CONTRACT NO: HK/2009/05

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

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

- APR 2010 -

CLIENTS:

Civil Engineering and Development Department

and

Highways Department

PREPARED BY:

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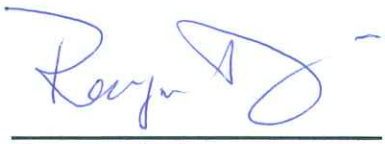

Raymond Dai
Environmental Team Leader

DATE:

10 May 2010

ENVIRON

Ref.: AACWBIECEM00_0_0202L.10 10 May 2010

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

By Post and Fax (2691 2649)

Attention: Mr. Kelvin CHENG

Dear Sir,

Re: Contract No. HK/2009/05
Wan Chai Development Phase II and Central-Wan Chai Bypass – Sampling, Field Measurement and Testing Work (Stage 1)
Environmental Monitoring and Audit Monthly Report (April 2010)

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring and Audit (EM&A) Report for April 2010 dated 10 May 2010.

Please be informed that we have no adverse comments on the captioned submission, hence we also 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

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

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EXECUTIVE SUMMARY

i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – April 2010 for Contract No. HK/2009/05 –Wanchai Development Phase II and Central Wanchai Bypass - Sampling, Field Measurement and Testing Work (Stage 1). This report presents the environmental monitoring findings and information recorded during the period 28th March 2010 to 27th April 2010. The cut-off date of reporting is at 27th of each reporting month.

Construction Activities for the Reported Period

ii. During this reporting period, the major work activities for HY/2009/11 included:
- Dredging Works;
- Construction of haul road for Harbour Height;
- Construction of break water;
- Construction of special site hoarding and
- Construction of Community Liaison Center (CLC).

iii. Major construction activities for Contract HK/2009/01 are anticipated to be commenced in mid-May 2010. The major site preparation works in this reporting periods included:
- Interim Engineer's Principal Office at Works areas WA1 is completed.
- Erection of interim Engineer's Principal Office at Works areas WA2 is ongoing.
- Trial Pile staging, silt screen and silt curtain are under fabrication.
- Hoarding erection along the southern side & eastern side of the site is in progress.
- Marine site investigation for cross harbour water mains and reclamation.
- Dewatering at existing pump houses is completed. Inspection and structural condition are underway.
- Fabrication of special made flat top barge for dredging inside the HKCEC water channel
- Production of pipes and fittings for cooling water mains is underway.
- Installation of inclinometer no. E1.
- Ground investigation for P1 pipe pile wall.

iv. Major construction activities for Contract HK/2009/02 are anticipated to be commenced in mid-May 2010. The major site preparation works in this reporting periods included:
- Removal Major construction activities for existing footing at WSD Salt Water Pumping Station;
- Site clearance; and
- Hoarding & fencing erection

Noise Monitoring

v. Noise monitoring during day time and evening time were conducted at the City Garden and Causeway Bay Community Centre on a weekly basis in the reporting period. One limit level exceedance was recorded on 8 April 2010 due to the noisy traffic noise from

Island Eastern Corridor during the evening time noise monitoring. No action level exceedance was recorded in reporting month.

Air Quality Monitoring

vi. No air quality monitoring was undertaken during the reporting month.

Water Quality Monitoring

vii. Water quality monitoring at 6 designated monitoring stations namely WSD9, WSD10, WSD15, WSD17, C8 and C9 were conducted three days per week during the reporting period.

Suspended Solid

viii. Five action level exceedances were recorded at C8 during mid-flood on 30 March and 16 and 26 April 2010 and during mid-ebb on 7 and 10 April 2010;
ix. Six action level exceedances were recorded at C9 during mid-food on 28 March, 5 and 10 April 2010 and during mid-ebb on 7, 10 and 14 April 2010;
x. One limit level exceedance was recorded at WSD17 during mid-flood on 26 April 2010.
xi. Two limit level exceedances were recorded at C8 during mid-flood on 28 March and 12 April 2010; and
xii. Four limit level exceedances were recorded at C9 during mid-flood on 30 March, 12, 16 and 26 April 2010.

Turbidity

xiii. One action level exceedance was recorded at C8 during mid-ebb of 12 April 2010;
xiv. Three limit level exceedances were recorded at C8 during mid-flood on 12, 16and 26 April 2010;
xv. Two action level exceedances were recorded at C9 during mid-flood on 10 and 19 April 2010;
xvi. Three limit level exceedances were recorded at C9 during mid-flood of 5, 16 and 26 April 2010.

Complaints, Notifications of Summons and Successful Prosecutions

xvii. No environmental complaints were received in the reporting month.

Site Inspections and Audit

xviii. The Environmental Team (ET) conducted 5 site inspections in this reported period. Major observations by the ET, actions by the Contractor and outcome are summarized in the following ***Table I***.

Table I Summary of Environmental Inspections for HY/2009/11

Item	Date	Observations	Action taken by Contractor	Outcome
100330_01	30-Mar-10	Gap was found at the silt screen at WSD17 above the sea level, which was located under the red warning board.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 8-Apr-10
100330_02	30-Mar-10	Gap was found on the RHS of the edge of silt screen at C8	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 8-Apr-10
100408_01	8-Apr-10	The level of floating foam, which was located on the left, near the red flat at LHS of silt screen at WSD17 was found a bit lowered.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 14-Apr-10
100414_01	14-Apr-10	Gap was found at the silt screen at C8 (City Garden). Regular maintenance needs to be implemented.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 27-Apr-10
100414_02	14-Apr-10	Gap was found at the silt curtain at the dredger, tightening of the rope to close the end gap need to be in place.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 20-Apr-10
100420_01	20-Apr-10	A Gap was found at silt screen at C8 (City Garden) at RHS. (View from the boat)	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 27-Apr-10
100427_01	27-Apr-10	Large floating objects were found within the silt screen. Contractor was reminded to remove it as soon as possible.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 4-May-10

Future Key Issues

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

HY/2009/11- North Point Reclaimation

- Dredging Works;
- Construction of break water;
- Construction of special site hoarding and
- Construction of Community Liaison Center (CLC) at Oil Street.

HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC

- Marine SI for cross harbour water mains and reclamation.
- Prefabrication of the pipe strings (max.120m long) in factory shall be proceeded.
- Silt screen installation for existing intake.
- Trial excavation and the subsequent installation of cooling mains & fresh water mains at Zone A1, A5 & B1.
- Tree transplantation at Wan Chai and TST.
- Structural remeasurement for the pump rooms.

- Instrumentation for reclamation
- Installation of temporary platform for pipe pile wall P1.
- Existing seawall and rock armour at the north side of the temporary platform for pipe pile P1 shall be removed.
- Surveying and installation of ADMS and vibrograph.
- Piled staging and the subsequent trial pile installation.

HK/2009/02 - Wan Chai Development II – Central – Wan Chai Bypass at WanChai East

- Site clearance;
- Hoarding & fencing erection;
- Excavation;
- Removal existing footing at WSD Salt Water Pumping Station;
- Removal existing footbridge staircase at Wan Shing Road;
- Road modification Works;
- Construction of temporary seawall; and
- Seabed dredging

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) for Contractor No. HK/2009/05 Wan Chai Development Phase II and Central –Wan Chai Bypass – Sampling, Field Measurement and Testing Work (Stage 1) 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 10.3 of EM&A Manual and "*Environmental Monitoring and Audit Requirements"* under Particular Specification Section 27.

1.1.3. This report documents the finding of EM&A works during the period 28th March to 27th April 2010. The cut-off date of reporting is at 27th of each reporting month.

1.2 Structure of the Report

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

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

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

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

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

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

Section 7 ***Cumulative Construction Impact due to the Concurrent Projects*** – summarizes the relevant cumulative construction impact due to the

concurrent activities of the concurrent Projects.

Section 8 ***Site Inspection*** – summarizes the findings of weekly site inspections undertaken within the reporting period, with a review of any relevant follow-up actions within the reporting period.

Section 9 ***Complaints, Notification of summons and Prosecution*** – summarizes the cumulative statistics on complaints, notification of summons and prosecution

Section 10 ***Conclusion***

2. PROJECT BACKGROUND

2.1 Background

2.1.1. "Wan Chai Development phase II and Central-Wan Chai Bypass" and "Central-Wan Chai Bypass and Island Eastern Corridor Link" (hereafter called "the Project") are 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 month, Contract no. HY/2009/11 - Central – Wanchai Bypass, North Point Reclamation under the Project has been commenced on 17 March 2010. Two Contracts under the Project are anticipated to be commenced on 10 May 2010. The details of individual contracts are summarized in ***Table2.2***.

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	10 May 2010
		DP1, DP2	Pending
HK/2009/02	Wan Chai Development II – Central – Wan Chai Bypass at WanChai East	DP3, DP5	10 May 2010
		DP1	Pending
HY/2009/11	Wan Chai Development Phase II and Central - Wan Chai Bypass - North Point Reclamation	DP3	17 March 2010

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	Chief Resident Engineer	Mr. David Kwan	2607 7801	2687 2322
	Engineer for CWB	Senior Resident Engineer	Mr. Terry Siu	3916 1818	3529 2829
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	Paul Yu	9456 9819	2634 1626
		Operation Manager	Ho Wing Tai	9306 1356	
		Construction Manager	David Wong	9653 8635	
		Construction Manager	Wilson Lau	5183 1270	
		Construction Manager	Alex Tsang	9194 9383	
		Environmental Officer (Compliance Manager)	Ho Wing Tai	9306 1356	
		Environmental Engineer	Ken Yang	9262 6791	
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. Anthony Wu	3658 3004	
		Environmental Officer (Compliance Manager)	Mr. Barry Leung	3658 3031	
		Environmental Engineer	Ms. Flora Ng	3658-3064	
ENVIRON Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3743 0788	3548 6988
Lam Geotechnics Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Raymond Dai	2882 3939	2882 3331

2.4.3. For HY/2009/11, the principal work activities in this reporting month included:

- Dredging Works;

- Construction of haul road for Harbour Height;
- Construction of break water;
- Construction of special site hoarding and
- Construction of Community Liaison Center (CLC).

2.4.4. For HK/2009/01, the site preparation works in this reporting month included:

- Interim Engineer's Principal Office at Works areas WA1 is completed;
- Erection of interim Engineer's Principal Office at Works areas WA2 is ongoing;
- Trial Pile staging, silt screen and silt curtain are under fabrication;
- Hoarding erection along the southern side & eastern side of the site is in progress;
- Marine site investigation for cross harbour water mains and reclamation;
- Dewatering at existing pump houses is completed. Inspection and structural condition are underway;
- Fabrication of special made flat top barge for dredging inside the HKCEC water channel;
- Production of pipes and fittings for cooling water mains is underway;
- Installation of inclinometer no. E1; and
- Ground investigation for P1 pipe pile wall.

2.4.5. For HK/2009/02, the site preparation works in this reporting month included:

- Removal existing footing at WSD Salt Water Pumping Station;
- Site clearance; and
- Hoarding & fencing erection

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

<u>HY/2009/11- North Point Reclaimation</u>

- Dredging Works;
- Construction of break water;
- Construction of special site hoarding and
- Construction of Community Liaison Center (CLC) at Oil Street.

<u>HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC</u>

- Marine SI for cross harbour water mains and reclamation.
- Prefabrication of the pipe strings (max.120m long) in factory shall be proceeded.
- Silt screen installation for existing intake.
- Trial excavation and the subsequent installation of cooling mains & fresh water mains at Zone A1, A5 & B1.
- Tree transplantation at Wan Chai and TST.
- Structural remeasurement for the pump rooms.
- Instrumentation for reclamation
- Installation of temporary platform for pipe pile wall P1.

- Existing seawall and rock armour at the north side of the temporary platform for pipe pile P1 shall be removed.
- Surveying and installation of ADMS and vibrograph.
- Piled staging and the subsequent trial pile installation.

HK/2009/02 - Wan Chai Development II – Central – Wan Chai Bypass at WanChai East

- Site clearance;
- Hoarding & fencing erection;
- Excavation;
- Removal existing footing at WSD Salt Water Pumping Station;
- Removal existing footbridge staircase at Wan Shing Road;
- Road modification Works;
- Construction of temporary seawall; and
- Seabed dredging

3. STATUS OF REGULATORY COMPLIANCE

3.1 Status of Environmental Licensing and Permitting under the Project

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

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

Permits and/or Licences	Reference No.	Issued Date	Expiry Date	Status
Environmental Permit	EP-356/2009	30 Jul 2009	N/A	Valid
Environmental Permit	EP-364/2009	17 Aug 2009	N/A	Valid
Environmental Permit	EP-376/2009	13 Nov 2010	N/A	Valid
Further Environmental Permit	FEP-01/356/2009	18 Feb 2010	N/A	Valid
Further Environmental Permit	FEP-02/356/2009	24 Mar 2010	N/A	Valid
Further Environmental Permit	FEP-03/356/2009	24 Mar 2010	N/A	Valid
Further Environmental Permit	FEP-01/364/2009	24 Mar 2010	N/A	Valid
Further Environmental Permit	FEP-02/364/2009	21 Apr 2010	N/A	Valid

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

HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

3.1.3. Summary of the current status on licences and/or permits on environmental protection pertinent and submission under FEP-01/356/2009 for contract no. HY/2009/11 are shown in ***Table 3.2*** and ***Table 3.3***.

Table 3.2 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/11

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-01/356/2009	18 Feb 2010	N/A	Valid
Notification of Works Under APCO	314911	9 Mar 2010	N/A	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0119-10	17 Feb 2010	22 Feb 2010 to 22 Aug 2010	Valid
Dumping Permit (Type 1 – Open Sea Disposal)	EP/MD/10-067	10 Mar 2010	9 Sep 2010	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Dumping Permit (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal)	EP/MD/10-066	10 Mar 2010	9 Apr 2010	Expired
Dumping Permit (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal)	EP/MD/10-082	8 Apr 2010	9 May 2010	Valid

Table 3.3 Summary of submission status under FEP-01/356/2009 Condition

EP Condition	Submission	Date of Submission
Condition 2.6	Management Organization of Main Construction Companies	18 Dec 2009
Condition 2.7	Submission of works schedule and location plan	8 Feb 2010
Condition 2.8	Silt Curtain Deployment Plan	25 Feb 2010
Condition 2.9	Silt Screen Deployment Plan	25 Feb 2010
Condition 2.10	Coral Translocation Plan	20 Nov 2009
Condition 2.16	Noise Management Plan	1 Mar 2010

HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC

3.1.4. Summary of the current status on licences and/or permits on environmental protection pertinent and submission under FEP-02/356/2009 for contract no. HK/2009/01 are shown in ***Table 3.4*** and ***Table 3.5***.

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

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-02/356/2009	24 Mar 2010	N/A	Valid
Further Environmental Permit	FEP-02/364/2009	21 Apr 2010	N/A	Valid
Notification of Works Under APCO	313088	6 Jan 2010	N/A	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0313-10	16 Apr 2010	16 Apr 2010 to 14 Sep 2010	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0328-10	22 Apr 2010	22 Apr 2010 to 15 Oct 2010	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0333-10	21 Apr 2010	21 Apr 2010 to 14 Sep 2010	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0336-10	21 Apr 2010	21 Apr 2010 to 14 Sep 2010	Valid
Discharge Licence	WT00006220-2010	18 Mar 2010	N/A	Valid
Registration as a Waste Producer	WPN5213-134-C3585-01	21 Jan 2010	N/A	Valid
Dumping Permit (Type 1 – Open Sea Disposal)	Application in progress	-	-	-
Dumping Permit (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal)	Application in progress	-	-	-

Table 3.5 Summary of submission status under FEP-02/356/2009 Condition

EP Condition	Submission	Date of Submission
Condition 2.6	Management Organization of Main Construction Companies	13 Apr 2010
Condition 2.7	Works Schedule and Location Plan	8 Apr 2010
Condition 2.8	Silt Curtain Deployment Plan	19 Apr 2010
Condition 2.9	Silt Screen Deployment Plan	19 Apr 2010
Condition 2.17	Noise Management Plan	23 Apr 2010

HK/2009/02 - Wan Chai Development II – Central – Wan Chai Bypass at WanChai East

3.1.5. Summary of the current status on licences and/or permits on environmental protection pertinent and submission under FEP-03/356/2009 for contract no. HK/2009/02 are shown in ***Table 3.6*** and ***Table 3.7***.

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

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-03/356/2009	24 Mar 2010	N/A	Valid
	FEP-01/364/2009	24 Mar 2010	N/A	Valid
Notification of Works Under APCO	313962	2 Feb 2010	N/A	Valid
Construction Noise Permit (CNP) for piling equipment	PP-RS0016-10	14 Apr 2010	1 Jun 2010 to 31 Nov 2010	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0132-10	22 Feb 2010	01 Apr 2010 to 30 Sep 2010	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0325-10	16 Apr 2010	30 Apr 2010 to 31 Jul 2010	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0327-10	16 Apr 2010	30 Apr 2010 to 30 Sep 2010	Valid
Discharge Licence	WT00006249-2010	22 Mar 2010	N/A	Valid
Discharge Licence	WT00006436-2010	15 Apr 2010	N/A	Valid
Registration as a Waste Producer	7010255	10 Feb 2010	N/A	Valid

Table 3.7 Summary of submission status under FEP-03/356/2009 Condition

EP Condition	Submission	Date of Submission
Condition 2.6	Management Organization of Main Construction Companies	10 April 2010
Condition 2.7	Works Schedule and Location Plans	8 April 2010
Condition 2.8	Silt Curtain Deployment Plan	20 April 2010
Condition 2.9	Silt Screen Deployment Plan	21 April 2010

3.1.6. Implementation status of the recommended mitigation measures during this reporting period is presented in ***Appendix 3.1***.

4. Monitoring Requirements

4.1 Noise Monitoring

NOISE MONITORING STATIONS

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

Table 4.1 Noise Monitoring Station

Station	Description
M1a	Harbour Road Sports Centre
M2b	Noon Gun Area
M3a	Tung Lo Wan Fire Station
M4a	Causeway Bay Community Centre
M5b	City Garden
M6	HK Baptist Church Henrietta Secondary School
M7a	Harbour Building

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

4.1.2. 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.

4.1.3. 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.

4.1.4. 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.

MONITORING EQUIPMENT

4.1.5. As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979

(Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.

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

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

4.2 Air Monitoring

AIR QUALITY MONITORING STATIONS

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

Table 4.2 Air Monitoring Station

Station ID	Monitoring Location	Description
CMA1b	Oil Street Community Liaison Centre	North Point
CMA2a	Causeway Bay Community Centre	Causeway Bay
CMA3a	Future CWB site office at Wanchai Waterfront Promenade	Causeway Bay
CMA4a	Society for the Prevention of Cruelty to Animals	Wan Chai
CMA5a	Children Playgrounds opposite to Pedestrian Plaza	Wan Chai
CMA6a	Future AECOM site office at Work Area	Wan Chai
MA1b	Harbour Building	Central

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

4.2.2. One-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.

4.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and

any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.

4.2.4. For regular impact monitoring, the sampling frequency of at least once in every six-days, shall be strictly observed at all the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs.

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

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

- 0.6 - 1.7 m3 per minute adjustable flow range;
- equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
- installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
- capable of providing a minimum exposed area of 406 cm2;
- flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
- equipped with a shelter to protect the filter and sampler;
- incorporated with an electronic mass flow rate controller or other equivalent devices;
- equipped with a flow recorder for continuous monitoring;
- provided with a peaked roof inlet;
- incorporated with a manometer;
- able to hold and seal the filter paper to the sampler housing at horizontal position;
- easily changeable filter; and
- capable of operating continuously for a 24-hour period.

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

LABORATORY MEASUREMENT / ANALYSIS

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

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

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

readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.

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

4.3 Water Quality Monitoring

4.3.1. 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

4.3.2. It is proposed to monitor the water quality at 9 WSD salt water intakes and 12 cooling water intakes along the seafront of the Victoria Harbour. The proposed water quality monitoring stations of the Project are shown in ***Table 4.3*** and ***Figure 4.1***. ***Appendix 4.1*** shows the established Action/Limit Levels for the monitoring works.

Table 4.3 Marine Water Quality Stations for Water Quality Monitoring

Station Ref.	Location	Easting	Northing
WSD Salt Water Intake			
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
Cooling Water Intake			
C1	HKCEC Extension	835885.6	816223.0
C2	Telecom House	835647.9	815864.4
C3	HKCEC Phase I	835836.2	815910.0
C4	Wan Chai Tower and Great Eagle Centre	835932.8	815888.2
C5	Sun Hung Kai Centre	836250.1	815932.2
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

Station Ref.	Location	Easting	Northing
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

4.3.3. 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.

4.3.4. 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.

SAMPLING PROCEDURES AND MONITORING EQUIPMENT

4.3.5. 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 4.4*** 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 4.4 Marine Water Quality Monitoring Frequency and Parameters

Activities	Monitoring Frequency[1]	Parameters[2]
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.

DISSOLVED OXYGEN AND TEMPERATURE MEASURING EQUIPMENT

4.3.6. The instrument should be a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and use a DC power source. It should be capable of measuring:

- a dissolved oxygen level in the range of 0-20 mg/l and 0-200% saturation
- a temperature of 0-45 degree Celsius

4.3.7. It should have a membrane electrode with automatic temperature compensation complete with a cable. Sufficient stocks of spare electrodes and cables should be available for replacement where necessary. (e.g. YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

4.3.8. Should salinity compensation not be build-in in the DO equipment, in-situ salinity shall be measured to calibrate the DO equipment prior to each DO measurement.

TURBIDITY MEASUREMENT INSTRUMENT

4.3.9. The instrument should be a portable, weatherproof turbidity-measuring instrument complete with comprehensive operation manual. The equipment should use a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. Hach model 2100P or an approved similar instrument).

SAMPLER

4.3.10. A water sampler comprises a transparent PVC cylinder, with a capacity of not less than 2 litres, and can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (e.g. Kahlsico Water Sampler or an approved similar instrument).

SAMPLE CONTAINER AND STORAGE

4.3.11. Water samples for suspended solids measurement should be collected in high-density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to ALS Technichem (HK) Pty Ltd. as soon as possible after collection for analysis.

WATER DEPTH DETECTOR

4.3.12. A portable, battery-operated echo sounder shall be used for the determination of water depth at each designated monitoring station. This unit can either be handheld or affixed to the bottom of the workboat, if the same vessel is to be used throughout the monitoring programme.

SALINITY

4.3.13. A portable salinometer capable of measuring salinity in the range of 0-40 ppt shall be provided for measuring salinity of the water at each of monitoring location.

MONITORING POSITION EQUIPMENT

4.3.14. A hand-held or boat-fixed type digital Global Positioning System (GPS) with way point bearing indication or other equivalent instrument of similar accuracy shall be provided and used during monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

CALIBRATION OF IN-SITU INSTRUMENTS

4.3.15. All in-situ monitoring instrument shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or equivalent before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

4.3.16. For the on site calibration of field equipment by the ET, the BS 127:1993, "Guide to Field and on-site test methods for the analysis of waters" should be observed.

4.3.17. Sufficient stocks of spare parts should be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.

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

LABORATORY MEASUREMENT / ANALYSIS

4.3.19. Analysis of suspended solids has been carried out in a HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd. Water samples of about 1L shall be collected at the monitoring stations for carrying out the laboratory SS determination. The SS determination work shall start within 24 hours after collection of the water samples. The SS determination shall follow APHA 19ed or equivalent methods subject to the approval of IEC and EPD.

5. MONITORING RESULTS

5.0.1. 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 4.1***. The monitoring results are presented in according to the Individual Contract(s).

5.0.2. In the reporting month, the current contract has HY/2009/11 Central - Wan Chai Bypass - North Point Reclamation under Permanent and temporary reclamation works including associated dredging works in Wan Chai Development Phase II (WDII) area (referred to as DP3 in the EIA Report).

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

5.1 Noise Monitoring Results

HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

5.1.1. The proposed division of noise monitoring stations for HY/2009/11 are summarized in ***Table 5.1*** below:

Table 5.1 Noise Monitoring Stations for HY/2009/11

Station	Description
M4a	Causeway Bay Community Centre
M5b	City Garden

5.1.2. Five day time and evening period noise monitoring was conducted at the City Garden and Causeway Bay Community Centre in the reporting month.

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

5.1.4. One limit level exceedance was recorded in the restricted hour on 8 April 2010. Major noise source was noted from the traffic noise of the Island Eastern Corridor during the measurement. After analysis of contractor's working procedure, well work practical of the dredging work was complied with the conditions under valid Construction Noise Permit no. GW-RS0119-10 during the measurement. No exceedance was recorded in the next restricted monitoring. Therefore, it was considered as invalid exceedance.

HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC and HK/2009/02 - Wan Chai Development II – Central – Wan Chai Bypass at WanChai East

5.1.5. The commencement of construction works for HK/2009/01 and HK/2009/02 are anticipated in mid-May 2010. The noise monitoring will be commenced concurrently with the commencement of construction works for these two contracts. The proposed division of noise monitoring stations are summarized in ***Table 5.2*** below.

Table 5.2 Noise Monitoring Station for HK/2009/01 and HK/2009/02

Station	Description
M1a	Harbour Road Sports Centre

5.2 Air Monitoring Results

HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

5.2.1. The major construction activities of Contract no. HY/2009/11 was dredging works in the reporting month. No major dust impact is anticipated to be caused by the dredging works. Therefore, no air monitoring was conducted in the reporting month.

5.2.2. Air monitoring will be commenced from the filling work for HY/2009/11. The proposed division of air monitoring stations are summarized in ***Table 5.3*** below.

Table 5.3 Air Monitoring Stations for HY/2009/11

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

HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC

5.1.6. Air monitoring will be commenced from the filling work for HK/2009/01. The proposed division of air monitoring stations are summarized in ***Table 5.4*** below.

Table 5.4 Air Monitoring Stations for HK/2009/01

Station	Description
CMA5a	Children Playgrounds opposite to Pedestrian Plaza
CMA6a	Future AECOM site office at Work Area 1

HK/2009/02 - Wan Chai Development II – Central – Wan Chai Bypass at WanChai East

5.1.7. Air monitoring will be commenced from the filling work for HK/2009/02. The proposed division of air monitoring stations are summarized in ***Table 5.5*** below.

Table 5.5 Air Monitoring Station for HK/2009/02

Station	Description
CMA4a	Society for the Prevention of Cruelty to Animals

5.3 Water Monitoring Results

HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

5.3.1. The proposed division of water monitoring stations for HY/2009/11 are summarized in ***Table 5.6*** below:

Table 5.6 Water Monitoring Stations for HY/2009/11

Station Ref.	Location	Easting	Northing
WSD Salt Water Intake			
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
Cooling Water Intake			
C8	City Garden	837970.6	816957.3
C9	Provident Garden	838355.0	817116.6

5.3.2. 13 water monitoring were conducted at the proposed water monitoring stations in reporting month.

5.3.3. Water monitoring results measured in this reporting period are reviewed and summarized. Details of water quality monitoring results and graphical presentation can be referred in ***Appendix 5.3***.

5.3.4. For the suspended solid, total twelve action level exceedances and six limit level exceedances were recorded in the reporting month. The details of exceedances are as follows:

- Five action level exceedances were recorded at C8 during mid-flood on 30 March and 16 and 26 April 2010 and during mid-ebb on 7 and 10 April 2010;
- Six action level exceedances were recorded at C9 during mid-food on 28 March, 5 and 10 April 2010 and during mid-ebb on 7, 10 and 14 April 2010;
- One limit level exceedance was recorded at WSD17 during mid-flood on 26 April 2010;
- Two limit level exceedances were recorded at C8 during mid-flood on 28 March and 12 April 2010; and
- Four limit level exceedances were recorded at C9 during mid-flood on 30 March, 12, 16 and 26 April 2010.

5.3.5. For the turbidity, total three action level exceedances and six limit level exceedances were recorded in the reporting month. The details of exceedances are as follows:

- One action level exceedance was recorded at C8 during mid-ebb of 12 April 2010;
- Two action level exceedances were recorded at C9 during mid-flood on 10 and 19 April 2010;

- Three limit level exceedances were recorded at C8 during mid-flood on 12, 16and 26 April 2010; and
- Three limit level exceedances were recorded at C9 during mid-flood of 5, 16 and 26 April 2010.

HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC

5.3.6. Water monitoring for HK/2009/01 is anticipated to be commenced on mid-May 2010. The proposed division of water monitoring stations are summarized in ***Table 5.7*** below.

Table 5.7 Water Monitoring Stations for HK/2009/01

Station Ref.	Location	Easting	Northing
WSD Salt Water Intake			
WSD7	Kowloon South	834150.0	818300.3
WSD19	Sheung Wan	833415.0	816771.0
WSD20	Kennedy Town	830750.6	816030.3
Cooling Water Intake			
C1	HKCEC Extension	835885.6	816223.0
C2	Telecom House	835647.9	815864.4
C3	HKCEC Phase I	835836.2	815910.0
C4	Wan Chai Tower and Great Eagle Centre	835932.8	815888.2

Remarks:
The water monitoring stations for the dredging works under Contract No. HK/2009/01 should also include WSD9, WSD17, WSD 21 and C5 if water quality monitoring at these locations have not been carried out by others. Similarly, the water monitoring stations for the dredging works under Contract No. HK/2009/02 should also include WSD7, WSD9, WSD17, WSD 19, C1, C2, C3 and C4 if water quality monitoring at these locations have not been carried out by others.

HK/2009/02 - Wan Chai Development II – Central – Wan Chai Bypass at WanChai East

5.3.7. Water monitoring for HK/2009/02 is anticipated to be commenced on mid-May 2010. The proposed division of water monitoring stations are summarized in ***Table 5.8*** below.

Table 5.8 Water Monitoring Stations for HK/2009/02

Station Ref.	Location	Easting	Northing
WSD Salt Water Intake			
WSD21	Wan Chai	836220.8	815940.1
Cooling Water Intake			
C5	Sun Hung Kai Centre	836250.1	815932.2

Remarks:
The water monitoring stations for the dredging works under Contract No. HK/2009/01 should also include WSD9, WSD17, WSD 21 and C5 if water quality monitoring at these locations have not been carried out by others. Similarly, the water monitoring stations for the dredging works under Contract No. HK/2009/02 should also include WSD7, WSD9, WSD17, WSD 19, C1, C2, C3 and C4 if water quality monitoring at these locations have not been carried out by others.

5.4 Waste Monitoring Results

HY/2009/11 – Central – Wanchai Bypass, North Point Reclamation

5.4.1. No inert C&D material was disposed nor non-inert C&D material were disposed of. Details of the waste flow table are summarized in ***Table 5.9***.

Table 5.9 Details of Waste Disposal for HY/2009/11

Waste Type	Quantity this month, m^3	Cumulative Quantity-to-Date, m^3	Disposal / Dumping Grounds
Inert C&D materials disposed	NIL	NIL	N/A
Inert C&D materials recycled	NIL	NIL	N/A
Non-inert C&D materials disposed	NIL	NIL	N/A
Non-inert C&D materials recycled	NIL	NIL	N/A
Chemical waste disposed	N/A	N/A	N/A
Marine Sediment (Type 1 – Open Sea Disposal)	32,000	32,000	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal)	21,500	43,500	East of Sha Chau

5.4.2. 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 month. The maximum dredging rate in North Point Shoreline Zone is 3000m^3 per day in the reporting month, which is complied with the criteria listed in Table 5.10 of EIA Report Register No. AEIAR-125/2008.

6. Compliance Audit

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

6.1 Noise Monitoring

6.1.1. One limit level exceedance was recorded in the restricted hour on 8 April 2010. Major noise source was noted from the traffic noise of the Island Eastern Corridor during the measurement. After analysis of contractor's working procedure, well work practical of the dredging work was complied with the conditions under valid Construction Noise Permit no. GW-RS0119-10 during the measurement. No exceedance was recorded in the next restricted hour monitoring. Therefore, it was considered as invalid exceedance.

6.2 Air Monitoring

6.2.1. No air monitoring was conducted in this reporting period.

6.3 Water Quality Monitoring

6.3.1. For the suspended solid, total twelve action level exceedances and six limit level exceedances were recorded in the reporting month. The details of exceedances are as follows:

- Five action level exceedances were recorded at C8 during mid-flood on 30 March and 16 and 26 April 2010 and during mid-ebb on 7 and 10 April 2010;
- Six action level exceedances were recorded at C9 during mid-food on 28 March, 5 and 10 April 2010 and during mid-ebb on 7, 10 and 14 April 2010;
- One limit level exceedance was recorded at WSD17 during mid-flood on 26 April 2010;
- Two limit level exceedances were recorded at C8 during mid-flood on 28 March and 12 April 2010; and
- Four limit level exceedances were recorded at C9 during mid-flood on 30 March, 12, 16 and 26 April 2010.

6.3.2. For the turbidity, total three action level exceedances and six limit level exceedances were recorded in the reporting month. The details of exceedances are as follows:

- One action level exceedance was recorded at C8 during mid-ebb of 12 April 2010;
- Two action level exceedances were recorded at C9 during mid-flood on 10 and 19 April 2010;

- Three limit level exceedances were recorded at C8 during mid-flood on 12, 16and 26 April 2010; and
- Three limit level exceedances were recorded at C9 during mid-flood of 5, 16 and 26 April 2010.

6.3.3. The action and limit level exceedances of turbidity and suspended solid were recorded at C8 and C9. Major exceedances were occurred during the mid-flood tide in the water quality monitoring. Investigation was found that the numerous unknown outfalls from the nearby coastal area enclosed by the silt screen at C8 and C9. It causes the potential for accumulation and trapping of pollutants behind the silt screens and may lead to potential water quality deterioration at the seawater intake points. Contractor was reminded to avoid the pollutant and refuse entrapment problems. Besides, regular maintenance of the silt screens and refuse collection shall be performed at the monitoring stations at regular intervals on a daily basis.

6.3.4. The limit level exceedance was recorded at WSD17 on 26 April 2010. No muddy boom was observed during the water monitoring. The value is within the tolerance of the baseline water quality range. Reviewed the next consecutive monitoring data, no exceedance was recorded. As such, it is concluded as non-project related exceedance. Summary for notification of exceedances can be referred to ***Appendix 6.2***.

6.4 Review of the Reasons for and the Implications of Non-compliance

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

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

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

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

7. Cumulative Construction Impact due to the Concurrent Projects

7.0.1. According to Condition 3.4 of the EP-356/2009, this section addresses the relevant cumulative construction impact due to the concurrent activities of the current projects including the Central Reclamation, Central-Wan Chai Baypass and Island Eastern Corridor Link projects.

7.0.2. From the Monthly EM&A report (March 2010) of Central Reclamation Project, the key works in the April are as follows:

- Type A filling in FRAW and FRAE above +2.5mPD;
- Surcharging in FRAW and FRAE;
- Construction of cantilever slab at caisson;
- Pile cap construction at Culvert F;
- Sheet piling, excavation, structural works and backfilling for Culvert F;
- General filling works above +2.5 mPD in IRAE;
- Construction of storm and foul drainage and gullies in hinterlands for Road P2;
- Road D7, Road D8 and Road D9 and adjacent to the GPO;
- Roadworks along Lung Wui Road, Tim Wa Avenue (Road D8) and Road P2;
- Backfilling to Culvert K extension;
- Precasting for seawall blocks and retaining wall (offsite);
- Installation of cooling water mains for Tamar Development Project at IRAE;
- Installation of cooling mains discharge pipes in FRAE;
- Diaphragm walling and barrettes for CWB Works, and
- Excavation to formation level at CWB works.

7.0.3. According to the construction programme of Central-Wan Chai Baypass and Island Eastern Corridor Link projects, the major construction activity under Wan Chai Development Phase II was the dredging work at North Point Reclamation Stage 1 in the reporting month. The major environmental impact was water quality impact at North Point. No construction activities were undertaken in the Central-Wan Chai Baypass and Island Eastern Corridor Link projects.

7.0.4. The major environmental impacts generated from the Central Reclamation Projects were located along the coastline of Central and Admiralty while only dredging work at North Point Reclamation Stage 1 was in operation in this reporting month. Beside, water quality mitigation measures were properly in place for the dredging works under HY/2009/11 in this reporting month. No project –related exceedance were recorded. Thus, it is evaluated that the cumulative construction impact from the concurrent projects including Wan Chai Development Phase II and Central Reclamation was insignificant.

8. Site Inspection

8.0.1. Five site inspections for HY/2009/11 were carried out during this reporting period. The results of these inspections and outcomes are summarized in ***Table 8.1***.

Table 8.1 Summary of Environmental Inspections for HY/2009/11

Item	Date	Observations	Action taken by Contractor	Outcome
100330_01	30-Mar-10	Gap was found at the silt screen at WSD17 above the sea level, which was located under the red warning board.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 8-Apr-10
100330_02	30-Mar-10	Gap was found on the RHS of the edge of silt screen at C8	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 8-Apr-10
100408_01	8-Apr-10	The level of floating foam, which was located on the left, near the red flat at LHS of silt screen at WSD17 was found a bit lowered.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 14-Apr-10
100414_01	14-Apr-10	Gap was found at the silt screen at C8 (City Garden). Regular maintenance needs to be implemented.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 27-Apr-10
100414_02	14-Apr-10	Gap was found at the silt curtain at the dredger, tightening of the rope to close the end gap need to be in place.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 20-Apr-10
100420_01	20-Apr-10	A Gap was found at silt screen at C8 (City Garden) at RHS. (View from the boat)	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 27-Apr-10
100427_01	27-Apr-10	Large floating objects were found within the silt screen. Contractor was reminded to remove it as soon as possible.	Daily clearance and inspection of silt screen. Keep maintaining the silt screen in well condition.	Complete as observed on 4-May-10

9. COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

9.0.1. No environmental complaint was recorded in the reporting month. The details of cumulative complaint log and summary of complaints are presented in ***Appendix 9.1***.

9.0.2. Regarding to the complaint log no.100321a and 100321b in the previous reporting month, an additional noise monitoring was conducted in the restricted hour on 5 April 2010. No exceedance was recorded in the additional monitoring. Besides, no further complaint was received from complainant, the complaints were considered closed.

9.0.3. Cumulative statistic on complaints and successful prosecutions are summarized in ***Table 9.1*** and ***Table 9.2*** respectively.

Table 9.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
April 2010	0
Project-to-Date	2

Table 9.2 Cumulative Statistics on Successful Prosecutions

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

10. CONCLUSION

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

10.0.2. The scheduled construction activities and the recommended mitigation measures for the coming month are listed in ***Table 10.1***.

Table 10.1 Construction Activities and Recommended Mitigation Measures in Coming Reporting Month

Contract No.	Key Construction Works	Recommended Mitigation Measures
HY/2009/11	• Dredging Works; • Construction of break water; • Construction of special site hoarding and • Construction of Community Liaison Center (CLC) at Oil Street.	• To avoid concurrent noisy operation • To avoid accumulation of refuse • Daily visual inspection of silt screen and silt curtain to ensure its operation properly • Daily clearance of floating debris behind the silt screen

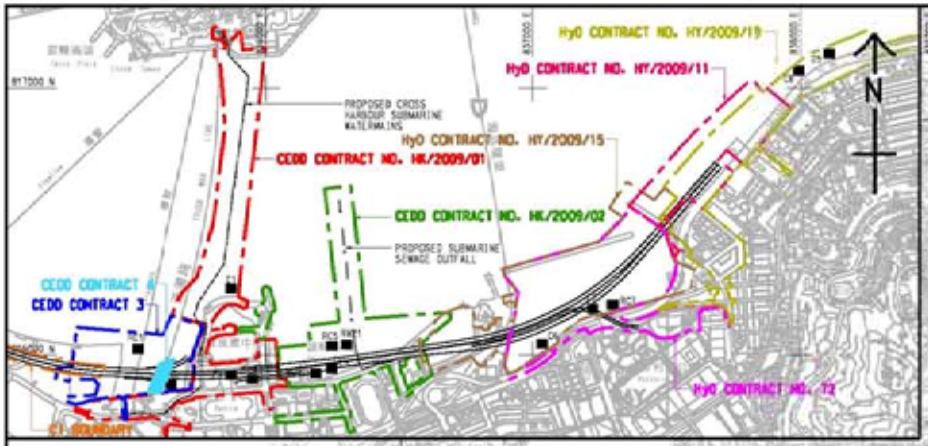
10.0.3. In the coming month, the Contracts HK/2009/01 and HK/2009/02 are anticipated to be commenced on site are summarized in ***Table 10.2***. The construction programmes of individual contracts are provided in ***Appendix 10.1***.

