CONTRACT NO: HK/2011/07

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

ENVIRONMENTAL PERMIT NO. EP-356/2009, FURTHER EVIRONMENTAL PERMIT NOS. FEP-01/356/2009, FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009 AND FEP-05/356/2009

QUARTERLY ENVIRONMENTAL MONITORING AND AUDIT REPORT

- JUNE 2012 TO AUGUST 2012 -

CLIENTS:

Civil Engineering and Development Department

and

Highways Department

PREPARED BY:

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CHECKED BY:

Raymond Dai
Environmental Team Leader

DATE:

27 September 2012

ENVIRON

Ref.: AACWBIECEM00_0_3220L.12 27 September 2012

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: Wan Chai Development Phase II and Central-Wan Chai Bypass Quarterly Environmental Monitoring and Audit Report (June to August 2012) for EP-356/2009, FEP-01/356/2009, FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009 and FEP-05/356/2009

Reference is made to the Environmental Team's submission of the Quarterly Environmental Monitoring and Audit (EM&A) Report for June to August 2012 dated 27 September 2012.

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

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

Yours sincerely,

David Yeung
Independent Environmental Checker

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 Quarterly Environmental Monitoring and Audit (EM&A) Report – June 2012 to August 2012 prepared for the Project of Wan Chai Development Phase II and Central-Wanchai Bypass under Environmental Permit no. EP-356/2009 and Further Environmental permit nos. FEP-01/356/2009, FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009 and FEP-05/356/2009. This report presents the environmental monitoring and audit findings and information during the period from June 2012 to August 2012. The cut-off date of reporting is at 27th of each reporting period.

Construction Activities for the Reported Period

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

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

June 2012	July 2012	August 2012
• The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 and the FEP-01/356/2009 was under application of surrender in this reporting period.	• The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 and the FEP-01/356/2009 was under application of surrender in this reporting period.	• The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 and the FEP-01/356/2009 was under application of surrender in this reporting period.

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

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

June 2012	July 2012	August 2012
Marine Works (at Wan Chai) • Installation of sheet pile water channel for cooling water intake at Dome Promenade between CH170 and Ch220 • Rockfilling for rock bund at HKCEC Water Channel from CH220 to Ch230 • Reclamation of HKECE3W within HKCEC Water Channel • Rock Armour protection to the seawall at Wan Chai Landfall in Zone B1-3 • Preparation works for demolition of existing staircase Cross-Harbour Watermains Installation (CHA & CHB) and	Marine Works (at Wan Chai) • Rockfilling for rock bund across HKCEC Water Channel from Ch220 to Ch230 • Reclamation of HKCEC3W within HKCEC Water Channel • Installation of pipe pile wall for demolition of existing seawall at Expo Drive East Cross-Harbour Watermains Installation (CHA & CHB) and Marine Works (at TST) • Rockfilling and rock protection to cross-harbour watermains • Removal of existing seawall at TST seashore for installation of cross harbour watermains (CHA) and (CHB) • Installation of cross-harbour	Marine Works (at Wan Chai) • Rockfilling for rock bund across HKCEC Water Channel from Ch220 to Ch230 • Reclamation of HKCEC3W within HKCEC Water Channel • Installation of pipe pile wall for demolition of existing seawall at Expo Drive East • Demolition of Wan Chai West Ferry Pier Cross-Harbour Watermains Installation (CHA & CHB) and Marine Works (at TST) • Rockfilling and rock protection to cross-harbour watermains • Installation of cross-harbour watermains No. A18 & B18 Fresh Watermains, Cooling

June 2012	July 2012	August 2012
Marine Works (at TST) • Rockfilling and rock protection to cross-harbour watermians • Trench excavation, installation of shoring system and trimming obstructions (mini-piles) for a 1000 dia. cross harbout watermains (CHB) along the pipe pile wall at TST seashore • Trench excavation and installation of shoring system for a 1000 dia. cross harbour watermains (CHA) along the pipe pile wall at TST seashore • Removal of existing seawall at TST seashore for installation of cross harbour watermains (CHA) and (CHB) Fresh Watermains, Cooling Watermains and Salt Watermains (On Land) • Mainlaying works at ZoneB1-5A, B2-1, B4-3, B5-1(Switch Room), B5-3(Switch Room), A1-1, A1-3, A1-3A, A1-3B, A202, A3-3, A3-4B, A3-5B, A3-5B, A4-1 and A4-2A • Mainlaying works and subsequent reinstatement works in Zone b4-4 • Mainlaying works at Zone B4-3 • Trench excavation for cable & G.I. Ducting works at Zone B5-1A, B5-1(Switch Room) and B5-3(Switch Room) • Gate valves connection works for intake and discharge cooling mains of Shui On Centre at Zone 2-2 • Heading No. H7 and H6A (mainlaying works by trenchless method) • Excavation for jacking pit for pipe laying works by heading method along Convention Avenue at Zone A1-3B was completed. Heading No. H6C • Mainlaying and chamber	watermains No. A18 & B18 Fresh Watermains, Cooling Watermains and Salt Watermains (On Land) • Mainlaying works at Zone B1-5A, B2-1, B4-3, B4-1A, B5-1, B5-3, A1-1, A1-2, A1-3A, A1-3B, A2-2, A3-4B, A3-5B, A4-2A and C1-10 • A combined TTA at Convention Avenue in Zone A1-1 and A1-2 • Trench excavation for cable ducting works at Zone B5-1 and B5-3 • Pipe laying works at Heading No. H7 • Heading No. H6a, H6b and H6c • Mainlaying and chamber construction works at the traffic island near junction of • Convention Avenue and Fenwick Pier Street was currently in progress. • Mainlaying works at Expo Drive East in Zone C1-10 • Pipe laying woks and chamber construction for a 1000 dia. Watermains (CHE) at Salisbury Garden • Mainlaying works including cooling mains and cross harbour watermains across CWB section within HKCEC Water Channel	Watermains and Salt Watermains (On Land) • Mainlaying works at Zone B1-5A, B2-1, B3-1, B4-3, B4-1A, B5-1(Switch Room), B5-3(Switch Room), A1-1, A1-2, A1-3B, A2-2, A3-2A, A3-4B, A3-5B and A4-2A • The reinstatement of one carriageway at Zone B2-1 Mainlaying Works at Zone B3-1 of Expo Drive Central • Breakup of concrete surround and trimming of 1 no. existing intake and 2 no. existing discharge pipe at Zone A1-1 and A1-2 • Pipe laying works at Heading No. H7 • Heading No. H6c (Mainlaying works by trenchless method) • Mainlaying and chamber construction works at the traffic island near junction of Convention Avenue and Fenwick Pier Street • Mainlaying works at Zone A3-2A of Fenwick Pier Street • Mainlaying works at Expo Drive East in Zone C1-10 • Mainlaying Works for a 1000 dia. Watermains (CHE) at Salisbury Garden • Reinstatement Works at Salisbury Garden • Pipe Laying works including 9 nos. cooling mains across E/D section within HKCEC Water Channel • Pipe Laying works including 9 nos. cooling mains across SCL section within HKCEC Water Channel • Pipe Laying works including 9 nos. cooling mains and 2no. cross harbour watermains at North Bank of HKCEC Water Channel

June 2012	July 2012	August 2012
construction works at the traffic island near junction of Convention Avenue and Fenwick Pier Street • Cable ducting works along Convention Avenue, Harbour Road and Fenwick Street • Trench excavation, pipe laying works and chamber construction for a 1000dia. Watermains (CHF) at Salisbury Garden • Trench excavation, pipe laying works and chamber construction for a 1000 dia. Waternaubs (CHE) at Salisbury Garden		

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

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

June 2012	July 2012	August 2012
• The possession of the new helipad was taken over by GFS • The GFS operation for the private sector business • Modification work of PTI at Expo Drive East • Self-testing of the individual systems • Install the motor of the band screen and steel platform at +2.03mPD at wet well of P8 • Wet well FRP platform of P7, P8 & P9 and handed over to E & M for penstock leakage testing. • Combined chamber for SHK at ex-pet garden • Trench excavation and shoring installation at Tonnochy Road - Harbour Road junction • Removal of the damaged cooling mains adjacent to new seawall area at WCR1 • Trench excavation and cooling mains installation at WCR1 • Cabling works along Harbour Road and Great Eagle Centre / Harbour Centre area	• Modification work of PTI at Expo Drive East • Modification work of bus station at Expo Drive East near EVA • Self-testing of the individual pumping systems for cooling mains work. • Wet well was handed over to E & M for penstock leakage testing. • Installation work of P7, P8 & P9 • Cooling mains Installation at Tonnochy Road - Harbour Road junction • Discharge pipe installation for SHK at WCR1 • Cooling mains installation at WCR1 • Cabling works along Harbour Road and Great Eagle Centre / Harbour Centre area • Waterproofing slurry to wall at 1/F Surge vessel area for finishing work and remedial work at R/F for planter area for the WSD Salt Water Pumping Station • E&M works at WSD Salt Water Pumping Station	• Modification work of PTI and bus station at Expo Drive East • Self-testing of the individual pumping systems for cooling mains work • Wet well was handed over to E & M for penstock leakage testing • Reinstatement at Tonnochy Road - Harbour Road junction • Cooling mains installation at west of Gate 1 inside ex-pet garden and the steel fixing and casting of the damaged thrust box • Cabling works along Harbour Road and Great Eagle Centre / Harbour Centre area • Waterproofing membrane at roof level at WSD Salt Water Pumping Station. • E&M works at WSD Salt Water Pumping Station • Wall shaft and roof slab casting of salt water intake culvert at Wan Shing Street Bay 20 and steel fixing of 19B • Removing the strut & waling for road reinstatement near

June 2012	July 2012	August 2012
• The TBM breaking-out of the WSD 2nd drive • The formwork and scaldfold removal was substantially completed in the WSD pumping station • Joint inspection of the TX room handed over to HEC • Preparatory work of waterproofing at the roof floor for the WSD Salt Water Pumping Station • Installation and welding for 4th layer of walings and struts for construction of intake culvert Bay 19B and Bay 20 at Wan Shing Street • Opening in sheetpile cofferdam at Wan Shing Street Bay 24 and dewatering and removal of loose sand at the bottom • ELS of 4th layer (-5.8mPD) struts & walings of salt water intake landside cofferdam • ELS of 3nd layer (-3.5mPD) struts & walings of salt water intake seadside cofferdam • Gridline 9-15 sub-structure and pre-cast slabs to +4.15mPD • Approximate 7m DN800 MS pipe installation near Gate 1 at ex-pet garden • Temporary seawall construction works of WCR2 was completed, rockfilling and laying of geotextile • The 1st layer of waling of the outfall launching shaft • Excavation and breaking up the rock to 2nd layer for strut and waling installation of the outfall launching shaft • Benching modification at existing DSD chamber • Excavation down to -5.8 mPD of submarine outfall seaside cofferdam • E&M installation at existing DSD treatment plant • Excavation down the Box Culvert N1 seaside cofferdam was commenced on 31 May 2012 and ELS of 2rd layer (+0.7mPD) struts & walings was in progress.	• Concreting of the salt water intake culvert at Wan Shing Street of Bay 19B and Bay 24 • Base slab casting of salt water intake culvert at Wan Shing Street Bay 20 • Additional grouting and excavation for pipe cap construction in salt water intake landside cofferdam • Casting of concrete plug of Bay 7 at WCR12 • Concreting the salt water intake culvert of Bay 3 and Bay 5 at WCR1 • Placement of concrete plug inside salt water intake seaside cofferdam • Under water excavation inside salt water intake seaside cofferdam • Approximate 36m at Was Shing Street • Rock filling and placing bagged concrete at return end of seawall block for WCR2 reclamation • Excavation and breaking up the rock to 2nd layer for strut and waling installation of the outfall launching shaft • Base concrete plug inside the outfall seaside cofferdam • HDPE pipe butt fusion welding inside the jacking pit • ELS for Box Culvert N1 seaside cofferdam for 3rd layer (-1.5mPD) struts & walings • Erecting formwork for construction of base slab for Box Culvert N1 on UU bridge • Final precast slab installation at New Ferry Pier Guide line 9-15 / A-F and dismantles formwork for upper beam • Erection of formwork and false work for column at New Ferry Pier Guide line 1-8 level 1 to level 2 • Vertical seawall construction at WCR2 • Laying of geotextile at WCR2 • Rock filling grade 200 at	Bay 24 and backfilling of salt water intake culvert at Wan Shing Street • Sheetpiling at Bay 11 and the grouting work • Pile cap steel fixing of Bay 6 in salt water intake landside cofferdam • Concreting the salt water intake culvert of Bay 4 and Bay 7 at WCR1 and concreting the base slab of Bay 8 • Concreting pile cap of IC1 and the construction of pile cap IC2 in salt water intake seaside cofferdam. • Excavation and breaking up the rock down to 3rd layer of strut and waling installation of the outfall launching shaft and then the 2nd layer waling • Cutting the opening of sheetpiles and coring of thrust wall between Launching Pit and Jacking Pit • Excavation the fill material to expose HDPE pipe end by divers inside the outfall seaside cofferdam • Cutting casing of pre-bored H-pile to cut-off level for pile cap at Bay 4 and Bay 5 of Box Culvert N1 northern cofferdam • Excavation to formation level and making good of blinding layer for pile cap at Bay 4 and Bay 5 of Box Culvert N1 northern cofferdam • Concreting the base slab of Box Culvert N1 Bay 2 and Bay 3 on UU bridge • Dismantling of steel panel & H-beam of water tank at zone 2B and the dismantling work of water tank in zone 3B and 3C at Ferry Pier. • Concreting the columns at New Ferry Pier GL 6-7 / B-F level 1 to level 2 and erection formwork and falsework at GL 8-15 / B-F • Steel fixing the slab at New Ferry Pier GL 1-8 level 1 and GL 9 -15 level 2 • Rockfilling and placing

June 2012	July 2012	August 2012
• Precast slab installation at New Ferry Pier Guide line 1-8 / A-F was completed on 24 May 2012, and dismantles formwork for upper beam was in progress. • Removal of formwork for top slab (+4.15mPD) Guide line 1-5 / A-F was completed on 28 May 2012. • Dismantle steel panel for water tank for 2A1, 2A2 was in progress. • Formwork erections for upper beam for 3A2, 3B2, 3C1, 3C2, 3C3,3A1, 3B1 • Steel bar fixing for upper beam & corbel beam for 3A1, 3A2, 3B1, 3B2, 3C1, 3C2, 3C3 was ongoing. • Rock filling grade 200 at WCR2 reclamation was ongoing. • Infill gap of steel frame "Well A" for construction of water diversion channel along the existing seawall at WCR2 • Reinstatement of permanent bituminous carriageway • ELS for Box culvert "O" diversion	WCR2 reclamation • Infill gap of steel frame "Well A" and "Well B" for construction of water diversion channel along the existing seawall at WCR2 • Flow Diversion of Box Culvert O • Bulkhead wall Type 3 and Type 2 construction at Box Culvert "O" • Bulkhead wall at Box Culvert "O" Bay 17 • Diversion of LV Cable and 150MS Freshwater pipe •	bagged concrete for the seawall block area at WCR2 • Reclamation of WCR2 • TDMP for Box Culvert "O" Diversion at Bay 12-13 • Bulkhead wall at Box Culvert "O" Bay 17 • Water pressure test and sterilization test for 150MS freshwater pipe at Box Culvert "O" prior to the diversion of captioned water pipe. • Trial pit excavation and preparation works for Hung Hing Road Diversion

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

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

June 2012	July 2012	August 2012
• Removal of temporary reclamation at TS1 • Dredging for seawall foundation at TS2 • Seawall trench works at TS2	• Removal of temporary reclamation at TS1 • Underwater cutting of temporary diaphragm walls at TS1 • Dredging for seawall foundation at TS2 • Seawall trench works at TS2	• Removal of temporary reclamation at TS1 • Underwater cutting of temporary diaphragm walls at TS1 • Dredging for seawall foundation at TS2 • Seawall trench works at TS2

vi. Contract no. HK/2010/06 was commenced on 22 March 2011. During this reporting period, the principal work activities for Contract no. HK/2010/06 are summarized as below:

Table V Principal Work Activities for Contract no. HK/2010/06

June 2012	July 2012	August 2012
• Concrete Breaking • Pre Drill Works • Coring Works • Sheet Piling	• Concrete Breaking • Pre Drill Works • Coring Works • Platform Disassembly	• Pile head breaking • Sonic tube trimming

vii. Contract no. HY/2009/19 was commenced on 24 March 2011. During this reporting period, the principal work activities for Contract no. HY/2009/19 are summarized as below:

Table VI Principal Work Activities for Contract no. HY/2009/19

June 2012	July 2012	August 2012
• Marine bored piling	• Marine bored piling • Construction works for Box Culvert T	• Marine bored piling • Construction works for Box Culvert T

Noise Monitoring

viii. Noise monitoring during day time and evening time were conducted at the M1a, M2b, M3a, M4b, M5b and M6 on a weekly basis in the reporting period. The Action and Limit level exceedances recorded in the reporting period are listed below. Investigation found that exceedances were not related to the Project. Investigation found that exceedances were not related to the Project.

ix. Due to adverse weather condition, the noise monitoring at the following stations were rescheduled:
M1a: From 24 Jul 2012 to 25 Jul 2012

x. Due to the equipment repair, the noise monitoring at M4b and M6 were rescheduled from 23 August 2012 to 24 August 2012

xi. Three limit level exceedances were recorded at M6 on 7 and 12 June 2012 and 24 August 2012 during this reporting period.

Real-time Noise Monitoring

xii. Real-time noise monitoring at FEHD Hong Kong Transport Section Whitefield Depot and Oil Street Community Centre have been commenced on 5 October 2010 for the filling works of Contract no. HY/2009/11.

xiii. Real-time noise monitoring at FEHD Hong Kong Transport Section Whitefield Depot commenced external wall renovation since 1 June 2012

xiv. Exceedances were recorded at RTN1 and RTN2 between 0700 and 1900 hours, and 1900 and 2300 hours throughout July 2012. Investigations found that the major noise impacts from 0700 and 1900 hours, and 1900 and 2300 hours were arising from the traffic noise along the Island Eastern Corridor and demolition works near Oil Street Community Liaison Center. In addition, there was no construction activity commenced in these two periods. As such, the exceedances were concluded as not project related.

xv. Exceedances were recorded at RTN2 between 0700 and 1900 hours throughout August 2012. Investigations found that no major noisy activities by the Contractor HY/2009/19 were being performed. The major noise impact was arising from the demolition works near Oil Street Community Liaison Center. As such, the exceedances were concluded as not project related.

Air Quality Monitoring

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

xvii. Due to lack of electric supply, the 24-hr TSP monitoring at the following stations were rescheduled as below:

CMA1b: from 6 Jun to 7 Jun 2012
from 27 Jul and 20 Aug 2012 to 31 Jul and 21 Aug 2012
CMA2a: from 18 Jun to 19 Jun 2012
from 27 Jul and 8 Aug 2012 to 28 Jul and 10 Aug 2012
CMA3a: from 10 and 16 Jul to 11 and 18 Jul 2012
CMA5a: from 6 Jun to 7 Jun 2012
from 4 and 21 Jul to 5 and 24 Jul 2012
from 20 Aug to 21 Aug 2012
CMA6a: from 8 Aug 2012 to 9 Aug 2012

xviii. Due to adverse weather condition, the 1-hr TSP monitoring at the following stations were rescheduled:

CMA2a: from 9 August 2012 to 11 August 2012

xix. 1hr and 24hr TSP monitoring were conducted at CMA1b, CMA2a, CMA3a, CMA4a, CMA5a and CMA6a in the reporting period. No exceedance was recorded during the reporting period.

xx. The odour patrol along the odour route with 7 sniffing locations was conducted by a qualified odour patrol member on 9, 27 July and 13, 23 August 2012 at the concerned hours (afternoon for higher daily temperature). The odour intensity detected at OP4 was found to be level 2 on 9 and 27 July 2012 which triggered Action Level. After investigation, the exceedances were likely to be possible in relation to the sewage from outfall which was considered as not work-related under the Project.

Water Quality Monitoring

xxi. Water quality monitoring was conducted at 16 monitoring stations namely WSD7, WSD9, WSD17, WSD19, WSD20, WSD 21, C1, C2, C3, C4e, C4w, C5e, C5w, C7, C8 and C9 during the reporting period.

xxii. During the weekly site inspection for HY/2009/15 on 10 July 2012 and further inspection on 11 July 2012, it was found that the seawall blocks on the south side of TCBR1E (TS1) have been removed before all dredging works have been completed. The contractor has immediately surrounded the seawall gap with silt curtains and stopped the relevant dredging works on 12 July 2012. No action or limit level exceedance was found during the water quality monitoring on 9 or 11 July 2012. The contractor has promised to provide double layer silt curtains and geotextile to act as temporary seawall and covered the sloping seawall with geotextile, and would provide a full incident report. A self water quality monitoring was

conducted on 15 July 2012 to indicate the effectiveness of the double silt curtain layers and would perform each time during dredging operations. The results from the self water quality monitoring showed that the suspended solids, turbidity and dissolved oxygen level outside the double silt curtain layers were not affected by the dredging activities inside the silt curtain layers.

xxiii. Due to a series of celebratory activities relating to the Anniversary of the Establishment of HKSAR to be held at the HKCEC and security search conducted at work sites of the HKCEC, the water quality monitoring at C1, C2, C4e and C4w WQM stations in ebb and flood tides were temporary suspended on 30 June 2012.

xxiv. Due to the adverse weather condition (e.g. Amber Rainstorm signal or Strong wind signal No.3 or above) were hoisted on 30 June 2012, 5 and 25 July 2012 and 11 and 17 August 2012 , water quality monitoring at ebb tide were cancelled.

xxv. Due to the adverse weather condition (e.g. Amber Rainstorm signal or Strong wind signal No.3 or above) was hoisted on 23 July 2012, water quality monitoring at flood and ebb tide were cancelled.

xxvi. Total 3 DO exceedances, 3 turbidity exceedances and 11 SS exceedances were recorded during mid-flood while 15 DO exceedance, 5 turbidity exceedances and 8 SS exceedances were recorded during mid-ebb in the reporting period. Investigations were found that all exceedances were not related to the Project works. The details of the recorded exceedances can be referred to the Section 5.4.

xxvii. Enhanced DO monitoring at 4 monitoring stations in Causeway Bay Typhoon Shelter and Ex-Public Cargo Works Area was conducted three days per week during the reporting period. There were 13 DO exceedance during mid-flood and 27 DO exceedances during mid-ebb recorded in this reporting period.

xxviii. In response to the Condition 2.18 of the Environmental Permit no. EP-356/2009 requiring that a silt curtain / impermeable barrier system be installed to channel water discharge flow from Culvert L to locations outside the embayment area, a proposed replacement of the requirement with additional dissolved oxygen monitoring has been conducted at three monitoring stations, namely A, B and C between the eastern seawall of Central Reclamation Phase III and the HKCEC Extension since November 2011 under EP-356/2009 so that DO level between the eastern seawall of Central Reclamation Phase II and the HKCEC extension could be continuously monitored.

xxix. Based on the joint inspection on 4 Jan 2012 for the NPR area, the 4-week water quality monitoring at WSD9, WSD10, WSD15, WSD17, C8, C9 to confirm no water deterioration with respect to NPR was commenced since 7 Jan 2012 and was completed on 6 Feb 2012 water quality monitoring.

xxx. Water quality monitoring at WSD10 and WSD15 will be temporary suspended while water quality monitoring at WSD9 and WSD17 was implemented with respect to HK/2009/02 from 8 Feb 12 onwards;

xxxi. Water quality monitoring at C8 and C9 have been implemented with respect to HY/2009/19 since the marine bore piling work started on 28 Jan 12.

xxxii. Based on the safety concern when external façade refurbishment was conducted by contractor employed by Provident Centre (C9) between 9 January 2012 to 30 July 2012 which caused to the inaccessibility of sampling either land and marine since 3 Feb 2012, there is a fine adjustment of the sampling location of water quality monitoring at C9 since 10 March

2012 to the closest accessible point prior to the completion of the external façade refurbishment work.

xxxiii. With respect to the trial dredging at WCR2 was scheduled on 20, 22, 24, 25 March and 1, 3 , 11, 13, 15, 17, 19, 20 Apr and 3 May 2012, on-going water quality monitoring results at WSD21 during this period was checked and indicated that there was no contribution due to the trial dredging operation. Enhanced review of water quality around WCR2 was also implemented and no deterioration in the water quality was observed.

xxxiv. Due to the access of water monitoring station at WSD19 was blocked by LCSD construction works from 3 April 2012 to 2 May 2012 and lead to the inaccessibility of sampling either land and marine, there is a fine adjustment of the sampling point of WSD 19 since 5 April 2012 to the closest accessible point prior to the completion of the construction activities.

xxxv. Due to the dredging works for Cross Harbour Water Mains from Wan Chai to Tsim Sha Tsui-DP6 was completed on 26 March 2012, the temporary suspension of impact water quality monitoring at WSD7 and WSD20 after 27 April 2012 for the water quality monitoring at WSD7 and WSD20 have been monitored for 4-week period after the completion of DP6 to confirm no water deterioration.

