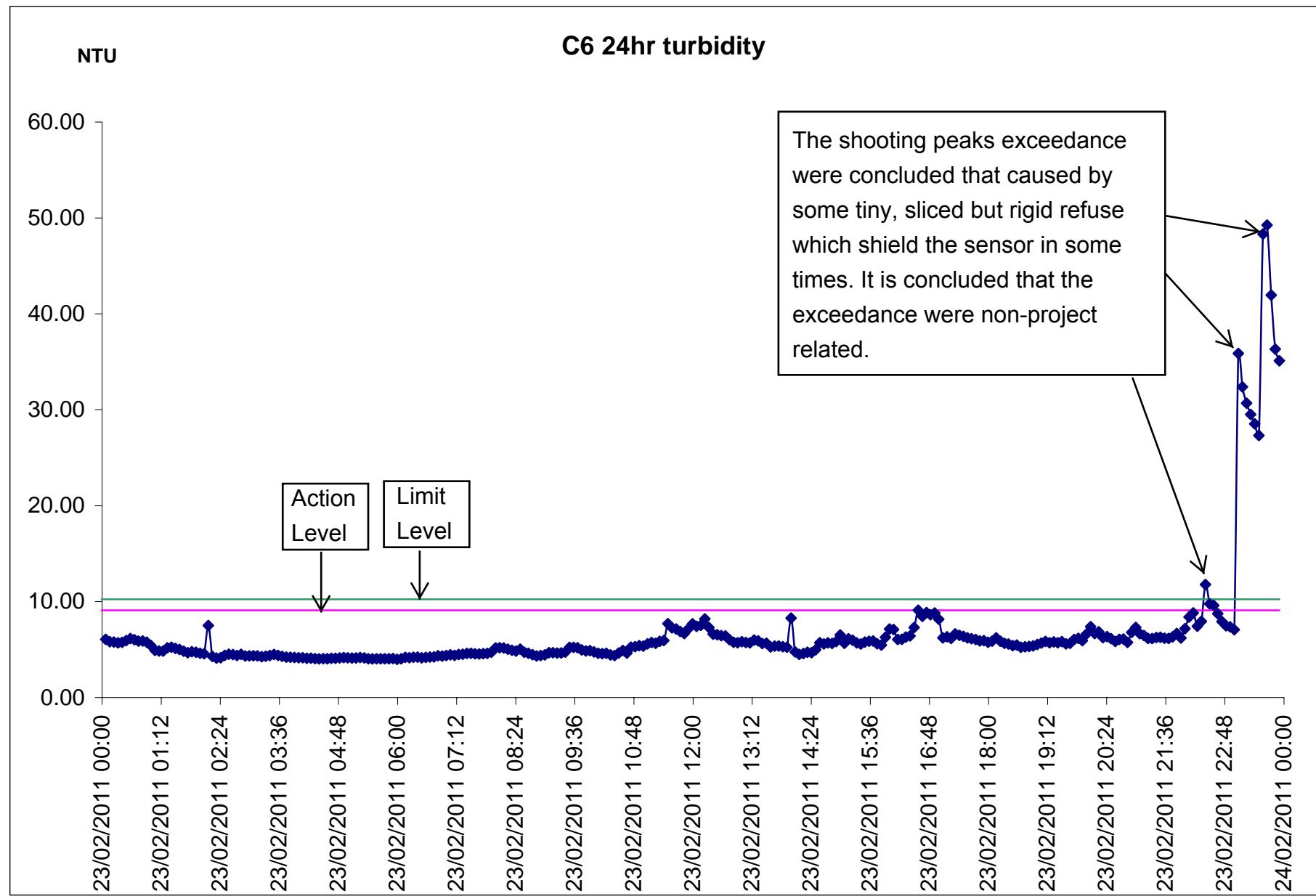
21/02/2011



23/02/2011



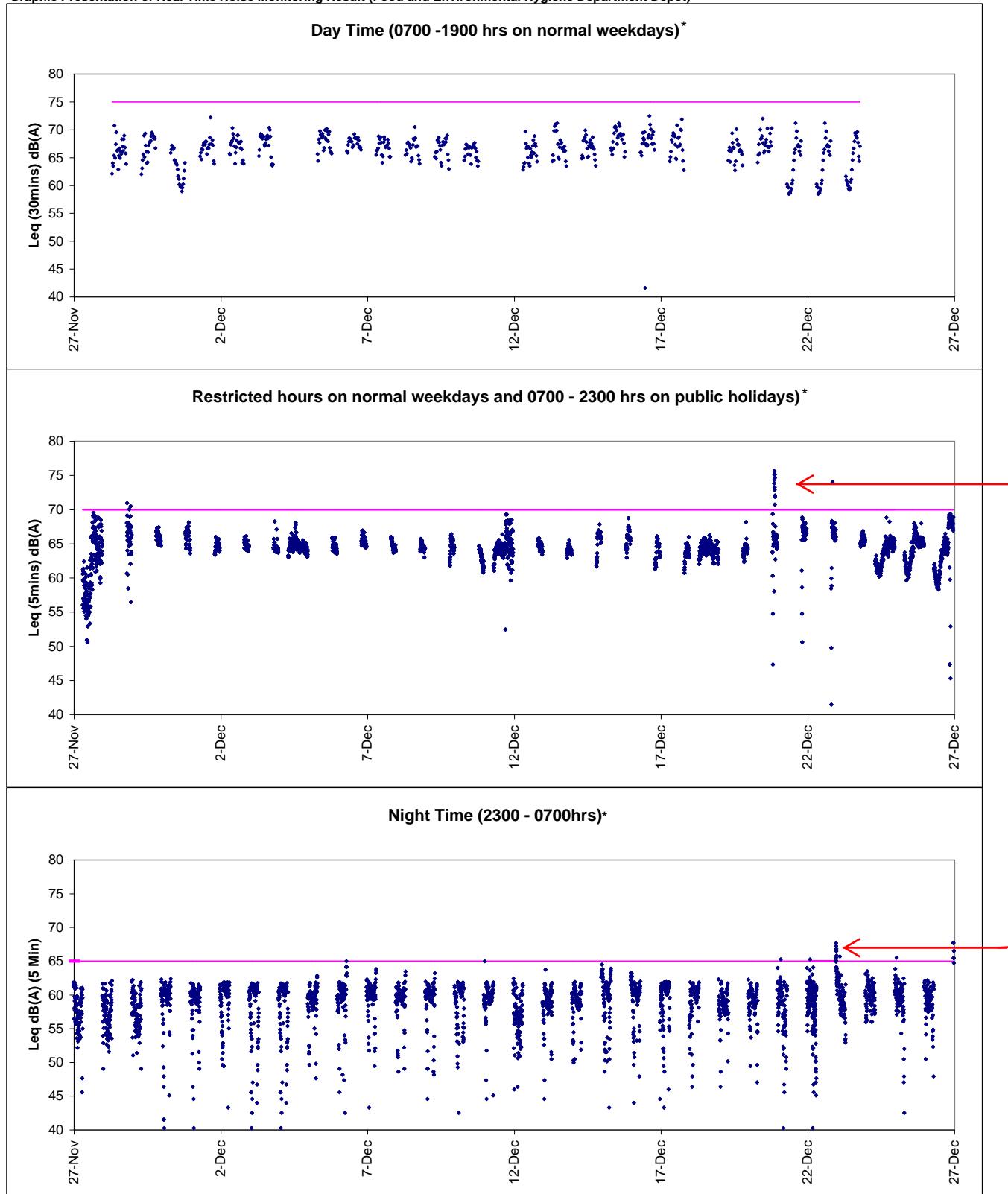
24/02/2011



#### ***Appendix 4.4***

##### ***Real-time Noise Monitoring Results and Graphical Presentations***

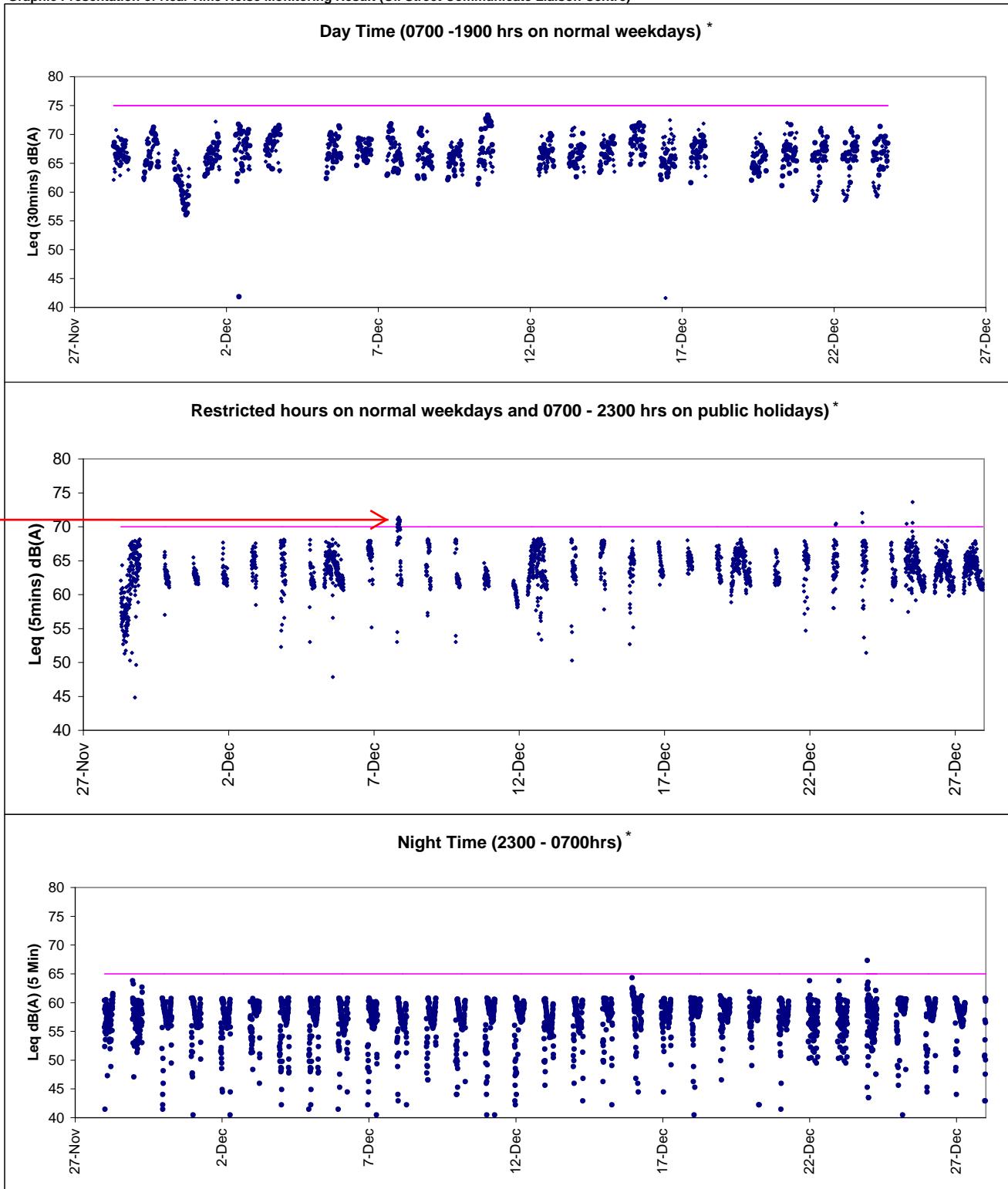
## Graphic Presentation of Real Time Noise Monitoring Result (Food and Environmental Hygiene Department Depot)



\* The noise levels shown were already corrected with baseline noise

No construction activity was conducted during Restricted and Night Time period. As there is no construction work near the monitoring station, estimating the noise contributed from Island Eastern Corridor. It is concluded that the exceedances were non-project related.