Table 10.2 Summary of Key Construction Activities of Individual Contract(s) to be commenced in Coming Reporting Month

Contract No.	Key Construction Activities	Recommended Mitigation Measures
HK/2009/01	• Marine SI for cross harbour water mains and reclamation; • Prefabrication of the pipe strings (max.120m long) in factory shall be proceeded; • Silt screen installation for existing intake; • Trial excavation and the subsequent installation of cooling mains & fresh water mains at Zone A1, A5 & B1; • Tree transplantation at Wan Chai and TST; • Structural re-measurement for the pump rooms; • Instrumentation for reclamation; • Installation of temporary platform for pipe pile wall P1; • Existing seawall and rock armour at the north side of the temporary platform for pipe pile P1 shall be removed; • Surveying and installation of ADMS and vibrograph; • Piled staging and the subsequent trial pile installation.	• To conform the installation and setting as in the silt screen deployment plan • Frequency spray water on the dry dusty road and on the surface of concrete breaking • To cover the dusty material or stockpile by impervious sheet • To space out noisy equipment and position as far as possible from sensitive receiver. • To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance. • Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum
HK/2009/02	• Site clearance • Hoarding & fencing erection • Excavation • Removal existing footing at WSD Salt Water Pumping Station • Removal existing footbridge staircase at Wan Shing Road • Road modification Works • Construction of temporary seawall • Seabed dredging	• To cover the dusty material or stockpile by impervious sheet; • Frequency spray water on the dry dusty road and on the surface of concrete breaking • To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance • To conform the installation and setting as in the silt screen and silt curtain deployment plan

Figure 2.1

Project Layout



DETAIL 'A'

LEGEND:

- WATER QUALITY MONITORING STATIONS

COOLING WATER INTAKES

- C1 HONG KONG CONVENTION AND EXHIBITION CENTRE EXTENSION
- C2 TELECOM HOUSE/THE ACADEMY FOR PERFORMING ARTS / GOLF ON CENTRE
- C3 HONG KONG CONVENTION AND EXHIBITION CENTRE PHASE II
- 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 HUKFA EXTENSION
- RC5 SUN HUNG KAI CENTRE (REPROVISION)
- RC7 WINDSOR HOUSE (TEMPORARY REPROVISION)

WSD SALT WATER INTAKE

- #S021 WAN CHAI
- #W07 WAN CHAI (REPROVISION)
- #S07 KOWLOON SOUTH
- #S09 TAI WAN
- #S21C CHA KWO LING
- #S21S SAI WAN HO
- #S21T QUARRY BAY
- #S21V SHEUNG WAN
- #S22S KENNEDY TOWN

DESIGNATED PROJECTS (DP)

- DP1 - CENTRAL-WAN CHAI BYPASS ECWB (INCLUDING ITS ROAD TUNNEL AND SLIP ROADS
- DP2 - ROAD P2 AND OTHER ROADS (PRIMARY / DISTRICT DISTRIBUTOR ROADS)
- DP3 - PERMANENT AND TEMPORARY RECLAMATION WORKS INCLUDING ASSOCIATED DREDGING WORKS IN WAN CHAI DEVELOPMENT PHASE II (WDII) AREA
- ~~DP4 - TEMPORARY TYPHOON SHELTER (DP4 NOT TO BE IMPLEMENTED)~~
- DP5 - WAN CHAI EAST SEWAGE OUTFALL
- DP6 - DREDGING FOR THE CROSS-HARBOUR WATER MAINS

DP1 IS COVERED BY EP - 314/2009
DP2 IS COVERED BY EP - 376/2009
DP3, DP5 AND DP6 ARE COVERED BY EP - 356/2005

WORKS CONTRACT	DESIGNATED PROJECT (PROJECTS)	CONSTRUCTION COMMENCEMENT
CEDD CONTRACT NO. HK/2009/01	DP1, DP3, DP6	APRIL 2010
CEDD CONTRACT NO. HK/2009/02	DP1, DP3, DP5	APRIL 2010
CEDD CONTRACT 3	DP1, DP3	END 2011
CEDD CONTRACT 4	DP1, DP3	END 2012
CEDD CONTRACT 5	DP2	2013
HyD CONTRACT NO. HY/2009/11	DP3	18 MARCH 2010
HyD CONTRACT NO. HY/2009/15	DP1, DP3	SEPTEMBER 2010
HyD CONTRACT NO. HY/2009/19	DP1	OCTOBER 2010
HyD CONTRACT NO. HY/2009/19	DP1	NOVEMBER 2010
HyD CONTRACT 12	DP1, DP3	MID 2013

CEDD 土木工程拓展署 Civil Engineering and Development Department

WAN CHAI DEVELOPMENT PHASE II

WAN CHAI DEVELOPMENT PHASE II AND CENTRAL - WAN CHAI BYPASS - SAMPLING, FIELD MEASUREMENT AND TESTING WORKS (STAGE 1)

LOCATIONS OF WATER QUALITY MONITORING STATIONS

AECOM

DRG.NO. 60041297/C5/SK001

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Plot Title by : 2009-3-17 CENAL

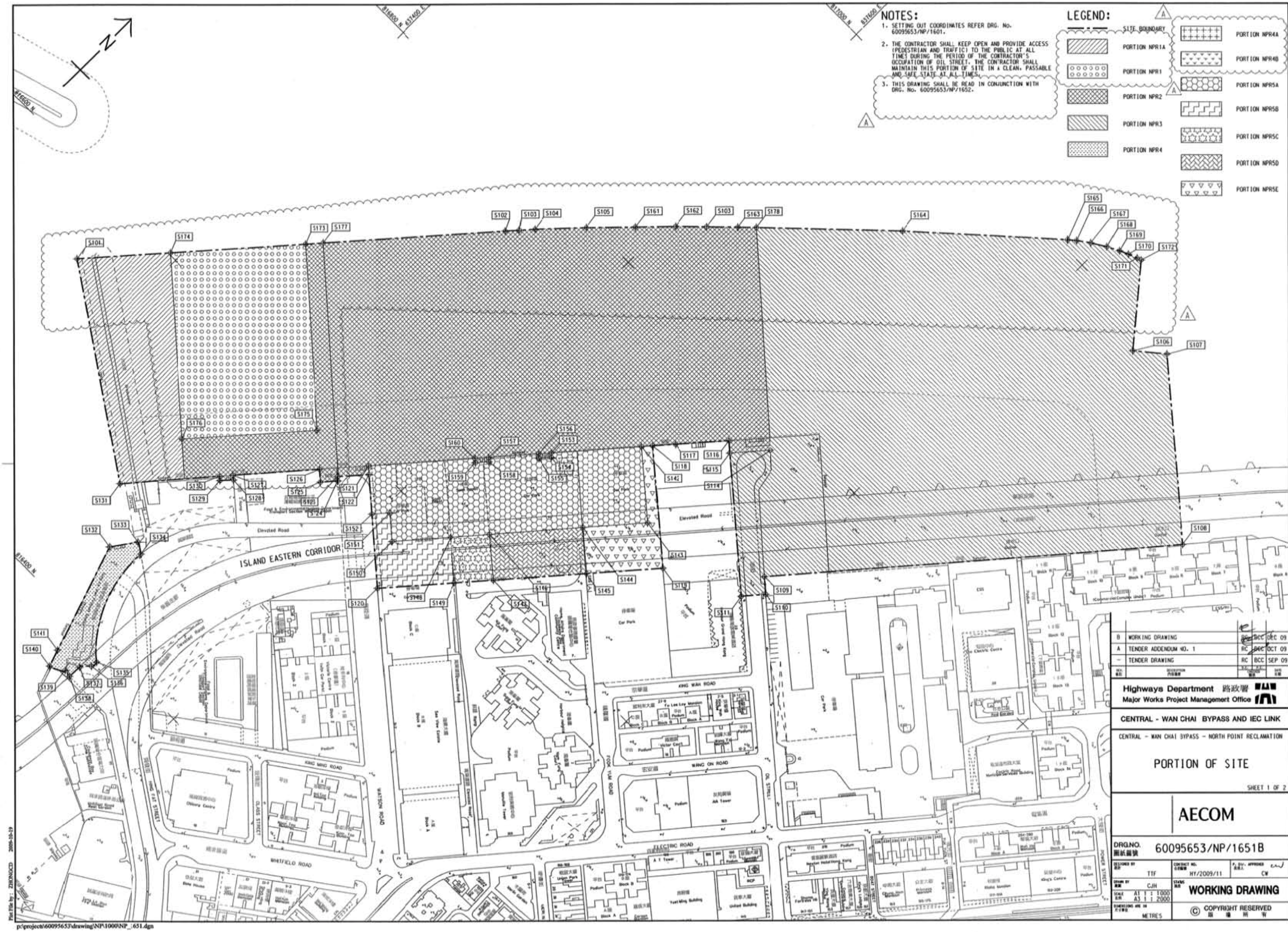
PATH: p:\projects\60041297\DRAWINGS\SETCH\C3\SKETCH 001.dgn

NOTES:

1. SETTING OUT COORDINATES REFER DRG. No. 60095653/NP/1601.
2. THE CONTRACTOR SHALL KEEP OPEN AND PROVIDE ACCESS (PEDESTRIAN AND TRAFFIC) TO THE PUBLIC AT ALL TIMES DURING THE PERIOD OF THE CONTRACTOR'S OCCUPATION OF OIL STREET. THE CONTRACTOR SHALL MAINTAIN THIS PORTION OF SITE IN A CLEAN, PASSABLE AND SAFE STATE AT ALL TIMES.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. No. 60095653/NP/1652.

LEGEND:

- SITE BOUNDARY
- PORTION NPR1A
- PORTION NPR1
- PORTION NPR2
- PORTION NPR3
- PORTION NPR4
- PORTION NPR4A
- PORTION NPR4B
- PORTION NPR5A
- PORTION NPR5B
- PORTION NPR5C
- PORTION NPR5D
- PORTION NPR5E



REV.	DESCRIPTION			DATE
B	WORKING DRAWING	RC	BCC	DEC 09
A	TENDER ADDENDUM NO. 1	RC	BCC	OCT 09
–	TENDER DRAWING	RC	BCC	SEP 09

Highways Department 路政署
Major Works Project Management Office

CENTRAL - WAN CHAI BYPASS AND IEC LINK

CENTRAL - WAN CHAI BYPASS - NORTH POINT RECLAMATION

PORTION OF SITE

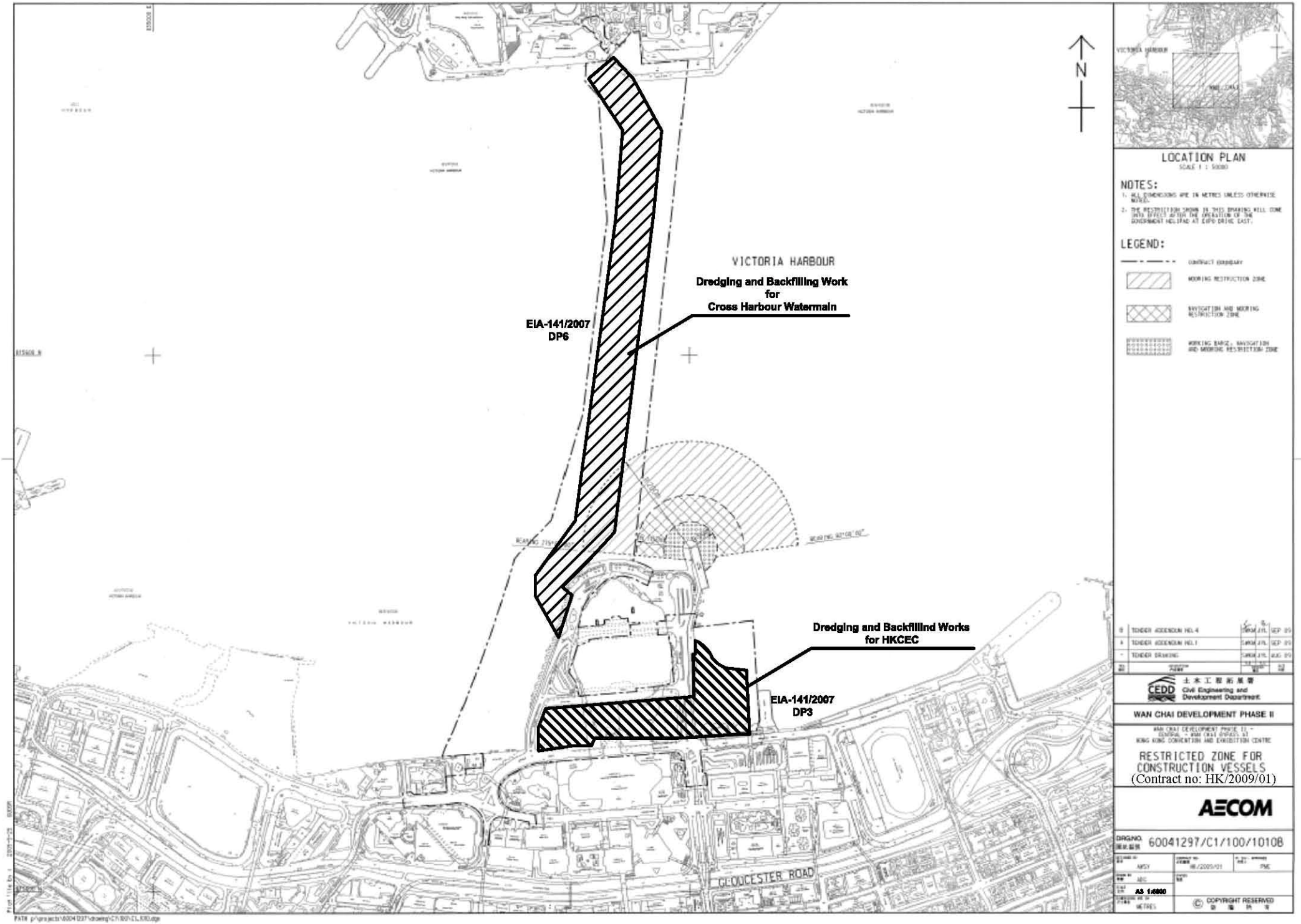
SHEET 1 OF 2

AECOM

DRG.NO. 圖紙編號 60095653/NP/1651B

DESIGNED BY: TTF	CONTRACT NO.: HY/2009/11	P. DIV. APPROVED: CW
DRAWN BY: CJH	STATUS: **WORKING DRAWING**	
SCALE: A1 1 : 1000, A3 1 : 2000		
DIMENSIONS ARE IN METRES		

p:\project\60095653\drawing\NP\1000\NP_1651.dgn


VICTORIA HARBOUR
Dredging and Backfilling Work
for
Cross Harbour Watermain
EIA-141/2007
DP6
Dredging and Backfillind Works
for HKCEC
EIA-141/2007
DP3
GLOUCESTER ROAD
N
LOCATION PLAN
SCALE 1 : 50000
NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. THE RESTRICTION SHOWN IN THIS DRAWING WILL CEASE TO HAVE EFFECT AFTER THE OPERATION OF THE GOVERNMENT HELIPAD AT EASTERN DRIVE EAST.
LEGEND:
CONTRACT BOUNDARY
MOORING RESTRICTION ZONE
NAVIGATION AND MOORING RESTRICTION ZONE
WORKING BARGE, NAVIGATION AND MOORING RESTRICTION ZONE
B TENDER ADDENDUM NO.4 SEP 09
A TENDER ADDENDUM NO.1 SEP 09
- TENDER DRAWING AUG 09
CEDD
土木工程拓展署
Civil Engineering and Development Department
WAN CHAI DEVELOPMENT PHASE II
WAN CHAI DEVELOPMENT PHASE II - EXTERNAL WORKS AT HONG KONG CONVENTION AND EXHIBITION CENTRE
RESTRICTED ZONE FOR CONSTRUCTION VESSELS
(Contract no: HK/2009/01)
AECOM
DRG.NO. 60041297/C1/100/10108
AS 1:6000
METRES
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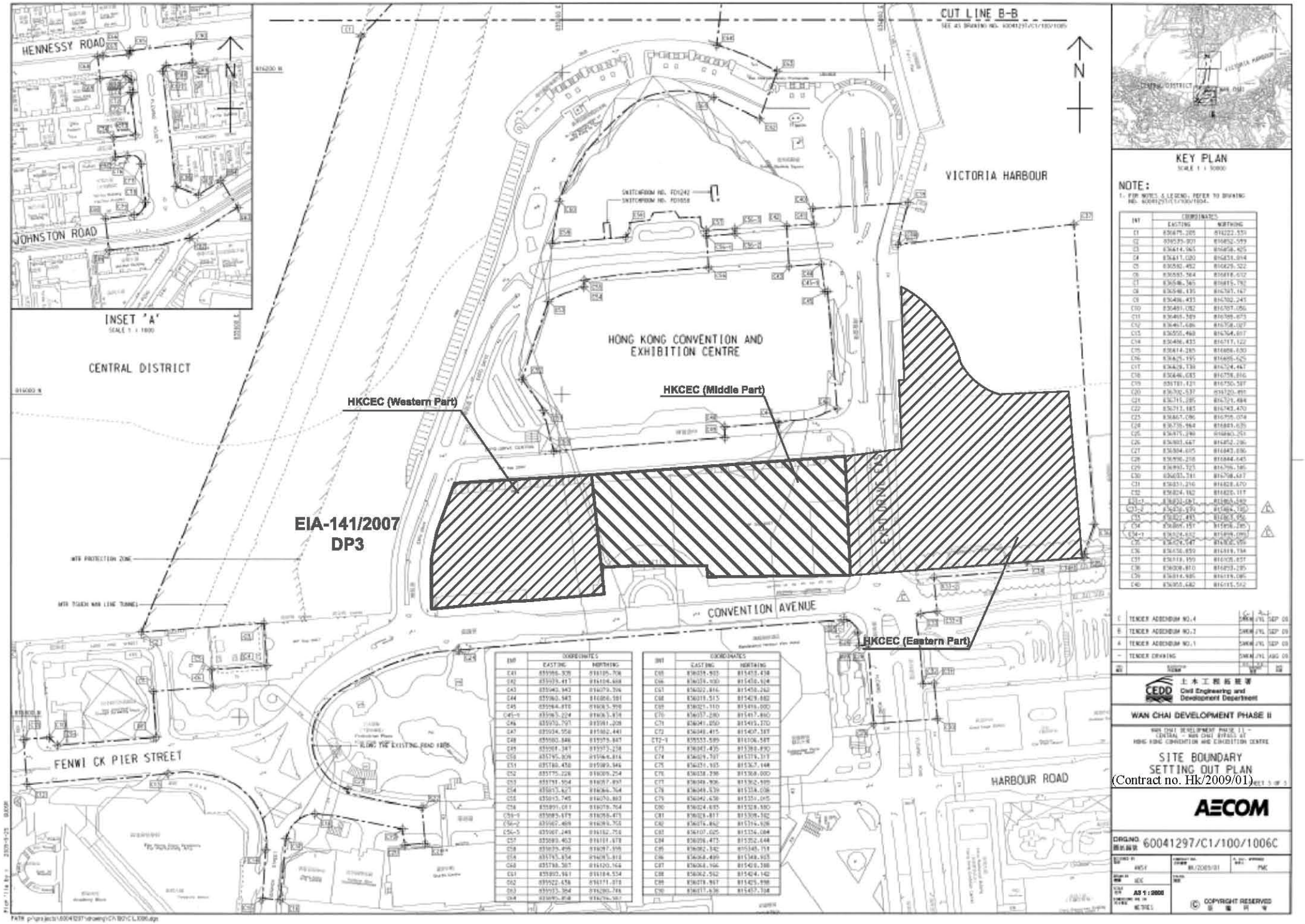
HENNESSY ROAD
JOHNSTON ROAD
INSET 'A'
SCALE 1 : 1000
CENTRAL DISTRICT
CUT LINE B-B
SEE A3 DRAWING NO. 60041297/C1/100/1005
VICTORIA HARBOUR
HONG KONG CONVENTION AND EXHIBITION CENTRE
HKCEC (Western Part)
HKCEC (Middle Part)
HKCEC (Eastern Part)
EIA-141/2007
DP3
MTR PROTECTION ZONE
MTR TSUEN WAN LINE TUNNEL
CONVENTION AVENUE
FENWI CK PIER STREET
HARBOUR ROAD
KEY PLAN
SCALE 1 : 50000
NOTE:
1. FOR NOTES & LEGEND, REFER TO DRAWING NO. 60041297/C1/100/1004.
WAN CHAI DEVELOPMENT PHASE II
WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT HONG KONG CONVENTION AND EXHIBITION CENTRE
SITE BOUNDARY SETTING OUT PLAN
(Contract no. Hk/2009/01)
Civil Engineering and Development Department
AECOM
DRG.NO. 60041297/C1/100/1006C
AS 1:2000
METRES
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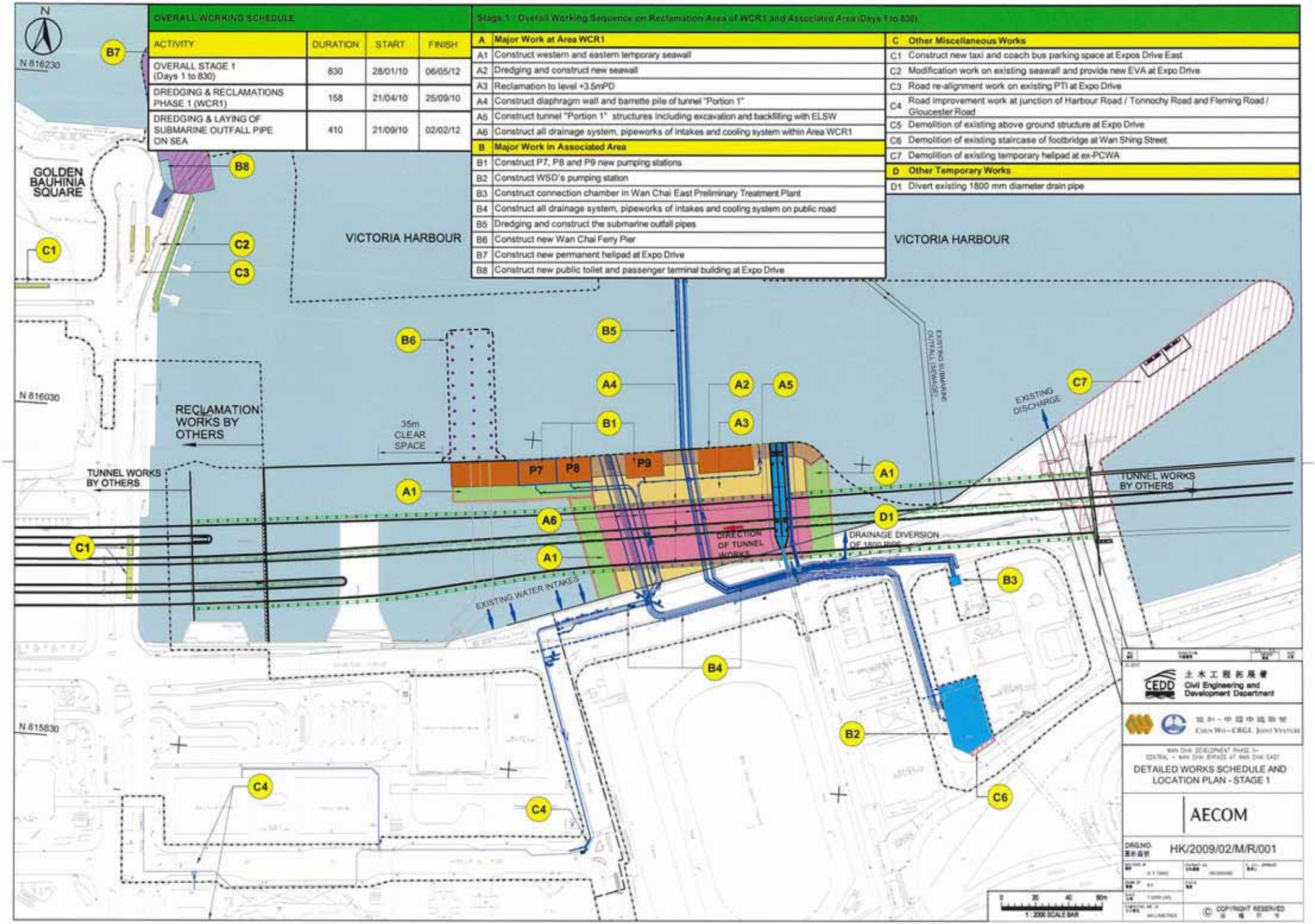

OVERALL WORKING SCHEDULE			
ACTIVITY	DURATION	START	FINISH
OVERALL STAGE 1 (Days 1 to 830)	830	28/01/10	06/05/12
DREDGING & RECLAMATIONS PHASE 1 (WCR1)	158	21/04/10	25/09/10
DREDGING & LAYING OF SUBMARINE OUTFALL PIPE ON SEA	410	21/09/10	02/02/12

Stage 1 : Overall Working Sequence on Reclamation Area of WCR1 and Associated Area (Days 1 to 830)	
A	**Major Work at Area WCR1**
A1	Construct western and eastern temporary seawall
A2	Dredging and construct new seawall
A3	Reclamation to level +3.5mPD
A4	Construct diaphragm wall and barrette pile of tunnel "Portion 1"
A5	Construct tunnel "Portion 1" structures including excavation and backfilling with ELSW
A6	Construct all drainage system, pipeworks of intakes and cooling system within Area WCR1
B	**Major Work in Associated Area**
B1	Construct P7, P8 and P9 new pumping stations
B2	Construct WSD's pumping station
B3	Construct connection chamber in Wan Chai East Preliminary Treatment Plant
B4	Construct all drainage system, pipeworks of intakes and cooling system on public road
B5	Dredging and construct the submarine outfall pipes
B6	Construct new Wan Chai Ferry Pier
B7	Construct new permanent helipad at Expo Drive
B8	Construct new public toilet and passenger terminal building at Expo Drive

C	**Other Miscellaneous Works**
C1	Construct new taxi and coach bus parking space at Expos Drive East
C2	Modification work on existing seawall and provide new EVA at Expo Drive
C3	Road re-alignment work on existing PTI at Expo Drive
C4	Road improvement work at junction of Harbour Road / Tonnochy Road and Fleming Road / Gloucester Road
C5	Demolition of existing above ground structure at Expo Drive
C6	Demolition of existing staircase of footbridge at Wan Shing Street
C7	Demolition of existing temporary helipad at ex-PCWA
D	**Other Temporary Works**
D1	Divert existing 1800 mm diameter drain pipe

0 20 40 60m
1 : 2000 SCALE BAR

土木工程拓展署
Civil Engineering and Development Department

CHUN WO – CRGE JOINT VENTURE

WAN CHAI DEVELOPMENT PHASE II – CENTRAL – WAN CHAI BYPASS AT WAN CHAI EAST

DETAILED WORKS SCHEDULE AND LOCATION PLAN - STAGE 1

AECOM

DRG.NO. HK/2009/02/M/R/001

Figure 2.2

Project Organization Chart

Project Organization Chart

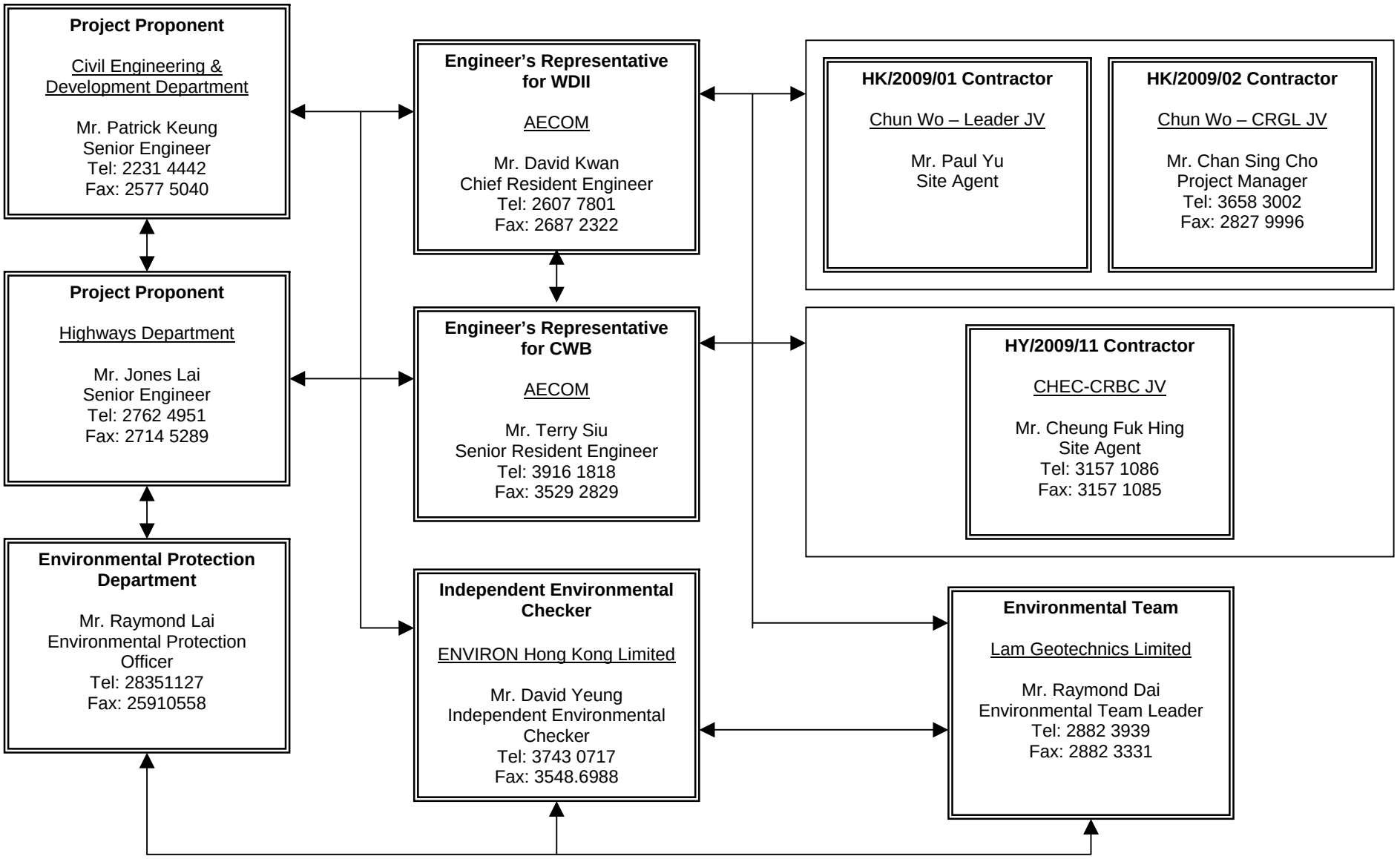

Figure 4.1

Locations of Monitoring Stations

N

LEGEND:

■ Water Quality Monitoring Stations

WSD7 - Kowloon South
WSD9 - Tai Wan
WSD10 - Cha Kwo Ling
WSD15 - Sai Wan Ho
WSD17 - Quarry Bay
WSD19 - Sheung Wan
WSD20 - Kennedy Town

Kowloon

WSD7

WSD9

WSD10

WSD19

WSD17

WSD15

WSD20

SEE FIGURE 4.1b

Hong Kong Island

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WAN CHAI DEVELOPMENT PHASE II - PLANNING AND ENGINEERING REVIEW

LOCATIONS OF WATER QUALITY MONITORING STATIONS

(SHEET 1 OF 2)

FIGURE 4.1a

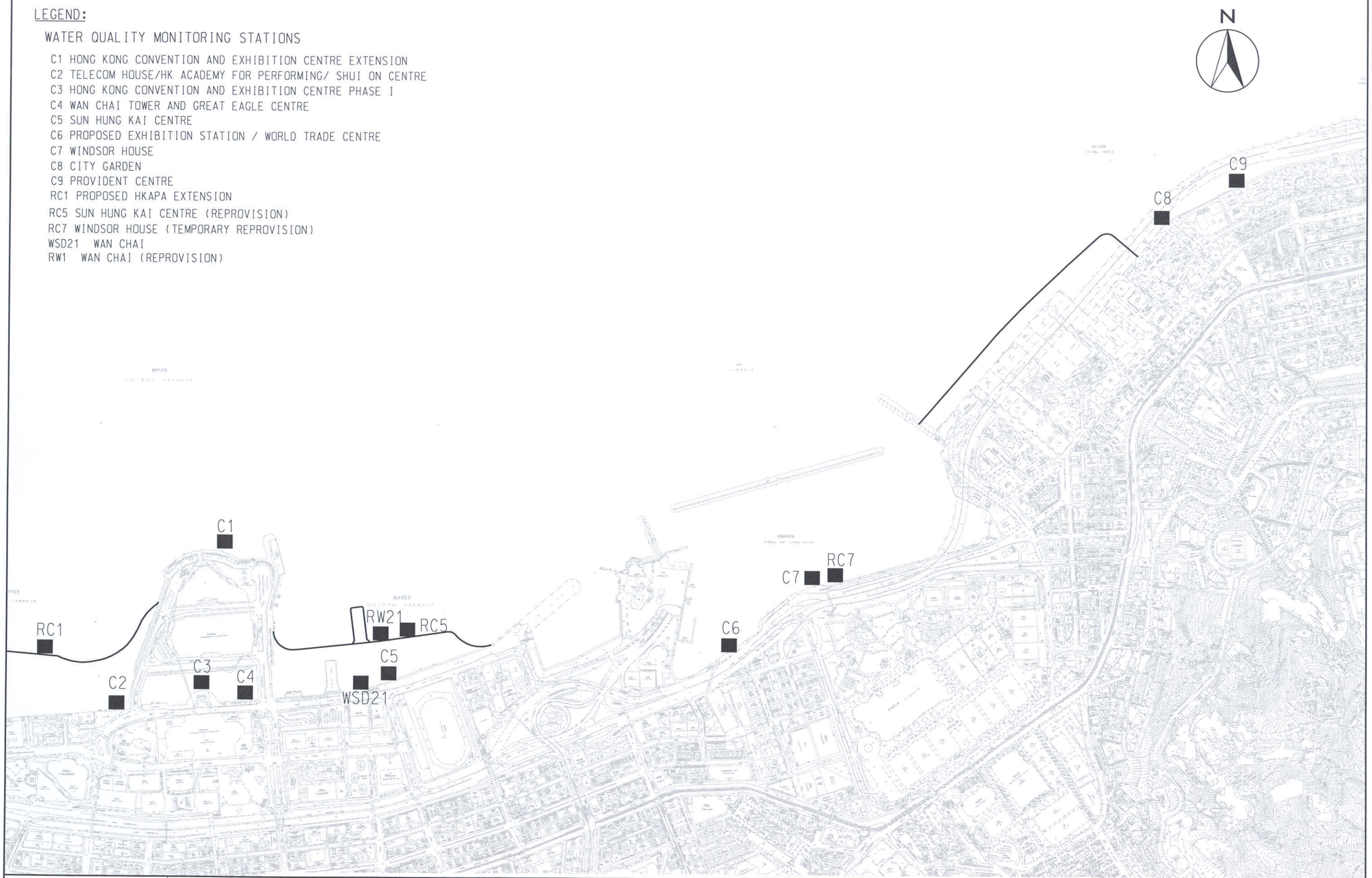
P:/60017193/REPORT/DRAWINGS/EM&A-0708/WQ/4.1A.DGN

SCALE: N.T.S. (A3)

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)



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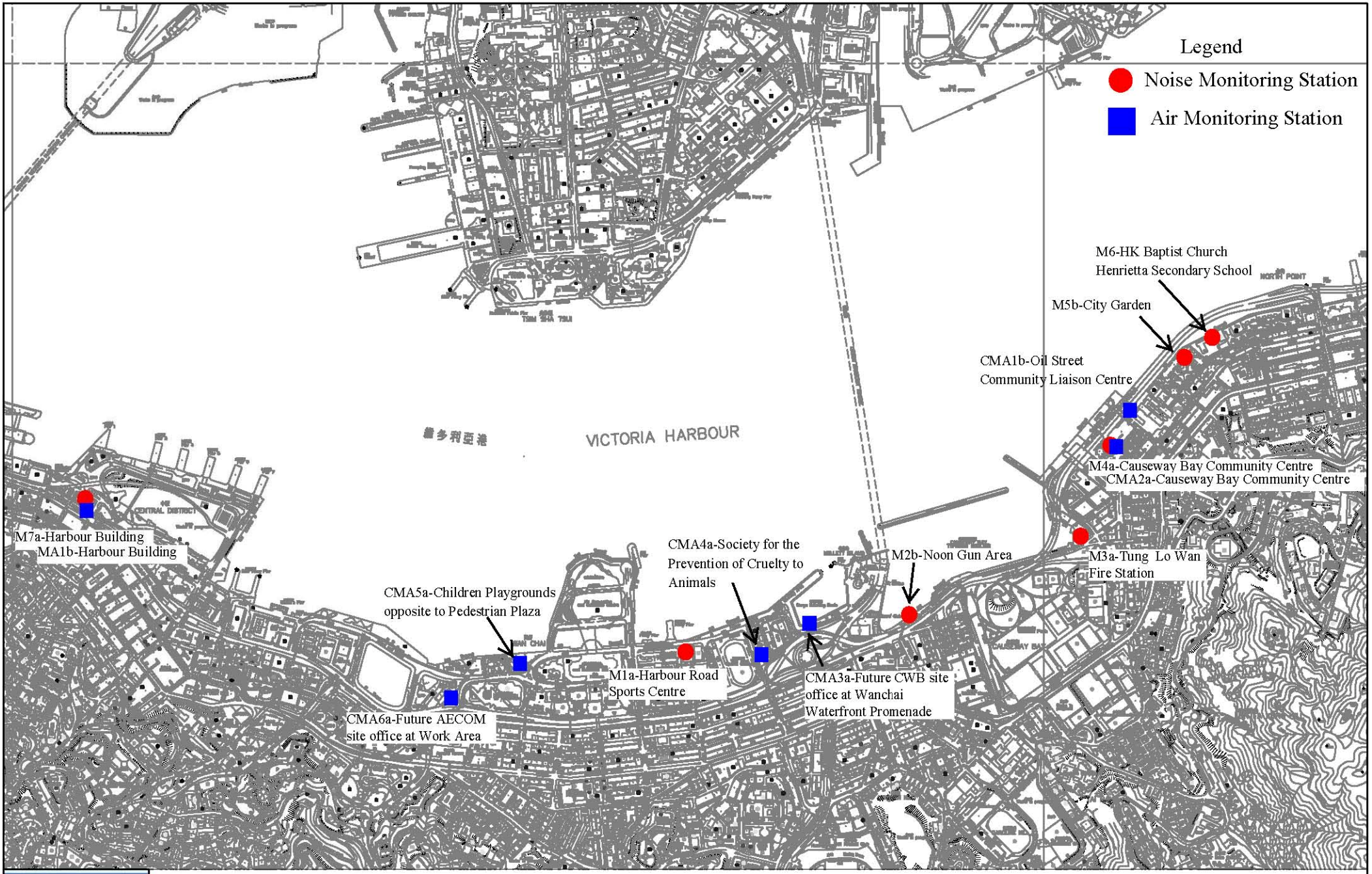
WAN CHAI DEVELOPMENT PHASE II - PLANNING AND ENGINEERING REVIEW

LOCATIONS OF WATER QUALITY MONITORING STATIONS (SHEET 2 OF2)

FIGURE 4.1b

P:/60017193/REPORT/DRAWINGS/EM&A-0708/WQ/4.1B.DGN SCALE 1:8000 (A3)



Location Plan of Air and Noise Monitoring Stations

Appendix 3.1

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	
Construction Phase								
For the Whole Project								
S3.6.5	Four times a day watering of the work site with active operations.	Work site / during construction	Contractor		√			EIAO-TM
S3.8.1	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimise cumulative dust impacts. • Strictly limit the truck speed on site to below 10 km per hour and water spraying to keep the haul roads in wet condition; • Watering during excavation and material handling; • Provision of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary; and • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	Work site / during construction	Contractor		√			

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[1]		√			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[2]		√			EIAO-TM
Operation Phase								
For the Whole Project								

[1] CEDD will identify an implementation agent.