Complaints, Notifications of Summons and Successful Prosecutions

xxxvi. There was one environmental complaint recorded in the reporting period.

1. INTRODUCTION

1.1 Scope of the Report

1.1.1. Lam Geotechnics Limited (LGL) has been appointed to work as the Environmental Team (ET) under Environmental Permit no. EP-356/2009 and Further Environmental permit nos. FEP-01/356/2009, FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009 and FEP-05/356/2009 to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Wan Chai Development phase II and Central-Wan Chai Bypass (Register No.: AEIAR-125/2008) and in the EM&A Manual of the approved EIA Report for Central-Wan Chai Bypass and Island Eastern Corridor Link (Register No. AEIAR-014/2001).

1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 10.4 of EM&A Manual and "*Environmental Monitoring and Audit Requirements"* under Particular Specification Section 27.

1.1.3. This report documents the finding of EM&A works during the period from June 2012 to August 2012

1.2 Structure of the Report

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

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

Section 3 ***Monitoring Requirements*** – summarizes all monitoring parameters, monitoring locations, monitoring frequency, duration and action plan.

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

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

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

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

Section 8 ***Conclusion***

2. PROJECT BACKGROUND

2.1 Background

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

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

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

2.2 Scope of the Project and Site Description

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

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

2.2.3. The scope of the Project comprises:

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

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

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

Table 2.1 Schedule 2 Designated Projects under this Project

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

2.3 Division of the Project Responsibility

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

2.3.2. 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	23 July 2010
		DP1, DP2	25 August 2011
HK/2009/02	Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East	DP3, DP5	5 July 2010
		DP1	26 April 2011
HY/2009/11	Wan Chai Development Phase II and Central – Wan Chai Bypass – North Point Reclamation	DP3	17 March 2010 (Under applicationof surrender)
HY/2009/15	Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)	DP3	10 November 2010
		DP1	13 July 2011
HK/2010/06	Wan Chai Development Phase II-Central-Wan Chai Bypass over MTR Tsuen Wan Line	DP3	22 March 2011
04/HY/2006	Reconstruction of Bus Terminus near Man Yiu Street and Man Kwong Street	DP1	September 2010
HY/2009/17	Central - Wan Chai Bypass (CWB) at FEHD Whitfield Depot - Advanced piling works.	DP1	5 October 2010
HY/2009/18	Central - Wan Chai Bypass (CWB) – Central Interchange	DP1	21 April 2011
HY/2009/19	Central - Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link	DP1	24 March 2011

2.4 Project Organization and Contact Personnel

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

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

Table 2.3 Contact Details of Key Personnel

Party	Role	Post	Name	Contact No.	Contact Fax
AECOM	Engineer's Representative for WDII	Principal Resident Engineer	Mr. Frankie Fan	2587 1778	2587 1877
	Engineer's Representative for CWB	Principal Resident Engineer	Mr. Peter Poon	3916 1818	3529 2829

Party	Role	Post	Name	Contact No.	Contact Fax
China Harbour-CRBC Joint Venture	Contractor under Contract no. HY/2009/11	Project Director	Mr. Cho Yu Fun	3157 1086	3157 1085
		Project Manager	Mr. Gregory Wong	3157 1086	
		Site Agent	Mr. Daniel Cheung	3157 1086	
		Environmental Officer	Mr. C. M. Wong	3157 1086	
Chun Wo – Leader Joint Venture	Contractor under Contract no. HK/2009/01	Project Director	Mr. PL Yue	2162 9909	2587 1878
		Site Agent	Mr. Paul Yu	9456 9819	
		Sub-Agent	Mr Terry Wong	9757 9846	
		Construction Manager	Mr. Wyman Wong	9627 2467	
		Construction Manager	Mr. Jack Chu	9775 3008	
		Construction Manager	Mr. KK Yuen	9498 1213	
		Environmental Officer (Compliance Manager)	Mr. Andy Mak	9103 2370	
Chun Wo – CRGL Joint Venture	Contractor under Contract no. HK/2009/02	Site Agent	Mr. Chan Sing Cho	3658 3002	2827 9996
		Quality & Environmental Manager (Environmental Officer)	Mr. C.P. Ho	3658 3000	
China State Construction Engineering (HK) Ltd.	Contractor under Contract no. HY/2009/15	Project Director	Chan Wai Hung	2823 7813	2865 5229
		Site Manager	P J Fan	3557 6368	2566 2192
		Contractor's Representative	Mr. David Lau	3557 6368	2566 2192
		Head of Construction Manager	Roger Cheung	3557 6371	2566 2192
		Senior Construction Manager	Gene Cheung	3557 6395	2566 2192
		Environmental Officer	Mr. Daniel Sin	3557 6215	
Gammon	Contractor under Contract no.	Project Manager	Mr. Paul Lui	9095 7922	2529 2880

Party	Role	Post	Name	Contact No.	Contact Fax
-Leader JV	HK/2010/06	Site Agent	Mr. Keith Tse	2529 2068	
		Environmental Officer	Mr. Lee Wai Man	9481 6024	
Chun Wo - CRGL - MBEC Joint Venture	Contractor under Contract no. HY/2009/19	Project Manager	Mr. Rayland Lee	3758 8879	2570 8013
		Site Agent	Mr. Cheung Kit Cheung	6909 1555	
		Environmental Engineer	Mr. Calvin Leung	9286 9208	
		Environmental Manager / Environmental Officer	Mr. M.H. Isa	9884 0810	
		Construction Manager (Land)	Patrick Cheung	9643 3012	
ENVIRON Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3743 0788	3548 6988
Lam Geotechnics Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Raymond Dai	2882 3939	2882 3331

2.5 Principal Work and Activities

2.5.1. During this reporting period, the principal work activities for Contract no. HY/2009/11 are summarized in **Table2.4**.

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

June 2012	July 2012	Aug 2012
• The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 and the FEP-01/356/2009 was under application of surrender in this reporting period.	• The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 and the FEP-01/356/2009 was under application of surrender in this reporting period.	• The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 and the FEP-01/356/2009 was under application of surrender in this reporting period.

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

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

June 2012	July 2012	Aug 2012

June 2012	July 2012	Aug 2012
Marine Works (at Wan Chai) • Installation of sheet pile water channel for cooling water intake at Dome Promenade between CH170 and Ch220 • Rockfilling for rock bund at HKCEC Water Channel from CH220 to Ch230 • Reclamation of HKECE3W within HKCEC Water Channel • Rock Armour protection to the seawall at Wan Chai Landfall in Zone B1-3 • Preparation works for demolition of existing staircase Cross-Harbour Watermains Installation (CHA & CHB) and Marine Works (at TST) • Rockfilling and rock protection to cross-harbour watermians • Trench excavation, installation of shoring system and trimming obstructions (mini-piles) for a 1000 dia. cross harbout watermains (CHB) along the pipe pile wall at TST seashore • Trench excavation and installation of shoring system for a 1000 dia. cross harbour watermains (CHA) along the pipe pile wall at TST seashore • Removal of existing seawall at TST seashore for installation of cross harbour watermains (CHA) and (CHB) Fresh Watermains, Cooling Watermains and Salt Watermains (On Land) • Mainlaying works at ZoneB1-5A, B2-1, B4-3, B5-1(Switch Room), B5-3(Switch Room), A1-1, A1-3, A1-3A, A1-3B, A202, A3-3, A3-4B, A3-5B, A3-5B, A4-1 and A4-2A • Mainlaying works and subsequent reinstatement works in Zone b4-4 • Mainlaying works at Zone	Marine Works (at Wan Chai) • Rockfilling for rock bund across HKCEC Water Channel from Ch220 to Ch230 • Reclamation of HKCEC3W within HKCEC Water Channel • Installation of pipe pile wall for demolition of existing seawall at Expo Drive East Cross-Harbour Watermains Installation (CHA & CHB) and Marine Works (at TST) • Rockfilling and rock protection to cross-harbour watermains • Removal of existing seawall at TST seashore for installation of cross harbour watermains (CHA) and (CHB) • Installation of cross-harbour watermains No. A18 & B18 Fresh Watermains, Cooling Watermains and Salt Watermains (On Land) • Mainlaying works at Zone B1-5A, B2-1, B4-3, B4-1A, B5-1, B5-3, A1-1, A1-2, A1-3A, A1-3B, A2-2, A3-4B, A3-5B, A4-2A and C1-10 • A combined TTA at Convention Avenue in Zone A1-1 and A1-2 • Trench excavation for cable ducting works at Zone B5-1 and B5-3 • Pipe laying works at Heading No. H7 • Heading No. H6a, H6b and H6c • Mainlaying and chamber construction works at the traffic island near junction of • Convention Avenue and Fenwick Pier Street was currently in progress. • Mainlaying works at Expo Drive East in Zone C1-10 • Pipe laying woks and chamber construction for a 1000 dia. Watermains (CHE) at Salisbury Garden • Mainlaying works including cooling mains and cross harbour watermains across CWB section within HKCEC Water Channel	Marine Works (at Wan Chai) • Rockfilling for rock bund across HKCEC Water Channel from Ch220 to Ch230 • Reclamation of HKCEC3W within HKCEC Water Channel • Installation of pipe pile wall for demolition of existing seawall at Expo Drive East • Demolition of Wan Chai West Ferry Pier Cross-Harbour Watermains Installation (CHA & CHB) and Marine Works (at TST) • Rockfilling and rock protection to cross-harbour watermains • Installation of cross-harbour watermains No. A18 & B18 Fresh Watermains, Cooling Watermains and Salt Watermains (On Land) • Mainlaying works at Zone B1-5A, B2-1, B3-1, B4-3, B4-1A, B5-1(Switch Room), B5-3(Switch Room), A1-1, A1-2, A1-3B, A2-2, A3-2A, A3-4B, A3-5B and A4-2A • The reinstatement of one carriageway at Zone B2-1 Mainlaying Works at Zone B3-1 of Expo Drive Central • Breakup of concrete surround and trimming of 1 no. existing intake and 2 no. existing discharge pipe at Zone A1-1 and A1-2 • Pipe laying works at Heading No. H7 • Heading No. H6c (Mainlaying works by trenchless method) • Mainlaying and chamber construction works at the traffic island near junction of Convention Avenue and Fenwick Pier Street • Mainlaying works at Zone A3-2A of Fenwick Pier Street • Mainlaying works at Expo Drive East in Zone C1-10 • Mainlaying Works for a 1000 dia. Watermains (CHE) at Salisbury Garden • Reinstatement Works at Salisbury Garden • Pipe Laying works including 9 nos. cooling mains across

June 2012	July 2012	Aug 2012
B4-3 • Trench excavation for cable & G.I. Ducting works at Zone B5-1A, B5-1(Switch Room) and B5-3(Switch Room) • Gate valves connection works for intake and discharge cooling mains of Shui On Centre at Zone 2-2 • Heading No. H7 and H6A (mainlaying works by trenchless method) • Excavation for jacking pit for pipe laying works by heading method along Convention Avenue at Zone A1-3B was completed. Heading No. H6C • Mainlaying and chamber construction works at the traffic island near junction of Convention Avenue and Fenwick Pier Street • Cable ducting works along Convention Avenue, Harbour Road and Fenwick Street • Trench excavation, pipe laying works and chamber construction for a 1000dia. Watermains (CHF) at Salisbury Garden • Trench excavation, pipe laying works and chamber construction for a 1000 dia. Waternaubs (CHE) at Salisbury Garden		E/D section within HKCEC Water Channel • Pipe Laying works including 9 nos. cooling mains across SCL section within HKCEC Water Channel • Pipe Laying works including 9 nos. cooling mains and 2no. cross harbour watermains at North Bank of HKCEC Water Channel

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

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

June 2012	July 2012	Aug 2012
• The possession of the new helipad was taken over by GFS • The GFS operation for the private sector business • Modification work of PTI at Expo Drive East • Self-testing of the individual systems • Install the motor of the band	• Modification work of PTI at Expo Drive East • Modification work of bus station at Expo Drive East near EVA • Self-testing of the individual pumping systems for cooling mains work. • Wet well was handed over to E & M for penstock leakage	• Modification work of PTI and bus station at Expo Drive East • Self-testing of the individual pumping systems for cooling mains work • Wet well was handed over to E & M for penstock leakage testing • Reinstatement at Tonnochy

June 2012	July 2012	Aug 2012
screen and steel platform at +2.03mPD at wet well of P8 • Wet well FRP platform of P7, P8 & P9 and handed over to E & M for penstock leakage testing. • Combined chamber for SHK at ex-pet garden • Trench excavation and shoring installation at Tonnochy Road - Harbour Road junction • Removal of the damaged cooling mains adjacent to new seawall area at WCR1 • Trench excavation and cooling mains installation at WCR1 • Cabling works along Harbour Road and Great Eagle Centre / Harbour Centre area • The TBM breaking-out of the WSD 2nd drive • The formwork and scaldfold removal was substantially completed in the WSD pumping station • Joint inspection of the TX room handed over to HEC • Preparatory work of waterproofing at the roof floor for the WSD Salt Water Pumping Station • Installation and welding for 4th layer of walings and struts for construction of intake culvert Bay 19B and Bay 20 at Wan Shing Street • Opening in sheetpile cofferdam at Wan Shing Street Bay 24 and dewatering and removal of loose sand at the bottom • ELS of 4th layer (-5.8mPD) struts & walings of salt water intake landside cofferdam • ELS of 3nd layer (-3.5mPD) struts & walings of salt water intake seadside cofferdam • Gridline 9-15 sub-structure and pre-cast slabs to +4.15mPD • Approximate 7m DN800 MS pipe installation near Gate 1 at ex-pet garden • Temporary seawall construction works of WCR2	testing. • Installation work of P7, P8 & P9 • Cooling mains Installation at Tonnochy Road - Harbour Road junction • Discharge pipe installation for SHK at WCR1 • Cooling mains installation at WCR1 • Cabling works along Harbour Road and Great Eagle Centre / Harbour Centre area • Waterproofing slurry to wall at 1/F Surge vessel area for finishing work and remedial work at R/F for planter area for the WSD Salt Water Pumping Station • E&M works at WSD Salt Water Pumping Station • Concreting of the salt water intake culvert at Wan Shing Street of Bay 19B and Bay 24 • Base slab casting of salt water intake culvert at Wan Shing Street Bay 20 • Additional grouting and excavation for pipe cap construction in salt water intake landside cofferdam • Casting of concrete plug of Bay 7 at WCR12 • Concreting the salt water intake culvert of Bay 3 and Bay 5 at WCR1 • Placement of concrete plug inside salt water intake seaside cofferdam • Under water excavation inside salt water intake seaside cofferdam • Approximate 36m at Was Shing Street • Rock filling and placing bagged concrete at return end of seawall block for WCR2 reclamation • Excavation and breaking up the rock to 2nd layer for strut and waling installation of the outfall launching shaft • Base concrete plug inside the outfall seaside cofferdam • HDPE pipe butt fusion welding inside the jacking pit • ELS for Box Culvert N1	Road - Harbour Road junction • Cooling mains installation at west of Gate 1 inside ex-pet garden and the steel fixing and casting of the damaged thrust box • Cabling works along Harbour Road and Great Eagle Centre / Harbour Centre area • Waterproofing membrane at roof level at WSD Salt Water Pumping Station. • E&M works at WSD Salt Water Pumping Station • Wall shaft and roof slab casting of salt water intake culvert at Wan Shing Street Bay 20 and steel fixing of 19B • Removing the strut & waling for road reinstatement near Bay 24 and backfilling of salt water intake culvert at Wan Shing Street • Sheetpiling at Bay 11 and the grouting work • Pile cap steel fixing of Bay 6 in salt water intake landside cofferdam • Concreting the salt water intake culvert of Bay 4 and Bay 7 at WCR1 and concreting the base slab of Bay 8 • Concreting pile cap of IC1 and the construction of pile cap IC2 in salt water intake seaside cofferdam. • Excavation and breaking up the rock down to 3rd layer of strut and waling installation of the outfall launching shaft and then the 2nd layer waling • Cutting the opening of sheetpiles and coring of thrust wall between Launching Pit and Jacking Pit • Excavation the fill material to expose HDPE pipe end by divers inside the outfall seaside cofferdam • Cutting casing of pre-bored H-pile to cut-off level for pile cap at Bay 4 and Bay 5 of Box Culvert N1 northern cofferdam • Excavation to formation level

June 2012	July 2012	Aug 2012
was completed, rockfilling and laying of geotextile • The 1st layer of waling of the outfall launching shaft • Excavation and breaking up the rock to 2nd layer for strut and waling installation of the outfall launching shaft • Benching modification at existing DSD chamber • Excavation down to -5.8 mPD of submarine outfall seaside cofferdam • E&M installation at existing DSD treatment plant • Excavation down the Box Culvert N1 seaside cofferdam was commenced on 31 May 2012 and ELS of 2rd layer (+0.7mPD) struts & walings was in progress. • Precast slab installation at New Ferry Pier Guide line 1-8 / A-F was completed on 24 May 2012, and dismantles formwork for upper beam was in progress. • Removal of formwork for top slab (+4.15mPD) Guide line 1-5 / A-F was completed on 28 May 2012. • Dismantle steel panel for water tank for 2A1, 2A2 was in progress. • Formwork erections for upper beam for 3A2, 3B2, 3C1, 3C2, 3C3,3A1, 3B1 • Steel bar fixing for upper beam & corbel beam for 3A1, 3A2, 3B1, 3B2, 3C1, 3C2, 3C3 was ongoing. • Rock filling grade 200 at WCR2 reclamation was ongoing. • Infill gap of steel frame “Well A” for construction of water diversion channel along the existing seawall at WCR2 • Reinstatement of permanent bituminous carriageway • ELS for Box culvert "O" diversion	seaside cofferdam for 3rd layer (-1.5mPD) struts & walings • Erecting formwork for construction of base slab for Box Culvert N1 on UU bridge • Final precast slab installation at New Ferry Pier Guide line 9-15 / A-F and dismantles formwork for upper beam • Erection of formwork and false work for column at New Ferry Pier Guide line 1-8 level 1 to level 2 • Vertical seawall construction at WCR2 • Laying of geotextile at WCR2 • Rock filling grade 200 at WCR2 reclamation • Infill gap of steel frame “Well A” and “Well B” for construction of water diversion channel along the existing seawall at WCR2 • Flow Diversion of Box Culvert O • Bulkhead wall Type 3 and Type 2 construction at Box Culvert “O” • Bulkhead wall at Box Culvert “O” Bay 17 • Diversion of LV Cable and 150MS Freshwater pipe	and making good of blinding layer for pile cap at Bay 4 and Bay 5 of Box Culvert N1 northern cofferdam • Concreting the base slab of Box Culvert N1 Bay 2 and Bay 3 on UU bridge • Dismantling of steel panel & H-beam of water tank at zone 2B and the dismantling work of water tank in zone 3B and 3C at Ferry Pier. • Concreting the columns at New Ferry Pier GL 6-7 / B-F level 1 to level 2 and erection formwork and falsework at GL 8-15 / B-F • Steel fixing the slab at New Ferry Pier GL 1-8 level 1 and GL 9 -15 level 2 • Rockfilling and placing bagged concrete for the seawall block area at WCR2 • Reclamation of WCR2 • TDMP for Box Culvert “O” Diversion at Bay 12-13 • Bulkhead wall at Box Culvert “O” Bay 17 • Water pressure test and sterilization test for 150MS freshwater pipe at Box Culvert “O” prior to the diversion of captioned water pipe. • Trial pit excavation and preparation works for Hung Hing Road Diversion

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

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

June 2012	July 2012	Aug 2012
• Removal of temporary reclamation at TS1 • Dredging for seawall foundation at TS2 • Seawall trench works at TS2	• Removal of temporary reclamation at TS1 • Underwater cutting of temporary diaphragm walls at TS1 • Dredging for seawall foundation at TS2 • Seawall trench works at TS2	• Removal of temporary reclamation at TS1 • Underwater cutting of temporary diaphragm walls at TS1 • Dredging for seawall foundation at TS2 • Seawall trench works at TS2

2.5.5. Contract no. HK/2010/06 was commenced on 22 March 2011. During this reporting period, the principal work activities for Contract no. HK/2010/06 are summarized as below:

Table 2.8 Principal Work Activities for Contract no. HK/2010/06

June 2012	July 2012	Aug 2012
• Concrete Breaking • Pre Drill Works • Coring Works • Sheet Piling	• Concrete Breaking • Pre Drill Works • Coring Works • Platform Disassembly	• Pile head breaking • Sonic tube trimming

2.5.6. Contract no. HY/2009/19 was commenced on 24 March 2011. During this reporting period, the principal work activities for Contract no. HY/2009/19 are summarized as below:

Table 2.9 Principal Work Activities for Contract no. HY/2009/19

June 2012	July 2012	Aug 2012
• Marine bored piling	• Marine bored piling • Construction works for Box Culvert T	• Marine bored piling • Construction works for Box Culvert T

2.5.7. Implementation status of the recommended mitigation measures during this reporting period is presented in ***Appendix 2.1***.

3. MONITORING REQUIREMENTS

3.1. Noise Monitoring

NOISE MONITORING STATIONS

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

Table 3.1 Noise Monitoring Stations

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

REAL TIME NOISE MONITORING STATIONS

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

Table 3.2 Real Time Noise Monitoring Station

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

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

3.1.2. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq\ (30\ minutes)}$ shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, $L_{eq\ (5\ minutes)}$ shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as L10 and L90 shall also be obtained for reference.