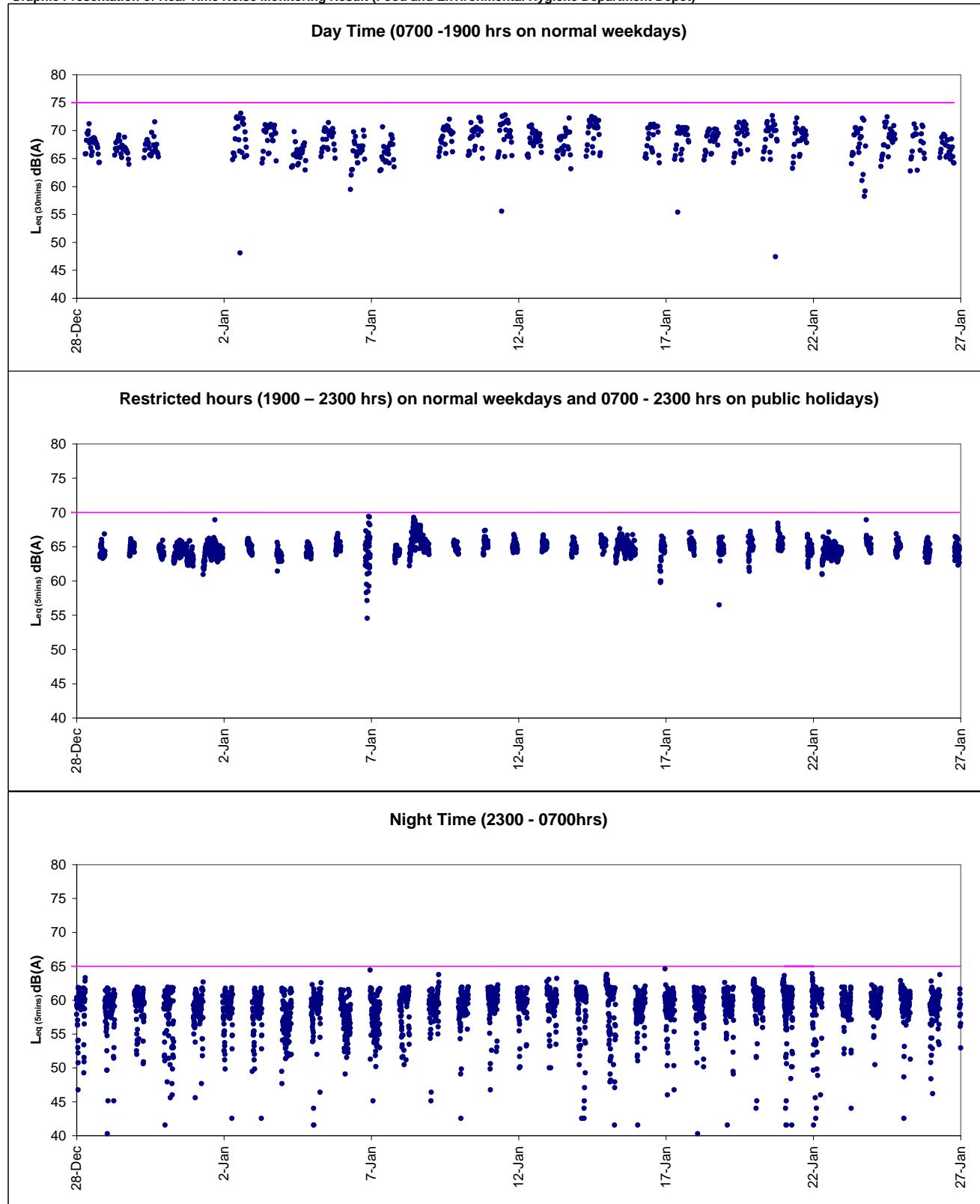
## Graphic Presentation of Real Time Noise Monitoring Result (Oil Street Communicate Liaison Centre)



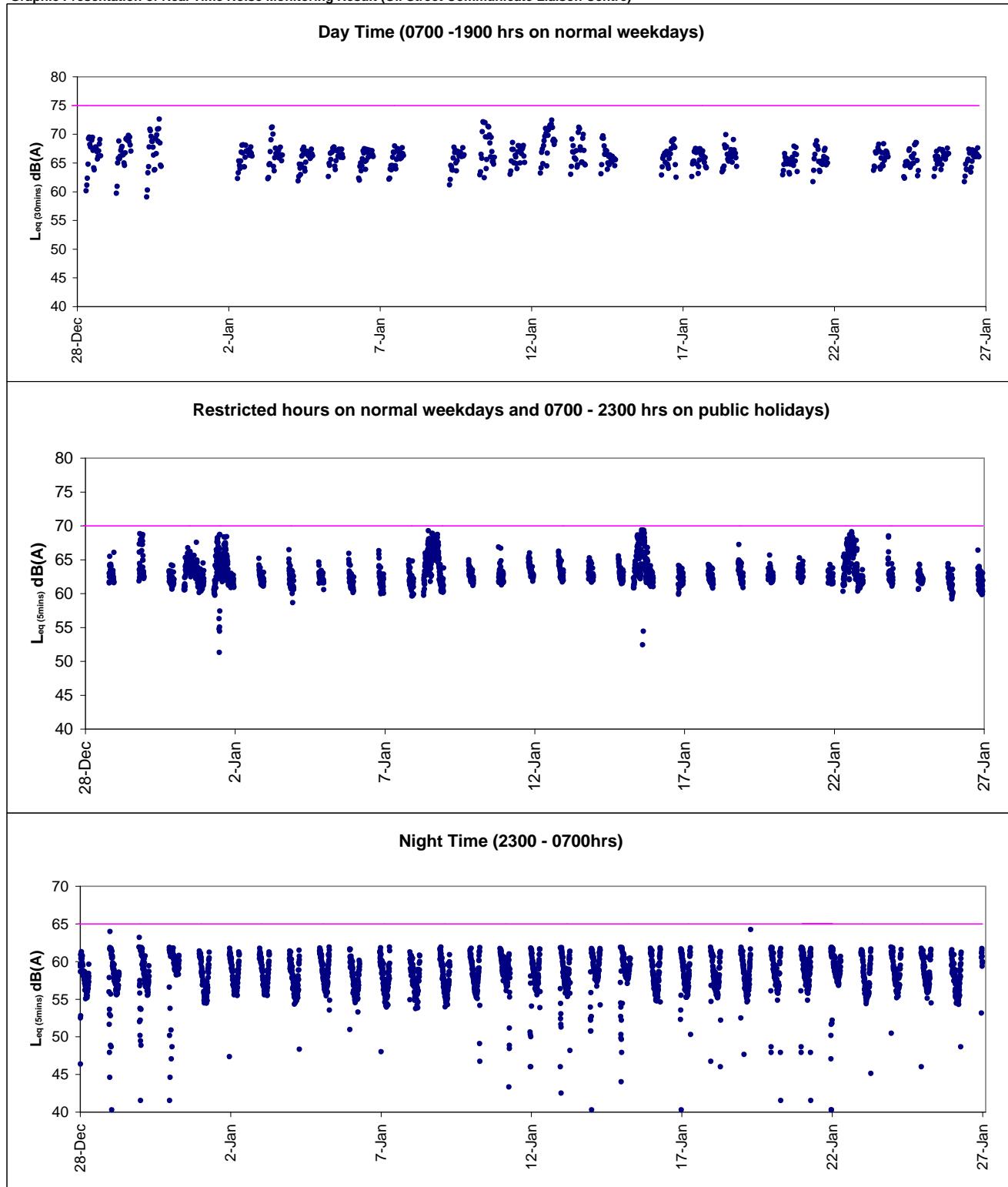
According to contractor information, only maintenance work was conducted during the period of exceedance. Therefore, it is concluded that the exceedance was non-project related.