[2] 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 on-going odour impacts at the ASRs.	Planned ASRs (CBTS Breakwater)/First 5-year period of operation phase	CEDD[1]			√		EIAO-TM
For DP1 – CWB (Within the Project Boundary)								
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

Contract No: HK/2009/05
Wan Chai Development Phase II and Central-Wan Chai Bypass -
Sampling, Field Measurement and Testing Works (Stage 1)
Monthly EM&A Report

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	
Construction Phase								
For the Whole Project								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S4.9.4	Good Site Practice: • Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program. • Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program. • Mobile plant, if any, shall be sited as far away from NSRs as possible. • 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. • 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. • Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
For DP1 – CWB (Within the Project Boundary)								

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	Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks: • Slip road 8 tunnel • Construction of diaphragm wall and substructures of the tunnel approach ramp • Excavation • Construction of slabs • Backfill • Demolition and construction of substructures for the IEC • Demolition works of existing piers and crossheads of the marine section of the existing IEC Use of PME grouping for the following tasks: • At-grade road construction • Substructure for IECL connection	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
For DP2 – WDII Major Roads (Road P2)								
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks: • Temporary road diversion • Resurfacing • At-grade roadwork	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
For DP3 – Reclamation Works								
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment for the following task: • Filling behind seawall • Seawall construction	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
For DP5 – Wan Chai East Sewage Outfall								
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment for the following tasks: • Submarine pipelines (marine section) Use of quiet powered mechanical equipment and movable noise barrier for the following tasks: • Installation of a new pipeline (land section)	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
For DP6 – Cross-Harbour Water Mains from Wan Chai to Tsim Sha Tsui								
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment for the following tasks: • Submarine pipelines (marine section) •	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO

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

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	• For Existing NSRs • about 235m length of noise semi-enclosure with transparent panel covering the westbound slip road from the IEC • about 230m length of noise semi-enclosure with transparent panel covering the main carriageways (eastbound and westbound) of the CWB and IEC • 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 • 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 • about 350m length of 3.5m high vertical noise barrier with transparent panel on the eastbound slip road to the IEC • 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	Near North Point / Before commencement of operation of road project	HyD	√	√	√		EIAO-TM
	For Future/Planned NSRs • about 265m length of noise semi-enclosure with transparent panel covering the westbound slip road from the IEC	In between the Electric Centre (next to City Garden) and CDA(1) site / Before occupation of Planned NSRs in CDA and CDA(1) sites.	HyD	√	√ #			

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

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	
Construction Phase								
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)								
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: • Seawall construction in all the reclamation areas; • Construction of the CWB Tunnel • Construction of the proposed WSD water mains; and • Construction of the proposed Wan Chai East sewage outfall pipelines.	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: • Dredging along the proposed cross-harbour water mains; • Dredging along the seawall in the Wan Chai Reclamation (WCR) zone (area between HKCEC Extension and PCWA).	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO

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

Reclamation Area		Maximum Dredging Rate		Maximum Dredging Rate (m^3 per week)
		m^3 per day	m^3 per hour (for 16 hrs per day)	
Dredging along seawall or breakwater				
North Point Shoreline Zone (NPR)		6,000	375	42,000
Causeway Bay Shoreline Zone	TBW	1,500	94	10,500
	TCBR	6,000	375	42,000
PCWA Zone		5,000	313	35,000

<table>
<tr><th rowspan="2">EIA Ref</th><th rowspan="2">Environmental Protection Measures / Mitigation Measures</th><th rowspan="2">Location / Timing</th><th rowspan="2">Implementation Agent</th><th colspan="4">Implementation Stages*</th><th rowspan="2">Relevant Legislation and Guidelines</th></tr>
<tr><th>Des</th><th>C</th><th>O</th><th>Dec</th></tr>
<tr><td></td><td>
<table>
<tr><td colspan="2">Wan Chai Shoreline Zone (WCR)</td><td>6,000</td><td>375</td><td>42,000</td></tr>
<tr><td rowspan="2">HKCEC Shoreline Zone (HKCEC)</td><td>HKCEC Stage 1 & 3</td><td>1,500</td><td>94</td><td>10,500</td></tr>
<tr><td>HKCEC Stage 2</td><td>6,000</td><td>375</td><td>42,000</td></tr>
<tr><td colspan="2">Cross Harbour Water Mains</td><td>1,500</td><td>94</td><td>10,500</td></tr>
<tr><td colspan="2">Wan Chai East Submarine Sewage Pipeline</td><td>1,500</td><td>94</td><td>10,500</td></tr>
</table>
Note: 1,500 m^3 per day shall be applied for construction of the western seawall of WCR1.</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>S5.8, Figure 5.3</td><td>Dredging along the seawall at WCR1 shall be undertaken initially at 1,500m^3 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.</td><td>Work site / During the construction period</td><td>Contractor</td><td></td><td>√</td><td></td><td></td><td>EIAO-TM, WPCO</td></tr>
<tr><td>S5.8, Figure 5.3</td><td>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.</td><td>Work site / During the construction period</td><td>Contractor</td><td></td><td>√</td><td></td><td></td><td>EIAO-TM, WPCO</td></tr>
<tr><td>S5.8, Figure 5.3</td><td>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.</td><td>Work site / During the construction period</td><td>Contractor</td><td></td><td>√</td><td></td><td></td><td>EIAO-TM, WPCO</td></tr>
<tr><td>S5.8, Figure 5.3</td><td>Silt screens shall be applied to seawater intakes at interim construction stages as stated below:
<table>
<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, TBW, NP and Water Mains Zone</td><td>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 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 & World Trade Centre and reprovisioned Windsor House.</td></tr>
</table></td><td>Work site / During the construction period</td><td>Contractor</td><td></td><td>√</td><td></td><td></td><td>EIAO-TM, WPCO</td></tr>
</table>

<table>
<tr><th rowspan="2">EIA Ref</th><th rowspan="2">Environmental Protection Measures / Mitigation Measures</th><th rowspan="2">Location / Timing</th><th rowspan="2">Implementation Agent</th><th colspan="4">Implementation Stages*</th><th rowspan="2">Relevant Legislation and Guidelines</th></tr>
<tr><th>Des</th><th>C</th><th>O</th><th>Dec</th></tr>
<tr><td>S5.8</td><td>Other mitigation measures include:

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;
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;
all hopper barges and dredgers shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material;
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;
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
</td><td>Work site / During the construction period</td><td>Contractor</td><td></td><td>√</td><td></td><td></td><td>ProPECC PN 1/94; WPCO (TM-DSS)</td></tr>
</table>

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	• 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.							
S5.8	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.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO

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				Des	C	O	Dec	
S5.8	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.	Causeway Bay typhoon shelter/Implementation of harbour-front enhancement.	CEDD[3]		√			WPCO

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
For the Whole Project								
S5.8	• Construction Runoff and Drainage • use of sediment traps, wheel washing facilities for vehicles leaving the site, and adequate maintenance of drainage systems to prevent flooding and overflow; • 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; • a sediment tank constructed from pre-formed individual cells of approximately 6 - 8 m3 capacity can be used for settling ground water prior to disposal; • 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; • 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; • 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; • 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	• Work site / During the constructi on period	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)

[3] 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	
	required. • 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.							
	• 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.							
S5.8	*Sewage from Construction Work Force* 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	*Floating Debris and Refuse* 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

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S5.8	*Storm Water Discharges* Minimum distances of 100 m shall be maintained between the existing or planned stormwater discharges and the existing or planned WSD flushing water intakes.	Work site and adjacent water / During the design and construction period.	Contractor	√	√			WPCO
Operation Phase								
DP1 – CWB (within the Project Boundary)								
S5.8	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: • 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. • Petrol interceptors shall be regularly cleaned and maintained in good working condition. • Oily contents of the petrol interceptors shall be properly handled and disposed of, in compliance with the requirements of the Waste Disposal Ordinance. • Sewage arising from ancillary facilities of CWB (for examples, car park,	CWB/During design and operational period	HyD/TD[3]	√		√		WPCO

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	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. • Road drainage shall also be provided with adequately designed silt trap to minimize discharge of silty runoff. • 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.							

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

[3] if employ Management, Operation and Maintenance (MOM) Contract

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	
Construction Phase								
For DP3 – Reclamation Works								
S6.7.2	***Marine Sediments*** 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 (>10xLCEL) 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^3. 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.							

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: • 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.							

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	• 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. • 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.							
S6.6.12	***Floating Refuse*** 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		√			
For the Whole Project								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.7.7	*Good Site Practices* Recommendations for good site practices during the construction activities include: • nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in proper waste management and chemical waste handling procedures; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Work site / During the construction period	Contractor		√			Waste Disposal Ordinance (Cap.354)

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.7.8	*Waste Reduction Measures* 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: • 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; • 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; • any unused chemicals or those with remaining functional capacity shall be recycled; • use of reusable non-timber formwork, such as in casting the tunnel box sections, to reduce the amount of C&D material. • prior to disposal of C&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; • proper storage and site practices to minimise the potential for damage or contamination of construction materials; and • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	Work site / During planning and design stage, and construction stage	Contractor	√	√			

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.7.10	*General Refuse* General refuse shall be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D material. 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.	Work site / During the construction period	Contractor		√			Public Health and Municipal Services Ordinance (Cap. 132)
S6.7.11	*Chemical Wastes* After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) shall be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals shall be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During the construction period	Contractor		√			Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S6.7.12	*Construction and Demolition Material* C&D material shall be sorted on-site into inert C&D material (that is, public fill) and C&D waste. All the suitable inert C&D material shall be broken down to 250 mm in size for reuse as public fill in the WDII reclamation. C&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.	Work site / During the construction period	Contractor		√			ETWB TCW No. 33/2002, 31/2004, 19/2005

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	*Bentonite Slurry* 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: • 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. • 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. • 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.	Work site / During the construction period	Contractor		√			ProPECC PN 1/94

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

Contract No: HK/2009/05
Wan Chai Development Phase II and Central-Wan Chai Bypass -
Sampling, Field Measurement and Testing Works (Stage 1)
Monthly EM&A Report

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	
Construction Phase								
For the Whole Project								
S.12.6	• The contaminated site shall be cleaned up before commencement of site clearance and construction work at the concerned area which may disturb the ground.	A King Marine / Before commencement of construction activities at A King Marine.	Project proponent for the re-provisioned Tin Hau Temple	√				"*Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops*" 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: • Excavation profiles must be properly designed and executed; • 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; • Quantities of soil to be excavated must be estimated; • It maybe necessary to split quantities of soil according to soil type, degree and nature of contamination. • Temporary storage of soil at intermediate depot or on-site	A King Marine / During soil remediation works	Contractor	√				Air Pollution Control Ordinance Noise Control Ordinance Waste Disposal Ordinance Waste Disposal (Chemical Waste) (General) Regulation

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.							
	• Supply of suitable clean backfill materials is needed after excavation. • Care must be taken of existing buildings and utilities. • Precautions must be taken to control of ground settlement • Speed controls for vehicles shall be imposed on dusty site areas. • Vehicle wheel and body washing facilities at the site's exit points shall be established and used. The following environmental mitigation measures shall be strictly followed during the operation and/or maintenance of the CS/S facilities:							Water Pollution Control Ordinance

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	Air Quality Mitigation Measures • The loading, unloading, handling, transfer or storage of cement shall be carried out in an enclosed system. • 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. • All practicable measures, including speed controls for vehicles, shall be taken to prevent or minimize the dust emission caused by vehicle movement. • Tarpaulin or low permeable sheet shall be put on dusty vehicle loads transported between site locations.							
	Noise Mitigation Measures • The mixing facilities shall be sited as far as practicable to the nearby noise sensitive receivers. • Simultaneous operation of mixing facilities and other equipment shall be avoided. • Mixing process and other associated material handling activities shall be properly scheduled to minimise potential cumulative noise impact on the nearby noise sensitive receivers. • Construction Noise Permit shall be applied for the operation of powered mechanical equipment during restricted hours (if any).							

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	Water Quality Mitigation Measures • 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. *Waste Mitigation Measures* • 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. • Stabilized soils shall be broken into suitable size for backfilling or reuse on site. • A high standard of housekeeping shall be maintained within the mixing plant area. • If necessary, there shall be clear and separated areas for stockpiling of untreated and treated materials.							

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

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	
Construction Phase								
For the Whole Project - Schedule 3 DP								
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.
For DP3 – Reclamation Works								
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.

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	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: • Installation of silt curtains during dredging activities • Use of tightly-closed grab dredger • Reduction of dredging rate • Control of grab descending speed • Construction of leading edges of seawall in the early stages of the reclamation works	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							

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	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: • Use of Quiet Mechanical Plant during the construction phase shall be adopted wherever possible. • Adoption of multiple-phase construction schedule. • General measures to reduce noise generated during the construction phase (see noise impact assessment) shall be effectively implemented.	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

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	
Construction Phase								
For the Whole Project								
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
For DP1 – CWB (Within the Project Boundary)								
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

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
For DP2 – WDII Major Roads (Road P2)								
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
For DP3 – Reclamation Works								
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
For DP5 – Wan Chai East Sewage Outfall								
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

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
For DP6 – Cross-Harbour Water Mains from Wan Chai to Tsim Sha Tsui								
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
Operation Phase								
For the Whole Project - Schedule 3 DP								
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

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[4]	√	√	√		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
For DP1 – CWB (Within the Project Boundary)								
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
For DP2 – WDII Major Roads (Road P2)								

[4] 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	
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
For DP3 – Reclamation Works								
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[5]	√	√	√		ETWB TCW 2/2004

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

[5] CEDD will identify an implementation agent

Appendix 4.1

Action and Limit Level

Action and Limit Level

Action and Limit Level for Noise Monitoring

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received.	75 dB(A)[Note 1]

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 $\mu g/m^3$		24-hour TSP Level in $\mu g/m^3$	
	Action Level	Limit Level	Action Level	Limit Level
CMA1a [Note 2]	320.1	500	176.7	260
CMA2a	323.4	500	169.5	260
CMA3 [Note 2]	311.3	500	171.0	260
CMA4a	312.5	500	171.2	260
CMA5 [Note 2]	332.0	500	181.0	260
CMA6 [Note 2]	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
WSD Salt Water Intakes		
SS in mg/L	13.00	14.43
Turbidity in NTU	8.04	9.49
DO in mg/L	3.66	3.28
Cooling Water Intakes		
SS in mg/L	15.00	22.13
Turbidity in NTU	9.10	10.25
DO in mg/L	3.36	2.73

Appendix 4.2

Copies of Calibration Certificates

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 96127 Page 1 of 4 Pages

Customer : Lam Environmental Services Ltd

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

Order No. : Q92434 **Date of receipt :** 24-Nov-09

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : ACO

Model : Type 6224 **Serial No. :** 30148

Test Conditions

Date of Test : 26-Nov-09 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

Test Results

All results were within the IEC 651 Type 1 & 804 Type I Specification.

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

Main Test equipment used:

Equipment No.	Description	Cert. No.	Due Date	Traceable to
S017	Multi-Function Generator	C081456	18-Mar-10	SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR

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

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

Calibrated by : P.F. Wong

Approved by : Dorothy Cheuk

Date: 27-Nov-09

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

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Time Const.		
20 – 100	L_A	Fast	94.03	94.3
		Slow		94.3
	L_C	Fast		94.3
30 – 120	L_A	Fast	94.03	94.5
		Slow		94.5
	L_C	Fast		94.5
30 – 120	L_A	Fast	113.97	114.2
		Slow		114.2
	L_C	Fast		114.2

IEC 651 Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.01 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
140	114.0	114.6	+0.1	± 0.7 dB
130	104.0	104.7	+0.2	
120	94.0	94.5 (Ref.)	- -	
110	84.0	84.5	0.0	
100	74.0	74.2	-0.3	
90	64.0	64.0	-0.5	
80	54.0	54.0	-0.5	

Uncertainty : ± 0.1 dB

Calibration Certificate

3.2 Differential level linearity

UUT Range	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.4	-0.1	± 0.4
	94.0	94.5 (Ref.)	- -	
	95.0	95.5	0.0	± 0.2
	104.0	104.5	0.0	± 0.3
	105.0	105.5	0.0	± 1.0

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.0	- 39.4 dB, ± 1.5 dB
63 Hz	-25.8	- 26.2 dB, ± 1.5 dB
125 Hz	-15.7	- 16.1 dB, ± 1 dB
250 Hz	-8.3	- 8.6 dB, ± 1 dB
500 Hz	-3.0	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref)	0 dB, ± 1 dB
2 kHz	+1.2	+ 1.2 dB, ± 1 dB
4 kHz	+0.8	+ 1.0 dB, ± 1 dB
8 kHz	-1.3	- 1.1 dB, + 1.5 dB ~ -3 dB
16 kHz	-5.9	- 6.6 dB, + 3 dB ~ - ∞

Uncertainty : ± 0.1 dB

Calibration Certificate

4. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.9	± 0.5 dB
$1/10^2$	40.0	40.1	
$1/10^3$	40.0	40.2	± 1.0 dB
$1/10^4$	40.0	40.3	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 010 hPa.

---------- END ----------

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. **96128**

Customer : Lam Environmental Services Ltd

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

Order No. : Q92434 **Date of receipt :** 24-Nov-09

Item Tested

Description : Sound Level Calibrator (EL469)

Manufacturer : ACO

Model : -- **Serial No. :** 050213

Test Conditions

Date of Test : 26-Nov-09 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: F21, Z02.

Test Results

All results were within the IEC 942 Class 1 specification after adjustment.

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

Main Test equipment used:

Equipment No.	Description	Cert. No.	Due Date	Traceable to
S014	Spectrum Analyzer	93091	18-Jun-10	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR
S041	Universal Counter	94005	6-Aug-10	SCL-HKSAR
S206	Sound Level Meter	93966	5-Aug-10	SCL-HKSAR

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

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

Calibrated by : P.F. Wong

Approved by : Dorothy Cheuk

Date: 27-Nov-09

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

Calibration Certificate

Results :

1. Level

UUT Nominal Value (dB)	Measured Value (dB)		IEC 942 Class 1 Spec.
	Before adjust.	After adjust.	
94	*93.52	94.11	± 0.3 dB

The above measured values are the mean of 3 measurements.
Uncertainty : ± 0.1 dB

2. Frequency

UUT Nominal Value	Measured Value		IEC 942 Class 1 Spec.
1 kHz	1.016	kHz	± 2 %

Uncertainty : $\pm 3.6 \times 10^{-6}$

3. **Level Stability** : 0.0 dB
IEC 942 Class 1 Spec. : ± 0.1 dB
Uncertainty : ± 0.01 dB

4. **Total Harmonic Distortion** : < 2.9 %
IEC 942 Class 1 Spec. : < 3 %
Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1010 hPa.
4. *Out of Specification.

---------- END ----------

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT:	MR RAYMOND DAI	**Batch:**	HK0927582
CLIENT:	LAM GEOTECHNICS LIMITED	**LABORATORY:**	HONG KONG
ADDRESS:	11/F., CENTRE POINT,	**DATE RECEIVED:**	24/12/2009
	181-185 GLOUCESTER ROAD,	**DATE OF ISSUE:**	07/01/2010
	WANCHAI, HONG KONG.	**SAMPLE TYPE:**	EQUIPMENT
ORDER No.:		**No. of SAMPLES:**	1

COMMENTS

The calibration procedure used for the analysis has been applied for the calibration of the above instrument.

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

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HONG KONG

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Email: hongkong@alsenviro.com

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Melbourne	*Singapore*	*Santiago*
Sydney	*Kuala Lumpur*	*Amtofagasta*
Newcastle	*Bogor*	*Lima*

Abbreviations: *% SPK REC denotes percentage spike recovery*
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

CERTIFICATE OF ANALYSIS

Batch: HK0927582
Date of Issue: 07/01/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference:

Calibration of Salinity System

Item : SONDE Environmental Monitoring System

Model No. : 600 XL

Serial No. : 05C1607

Equipment No. : --

Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 2520 A and B

Date of Calibration : 30 December, 2009

Testing Results :

Expected Reading	Recording Reading
10.0 g/L 20.0 g/L 30.0 g/L	10.0 g/L 21.1 g/L 31.3 g/L
Allowing Deviation	±10%

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0927582
Date of Issue: 07/01/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference:

Calibration of Thermometer

Item : YSI SONDE Environmental Monitoring System

Model No. : 600 XL

Serial No. : 05C1607

Equipment No. : --

Calibration Method : In-house Method

Date of Calibration : 30 December, 2009

Testing Results :

Reference Temperature (^{0}C)	Recorded Temperature (^{0}C)
22.0 ^{0}C	21.5 ^{0}C
38.0 ^{0}C	39.7 ^{0}C
Allowing Deviation	±2.0^{0}C

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0927582
Date of Issue: 07/01/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference:

Calibration of DO System

Item : YSI SONDE Environmental Monitoring System

Model No. : 600 XL

Serial No. : 05C1607

Equipment No. : --

Calibration Method : This meter was calibrated in accordance with standard method APHA (18th Ed.) 4500-O C & G

Date of Calibration : 30 December, 2009

Testing Results :

Expected Reading	Recording Reading
3.98 mg/L	4.07 mg/L
5.97 mg/L	5.99 mg/L
8.84 mg/L	8.79 mg/L
Allowing Deviation	±0.2 mg/L

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0927582
Date of Issue: 07/01/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference:

Calibration of pH System

Item : YSI SONDE Environmental Monitoring System

Model No. : 600 XL

Serial No. : 05C1607

Equipment No. : --

Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 4500-H^+B

Date of Calibration : 30 December, 2009

Testing Results :

Expected Reading	Recording Reading
4.00	3.99
7.00	6.97
10.0	10.1
Allowing Deviation	± 0.2

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT:	MS CHERRY MAK	**Batch:**	HK1006496
CLIENT:	LAM ENVIRONMENTAL SERVICES LIMITED	**LABORATORY:**	HONG KONG
ADDRESS:	11/F, CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI	**DATE RECEIVED:**	29/03/2010
		DATE OF ISSUE:	30/03/2010
		SAMPLE TYPE:	EQUIPMENT
PROJECT:	MARINE WATER QUALITY MONITORING AT WSD INTAKES AND COOLING INTAKES	**No. of SAMPLES:**	1

COMMENTS

The calibration procedure used for the analysis has been applied for the calibration of the above instrument.

NOTES

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ISSUING LABORATORY: HONG KONG

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pp Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Melbourne	*Singapore*	*Santiago*
Sydney	*Kuala Lumpur*	*Amtofagasta*
Newcastle	*Bogor*	*Lima*

Abbreviations: *% SPK REC denotes percentage spike recovery*
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

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Phone: 852-2610 1044 Fax: 852-2610 2021 **www.alsenviro.com**
A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

Batch: HK1006496
Date of Issue: 30/03/2010
Client: LAM ENVIRONMENTAL SERVICES LIMITED
Client Reference:

Calibration of Mulitimeter

Item : Sonde Environmental Monitoring System Model No.: 600 XL
ALS Lab ID: HK1006496 -001 Equipment No.: N/A
Date of Calibration: 29 March, 2010 Serial No.: 05C1607

Testing Results :

pH

Expected Reading	Recording Reading
4.00	3.92
7.00	7.06
10.0	9.89
Allowing Deviation	± 0.2 unit

Testing Method:
APHA (20th edition), 4500-H^+B

Conductivity

Expected Reading	Recording Reading
1412 uS/cm	1421 uS/cm
12890 uS/cm	12279 uS/cm
50000 uS/cm	50028 uS/cm
Allowing Deviation	± 10%

Testing Method:
APHA (20th edition), 2510B

Temperature

Expected Reading	Recording Reading
22.0 °C	21.4 °C
34.5 °C	34.5 °C
Allowing Deviation	±2.0°C

Testing Method:
In-House Method

Salinity

Expected Reading	Recording Reading
10.0 g/L	10.1 g/L
20.0 g/L	19.3 g/L
30.0 g/L	30.1 g/L
Allowing Deviation	± 10%

Testing Method:
APHA (20th edition), 2520 A and B

DO

Expected Reading	Recording Reading
4.98 mg/L	5.15 mg/L
6.21 mg/L	6.36 mg/L
8.34 mg/L	8.39 mg/L
Allowing Deviation	± 0.2 mg/L

Testing Method:
APHA (20th edition), 4500-OC & G

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

ALS Technichem (HK) Pty Ltd
ALS Environmental

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT:	MR RAYMOND DAI	**Batch:**	HK1003910
CLIENT:	LAM GEOTECHNICS LIMITED	**LABORATORY:**	HONG KONG
ADDRESS:	11/F., CENTRE POINT,	**DATE RECEIVED:**	24/02/2010
	181-185 GLOUCESTER ROAD,	**DATE OF ISSUE:**	02/03/2010
	WANCHAI, HONG KONG.	**SAMPLE TYPE:**	EQUIPMENT
ORDER No.:		**No. of SAMPLES:**	1

COMMENTS

The calibration procedure used for the analysis has been applied for the calibration of the above instrument.

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Abbreviations: *% SPK REC denotes percentage spike recovery*
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

CERTIFICATE OF ANALYSIS

Batch: HK1003910
Date of Issue: 24/02/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference:

Calibration of Turbidity System

Item : HACH Turbidimeter

Model No. : 2100P

Serial No. : 00032935

Equipment No. : --

Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 2130B

Date of Calibration : 25 February, 2010

Testing Results :

Expected Reading	Recording Reading
4.00 NTU	3.89 NTU
16.0 NTU	15.8 NTU
80.0 NTU	75.3 NTU
160 NTU	160 NTU
Allowing Deviation	±10%

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Appendix 5.1

Monitoring Schedules for Reporting Month and Coming Reporting Month

Contract No. HK/2009/05
Wan Chai Development Phase II and Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage 1)

Water Quality Monitoring Schedule

March to April 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
14-Mar	15-Mar	16-Mar	17-Mar	18-Mar	19-Mar WQM Mid-Flood: 7:56 Mid-Ebb: 14:22	20-Mar
21-Mar	22-Mar WQM Mid-Flood: 8:37 Mid-Ebb: 16:10	23-Mar	24-Mar WQM WQM Mid-Flood: 6:40 Mid-Ebb: 19:22	25-Mar	26-Mar Mid-Flood: 14:37 Mid-Ebb: 21:45	27-Mar
28-Mar WQM Mid-Ebb: 11:07 Mid-Flood: 16:59	29-Mar	30-Mar WQM Mid-Ebb: 12:25 Mid-Flood: 18:45	31-Mar	1-Apr WQM Mid-flood: 07:22 Mid-ebb: 13:44	2-Apr Public Holiday	3-Apr
4-Apr	5-Apr Public Holiday WQM WQM Mid-Flood: 8:57 Mid-Ebb: 17:10	6-Apr Public Holiday	7-Apr Mid-Flood: 6:56 Mid-Ebb: 19:30	8-Apr	9-Apr	10-Apr WQM Mid-Flood: 15:36 Mid-Ebb: 22:08
11-Apr	12-Apr WQM Mid-Ebb: 11:26 Mid-Flood: 17:18	13-Apr	14-Apr WQM Mid-Ebb: 12:19 Mid-Flood: 18:41	15-Apr	16-Apr WQM Mid-Ebb: 13:21 Mid-Flood: 20:05	17-Apr
18-Apr	19-Apr WQM Mid-Flood: 7:30 Mid-Ebb: 14:53	20-Apr	21-Apr WQM Mid-Flood: 9:23 Mid-Ebb: 17:34	22-Apr	23-Apr WQM Mid-Flood: 13:02 Mid-Ebb: 20:17	24-Apr
25-Apr	26-Apr WQM Mid-Ebb: 10:43 Mid-Flood: 16:56	27-Apr	28-Apr WQM Mid-Ebb: 12:03 Mid-Flood: 18:44	29-Apr	30-Apr WQM Mid-Flood: 6:43 Mid-Ebb: 13:24	1-May Public Holiday

Notes:

1. Actual monitoring will subject to change due to any safety concern or adverse weather condition.
2. Water Quality Monitoring Stations corresponding to active contracts are sub-divided below:
   - Contract HY/2009/11: WSD9, WSD10, WSD15, WSD17, C8, C9
   - Contract HY/2009/15: C6, C7 (To be commenced in Sep 2010)
   - Contract HK/2009/01: WSD7, WSD19, WSD20, C1, C2, C3, C4 (Commence by mid-April 2010)
   - Contract HK/2009/02: WSD21, C5 (Commence by mid-April 2010)
3. Cut-off date is at the 27th of each reporting month.

Remarks

The water monitoring stations for the dredging works under Contract No. HK/2009/01 should also include WSD9, WSD17, WSD 21 and C5 if water quality monitoring at these locations have not been carried out by others. Similarly, the water monitoring stations for the dredging works under Contract No. HK/2009/02 should also include WSD7, WSD9, WSD17, WSD 19, C1, C2, C3 and C4 if water quality monitoring at these locations have not been carried out by others.

Contract No. HK/2009/05
Wan Chai Development Phase II and Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage 1)

Noise Monitoring Schedule (Construction Phase)

April 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28-Mar	29-Mar	30-Mar **Noise (Day time)** **Noise (Restricted hours)**	31-Mar	1-Apr	2-Apr Public Holiday	3-Apr Public Holiday
4-Apr	5-Apr Public Holiday **Noise (Restricted hours)**	6-Apr Public Holiday	7-Apr	8-Apr **Noise (Day time)** **Noise (Restricted hours)**	9-Apr	10-Apr
11-Apr	12-Apr	13-Apr **Noise (Day time)** **Noise (Restricted hours)**	14-Apr	15-Apr	16-Apr	17-Apr
18-Apr	19-Apr	20-Apr **Noise (Day time)** **Noise (Restricted hours)**	21-Apr	22-Apr	23-Apr	24-Apr
25-Apr	26-Apr	27-Apr **Noise (Day Time)** **Noise (Restricted hours)**	28-Apr	29-Apr	30-Apr	1-May Public Holiday

Notes:

1. Cut-off date is at the 27th of each reporting month.
2. Air Quality Monitoring Stations corresponding to active contracts are sub-divided below:
   - Contract HK/2009/01: CMA5a and CMA6a (To be commended when filling works)
   - Contract HK/2009/02: CMA4a (To be commended when filling works)
   - Contract HY/2009/11: CMA1b and CMA2a (To be commenced in early Jun 2010 when filling work starts)
   - Contract HY/2009/15: CMA3a (Contract to be commenced in Sep 2010)
3. Noise Quality Monitoring Stations corresponding to active contracts are sub-divided below:
   - Contract HK/2009/01 and HK/2009/02: M1a (To be commence by mid-May 2010)
   - Contract HY/2009/11: M4a, M5b (Commenced on 23 Mar 2010 when dredging work starts); M3a and M6 (To be commenced in mid-2010 when filling work starts)
   - Contract HY/2009/15: M2b (Contract to be commenced in Sep 2010)
4. Day time noise will be monitored for Leq(30min) during the period between 07:00 and 19:00 for active contract(s).
5. Restricted hours noise (i.e. outside 07:00-19:00 of normal weekday) will be monitored for 3 nos. Leq(5min) as per the relevant Construction Noise Permit(s) in force for the following contract(s): Contract HY/2009/11

For any enquiry on monitoring matters, please feel free to contact our Assistant Environmental Engineer, Ms. Cherry Mak at 2919 0288.

Contract No. HK/2009/05
Wan Chai Development Phase II and Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage 1)

Water Quality Monitoring Schedule

May 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25-Apr	26-Apr WQM Mid-Ebb: 10:43 Mid-Flood: 16:56	27-Apr	28-Apr WQM Mid-Ebb: 12:03 Mid-Flood: 18:44	29-Apr	30-Apr WQM Mid-Flood: 6:43 Mid-Ebb: 13:24	1-May Public Holiday
2-May WQM Mid-Flood: 7:45 Mid-Ebb: 14:49	3-May	4-May WQM Mid-Flood: 8:25 Mid-Ebb: 16:26	5-May	6-May WQM Mid-Flood: 5:48 Mid-Ebb: 18:16	7-May	8-May
9-May	10-May WQM Mid-ebb: 10:23 Mid-flood: 16:11	11-May	12-May WQM Mid-ebb: 11:17 Mid-flood: 17:49	13-May	14-May WQM Mid-ebb: 12:21 Mid-flood: 19:16	15-May
16-May	17-May WQM Mid-flood: 7:06 Mid-Ebb: 14:27	18-May	19-May WQM Mid-flood: 8:46 Mid-Ebb: 16:23	20-May	21-May Public Holiday	22-May WQM Mid-flood: 13:10 Mid-Ebb: 19:49
23-May	24-May WQM Mid-ebb: 9:37 Mid-flood: 15:55	25-May	26-May WQM Mid-ebb: 11:06 Mid-flood: 17:58	27-May	28-May WQM Mid-ebb: 12:28 Mid-flood: 19:42	29-May
30-May	31-May WQM Mid-flood: 7:16 Mid-Ebb: 14:31	1-Jun	2-Jun WQM Mid-flood: 8:22 Mid-Ebb: 15:45	3-Jun	4-Jun WQM Mid-flood: 10:03 Mid-Ebb: 17:01	5-Jun

Notes:

1. Actual monitoring will subject to change due to any safety concern or adverse weather condition.
2. Water Quality Monitoring Stations corresponding to active contracts are sub-divided below:
   - Contract HY/2009/11: WSD9, WSD10, WSD15, WSD17, C8, C9
   - Contract HY/2009/15: C6, C7 (To be commenced in Sep 2010)
   - Contract HK/2009/01: WSD7, WSD19, WSD20, C1, C2, C3, C4 (To be commence by mid-May 2010)
   - Contract HK/2009/02: WSD21, C5 (To be commence by mid-May 2010)
3. Cut-off date is at the 27th of each reporting month.

Remarks

The water monitoring stations for the dredging works under Contract No. HK/2009/01 should also include WSD9, WSD17, WSD 21 and C5 if water quality monitoring at these locations have not been carried out by others. Similarly, the water monitoring stations for the dredging works under Contract No. HK/2009/02 should also include WSD7, WSD9, WSD17, WSD 19, C1, C2, C3 and C4 if water quality monitoring at these locations have not been carried out by others.

For enquiry on day-to-day monitoring matters, please contact Ms Cherry Mak at 9237 6460.

Contract No. HK/2009/05
Wan Chai Development Phase II and Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage 1)

Noise Monitoring Schedule (Construction Phase)

April 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25-Apr	26-Apr	27-Apr **Noise (Day Time)** **Noise (Restricted hours)**	28-Apr	29-Apr	30-Apr	1-May Public Holiday
2-May	3-May	4-May **Noise (Day Time)** **Noise (Restricted hours)**	5-May	6-May	7-May	8-May
9-May	10-May	11-May **Noise (Day Time)** **Noise (Restricted hours)**	12-May	13-May	14-May	15-May
16-May	17-May	18-May **Noise (Day Time)** **Noise (Restricted hours)**	19-May	20-May	21-May	22-May
23-May	24-May	25-May **Noise (Day Time)** **Noise (Restricted hours)**	26-May	27-May	28-May	29-May

Notes:

1. Cut-off date is at the 27th of each reporting month.
2. Air Quality Monitoring Stations corresponding to active contracts are sub-divided below:
   - Contract HK/2009/01: CMA5a and CMA6a (To be commended when filling works)
   - Contract HK/2009/02: CMA4a (To be commended when filling works)
   - Contract HY/2009/11: CMA1b and CMA2a (To be commenced in early Jun 2010 when filling work starts)
   - Contract HY/2009/15: CMA3a (Contract to be commenced in Sep 2010)
3. Noise Quality Monitoring Stations corresponding to active contracts are sub-divided below:
   - Contract HK/2009/01 and HK/2009/02: M1a (To be commence by mid-May 2010)
   - Contract HY/2009/11: M4a, M5b (Commenced on 23 Mar 2010 when dredging work starts); M3a and M6 (To be commenced in mid-2010 when filling work starts)
   - Contract HY/2009/15: M2b (Contract to be commenced in Sep 2010)
4. Day time noise will be monitored for Leq(30min) during the period between 07:00 and 19:00 for active contract(s).
5. Restricted hours noise (i.e. outside 07:00-19:00 of normal weekday) will be monitored for 3 nos. Leq(5min) as per the relevant Construction Noise Permit(s) in force for the following contract(s): Contract HY/2009/11

For any enquiry on monitoring matters, please feel free to contact our Assistant Environmental Engineer, Ms. Cherry Mak at 2919 0288.

Appendix 5.2

Noise Monitoring Results and Graphical Presentations

Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: M4a - Caseway Bay Community Centre

Date	Time	Weather	Measurement Noise Level			Baseline Noise Level	Construction Noise Level
			Leq	L10	L90	Leq	Leq
			Unit: dB(A), (30min)				
30/03/10	15:25	Sunny	71.1	72.5	68.9	68.6	67.5
08/04/10	16:00	Sunny	74.9	76.4	72.9	68.6	73.7
13/04/10	10:54	Fine	73.1	74.7	70.2	68.6	71.2
20/04/10	16:33	Cloudy	73.8	74.9	70.9	68.6	72.2
27/04/10	17:15	Cloudy	71.9	73.5	69.3	68.6	69.2

Location: M5b - City Garden

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level
			Leq	L10	L90	Leq	Leq
			Unit: dB(A), (30-min)				
30/03/10	16:15	Sunny	65.7	66.8	63.0	-	65.7
08/04/10	16:50	Sunny	67.2	68.2	64.8	-	67.2
13/04/10	15:00	Fine	66.6	67.9	64.6	-	66.6
20/04/10	17:30	Cloudy	67.7	69.4	64.6	-	67.7
27/04/10	15:50	Cloudy	65.9	67.3	63.5	-	65.9

Noise Monitoring Result

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

Location: M4a - Caseway Bay Community Centre

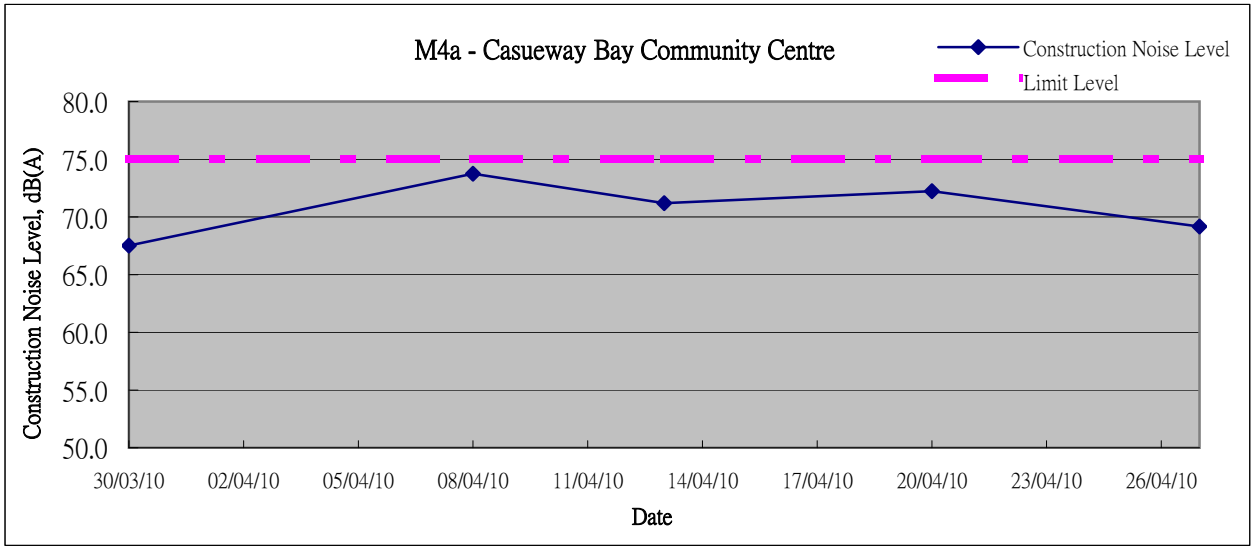
Date	Time	Weather	Measurement Noise Level			Average Noise Level	Baseline Noise Level	Construction Noise Level
			Leq	L10	L90	Leq	Leq	Leq
			Unit: dB(A), (5-min)					
30/03/10	21:35	Fine	70.4	72.4	67.6	70.2	66.7	67.6
	21:40		70.1	71.6	67.4			
	21:45		70.1	72.2	66.3			
05/04/10	11:30	Fine	71.1	73.2	67.5	71.2	66.7	69.2
	11:35		71.0	72.7	68.2			
	11:40		71.4	73.3	67.8			
08/04/10	21:50	Fine	72.6	74.2	70.5	72.5	66.7	71.2
	21:55		72.3	74.2	69.9			
	22:00		72.7	74.5	70.4			
13/04/10	20:13	Fine	70.4	72.1	68.0	70.3	66.7	67.8
	20:18		70.3	82.0	68.0			
	20:23		70.2	71.9	67.4			
20/04/10	20:40	Fine	70.8	72.9	67.9	70.7	66.7	68.6
	20:45		71.0	73.1	67.3			
	20:50		70.4	72.2	67.1			
27/04/10	19:00	Fine	71.5	72.9	69.2	71.3	66.7	69.4
	19:05		70.9	72.3	68.8			
	19:10		71.4	73.0	69.2			

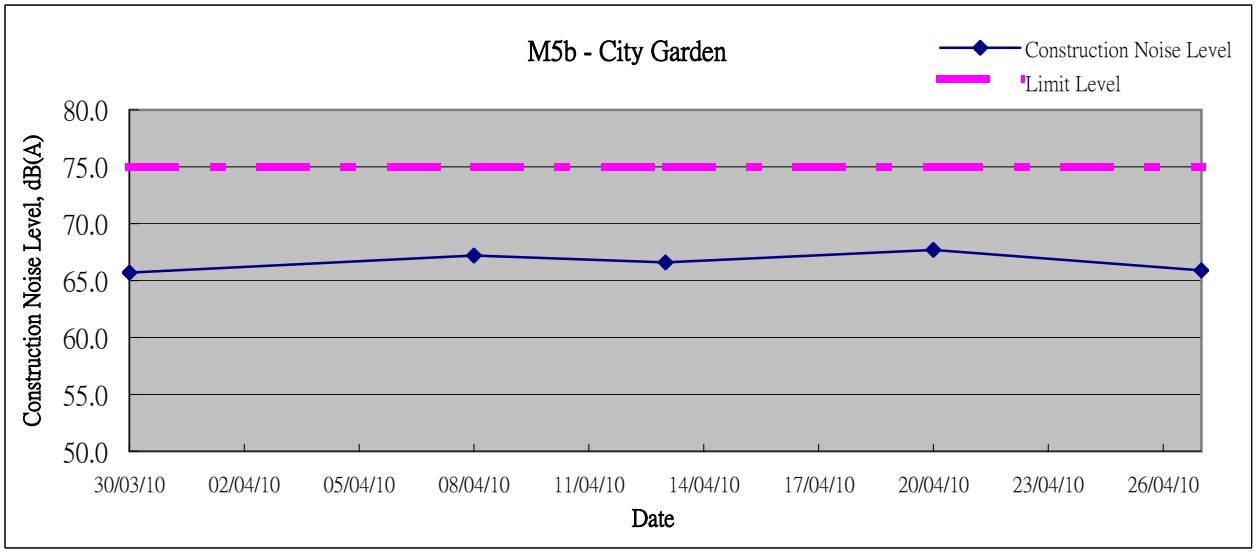
Location: M5b - City Garden

Date	Time	Weather	Measurement Noise Level			Average Noise Level	Baseline Level	Construction Noise Level
			Leq	L10	L90	Leq	Leq	Leq
			Unit: dB(A), (5-min)					
30/03/10	22:21	Fine	63.3	64.8	61.3	63.5	-	63.5
	22:26		63.5	65.2	61.3			
	22:31		63.6	65.5	60.6			
05/04/10	13:20	Fine	64.1	64.5	64.6	63.9	-	63.9
	13:25		65.7	66.2	66.3			
	13:30		61.8	62.1	61.4			
08/04/10	22:38	Fine	67.3	69.1	64.9	65.7	-	65.7
	22:43		64.8	66.4	62.4			
	22:48		65.1	67.5	61.9			
13/04/10	21:02	Fine	63.9	64.9	62.2	64.2	-	64.2
	21:07		63.7	65.2	61.9			
	21:12		65.0	66.7	62.9			
20/04/10	19:25	Fine	65.2	66.7	63.3	65.8	-	65.8
	19:30		67.9	70.9	63.9			
	19:35		64.3	65.7	62.3			
27/04/10	19:45	Fine	65.3	66.8	62.9	65.3	-	65.3
	19:51		65.3	66.6	63.0			
	19:57		65.3	66.9	62.5			