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

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

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

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

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

MONITORING EQUIPMENT

3.1.6. As referred to in the Technical Memorandum ™ 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.

3.1.7. 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.

3.2. Air Monitoring

AIR QUALITY MONITORING STATIONS

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

Table 3.3 Air Monitoring Stations

Station ID	Monitoring Location	Description
CMA1b	Oil Street Community Liaison Centre	North Point
CMA2a	Causeway Bay Community Centre	Causeway Bay
CMA3a	CWB PRE Site Office *	Causeway Bay
CMA4a	Society for the Prevention of Cruelty to Animals	Wan Chai
CMA5a	Children Playgrounds opposite to Pedestrian Plaza	Wan Chai
CMA6a	WDII PRE Site Office *	Wan Chai

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

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

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

3.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.

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

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

3.2.5 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.

3.2.6 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

3.2.7 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.

3.2.8 An alternative non-HOKLAS accredited laboratory was set-up for carrying out the laboratory analysis, the laboratory equipment was approved by the ER on 8 February 2011 and the measurement procedures were witnessed by the IEC. Any measurement performed by the laboratory was be demonstrated to the satisfaction of the ER and IEC. IEC shall regularly audit to the measurement performed by the laboratory to ensure the accuracy of measurement results.

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

3.2.10 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.

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

IMPACT MONITORING FOR ODOUR PATROL

3.2.12 Odour patrols along the shorelines of Causeway Bay Typhoon Shelter and ex-Wan Chai Public Cargo Working Area when there is temporary reclamation in Causeway Bay Typhoon Shelter and/or in the ex-Wan Chai Public Cargo Working Area, or when there is dredging of the odorous sediment and slime at the south-western corner of the Causeway Bay Typhoon Shelter. Odour patrols will be carried out at bi-weekly intervals during July, August and September by a qualified person of the ET who shall:

- be at least 16 years of age;
- be free from any respiratory illnesses; and
- not be allowed to smoke, eat, drink (except water) or use chewing gum or sweets 30 min
- before and during odour patrol

3.2.13 Odour patrol shall be conducted by independent trained personnel / competent persons patrolling and sniffing around the shore as shown in ***Figure 3.1*** to detect any odour at the concerned hours (afternoon is preferred for higher daily temperature).

3.2.14 The qualified person will use the nose (olfactory sensor) to sniff odours at different locations. The main odour emission sources and the areas to be affected by the odour nuisance will be identified.

3.2.15 The perceived odour intensity is to be divided into 5 levels which are ranked in the descending order as follows:

- 0 - Not detected. No odour perceived or an odour so weak that it cannot be easily characterized or described;
- 1 - Slight Identifiable odour, and slight chance to have odour nuisance;
- 2 - Moderate Identifiable odour, and moderate chance to have odour nuisance;
- 3 - Strong Identifiable, likely to have odour nuisance;
- 4 - Extreme Severe odour, and unacceptable odour level.

3.2.16 The findings including odour intensity, odour nature and possible odour sources, and also the local wind speed and direction at each location will be recorded. In addition, some relevant meteorological and tidal data such as daily average temperature, and daily average humidity, on that surveyed day will be obtained from the Hong Kong Observatory Station for reference. The Action and Limit levels for odour patrol are shown in ***Appendix 3.1***.

3.3 Water Quality Monitoring

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

3.3.2. The updated EM&A Manual for EP-356/2009 (Version in March 2011) is approval by EPD on 29 April 2011. As such, the Action Level and Limit Level for the wet season (April – September) will be effected and applied to the water quality monitoring data from 30 April 2011.

Water Quality Monitoring Stations

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

Table 3.4 Marine Water Quality Stations for Water Quality Monitoring

Station Ref.	Location	Easting	Northing
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

Station Ref.	Location	Easting	Northing
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
C4e	Wan Chai Tower and Great Eagle Centre (Eastern)	835932.8	815888.2
C4w	Wan Chai Tower and Great Eagle Centre (Western)	835629.8	815889.2
C5e	Sun Hung Kai Centre (Eastern)	836250.1	815932.2
C5w	Sun Hung Kai Centre (Western)	836248.1	815933.2
C6	World Trade Centre	837009.6	815999.3
C7	Windsor House	837193.7	816150.0
C8	City Garden	837970.6	816957.3
C9	Provident Garden	838355.0	817116.6
RC1	Proposed HKAPA Extension	835487.7	815987.7
RC5	Sun Hung Kai Centre (Reprovision)	836291.4	816029.7
RC7	Windsor House (Temporary Dilution)	837245.2	816156.6

Remarks: - The cessation of seawater intake operation for C6 was confirmed on 17 May 2011, the water monitoring at C6 was then terminated since 17 May 2011.

- WSD9 and WSD17 were implemented with respect to HK/2009/02 from 8 Feb 2012.
- 4-week water quality monitoring at WSD9, WSD10, WSD15, WSD17, C8 and C9 were completed on 6 Feb 2012.
- C8 and C9 were implemented with respect to HY/2009/19 from 28 Jan 2012.
- WSD7 and WSD20 water quality monitoring were temporarily suspended from 27 Apr 2012.

WATER QUALITY PARAMETERS AND FREQUENCY

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

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

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

Table 3.5 Marine Water Quality Monitoring Frequency and Parameters

Activities	Monitoring Frequency[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

3.3.7. 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

3.3.8. 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).

3.3.9. 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

3.3.10 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

3.3.11 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

3.3.12 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

3.3.13 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

3.3.14 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

3.3.15 A hand-held or boat-fixed type digital Global Positioning System (GPS) with waypoint 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

3.3.16 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.

3.3.17 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.

3.3.18 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.

LABORATORY MEASUREMENT / ANALYSIS

3.3.19 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.

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

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

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

Table 3.6 Marine Water Quality Stations for Enhanced Water Quality Monitoring

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

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

DAILY SS MONITORING AND 24 HOURS TURBIDITY MONITORING SYSTEM

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

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

ADDITIONAL DISSOVLED OXYGEN MONITORING FOR CULVERT L WATER DISCHARGE FLOW

3.3.15 In response to the Condition 2.18 of the Environmental Permit no. EP-356/2009 requiring that a silt curtain / impermeable barrier system be installed to channel water discharge flow from Culvert L to locations outside the embayment area, a proposed replacement of the requirement with additional dissolved oxygen monitoring has been conducted at three monitoring stations, namely A, B and C between the eastern seawall of Central Reclamation Phase III and the HKCEC Extension since November 2011 under EP-356/2009 so that DO level between the eastern seawall of Central Reclamation Phase II and the HKCEC extension could be continuously monitored.

3.3.16 The proposed DO monitoring stations of the Project are shown in Table 3.7

Table 3.7 Marine Water Quality Stations for Additional DO Monitoring

Station	Easting	Northing
A	835468	815857
B	835572	815961
C	835659	816271

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

4. MONITORING RESULTS

4.0.1. The environmental monitoring will be implemented based on the division of works areas of each designed project managed under different contracts with separate FEP applied by individual contractors. Overall layout showing work areas of various contracts, latest status of work commencement and monitoring stations is shown in ***Figure 2.1*** and ***Figure 3.1***. The monitoring results are presented in according to the Individual Contract(s).

4.0.2 The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The FEP surrender application was submitted to EPD by contractor on 16 Jan 2012 that they would surrender the permit on 1 Jan 2012. Moreover, the construction site was handed over to contractor HY/2009/19 on 4 January 2012. However, the surrender of the FEP for HY/2009/11 withdrew by contractor on 14 February 2012 due to some outstanding works was confirmed by RSS on 10 Feb 2012. Therefore, the noise, air and water quality monitoring were keeping in view for the commencement of the works under this contract. No construction activity was conducted by HY/2009/11 up to 4 January 2012.

4.0.3 According to EP-364/2009/A Part B, "Scale and Scope of Designated Project", Remarks (c),"The permanent and temporary reclamation and associated dredging works related to the CWB construction are separately covered by environmental permit No. EP-356/2009 issued to Civil Engineering and Development Department", and marine piling works to be conducted by the Contractor of Contract no. HY/2009/19 from 28 January 2012 was considered to be governed under EP-356/2009. As the construction site area of Contract no. HY/2009/11 had already been handed over to Contract no. HY/2009/19, the designated noise, water and air quality monitoring stations for Contract no. HY/2009/11 would be shared with Contract no. HY/2009/19 from 28 January 2012.

4.1. Noise Monitoring Results

4.1.1 Due to adverse weather condition, the noise monitoring at the following stations were rescheduled:

M1a: From 24 Jul 2012 to 25 Jul 2012

4.1.2 Due to the equipment repair, the noise monitoring at M4b and M6 were rescheduled from 23 Aug 2012 to 24 Aug 2012

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

4.1.1. The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 on 31 December 2011 and the FEP-01/356/2009 was under application of surrender in this reporting period. The monitoring was temporary suspended since 5 January 2012.

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

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

Station	Description
M4b	Victoria Centre
M5b	City Garden

4.1.3. There was no exceedance recorded in reporting period. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of graphical presentation can be referred in ***Appendix 4.1***.

Contract no. HK/2009/01 - Wan Chai Development Phase II – Central –Wanchai Bypass at HKCEC and Contract no. HK/2009/02 - Wan Chai Development Phase II – Central – Wan Chai Bypass at WanChai East and Contract no. HK/2010/06 Wan Chai Development Phase II – Central-Wan Chai Bypass over MTR Tsuen Wan Line

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

Table 4.2 Noise Monitoring Station for Contract nos. HK/2009/01 and HK/2009/02 and HK/2010/06

Station	Description
M1a	Harbour Road Sports Centre

4.1.5. There was no exceedance recorded in reporting period. Details of noise monitoring results and graphical presentation can be referred in ***Appendix 4.1***.

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

4.1.6. The noise monitoring for HY/2009/15 was commenced on 10 November 2010. The proposed division of noise monitoring stations are summarized in ***Table 4.3*** below.

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

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

4.1.7. There was no exceedance recorded in this reporting period. The noise complaint was recorded on 5 April 2012. Details of noise monitoring results and graphical presentation can be referred in ***Appendix 4.1***

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

4.1.8. Noise quality monitoring at M4b and M5b have been implemented with respect to HY/2009/19 since the marine bore piling work started on 28 Jan 2012.

4.1.9. The proposed division of noise monitoring stations for Contract no. HY/2009/19 are summarized in ***Table 4.4*** below:

Table 4.4 Noise Monitoring Stations for Contract no. HY/2009/19

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

4.1.10. Three limit level exceedances were recorded at M6 on 7 and 12 June 2012 and 24 August 2012 during this reporting quarter. Major traffic jam and no major work activities were observed during monitoring, the exceedances were considered as non-project related. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of graphical presentation can be referred in ***Appendix 4.1***.

4.2. Real Time Noise Monitoring Results

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

4.2.1 The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 on 31 December 2011 and the FEP-01/356/2009 was under application of surrender in this reporting period. The monitoring was temporary suspended since 5 January 2012.

Table 4.5 Real Time Noise Monitoring Station for Contract no. HY/2009/11

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

4.2.2 Real time noise monitoring results were reviewed and no project-related Action and Limit level exceedance were recorded in the reporting period. Details of real time noise monitoring results and graphical presentation can be referred to ***Appendix 4.2***

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

4.2.3 The proposed division of real time noise monitoring stations are summarized in ***Table 4.6*** below. Real time noise monitoring for the marine bored piling works under contract no. HY/2009/19 was commenced on 28 January 2012.

4.2.4 Real-time noise monitoring at FEHD Hong Kong Transport Section Whitefield Depot commenced external wall renovation since 1 June 2012

Table 4.6 Real Time Noise Monitoring Station for Contract no. HY/2009/19

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

4.2.5 Exceedances were recorded between 0700 and 1900 hours, and 1900 and 2300 hours at RTN1 and RTN2 throughout July 2012. Investigations found that the major noise impacts from 0700 and 1900 hours, and 1900 and 2300 hours were arising from the traffic noise along the Island Eastern Corridor and demolition works near Oil Street Community Liaison Center. In addition, there was no construction activity commenced in these two periods. As such, the exceedances were concluded as not project related.

4.2.6 Exceedances were recorded at RTN2 between 0700 and 1900 hours throughout August 2012. Investigations found that no major noisy activities by the Contractor HY/2009/19 were being performed. The major noise impact was arising from the demolition works near Oil Street Community Liaison Center. As such, the exceedances were concluded as not project related. Details of real time noise monitoring results and graphical presentation can be referred to ***Appendix 4.2***

4.3. Air Monitoring Results

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

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

CMA1b: from 6 Jun to 7 Jun 2012
from 27 Jul and 20 Aug 2012 to 31 Jul and 21 Aug 2012
CMA2a: from 18 Jun to 19 Jun 2012
from 27 Jul and 8 Aug 2012 to 28 Jul and 10 Aug 2012
CMA3a: from 10 and 16 Jul to 11 and 18 Jul 2012
CMA5a: from 6 Jun to 7 Jun 2012
from 4 and 21 Jul to 5 and 24 Jul 2012
from 20 Aug to 21 Aug 2012
CMA6a: from 8 Aug 2012 to 9 Aug 2012

4.3.3. Due to adverse weather condition, the 1-hr TSP monitoring at the following stations were rescheduled:

CMA2a: from 9 August 2012 to 11 August 2012

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

4.3.4. The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 and the FEP-01/356/2009 was under application of surrender in this reporting period. The monitoring for the contract was temporary suspended on 6 January 2012.

4.3.5. The proposed division of air monitoring stations is summarized in ***Table 4.7*** below.

Table 4.7 Air Monitoring Stations for Contract no. HY/2009/11

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

4.3.6. No exceedance was recorded in the reporting period. Details of air monitoring results and graphical presentation can be referred in ***Appendix 4.2***.

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

4.3.7. Air monitoring was commenced on 1 April 2011 in response to the commencement of the land-filling work for Contract no. HK/2009/01. The proposed division of air monitoring stations are summarized in ***Table 4.8*** below. No exceedance was recorded in the reporting period.

Table 4.8 Air Monitoring Stations for Contract no. HK/2009/01

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

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

4.3.8. Air monitoring was commenced in mid-January 2011 for the land-filling work for Contract no. HK/2009/02. The proposed division of air monitoring stations is summarized in ***Table 4.9*** below. No exceedance was recorded in the reporting period.

Table 4.9 Air Monitoring Station for Contract no. HK/2009/02

Station	Description
CMA4a	Society for the Prevention of Cruelty to Animals

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

4.3.9. Air monitoring was commenced on 15 March 2011 for the land filling work for Contract no. HY/2009/15. The proposed division of air monitoring stations are summarized in ***Table 4.10*** below. No exceedance was recorded in the reporting period.

Table 4.10 Air Monitoring Station for Contract no. HY/2009/15

Station	Description
CMA3a	CWB site office at Wanchai Waterfront Promenade

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

4.3.10. Air monitoring at CMA1b and CMA2a have been implemented with respect to HY/2009/19 since the marine bore piling works started on 28 Jan 12. No exceedance was recorded in the reporting period.

4.3.11. The proposed division of air monitoring stations is summarized in ***Table 4.11*** below.

Table 4.11 Air Monitoring Stations for Contract no. HY/2009/19

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

4.3.12. The odour patrol along the odour route with 7 sniffing locations was conducted by a qualified odour patrol member on 9, 27 July and 13, 23 August 2012 at the concerned hours (afternoon for higher daily temperature). The odour intensity detected at OP4 was found to be level 2 on 9 and 27 July 2012 which triggered Action Level. After investigation, the exceedances were likely to be possible in relation to the sewage from outfall which was considered as not work-related under the Project.

4.4 Water Monitoring Results

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

4.4.1. The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. The construction site was handed over to contractor HY/2009/19 on 31 December 2011 and the FEP-01/356/2009 was valid in this reporting period.

4.4.2. Water quality monitoring for Contract no. HY/2009/11 was commenced on 19 March 2010. The proposed division of water monitoring stations for Contract no. HY/2009/11 is summarized in ***Table 4.12*** below:

Table 4.12 Water Monitoring Stations for Contract no. 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

Remarks: WSD9, WSD10, WSD15, WSD17. C8 and C9 water monitoring finished on 6 Feb 2012.

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

4.4.3. Water quality monitoring for Contract no. HK/2009/01 was commenced on 23 July 2010. The proposed division of water monitoring stations is summarized in ***Table 4.13*** below.

Table 4.13 Water Monitoring Stations for Contract no. 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
C4e	Wan Chai Tower and Great Eagle Centre (Eastern)	835932.8	815888.2
C4w	Wan Chai Tower and Great	835629.8	815889.2

Station Ref.	Location	Easting	Northing
	Eagle Centre (Western)		

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.
- WSD7 and WSD20 water quality monitoring were temporarily suspended since 27 Apr 2012.

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

4.4.4. Water quality monitoring for Contract no. HK/2009/02 was commenced on 8 July 2010. The proposed division of water monitoring stations is summarized in ***Table 4.14*** below.

Table 4.14 Water Monitoring Stations for Contract no. HK/2009/02

Station Ref.	Location	Easting	Northing
WSD Salt Water Intake			
WSD21	Wan Chai	836220.8	815940.1
WSD9	Sheung Wan	833415.0	816771.0
WSD17	Kennedy Town	830750.6	816030.3
Cooling Water Intake			
C5e	Sun Hung Kai Centre (Eastern)	836250.1	815932.2
C5w	Sun Hung Kai Centre (Western)	836248.1	815933.2

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 has not been carried out by others.
- Water quality monitoring at WSD9 and WSD 17 was implemented with respect to HK/2009/02 from 8 Feb 2012.

Contract no. HK/2010/06 - Wan Chai Development Phase II – Central –Wanchai Bypass over MTR Tsuen Wan Line

4.4.5. Water monitoring for Contract no. HK/2010/06 was commenced on 8 March 2011. The proposed division of water monitoring stations are summarized in ***Table 4.15*** below.

Table 4.15 Water Monitoring Stations for Contract no. HK/2010/06

Station Ref.	Location	Easting	Northing
Cooling Water Intake			
C2	Telecom House	835647.9	815864.4

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

4.4.6. Due to the commencement of the maintenance dredging on 10 November 2010, water quality monitoring for Contract no. HY/2009/15 was commenced on 9 November 2010. The proposed division of water monitoring stations is summarized in ***Table 4.16*** below.

Table 4.16 Water Monitoring Stations for Contract no. HY/2009/15

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

Remarks: - The cessation of seawater intake operation for C6 was confirmed on 17 May 2011, the water monitoring at C6 was then terminated since 17 May 2011.

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

4.4.7. Due to the commencement of the marine bored piling on 28 Jan 2012, water quality monitoring for Contract no. HY/2009/19 was commenced on 28 Jan 2012. The proposed division of water monitoring stations are summarized in *Table 4.17* below.

Table 4.17 Water Monitoring Stations for Contract no. HY/2009/19

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

Remarks: C8 and C9 water monitoring commenced on 28 Jan 2012.

4.4.8. During the weekly site inspection for HY/2009/15 on 10 July 2012 and further inspection on 11 July 2012, it was found that the seawall blocks on the south side of TCBR1E (TS1) have been removed before all dredging works have been completed. The contractor has immediately surrounded the seawall gap with silt curtains and stopped the relevant dredging works on 12 July 2012. No action or limit level exceedance was found during the water quality monitoring on 9 or 11 July 2012. The contractor has promised to provide double layer silt curtains and geotextile to act as temporary seawall and covered the sloping seawall with geotextile, and would provide a full incident report. A self water quality monitoring was conducted on 15 July 2012 to indicate the effectiveness of the double silt curtain layers and would perform each time during dredging operations. The results from the self water quality monitoring showed that the suspended solids, turbidity and dissolved oxygen level outside the double silt curtain layers were not affected by the dredging activities inside the silt curtain layers.

4.4.9. Due to a series of celebratory activities relating to the Anniversary of the Establishment of HKSAR to be held at the HKCEC and security search conducted at work sites of the HKCEC, the water quality monitoring at C1, C2, C4e and C4w WQM stations in ebb and flood tides were temporary suspended on 30 June 2012.

4.4.10. Due to the adverse weather condition (e.g. Amber Rainstorm signal or Strong wind signal No.3 or above) were hoisted on 30 June 2012, 5 and 25 July 2012 and 11 and 17 August 2012 , water quality monitoring at ebb tide were cancelled.

4.4.11. Due to the adverse weather condition (e.g. Amber Rainstorm signal or Strong wind signal No.3 or above) was hoisted on 23 July 2012, water quality monitoring at flood and ebb tide were cancelled.

4.4.12. Based on the joint inspection on 4 Jan 2012 for the NPR area, the 4-week water quality monitoring at WSD9, WSD10, WSD15, WSD17, C8, C9 to confirm no water deterioration with respect to NPR was commenced since 7 Jan 2012 and it was completed on 6 February 2012.

4.4.13. Water quality monitoring at WSD10 and WSD15 was temporary suspended while water quality monitoring at WSD9 and WSD17 was implemented with respect to HK/2009/02 from 8 Feb 12 onwards;

4.4.14. Water quality monitoring at C8 and C9 have been implemented with respect to HY/2009/19 since the marine bore piling work started on 28 Jan 12.

4.4.15. Based on the safety concern when external façade refurbishment was conducted by contractor employed by Provident Center (C9) between 9 January 2012 to 30 July 2012 which caused to the inaccessibility of sampling either land and marine since 3 Feb 2012, there is a fine adjustment of the sampling location of water quality monitoring at C9 since 10 March 2012 to the closest accessible point prior to the completion of the external façade refurbishment work.

4.4.16. With respect to the trial dredging at WCR2 was scheduled on 20, 22, 24, 25 March and 1, 3 , 11, 13, 15, 17, 19, 20 Apr and 3 May 2012, on-going water quality monitoring results at WSD21 during this period was checked and indicated that there was no contribution due to the trial dredging operation. Enhanced review of water quality around WCR2 was also implemented and no deterioration in the water quality was observed.

4.4.17. Due to the access of water monitoring station at WSD19 was blocked by LCSD construction works from 3 April 2012 to 2 May 2012 and lead to the inaccessibility of sampling either land and marine, there is a fine adjustment of the sampling point of WSD 19 since 5 April 2012 to the closest accessible point prior to the completion of the construction activities.

4.4.18. Due to the dredging works for Cross Harbour Water Mains from Wan Chai to Tsim Sha Tsui-DP6 was completed on 26 March 2012, the temporary suspension of impact water quality monitoring at WSD7 and WSD20 after 27 April 2012 for the water quality monitoring at WSD7 and WSD20 have been monitored for 4-week period after the completion of DP6 to confirm no water deterioration.

4.4.19. As per the meeting with the representative of Excelsior Hotel and World Trade Centre on 17 May 2011, they confirmed that the seawater intake for The Excelsior was no longer in use and replaced by the connected permanent water supply from WSD pipelines since 11

January 2011. Thus, the impact water quality monitoring for the cooling intake - C6 was terminated effective from 26 May 2011.

4.4.20. 24 hours monitoring of turbidity at the cooling water intakes at C7 was conducted. With respect to the seawall collapsing at TS4 on 17 November 2011, the 24 hours turbidity monitoring and was kept in November 2011. Since the reinstating the seawall was completed on 13 January 2012 and no any water deterioration was performed, 24 hour turbidity monitoring was then suspended on 27 January 2012.