\*The noise levels shown were already corrected with baseline noise

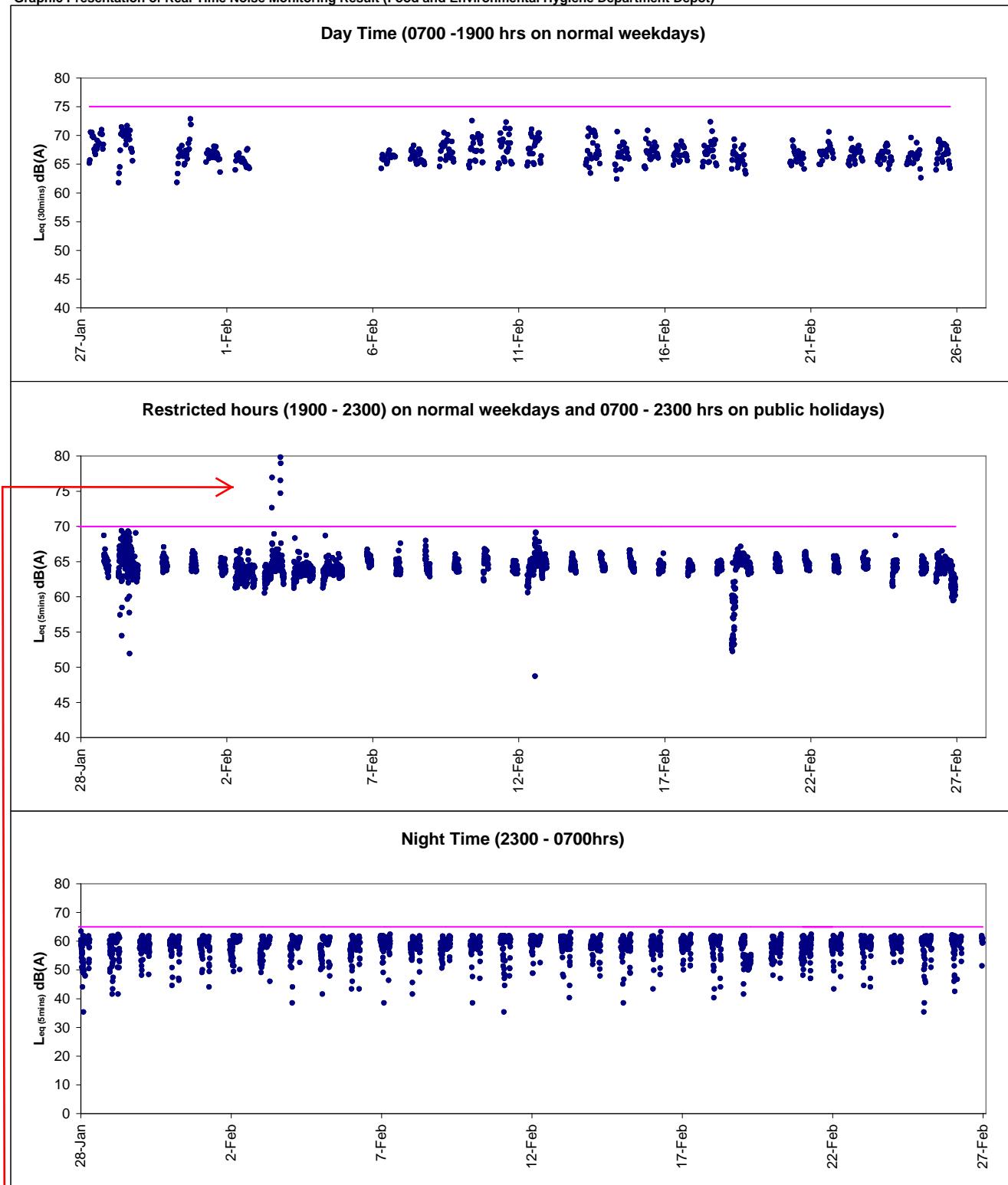
Graphic Presentation of Real Time Noise Monitoring Result (Food and Environmental Hygiene Department Depot)



Graphic Presentation of Real Time Noise Monitoring Result (Oil Street Communicate Liaison Centre)