Graphic Presentation of Noise Monitoring Result

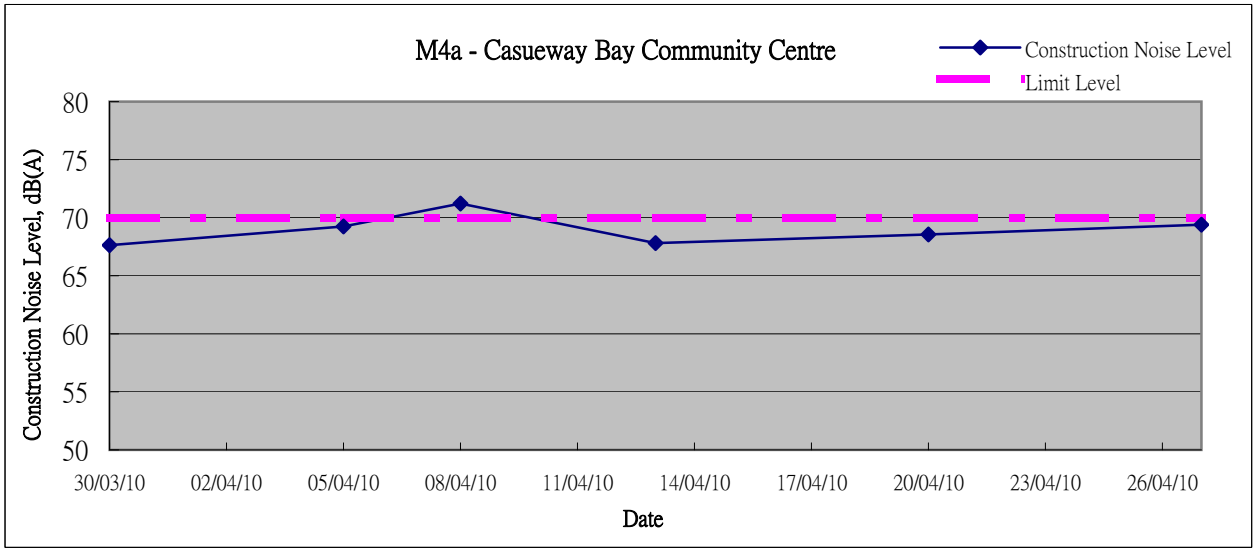
Day Time (0700 - 1900hrs on normal weekdays)

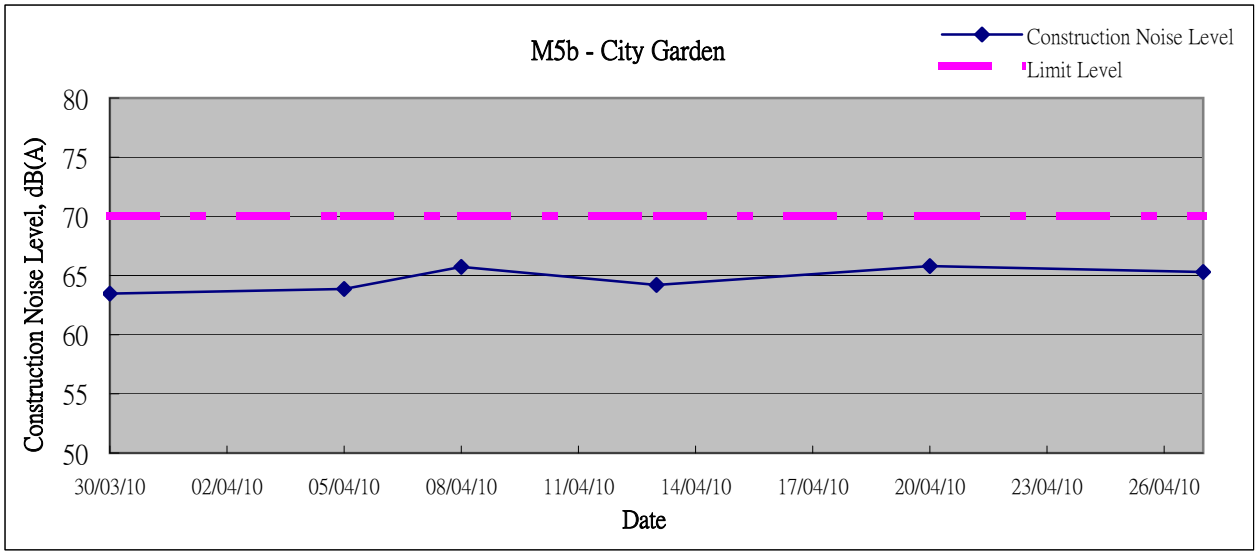




Graphic Presentation of Noise Monitoring Result

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





Appendix 5.3

Water Quality Monitoring Results and Graphical Presentations

Water Monitoring Result at WSD9 - Tai Wan
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	17:07	Sunny	Middle	3.0	20.11	20.05	20.0	7.54	7.55	7.6	35.10	35.13	34.9	78.9	77.6	78.5	5.79	5.74	5.81	2.11	2.08	2.06	3	4
	17:09		Middle	3.0	20.06	19.97		7.55	7.56		34.18	35.09		78.0	79.6		5.78	5.93		1.97	2.06		4	
30/03/2010	19:46	Cloudy	Middle	3.0	19.41	19.45	19.4	7.97	7.98	8.0	33.19	33.34	33.3	57.4	57.5	57.6	4.34	4.43	4.37	3.00	3.04	2.92	7	7
	19:49		Middle	3.0	19.41	19.41		8.02	8.01		33.29	33.35		58.1	57.2		4.39	4.32		2.87	2.78		6	
01/04/2010	07:24	Foggy	Middle	2.5	20.45	20.55	20.5	7.72	7.69	7.7	32.75	32.83	32.8	60.5	59.4	59.5	4.48	4.40	4.40	2.59	2.69	2.54	3	3
	07:27		Middle	2.5	20.46	20.51		7.77	7.75		32.45	33.00		59.2	58.7		4.38	4.35		2.47	2.41		3	
05/04/2010	08:34	Foggy	Middle	3.0	20.08	19.97	20.0	7.52	7.80	7.7	31.95	32.18	31.9	72.5	68.1	68.4	5.24	5.10	5.09	2.60	2.60	2.43	3	4
	08:37		Middle	3.0	19.91	19.94		7.81	7.81		31.54	32.08		67.2	65.6		5.07	4.93		2.30	2.20		4	
07/04/2010	07:33	Cloudy with	Middle	2.5	20.42	20.48	20.4	7.73	7.73	7.7	31.96	31.95	32.0	70.0	69.7	69.4	5.22	5.20	5.18	1.86	2.14	2.01	5	5
	07:35	Fog & Rain	Middle	2.5	20.39	20.40		7.75	7.75		32.04	32.04		69.5	68.4		5.17	5.11		2.11	1.93		4	
10/04/2010	15:39	Cloudy	Middle	2.5	20.04	19.92	19.9	7.84	7.89	7.9	32.26	32.43	32.4	75.1	73.9	73.7	5.63	5.56	5.54	4.21	4.03	3.90	6	6
	15:41		Middle	2.5	19.80	19.79		7.91	7.91		32.54	32.46		73.2	72.7		5.50	5.47		3.89	3.45		5	
12/04/2010	16:45	Cloudy	Middle	3.0	21.37	21.40	21.2	7.90	7.90	7.9	32.86	32.85	32.9	50.4	50.9	50.7	3.81	3.77	3.77	4.29	3.77	3.69	4	5
	16:50		Middle	3.0	20.90	20.96		7.87	7.85		32.92	32.89		50.7	50.7		3.79	3.71		3.55	3.14		6	
14/04/2010	18:50	Cloudy	Middle	3.5	20.13	20.12	20.2	8.10	8.09	8.1	32.96	32.98	33.0	54.6	54.2	53.9	4.08	4.05	4.02	3.82	3.60	3.60	4	5
	18:55		Middle	3.5	20.19	20.17		8.09	8.08		33.02	33.03		53.4	53.3		3.98	3.98		3.49	3.48		6	
16/04/2010	19:25	Cloudy	Middle	3.0	19.52	19.34	19.4	7.93	7.93	7.9	33.22	33.44	33.4	81.6	80.0	79.8	6.16	6.05	6.04	4.18	3.97	3.95	6	5
	19:30		Middle	3.0	19.40	19.30		7.96	7.97		33.45	33.41		79.0	78.7		5.98	5.95		3.84	3.82		4	
19/04/2010	07:55	Cloudy	Middle	3.0	20.00	20.02	19.9	7.58	7.64	7.7	33.05	33.07	32.9	85.4	84.0	84.5	6.39	6.28	6.33	4.49	4.38	4.31	4	5
	07:59		Middle	3.0	19.81	19.83		7.76	7.76		32.81	32.83		84.5	84.0		6.35	6.31		4.12	4.25		5	
21/04/2010	09:10	Sunny	Middle	3.5	21.93	21.67	21.4	7.82	7.79	7.8	33.12	33.14	33.1	85.6	84.8	85.4	6.21	6.15	6.23	3.14	2.97	2.99	4	4
	09:15		Middle	3.5	21.11	21.05		7.74	7.72		33.04	33.03		85.9	85.1		6.31	6.24		2.95	2.88		3	
23/04/2010	12:44	Sunny	Middle	3.0	21.94	21.91	21.8	7.89	7.86	7.8	33.17	33.10	33.1	81.0	82.8	84.2	5.85	5.97	6.08	3.42	3.50	3.30	3	4
	12:48		Middle	3.0	21.76	21.49		7.79	7.68		33.02	33.02		85.5	87.4		6.19	6.32		3.24	3.05		4	
26/04/2010	17:08	Cloudy	Middle	2.5	21.05	21.12	21.0	8.16	8.15	8.1	33.46	33.43	33.4	71.1	71.0	71.1	5.20	5.19	5.21	7.19	7.27	7.00	11	10
	17:13		Middle	2.5	20.88	20.85		8.14	8.13		33.38	33.36		71.3	71.0		5.24	5.21		7.19	6.33		9	

Water Monitoring Result at WSD10 - Cha Kwo Ling
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	16:43	Sunny	Middle	3.5	20.05	19.99	20.0	7.62	7.62	7.6	35.26	35.27	35.3	78.8	78.7	79.4	5.83	5.81	5.86	2.10	2.12	2.07	3	4
	16:45		Middle	3.5	20.07	20.04		7.62	7.61		35.28	35.28		79.8	80.3		5.88	5.93		2.16	1.88		4	
30/03/2010	19:20	Cloudy	Middle	3.0	19.34	19.37	19.3	7.97	7.97	8.0	33.27	33.29	33.3	56.7	57.1	58.3	4.30	4.32	4.42	3.37	3.16	3.44	9	8
	19:24		Middle	3.0	19.26	19.23		7.99	7.99		33.45	33.32		58.8	60.7		4.45	4.60		3.69	3.54		7	
01/04/2010	07:55	Foggy	Middle	3.0	20.13	20.13	20.1	7.90	7.90	7.9	33.63	33.64	33.5	57.2	57.3	57.3	4.62	4.25	4.35	3.50	3.47	3.45	5	6
	07:58		Middle	3.0	20.06	20.11		7.90	7.90		33.54	33.36		56.9	57.7		4.24	4.30		3.55	3.27		6	
05/04/2010	09:04	Foggy	Middle	3.5	19.93	19.98	19.9	7.92	7.91	7.9	32.29	32.45	32.4	65.8	66.9	65.4	4.94	5.02	4.91	2.50	2.30	2.38	5	6
	09:07		Middle	3.5	19.88	19.93		7.93	7.93		32.35	32.42		64.3	64.6		4.83	4.86		2.50	2.20		7	
07/04/2010	07:59	Cloudy with	Middle	3.5	20.31	20.30	20.3	7.91	7.92	7.9	32.16	32.20	32.2	63.3	63.6	63.4	4.73	4.73	4.73	2.43	2.34	2.29	5	4
	08:02	Fog & Rain	Middle	3.5	20.38	20.28		7.91	7.91		32.24	32.19		63.4	63.3		4.73	4.72		2.17	2.20		3	
10/04/2010	16:08	Cloudy	Middle	2.5	19.67	19.65	19.6	8.10	8.09	8.1	32.65	32.11	32.3	68.5	69.2	68.3	5.17	5.24	5.16	4.02	3.71	3.71	6	6
	16:10		Middle	2.5	19.64	19.63		8.09	8.09		32.63	31.79		67.5	68.0		5.09	5.13		3.42	3.69		5	
12/04/2010	16:23	Cloudy	Middle	3.0	21.51	21.49	21.4	7.94	7.93	7.9	33.02	33.01	33.0	55.4	55.0	49.5	4.04	4.01	3.97	2.54	2.44	2.36	4	5
	16:28		Middle	3.0	21.23	21.40		7.93	7.92		32.99	32.86		54.1	33.4		3.95	3.89		2.22	2.23		6	
14/04/2010	18:25	Cloudy	Middle	3.0	19.91	19.88	19.9	8.15	8.15	8.2	33.08	33.24	33.2	54.1	54.2	54.1	4.06	4.06	4.14	4.08	4.07	3.70	4	5
	18:30		Middle	3.0	19.92	19.90		8.15	8.15		33.27	33.28		53.9	54.1		4.40	4.05		3.20	3.45		6	
16/04/2010	19:05	Cloudy	Middle	3.0	19.54	19.48	19.5	7.93	7.94	7.9	33.25	33.39	33.4	80.9	82.8	81.3	6.09	6.24	6.13	3.39	3.32	3.60	5	4
	19:10		Middle	3.0	19.51	19.48		7.96	7.96		33.41	33.42		81.6	79.9		6.15	6.03		3.82	3.88		3	
19/04/2010	08:25	Cloudy	Middle	3.5	19.83	19.85	19.9	7.89	7.88	7.9	33.19	33.20	33.2	90.7	90.0	90.5	6.80	6.75	6.78	4.05	4.28	4.04	4	4
	08:30		Middle	3.5	19.94	19.95		7.87	7.86		33.17	33.17		90.4	90.9		6.77	6.81		4.00	3.84		4	
21/04/2010	09:45	Sunny	Middle	4.0	21.61	21.40	21.4	7.94	7.93	7.9	33.37	33.26	33.2	84.5	83.5	83.2	6.14	6.06	6.07	2.72	2.93	2.69	7	7
	09:50		Middle	4.0	21.21	21.20		7.80	7.77		33.10	33.14		82.5	82.3		6.04	6.02		2.61	2.48		6	
23/04/2010	13:12	Sunny	Middle	3.5	22.74	22.70	22.4	7.91	7.89	7.9	33.09	33.14	33.2	86.0	86.3	86.1	6.13	6.15	6.17	3.66	3.48	3.57	3	4
	13:17		Middle	3.5	21.87	22.13		7.86	7.84		33.25	33.20		85.6	86.6		6.16	6.24		3.44	3.70		5	
26/04/2010	16:48	Cloudy	Middle	3.0	21.09	21.00	21.1	8.12	8.11	8.1	33.69	33.68	33.7	74.4	74.0	73.9	5.44	5.42	5.40	4.73	4.28	4.45	9	9
	16:53		Middle	3.0	21.06	21.12		8.09	8.09		33.66	33.59		73.8	73.3		5.39	5.35		4.39	4.38		9	

Water Monitoring Result at WSD15 - Sai Wan Ho
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	16:28	Sunny	Middle	4.0	19.74	19.69	19.6	7.59	7.59	7.6	35.28	35.29	35.3	77.2	76.9	76.7	5.70	5.71	5.68	2.21	2.50	2.79	4	5
	16:30		Middle	4.0	19.59	19.54		7.59	7.58		35.32	35.30		76.3	76.2		5.66	5.65		3.41	3.02		6	
30/03/2010	19:03	Cloudy	Middle	3.5	19.27	19.27	19.3	7.98	7.99	8.0	33.39	33.46	33.5	56.7	58.0	58.1	4.30	4.39	4.40	5.58	4.99	4.92	7	7
	19:06		Middle	3.5	19.36	19.31		8.00	8.01		33.61	33.47		58.7	58.9		4.43	4.46		4.40	4.71		7	
01/04/2010	08:11	Foggy	Middle	3.5	20.00	20.05	20.0	7.94	7.94	7.9	33.61	33.41	33.4	57.4	57.5	57.6	4.55	4.30	4.36	4.81	4.43	4.80	7	8
	08:15		Middle	3.5	20.09	20.05		7.93	7.93		32.90	33.66		57.8	57.8		4.30	4.30		4.98	4.97		8	
05/04/2010	09:18	Foggy	Middle	3.0	20.06	20.00	20.0	7.95	7.95	8.0	32.46	32.26	32.2	63.3	63.7	64.3	4.75	4.78	4.84	3.10	3.10	3.40	4	5
	09:21		Middle	3.0	19.95	20.00		7.96	7.96		31.64	32.42		64.2	66.1		4.85	4.98		3.50	3.90		6	
07/04/2010	08:10	Cloudy with	Middle	3.5	20.05	20.04	20.0	7.95	7.92	7.9	32.40	31.98	32.3	63.3	63.6	63.1	4.75	4.78	4.74	2.42	2.37	2.38	4	4
	08:12	Fog & Rain	Middle	3.5	20.02	20.02		7.96	7.96		32.44	32.44		62.9	62.6		4.72	4.71		2.29	2.44		3	
10/04/2010	16:25	Cloudy	Middle	4.5	19.62	19.62	19.6	8.08	8.09	8.1	32.65	30.41	32.1	65.8	66.4	66.1	4.97	5.07	5.01	4.22	3.72	3.86	7	6
	16:28		Middle	4.5	19.64	19.65		8.09	8.09		32.56	32.69		66.6	65.7		5.03	4.96		3.65	3.83		5	
12/04/2010	16:10	Cloudy	Middle	3.5	21.23	21.25	21.4	7.92	7.89	7.9	33.09	33.02	33.0	51.6	51.5	51.5	3.78	3.76	3.76	3.41	2.81	2.83	2	2
	16:15		Middle	3.5	21.45	21.49		7.89	7.88		32.89	32.91		51.5	51.5		3.75	3.75		2.57	2.54		2	
14/04/2010	18:10	Cloudy	Middle	3.5	19.88	19.88	19.9	8.16	8.16	8.2	33.20	33.02	33.2	56.6	56.4	56.4	4.24	4.23	4.21	4.20	4.17	4.23	6	7
	18:15		Middle	3.5	19.85	19.87		8.16	8.16		33.26	33.27		56.1	56.6		4.20	4.16		4.14	4.42		7	
16/04/2010	18:52	Cloudy	Middle	3.5	19.37	19.28	19.3	7.95	7.94	7.9	33.22	33.30	33.3	80.9	80.4	83.1	6.31	6.08	6.34	6.42	6.47	5.62	8	8
	18:56		Middle	3.5	19.22	19.21		7.95	7.94		33.37	33.39		85.9	85.0		6.51	6.44		4.78	4.79		8	
19/04/2010	08:35	Cloudy	Middle	4.0	19.71	19.79	19.7	7.88	7.88	7.9	33.38	33.28	33.3	88.9	87.6	88.2	6.68	6.57	6.63	3.33	3.40	3.58	6	5
	08:40		Middle	4.0	19.68	19.69		7.88	7.87		33.32	33.32		88.6	87.8		6.66	6.59		3.79	3.78		4	
21/04/2010	09:58	Sunny	Middle	4.0	21.64	21.41	21.1	7.77	7.75	7.7	33.01	33.20	33.2	82.2	81.9	81.8	5.98	5.97	5.99	4.17	3.96	3.92	7	6
	10:02		Middle	4.0	20.57	20.60		7.72	7.70		33.27	33.17		81.7	81.2		6.04	5.98		3.76	3.78		5	
23/04/2010	13:28	Sunny	Middle	3.5	21.79	21.85	21.5	7.89	7.81	7.8	33.12	33.10	33.1	87.3	88.3	89.1	6.32	6.39	6.48	3.18	3.01	2.85	3	4
	13:33		Middle	3.5	21.00	21.47		7.73	7.69		33.31	32.88		90.5	90.4		6.61	6.58		2.86	2.34		4	
26/04/2010	16:35	Cloudy	Middle	3.0	20.85	20.81	21.0	8.03	8.03	8.0	33.63	33.63	33.7	76.1	75.8	76.1	5.59	5.57	5.57	6.72	6.01	6.62	10	10
	16:40		Middle	3.0	21.20	21.21		8.06	8.05		33.72	33.68		76.5	76.0		5.58	5.54		7.13	6.61		10	

Water Monitoring Result at WSD17 - Quarry Bay
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	16:15	Sunny	Middle	5.5	20.05	20.03	20.0	7.53	7.54	7.5	35.27	35.25	35.2	75.4	75.4	75.4	5.55	5.56	5.57	4.08	3.51	4.05	8	9
	16:17		Middle	5.5	20.02	19.89		7.55	7.55		35.22	35.24		75.1	75.8		5.54	5.61		4.15	4.44		10	
30/03/2010	18:46	Cloudy	Middle	5.5	19.33	19.35	19.4	7.97	7.98	8.0	33.40	33.52	33.4	56.6	58.0	58.0	4.28	4.38	4.43	6.39	5.96	5.84	13	13
	18:49		Middle	5.5	19.42	19.42		7.99	7.99		33.38	33.36		58.5	58.7		4.52	4.55		5.88	5.14		12	
01/04/2010	08:25	Foggy	Middle	3.0	20.16	20.09	20.2	8.03	8.00	8.0	33.58	33.57	33.4	57.7	58.4	58.1	4.28	4.32	4.32	5.78	5.42	5.31	10	10
	08:30		Middle	3.0	20.09	20.26		7.98	7.98		33.66	32.63		57.8	58.6		4.30	4.36		4.91	5.13		10	
05/04/2010	09:33	Foggy	Middle	5.0	19.98	20.07	20.0	7.97	7.97	8.0	32.42	32.40	32.3	62.9	62.9	63.3	4.72	4.71	4.75	4.10	3.40	3.70	5	6
	09:35		Middle	5.0	20.07	20.07		7.96	7.96		32.42	32.01		63.7	63.8		4.77	4.79		3.60	3.70		7	
07/04/2010	08:20	Cloudy with	Middle	4.5	19.97	19.97	19.9	7.99	7.99	8.0	32.50	32.51	32.4	64.3	63.4	63.7	4.83	4.76	4.79	3.18	3.09	3.52	4	5
	08:23	Fog & Rain	Middle	4.5	19.91	19.91		8.00	8.01		32.52	32.19		63.8	63.2		4.79	4.79		3.89	3.90		6	
10/04/2010	16:38	Cloudy	Middle	4.5	19.65	19.66	19.7	8.09	8.09	8.1	31.90	32.66	32.5	64.9	65.3	65.1	4.92	4.93	4.92	4.91	5.09	5.33	10	10
	16:41		Middle	4.5	19.66	19.68		8.10	8.11		32.63	32.66		65.0	65.2		4.91	4.92		5.33	5.99		9	
12/04/2010	16:00	Cloudy	Middle	5.0	21.56	21.69	21.8	7.87	7.84	7.8	32.90	32.76	32.9	53.3	51.5	51.9	3.87	3.72	3.75	4.94	4.22	4.48	6	7
	16:05		Middle	5.0	21.95	21.91		7.84	7.83		32.97	32.99		51.5	51.2		3.71	3.68		4.28	4.47		7	
14/04/2010	17:50	Cloudy	Middle	5.0	19.92	19.89	19.9	8.13	8.13	8.1	33.08	33.16	33.1	61.0	60.4	60.3	4.57	4.53	4.52	7.89	7.57	7.57	10	11
	17:55		Middle	5.0	19.86	19.82		8.13	8.13		32.96	33.13		60.5	59.1		4.54	4.44		7.60	7.20		12	
16/04/2010	18:35	Cloudy	Middle	5.0	19.48	19.34	19.5	7.89	7.90	7.9	33.00	33.18	33.2	79.4	78.1	78.5	6.00	5.90	5.93	8.04	8.58	7.45	9	9
	18:40		Middle	5.0	19.53	19.46		7.91	7.92		33.27	33.33		78.8	77.8		5.94	5.88		6.59	6.58		8	
19/04/2010	08:47	Cloudy	Middle	5.5	19.83	19.84	19.9	7.94	7.92	7.9	33.32	33.31	33.3	89.1	88.4	89.6	6.68	6.62	6.71	6.46	5.17	5.53	9	9
	08:52		Middle	5.5	19.86	19.92		7.89	7.88		33.31	33.18		90.8	90.2		6.80	6.74		5.50	4.99		9	
21/04/2010	10:07	Sunny	Middle	5.0	20.83	20.85	21.0	7.62	7.62	7.6	33.09	33.08	33.0	85.2	84.3	84.8	6.27	6.21	6.23	2.81	3.05	3.22	4	4
	10:10		Middle	5.0	21.06	21.07		7.63	7.62		32.89	32.89		84.9	84.6		6.24	6.21		3.59	3.43		4	
23/04/2010	13:39	Sunny	Middle	5.0	22.00	22.22	21.8	7.69	7.66	7.6	33.32	33.25	33.2	84.6	85.0	86.4	6.09	6.10	6.24	4.22	4.20	4.27	5	6
	13:44		Middle	5.0	21.40	21.64		7.57	7.52		33.21	32.97		88.5	87.6		6.44	6.34		4.44	4.20		6	
26/04/2010	16:20	Cloudy	Middle	4.5	21.16	21.05	21.0	8.03	8.06	8.0	33.74	33.47	33.6	80.3	78.8	78.3	5.83	5.75	5.71	6.34	5.63	6.15	15	15
	16:21		Middle	4.5	20.89	20.91		8.03	8.02		33.60	33.47		77.3	76.6		5.64	5.62		6.14	6.47		14	

Water Monitoring Result at C8 - City Garden
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth (m)		Water Temperature (°C)			pH (-)			Salinity (ppt)			DO Saturation (%)			DO (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	15:42	Sunny	Middle	2.0	20.80	20.85	20.8	7.40	7.37	7.4	34.50	34.53	33.7	70.8	65.9	65.8	4.86	4.74	4.70	6.48	6.03	7.56	20	29
	15:44		Middle	2.0	20.65	20.72		7.34	7.34		32.97	32.83		63.3	63.0		4.60	4.58		8.78	8.93		37	
30/03/2010	17:16	Cloudy	Middle	3.0	19.23	19.21	19.2	7.74	7.75	7.8	33.05	33.11	32.9	50.3	49.6	50.3	3.82	3.77	3.93	8.57	8.76	8.30	18	19
	17:20		Middle	3.0	19.17	19.14		7.76	7.76		32.81	32.77		51.0	50.4		4.26	3.86		8.06	7.80		20	
01/04/2010	08:41	Foggy	Middle	2.5	20.40	20.47	20.4	7.86	7.85	7.9	33.40	33.35	33.4	54.7	52.0	53.1	4.30	3.84	4.00	7.23	7.00	6.94	14	15
	08:46		Middle	2.5	20.49	20.43		7.84	7.85		33.36	33.31		53.5	52.1		3.99	3.86		6.79	6.74		16	
05/04/2010	10:01	Foggy	Middle	3.0	20.31	20.28	20.3	7.92	7.92	7.9	32.21	32.17	32.2	57.0	57.1	57.6	4.27	4.27	4.29	7.50	7.70	8.15	12	14
	10:04		Middle	3.0	20.10	20.31		7.92	7.92		32.28	32.27		56.1	60.3		4.20	4.43		8.50	8.90		15	
07/04/2010	08:44	Cloudy with	Middle	2.5	20.19	20.17	20.2	7.91	7.90	7.9	32.04	31.97	31.9	54.7	53.2	53.0	4.08	4.11	4.00	5.30	4.84	5.71	8	10
	08:46	Fog & Rain	Middle	2.5	20.21	20.21		7.87	7.87		31.84	31.84		53.3	50.9		3.97	3.82		6.25	6.46		11	
10/04/2010	17:07	Cloudy	Middle	3.0	19.80	19.80	19.8	8.02	8.02	8.0	32.29	32.25	32.3	57.2	58.7	57.2	4.33	4.39	4.28	7.92	8.56	8.20	13	14
	17:09		Middle	3.0	19.81	19.81		8.03	8.03		32.40	32.24		57.9	55.1		4.23	4.17		8.40	7.90		15	
12/04/2010	13:30	Cloudy	Middle	2.5	21.87	21.88	22.1	7.78	7.78	7.8	31.49	31.47	31.5	51.2	50.8	50.6	3.73	3.71	3.68	13.00	14.00	13.55	17	25
	13:35		Middle	2.5	22.27	22.30		7.79	7.80		31.51	31.55		50.4	49.8		3.66	3.60		13.60	13.60		32	
14/04/2010	17:10	Cloudy	Middle	2.5	20.19	20.18	20.2	8.03	8.03	8.0	32.52	32.53	32.6	47.1	46.6	46.7	3.52	3.49	3.49	8.43	8.51	8.44	13	14
	17:15		Middle	2.5	20.14	20.14		8.04	8.04		32.66	32.63		47.0	45.9		3.51	3.44		8.49	8.31		14	
16/04/2010	18:00	Cloudy	Middle	2.5	19.51	19.35	19.5	7.80	7.82	7.8	32.86	33.07	33.0	74.3	73.1	72.7	5.62	5.54	5.50	14.00	13.40	13.18	20	19
	18:05		Middle	2.5	19.52	19.51		7.83	7.84		33.00	33.00		72.4	71.0		5.46	5.36		12.80	12.50		18	
19/04/2010	09:10	Cloudy	Middle	3.0	20.04	20.08	20.0	7.75	7.76	7.8	33.16	33.12	33.1	81.9	79.0	78.4	6.12	5.90	5.86	9.58	8.77	8.70	12	14
	09:15		Middle	3.0	19.97	19.97		7.75	7.74		33.11	33.12		76.0	76.7		5.69	5.74		8.22	8.24		15	
21/04/2010	10:30	Sunny	Middle	3.0	21.17	21.24	21.3	7.64	7.62	7.6	32.90	32.90	32.9	70.3	69.6	69.9	5.15	5.10	5.11	7.89	7.27	7.59	10	11
	10:34		Middle	3.0	21.35	21.44		7.60	7.59		32.86	32.85		69.9	69.8		5.10	5.09		8.06	7.15		12	
23/04/2010	13:59	Sunny	Middle	3.0	21.88	22.07	21.9	7.32	7.31	7.4	32.12	32.12	32.4	73.5	71.8	73.0	5.32	5.20	5.29	5.00	4.92	4.91	7	8
	14:03		Middle	3.0	21.57	22.01		7.39	7.39		32.79	32.50		74.6	72.0		5.43	5.22		4.91	4.81		9	
26/04/2010	15:45	Cloudy	Middle	2.0	21.53	21.54	21.4	7.98	7.96	8.0	32.87	32.88	32.9	87.0	85.5	84.6	6.32	6.23	6.18	13.60	12.20	12.43	18	20
	15:49		Middle	2.0	21.18	21.24		7.93	7.93		32.83	32.82		83.4	82.6		6.11	6.05		12.60	11.30		21	

Water Monitoring Result at C9 - Provident Garden
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	15:56	Sunny	Middle	2.0	20.56	20.56	20.4	7.35	7.34	7.4	34.79	34.85	34.8	65.4	70.3	68.2	4.78	5.12	5.00	6.55	6.50	6.80	13	16
	15:58		Middle	2.0	20.31	20.24		7.35	7.36		34.88	34.86		67.5	69.6		4.97	5.13		7.14	6.99		18	
30/03/2010	17:48	Cloudy	Middle	2.5	19.04	18.95	19.0	7.86	7.87	7.9	33.13	33.12	33.1	50.1	50.1	51.4	3.77	3.81	3.86	7.94	7.19	7.20	22	24
	17:50		Middle	2.5	18.88	18.93		7.86	7.87		33.12	33.03		53.2	52.0		3.94	3.91		6.79	6.89		26	
01/04/2010	08:51	Foggy	Middle	3.5	20.41	20.52	20.4	7.87	7.86	7.9	33.39	33.38	33.4	52.5	51.3	51.8	3.87	3.79	3.83	7.21	7.22	7.83	11	13
	08:55		Middle	3.5	20.33	20.48		7.86	7.85		33.49	33.32		51.1	52.3		3.79	3.88		8.46	8.44		14	
05/04/2010	09:47	Foggy	Middle	2.5	20.43	20.28	20.3	7.90	7.90	7.9	32.28	32.29	32.2	62.9	55.8	57.3	4.34	4.16	4.20	11.70	11.90	11.10	20	19
	09:50		Middle	2.5	20.25	20.26		7.89	7.89		32.24	32.07		55.3	55.3		4.12	4.19		10.40	10.40		17	
07/04/2010	08:32	Cloudy with	Middle	3.0	20.12	20.13	20.1	7.93	7.92	7.9	32.32	32.18	32.3	58.8	60.8	58.2	4.44	4.51	4.36	7.24	6.46	7.04	13	13
	08:35	Fog & Rain	Middle	3.0	20.12	20.08		7.93	7.93		32.27	32.23		57.5	55.7		4.32	4.15		7.07	7.38		13	
10/04/2010	16:55	Cloudy	Middle	2.5	19.73	19.73	19.7	8.07	8.07	8.1	32.45	32.53	32.5	61.0	60.6	61.0	4.60	4.57	4.60	10.40	9.20	9.54	16	16
	16:56		Middle	2.5	19.76	19.76		8.07	8.08		32.57	32.50		60.9	61.5		4.58	4.63		9.57	9.00		15	
12/04/2010	15:45	Cloudy	Middle	2.0	22.05	21.99	21.7	7.96	7.94	7.9	32.57	32.60	32.6	48.9	48.4	48.7	3.53	3.60	3.56	7.12	7.21	7.20	19	24
	15:50		Middle	2.0	21.32	21.53		7.90	7.88		32.71	32.60		49.0	48.6		3.58	3.54		7.19	7.26		29	
14/04/2010	17:30	Cloudy	Middle	2.5	20.08	20.09	20.0	8.06	8.06	8.1	32.70	32.74	32.8	45.1	44.4	45.6	3.37	3.32	3.41	7.12	7.33	7.31	12	13
	17:35		Middle	2.5	20.03	19.93		8.06	8.07		32.79	32.92		44.3	48.4		3.31	3.63		7.32	7.45		14	
16/04/2010	18:15	Cloudy	Middle	2.0	19.56	19.50	19.5	7.83	7.84	7.8	33.01	33.16	33.1	74.8	73.2	73.9	5.64	5.53	5.61	13.50	13.60	13.80	26	25
	18:20		Middle	2.0	19.51	19.48		7.85	7.86		33.14	33.18		74.6	73.1		5.63	5.62		14.00	14.10		24	
19/04/2010	09:00	Cloudy	Middle	3.0	19.91	19.93	19.9	7.81	7.80	7.8	33.24	33.21	33.2	81.9	79.9	79.9	6.13	5.98	5.98	9.65	9.30	9.47	14	14
	09:05		Middle	3.0	19.85	19.89		7.79	7.80		33.17	33.12		79.0	78.6		5.92	5.89		9.51	9.43		13	
21/04/2010	10:20	Sunny	Middle	3.0	21.58	21.91	21.8	7.88	7.84	7.8	33.12	32.81	33.0	81.0	77.7	77.7	5.87	5.60	5.62	8.63	8.79	8.70	11	13
	10:25		Middle	3.0	22.14	21.75		7.80	7.78		33.03	33.06		76.3	75.6		5.53	5.48		9.04	8.33		14	
23/04/2010	13:50	Sunny	Middle	3.0	21.82	21.66	21.9	7.48	7.43	7.4	33.03	33.01	32.9	77.8	76.8	77.4	5.65	5.58	5.61	6.16	5.89	6.13	10	9
	13:55		Middle	3.0	22.20	21.81		7.38	7.36		32.84	32.90		77.7	77.1		5.61	5.60		6.43	6.02		8	
26/04/2010	15:58	Cloudy	Middle	2.0	21.60	21.38	21.4	8.04	7.98	8.0	33.40	33.28	33.3	80.2	78.9	77.9	5.84	5.74	5.68	13.80	14.30	13.98	27	27
	16:03		Middle	2.0	21.27	21.24		7.92	7.92		33.18	33.20		76.1	76.2		5.56	5.57		14.00	13.80		26	

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	10:22	Sunny	Middle	2.5	20.86	21.05	20.8	7.22	7.25	7.2	32.25	35.29	34.5	91.6	89.4	89.7	6.64	6.57	6.55	2.47	2.48	2.13	4	4
	10:25		Middle	2.5	20.70	20.54		7.25	7.24		35.27	35.29		88.9	88.8		6.43	6.57		1.62	1.94		3	
30/03/2010	11:20	Cloudy	Middle	2.5	19.01	18.54	18.8	7.64	7.64	7.7	33.76	33.43	33.5	56.2	57.3	56.6	4.36	4.41	4.43	3.32	3.20	2.77	4	5
	11:23		Middle	2.5	18.87	18.86		7.67	7.69		33.41	33.25		56.5	56.2		4.64	4.29		2.26	2.31		5	
01/04/2010	14:15	Sunny	Middle	2.5	21.02	21.07	21.0	7.96	7.96	7.9	32.58	32.59	32.6	56.5	56.7	56.5	4.16	4.17	4.16	2.12	1.34	1.83	2	2
	14:20		Middle	2.5	20.82	20.95		7.95	7.88		32.58	32.57		56.6	56.1		4.18	4.14		2.28	1.58		2	
05/04/2010	17:40	Cloudy	Middle	2.5	20.22	20.30	20.2	8.02	8.02	8.0	32.11	32.08	32.1	60.0	60.9	60.1	4.49	4.56	4.50	2.02	2.03	1.92	<2	<2
	17:42		Middle	2.5	20.21	20.24		8.00	8.00		32.02	32.02		59.6	60.0		4.46	4.50		1.88	1.74		<2	
07/04/2010	20:19	Cloudy with	Middle	3.5	19.53	19.44	19.4	8.16	8.14	8.1	32.35	32.57	32.5	61.6	61.9	61.9	4.66	4.71	4.69	2.81	2.89	2.63	6	5
	20:21	Rain Patches	Middle	3.5	19.34	19.42		8.13	8.13		32.34	32.56		62.0	61.9		4.71	4.69		2.48	2.32		4	
10/04/2010	21:15	Cloudy	Middle	2.5	19.74	19.74	19.7	8.15	8.16	8.2	33.25	33.20	33.2	54.7	54.5	54.5	4.10	4.09	4.09	2.74	2.82	2.79	3	3
	21:17		Middle	2.5	19.75	19.74		8.15	8.15		33.18	33.16		54.1	54.5		4.06	4.10		2.70	2.89		2	
12/04/2010	11:20	Cloudy	Middle	3.0	20.23	21.44	20.7	7.71	7.85	7.8	33.12	33.10	33.1	69.1	68.3	68.2	5.14	4.97	5.03	1.68	1.57	1.61	2	2
	11:25		Middle	3.0	20.20	21.11		7.74	7.83		33.11	32.90		67.3	68.1		5.01	5.00		1.58	1.61		<2	
14/04/2010	12:34	Misty	Middle	3.5	19.66	19.42	19.4	7.97	7.96	8.0	33.03	33.09	33.1	52.2	42.8	46.8	4.95	4.53	4.75	2.52	2.58	2.97	6	5
	12:38		Middle	3.5	19.35	19.29		8.02	8.02		33.07	33.12		51.3	40.7		4.83	4.69		3.34	3.45		4	
16/04/2010	13:15	Cloudy	Middle	3.5	19.35	19.26	19.3	7.76	7.81	7.8	33.09	33.18	33.0	89.4	86.0	84.1	6.77	6.52	6.38	4.27	4.23	4.09	6	6
	13:20		Middle	3.5	19.28	19.19		7.86	7.86		32.82	33.00		81.6	79.4		6.20	6.03		3.62	4.25		5	
19/04/2010	14:27	Sunny	Middle	3.5	21.74	21.80	21.5	7.72	7.49	7.5	33.28	33.36	33.3	86.8	84.9	84.8	6.27	6.14	6.16	2.73	2.64	2.64	4	4
	14:30		Middle	3.5	21.20	21.31		7.41	7.32		33.29	33.25		84.6	82.9		6.18	6.04		2.58	2.60		4	
21/04/2010	17:15	Cloudy	Middle	3.0	21.94	21.93	22.0	7.99	7.96	8.0	32.94	33.06	33.0	86.5	85.9	87.2	6.22	6.19	6.28	3.05	2.82	2.81	3	3
	17:20		Middle	3.0	22.10	22.09		7.93	7.92		33.06	33.06		88.7	87.7		6.39	6.32		2.70	2.65		2	
23/04/2010	19:48	Cloudy	Middle	3.0	20.52	20.47	20.5	7.93	7.95	8.0	33.02	33.16	33.1	75.0	75.2	75.4	5.57	5.58	5.59	1.66	1.65	1.78	2	2
	19:49		Middle	3.0	20.63	20.49		7.96	7.96		33.03	33.12		75.6	75.8		5.59	5.62		1.92	1.90		2	
26/04/2010	10:18	Cloudy	Middle	3.0	21.13	21.16	21.0	7.97	7.90	7.9	33.81	33.66	33.7	98.4	96.4	96.7	7.16	7.03	7.05	3.71	3.84	3.64	11	11
	10:20		Middle	3.0	20.89	20.91		7.85	7.83		33.64	33.63		96.7	95.4		7.00	7.00		3.68	3.33		11	