4.4.21. The enhanced water quality monitoring at C6, C7, Ex-WPCWA-SW and Ex-WPCWA-SE was commenced on 13 January 2011. No project-related exceedances was recorded in the daily SS monitoring and 24 hours turbidity monitoring.

4.4.22. Water monitoring results measured in this reporting period are reviewed and summarized in **Table 4.18**. Details of water quality monitoring results and graphical presentation can be referred in ***Appendix 4.3***.

Table 4.18 Summary of Water Quality Monitoring Exceedances in Reporting period

Contract no.	Water Monitoring Station	Mid-flood						Mid-ebb					
		DO		Turbidity		SS		DO		Turbidity		SS	
		AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
HY/2009/11 Monitoring finished on 6 Feb 2012	WSD9	0	0	0	0	0	0	0	0	0	0	0	0
	WSD10	0	0	0	0	0	0	0	0	0	0	0	0
	WSD15	0	0	0	0	0	0	0	0	0	0	0	0
	WSD17	0	0	0	0	0	0	0	0	0	0	0	0
	C8	0	0	0	0	0	0	0	0	0	0	0	0
	C9	0	0	0	0	0	0	0	0	0	0	0	0
HK/2009/01	WSD19	0	0	0	**1**	**1**	0	**1**	0	0	**1**	**1**	0
	C1	0	0	0	0	0	0	0	0	0	0	0	0
	C3	0	0	0	0	**1**	0	0	0	0	0	0	0
	C4e	0	0	0	0	**1**	0	**1**	0	0	0	**1**	0
	C4w	**2**	0	0	0	0	0	0	0	0	0	**1**	0
Monitoring finished on 27 April 2012	WSD20	0	0	0	0	0	0	0	0	0	0	0	0
	WSD7	0	0	0	0	0	0	0	0	0	0	0	0
HK/2009/01 & HK/2010/06	C2	0	0	0	0	0	0	0	**2**	0	0	0	0
HK/2009/02 Monitoring started on 8 Feb 2012	C5e	0	0	0	0	**1**	0	0	0	0	0	0	0
	C5w	0	0	0	0	**1**	0	0	0	0	**1**	**0**	**1**
	WSD21	0	0	0	**1**	**2**	**3**	**2**	0	0	0	0	0
	WSD9	0	0	0	0	0	0	**1**	**1**	0	0	0	0
	WSD17	0	0	0	0	**1**	0	0	**1**	0	0	0	0

Contract no.	Water Monitoring Station	Mid-flood						Mid-ebb					
		DO		Turbidity		SS		DO		Turbidity		SS	
		AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
HY/2009/15	C7	**1**	0	0	0	0	0	**3**	**1**	0	0	**1**	0
HY/2009/19 Monitoring started on 28 Jan 2012	C8	0	0	0	**1**	0	0	**1**	0	0	**3**	**1**	**1**
	C9	0	0	0	0	0	0	**1**	0	0	0	0	0
Total		**3**	0	0	**3**	**8**	**3**	**10**	**5**	0	**5**	**5**	**2**

Remarks: - The cessation of seawater intake operation for C6 was confirmed on 17 May 2011, the water monitoring at C6 was then terminated since 17 May 2011.

- WSD9 and WSD17 were implemented with respect to HK/2009/02 from 8 Feb 2012.
- 4-week water quality monitoring at WSD9, WSD10, WSD15, WSD17, C8 and C9 were completed on 6 Feb 2012.
- C8 and C9 were implemented with respect to HY/2009/19 from 28 Jan 2012.
- WSD7 and WSD20 were temporarily suspended from 27 Apr 2012
- The total number of water exceedances in August had been revised.

4.4.23. Enhanced DO monitoring at 4 monitoring stations in Causeway Bay Typhoon Shelter and Ex-Public Cargo Works Area was conducted three days per week during the reporting period. The action and limit level exceedances of water quality monitoring are summarized in ***Table 4.18a.***

4.4.24. Due to the enforcement of Amber Rainstorm Warning Signal on 16, 20 and 27 April 2012, the ebb tide Enhanced DO water monitoring on 16, 20 and 27 April 2012 were cancelled.

Table 4.18a Summary of Enhanced Dissolved Oxygen Monitoring Exceedances in Reporting period

Contract no.	**Water Monitoring Station**	**Mid-flood**		**Mid-ebb**	
		DO		**DO**	
		AL	LL	AL	LL
HY/2009/15	C6	0	0	**2**	0
	C7	**3**	0	**3**	**2**
	Ex-WPCWA SW	**1**	0	**0**	5
	Ex-WPCWA SE	**7**	**2**	**5**	10
Total		**11**	**2**	**10**	**17**

4.4.25. There was no exceedance in this reporting period are reviewed and summarized. Details of graphical presentation can be referred in ***Appendix 4.3***.

4.5 Waste Monitoring Results

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

4.5.1. The major work activities for Contract no. HY/2009/11 was confirmed substantial complete by RSS on 4 January 2012. Therefore, no C&D waste was generated.

Table 4.19 Details of Waste Disposal for Contract no. HY/2009/11

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m^3	NIL	NIL	N/A
Inert C&D materials recycled, m^3	NIL	NIL	N/A
Non-inert C&D materials disposed, m^3	NIL	692.255	SENT Landfill
Non-inert C&D materials recycled, m^3	NIL	NIL	N/A
Chemical waste disposed, kg	N/A	N/A	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m^3	0 (Bulk Volume)	89,500 (Bulk Volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m^3	0 (Bulk Volume)	129,200 (Bulk Volume)	East of Sha Chau

4.5.2. There was no marine sediment disposed and no dredging work undertaken in the reporting period. Contractor submitted a letter dated 20 July 2011 to confirm that the dredging works and dumping operation were completed.

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

4.5.3. Inert and non-inert C&D waste was disposed of for the site preparation works in this reporting period. Details of the waste flow table are summarized in ***Table 4.20.***

Table 4.20 Details of Waste Disposal for Contract no. HK/2009/01

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m^3	175.775	22245.42	TKO137, TM38
Inert C&D materials recycled, m^3	4589.54	4979.5	N/A
Non-inert C&D materials disposed, m^3	190.48	942.88	SENT Landfill
Non-inert C&D materials recycled, kg	11259	151143	N/A
Chemical waste disposed, kg	870	7200	N/A
Marine Sediment (Type 1 – Open Sea Disposal) , m^3	0	91164.2 (Bulk Volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea	0	43018	East of Cha Chau

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal) , m^3		(Bulk Volume)	
Dredged Sediment Requiring Type 3 – Special Treatment / Disposal contained in Geosynthetic Containers	0	5613 (Bulk Volume)	East of Cha Chau

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

4.5.4. There was no marine sediment disposed in the reporting period.

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

4.5.5. Inert and non-inert C&D waste was disposed of for the site preparation works in this reporting period. Details of the waste flow table are summarized in ***Table 4.21.***

Table 4.21 Details of Waste Disposal for Contract no. HK/2009/02

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m^3	34,168	174,298	TKO137/ TM 38
Inert C&D materials recycled, m^3	18,161	18,161	N/A
Non-inert C&D materials disposed, m^3	134	586	SENT Landfill
Non-inert C&D materials recycled, m^3	NIL	NIL	N/A
Chemical waste disposed, kg	535	4,186	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m^3	NIL	154,827 (Bulk Volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m^3	NIL	114,464 (Bulk Volume)	East of Sha Chau

4.5.6. There was no marine sediment disposed in this reporting period.

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

4.5.7. Inert and non-inert C&D waste was disposed of for the site preparation works in this reporting period. Details of the waste flow table are summarized in ***Table 4.22.***

Table 4.22 Details of Waste Disposal for Contract no. HY/2009/15

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m^3	NIL	141579.2	Tuen Mun Area 38
	NIL	65216	TKO137 FB
Inert C&D materials recycled, m^3	NIL	184.0	To Contract HY/2009/11
	NIL	304	Ex-PCWA
	NIL	111.9	TS4
Non-inert C&D materials disposed, m^3	NIL	252.2	SENT Landfill
Non-inert C&D materials recycled, kg	NIL	299361.5	N/A
Chemical waste disposed, kg	NIL	8,200	N/A
Marine Sediment (Type 1 – Open Sea Disposal) , m^3	38,429	96,877 (Bulk Volume)	South of Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal) , m^3	20,943	207,285 (Bulk Volume)	East of Sha Chau
Marine Sediment (Type 3 – Special Treatment / Disposal contained in Geosynthetic Containers)	0	7,050 (Bulk Volume)	East of Sha Chau

4.5.8. There were marine sediments Type 1- Open Sea Disposal, Type 1- Open Sea Disposal (Dedicate Sites) & Type 2-Confined Marine Disposal dredging from bore-piling casing in the reporting month.

Contract no. HK/2010/06 - Wan Chai Development Phase II – Central –Wanchai Bypass over MTR Tsuen Wan Line

4.5.9. Inert C&D waste was disposed of for the site preparation works in this reporting period. Details of the waste flow table are summarized in ***Table 4.23.***

Table 4.23 Details of Waste Disposal for Contract no. HK/2010/06

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m^3	NIL	11027.83	Tuen Mun Area 38
Inert C&D materials recycled, m^3	266.8	266.8	N/A
Non-inert C&D materials disposed, m^3	NIL	NIL	N/A

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Non-inert C&D materials recycled, kg	366	1374.5	N/A
Chemical waste disposed, L	0	600	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m^3	0 (Bulk Volume)	3,694 (Bulk Volume)	South Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal) , m^3	0 (Bulk Volume)	12,297 (Bulk Volume)	East Sha Chau

4.5.10. There was no marine sediment disposed in the reporting period.

Contract no. HY/2009/19 – Central- WanChai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link

4.5.11. There was no project-related waste disposal in the reporting period.

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m^3	36585.7	36585.7	Tuen Mun Area 38
Inert C&D materials recycled, m^3	NIL	NIL	N/A
Non-inert C&D materials disposed, m^3	55.97	55.97	N/A
Non-inert C&D materials recycled, kg	NIL	NIL	N/A
Chemical waste disposed, L	0.29	0.29	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m^3	NIL	NIL	South Cheung Chau
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal) , m^3	105	105	East Sha Chau

5. COMPLIANCE AUDIT

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

5.1. Noise Monitoring

5.1.1 Three limit level exceedances were recorded at M6 on 7 and 12 June 2012 and 24 August 2012 during this reporting quarter. Major traffic jam and no major work activities were observed during monitoring, the exceedances were considered as non-project related. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of graphical presentation can be referred in ***Appendix 4.1***.

5.2. Real-time Noise Monitoring

5.2.1 Exceedances were recorded at RTN1 and RTN2 between 0700 and 1900 hours, and 1900 and 2300 hours throughout the July reporting month. Investigations found that the major noise impacts from 0700 and 1900 hours, and 1900 and 2300 hours were arising from the traffic noise along the Island Eastern Corridor and demolition works near Oil Street Community Liaison Center. In addition, there was no construction activity commenced in these two periods. As such, the exceedances were concluded as not project related.

5.2.2 Exceedances were recorded at RTN2, between 0700 and 1900 hours throughout the August reporting month. Investigations found that no major noisy activities by the Contractor HY/2009/19 were being performed. The major noise impact was arising from the demolition works near Oil Street Community Liaison Center. As such, the exceedances were concluded as not project related.

5.3. Air Monitoring

5.3.1. No exceedance was recorded in the reporting period.

5.4. Water Quality Monitoring

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

Table 5.1 Summary of Water Quality Monitoring Exceedances in Reporting period

Contract no.	Water Monitoring Station	Mid-flood						Mid-ebb					
		DO		Turbidity		SS		DO		Turbidity		SS	
		AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
HY/2009/11 Monitoring finished on 6 Feb 2012	WSD9	0	0	0	0	0	0	0	0	0	0	0	0
	WSD10	0	0	0	0	0	0	0	0	0	0	0	0
	WSD15	0	0	0	0	0	0	0	0	0	0	0	0
	WSD17	0	0	0	0	0	0	0	0	0	0	0	0

Contract no.	Water Monitoring Station	Mid-flood						Mid-ebb					
		DO		Turbidity		SS		DO		Turbidity		SS	
		AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
	C8	0	0	0	0	0	0	0	0	0	0	0	0
	C9	0	0	0	0	0	0	0	0	0	0	0	0
HK/2009/01	WSD19	0	0	0	**1**	**1**	0	**1**	0	0	**1**	**1**	0
	C1	0	0	0	0	0	0	0	0	0	0	0	0
	C3	0	0	0	0	**1**	0	0	0	0	0	0	0
	C4e	0	0	0	0	**1**	0	**1**	0	0	0	**1**	0
	C4w	**2**	0	0	0	0	0	0	0	0	0	**1**	0
Monitoring finished on 27 April 2012	WSD20	0	0	0	0	0	0	0	0	0	0	0	0
	WSD7	0	0	0	0	0	0	0	0	0	0	0	0
HK/2009/01 & HK/2010/06	C2	0	0	0	0	0	0	0	**2**	0	0	0	0
HK/2009/02	C5e	0	0	0	0	**1**	0	0	0	0	0	0	0
	C5w	0	0	0	0	**1**	0	0	0	0	**1**	**0**	**1**
Monitoring started on 8 Feb 2012	WSD21	0	0	0	**1**	**2**	**3**	**2**	0	0	0	0	0
	WSD9	0	0	0	0	0	0	**1**	**1**	0	0	0	0
	WSD17	0	0	0	0	**1**	0	0	**1**	0	0	0	0
HY/2009/15	C7	**1**	0	0	0	0	0	**3**	**1**	0	0	**1**	0
HY/2009/19 Monitoring started on 28 Jan 2012	C8	0	0	0	**1**	0	0	**1**	0	0	**3**	**1**	**1**
	C9	0	0	0	0	0	0	**1**	0	0	0	0	0
Total		**3**	0	0	**3**	**8**	**3**	**10**	**5**	0	**5**	**5**	**2**

Remarks: - The cessation of seawater intake operation for C6 was confirmed on 17 May 2011, the water monitoring at C6 was then terminated since 17 May 2011.

- WSD9 and WSD17 were implemented with respect to HK/2009/02 from 8 Feb 2012.
- 4-week water quality monitoring at WSD9, WSD10, WSD15, WSD17, C8 and C9 were completed on 6 Feb 2012.
- C8 and C9 were implemented with respect to HY/2009/19 from 28 Jan 2012.
- WSD7 and WSD20 were temporary suspended since 27 April 2012
- The total number of water exceedance in August had been reviewed.

5.4.2. All exceedances in Table 5.1 have been investigated and there was no project-related exceedance.

Table 5.1a Summary of Enhanced Dissolved Oxygen Monitoring Exceedances in Reporting period

Contract no.	**Water Monitoring Station**	**Mid-flood**		**Mid-ebb**	
		DO		**DO**	
		AL	LL	AL	LL
HY/2009/15	C6	0	0	**2**	0

Contract no.	Water Monitoring Station	Mid-flood		Mid-ebb	
		DO		DO	
		AL	LL	AL	LL
	C7	**3**	0	**3**	**2**
	Ex-WPCWA SW	**1**	0	**0**	5
	Ex-WPCWA SE	**7**	**2**	**5**	10
Total		**11**	**2**	**10**	**17**

5.4.3. All exceedances in Table 5.1a have been investigated and were considered unlikely to be related to project works. The low DO levels were possible in relation to the low flow and recorded low water depth. In view that no odour nuisance was detected during monitoring, the DO exceedances were considered not related to the Project. These DO exceedances were considered as the natural variation and not related to the Project works.

5.5. Site Audit

5.5.1. There was non-compliance from the site audits in the reporting month of August 2012 in Contract HY/2009/15. During environmental site inspections conducted during the reporting period, minor deficiencies were noted.

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

5.6.1 During the reporting month of August 2012, contractor of HY/2009/15 has failed to demonstrate compliance with the conditions set in FEP-04/356/2009 and relevant conditions in EP-356/2009 for the temporary reclamation removal operations at TCBR1E (TS1). Contractor was unable to provide a proper method statement with respect to the change in works circumstance, and the Contractor was unable to effectively mitigate the impact due to non-compliance such that muddy boom recurrence occurred and dispersed into Victoria Harbour.

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

5.7.1 Warning letters from ETL regarding the situation at TS1 were issued to the contractor of HY/2009/15 on multiple occasions with recommended mitigation measures, and the contractor has immediately deployed silt curtains to conceal the seawall gaps.

5.7.2 As removal dredging and barge mooring operations were anticipated to be performed at the southern side of TS1, ETL requested that daily self water quality tests during removal dredging operations, also pilot test for mooring operations, to demonstrate the effectiveness of the mitigation measures during the operation and to demonstrate the operation itself would not cause substantial water quality impact, should be performed before the mooring operations. These tests were requested to prove whether conditions set in FEP-04/356/2009 and relevant conditions EP-356/2009 are fully complied.

5.7.3 Water samplings for self water quality tests were collected at locations inside and outside the silt curtains during removal dredging operations. This was to demonstrate whether the double silt curtains could effectively hold back silty water during removal dredging operations.

5.7.4 Water samplings for pilot test were collected inside and outside the double silt curtains before and after the mooring operations. This was to demonstrate whether the double silt curtains could effectively hold back silty water during removal mooring operations, and if high turbid would be generated during the mooring operations.

5.7.5 On 15 July 2012, a successful self water quality test was performed by the contractor.

5.7.6 Pilot tests were carried out on 27 July, 2, 7 and 20 Aug 2012 to demonstrate the compliance of barge mooring operations with the conditions set in FEP-04/356/2009 and EP-356/2009, but none of the pilot test was successful.

5.7.7 It is concluded that the self water quality tests proved the effectiveness of the mitigation measures, but the pilot tests were a failure and the contractor cannot demonstrate their ability to comply with the conditions set in FEP-04/356/2009 and EP-356/2009.

5.7.8 ETL then strongly recommended the Contractor to follow the following points for future activities. First, the Contractor should request for RSS inspections for confirmation of implementation of mitigation measures before any commencement of work activities that are governed by the EP. Second, if there is any site mitigation measure not confirmed by RSS for fulfilling the agreed method statements, contractor shall not commence any environmentally sensitive construction activities (e.g. dredging, filling, mooring or any works related to temporary reclamation) unless such site mitigation measures have been properly reviewed by both ET and IEC. Third, the revised site mitigation measures should be reviewed and consented by both ET and IEC before implementation.

5.7.9 The Contractor and RSS agreed on the above points and the Contractor submitted Investigation Report regarding the incident at TS1, Rectification Plan, Preventive Action Plan and revised Method Statement on 7 September 2012.

.

6. COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

6.0.1. There was one water impact complaint received in this reporting period.

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

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

Table 6.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
Commencement works (Mar 2010) to last reporting period	26
June 2012- August 2012	1
Project-to-Date	**27**

Table 6.2 Cumulative Statistics on Successful Prosecutions

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

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 Phase III, Central-Wanchai Bypass and Island Eastern Corridor Link projects.

7.0.2. According to the Monthly EM&A report (July 2012) of Central Reclamation Phase III (CRIII), drainage work, building construction works and pipe works were performed in the reporting period. The water quality monitoring was completed in October 2011 and no exceedance was recorded for air and noise monitoring. It can be concluded that cumulative construction impact due to the concurrent activities of the current projects with the Central Reclamation Phase III (CRIII) was insignificant.

7.0.3. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, the major construction activities at Reclamation Shoreline Sub-zones under Wan Chai Development Phase II were the dredging and filling at HKCEC3w, dredging at submarine sewage pipelines, reinstatement of seawall block construction at TCBR1W and marine bored piling at MTR Tunnel Crossing in the reporting month. The major environmental impact was water quality impact at North Point, Causeway Bay and Wan Chai.

7.0.4. The major environmental impacts generated from the reclamation work at Central Reclamation Phase III were only located along the coastline of Central and Admiralty. As no project related exceedance was recorded in the Project, it was considered no adverse environmental impact caused by the Project works. Thus, it is evaluated the cumulative construction impact was insignificant.

8. CONCLUSION

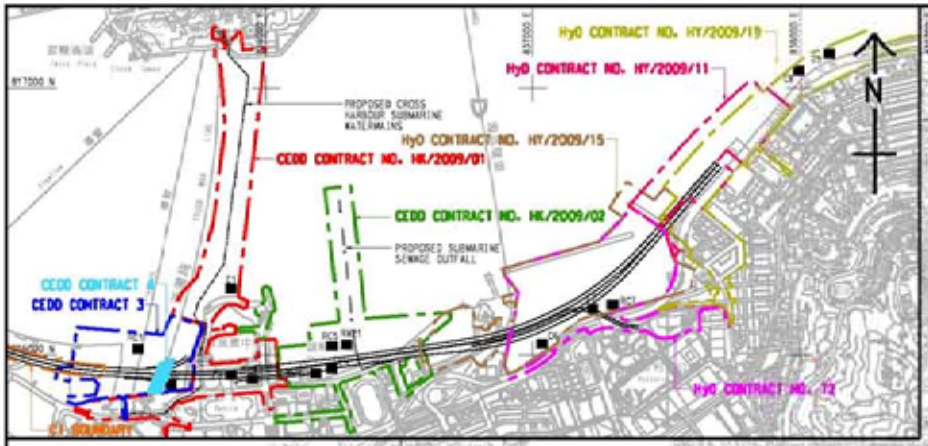
8.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.