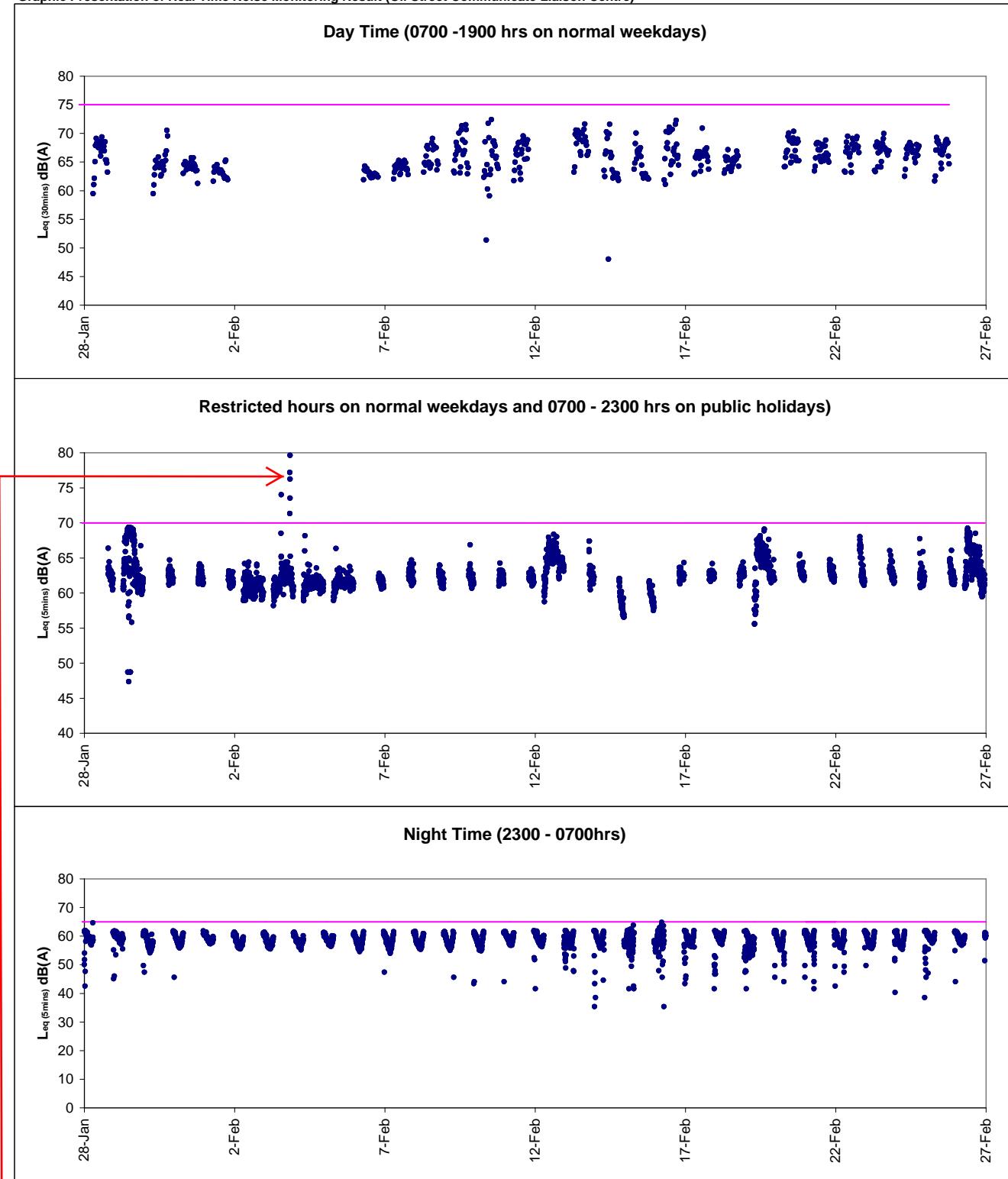


## Graphic Presentation of Real Time Noise Monitoring Result (Food and Environmental Hygiene Department Depot)



Exceedances were recorded during fireworks for celebrating the year of Rabbit. In addition, no construction activity was conducted during the exceedance period. As such, the exceedance was non-project related.

Graphic Presentation of Real Time Noise Monitoring Result (Oil Street Communicate Liaison Centre)



One Limit Level Exceedance was continuously recorded on 4 February 2011 for 20 minutes during the 2011 Lunar New Year Fireworks Display. In addition, no construction activity was conducted during the exceedance period. As such, the exceedance was non-project related.



***Appendix 5.1***

***Event Action Plans***

**Event/Action Plan for Construction Noise**

<b>EVENT</b>	<b>ACTION</b>			
	<b>ET</b>	<b>IEC</b>	<b>ER</b>	<b>CONTRACTOR</b>
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. (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. 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. (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. (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. Submit noise mitigation proposals to IEC and ER;</li><li>2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)</li></ol>

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.</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. 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.</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> <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.</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. 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.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>

## Event / Action Plan for Construction Air Quality

EVENT	ACTION				CONTRACTOR
	ET	IEC	ER		
<b>ACTION LEVEL</b>					
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Notify Contractor. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)	
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)	
<b>LIMIT LEVEL</b>					
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)	
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	

## Event and Action Plan for Marine Water Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next day of exceedance.	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Action level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next working day of exceedance.	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by one sampling day	<p>Repeat in-situ measurement to confirm findings;</p> <p>Identify source(s) of impact; Inform IEC, contractor and EPD;</p> <p>Check monitoring data, all plant, equipment and Contractor's working methods;</p> <p>Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented;</p> <p>Increase the monitoring frequency to daily until no exceedance of Limit level.</p> <p>(The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>Discuss with ET and Contractor on the mitigation measures;</p> <p>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly;</p> <p>Assess the effectiveness of the implemented mitigation measures.</p> <p>(The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>Discuss with IEC, ET and Contractor on the proposed mitigation measures;</p> <p>Request Contractor to critically review the working methods;</p> <p>Make agreement on the mitigation measures to be implemented;</p> <p>Assess the effectiveness of the implemented mitigation measures.</p> <p>(The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>Inform the Engineer and confirm notification of the non-compliance in writing;</p> <p>Rectify unacceptable practice;</p> <p>Check all plant and equipment;</p> <p>Consider changes of working methods;</p> <p>Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days;</p> <p>Implement the agreed mitigation measures.</p> <p>(The above actions should be taken within 1 working day after the exceedance is identified)</p>
Limit level being exceeded by more than one consecutive sampling days	<p>Identify source(s) of impact; Inform IEC, contractor and EPD;</p> <p>Check monitoring data, all plant, equipment and Contractor's working methods;</p> <p>Discuss mitigation measures with IEC, ER and Contractor;</p> <p>Ensure mitigation measures are implemented;</p> <p>Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.</p> <p>(The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>Discuss with ET and Contractor on the mitigation measures;</p> <p>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly;</p> <p>Assess the effectiveness of the implemented mitigation measures.</p> <p>(The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>Discuss with IEC, ET and Contractor on the proposed mitigation measures;</p> <p>Request Contractor to critically review the working methods;</p> <p>Make agreement on the mitigation measures to be implemented;</p> <p>Assess the effectiveness of the implemented mitigation measures;</p> <p>Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level.</p> <p>(The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>Inform the ER and confirm notification of the non-compliance in writing;</p> <p>Rectify unacceptable practice;</p> <p>Check all plant and equipment;</p> <p>Consider changes of working methods;</p> <p>Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days;</p> <p>Implement the agreed mitigation measures;</p> <p>As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.</p> <p>(The above actions should be taken within 1 working day after the exceedance is identified)</p>