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	11:05	Sunny	Middle	4.0	20.58	20.46	20.5	7.34	7.33	7.3	35.34	35.33	35.3	89.30	88.90	89.7	6.51	6.59	6.59	3.10	2.67	2.77	6	5
	11:08		Middle	4.0	20.35	20.42		7.30	7.30		35.36	35.35		90.30	90.40		6.62	6.65		2.62	2.69		4	
30/03/2010	12:21	Cloudy	Middle	3.0	19.41	19.34	19.4	7.81	7.84	7.8	33.35	33.36	33.4	54.60	55.00	55.0	4.13	4.15	4.17	3.72	3.45	3.37	8	8
	12:23		Middle	3.0	19.38	19.33		7.83	7.84		33.34	33.35		55.30	55.10		4.22	4.17		3.12	3.19		7	
01/04/2010	13:30	Sunny	Middle	3.5	21.10	21.68	21.2	7.96	7.88	7.9	32.68	32.61	32.6	58.20	58.70	58.5	4.50	4.27	4.35	2.56	2.49	2.68	5	4
	13:35		Middle	3.5	21.12	21.05		7.81	7.80		32.65	32.41		59.00	58.20		4.34	4.30		2.82	2.86		3	
05/04/2010	17:03	Cloudy	Middle	3.5	20.13	20.16	20.2	8.09	8.06	8.1	32.44	32.43	32.4	62.40	61.90	62.5	4.68	4.64	4.68	3.26	3.16	3.11	6	6
	17:06		Middle	3.5	20.10	20.21		8.05	8.04		32.43	32.40		62.20	63.60		4.66	4.74		2.83	3.17		6	
07/04/2010	19:30	Cloudy with	Middle	5.0	19.40	19.37	19.4	8.07	8.07	8.1	32.46	32.41	32.5	62.20	62.00	62.2	4.72	4.73	4.72	2.72	2.68	2.81	3	4
	19:40	Rain Patches	Middle	5.0	19.40	19.33		8.07	8.08		32.58	32.54		62.10	62.30		4.70	4.73		2.89	2.96		4	
10/04/2010	21:30	Cloudy	Middle	4.0	19.67	19.64	19.7	8.16	8.16	8.2	33.38	33.37	33.4	59.30	60.10	59.6	4.45	4.51	4.48	3.71	3.79	3.93	6	6
	21:33		Middle	4.0	19.65	19.65		8.16	8.16		33.40	33.39		59.40	59.70		4.46	4.49		4.28	3.93		6	
12/04/2010	12:00	Cloudy	Middle	3.5	21.36	21.35	21.2	8.03	8.00	8.0	33.07	33.10	33.1	61.00	60.80	59.6	4.45	4.44	4.36	2.89	2.93	2.90	4	4
	12:05		Middle	3.5	20.94	20.97		7.96	7.94		33.13	33.12		58.40	58.00		4.29	4.26		2.90	2.87		3	
14/04/2010	13:33	Misty	Middle	4.5	19.20	19.65	19.6	8.13	8.13	8.1	32.98	33.05	33.1	54.00	53.90	53.4	4.03	4.02	4.03	3.45	3.58	3.59	6	6
	13:36		Middle	4.5	19.84	19.75		8.14	8.13		33.15	33.30		53.20	52.40		4.10	3.96		3.83	3.49		5	
16/04/2010	13:52	Cloudy	Middle	3.5	18.95	18.85	19.1	8.07	8.08	8.1	30.27	30.06	31.7	77.50	77.30	77.0	6.00	5.98	5.86	5.20	4.93	4.80	8	7
	13:57		Middle	3.5	19.42	19.36		8.03	8.04		33.13	33.28		76.90	76.20		5.78	5.68		4.66	4.40		6	
19/04/2010	13:53	Sunny	Middle	4.0	20.40	20.55	20.6	8.10	8.04	8.0	33.74	33.59	33.6	85.00	83.60	83.8	6.28	6.17	6.17	5.04	4.65	4.71	4	5
	13:57		Middle	4.0	20.89	20.36		7.99	7.96		33.38	33.49		83.30	83.40		6.03	6.19		4.43	4.71		6	
21/04/2010	16:40	Cloudy	Middle	4.0	21.71	22.42	22.2	8.06	8.02	8.0	33.70	33.09	33.3	87.00	84.60	85.5	6.26	6.06	6.13	2.51	2.16	2.28	4	5
	16:44		Middle	4.0	22.43	22.37		8.00	7.98		33.19	33.17		85.90	84.30		6.16	6.04		2.36	2.07		5	
23/04/2010	19:08	Cloudy	Middle	3.5	20.24	20.23	20.2	8.00	8.01	8.0	33.42	33.41	33.4	83.00	82.80	83.0	6.17	6.16	6.18	3.06	3.04	3.00	7	6
	19:10		Middle	3.5	20.24	20.13		8.00	7.99		33.41	33.41		82.50	83.80		6.13	6.26		3.01	2.90		5	
26/04/2010	11:00	Cloudy	Middle	3.0	21.31	21.40	21.1	7.97	7.94	7.9	33.78	33.81	33.8	85.80	85.50	85.3	6.23	6.22	6.24	4.23	3.85	3.94	6	7
	11:04		Middle	3.0	20.79	20.78		7.92	7.91		33.77	33.74		85.30	84.70		6.27	6.22		3.91	3.75		7	

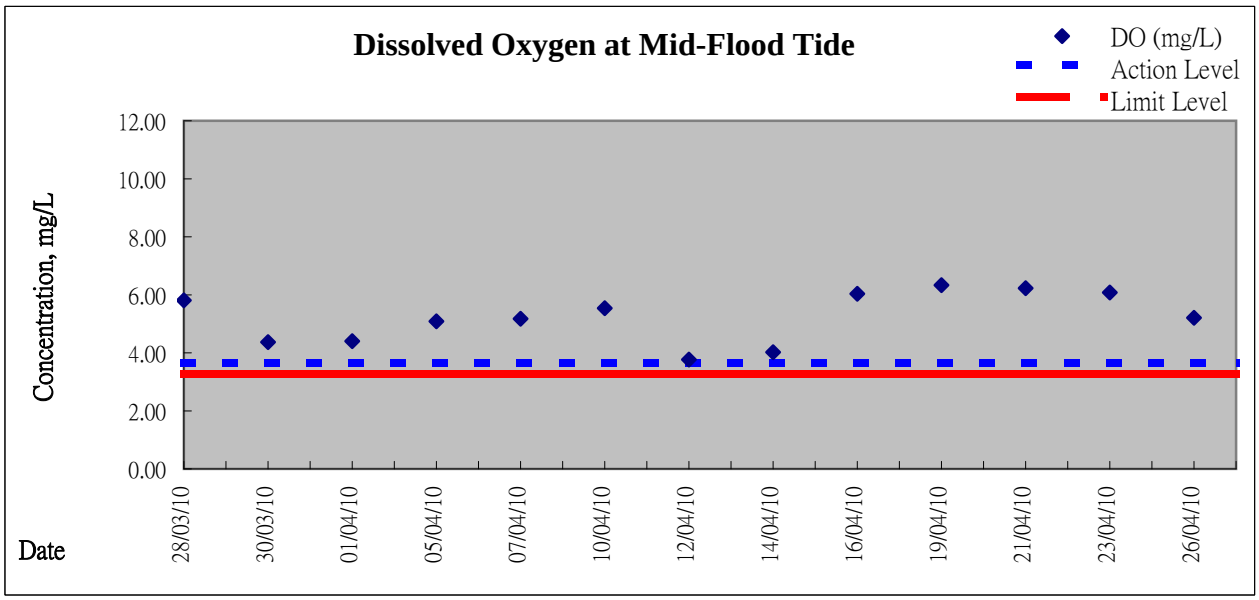
Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	10:53	Sunny	Middle	3.0	20.57	20.61	20.6	7.24	7.25	7.3	35.25	35.26	35.3	88.9	88.8	89.2	6.50	6.48	6.53	2.45	1.95	2.15	4	4
	10:56		Middle	3.0	20.51	20.56		7.27	7.28		35.28	35.27		90.2	88.9		6.63	6.50		2.21	1.98		3	
30/03/2010	12:04	Cloudy	Middle	3.0	19.40	19.50	19.5	7.72	7.73	7.7	33.31	33.31	33.3	55.0	56.0	55.3	4.16	4.22	4.25	3.36	3.59	3.40	9	9
	12:06		Middle	3.0	19.51	19.48		7.74	7.75		33.29	33.28		55.1	55.1		4.47	4.16		3.41	3.24		8	
01/04/2010	13:50	Sunny	Middle	2.5	21.37	21.45	21.5	7.93	7.92	7.9	32.42	32.29	32.3	58.0	57.6	57.6	4.45	4.46	4.32	2.85	2.41	2.57	3	3
	13:55		Middle	2.5	21.31	21.68		7.89	7.85		32.41	32.26		57.6	57.0		4.22	4.16		2.25	2.75		3	
05/04/2010	17:15	Cloudy	Middle	2.5	20.22	20.25	20.3	8.05	8.06	8.1	32.45	32.43	32.5	61.9	62.6	62.7	4.63	5.09	4.79	3.06	2.75	2.73	5	4
	17:17		Middle	2.5	20.35	20.40		8.05	8.05		32.48	32.48		63.3	63.1		4.72	4.70		2.43	2.66		3	
07/04/2010	19:53	Cloudy with	Middle	2.5	19.42	19.42	19.5	8.09	8.09	8.1	32.54	32.58	32.5	61.0	61.0	61.1	4.62	4.64	4.64	6.36	5.93	5.94	11	10
	19:55	Rain Patches	Middle	2.5	19.49	19.48		8.09	8.09		32.52	32.46		61.0	61.5		4.62	4.67		5.63	5.83		9	
10/04/2010	21:49	Cloudy	Middle	2.5	19.70	19.73	19.7	8.13	8.16	8.2	33.06	33.24	33.2	58.5	60.3	58.8	4.40	4.53	4.41	4.12	3.90	4.86	7	8
	21:52		Middle	2.5	19.71	19.76		8.17	8.17		33.30	33.33		58.4	57.8		4.38	4.33		5.72	5.69		8	
12/04/2010	11:50	Cloudy	Middle	3.5	20.26	20.90	20.5	7.99	7.93	7.9	33.17	33.10	33.1	61.3	61.2	60.9	4.57	4.50	4.51	3.14	2.90	3.09	3	4
	11:55		Middle	3.5	20.24	20.68		7.92	7.95		33.16	33.16		59.6	61.3		4.44	4.52		3.19	3.12		4	
14/04/2010	13:04	Misty	Middle	4.0	19.41	19.46	19.5	8.05	8.06	8.1	33.04	33.13	33.1	60.2	59.5	59.0	4.46	4.48	4.39	3.91	3.62	3.57	8	8
	13:08		Middle	4.0	19.46	19.49		8.08	8.09		33.11	33.11		57.7	58.4		4.34	4.28		3.44	3.32		7	
16/04/2010	13:40	Cloudy	Middle	3.5	19.42	19.37	19.4	7.99	7.99	8.0	33.22	33.25	33.3	86.7	85.3	85.8	6.49	6.41	6.45	4.07	4.07	4.43	5	6
	13:45		Middle	3.5	19.49	19.39		8.00	8.01		33.32	33.36		86.4	84.7		6.54	6.36		4.63	4.96		6	
19/04/2010	14:04	Sunny	Middle	4.0	20.91	20.99	20.9	8.09	8.05	8.1	33.53	33.52	33.4	85.2	84.1	84.1	6.24	6.20	6.18	3.57	3.44	3.37	3	4
	14:09		Middle	4.0	20.80	20.81		8.04	8.04		33.36	33.38		84.1	83.0		6.19	6.10		3.21	3.26		5	
21/04/2010	16:50	Cloudy	Middle	3.5	21.50	21.78	21.8	7.89	7.84	7.9	33.31	33.19	33.2	86.9	86.7	86.6	6.29	6.27	6.26	2.81	2.96	2.88	4	5
	16:54		Middle	3.5	21.99	21.81		7.84	7.83		33.19	33.19		86.4	86.5		6.24	6.25		2.85	2.89		5	
23/04/2010	19:20	Cloudy	Middle	3.5	20.08	20.03	20.0	7.97	7.98	8.0	33.43	33.64	33.5	79.4	81.5	80.9	5.91	6.08	6.03	4.00	3.88	4.39	7	7
	19:22		Middle	3.5	19.99	19.97		7.98	7.99		33.55	33.52		81.8	81.0		6.08	6.05		5.00	4.66		7	
26/04/2010	10:47	Cloudy	Middle	3.5	21.08	21.17	21.1	8.01	7.98	8.0	33.80	33.64	33.7	91.6	90.6	90.3	6.69	6.61	6.59	4.76	4.78	4.38	7	8
	10:52		Middle	3.5	21.02	21.07		7.94	7.93		33.66	33.66		89.6	89.3		6.54	6.53		4.06	3.91		8	

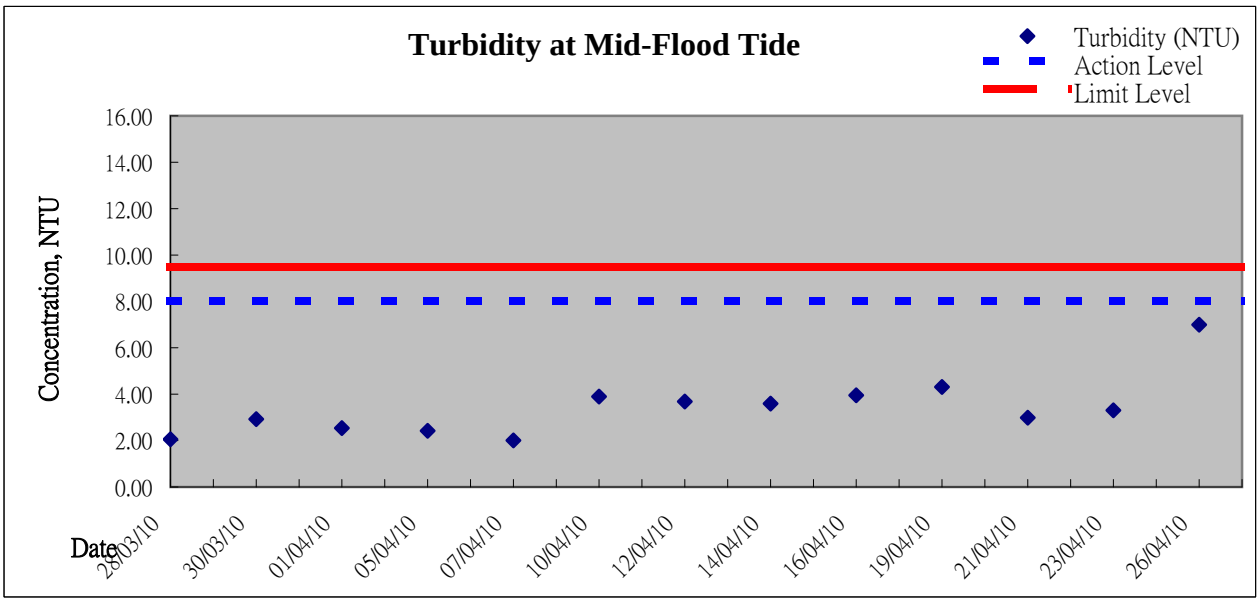
Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	11:19	Sunny	Middle	5.0	20.59	20.36	20.7	7.26	7.28	7.3	35.32	35.33	35.4	86.70	87.20	87.8	6.33	6.37	6.38	5.72	5.04	4.85	10	10
	11:20		Middle	5.0	20.79	20.94		7.36	7.39		35.27	35.82		86.50	90.70		6.35	6.45		4.37	4.28		9	
30/03/2010	12:38	Cloudy	Middle	5.0	19.35	19.29	19.3	7.86	7.86	7.9	33.30	33.33	33.3	53.00	53.70	53.5	4.01	4.07	4.12	5.37	5.21	5.09	14	13
	12:40		Middle	5.0	19.33	19.23		7.87	7.87		33.32	33.30		53.60	53.50		4.35	4.06		5.07	4.72		11	
01/04/2010	13:15	Sunny	Middle	3.0	21.70	21.65	21.3	7.92	7.86	7.8	32.47	32.54	32.5	59.60	58.50	58.8	4.31	4.26	4.29	4.57	4.58	4.19	4	5
	13:20		Middle	3.0	20.86	21.11		7.76	7.65		32.51	32.48		59.10	58.10		4.31	4.27		3.79	3.82		6	
05/04/2010	16:47	Cloudy	Middle	4.5	20.40	20.42	20.4	7.97	7.97	8.0	32.32	32.27	32.3	60.50	60.10	61.2	4.51	4.48	4.56	4.58	3.96	4.27	5	5
	16:49		Middle	4.5	20.34	20.38		7.96	7.98		32.22	32.28		61.30	62.80		4.58	4.67		3.68	4.85		4	
07/04/2010	19:12	Cloudy with	Middle	5.0	19.38	19.34	19.4	8.10	8.08	8.1	32.58	32.56	32.6	63.90	64.10	64.0	4.85	4.87	4.85	4.44	4.66	4.34	5	6
	19:15	Rain Patches	Middle	5.0	19.43	19.36		8.08	8.08		32.59	32.60		64.00	63.90		4.84	4.85		4.18	4.09		6	
10/04/2010	21:11	Cloudy	Middle	4.5	19.65	19.63	19.6	8.14	8.14	8.1	33.38	33.32	33.3	61.00	61.70	61.2	4.59	4.64	4.60	4.98	5.10	4.99	7	8
	21:13		Middle	4.5	19.65	19.65		8.14	8.13		33.33	33.36		61.40	60.80		4.61	4.57		4.98	4.90		8	
12/04/2010	12:27	Cloudy	Middle	5.0	21.20	21.23	21.0	7.94	7.93	7.9	33.06	33.05	33.1	57.00	57.10	57.7	4.16	4.17	4.23	4.83	4.67	4.69	8	7
	12:32		Middle	5.0	20.80	20.86		7.90	7.90		33.12	33.09		58.50	58.00		4.31	4.27		4.60	4.67		6	
14/04/2010	13:49	Misty	Middle	4.5	19.64	19.62	19.7	8.10	8.10	8.1	33.18	33.18	33.2	51.80	51.90	51.6	3.84	3.89	3.82	5.62	5.87	5.84	12	11
	13:52		Middle	4.5	19.75	19.72		8.10	8.10		33.24	33.24		52.00	50.60		3.81	3.72		5.91	5.95		10	
16/04/2010	14:05	Cloudy	Middle	5.0	19.42	19.35	19.5	7.99	8.00	8.0	32.91	33.19	33.1	68.50	67.50	68.8	5.21	5.08	5.18	5.24	5.39	5.36	8	9
	14:10		Middle	5.0	19.56	19.50		8.01	8.02		33.19	33.24		71.20	67.80		5.27	5.14		5.25	5.57		10	
19/04/2010	13:42	Sunny	Middle	5.0	21.08	20.91	20.7	8.14	8.10	8.1	33.51	33.48	33.5	86.80	84.90	84.8	6.37	6.22	6.24	5.97	6.01	5.66	6	7
	13:45		Middle	5.0	20.40	20.36		8.04	7.98		33.36	33.45		83.40	84.00		6.13	6.23		5.33	5.32		7	
21/04/2010	16:31	Cloudy	Middle	5.0	22.05	21.73	21.9	7.74	7.71	7.7	33.01	33.15	33.1	85.10	83.40	83.8	6.16	6.05	6.07	5.98	5.79	5.74	6	7
	16:35		Middle	5.0	21.77	21.88		7.69	7.68		33.06	33.09		83.80	82.90		6.08	6.00		5.54	5.66		8	
23/04/2010	18:59	Cloudy	Middle	5.0	20.37	20.77	20.3	7.90	7.92	7.9	33.12	33.22	33.2	78.50	76.90	78.4	5.82	5.64	5.80	4.14	4.13	3.96	5	5
	19:01		Middle	5.0	20.26	19.95		7.94	7.94		33.25	33.25		77.70	80.30		5.78	5.96		3.51	4.04		4	
26/04/2010	11:13	Cloudy	Middle	5.0	21.80	21.65	21.5	7.93	7.89	7.9	33.70	33.79	33.7	88.80	88.30	87.6	6.42	6.39	6.36	5.43	5.17	4.92	8	8
	11:17		Middle	5.0	21.23	21.32		7.85	7.84		33.65	33.52		87.20	86.20		6.35	6.27		4.21	4.88		8	

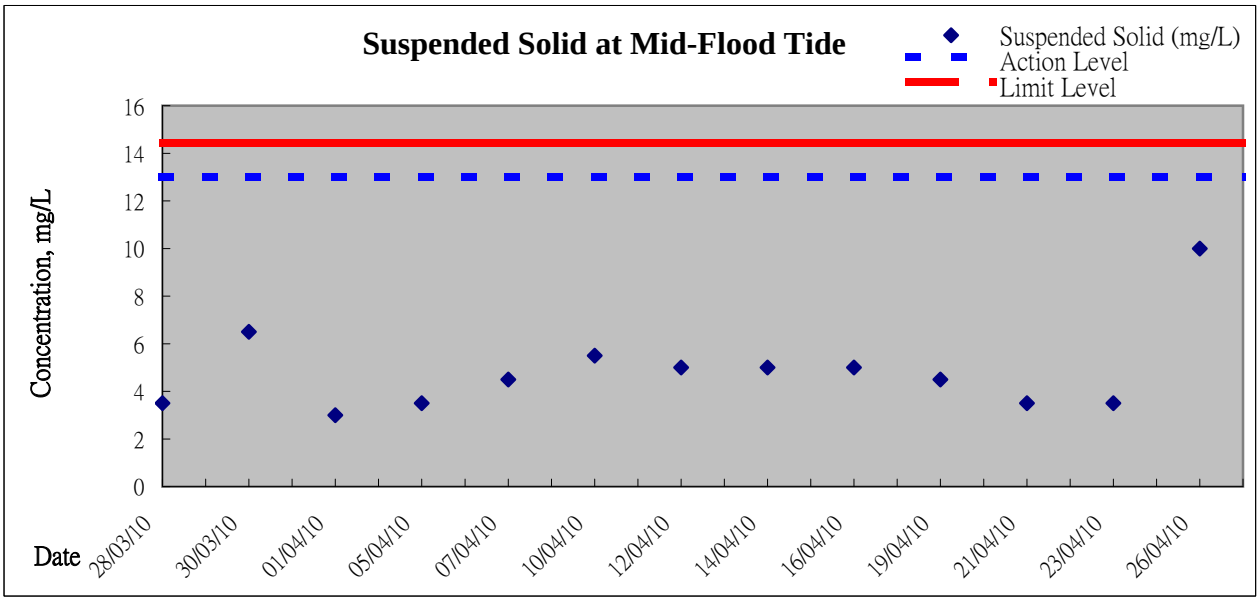
Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	11:45	Sunny	Middle	2.5	20.21	20.22	20.3	7.46	7.46	7.5	34.99	34.96	35.0	81.50	80.60	81.6	6.06	5.94	6.01	3.85	3.34	3.51	10	9
	11:47		Middle	2.5	20.31	20.37		7.45	7.44		34.95	34.93		82.40	81.70		6.03	6.00		3.68	3.15		8	
30/03/2010	13:27	Cloudy	Middle	3.0	19.57	19.50	19.6	7.92	7.91	7.9	33.13	33.16	33.2	52.00	52.30	53.3	4.19	4.34	4.21	5.07	5.29	5.00	10	10
	13:29		Middle	3.0	19.64	19.58		7.90	7.88		33.11	33.29		53.90	54.80		4.03	4.27		5.12	4.50		9	
01/04/2010	13:00	Sunny	Middle	2.5	21.38	21.91	21.8	7.60	7.48	7.5	32.47	32.35	32.3	55.70	55.80	56.1	4.07	4.05	4.07	9.16	8.13	7.19	7	7
	13:05		Middle	2.5	21.88	22.13		7.46	7.49		32.18	32.32		56.70	56.10		4.11	4.06		6.18	5.28		7	
05/04/2010	16:20	Cloudy	Middle	2.5	20.53	20.45	20.4	7.78	7.87	7.8	31.82	31.97	32.0	64.60	62.80	63.4	4.81	4.68	4.73	5.57	5.20	5.53	10	9
	16:22		Middle	2.5	20.41	20.33		7.87	7.86		32.05	32.01		63.90	62.20		4.76	4.65		5.99	5.34		8	
07/04/2010	18:35	Cloudy with	Middle	3.0	19.39	19.37	19.4	7.77	7.86	7.9	31.63	31.74	31.9	63.70	62.40	63.7	4.86	4.76	4.85	9.05	9.08	8.93	18	19
	18:37	Rain Patches	Middle	3.0	19.42	19.44		7.91	7.92		31.98	32.12		63.80	65.00		4.85	4.93		8.87	8.71		20	
10/04/2010	20:32	Cloudy	Middle	2.5	19.83	19.81	19.8	7.80	7.95	7.9	33.02	33.10	33.1	66.00	64.70	64.8	4.95	4.85	4.86	9.01	9.29	8.76	18	17
	20:34		Middle	2.5	19.83	19.83		8.00	8.01		33.12	33.12		63.80	64.80		4.79	4.85		8.68	8.06		15	
12/04/2010	13:00	Cloudy	Middle	2.5	21.60	21.68	21.7	7.83	7.83	7.8	32.83	32.79	32.7	53.90	52.30	53.0	3.91	3.80	3.85	9.17	9.29	9.45	11	11
	13:05		Middle	2.5	21.65	21.74		7.80	7.81		32.64	32.67		54.30	51.60		3.95	3.74		10.30	9.03		11	
14/04/2010	14:20	Misty	Middle	2.5	20.06	19.99	20.1	8.03	8.03	8.0	32.17	32.31	32.3	62.90	61.40	63.6	4.73	4.62	4.69	10.40	8.08	8.84	16	15
	14:22		Middle	2.5	20.12	20.12		8.05	8.06		32.44	32.47		62.50	67.70		4.69	4.71		8.67	8.21		13	
16/04/2010	14:30	Cloudy	Middle	3.0	19.70	19.66	19.7	7.98	7.98	8.0	32.97	33.07	33.0	60.60	60.80	60.0	4.68	4.59	4.63	6.83	6.18	6.48	9	10
	14:35		Middle	3.0	19.75	19.72		8.02	8.01		33.07	33.08		58.90	59.80		4.65	4.61		6.25	6.66		11	
19/04/2010	13:20	Sunny	Middle	3.0	22.09	22.10	21.9	8.07	8.00	7.9	33.03	33.13	33.1	85.70	84.80	82.4	6.16	6.11	5.94	7.85	7.80	7.72	10	11
	13:23		Middle	3.0	21.61	21.90		7.86	7.81		33.13	32.91		80.30	78.90		5.83	5.67		7.54	7.67		12	
21/04/2010	16:10	Cloudy	Middle	3.0	22.28	22.52	22.6	8.01	7.94	7.9	33.24	33.13	33.0	86.10	80.40	82.7	6.16	5.74	5.80	7.65	7.32	7.08	10	12
	16:15		Middle	3.0	22.64	22.95		7.88	7.83		32.92	32.82		83.20	81.10		5.76	5.54		6.63	6.71		13	
23/04/2010	18:30	Cloudy	Middle	3.0	20.82	20.67	20.7	7.46	7.72	7.7	32.59	32.65	32.8	75.40	76.20	76.4	5.57	5.62	5.64	6.25	5.90	6.05	11	11
	18:31		Middle	3.0	20.66	20.66		7.81	7.80		32.96	32.95		77.40	76.60		5.72	5.66		6.09	5.94		10	
26/04/2010	11:37	Cloudy	Middle	2.5	21.48	21.90	21.6	7.94	7.93	7.9	33.42	33.13	33.3	83.00	79.00	79.0	6.02	5.72	5.75	7.24	8.28	7.09	10	11
	11:41		Middle	2.5	21.33	21.49		7.91	7.90		33.36	33.32		77.10	77.00		5.69	5.58		6.51	6.33		12	

Date	Time	Weater Condition	Sampling Depth (m)		Water Temperature (°C)			pH (-)			Salinity (ppt)			DO Saturation (%)			DO (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/03/2010	11:34	Sunny	Middle	2.5	20.49	20.55	20.7	7..38	7.38	7.4	35.01	34.98	35.0	83.60	82.80	83.9	6.08	6.02	6.11	2.95	2.89	3.04	8	7
	11:36		Middle	2.5	20.85	20.84		7.37	7.38		34.90	34.96		84.20	84.80		6.16	6.18		3.62	2.71		6	
30/03/2010	12:58	Cloudy	Middle	2.5	19.28	19.28	19.3	7.84	7.86	7.9	33.25	33.23	32.4	52.70	52.80	52.8	4.08	4.29	4.19	6.66	6.72	6.43	15	14
	13:00		Middle	2.5	19.39	19.27		7.86	7.87		33.00	30.19		52.50	53.10		4.29	4.09		6.54	5.80		12	
01/04/2010	12:45	Sunny	Middle	3.0	21.93	21.92	22.2	8.06	8.05	8.0	32.60	32.40	32.3	60.90	58.40	58.3	4.80	4.22	4.31	8.70	8.44	7.07	8	9
	12:50		Middle	3.0	22.27	22.50		7.91	7.85		32.01	32.23		57.10	56.90		4.12	4.09		5.33	5.82		10	
05/04/2010	16:32	Cloudy	Middle	2.5	20.31	20.32	20.3	7.86	7.87	7.9	32.03	32.01	32.0	62.00	61.80	60.6	4.63	4.63	4.53	7.04	6.22	6.19	13	12
	16:34		Middle	2.5	20.29	20.32		7.87	7.87		32.10	31.98		60.60	57.90		4.52	4.33		6.17	5.33		10	
07/04/2010	18:51	Cloudy with	Middle	2.5	19.23	19.43	19.5	7.91	7.96	8.0	32.38	32.48	32.4	62.10	62.40	62.4	4.72	4.73	4.73	8.52	8.44	8.70	22	20
	18:54	Rain Patches	Middle	2.5	19.56	19.59		7.97	7.97		32.38	32.39		62.60	62.60		4.74	4.74		8.71	9.11		18	
10/04/2010	20:51	Cloudy	Middle	2.5	19.78	19.75	19.7	8.04	8.05	8.0	33.10	33.11	33.2	62.70	62.20	62.1	4.70	4.67	4.66	8.02	8.11	8.08	16	16
	20:53		Middle	2.5	19.74	19.72		8.05	8.05		33.19	33.20		61.80	61.70		4.64	4.64		8.13	8.05		15	
12/04/2010	12:37	Cloudy	Middle	2.5	21.98	21.69	21.8	7.69	7.72	7.8	32.74	32.66	32.8	56.40	56.10	55.3	4.13	4.10	4.03	7.54	7.71	7.98	12	13
	12:42		Middle	2.5	21.72	21.79		7.80	7.82		32.84	32.82		53.50	55.10		3.89	3.98		8.49	8.18		13	
14/04/2010	14:09	Misty	Middle	3.0	20.11	20.10	20.1	8.05	8.06	8.1	32.54	32.56	32.6	62.20	62.50	62.8	4.66	4.68	4.70	8.45	8.22	7.79	15	16
	14:14		Middle	3.0	20.18	20.18		8.06	8.06		32.70	32.67		63.30	63.00		4.73	4.71		7.21	7.27		16	
16/04/2010	14:18	Cloudy	Middle	2.0	19.66	19.63	19.7	7.98	7.98	8.0	33.09	33.12	33.1	63.20	62.80	64.1	4.76	4.79	4.82	7.40	7.55	7.29	12	12
	14:25		Middle	2.0	19.65	19.66		7.98	7.97		33.01	33.12		64.70	65.50		4.84	4.90		6.83	7.36		11	
19/04/2010	13:28	Sunny	Middle	3.0	21.52	22.12	22.4	7.98	7.96	7.9	33.15	32.82	33.1	83.40	80.90	82.0	6.03	5.81	5.86	7.95	7.69	7.72	11	11
	13:34		Middle	3.0	22.80	22.98		7.92	7.90		33.32	33.22		82.60	81.00		5.86	5.73		7.63	7.60		11	
21/04/2010	16:18	Cloudy	Middle	3.0	22.25	22.78	22.6	7.97	7.97	8.0	33.22	33.16	33.1	85.60	83.30	83.4	6.09	5.96	5.95	7.60	7.13	7.15	13	12
	16:22		Middle	3.0	22.58	22.62		7.94	7.92		32.99	32.98		82.90	81.90		5.92	5.84		6.99	6.88		11	
23/04/2010	18:42	Cloudy	Middle	3.0	20.57	20.47	20.4	7.88	7.89	7.9	33.16	33.20	33.2	85.60	81.00	82.1	6.02	6.06	6.01	6.03	5.71	6.30	13	14
	18:44		Middle	3.0	20.41	20.20		7.89	7.88		33.21	33.20		79.70	81.90		5.89	6.08		6.18	7.28		14	
26/04/2010	11:28	Cloudy	Middle	2.5	21.82	21.67	21.6	7.93	7.91	7.9	33.46	33.57	33.6	83.50	82.70	83.1	6.04	5.99	6.03	7.17	6.52	5.78	10	10
	11:33		Middle	2.5	21.49	21.36		7.89	7.88		33.59	33.62		83.80	82.40		6.10	5.99		4.54	4.88		9	

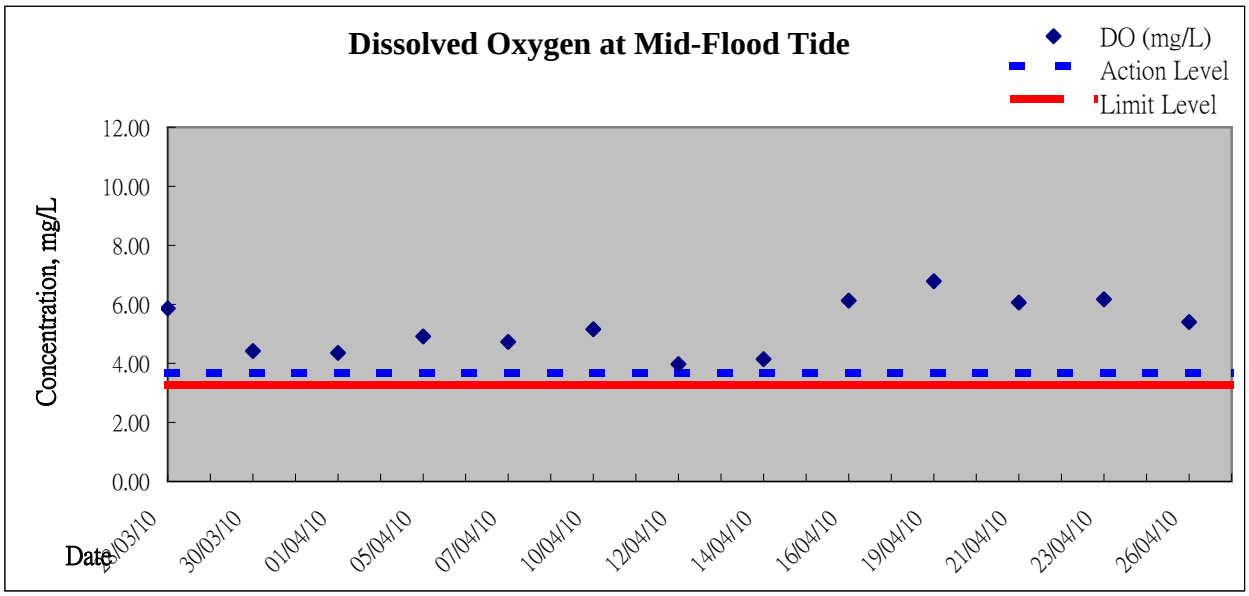
Graphic Presentation of Water Quality Result of WSD9 - Tai Wan

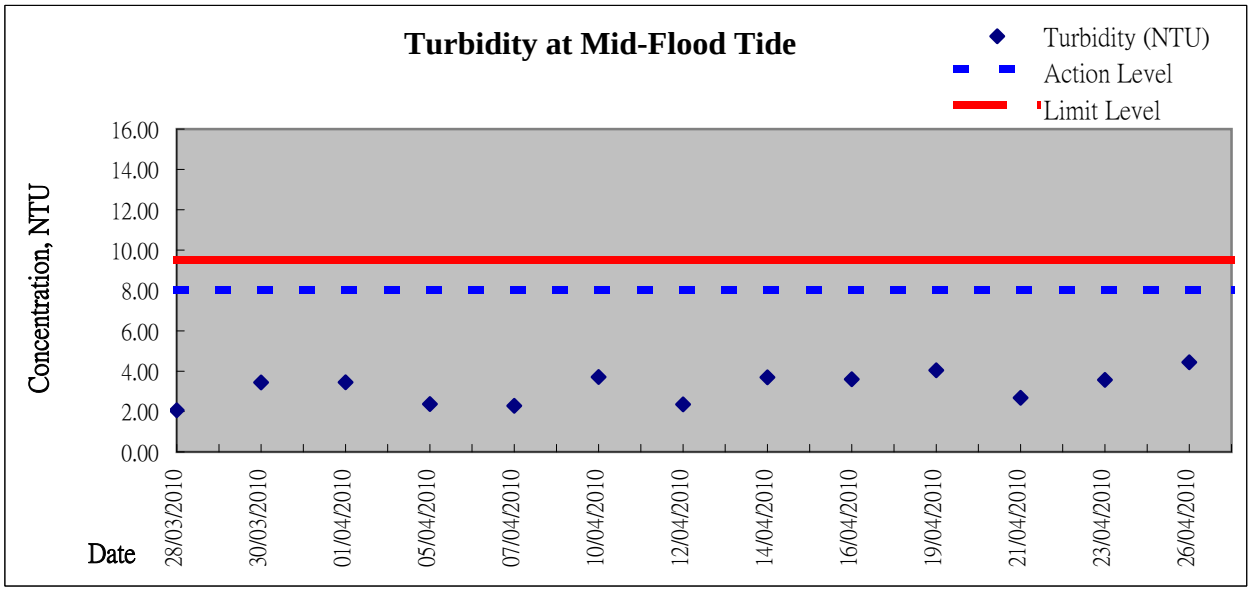


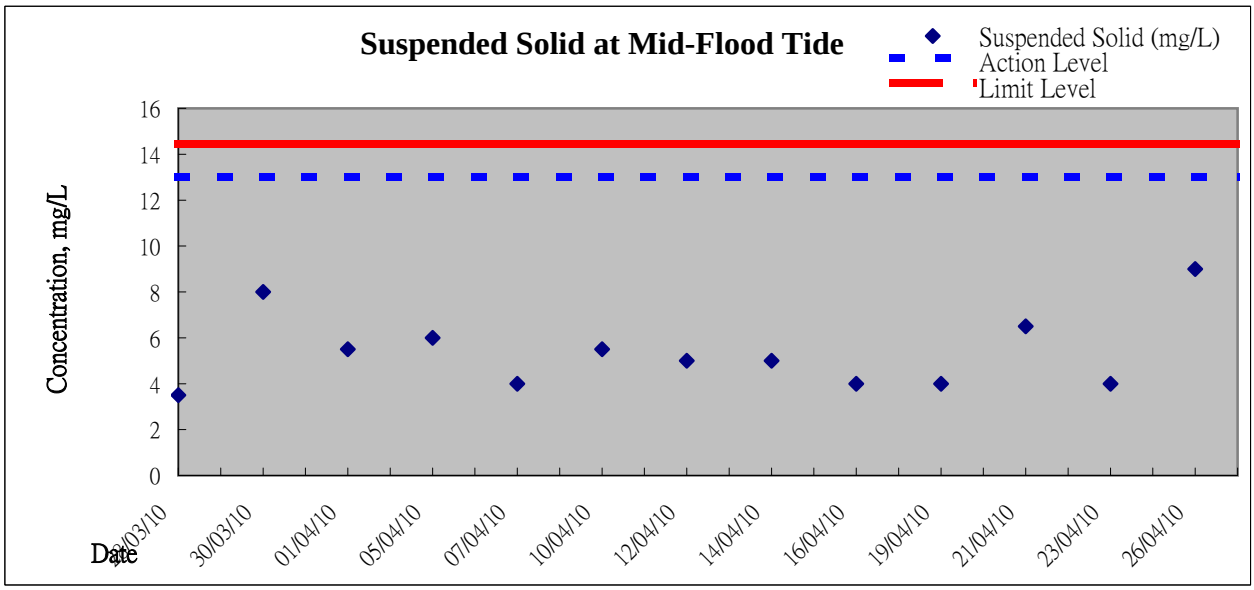




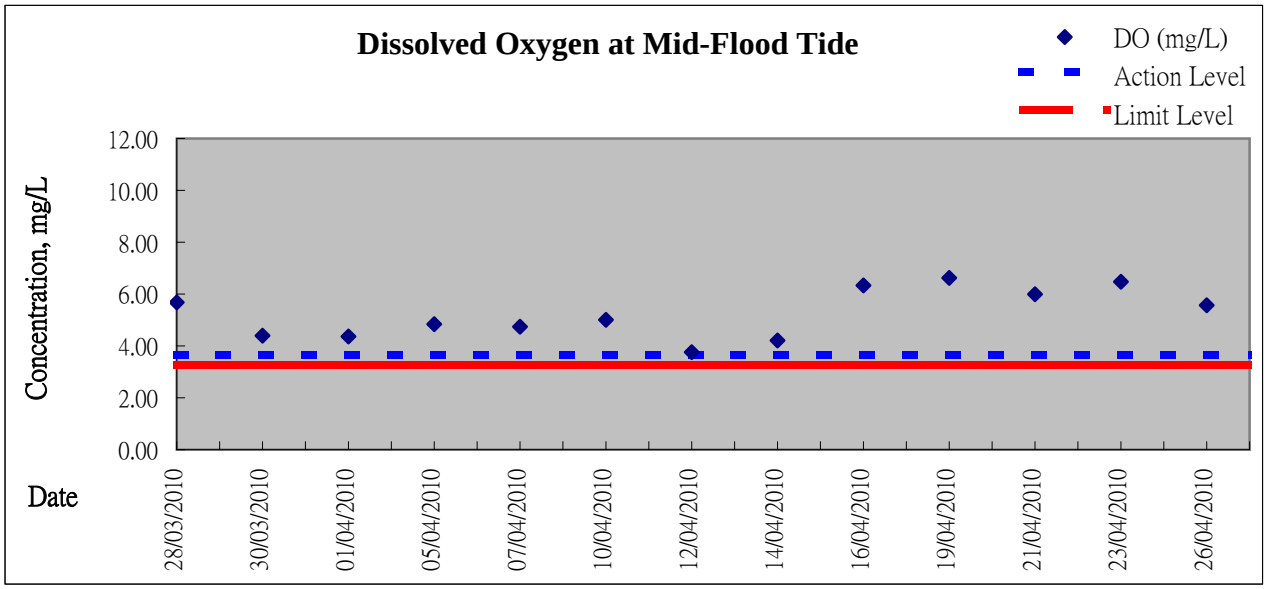
Graphic Presentation of Water Quality Result of WSD10 - Cha Kwo Ling