8.0.2. One non-compliance was noted and no prosecution was received during the reporting period.

8.0.3. The construction programmes of individual contracts are provided in ***Appendix 7.1***.

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

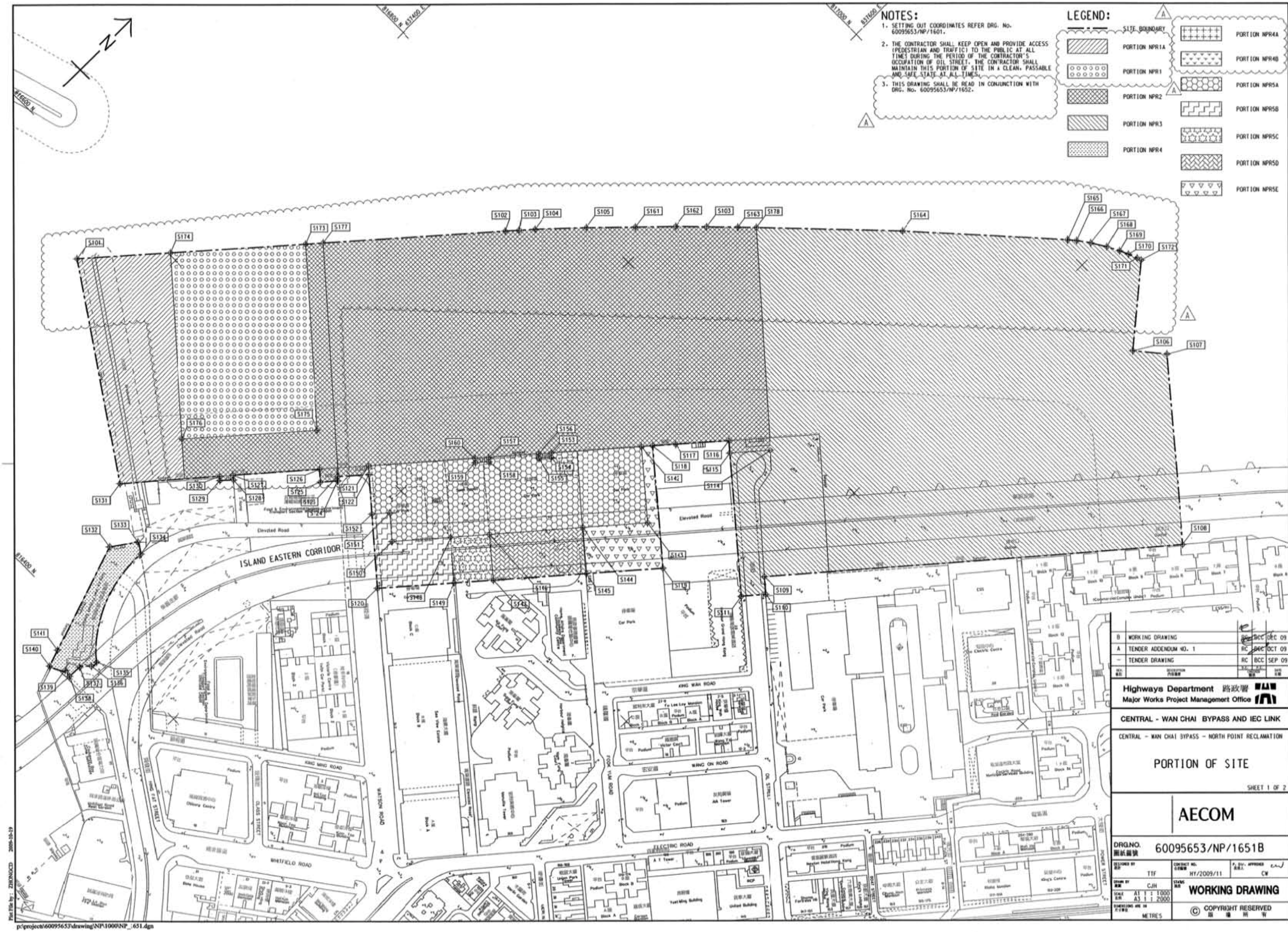
PATH: p:\projects\60041297\DRAWINGS\SETCH\C3\SKETCH 001.dgn

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

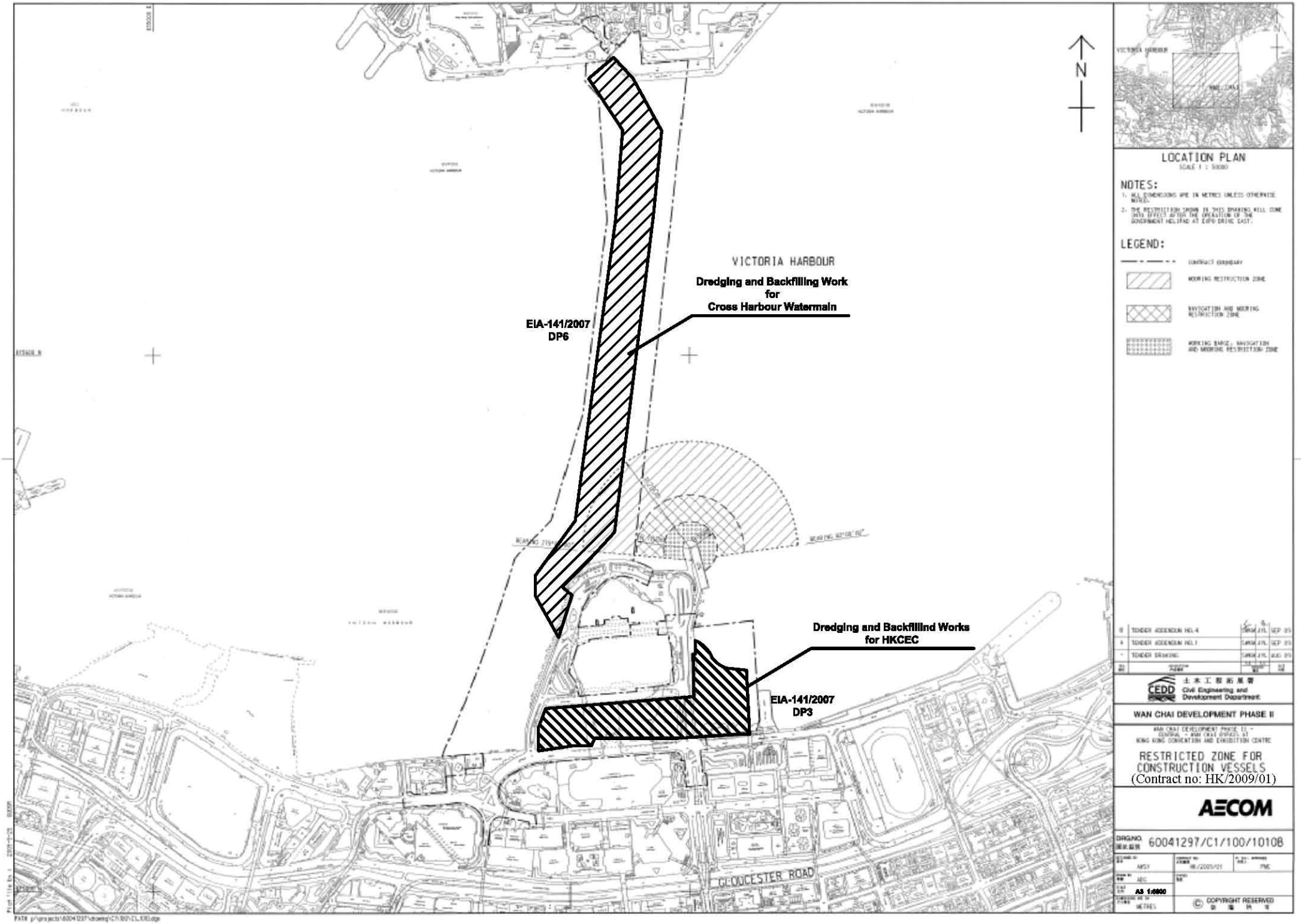
SHEET 1 OF 2

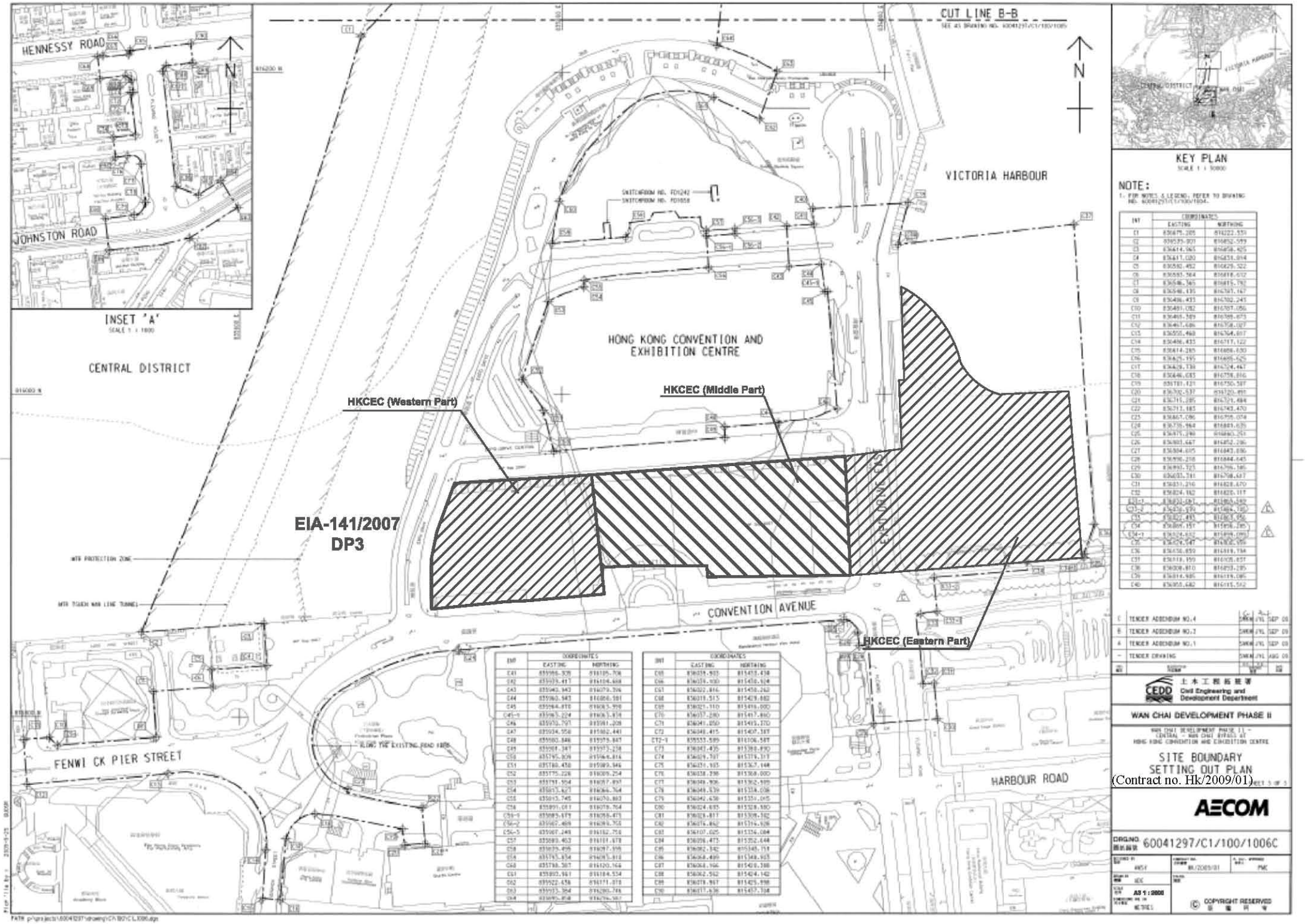
AECOM

DRG.NO. 60095653/NP/1651B

DESIGNED BY: TTF	CONTRACT NO.: HY/2009/11	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
© COPYRIGHT RESERVED


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
© COPYRIGHT RESERVED

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)	146 (C)	22/05/10	19/10/10
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)

Section of Works	A	Major Work at Area WCR1
XI	A1	Construct western and eastern temporary seawall
XI	A2	Dredging and construct new seawall
XI	A3	Reclamation to level +3.5mPD
IXB	A4	Construct diaphragm wall and barrette pile of tunnel "Portion 1"
IXB	A5	Construct tunnel "Portion 1" structures including excavation and backfilling with ELSW
IVA, IVB, IVC V, VI, VII	A6	Construct all drainage system, pipeworks of intakes and cooling system within Area WCR1

Section of Works	B	Major Work in Associated Area
IVA, IVB, IVC	B1	Construct P7, P8 and P9 new pumping stations
V	B2	Construct WSD's pumping station
VI	B3	Construct connection chamber in Wan Chai East Preliminary Treatment Plant
IVA, IVB, IVC V, VI, VII	B4	Construct all drainage system, pipeworks of intakes and cooling system on public road
VI	B5	Dredging and construct the submarine outfall pipes
VIIIA	B6	Construct new Wan Chai Ferry Pier
III	B7	Construct new permanent helipad at Expo Drive
III	B8	Construct new public toilet and passenger terminal building at Expo Drive

Section of Works	C	Other Miscellaneous Works
III	C1	Construct new taxi and coach bus parking space at Expos Drive East
III	C2	Modification work on existing seawall and provide new EVA at Expo Drive
III	C3	Road re-alignment work on existing PTI at Expo Drive
II	C4	Road improvement work at junction of Harbour Road / Tonnochy Road and Fleming Road / Gloucester Road
III	C5	Demolition of existing above ground structure at Expo Drive
V	C6	Demolition of existing staircase of footbridge at Wan Shing Street
IXA	C7	Demolition of existing temporary helipad at ex-PCWA

Section of Works	D	Other Temporary Works
XI	D1	Divert existing 1800 mm diameter drain pipe

N

N 816230

N 816030

N 815830

GOLDEN BAUHINIA SQUARE

VICTORIA HARBOUR

RECLAMATION WORKS BY OTHERS

TUNNEL WORKS BY OTHERS

35m CLEAR SPACE

P7 P8 P9

DIRECTION OF TUNNEL WORKS

EXISTING WATER INTAKES

EXISTING SUBMARINE OUTFALL (SEWAGE)

EXISTING DISCHARGE

DRAINAGE DIVERSION OF 1800 PIPE

B1 B2 B3 B4 B5 B6 B7 B8

A1 A2 A3 A4 A5 A6

C1 C2 C3 C4 C6 C7

D1

0 20 40 60m

1 : 2000 SCALE BAR

REV	DATE	DESCRIPTION
C	19/05/2010	WORKING SCHEDULE UPDATED & TEMPORARY SEAWALL LAYOUT REVISED
B	14/04/2010	SECTION OF WORKS ADDED
A	08/04/2010	AS MARKED & TITLE BLOCK UPDATED

CLIENT

ENGINEER'S REPRESENTATIVE

CONTRACTOR

俊和－中國中鐵聯營
CHUN WO - CRGL JOINT VENTURE

PROJECT

CONTRACT NO. HK/2009/02
WAN CHAI DEVELOPMENT PHASE II
CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST

DRAWING TITLE

DETAILED WORKS SCHEDULE AND LOCATION PLAN - STAGE 1

	DESIGN	DRAWN	CHECKED
INITIAL	-	M.S. SIN	-
DATE	-	07/04/2010	-

DRAWING NO. CWCRJV/HK200902/SK0031

REV C

SCALE 1 : 2000 (A3)

P:\01_Construction Team\CAD (sketch working)\2010_05_19 SK0031C\CWCRJV-HK200902-SK0031C.dwg, 20/5/2010 9:34:20

LEGEND:

WORKS AREA

DREDGING AREA FOR
MITGATION OF ODOUR(DP3)

SITE BOUNDARY

TCBR1E

TCBR2
AND
TCBR3

TCBR4

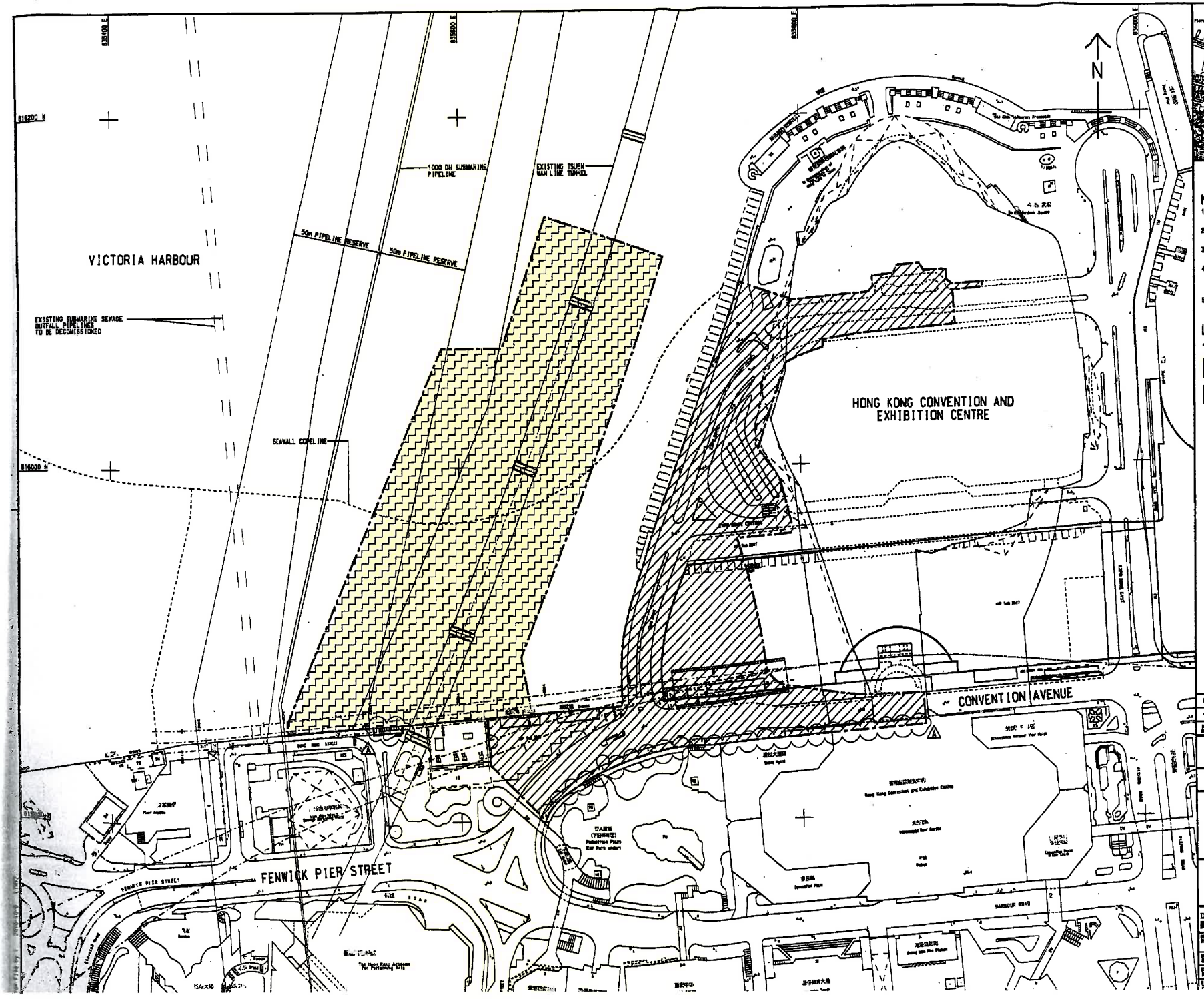
TCBR1W

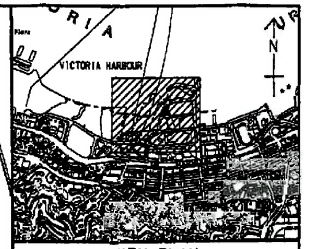
TPCWAE

TPCWAW

DP3

中國建築工程(香港)有限公司 CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.	
Highways Department CONTRACT NO. HY/2009/15 CENTRAL–WAN CHAI BYPASS –TUNNEL (CAUSEWAY BAY TYPHOON SHELTER SECTION)	
TITLE LOCATION PLAN OF WORKS AREA	
DRG. NO. CWBT/EPD/001B	
SCALE 1:1000 @ A0	STATUS
DIMENSIONS ARE IN MILLIMETERS	COPYRIGHT RESERVED





KEY PLAN
SCALE 1 : 20000

NOTES:

1. COORDINATES ARE BASED ON HONG KONG METRIC GRID (1980) UNLESS OTHERWISE NOTED.
2. LEVELS ARE IN METRES RELATIVE TO HONG KONG PRINCIPAL DATUM (HPD) UNLESS OTHERWISE NOTED.
3. DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
4. SETTING OUT DIMENSIONS, LEVELS, COORDINATES ARE TO BE CALCULATED BY THE CONTRACTOR. NO INFORMATION SHOULD BE SCALED PHYSICALLY OR ELECTRONICALLY FROM THE DRAWINGS OR FILES.
5. SITE BOUNDARY SETTING OUT POINTS SHALL REFER TO DRAWING NO. 60041297/C4/100/1201.

LEGEND:

- SITE BOUNDARY
- PORTION 1
- PORTION 2 (DELAY POSSESSION)

REV	DESCRIPTION	BY	CHK	DATE
A	TENDER ADDENDUM NO.1	SWKM	JYL	OCT 10
-	TENDER DRAWING	SWKM	JYL	SEP 10

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

WAN CHAI DEVELOPMENT PHASE II

WAN CHAI DEVELOPMENT PHASE II - CENTRAL-WAN CHAI BYPASS OVER MTR TSUEN WAN LINE

PORTIONS OF THE SITE
(Contract HK/2010/06)

AECOM

DRG.NO. 60041297/C4/100/1301A

DESIGNED BY	SWKM	CONTRACT NO.	HK/2010/06
CHECKED BY	ADC	SCALE	A1 1:1000
APPROVED	TKH		

Figure 2.2

Project Organization Chart

Project Organization Chart

Project Proponent

Civil Engineering & Development Department

Mr. Patrick Keung
Senior Engineer
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Fax: 2577 5040

Project Proponent

Highways Department

Mr. Jones Lai
Senior Engineer
Tel: 2762 4951
Fax: 2714 5289

Environmental Protection Department

Mr. Raymond Lai
Environmental Protection Officer
Tel: 28351127
Fax: 25910558

Engineer's Representative for WDII

AECOM

Mr. Frankie Fan
Principal Resident Engineer
Tel: 2587 1778
Fax: 2587 1877

Engineer's Representative for CWB

AECOM

Mr. Peter Poon
Principal Resident Engineer
Tel: 3922 8332
Fax: 3529 2829

Independent Environmental Checker

ENVIRON Hong Kong Limited

Mr. David Yeung
Independent Environmental Checker
Tel: 3743 0717
Fax: 3548.6988

HK/2009/01 Contractor

Chun Wo – Leader JV

Mr. Paul Yu
Site Agent

HK/2009/02 Contractor

Chun Wo – CRGL JV

Mr. Chan Sing Cho
Project Manager
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Fax: 2827 9996

HK/2010/06 Contractor

Gammon – Leader JV

Mr. Paul Lui
Project Manager
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Fax: 2529 2880

HY/2009/11 Contractor

CHEC-CRBC JV

Mr. Cheung Fuk Hing
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Fax: 3157 1085

HY/2009/15 Contractor

China State Co. Engineering Ltd.