***Appendix 6.1***

***Complaints Log***

## Environmental Complaints Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
100321a	21/3/2010	ICC Case no. 1-224618029, Ms. Tsang	Location near Tin Hau	Complaint regarding the loud noise and dark smoke in the course of dredging works on 21 March 2010 (Sunday).	<p>1) A valid Construction Noise Permit no. GW-RS0119-10 was granted from EPD since 18<sup>th</sup> Feb. 2010 for the dredging works which carry out at area for North Point Reclamation.</p> <p>2) Officer from Marine Department, Police and EPD's officer attended the scene for inspection and investigation.</p> <p>3) The Contractor (CHEC-CRBC JV) strictly comply all the conditions in CNP and take all mitigation measures in order to minimize the potential impacts to surrounding sensitive receivers. A formal letter was issued out by CHEC-CRBC JV and to explain the status of the recent construction activities.</p> <p>4) No limit level exceedance was recorded on the noise measurement during day time and evening time noise measurement on 23 March 2010. Additional restrict hours noise monitoring at Causeway Bay Community and City Garden was conducted on 5 April 2010 (Public Holiday). No limit level exceedance was recorded in the monitoring.</p> <p>5) No further complaints were received from Mr. Tsang in the reporting month. The complaint is considered closed.</p>	Closed
100321b	21/3/2010	Unknown	Near the eastern breakwater of the Causeway Bay Typhoon Shelter	A public complaint and enquiry regarding loud noises emanated from dredging activities on 21/3/2010 (Sunday) until 2220 hours and between 1920-1946 hours in the evening of 22 March 2010(Monday).	<p>1) A valid Construction Noise Permit no. GW-RS0119-10 was granted from EPD since 18<sup>th</sup> Feb. 2010 for the dredging works at area for North Point Reclamation during general holidays including Sunday between 0700-2300 hours and any day not being a general holiday between 1900-2300hours. It is complied with the condition of CNP.</p> <p>2) Officer from Marine Department, Police and EPD's officer attended the scene for inspection and investigation.</p> <p>3) No limit level exceedance was recorded on the noise measurement during day time and evening time noise measurement on 23 March 2010. Additional restrict hours noise monitoring at Causeway Bay Community and City Garden was conducted on 5 April 2010 (Public</p>	Closed