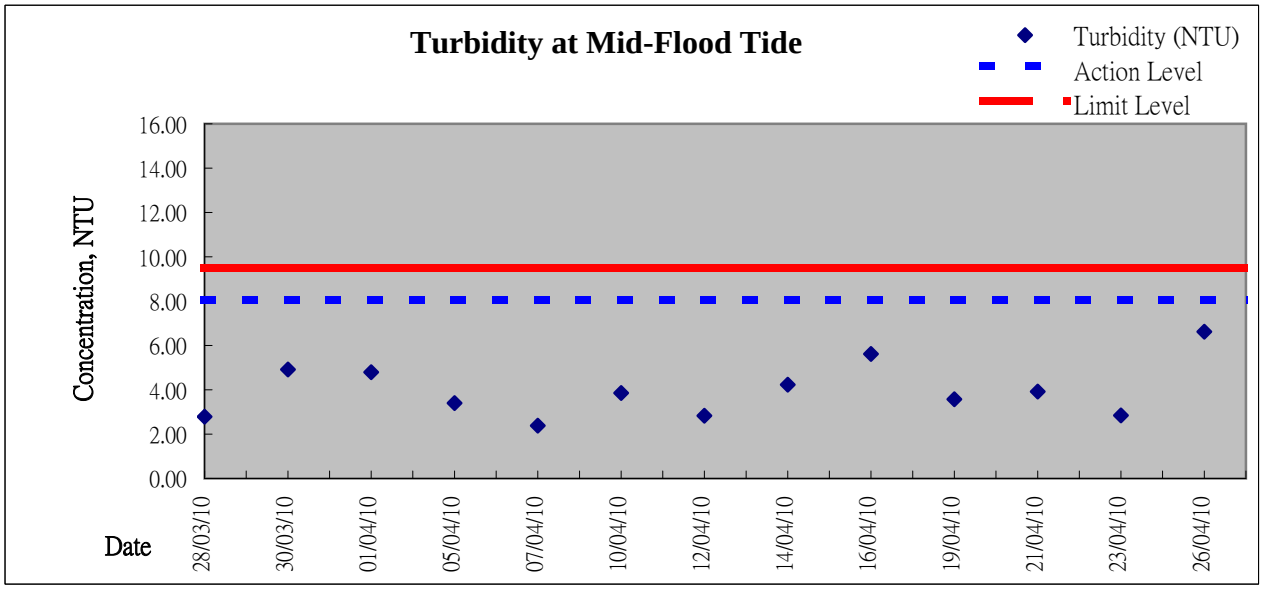


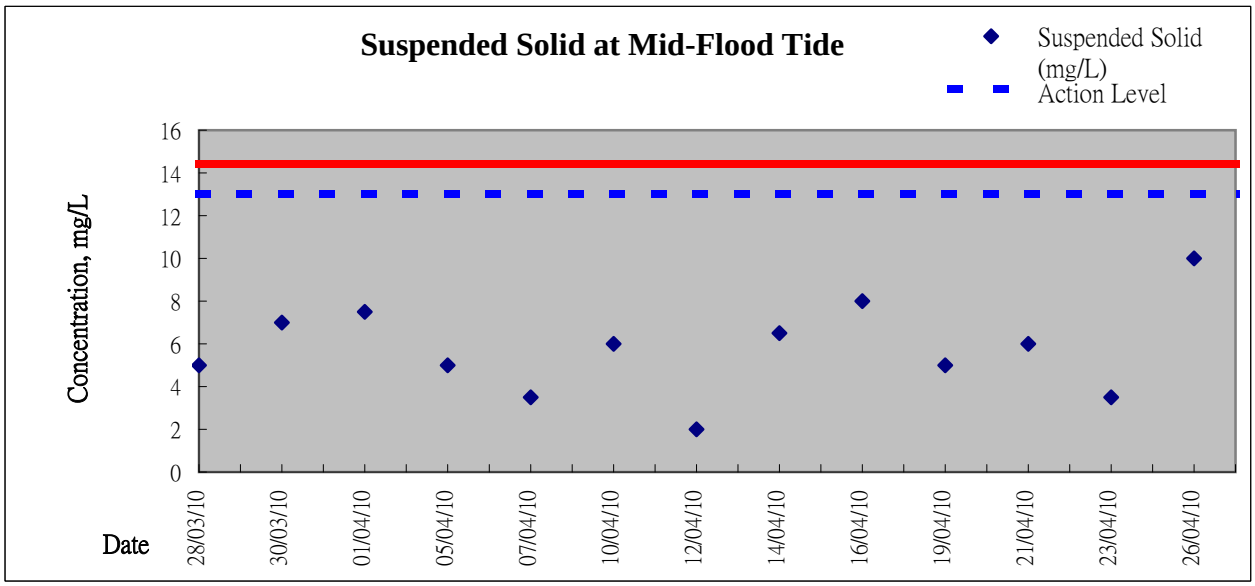




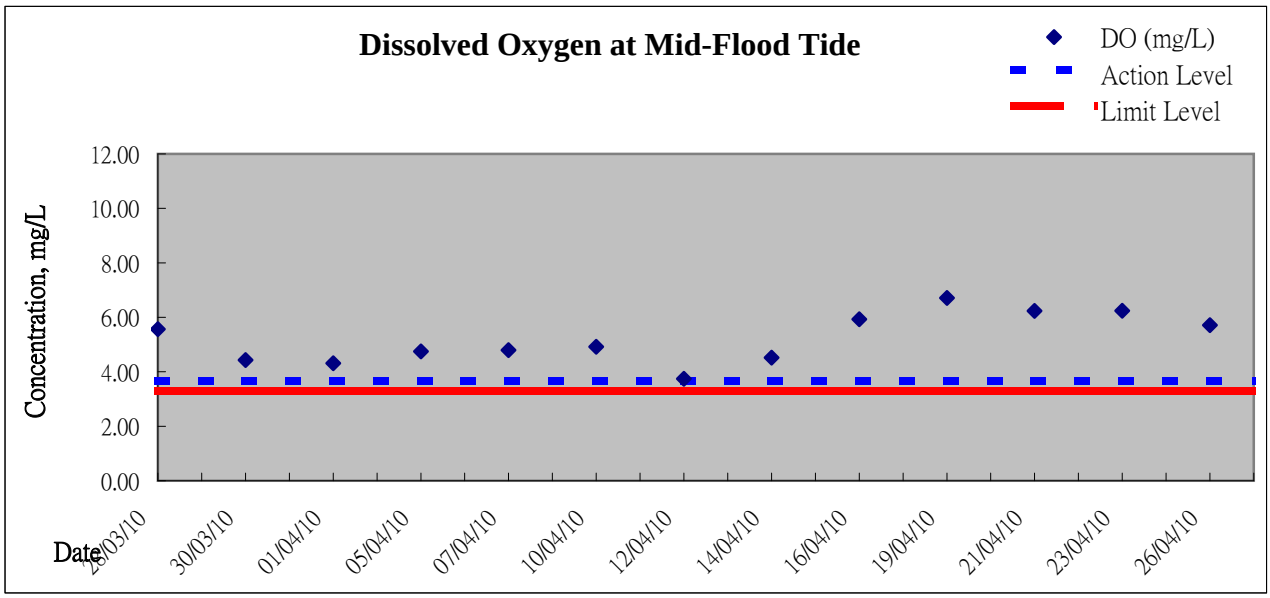
Graphic Presentation of Water Quality Result of WSD15 - Sai Wan Ho

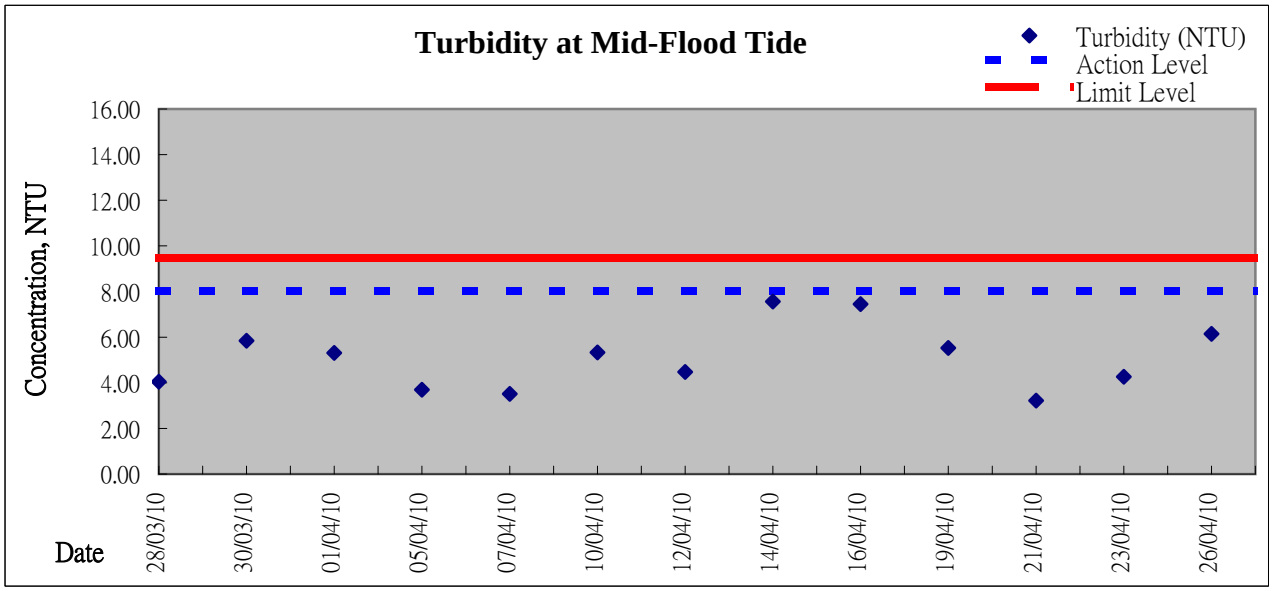


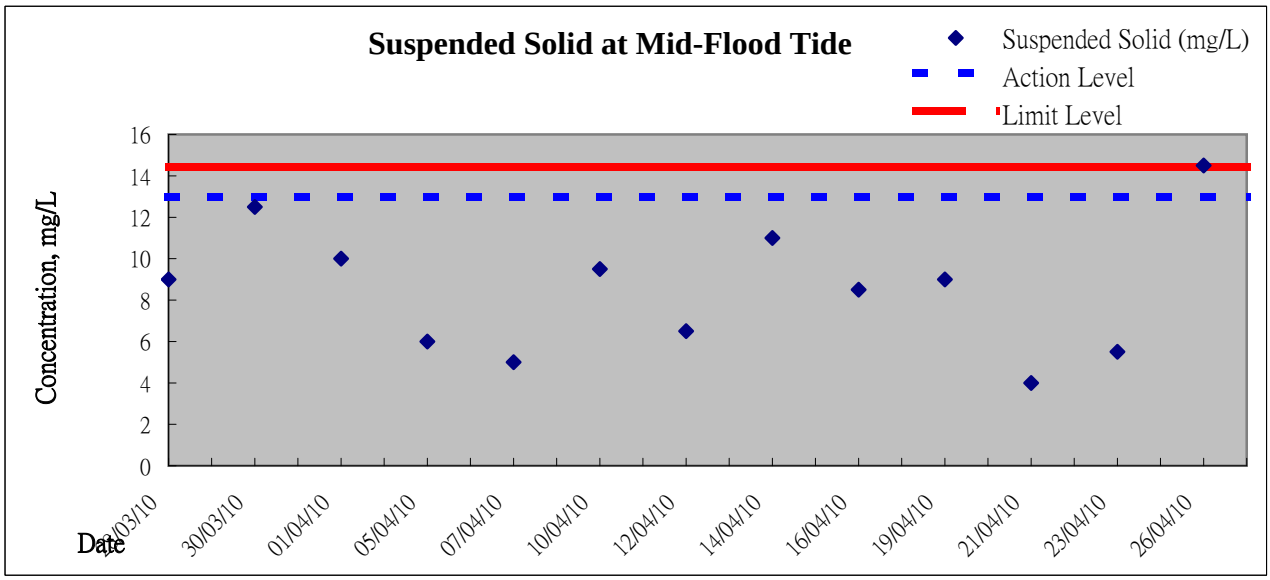




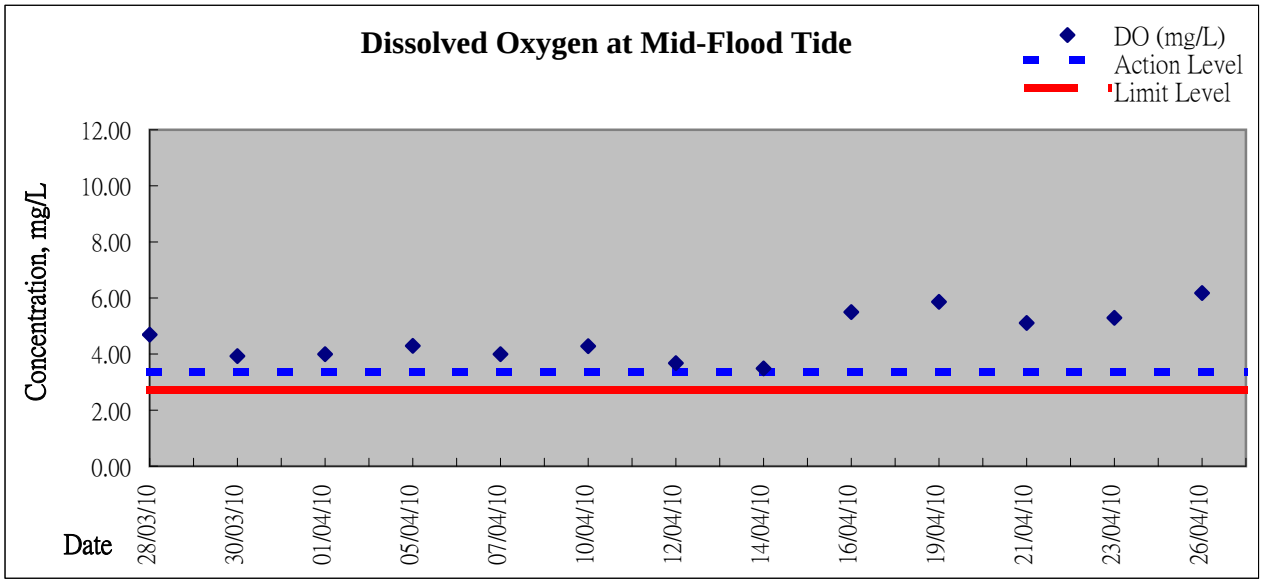
Graphic Presentation of Water Quality Result of WSD17 - Quarry Bay

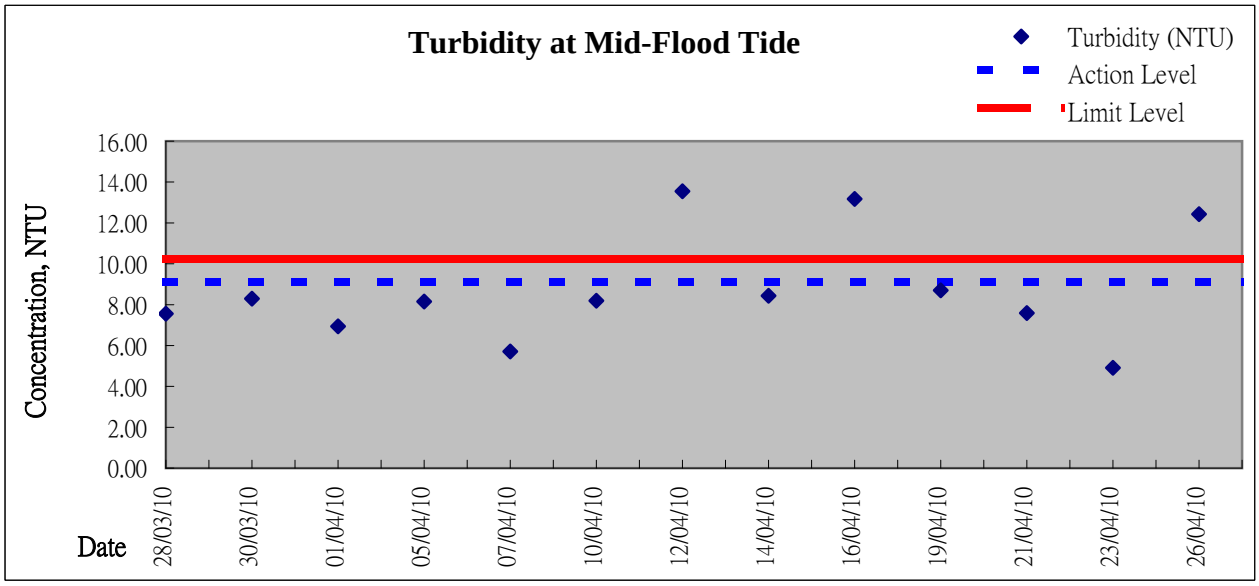


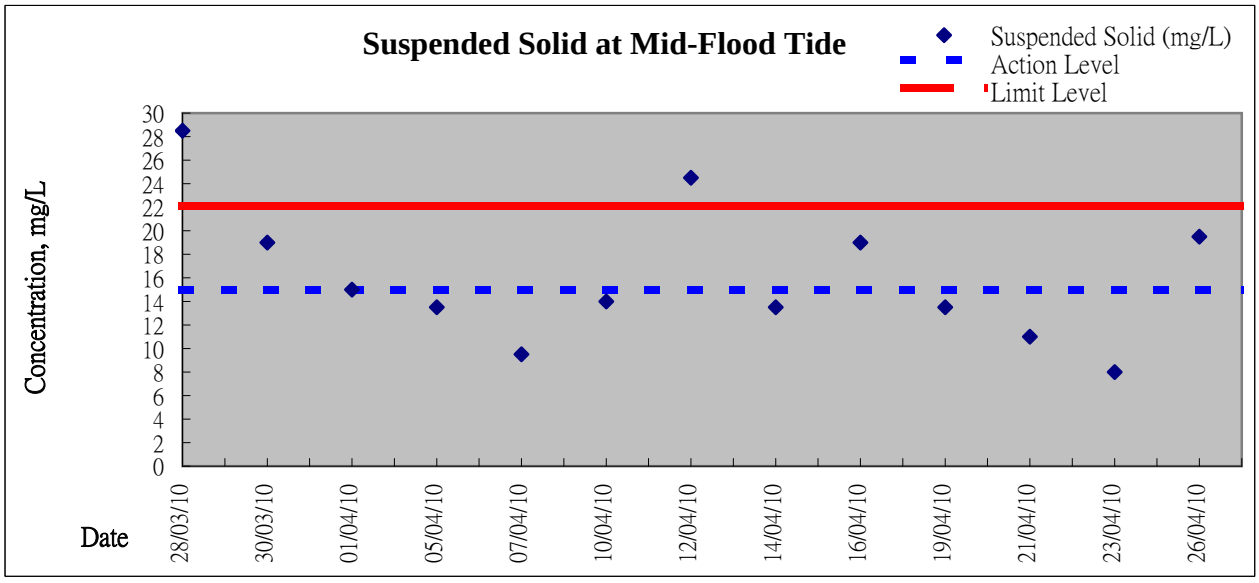




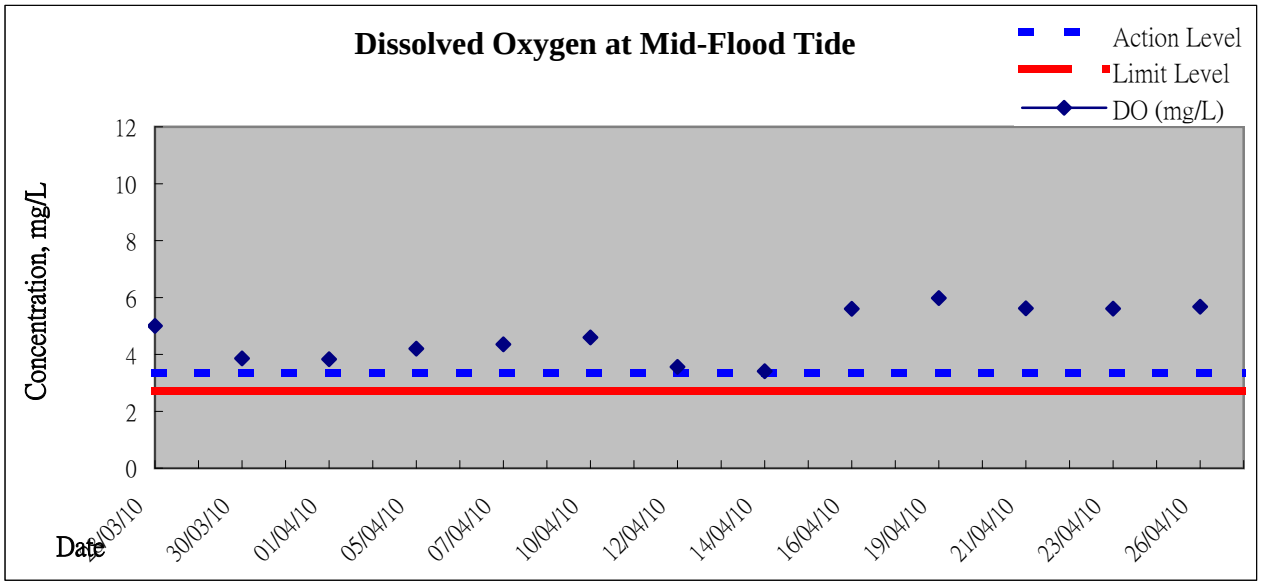
Graphic Presentation of Water Quality Result of C8 - City Garden

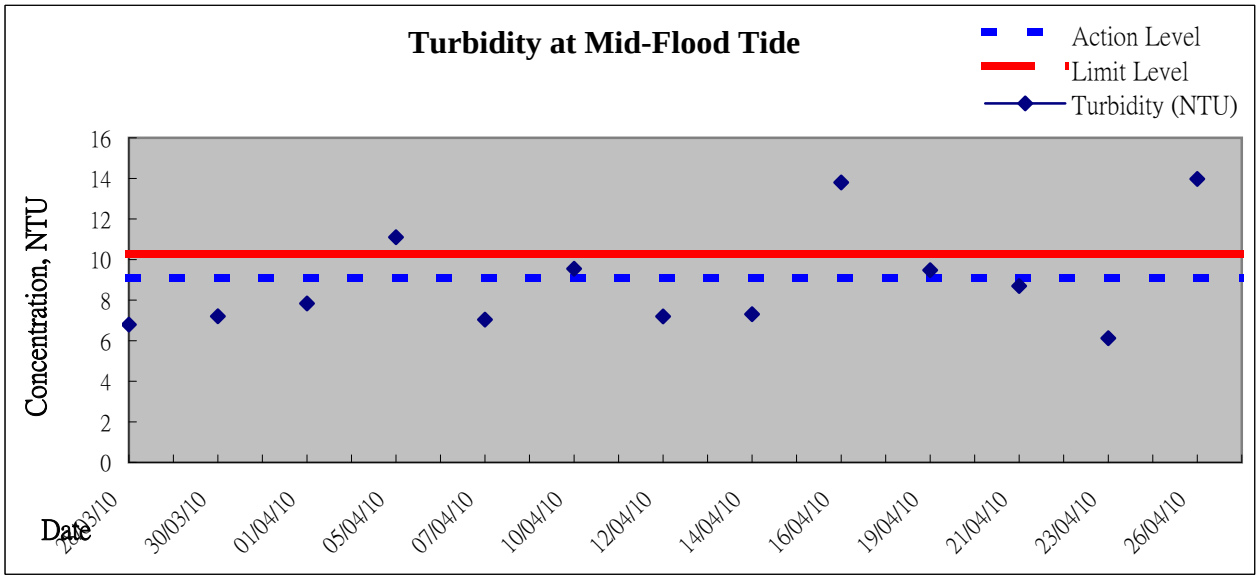


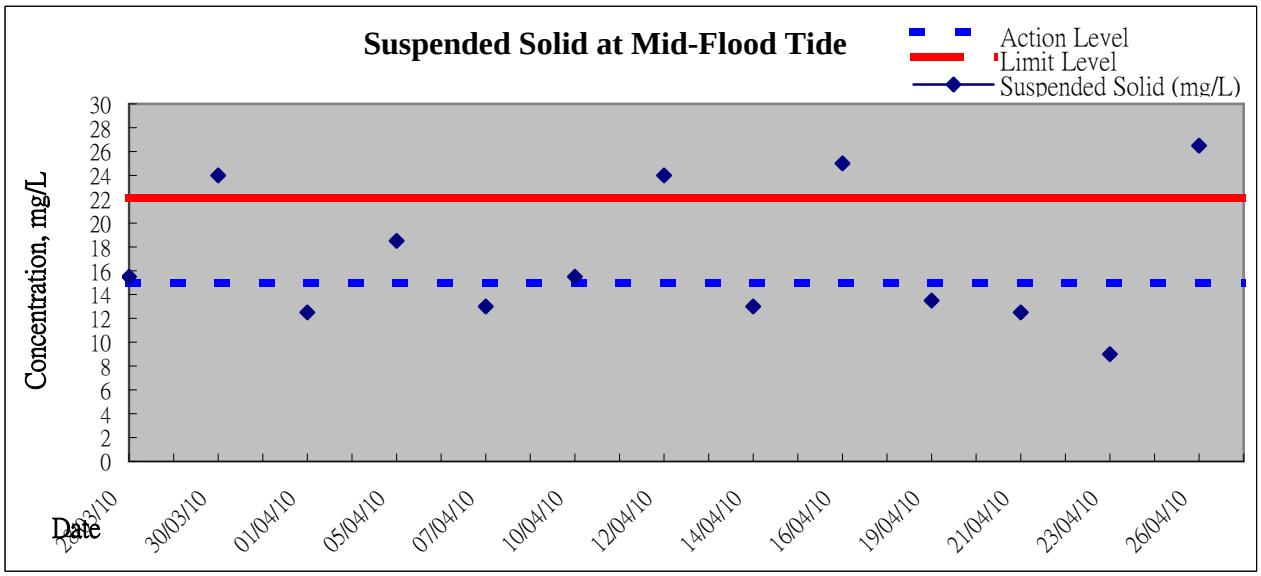




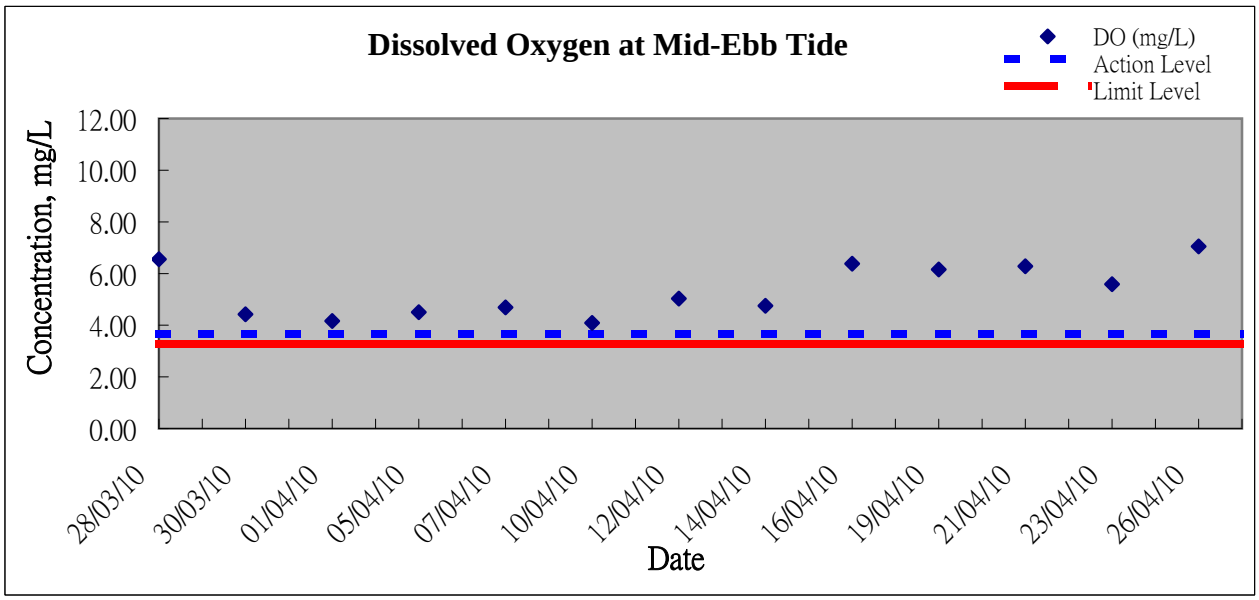
Graphic Presentation of Water Quality Result of C9 - Provident Centre

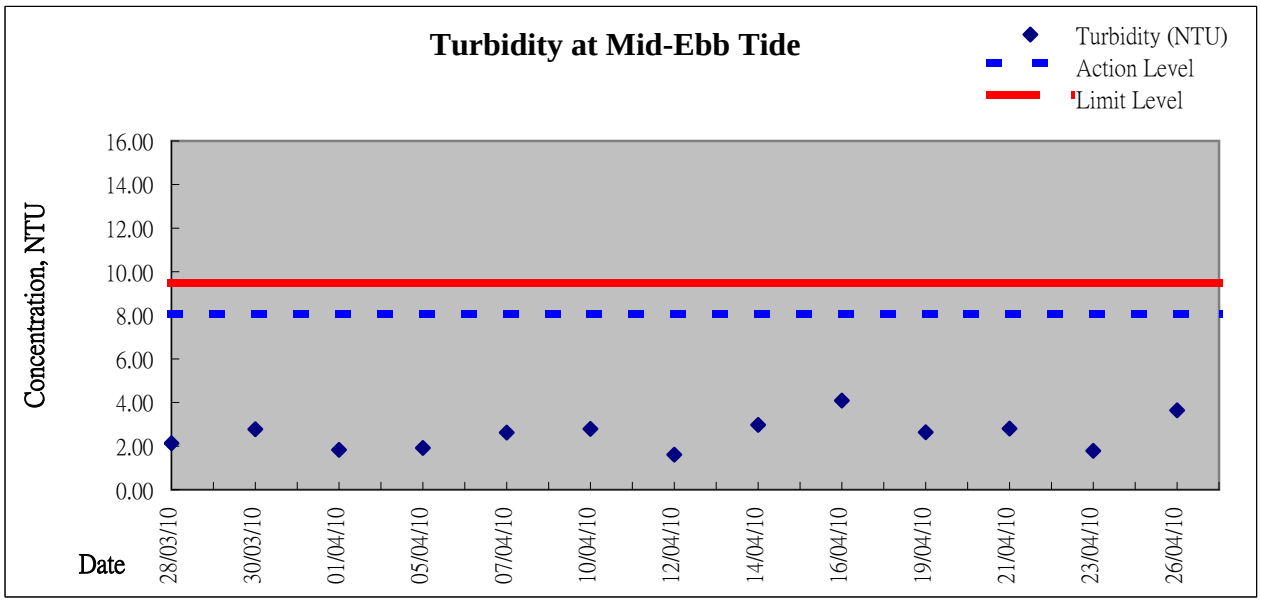


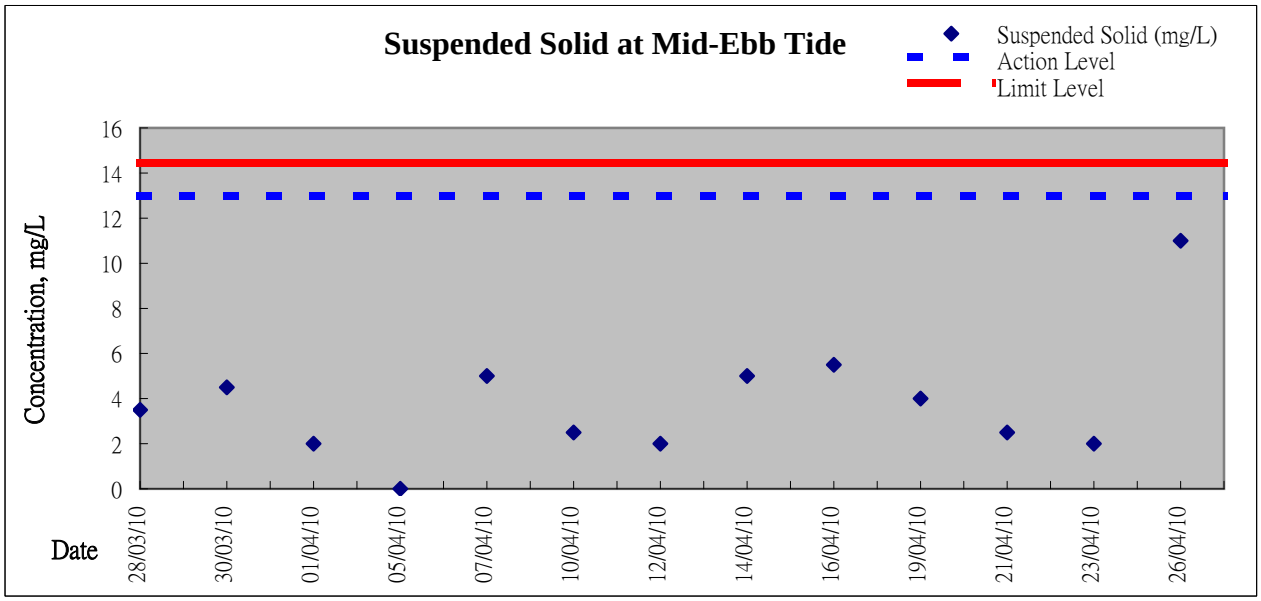




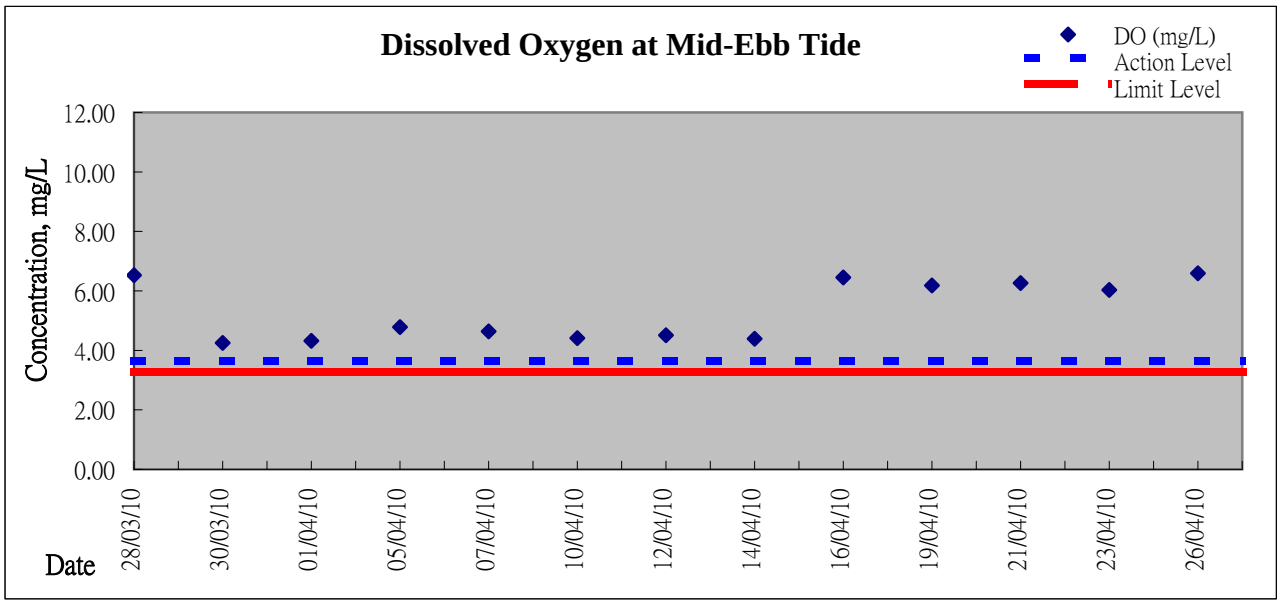
Graphic Presentation of Water Quality Result of WSD9 - Tai Wan

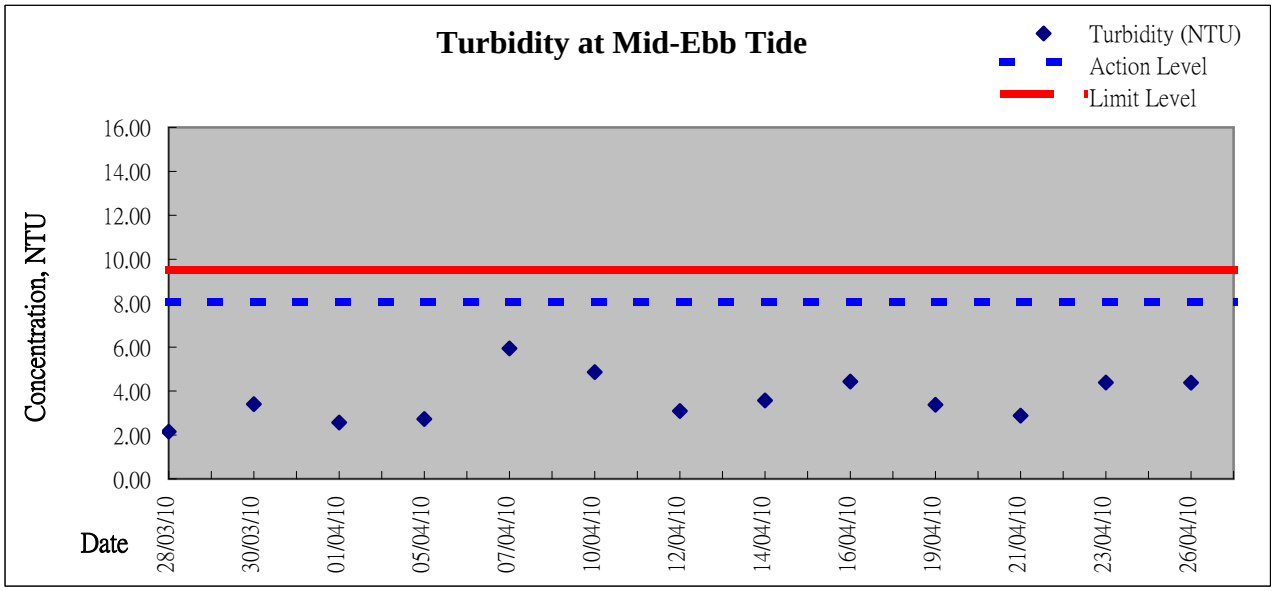


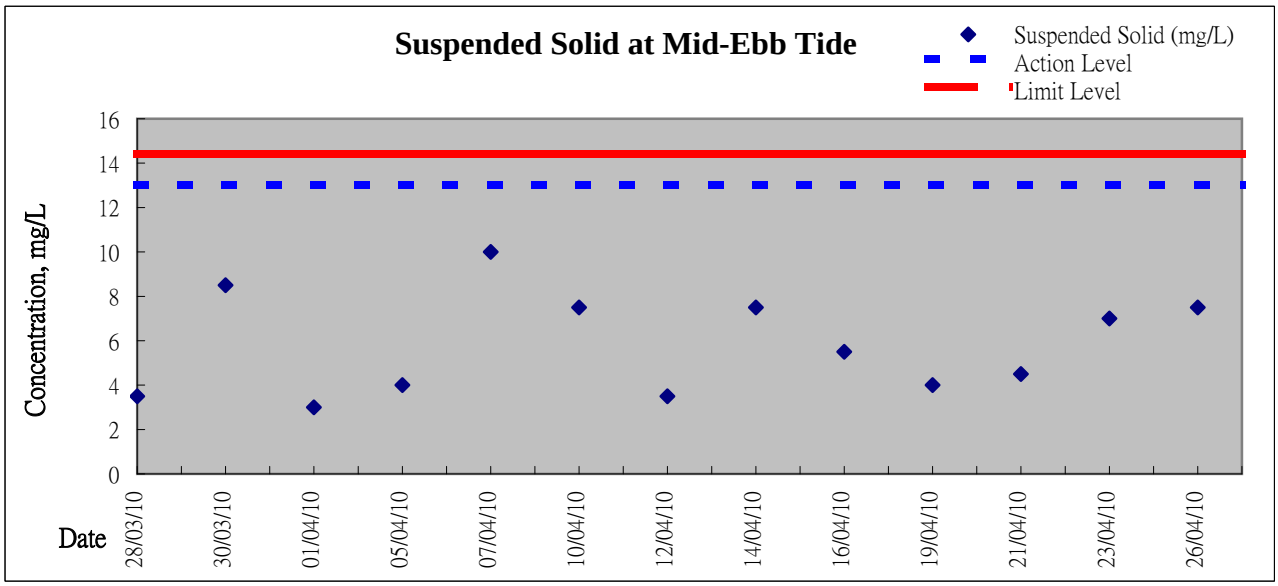




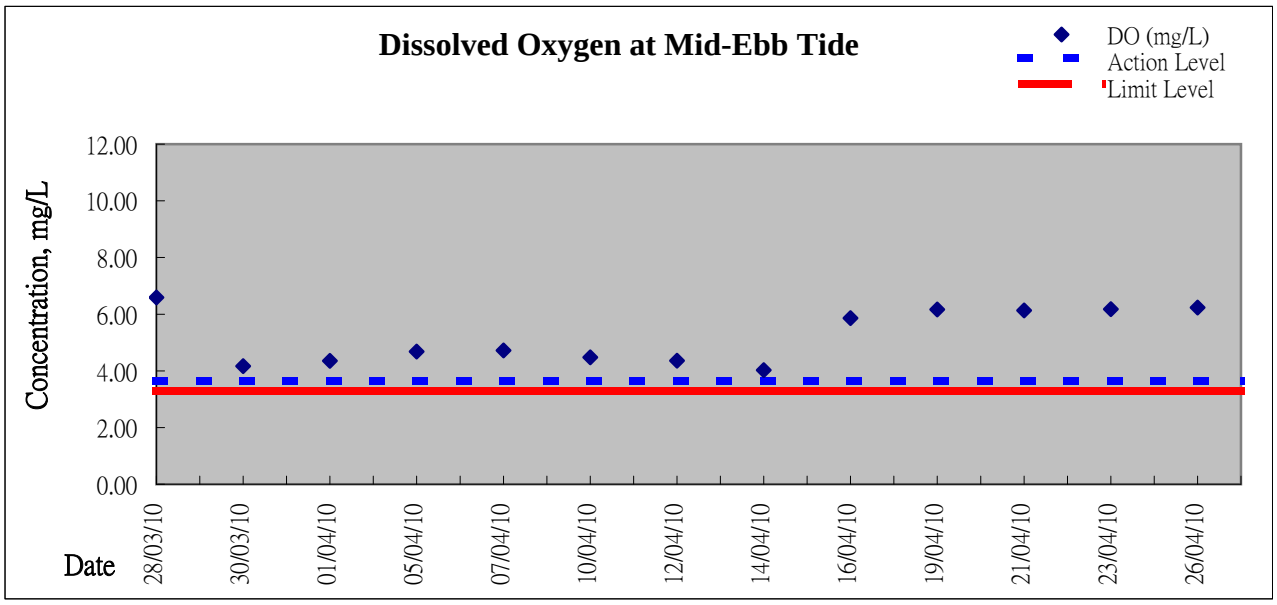
Graphic Presentation of Water Quality Result of WSD10 - Cha Kwo Ling