Mr. P.J. Fan
Site Manager
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Fax: 2566 2192

HY/2009/19 Contractor

Chun Wo- CRGL JV

Mr. Rayland Lee
Project Manager
Fax: 3758 8879

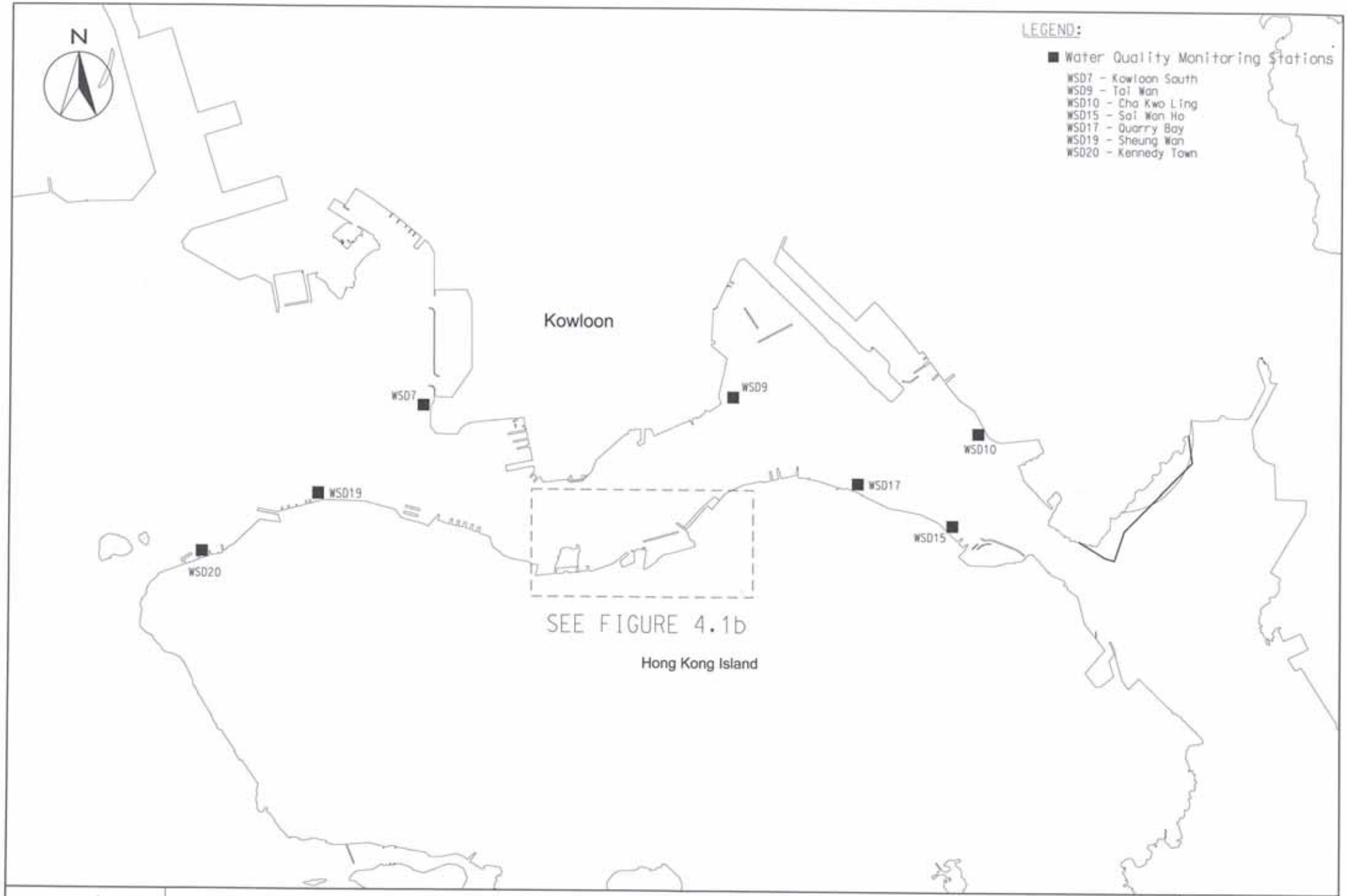
Environmental Team

Lam Geotechnics Limited

Mr. Raymond Dai
Environmental Team Leader
Tel: 2882 3939
Fax: 2882 3331

Figure 3.1

Locations of Monitoring Stations



MAUNSELL AECOM
Maunsell Consultants Asia Ltd

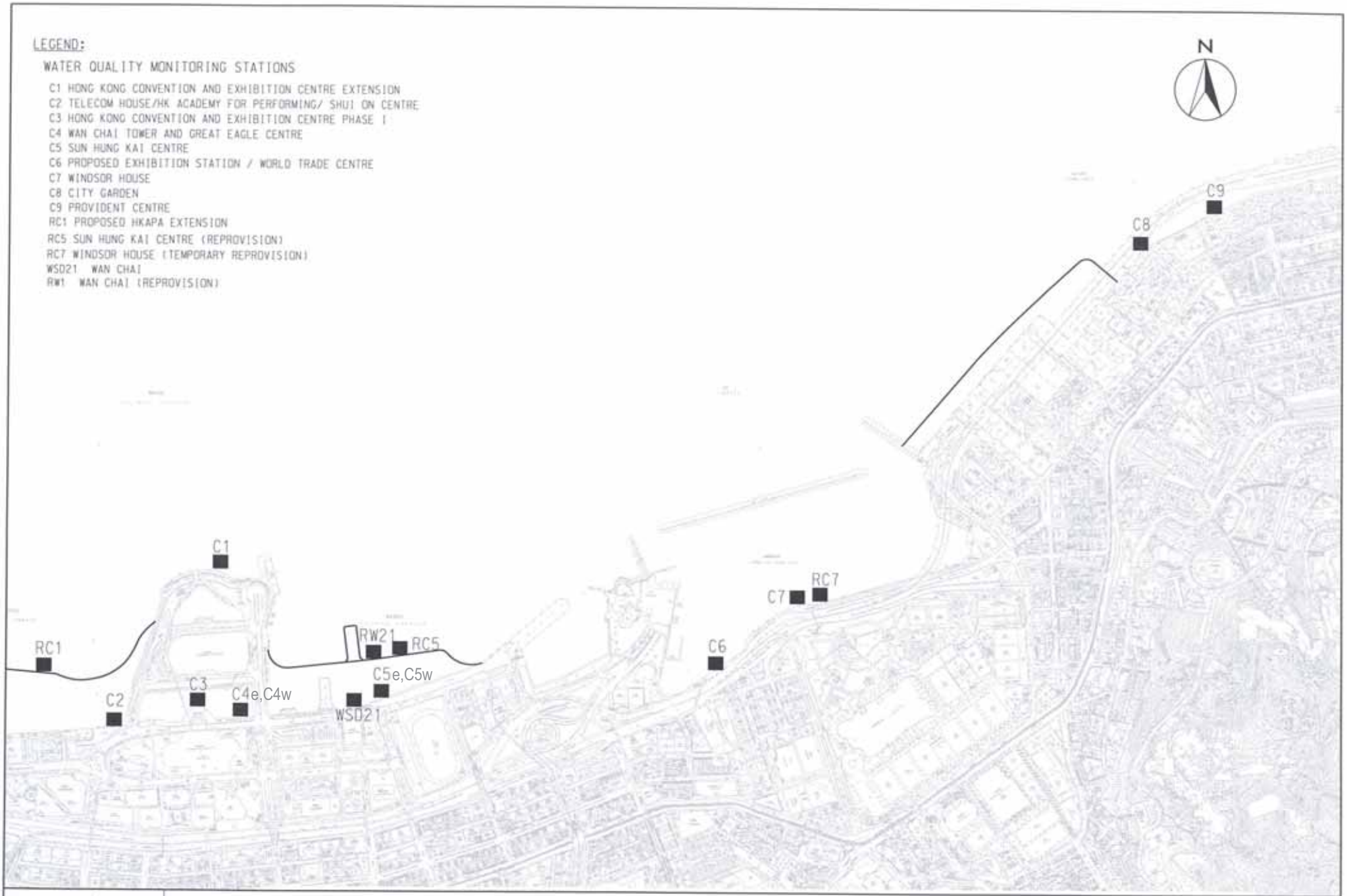
WAN CHAI DEVELOPMENT PHASE II - PLANNING AND ENGINEERING REVIEW

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)



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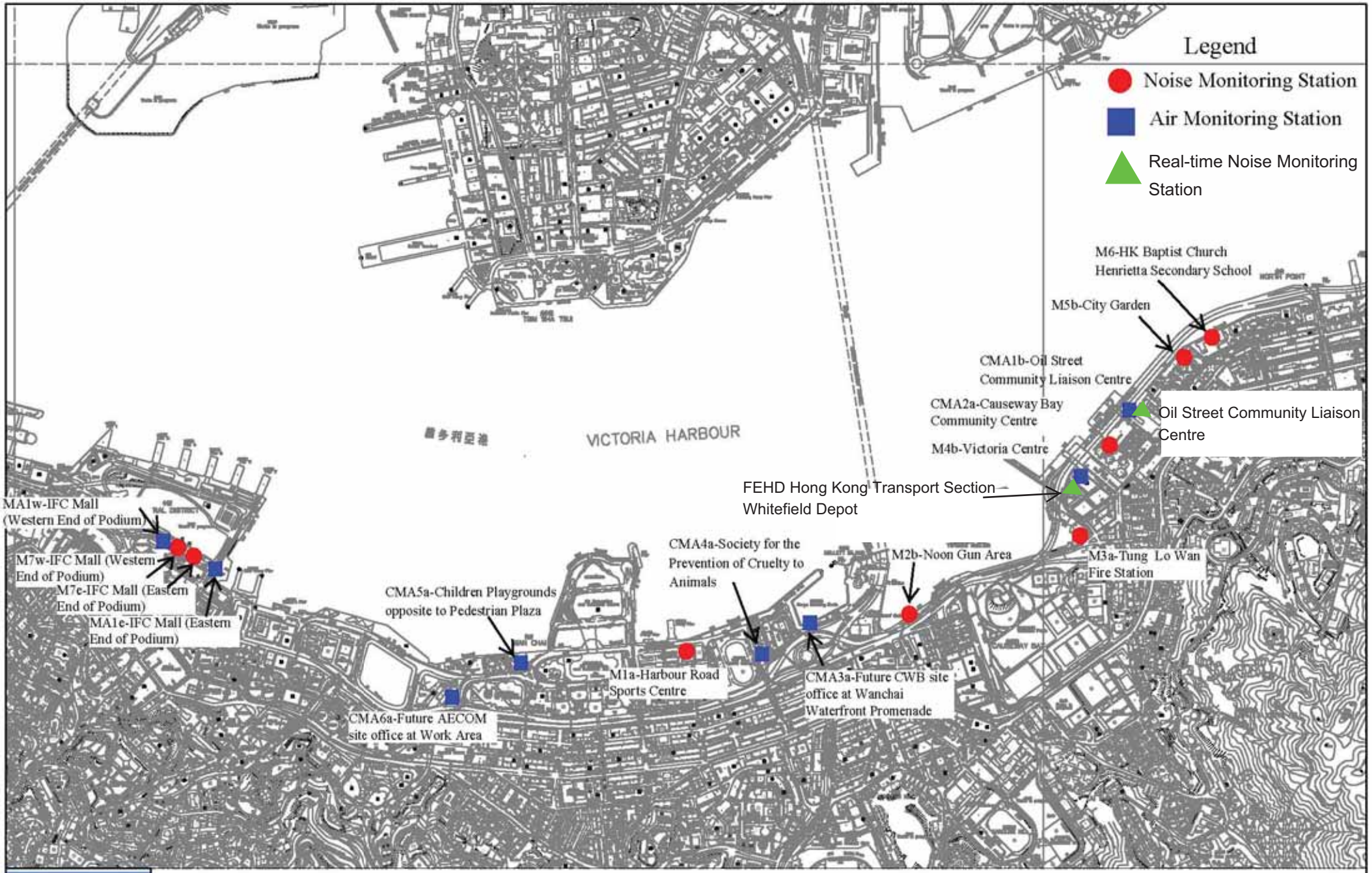
WAN CHAI DEVELOPMENT PHASE II - PLANNING AND ENGINEERING REVIEW

LOCATIONS OF WATER QUALITY MONITORING STATIONS

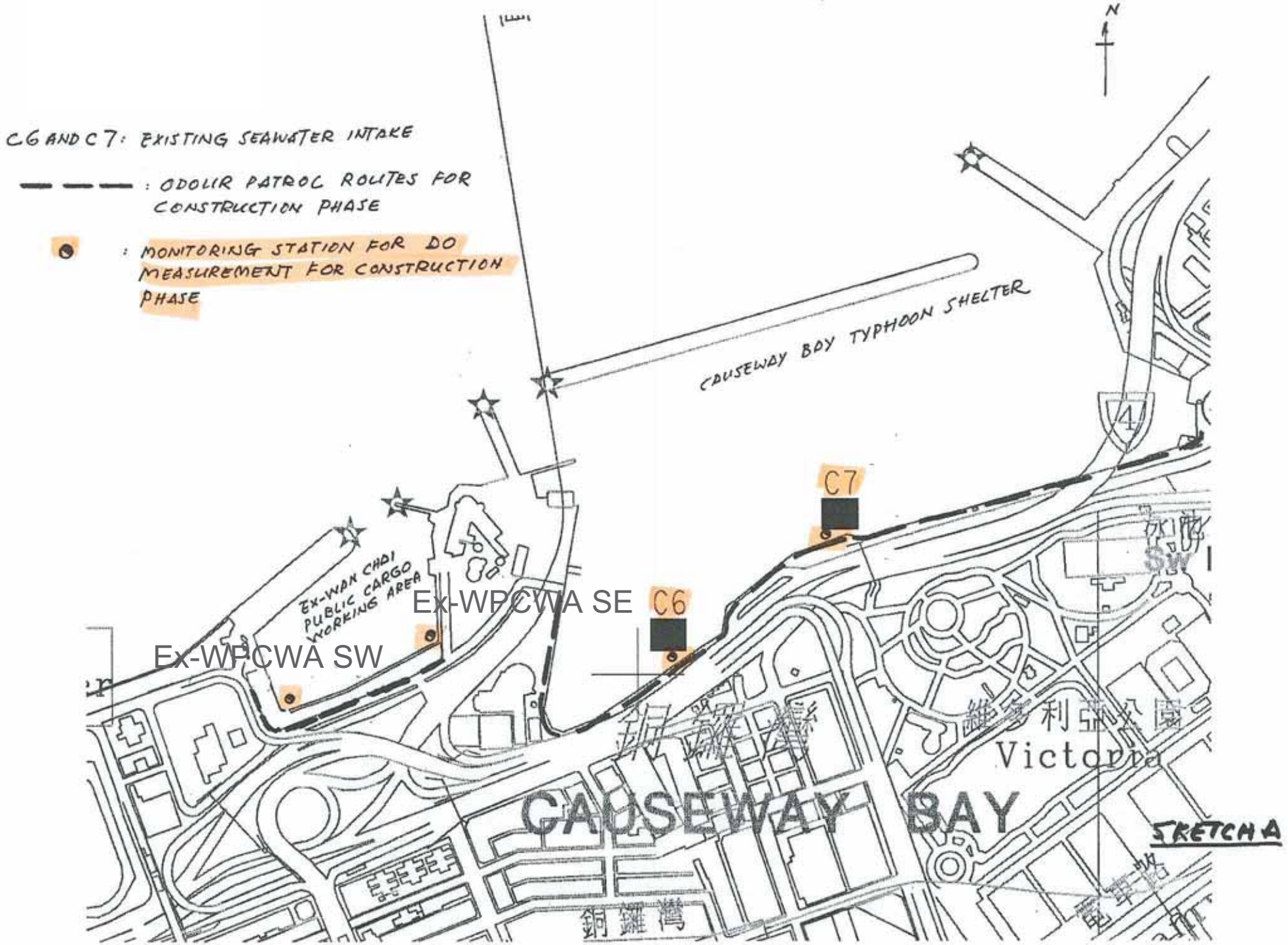
(SHEET 2 OF 2)

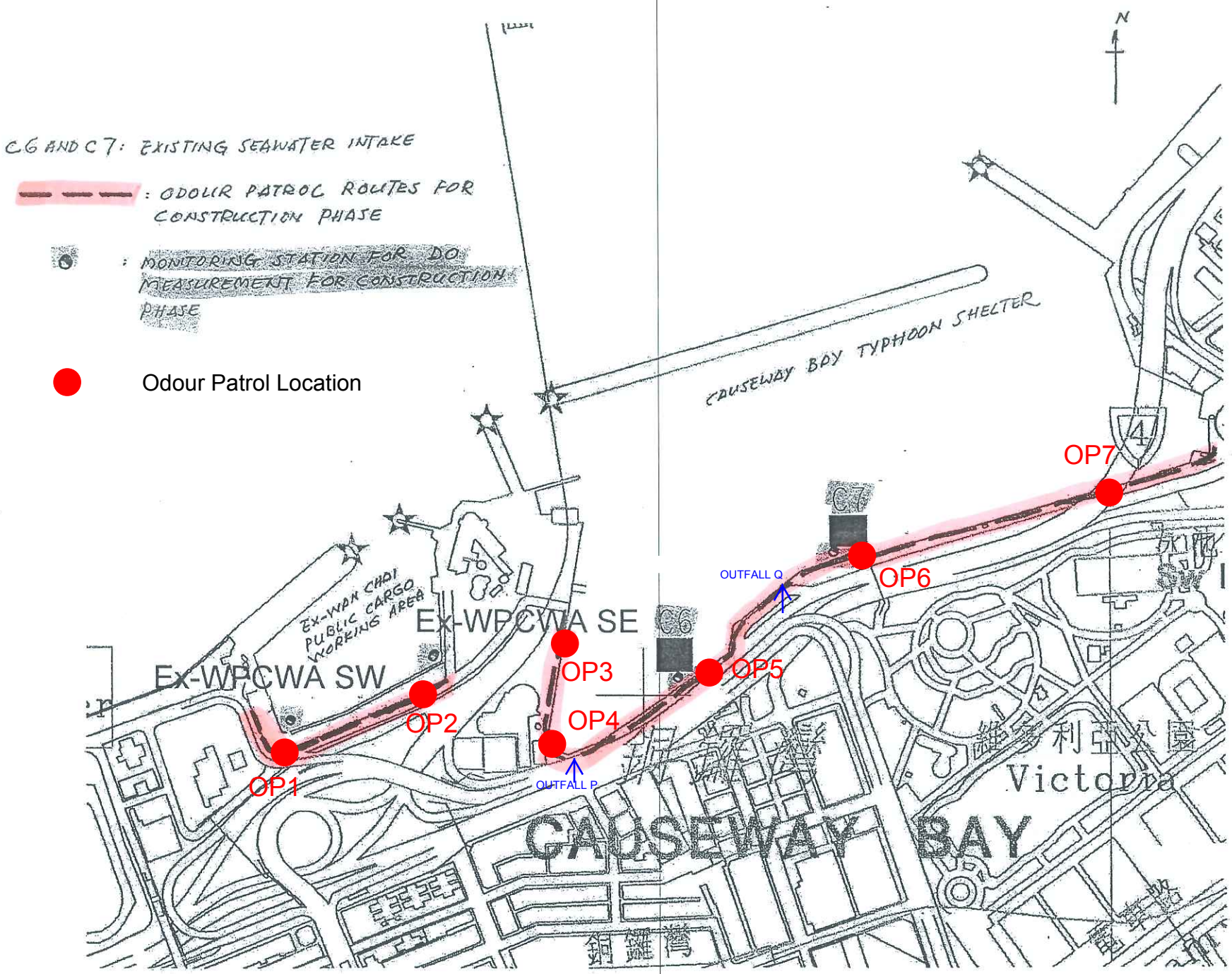
FIGURE 4.1b

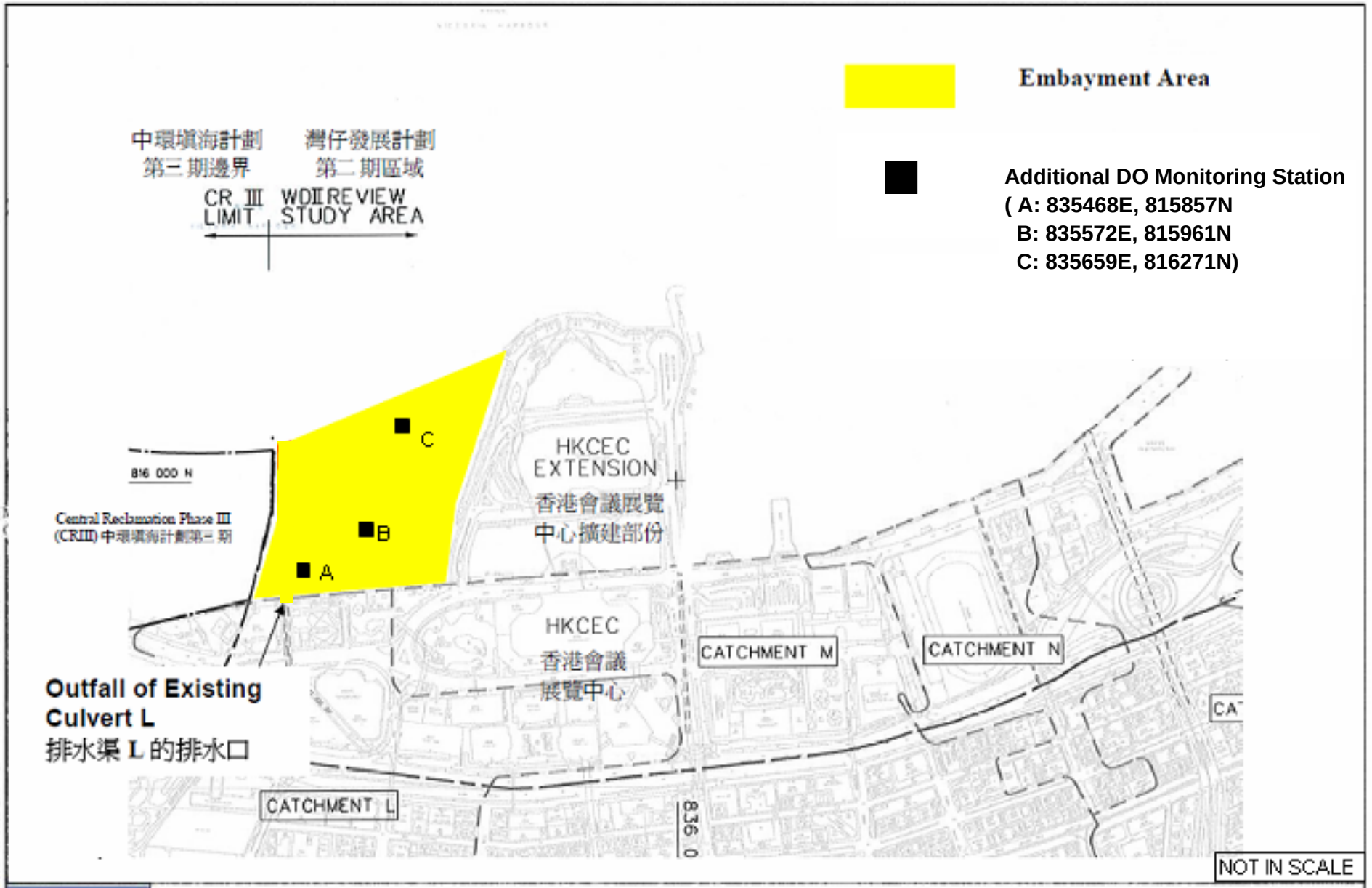
P:/60017193/REPORT/DRAWINGS/EM&A-0708/WQ/4.1B.DGN SCALE 1:8000 (A3)



Location plan of Environmental Monitoring Stations


C6 AND C7: EXISTING SEAWATER INTAKE
: ODOUR PATROL ROUTES FOR CONSTRUCTION PHASE
: MONITORING STATION FOR DO MEASUREMENT FOR CONSTRUCTION PHASE
N
CAUSEWAY BAY TYPHOON SHELTER
C7
C6
EX-WAN CHAI PUBLIC CARGO WORKING AREA
Ex-WPCWA SE
Ex-WPCWA SW
CAUSEWAY BAY
Victoria
SKETCH A


C6 AND C7: EXISTING SEAWATER INTAKE
: ODOUR PATROL ROUTES FOR CONSTRUCTION PHASE
: MONITORING STATION FOR DO MEASUREMENT FOR CONSTRUCTION PHASE
Odour Patrol Location
N
CAUSEWAY BAY TYPHOON SHELTER
EX-WAN CHAI PUBLIC CARGO WORKING AREA
Ex-WPCWA SE
Ex-WPCWA SW
OP1
OP2
OP3
OP4
OP5
OP6
OP7
OUTFALL P
OUTFALL Q
C6
C7
CAUSEWAY BAY
Victoria



Location Plan of Additional Dissolved Oxygen Monitoring Stations for Culvert L Water Discharge Flow

Appendix 2.1

Environmental Mitigation Implementation Schedule

Environmental Mitigation Implementation Schedule

Implementation Schedule for Air Quality Control

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

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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	
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

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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)								

Appendix 2.1

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S4.8.14 – S4.8.18	• 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

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<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.							
S5.8, Figure 5.3	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.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO
S5.8, Figure 5.3	For dredging within the Causeway Bay typhoon shelter, seawall shall be partially constructed to protect the nearby seawater intakes from further dredging activities. For example, at TCBR1W, the southern and eastern seawalls shall be constructed first (above high water mark) so that the seawater intakes at the inner water would be protected from the impacts from the remaining dredging activities along the northern boundary.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO
S5.8, Figure 5.3	Silt curtains shall be deployed around the closed grab dredgers during seawall dredging and seawall trench filling in the areas of HKCEC, WCR, TCBR and NP.	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO
S5.8, Figure 5.3	Silt screens shall be applied to seawater intakes at interim construction stages as stated below: <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>	Work site / During the construction period	Contractor		√			EIAO-TM, WPCO

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S5.8	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	Work site / During the construction period	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)

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

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				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.