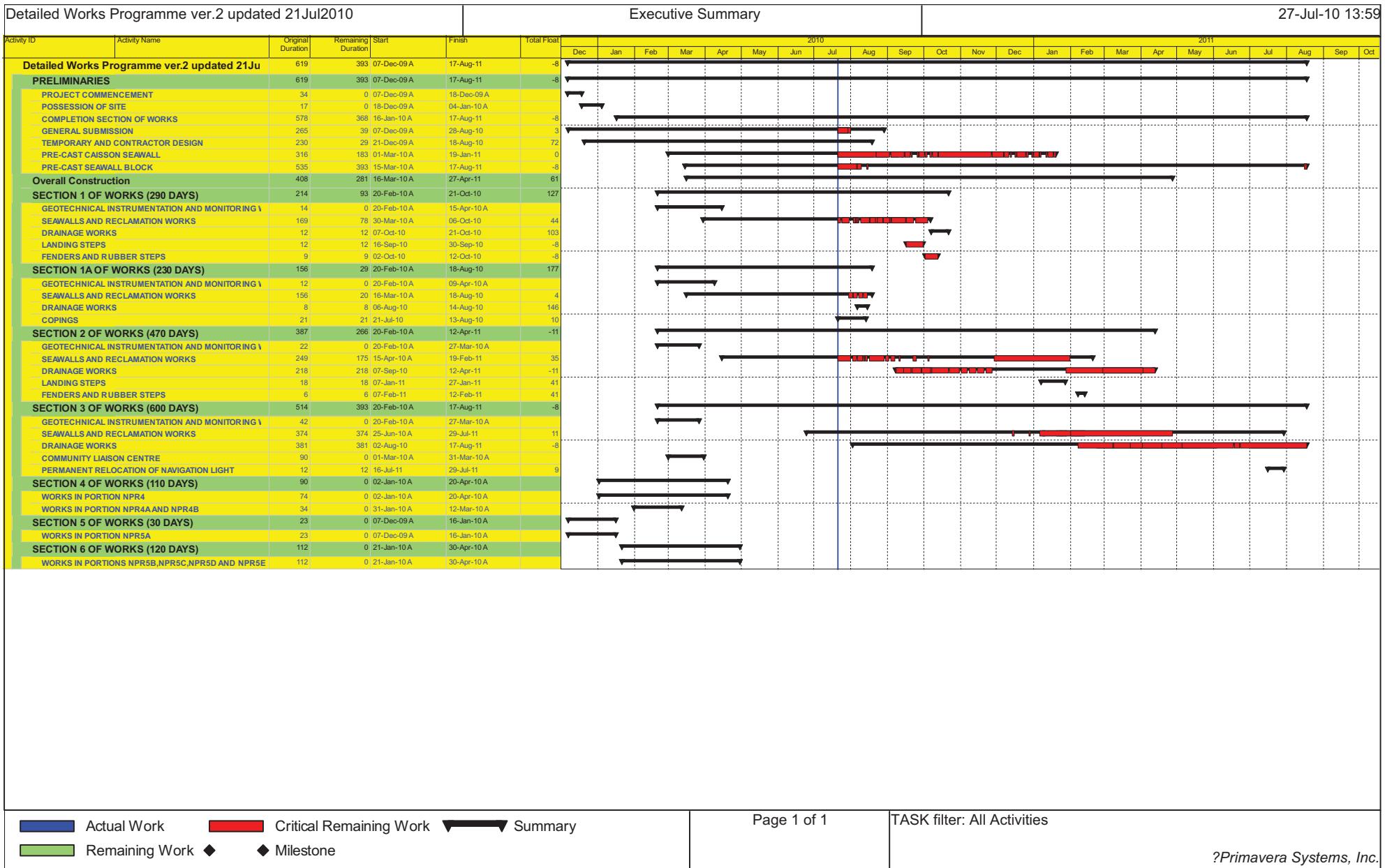
Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					Holiday). No limit level exceedance was recorded in the monitoring. 4) No further complaints were received in the reporting month. The complaint is considered closed.	
100504	4/5/2010	Public complainant received by ICC (ICC case: 1-233384048)	Watson Road	Complaint on the noise nuisance due to the large scale of dredging machine (face to Island East Corridor) in particular the hours 1900 to 0800 and request to reduce the noise level.	1) Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0119-10 for their dredging works. Contractor has implemented mitigation measures to reduce the working hour not later than 2230. 2) According to RSS 's record, no more daytime and night time dredging since the departure of the split hopper barge from the workplace on 29 April 2010 at 1900 hrs to 5 May 2010. 3) No further complaints were received in the reporting month. The complaint is considered closed.	Closed
100731	31/7/2010	Mr. Lee received by ICC (CC Case: 1-250702681)	Oil Street to Watson Road	Complaint on the noise nuisance due to the dredging works. Three construction plants were operated concurrently.	1) Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0371-10 for their dredging works. 2) There was only 1 grab dredger operated by Contractor within NPR project site area for dredging works. 3) No noise exceedance was recorded at noise monitoring station at Victoria Centre on 27 July and 3 August 2010 during daytime and evening time period. 4) It is considered as invalid from the EP and CNP point of view.	Closed
100812	12/8/2010	Mr. Wong, Harbour Heights (Management) Ltd.	Harbour Heights	Management office received their resident complained on the noise nuisance from the dredging works at the marine works area adjacent to the Harbour Height during the period from 0700 to 2200.	1) Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0371-10 for their dredging works. Contractor has implemented mitigation measures to reduce the working hour not later than 2230. 2) No noise exceedance was recorded at noise monitoring station at Victoria Centre on 10 and 17 August 2010 during daytime and evening time period. 3) It is considered as invalid complaint. No further complaints were received in the reporting month. The complaint is considered closed.	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
101108	8/11/2010	Mr. Peter Nip received by ICC (CC Case)	Sai Wan Ho	Visual concern around the seaside silt screen outside the WSD freshwater intake pump at Sai Wan Ho (Monitoring station ref no.. WSD15)	<p>1) Contractor for HY/2009/11 has been regular checked of condition and removal of trapped rubbish before the dismantling of the floating silt screen to be replaced by wall mount silt screen.</p> <p>2) Follow-up action had been immediately carried out to check and clear the floating refuse around the seaside silt screen after receipt of the complaint.</p> <p>3) Removal of seaside silt screen outside the WSD freshwater intake (WSD15) by contractor HY/2009/11 was checked and confirmed dated 9 November 2010. Silt screen has been deployed into the existing steel frame at WSD15 for the protection of WSD salt water intake.</p>	Closed
101110	10/11/2010	Mr. Wong, Harbour Heights (Management) Ltd.	Harbour Heights	Management office received their resident complained on the noise nuisance from the power mechanical equipment during the 0700 to 2200hrs	<p>1) Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0870-10 for their dredging works during evening time. Contractor has implemented mitigation measures to reduce the working hour not later than 2230.</p> <p>2) No noise exceedance was recorded at noise monitoring station at Victoria Centre on 4 and 10 November 2010 during daytime and evening time period.</p> <p>3) It is considered as invalid complaint. No further complaints were received in the reporting month. The complaint is considered closed.</p>	Closed
101203	3/12/2010, 01:45a.m.	The resident of Block 11, City Garden by ICC referral from Marine Department	North Point	Bad odour was generated from the dredging plant off North Point	<p>1) The first investigation was carried out by Marine Department patrol in the morning on 3 Dec 2010 at around 10:00 and revealed that a few working barges were anchoring in the vicinity without carrying out dredging work.</p> <p>2) A further specific investigation inspection on contractor's backhoe barge in the vicinity of City Garden was jointly conducted with Engineer Representatives (AECOM/RSS), and ET on 8 Dec 2010 at 11:30. No bad odour was noted during the investigation.</p> <p>3) Routine dredging operation of the backhoe barge was performed during the jointed investigation inspection and it was revealed that no bad odour was attributed by the dredged materials inspected.</p>	Closed
101206	6/12/2010	Ms. Lui, the	City Garden, North	Two barges were generating noise at 22:00 on 6 December	<p>1) ET confirmed the following information with resident site</p>	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
		resident of 27/F, Block 10, City Garden by ICC (ICC case: 1-266039336)	Point	<p>noise at 22:00 on 6 December 2010 in which the noise from filling operation was louder than the traffic noise &amp; visual impact was generated due to the spotlight pointing directly to the complainant flat, suspected the filling operation was part of Wanchai Development Phase II;</p> <p>Complainant also raised the same complaint to District Councillor, Mr. Hui on 7 Dec 2010 regarding the night-time noise and suspected earlier start of work at 06:30. Complaint also requested for limiting the plant operating hours from 09:00-21:00.</p>	<p>staff on the complaint:</p> <ul style="list-style-type: none"> <li>• It was referred to the filling operation at North Point Reclamation of Central Wan Chai Bypass site area instead of part of Wanchai Development Phase II;</li> <li>• Two derrick barges were in operation at the time of complaint for placing 400 rockfill onto the excavation trench and for levelling the formation level to receive the precast caisson seawall;</li> <li>• Flood light on the control mast of derrick barge have no lighting shields for the prevention of glare of flood lights;</li> <li>• No starting work on 7 Dec 2010 at 0630hours.</li> </ul> <p>2) PME used in restricted hours were checked and confirmed compliant with valid CNP no. GW-RS0870-10. The noise level recorded on 6 Dec 2010 was complied with the noise criteria during restricted hour;</p> <p>3) It was found that the occasional noise nuisance might be caused by the hitting or scratching onto the rock surface during loading down the grab onto the Grade 400 rockfill;</p> <p>4) The absence of the lighting shields at flood light results in visual glare to the complainant at night-time.</p> <p>5) Contractor was advised to minimize the finishing time of placing Grade 400 rockfill at 2100hrs and switch off all unnecessary flood lights apart from the light for the safety and security purpose;</p> <p>6) No further complaint was received after implementation of proposed measures</p>	