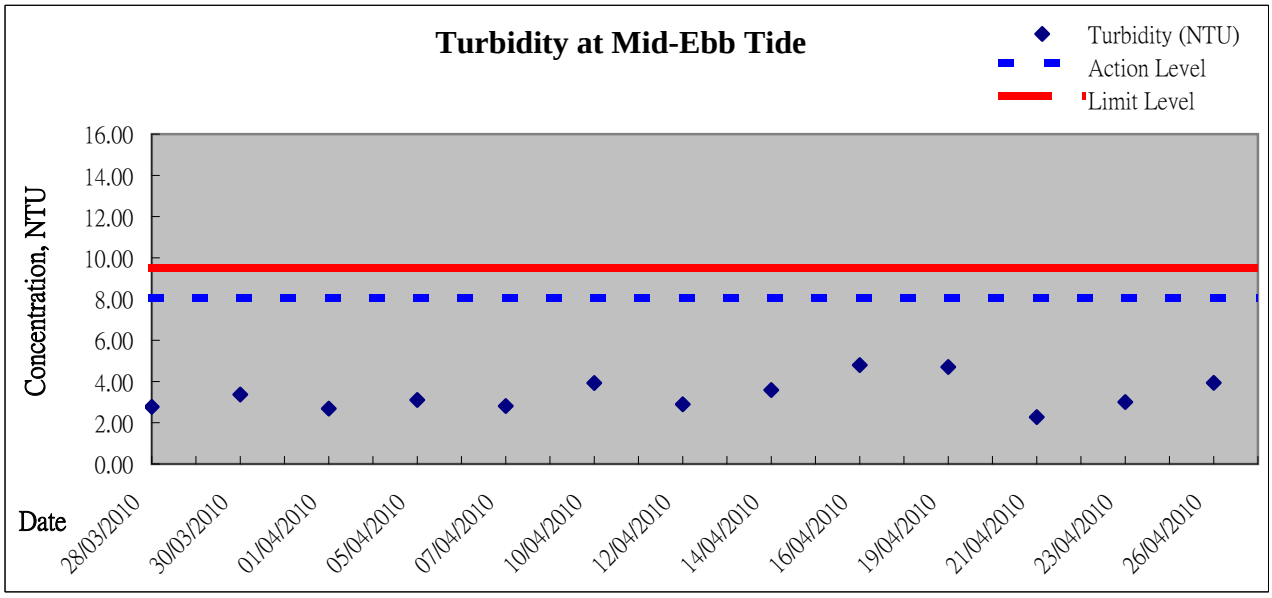


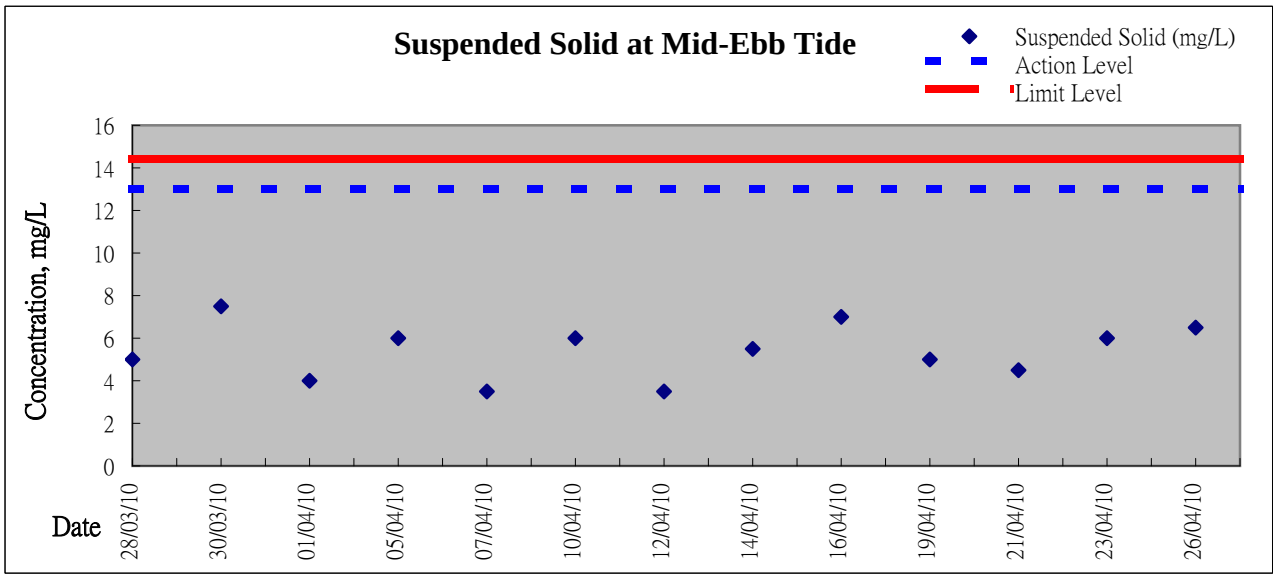




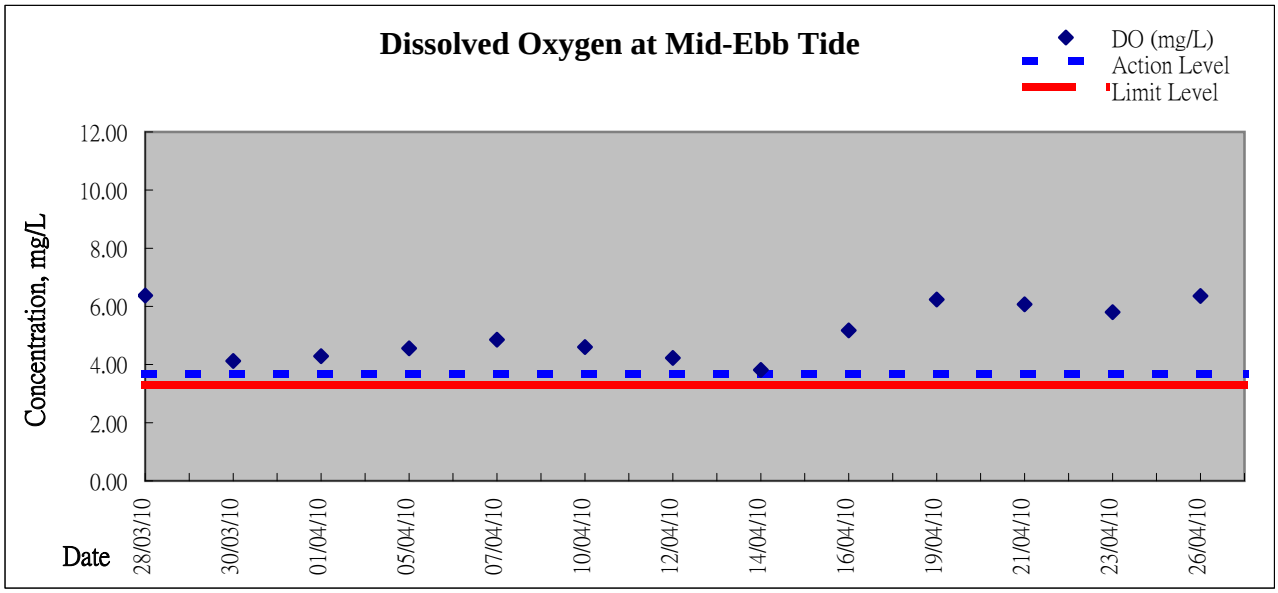
Graphic Presentation of Water Quality Result of WSD15 - Sai Wan Ho

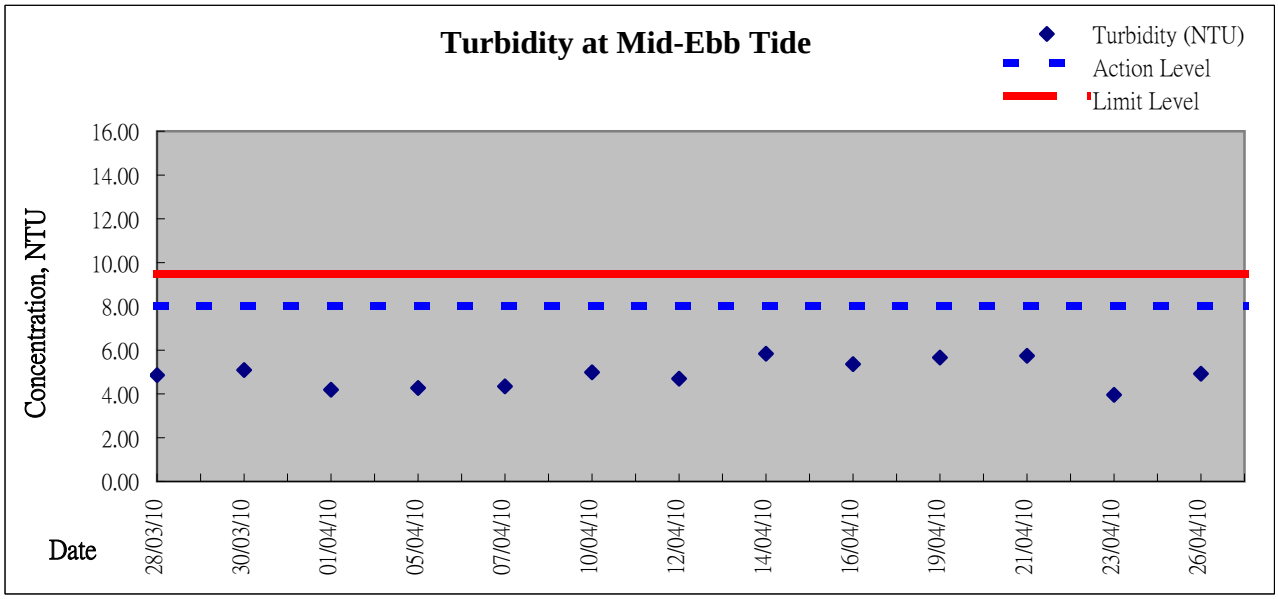


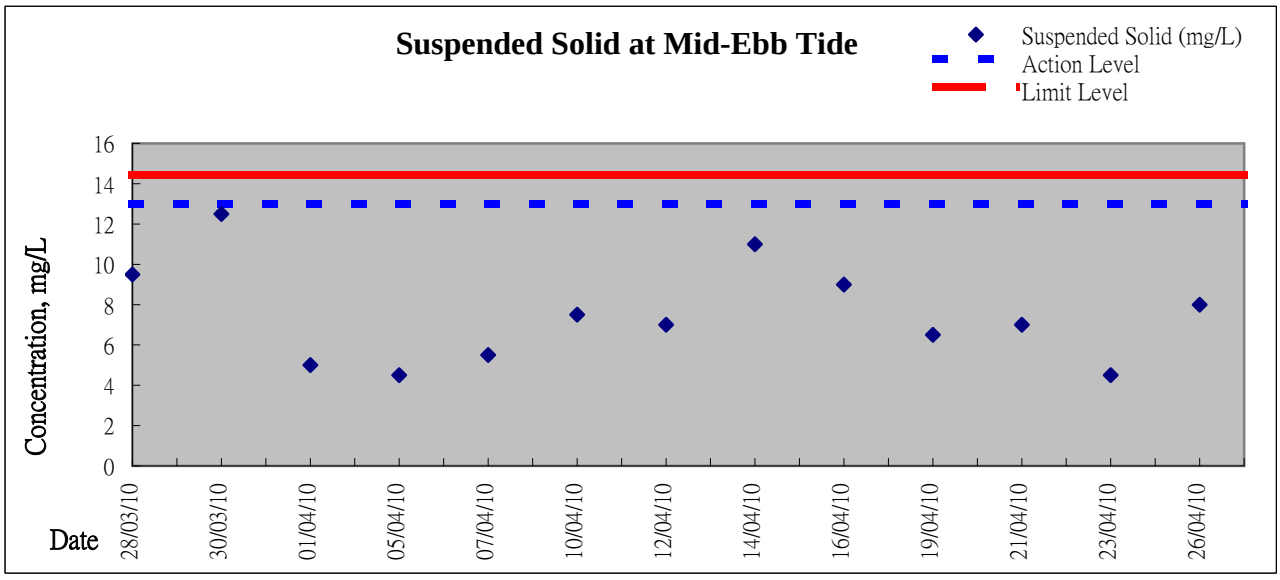




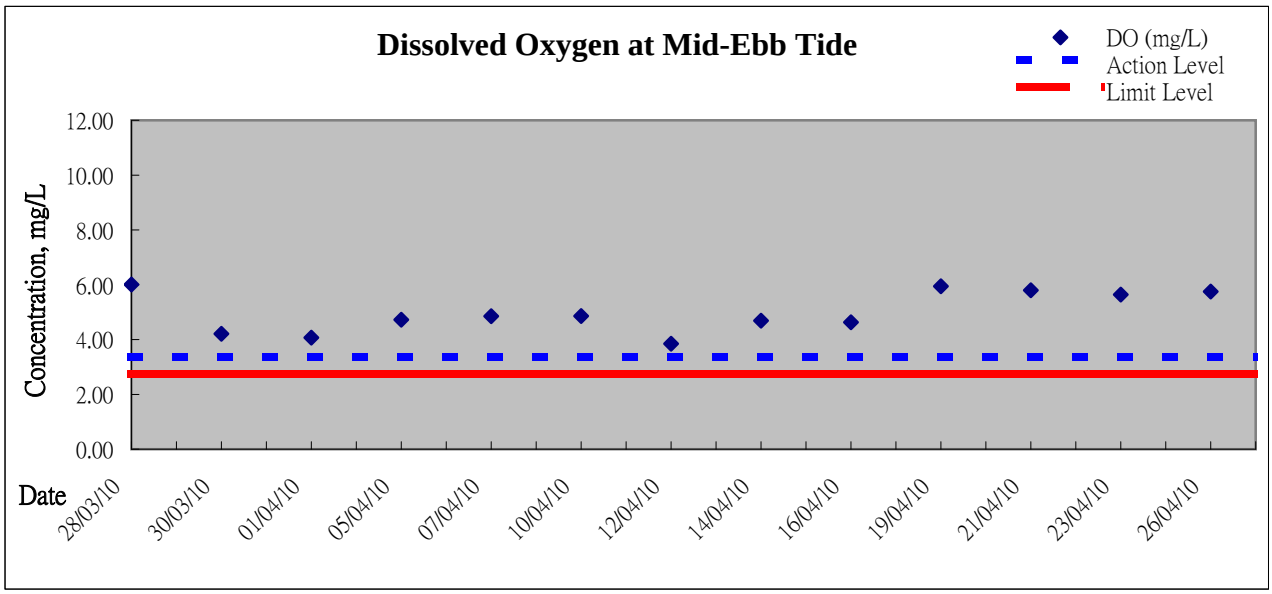
Graphic Presentation of Water Quality Result of WSD17 - Quarry Bay

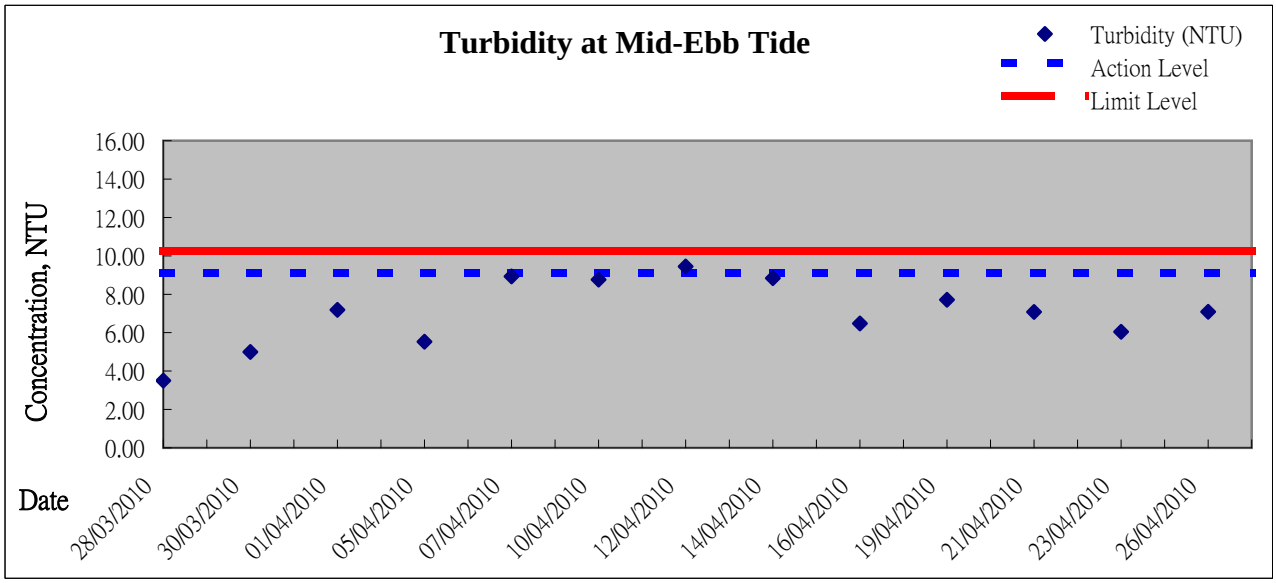


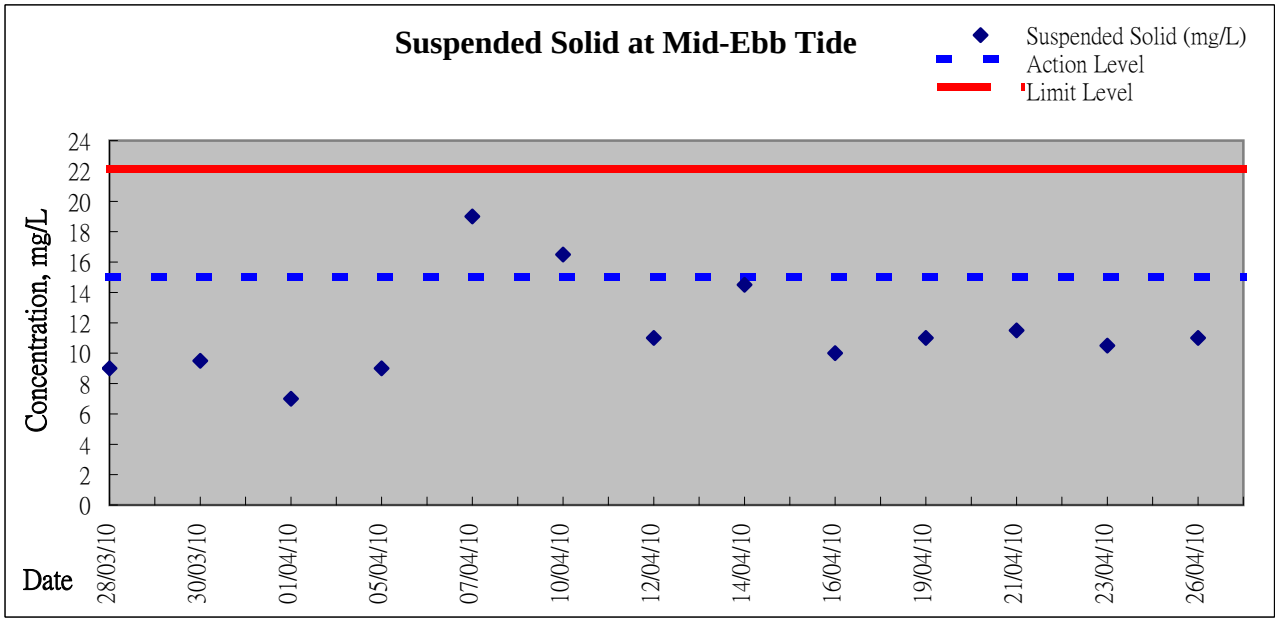




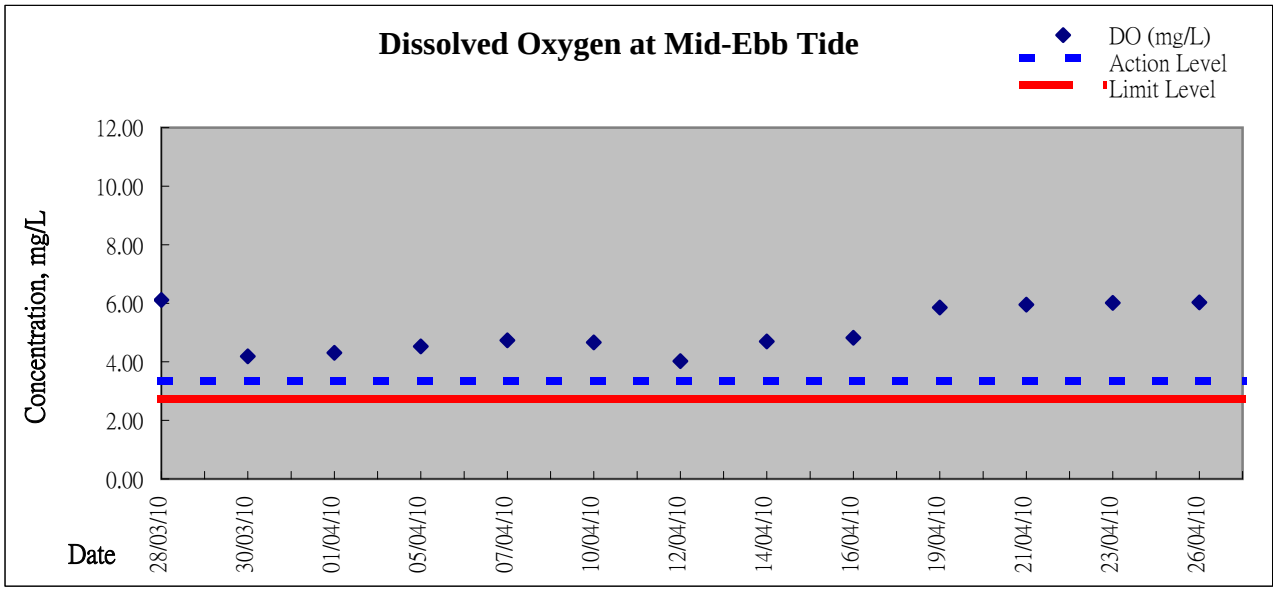
Graphic Presentation of Water Quality Result of C8 - City Garden

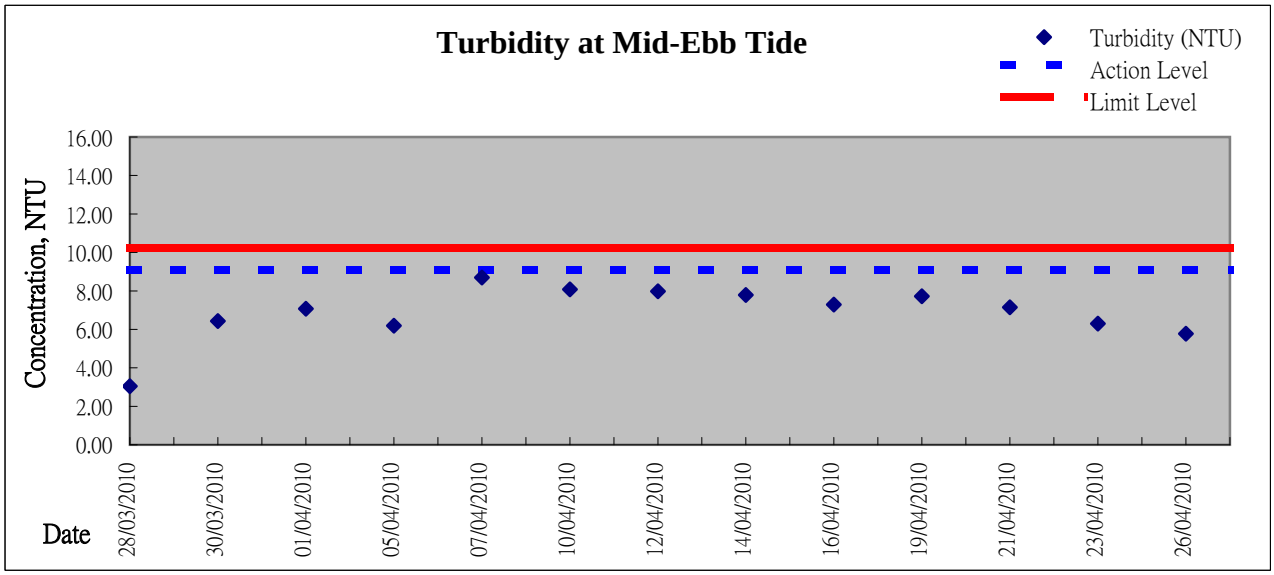


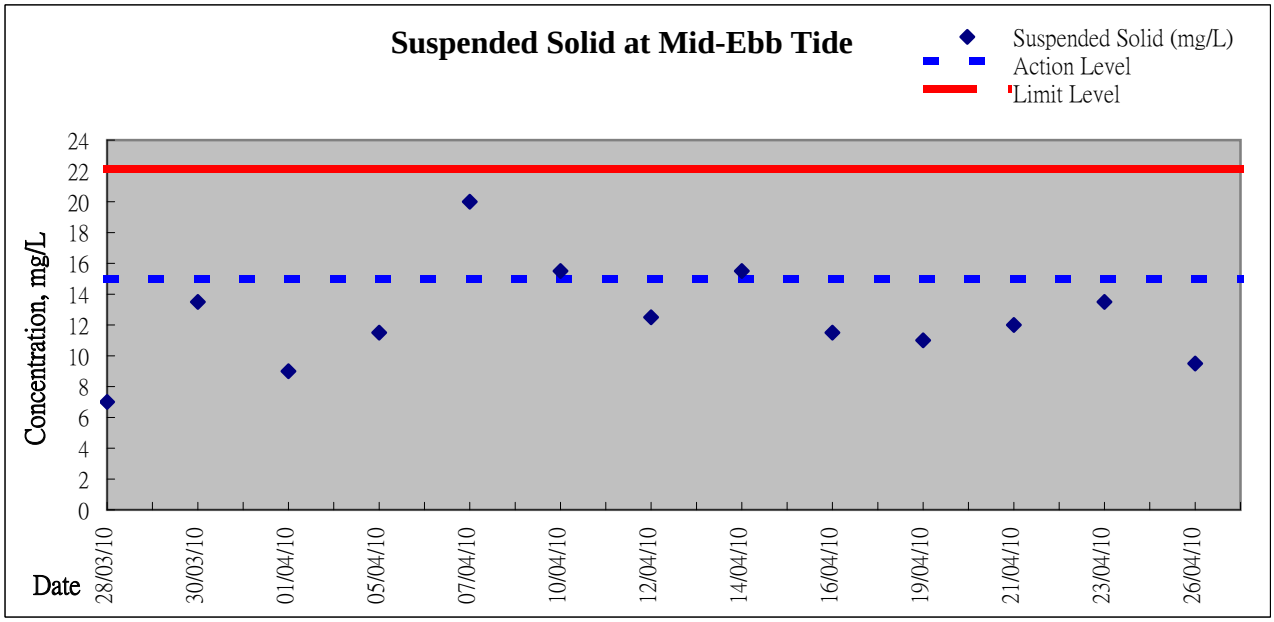




Graphic Presentation of Water Quality Result of C9 - Provident Centre







Appendix 6.1

Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 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)	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. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. 4. Identify source and investigate the cause of exceedance; 5. 5. Carry out analysis of Contractor's working procedures; 6. 6. Discuss with the IEC, Contractor and ER on remedial measures required; 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. (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. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)

Event / Action Plan for Construction Air Quality

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

Appendix 6.2

Summary for Notification of Exceedance

Ref no.	Date	Tidal	Location	Parameters (Avg.)	Measured	Action Level	Limit Level	Follow-up	
X_W2	26-Apr-10	Mid-flood	WSD17	DO (mg/L)	5.71	3.66	3.28	Possible reason:	No muddy boom observed; value is within the tolerance of the baseline water quality range
				Turbidity	6.15	8.04	9.49	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				Suspended Solid	**14.5**	13.00	14.43	Remarks / Other Obs:	No exceedance at WSD17 for the next mid-ebb monitoring. It is concluded as non-project related exceedance.

Ref no.	Date	Tidal	Location	Parameters (Unit)	Measured	Action Level	Limit Level	Follow-up action	
X_10C003	28-Mar-10	Mid-flood	C8	DO (mg/L)	5.00	3.36	2.73	Possible reason:	No muddy boom observed;
				Turbidity (NTU)	6.80	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**29**	15.00	22.13	Remarks / Other Obs:	No exceedance at C8 for the next mid-ebb monitoring on the same day. It is concluded as invalid exceedance.
X_10C004	28-Mar-10	Mid-flood	C9	DO (mg/L)	4.70	3.36	2.73	Possible reason:	No muddy boom observed; value is within the tolerance of the baseline water quality range
				Turbidity (NTU)	7.56	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**15.50**	15.00	22.13	Remarks / Other Obs:	No exceedance at C9 for the next mid-ebb monitoring on the same day. It is concluded as invalid exceedance.
X_10C005	30-Mar-10	Mid-flood	C8	DO (mg/L)	3.86	3.36	2.73	Possible reason:	No muddy boom observed; value is within the tolerance of the baseline water quality range
				Turbidity (NTU)	8.30	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**19.00**	15.00	22.13	Remarks / Other Obs:	No exceedance at C8 for the next mid-ebb monitoring on the same day. It is concluded as invalid exceedance.
X_10C006	30-Mar-10	Mid-flood	C9	DO (mg/L)	3.93	3.36	2.73	Possible reason:	No muddy boom observed;
				Turbidity (NTU)	7.20	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**24.00**	15.00	22.13	Remarks / Other Obs:	No exceedance at C9 for the next mid-ebb monitoring on the same day. It is concluded as invalid exceedance.
X_10C007	5-Apr-10	Mid-flood	C9	DO (mg/L)	4.29	3.36	2.73	Possible reason:	No muddy boom observed;
				Turbidity (NTU)	**11.10**	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**18.50**	15.00	22.13	Remarks / Other Obs:	No exceedance at C9 for the next mid-ebb monitoring on the same day. In the course of monitoring, only C9 has the exceedance in S.S. The nearest monitoring station, C8 has no exceedance recorded . It is concluded that the exceedance was the localized influence and not due to the Project.
X_10C008	10-Apr-10	Mid-flood	C9	DO (mg/L)	4.28	3.36	2.73	Possible reason:	No muddy boom observed;
				Turbidity (NTU)	**9.54**	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**15.50**	15.00	22.13	Remarks / Other Obs:	No exceedance at C9 for the next mid-ebb monitoring on the same day. In the course of monitoring, only C9 has the exceedance in S.S. The nearest monitoring station, C8 had no exceedance recorded . It is concluded that the exceedance was not due to the Project.

Ref no.	Date	Tidal	Location	Parameters (Unit)	Measured	Action Level	Limit Level	Follow-up action	
X_10C009	12-Apr-10	Mid-ebb	C8	DO (mg/L)	4.03	3.36	2.73	Possible reason:	No muddy boom observed;
				Turbidity (NTU)	**9.45**	9.10	10.25	Action taken / to be taken:	Repeat in-situ measurement and review the next consecutive data to conclude the reasoning
				SS (mg/L)	11.00	15.00	22.13	Remarks / Other Obs:	Exceedance was still occurred in the next consecutive data. The finding is marked in the Ref no. X_C10
X_10C010	12-Apr-10	Mid-flood	C8	DO (mg/L)	3.68	3.36	2.73	Possible reason:	Red tide was observed inside the screen only. No abnormal circumstance outside the silt screen
				Turbidity (NTU)	**13.55**	9.10	10.25	Action taken / to be taken:	Repeat in-situ measurement for the water samples from the inside and outside the silt screen. The range of the repeated turbidity and SS outside the silt screen are 13.0-14.0NTU and 10mg/L respectively. **Corrective action of Contractor: Conduct daily maintenance of silt screen to remove trapped disharge** **Preventive action of Contractor: Reduce the silt screen coverage to exclude the local discharge points.**
				SS (mg/L)	**24.50**	15.00	22.13	Remarks / Other Obs:	No exceedance was recorded outside the silt screen. The water quality behind the silt screen was worse than outside the silt screen. Investigation was found that unknown local discharge points enclosed by silt screen were identified. It seems that the local discharge was accumulated and trapped inside the silt screen. It is concluded as no-project related exceedance.
X_10C011	7-Apr-10	Mid-ebb	C8	DO (mg/L)	4.85	3.36	2.73	Possible reason:	No muddy boom observed;
				Turbidity (NTU)	8.93	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**19.00**	15.00	22.13	Remarks / Other Obs:	No exceedance was recorded on the next mid-flood monitoring. It is concluded as no project-related exceedance.
X_10C012	7-Apr-10	Mid-ebb	C9	DO (mg/L)	4.73	3.36	2.73	Possible reason:	No muddy boom observed;
				Turbidity (NTU)	8.70	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**20.00**	15.00	22.13	Remarks / Other Obs:	No exceedance was recorded on the next mid-flood monitoring. It is concluded as no project-related exceedance.
X_10C013	16-Apr-10	Mid-flood	C8	DO (mg/L)	5.50	3.36	2.73	Possible reason:	No muddy boom was observed during water monitoring;
				Turbidity (NTU)	**13.18**	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**19.00**	15.00	22.13	Remarks / Other Obs:	No exceedance at C8 for the next mid-ebb monitoring on the same day. It is concluded as no project-related exceedance.
X_10C014	16-Apr-10	Mid-flood	C9	DO (mg/L)	5.61	3.36	2.73	Possible reason:	No muddy boom observed during water monitoring;
				Turbidity (NTU)	**13.80**	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**25.00**	15.00	22.13	Remarks / Other Obs:	No exceedance at C9 for the next mid-ebb monitoring on the same day. It is concluded as no project-related exceedance.
X_10C015	19-Apr-10	Mid-flood	C9	DO (mg/L)	5.98	3.36	2.73	Possible reason:	No muddy boom observed during water monitoring;
				Turbidity (NTU)	**9.47**	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	13.50	15.00	22.13	Remarks / Other Obs:	No exceedance at C9 for the next mid-ebb monitoring on the same day. The nearest monitoring station, C8 has no exceedance recorded.

Ref no.	Date	Tidal	Location	Parameters (Unit)	Measured	Action Level	Limit Level	Follow-up action	
X_10C016	10-Apr-10	Mid-ebb	C8	DO (mg/L)	4.60	3.36	2.73	Possible reason:	No muddy boom observed during water monitoring;
				Turbidity (NTU)	8.20	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**16.50**	15.00	22.13	Remarks / Other Obs:	Unknown local discharge points were enclosed by silt screen. It seems that the local discharge was accumulated and trapped inside the silt screen. It is concluded as no project-related exceedance.
X_10C017	10-Apr-10	Mid-ebb	C9	DO (mg/L)	4.86	3.36	2.73	Possible reason:	No muddy boom observed during water monitoring;
				Turbidity (NTU)	8.46	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**15.50**	15.00	22.13	Remarks / Other Obs:	Unknown local discharge points were enclosed by silt screen. It seems that the local discharge was accumulated and trapped inside the silt screen. It is concluded as no project-related exceedance.
X_10C018	12-Apr-10	Mid-flood	C9	DO (mg/L)	3.85	3.36	2.73	Possible reason:	No muddy boom observed during water monitoring;
				Turbidity (NTU)	7.98	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**24.00**	15.00	22.13	Remarks / Other Obs:	Unknown local discharge points were enclosed by silt screen. It seems that the local discharge was accumulated and trapped inside the silt screen. It is concluded as no project-related exceedance.
X_10C019	14-Apr-10	Mid-ebb	C9	DO (mg/L)	3.41	3.36	2.73	Possible reason:	No muddy boom observed during water monitoring;
				Turbidity (NTU)	7.31	9.10	10.25	Action taken / to be taken:	Review the next consecutive data to conclude the reasoning
				SS (mg/L)	**15.50**	15.00	22.13	Remarks / Other Obs:	No exceedance was recorded at the nearest monitoring station, C8 during the mid-ebb and at C9 in the next mid-flood monitoring on the same day. It is concluded as no project-related exceedance.
X_10C020	26-Apr-10	Mid-flood	C8	DO (mg/L)	6.18	3.36	2.73	Possible reason:	Accumulation of unknown local discharge enclosed by silt screen
				Turbidity (NTU)	**12.43**	9.10	10.25	Action taken / to be taken:	Repeated to conduct in-situ measurement inside and outside the silt screen to conclude the reasoning;
				SS (mg/L)	**19.50**	15.00	22.13	Remarks / Other Obs:	The range of the repeated turbidity measurement inside and outside the silt screen are 10.6-11.5 and 8.51-8.76NTU respectively. No exceedance was recorded outside the silt screen. It is concluded as no project-related exceedance.
X_10C021	26-Apr-10	Mid-flood	C9	DO (mg/L)	5.68	3.36	2.73	Possible reason:	Accumulation of unknown local discharge enclosed by silt screen
				Turbidity (NTU)	**13.98**	9.10	10.25	Action taken / to be taken:	Repeated to conduct in-situ measurement inside and outside the silt screen to conclude the reasoning;
				SS (mg/L)	**26.50**	15.00	22.13	Remarks / Other Obs:	The range of the repeated turbidity measurement inside and outside the silt screen are 14.1-14.6 and 7.39-8.09NTU respectively. No exceedance was recorded outside the silt screen. It is concluded as no project-related exceedance.

Ref. No.	Date	Time	Location	Measured Noise level	Unit	Baseline Noise Level	Construction Noise Level	Limit Level	Follow-up action	
X_10N001	8-Apr-10	21:50	Causeway Bay Community Centre	72.5	Leq(5-min)	66.7	71.2	70	Possible reason:	Noisy traffic noise from Island Eastern Corridorwas noted during the noise monitoring.
									Action taken / to be taken:	Analysis of contractor's working procedure during monitoring; and review next restricted hour monitoring
									Remarks / Other Obs:	Well work practical of the dredging work was complied with the conditions under valid Construction Noise Permit no. GW-RS0119-10 during the measurement; No exceedance was recorded in the

Appendix 9.1

Complaint Log

Environmental Complaints Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
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).	1) A valid Construction Noise Permit no. GW-RS0119-10 was granted from EPD since 18th Feb. 2010 for the dredging works which carry out at area for North Point Reclamation. 2) Officer from Marine Department, Police and EPD's officer attended the scene for inspection and investigation. 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. 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. 5) No further complaints were received from Mr. Tsang in the reporting month. The complaint is considered closed.	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).	1) A valid Construction Noise Permit no. GW-RS0119-10 was granted from EPD since 18th 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. 2) Officer from Marine Department, Polic and EPD's officer attended the scene for inspection and investigation. 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	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					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. 4) No further complaints were received in the reporting month. The complaint is considered closed.	