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				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

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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	
	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.							

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				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								

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				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	√	√			

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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	
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

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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

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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	
	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.							

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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							

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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	
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 3.1

Action and Limit Level

Action and Limit Level

Action and Limit Level for Noise Monitoring

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received.	75 dB(A)[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
CMA1b [Note 2]	320.1	500	176.7	260
CMA2a	323.4	500	169.5	260
CMA3a [Note 2]	311.3	500	171.0	260
CMA4a	312.5	500	171.2	260
CMA5a [Note 2]	332.0	500	181.0	260
CMA6a [Note 2]	300.1	500	187.3	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 were proposed for IEC verification and EPD approval.*
- *The established Action and Limit Levels from the baseline air monitoring will be adopted to the alternative monitoring stations.*

Action and Limit Level for Water Monitoring

Parameters	Dry Season		Wet Season	
	Action	Limit	Action	Limit
WSD Salt Water Intake				
SS in mg L^{-1}	13.00	14.43	16.26	19.74
Turbidity in NTU	8.04	9.49	10.01	11.54
DO in mg/L	3.66	3.28	3.17	2.63
Cooling Water Intake				
SS in mg L^{-1}	15.00	22.13	18.42	27.54
Turbidity in NTU	9.10	10.25	11.35	12.71
DO in mg/L	3.36	2.73	3.02	2.44

Remarks:

- *Action and Limit Level for the wet season are applied after the EPD approval of Updated EM&A Manual on 29 April 2011.*

Action and Limit Levels for Odour Patrol

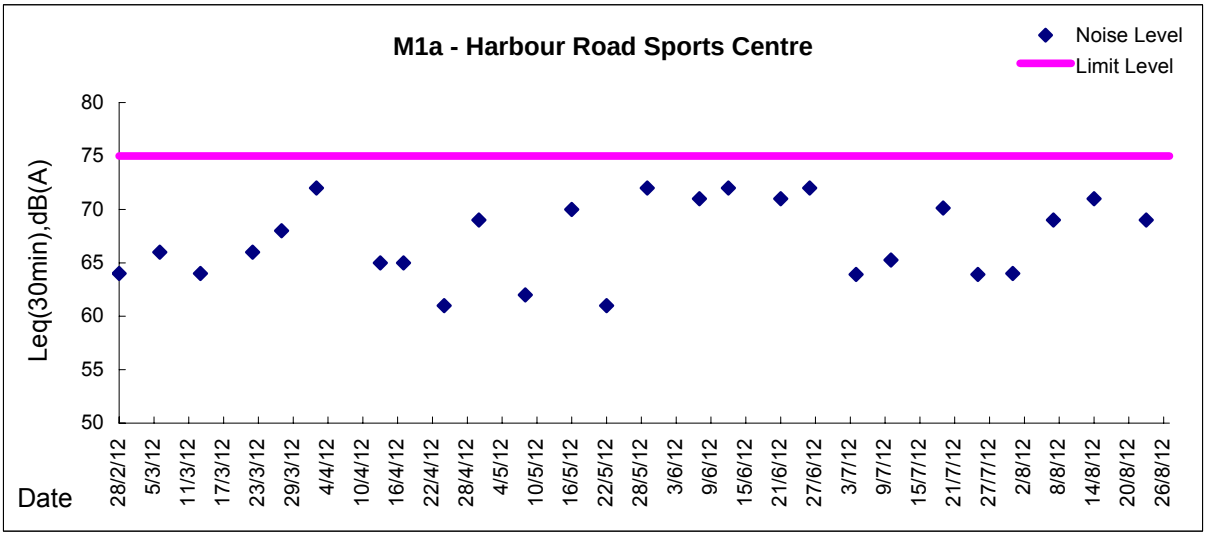
Parameters	Action	Limit
Odour Nuisance (from odour intensity analysis or odour patrol)	• When two documented complaint are received; or • Odour Intensity of 2 is measured from odour intensity analysis.	• Five or more consecutive genuine documented complaints within a week; or • Odour Intensity of 3 or above is measured from odour intensity analysis.

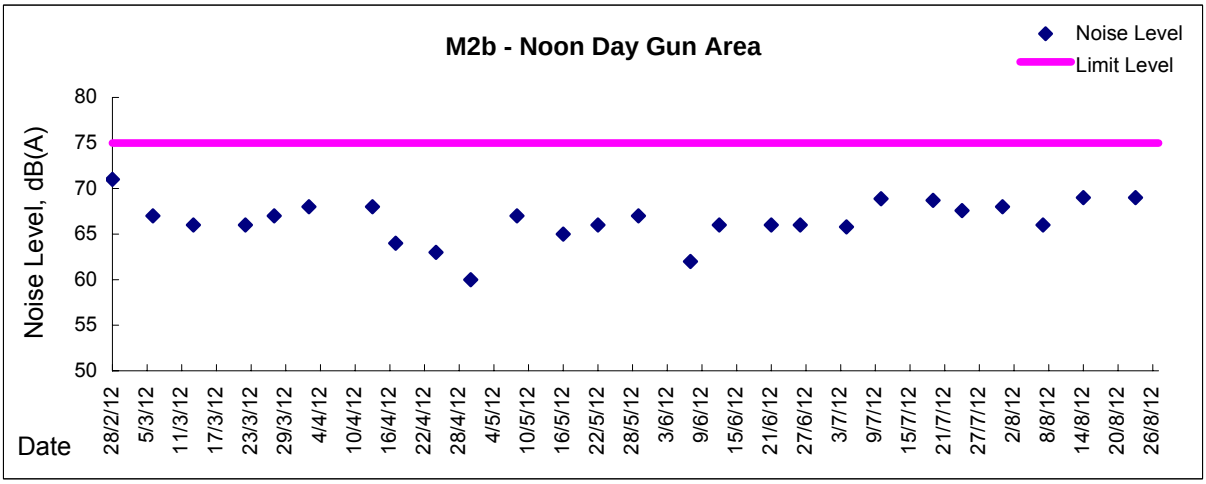
Appendix 4.1

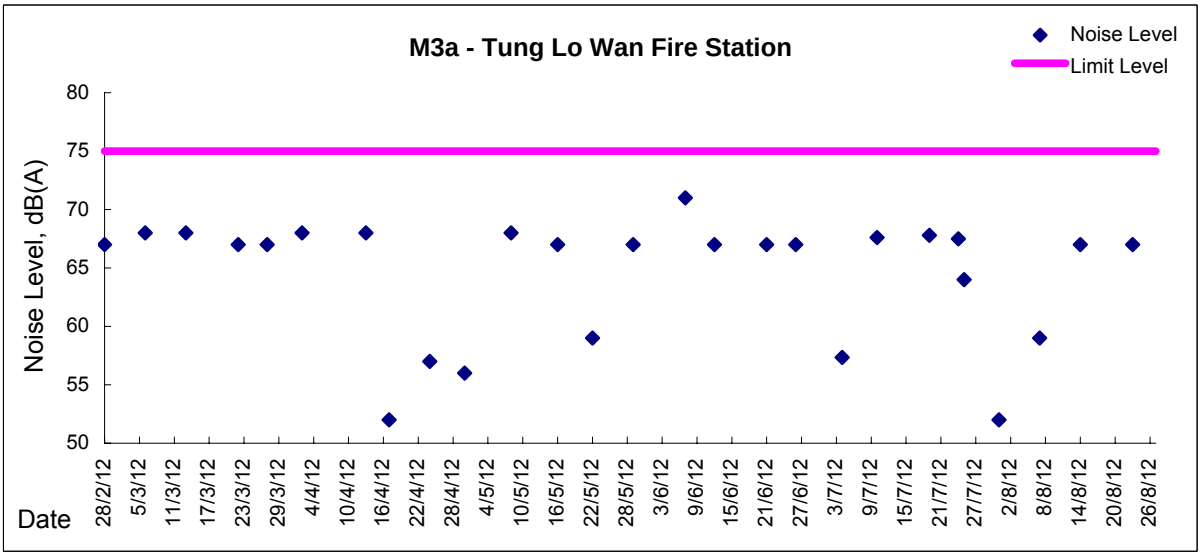
Noise Monitoring Graphical Presentations

Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

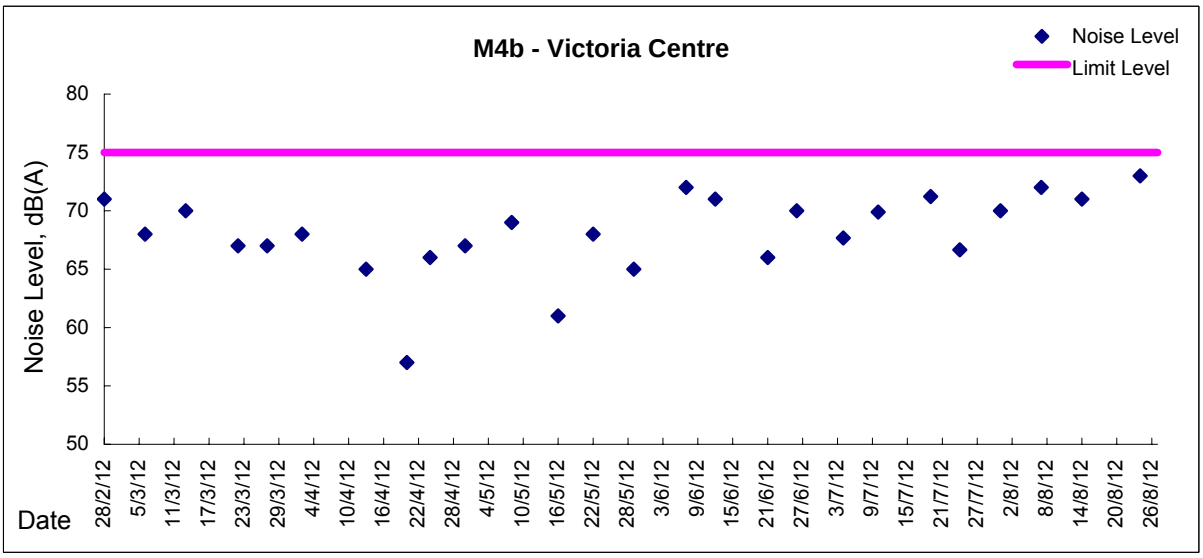


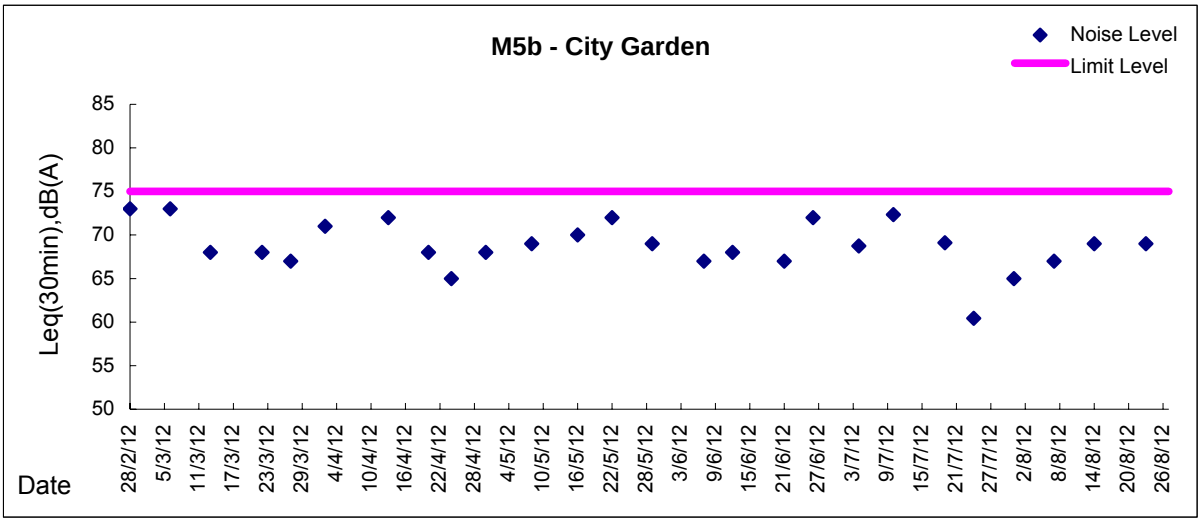


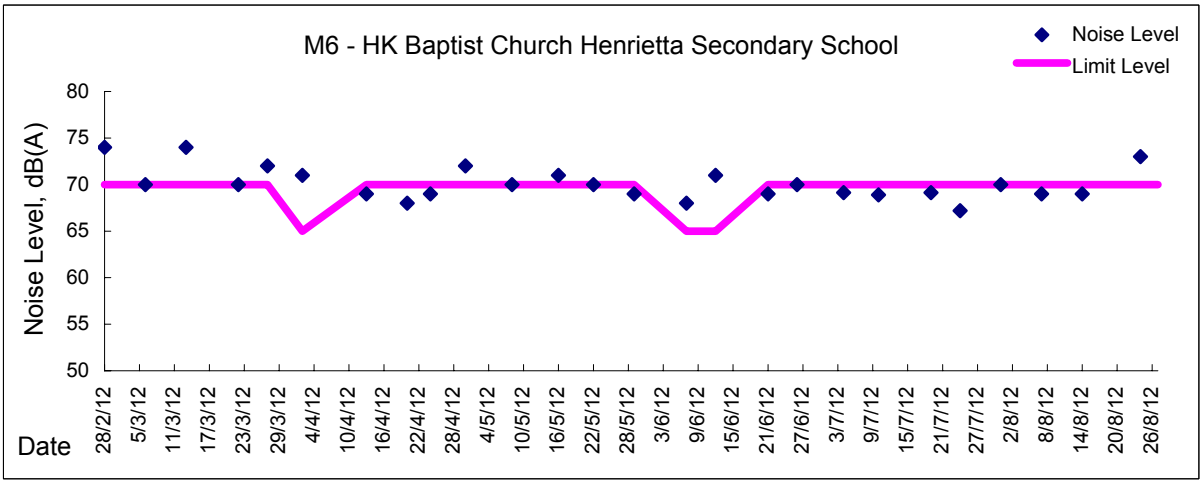


Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

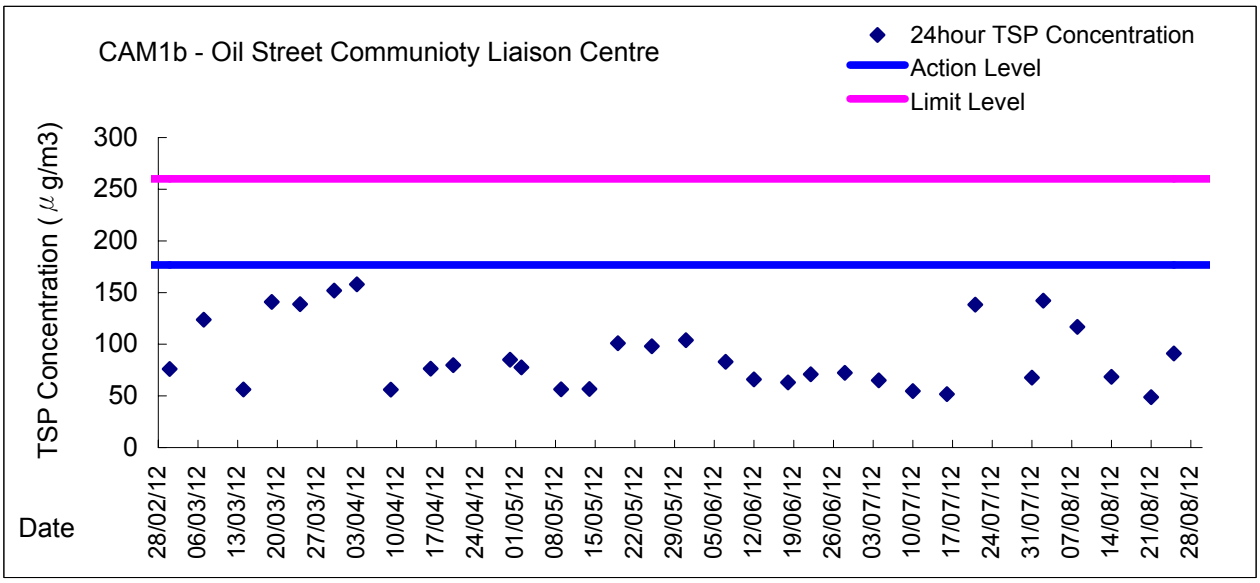


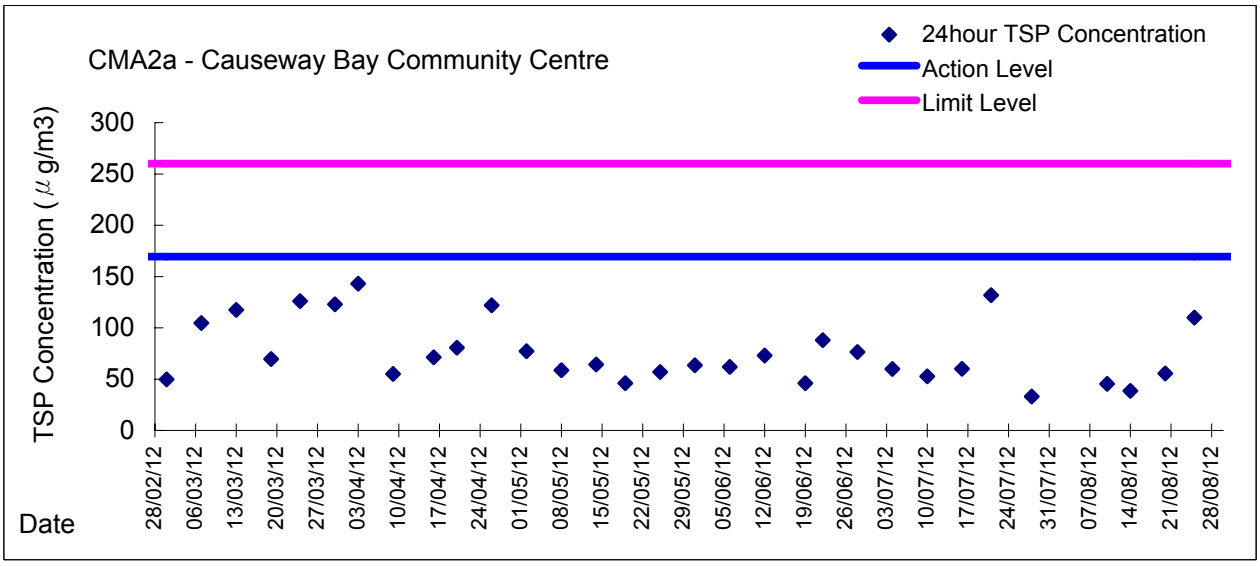


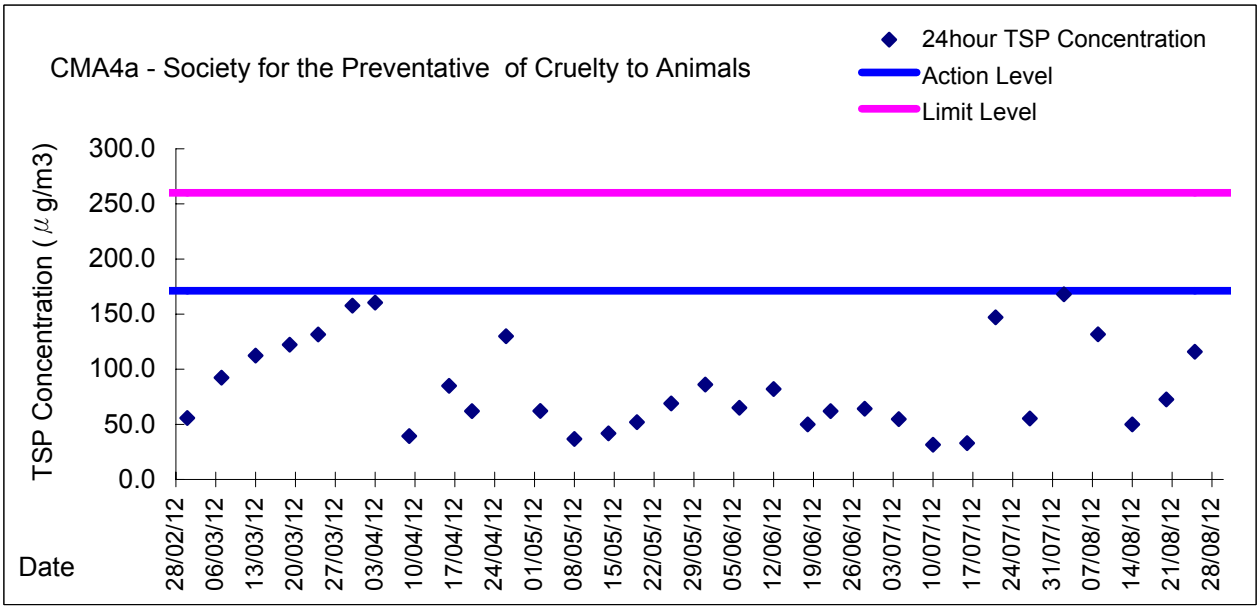


Appendix 4.2
Air Quality Monitoring Graphical Presentations

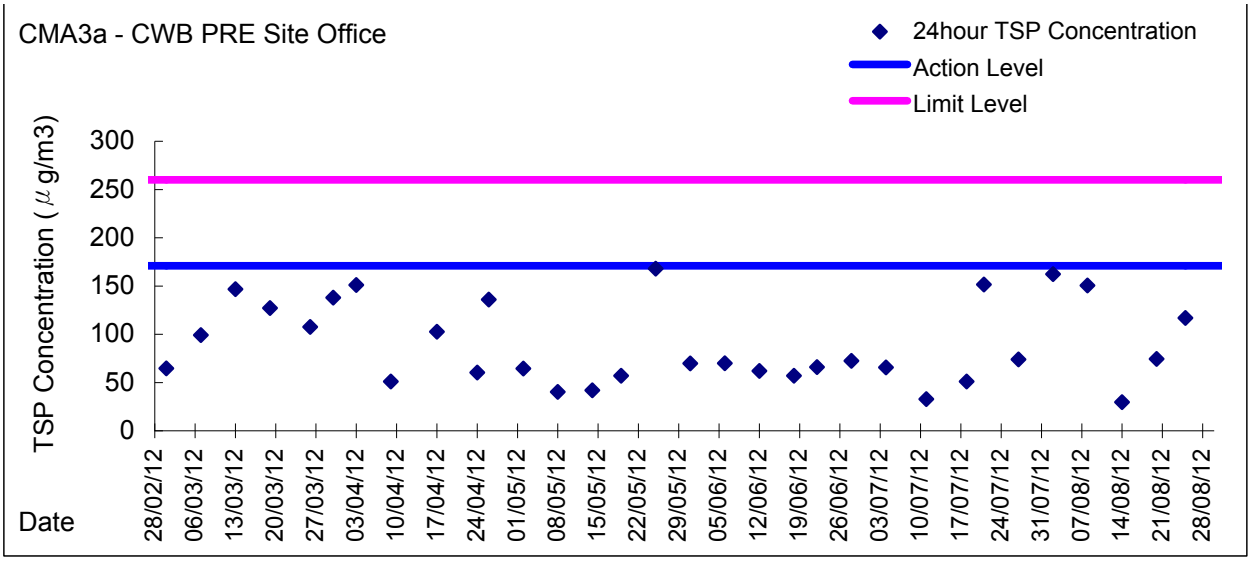
Graphic Presentation of 24 hour TSP Result