### ***Appendix 8.1***

#### ***Construction Programme of Individual Contracts***



Contract No. HK/2009/01

**Contract Title : Wan Chai Development Phase II - Central - Wan Chai Bypass at HKCEC**

## **Working Programme for Marine Works (Dredging and Backfilling)**

**Dredging & Reclamation Works Programme Summary**  
(based on Initial Works Programme Rev. 0)

ID	Task Name	Duration	Start	Timeline																
				Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	<b>HK/2009/02-Marine &amp; Reclamation Works</b>	<b>2008 d</b>	<b>Thu 28/1/10</b>																	
2	Contract Commencement	0 d	Thu 28/1/10																	
3	<b>General</b>	<b>1879 d</b>	<b>Mon 22/2/10</b>																	
4	Submission & obtain approval for marine GI	21 d	Mon 22/2/10																	
5	Stage 1 Marine GI for reclamation	30 d	Mon 15/3/10																	
6	Engineer's Design review for Dredging of WCR1, WCR2 & WCR4	30 d	Mon 22/3/10																	
7	Relocation of New Star Ferry Pier	0 d	Tue 18/3/14																	
8	Demolition of Existing Star Ferry Pier	100 d	Tue 18/3/14																	
9	Stage 2 Marine GI for Reclamation	14 d	Tue 18/3/14																	
10	Engineer's Design review for Dredging of WCR3	21 d	Tue 25/3/14																	
11	Complete Diversion of Hung Hing Road Traffic Back to Original	20 d	Fri 6/2/15																	
12	Excavate & remove top of d-wall for permanent seawall construction	50 d	Wed 25/2/15																	
13	<b>Submarine Outfall</b>	<b>500 d</b>	<b>Tue 21/9/10</b>																	
14	Dredging, Laying and Backfilling of Submarine Outfall Pipe at Sea	500 d	Tue 21/9/10																	
15	<b>Phase 1 - WCR1</b>	<b>158 d</b>	<b>Wed 21/4/10</b>																	
16	Mobilization of plants	1 d	Wed 21/4/10																	
17	Seabed dredging	63 d	Wed 21/4/10																	
18	Bedding Filling and Permanent seawall (precast cassion)	60 d	Tue 22/6/10																	
19	Bulk reclamation	37 d	Fri 20/8/10																	
20	<b>Phase 2 - WCR2</b>	<b>149 d</b>	<b>Thu 1/3/12</b>																	
21	Mobilization of plants	1 d	Thu 1/3/12																	
22	Temp seawall and Seabed dredging	77 d	Thu 1/3/12																	
23	Bulk reclamation	73 d	Wed 16/5/12																	
24	<b>Phase 3 - WCR4 &amp; WCR4</b>	<b>98 d</b>	<b>Sat 28/4/12</b>																	
25	Mobilization of plants	1 d	Sat 28/4/12																	
26	Temp Seawall and Seabed dredging	75 d	Sat 28/4/12																	
27	Bulk & temp reclamation	24 d	Wed 11/7/12																	
28	<b>Phase 4 - WCR3</b>	<b>294 d</b>	<b>Tue 18/3/14</b>																	
29	Mobilization of plants	1 d	Tue 18/3/14																	
30	Seabed dredging for Permanent Seawall	112 d	Tue 18/3/14																	
31	Backfill and permanent seawall (precast cassion)	108 d	Tue 8/7/14																	
32	Bulk reclamation	74 d	Fri 24/10/14																	
33	<b>Phase 5 - Construct Permanent Seawall Blocks along curved coastline &amp; Remove TWCR4</b>	<b>105 d</b>	<b>Wed 15/4/15</b>																	
34	Mobilization of plants	1 d	Wed 15/4/15																	
35	Dredging and Filling for permanent seawall construction	50 d	Wed 15/4/15																	
36	Construction of Permanent Seawall Blocks for curved coastline	56 d	Wed 3/6/15																	
37	Remove temp seawall and reinstate the location of TWCR4	30 d	Mon 29/6/15																	

Project: Reclamation Works Programme  
Date: Tue 9/3/10

Task Progress Summary Rolled Up Progress Project Summary  
Milestone: Rolled Up Task Split Group By Summary  
Rolled Up Milestone External Tasks Deadline

Activity ID	Cal ID	Activity Description	Orig Dur	Early Start	Early Finish	2010	2011	2012	2013	2014	2015	2016	2017
<b>TCBR1E (TS1 Area)</b>													
105	1	TCBR1E(TS1)-dredging+rockfill(prep. for seawall)	86	03DEC10*	26FEB11								
110	1	TCBR1E (TS1)-temporary reclamation	69	28JAN11*	06APR11								
155	1	TCBR1E (TS1)- removal of temporary reclamation	27	30JAN12*	25FEB12								
<b>TCBR4</b>													
100	1	Maintenance dredging for navigation safety for	7	20NOV10*	26NOV10								
<b>TCBR2 + TCBR3 (TS2 Area)</b>													
115	1	TCBR2&TCBR3(TS2)- Maintenance dredging for	5	15NOV10*	19NOV10								
117	1	TCBR2&TCBR3(TS2)-dredge+rockfill seabed	64	16DEC11*	17FEB12								
120	1	TCBR2&TCBR3(TS2) --temporary reclamation	115	26FEB12*	19JUN12								
160	1	TCBR2&TCBR3(TS2)-removal temporary reclamation	57	18AUG13*	13OCT13								
<b>TCBR1W (TS4 Area)</b>													
125	1	TCBR1W(TS4)-dredging+rockfill(prep. for seawall)	40	19DEC10*	27JAN11								
130	1	TCBR1W(TS4) --temporary reclamation	68	28JAN11	05APR11								
165	1	TCBR1W(TS4)--removal temporary reclamation	26	27OCT13*	21NOV13								
<b>TPCWAE</b>													
135	1	TPCWAE-dredging+rockfill(prep. for seawall)	55	03DEC10*	26JAN11								
140	1	TPCWAE --temporary reclamation	77	27JAN11	13APR11								
170	1	TPCWAE--removal temporary reclamation	28	28SEP13*	25OCT13								
<b>TPCWAW</b>													
145	1	TPCWAW-dredging+rockfill(prep. for seawall)	47	28OCT13*	13DEC13								
150	1	TPCWAW --temporary reclamation	83	14DEC13	06MAR14								
175	1	TPCWAW--removal temporary reclamation	50	02JUL15*	20AUG15								

TCBR1E(TS1)-dredging+rockfill(prep. for seawall)

TCBR1E (TS1)-temporary reclamation

TCBR1E (TS1)- removal of temporary reclamation

Maintenance dredging for navigation safety for relocation of RHKYC mooring at Area B

TCBR2&TCBR3(TS2)- Maintenance dredging for navigation safety at Area A for relocation of commercial vessels

TCBR2&TCBR3(TS2)-dredge+rockfill seabed (preparation for seawall)

TCBR2&TCBR3(TS2) --temporary reclamation

TCBR2&TCBR3(TS2)-removal temporary reclamation

TCBR1W(TS4)-dredging+rockfill(prep. for seawall)

TCBR1W(TS4) --temporary reclamation

TCBR1W(TS4)--removal temporary reclamation

TPCWAE-dredging+rockfill(prep. for seawall)

TPCWAE --temporary reclamation

TPCWAE--removal temporary reclamation

TPCWAW-dredging+rockfill(prep. for seawall)

TPCWAW --temporary reclamation

TPCWAW--removal temporary reclamation



EP02

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Sheet 1 of 1

Prepared based on IWP Rev. 0

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## **GAMMON-LEADER JV**

## Works Schedule of Marine Works for EP-356/2009