Appendix 10.1

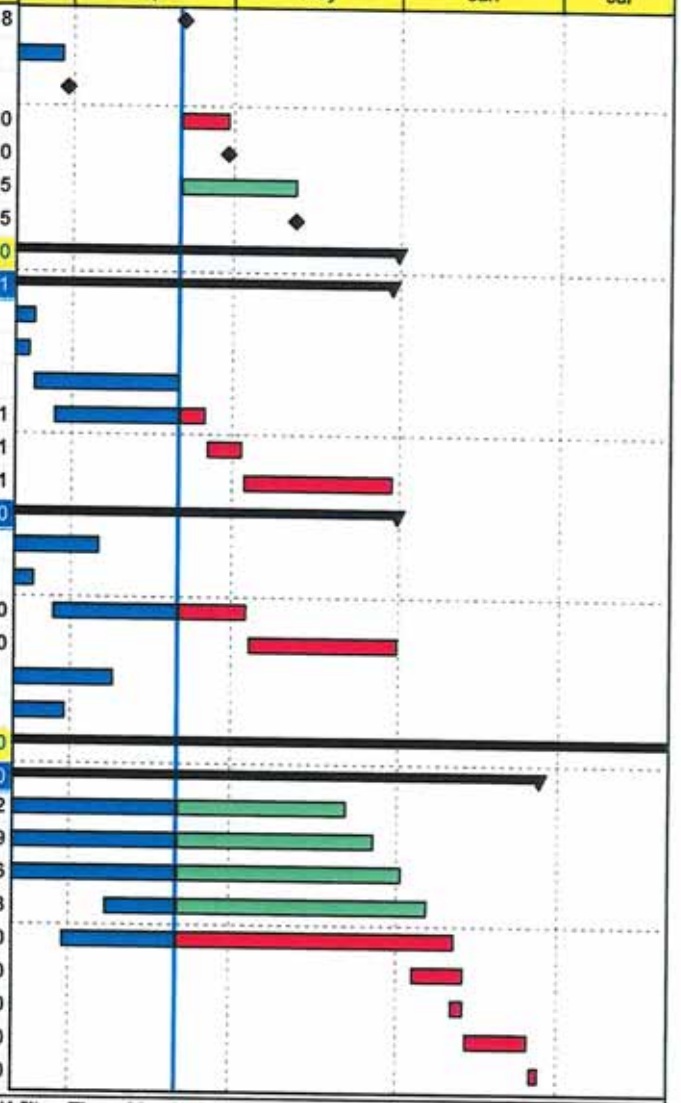
Construction Programme of Individual Contracts

Updated Works Programme upto 20Apr2010 from details programme rev

3 Month Rolling Programme

28-Apr-10 09:25

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
24300	Deliver weather protection system	0	0		21-Apr-10*	8
24940	Revised the draft environmental management plan	11	0	11-Feb-10 A	30-Mar-10 A	
25000	Submit final environmental management plan (EMP)	0	0		31-Mar-10 A	
26500	Prepare proposal for location and its area for holding pre-w	8	8	21-Apr-10	29-Apr-10	0
26600	Submit proposal for location and its area for holding pre-wc	0	0		29-Apr-10*	0
26700	Prepare detailed information on silance material (del)	18	18	21-Apr-10	12-May-10	15
26800	Submit detailed information on silance material (del)	0	0		12-May-10*	15
TEMPORARY AND CONTRACTOR DESIGN		119	41	09-Feb-10 A	31-May-10	0
TEMPORARY WORKS DESIGN		70	40	15-Mar-10 A	30-May-10	1
20000	Sub. & consent temp works dsgn for precast caisson seaw:	28	0	15-Mar-10 A	25-Mar-10 A	
20200	Sub. & cerf. temp works dsgn for facilitate the demolition of	7	0	16-Mar-10 A	24-Mar-10 A	
20300	Sub. & consent temp works dsgn for facilitate the demolitior	7	0	25-Mar-10 A	21-Apr-10 A	
20400	Temporary works design for protection & precautionary me	12	5	29-Mar-10 A	25-Apr-10	1
20500	Sub. & cerf. temp works dsgn for protection & precautionar	7	7	26-Apr-10	02-May-10	1
20600	Sub. & consent temp works dsgn for protection & precautio	28	28	03-May-10	30-May-10	1
CONTRACTOR DESIGN		111	41	09-Feb-10 A	31-May-10	0
18900	Sub. & app. E&M design for RCP	14	0	06-Mar-10 A	06-Apr-10 A	
19400	Sub. & app. road design for Harbour Height access	14	0	09-Feb-10 A	25-Mar-10 A	
20900	Design steel protection ties for IEC protection	14	10	29-Mar-10 A	03-May-10	0
21000	Sub. & app. steel protection ties for IEC protection by the E	28	28	04-May-10	31-May-10	0
21200	Sub. & app. decorative banners for special hoardings by th	28	0	10-Mar-10 A	09-Apr-10 A	
21500	Sub. & app. Community Liaison Centre by the Engineer	60	0	22-Feb-10 A	31-Mar-10 A	
PRE-CAST CAISSON SEAWALL		133	131	15-Mar-10 A	29-Aug-10	0
Package 1 of Caisson Seawall SP3-6 & 7-8 5nrs		77	68	15-Mar-10 A	27-Jun-10	0
A00400	Casting Cassion Seawall SP 3-4a (Type 2-R)(Land)	60	32	17-Mar-10 A	22-May-10	12
A00500	Casting Cassion Seawall SP 4a-4b (Type 2)(Land)	60	37	15-Mar-10 A	27-May-10	9
A00600	Casting Cassion Seawall SP 4b-5 (Type 2)(Land)	60	42	15-Mar-10 A	01-Jun-10	6
A00700	Casting Cassion Seawall SP 5-6 (Type 1-L)(Land)	60	47	08-Apr-10 A	06-Jun-10	3
A00800	Casting Cassion Seawall SP7-8 (Type 2-N)(Land)	60	52	31-Mar-10 A	11-Jun-10	0
A00900	Install BT/Bulkhead (SP3-6 & 7-8) 5nrs	10	10	04-Jun-10	13-Jun-10	0
A01000	Rolling Setup	3	3	11-Jun-10	13-Jun-10	0
A01100	Rolling caisson seawalls onto Barge (SP3-6 & 7-8) 5nrs	12	12	14-Jun-10	25-Jun-10	0
A03000	Tow Barge to HK (SP3-6 & 7-8) 5nrs	2	2	26-Jun-10	27-Jun-10	0



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone | Level Effort

TASK filter: Three Month Rolling Programme.

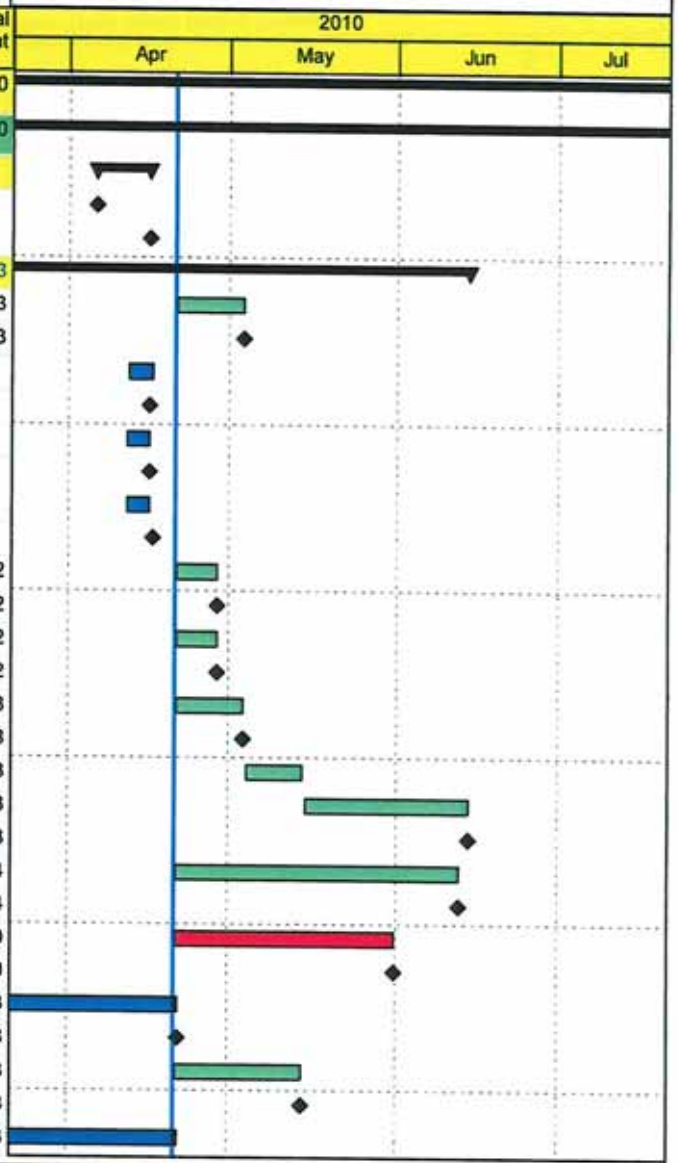
9/2

Updated Works Programme upto 20Apr2010 from details programme rev

3 Month Rolling Programme

28-Apr-10 09:25

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
Updated Works Programme upto 20Apr2010 f		182	131	18-Dec-09 A	29-Aug-10	0
PRELIMINARIES		182	131	18-Dec-09 A	29-Aug-10	0
COMPLETION SECTION OF WORKS		10	0	06-Apr-10 A	16-Apr-10 A	
K11300	Completion Section IV of Works	0	0		06-Apr-10 A	
K11500	Completion Section VI of Works	0	0		16-Apr-10 A	
GENERAL SUBMISSION		78	45	18-Dec-09 A	14-Jun-10	13
22980	Prepare proposed storage compartment	10	10	21-Apr-10	03-May-10	23
23000	Submit storage compartment	0	0		03-May-10*	23
23080	Prepare proposed drinking water facilities	5	0	12-Apr-10 A	16-Apr-10 A	
23100	Submit drinking water facilities	0	0		16-Apr-10 A	
23180	Prepare proposed toilet facilities	7	0	12-Apr-10 A	16-Apr-10 A	
23200	Submit toilet facilities	0	0		16-Apr-10 A	
23280	Prepare proposed hand-wash facilities	7	0	12-Apr-10 A	16-Apr-10 A	
23300	Submit hand-wash facilities	0	0		16-Apr-10 A	
23380	Prepare proposed showering facilities	7	7	21-Apr-10	28-Apr-10	2
23400	Submit showering facilities	0	0		28-Apr-10*	2
23480	Prepare proposed rubbish bins	7	7	21-Apr-10	28-Apr-10	2
23500	Submit rubbish bins	0	0		28-Apr-10*	2
23580	Prepare security system for the site	10	10	21-Apr-10	03-May-10	13
23600	Submit security system for the site	0	0		03-May-10*	13
23620	Approval of securtiy system	10	10	04-May-10	14-May-10	13
23680	Setting up of security system	25	25	15-May-10	14-Jun-10	13
23700	Complete setting up of security system	0	0		14-Jun-10*	13
23780	Prepare risk resulting from working in hot weather	44	44	21-Apr-10	12-Jun-10	14
23800	Submit Risk resulting from working in hot weather	0	0		12-Jun-10*	14
23980	Prepare propose each release of construction video	33	33	21-Apr-10	31-May-10	0
24000	Submit propose each release of construction video	0	0		31-May-10*	0
24080	Prepare video scripts for each release of video	78	1	18-Dec-09 A	21-Apr-10	8
24100	Submit video scripts for each release of video	0	0		21-Apr-10*	8
24180	Prepare weather protection scheme	20	20	21-Apr-10	14-May-10	13
24200	Submit weather protection scheme	0	0		14-May-10*	13
24280	Prepare deliver weather protection system	44	1	18-Dec-09 A	21-Apr-10	8

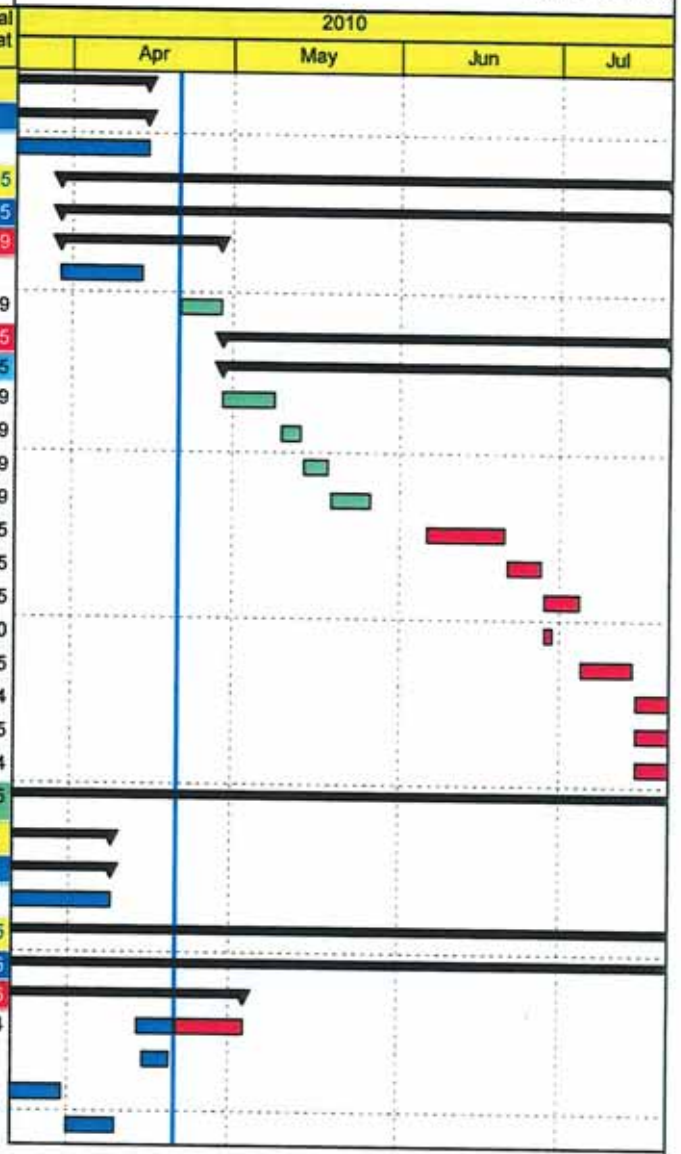


Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone | Level Effort

TASK filter: Three Month Rolling Programme.

Updated Works Programme upto 20Apr2010 from details programme rev | 3 Month Rolling Programme | 28-Apr-10 09:25

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
	GEOTECHNICAL INSTRUMENTATION AND MONITORING WC	14	0	09-Mar-10 A	15-Apr-10 A	
	PORTION NPR1	14	0	09-Mar-10 A	15-Apr-10 A	
10800	Sub. & app. site investigation report by Engineer	14	0	09-Mar-10 A	15-Apr-10 A	
	SEAWALLS AND RECLAMATION WORKS	92	92	30-Mar-10 A	21-Jul-10	-5
	PORTION NPR1	92	92	30-Mar-10 A	21-Jul-10	-5
	DREDGING	10	7	30-Mar-10 A	28-Apr-10	19
11300	Dredging in Portion NPR1 (37066m3)	10	0	30-Mar-10 A	14-Apr-10 A	
11320	Prepare & Submit Dredging Report	7	7	21-Apr-10	28-Apr-10	19
	SEAWALL CONSTRUCTION	84	84	29-Apr-10	21-Jul-10	-5
	Package 1 SP3-6 & 7-8 5nrs	84	84	29-Apr-10	21-Jul-10	-5
11900	Remove existing seawall berm stone	8	8	29-Apr-10	08-May-10	19
12000	Laying geotextile Type A	4	4	10-May-10	13-May-10	19
12100	Seawall foundation rockfill grade 400 (13071m3)	4	4	14-May-10	18-May-10	19
12900	Rockfill slope survey checking	6	6	19-May-10	26-May-10	19
12910	Levelling Stone & Toe Block SP 3-6	15	15	06-Jun-10	20-Jun-10	-5
12920	Levelling Stone & Toe Block SP 6-7	7	7	21-Jun-10	27-Jun-10	-5
12930	Levelling Stone & Toe Block SP 7-8	7	7	28-Jun-10	04-Jul-10	-5
12940	Float Out caisson seawalls (SP3-6 & 7-8) 5nrs	2	2	28-Jun-10	29-Jun-10	0
12950	Install caisson seawall (SP 3 to 6 & 7 to 8) 5 nos.	10	10	05-Jul-10	14-Jul-10	-5
13800	Rockfill grade 200 inside caisson seawall	6	6	15-Jul-10	21-Jul-10	-4
13810	Install Seawall Blocks SP6-7	7	7	15-Jul-10	21-Jul-10	-5
13820	Geotextile type A & filter layer below -6.65mPD	6	6	15-Jul-10	21-Jul-10	-4
	SECTION 1A OF WORKS (230 DAYS)	137	101	09-Mar-10 A	30-Jul-10	5
	GEOTECHNICAL INSTRUMENTATION AND MONITORING WC	12	0	09-Mar-10 A	09-Apr-10 A	
	PORTION NPR1A	12	0	09-Mar-10 A	09-Apr-10 A	
10400	Sub. & app. site investigation report by Engineer	12	0	09-Mar-10 A	09-Apr-10 A	
	SEAWALLS AND RECLAMATION WORKS	137	101	16-Mar-10 A	30-Jul-10	5
	PORTION NPR1A	137	101	16-Mar-10 A	30-Jul-10	5
	DREDGING	58	13	16-Mar-10 A	03-May-10	-6
10300	Remove of existing Causeway Bay East breakwater (4605	9	10	14-Apr-10 A	03-May-10	-4
10310	Suspension of removal of existing Causeway Bay East bre	7	0	15-Apr-10 A	20-Apr-10 A	
11100	Dredging in Portion NPR1A (10,200m3)	7	0	16-Mar-10 A	31-Mar-10 A	
11200	Prepare & Submit Dredging Report	7	0	01-Apr-10 A	10-Apr-10 A	



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone | Level Effort

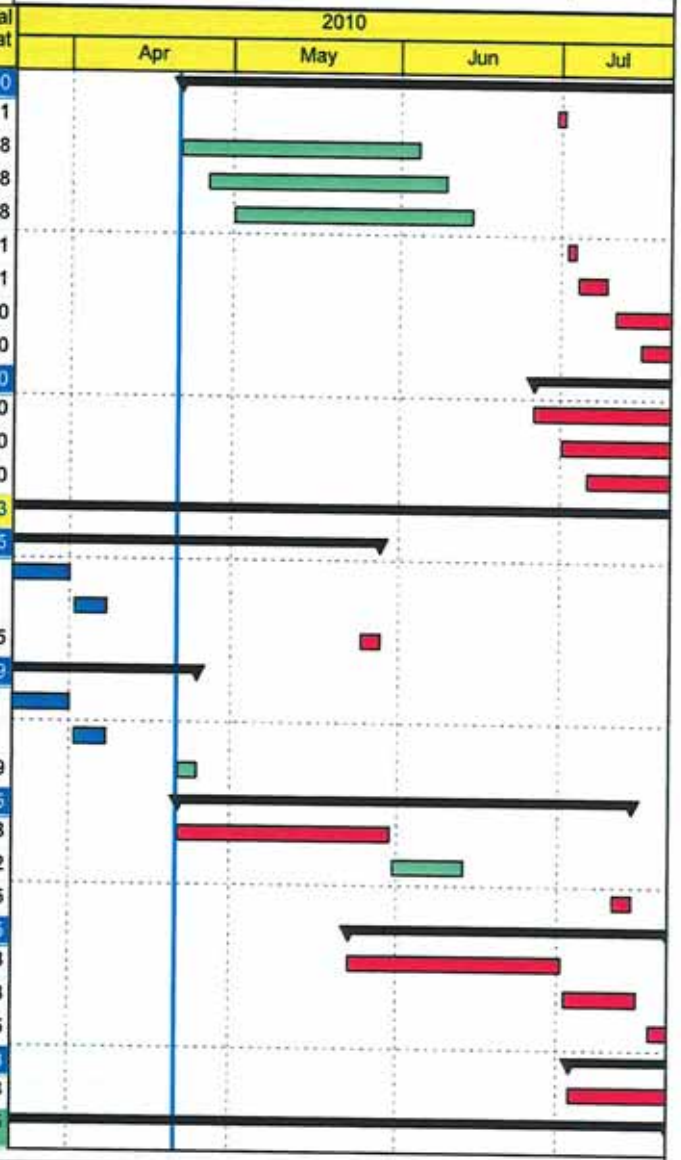
TASK filter: Three Month Rolling Programme.

Updated Works Programme upto 20Apr2010 from details programme rev

3 Month Rolling Programme

28-Apr-10 09:25

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
	Package 2 of Caission Seawall SP9-10, 11a-14 & 15-16 6nrs	131	131	21-Apr-10	29-Aug-10	0
A03500	Tow Barge Back to yard	2	2	30-Jun-10	01-Jul-10	1
A03600	Casting Cassion Seawall SP 9-10 (Type 1-N)(Land)	45	45	21-Apr-10	04-Jun-10	18
A03700	Casting Cassion Seawall SP12-13 (Type 1)(Land)	45	45	26-Apr-10	09-Jun-10	18
A03800	Casting Cassion Seawall SP 13-14 (Type 1-L)(Land)	45	45	01-May-10	14-Jun-10	18
A03900	Rolling setpup	2	2	02-Jul-10	03-Jul-10	1
A04000	Rolling Caisson seawalls onto Barge (SP9-10, 12-14) 3nrs	6	6	04-Jul-10	09-Jul-10	1
A04100	Casting Cassion Seawall SP 11a-11b (Type 2-R)(Barge)	45	45	11-Jul-10	24-Aug-10	0
A04200	Casting Cassion Seawall SP 11b-12 (Type 2)(Barge)	45	45	16-Jul-10	29-Aug-10	0
	Package 3 of Caisson Seawall SP16-22 6nrs	55	55	26-Jun-10	19-Aug-10	0
A05100	Casting Cassion Seawall SP 16-17 (Type 1)(Land)	45	45	26-Jun-10	09-Aug-10	0
A05200	Casting Cassion Seawall SP17-18 (Type 1AR)(Land)	45	45	01-Jul-10	14-Aug-10	0
A05300	Casting Cassion Seawall SP 18-19 (Type 1)(Land)	45	45	06-Jul-10	19-Aug-10	0
	PRE-CAST SEAWALL BLOCK	164	113	15-Mar-10 A	11-Aug-10	-3
	1st Barge of Seawall Block SP1-2	89	4	15-Mar-10 A	28-May-10	-5
A20100	Casting Seawall Block SP1-2 49nrs	44	0	15-Mar-10 A	01-Apr-10 A	
A20110	Curing Seawall Block SP1-2	14	0	02-Apr-10 A	08-Apr-10 A	
A20120	Transport Seawall Block SP1-2 to Site	4	4	25-May-10	28-May-10	-5
	2nd Barge of Seawall Block SP2-3	73	4	15-Mar-10 A	24-Apr-10	19
A20200	Casting Seawall Block SP2-3 105nrs	48	0	15-Mar-10 A	01-Apr-10 A	
A20210	Curing Seawall Block SP2-3	14	0	02-Apr-10 A	08-Apr-10 A	
A20220	Transport Seawall block SP2-3 to Site	4	4	21-Apr-10	24-Apr-10	19
	3rd Barge of Seawall Block SP6-7	85	85	21-Apr-10	14-Jul-10	-5
A20300	Casting Seawall Block SP6-7 137nrs	40	40	21-Apr-10	30-May-10	-3
A20310	Curing Seawall Block SP6-7	14	14	31-May-10	13-Jun-10	22
A20320	Transport seawll block SP6-7 to site	4	4	11-Jul-10	14-Jul-10	-5
	4th Barge of Seawall Block SP8-9	60	60	23-May-10	21-Jul-10	-5
A20400	Casting Seawall Block SP8-9 185nrs	40	40	23-May-10	01-Jul-10	-3
A20410	Curing Seawall Block SP8-9	14	14	02-Jul-10	15-Jul-10	-3
A20420	Transport seawall block SP8-9 to site	4	4	18-Jul-10	21-Jul-10	-5
	5th Barge of Seawall Block SP10-11a	40	40	03-Jul-10	11-Aug-10	-3
A20500	Casting Seawall Block SP10-11a 103nrs	40	40	03-Jul-10	11-Aug-10	-3
	SECTION 1 OF WORKS (290 DAYS)	122	92	09-Mar-10 A	21-Jul-10	-5



Actual Work | Remaining Work | Critical Remaining Work | Milestone | Summary | Level Effort

TASK filter: Three Month Rolling Programme.

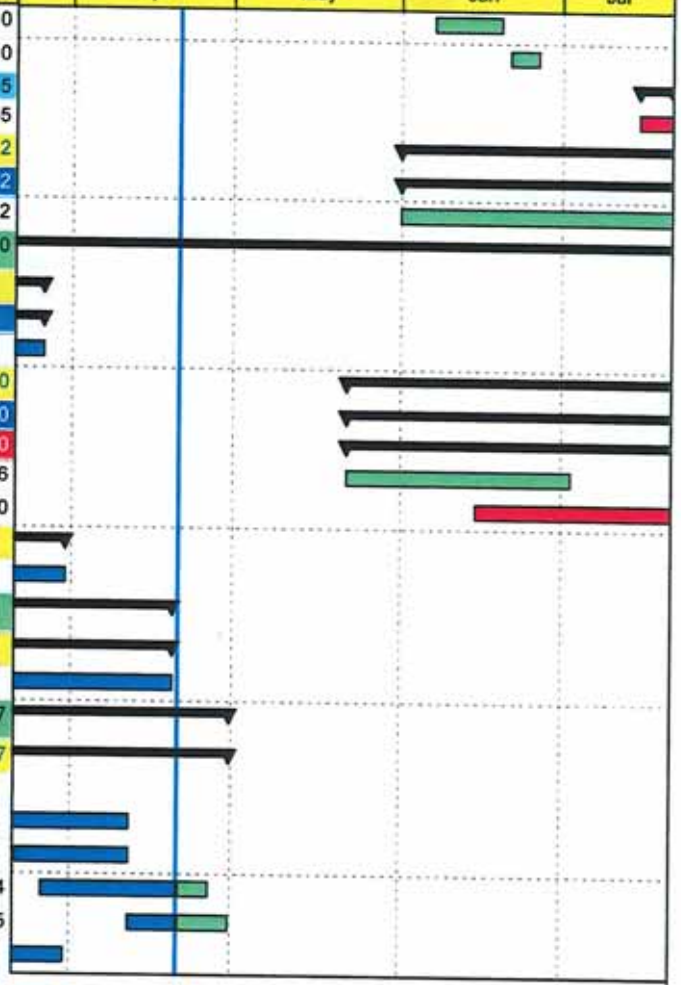
9/3

Updated Works Programme upto 20Apr2010 from details programme rev

3 Month Rolling Programme

28-Apr-10 09:25

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
12400	Seawall foundation rockfill grade 400 (41082m3)	11	11	07-Jun-10	19-Jun-10	10
13100	Rockfill slope survey checking	6	6	21-Jun-10	26-Jun-10	10
	Package 2 SP9-10, 11a-14 & 15-16 6nrs	7	7	15-Jul-10	21-Jul-10	-5
17210	Levelling Stone & Toe Block SP 8-9	7	7	15-Jul-10	21-Jul-10	-5
	DRAINAGE WORKS	60	60	01-Jun-10	30-Jul-10	2
	PORTION NPR2	60	60	01-Jun-10	30-Jul-10	2
18290	Casting blockwork wall for open channel T	60	60	01-Jun-10*	30-Jul-10	2
	SECTION 3 OF WORKS (600 DAYS)	127	80	01-Mar-10 A	25-Aug-10	0
	GEOTECHNICAL INSTRUMENTATION AND MONITORING WC	14	0	09-Mar-10 A	27-Mar-10 A	
	PORTION NPR3	14	0	09-Mar-10 A	27-Mar-10 A	
10600	Sub. & app. site investigation report by Engineer	14	0	09-Mar-10 A	27-Mar-10 A	
	SEAWALLS AND RECLAMATION WORKS	80	80	22-May-10	25-Aug-10	0
	PORTION NPR3	80	80	22-May-10	25-Aug-10	0
	DREDGING	80	80	22-May-10	25-Aug-10	0
11428	Dredging in Portion NPR3 (98844m3)	34	34	22-May-10	02-Jul-10	46
11430	Protection & Precautionary measures for Existing Island Ea	60	60	15-Jun-10	25-Aug-10	0
	COMMUNITY LIAISON CENTRE	90	0	01-Mar-10 A	31-Mar-10 A	
21600	Construct Community Liaison Centre	90	0	01-Mar-10 A	31-Mar-10 A	
	SECTION 4 OF WORKS (110 DAYS)	15	0	16-Mar-10 A	20-Apr-10 A	
	WORKS IN PORTION NPR4	15	0	16-Mar-10 A	20-Apr-10 A	
18720	E&M works at NPR4	15	0	16-Mar-10 A	20-Apr-10 A	
	SECTION 6 OF WORKS (120 DAYS)	64	10	23-Feb-10 A	30-Apr-10	7
	WORKS IN PORTIONS NPR5B,NPR5C,NPR5D AND NPR5E	64	10	23-Feb-10 A	30-Apr-10	7
19260	5th barge od delivery of concrete blocks 69nrs	1	0	21-Mar-10 A	21-Mar-10 A	
19500	Install concrete block for special site hoarding	28	0	23-Feb-10 A	12-Apr-10 A	
19600	Erection steel column	14	0	22-Mar-10 A	12-Apr-10 A	
19650	Erection noise absorptive panel	14	5	27-Mar-10 A	26-Apr-10*	4
19700	Exterior finish of decorative panel	5	9	12-Apr-10 A	30-Apr-10*	5
25600	Construct new access for Harbour Height	11	0	15-Mar-10 A	31-Mar-10 A	



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone | Level Effort

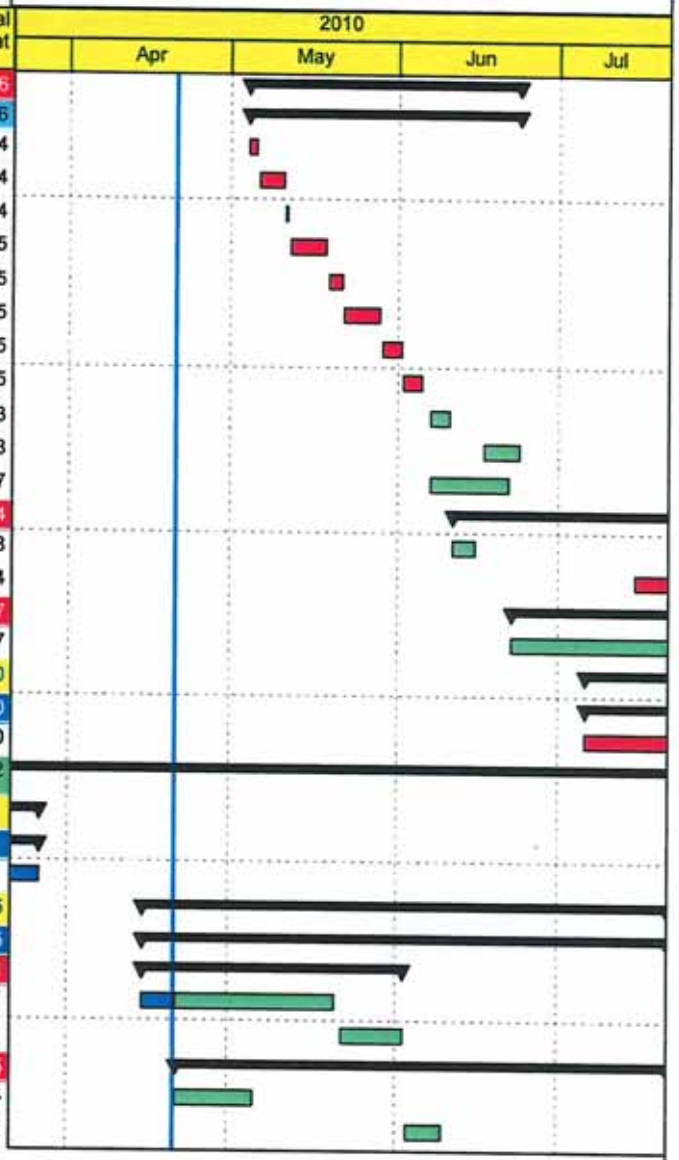
TASK filter: Three Month Rolling Programme.

Updated Works Programme upto 20Apr2010 from details programme rev

3 Month Rolling Programme

28-Apr-10 09:25

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
	SEAWALL CONSTRUCTION	51	51	04-May-10	23-Jun-10	16
	Package 1	51	51	04-May-10	23-Jun-10	16
11700	Laying geotextile Type A	2	2	04-May-10	05-May-10	-4
11800	Seawall foundation rockfill grade 400 (3734m3)	4	4	06-May-10	10-May-10	-4
12800	Rockfill Slope survery checking	1	1	11-May-10	11-May-10	-4
12810	Levelling Stone & Toe Block SP 2-3	7	7	12-May-10	18-May-10	-5
12820	Install Seawall Blocks SP 2-3 (-7.5mPD to -5.3mPD)	3	3	19-May-10	21-May-10	-5
12830	Levelling Stone & Toe Block SP 1-2	7	7	22-May-10	28-May-10	-5
12840	Install Seawall Blocks SP 1-2	4	4	29-May-10	01-Jun-10	-5
12850	Install Seawall Blocks SP 2-3 (-3.95mPD to +0.1mPD)	4	4	02-Jun-10	05-Jun-10	-5
12860	Geotextile type A & filter layer below -6.65mPD	4	4	07-Jun-10	10-Jun-10	13
15160	Rockfill type A, geotextile type A & filter layer above -6.65m	6	6	17-Jun-10	23-Jun-10	13
15170	Seawall foundation 0.5T amour and filter layer below -6.65	12	12	07-Jun-10	21-Jun-10	7
	RECLAMATION	41	41	11-Jun-10	30-Jul-10	-4
15300	Reclamation upto -6.65mPD	4	4	11-Jun-10	15-Jun-10	13
15500	Reclamation upto finish level (27000m3)	14	14	15-Jul-10	30-Jul-10	-4
	CONSTRUCT CAUSEWAY BAY EAST BREAKWATER	30	30	22-Jun-10	27-Jul-10	7
16100	Construct Causeway Bay East breakwater	30	30	22-Jun-10	27-Jul-10	7
	COPINGS	18	18	06-Jul-10	26-Jul-10	0
	PORTION NPR1A	18	18	06-Jul-10	26-Jul-10	0
15700	Mass concrete copings (2 bays)	18	18	06-Jul-10	26-Jul-10	0
	SECTION 2 OF WORKS (470 DAYS)	131	101	09-Mar-10 A	30-Jul-10	2
	GEOTECHNICAL INSTRUMENTATION AND MONITORING WC	14	0	09-Mar-10 A	27-Mar-10 A	
	PORTION NPR2	14	0	09-Mar-10 A	27-Mar-10 A	
10500	Sub. & app. site investigation report by Engineer	14	0	09-Mar-10 A	27-Mar-10 A	
	SEAWALLS AND RECLAMATION WORKS	92	92	15-Apr-10 A	21-Jul-10	-5
	PORTION NPR2	92	92	15-Apr-10 A	21-Jul-10	-5
	DREDGING	35	35	15-Apr-10 A	02-Jun-10	11
11400	Dredging in Portion NPR2 (86488m3)	25	25	15-Apr-10 A	20-May-10	11
11420	Prepare and submit Dredging Report	10	10	22-May-10	02-Jun-10	11
	SEAWALL CONSTRUCTION	92	92	21-Apr-10	21-Jul-10	-5
12200	Remove existing seawall berm stone	12	12	21-Apr-10	05-May-10	24
12300	Laying geotextile Type A	6	6	03-Jun-10	09-Jun-10	11



Actual Work | Critical Remaining Work | Summary

Remaining Work | Milestone | Level Effort

TASK filter: Three Month Rolling Programme.

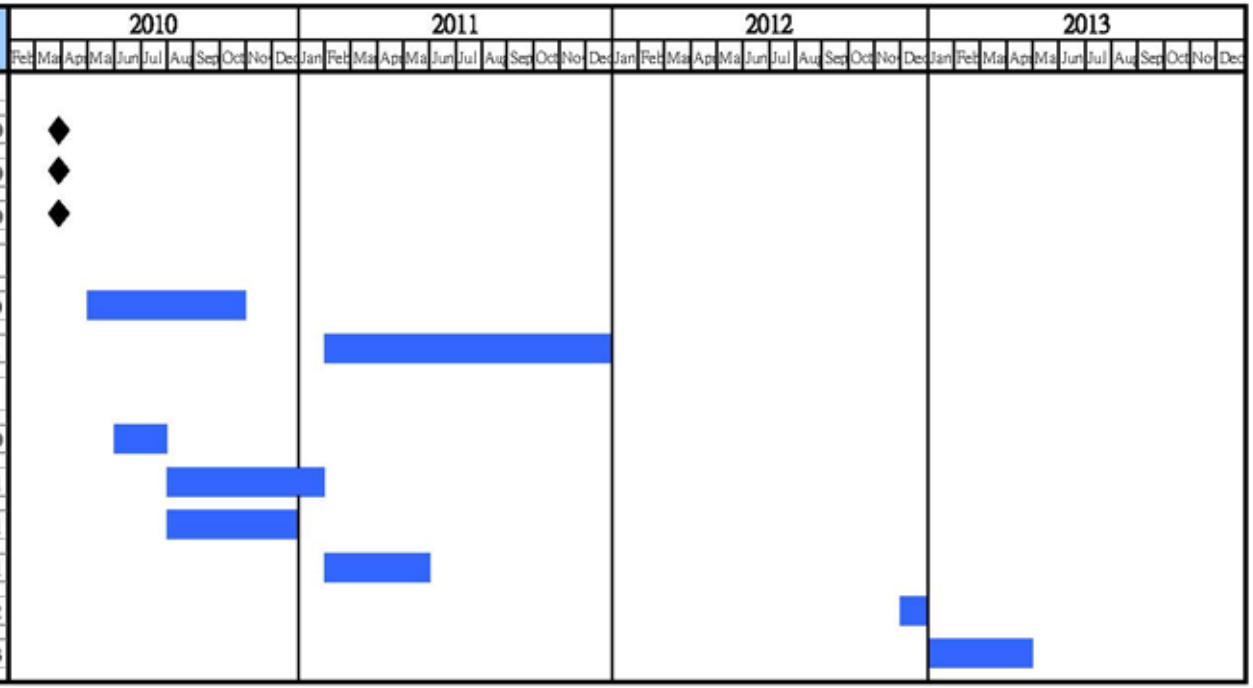
9/4

Contract No. HK/2009/01

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

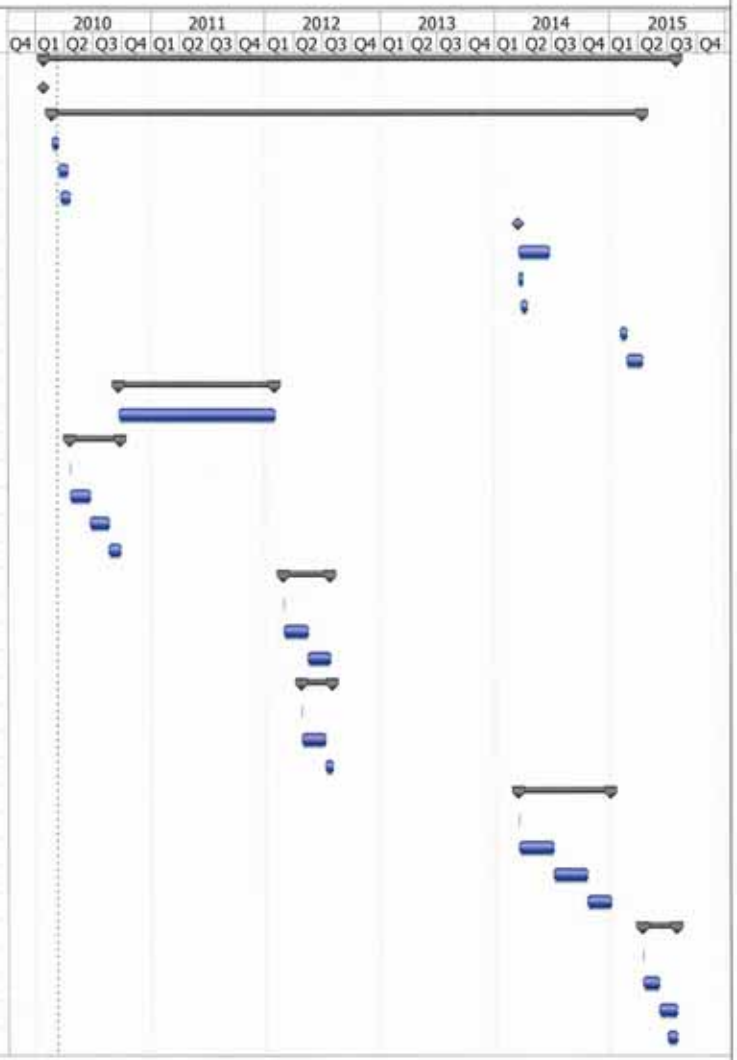
Working Programme for Marine Works (Dredging and Backfilling)

ACTIVITY	START	FINISH
Submissions before Works Commencement		
Submit silt curtain deployment plan	31/3/10	31/3/10
Submit silt screen deployment plan	31/3/10	31/3/10
Submit measures to mitigate noise impact	31/3/10	31/3/10
Cross Harbour Watermains from WCN to TST (DP6)		
Trench dredging for marine watermains installation	29/4/10	28/10/10
Backfilling for watermain	28/1/11	14/12/11
Reclamation Works at HKCEC Water Channel (DP3)		
Dredging at HKCEC Water Channel (Western Part)	1/6/10	1/8/10
Backfilling to +3.5mPD (Western Part)	17/8/10	6/2/11
Dredging at HKCEC Water Channel (Middle Part)	2/8/10	6/1/11
Backfilling to +3.5mPD (Middle Part)	21/2/11	1/6/11
Dredging at HKCEC Water Channel (Eastern Part)	1/12/12	31/12/12
Backfilling to +3.5mPD (Eastern Part)	16/1/13	30/4/13



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

ID	Task Name	Duration	Start
1	**HK/2009/02-Marine & Reclamation Works**	**2008 d**	**Thu 28/1/10**
2	Contract Commencement	0 d	Thu 28/1/10
3	**General**	**1879 d**	**Mon 22/2/10**
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 permanet seawall construction	50 d	Wed 25/2/15
13	**Submarine Outfall**	**500 d**	**Tue 21/9/10**
14	Dredging, Laying and Backfilling of Submarine Outfall Pipe at Sea	500 d	Tue 21/9/10
15	**Phase 1 - WCR1**	**158 d**	**Wed 21/4/10**
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	**Phase 2 - WCR2**	**149 d**	**Thu 1/3/12**
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	**Phase 3 - TWCR4 & WCR4**	**98 d**	**Sat 28/4/12**
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	**Phase 4 - WCR3**	**294 d**	**Tue 18/3/14**
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	**Phasee 5 - Construct Permanent Seawall Blocks along curved coastline & Remove TWCR4**	**105 d**	**Wed 15/4/15**
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 Programm
Date: Tue 9/3/10

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