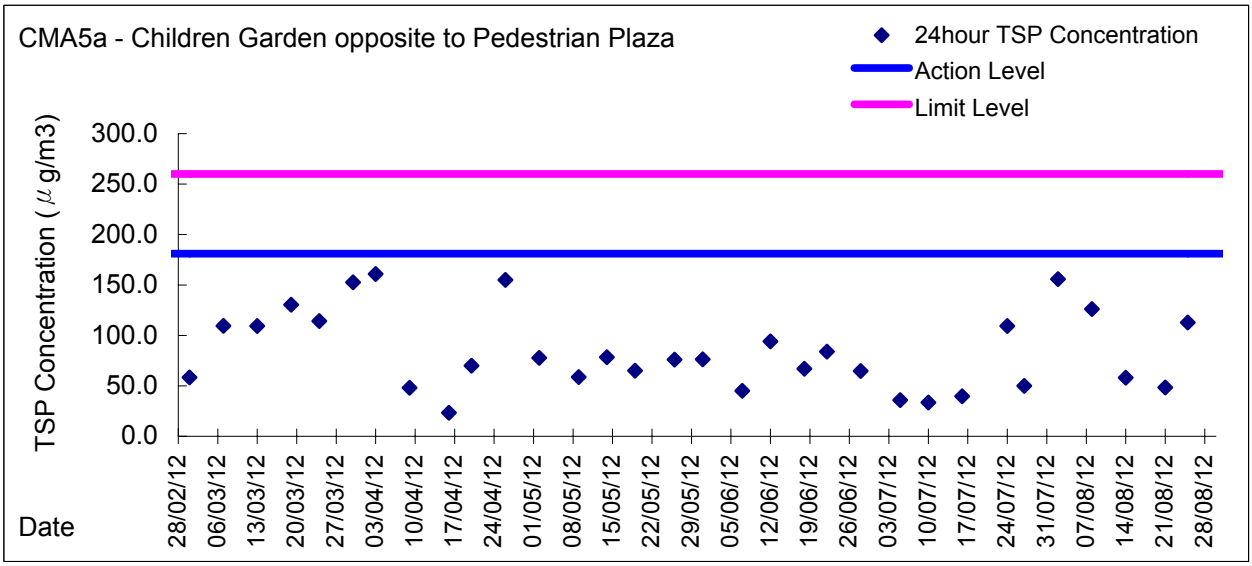


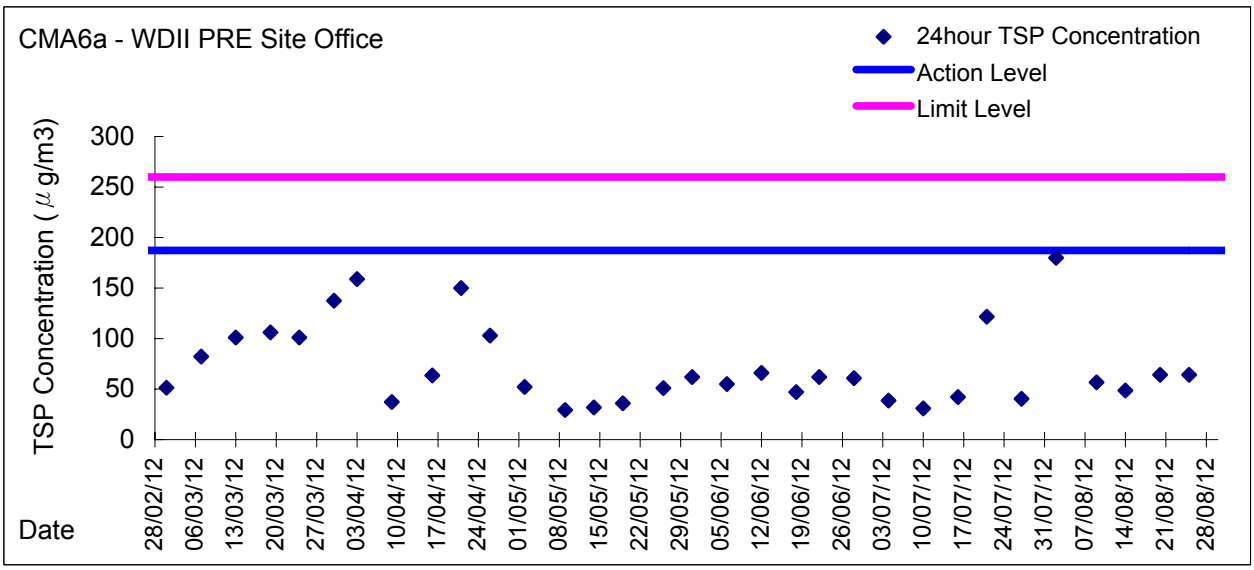




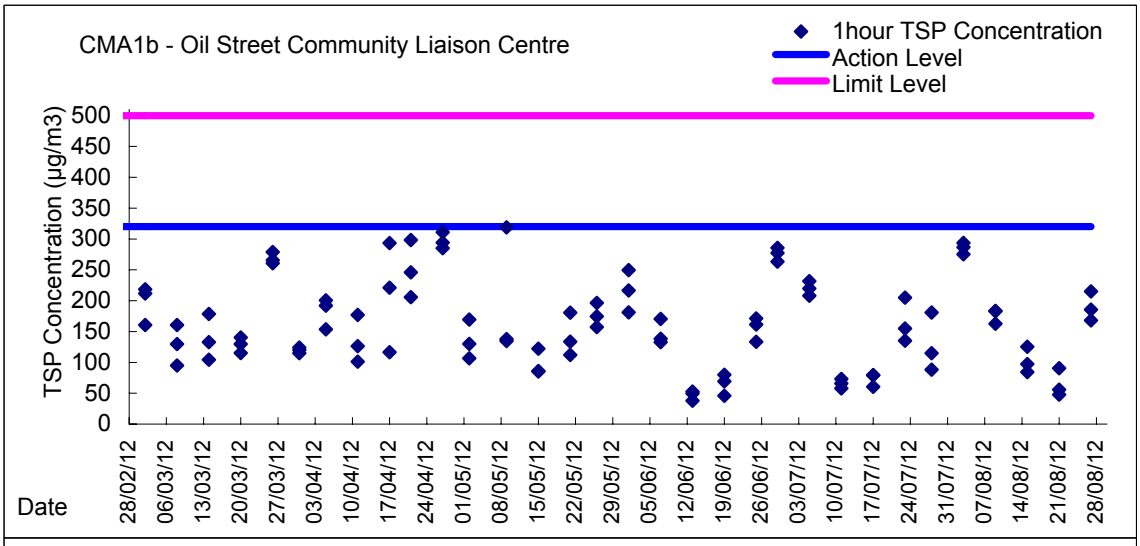
Graphic Presentation of 24 hour TSP Result

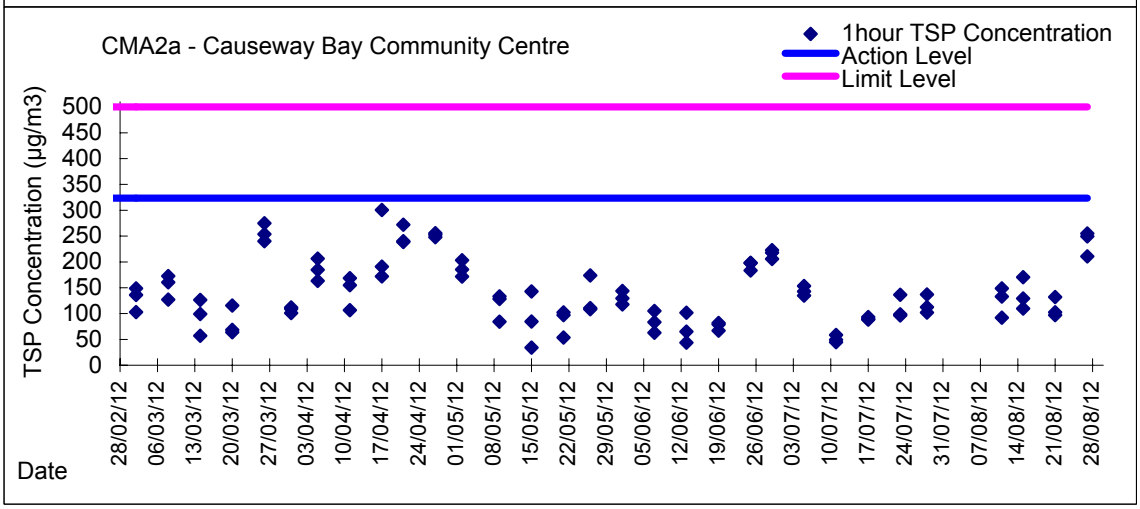


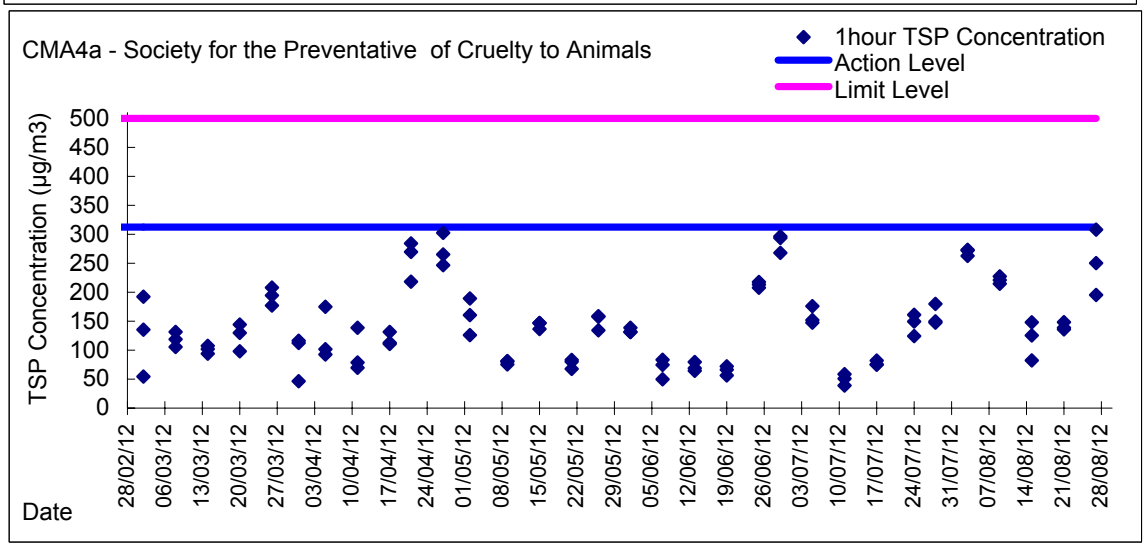




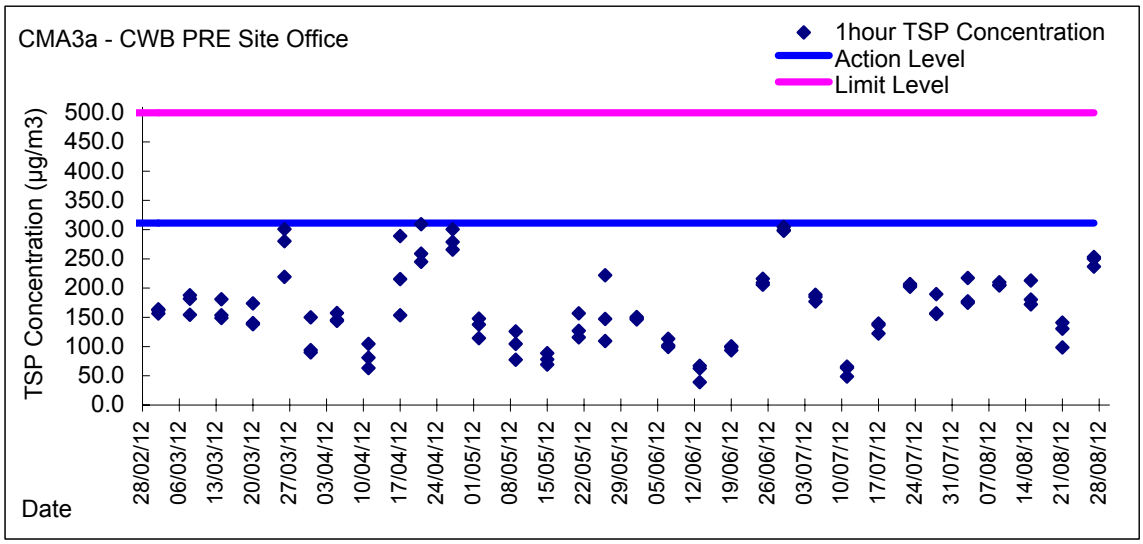
Graphic Presentation of 1 hour TSP Result

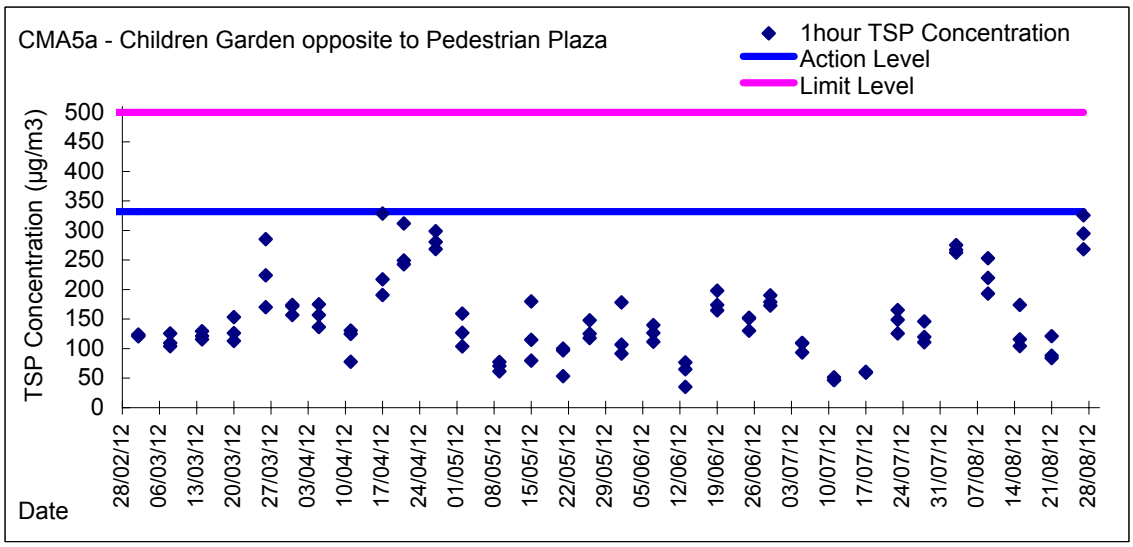


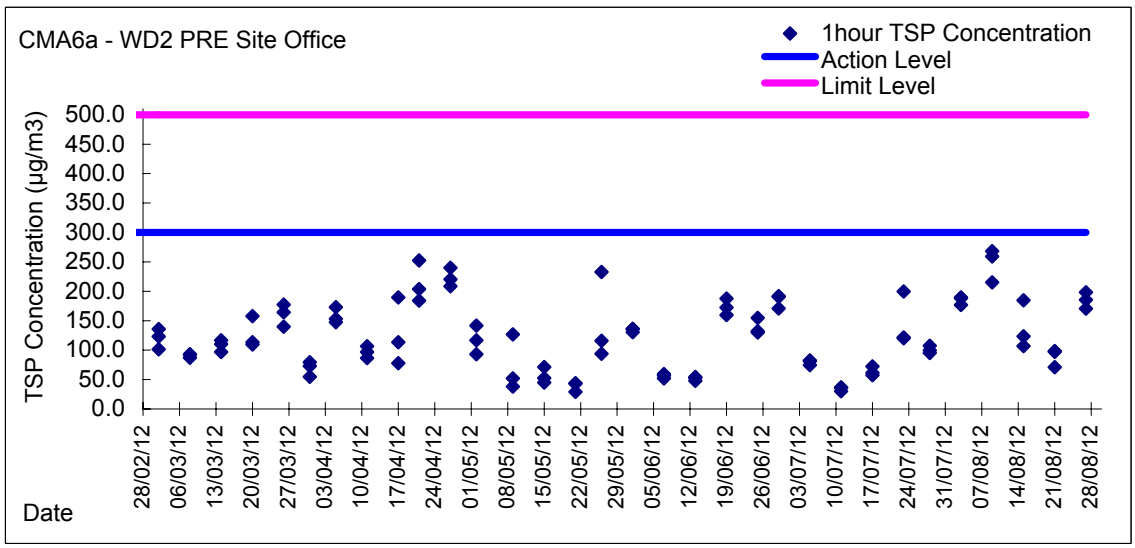




Graphic Presentation of 1 hour TSP Result







Field Data Record Sheet

Monitoring Date: 9-7-2012 **Weather Condition:** Fine **Tidal Condition:** EBB

Temperature: 32.5°C **Relative Humidity:** 63%

Location	Time	Temperature	Relative Humidity (%)	Odour Intensity	Odour Nature	Possible Odour Sources	Duration	Wind Speed(m/s)	Wind Direction	Remarks
OP7	14:04	29.8	72.0	0				1.6	S-SW	
OP6	14:15	33.7	60.8	0-1	Rotten Egg	Sea	Intermittent	1.1	S-SW	
OP5	14:22	34.6	56.9	0				2.7	S-SW	
OP4	14:28	35.7	57.1	2	Rotten Egg	Sea	Continuous	0.3	S-SW	
OP3	14:34	35.4	55.7	0				0.6	S-SW	
OP2	14:42	35.8	54.4	0				0.2	S-SW	
OP1	14:49	34.2	59.1	1	Rotten Egg	Sea	Continuous	0.1	S-SW	

Remarks for Odour Intensity: The perceived odour intensity is to be divided into 5 levels which are ranked in the descending order as follows:
0 – Not detected. No odour perceived or an odour so weak that it cannot be easily characterised or described;
1 – Slight Identifiable odour, and slight chance to have odour nuisance;
2 – Moderate Identifiable odour, and moderate chance to have odour nuisance
3 – Strong Identifiable, likely to have odour nuisance;
4 – Extreme Severe odour, and unacceptable level

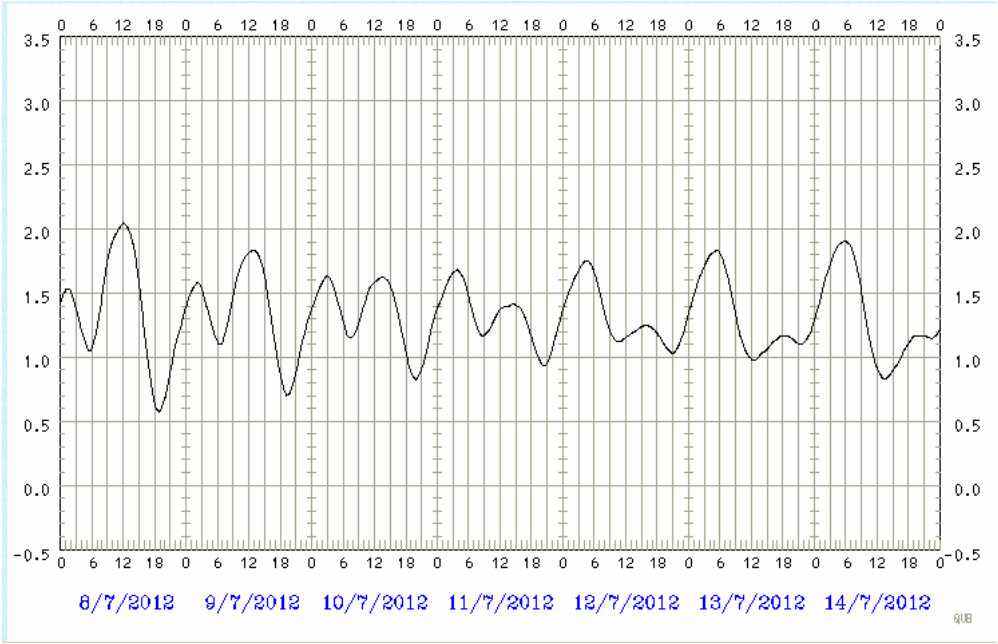
Meteorological Conditions on 9 July 2012

- **Hong Kong Observatory Weather Station at Hong Kong Observatory**
  Air Temperature: 27.8-32.9℃ Relative humidity: 60-85%

- **Hong Kong Observatory Weather Station at Hong Kong Park**
  Air Temperature: 27.6-33.3℃

- **The tidal data at Quarry Bay Station**

Tide Time	Tide Height (m)
2:14	1.6
6:27	1.1
12:49	1.8
19:18	0.7



Field Data Record Sheet

Monitoring Date: 27-7-2012 **Weather Condition:** Cloudy **Tidal Condition:** FLOOD

Temperature: 27.0°C **Relative Humidity:** 95%

Location	Time	Temperature	Relative Humidity (%)	Odour Intensity	Odour Nature	Possible Odour Sources	Duration	Wind Speed(m/s)	Wind Direction	Remarks
OP7	15:36	24.7	89.2	0				0.4	SE	
OP6	15:47	26.9	85.5	0				0.9	SE	
OP5	15:53	27.6	83.8	0				1.2	SE	
OP4	15:59	28.1	79.7	2	Rotten Egg	Sea	Continuous	2.5	SE	
OP3	16:05	28.7	78.5	0				0.1	SE	
OP2	16:10	29.6	75.4	0				0.2	SE	
OP1	16:16	28.4	73.5	1-2	Rotten Egg	Sea	Continuous	1.1	SE	

Remarks for Odour Intensity: The perceived odour intensity is to be divided into 5 levels which are ranked in the descending order as follows:
0 – Not detected. No odour perceived or an odour so weak that it cannot be easily characterised or described;
1 – Slight Identifiable odour, and slight chance to have odour nuisance;
2 – Moderate Identifiable odour, and moderate chance to have odour nuisance
3 – Strong Identifiable, likely to have odour nuisance;
4 – Extreme Severe odour, and unacceptable level

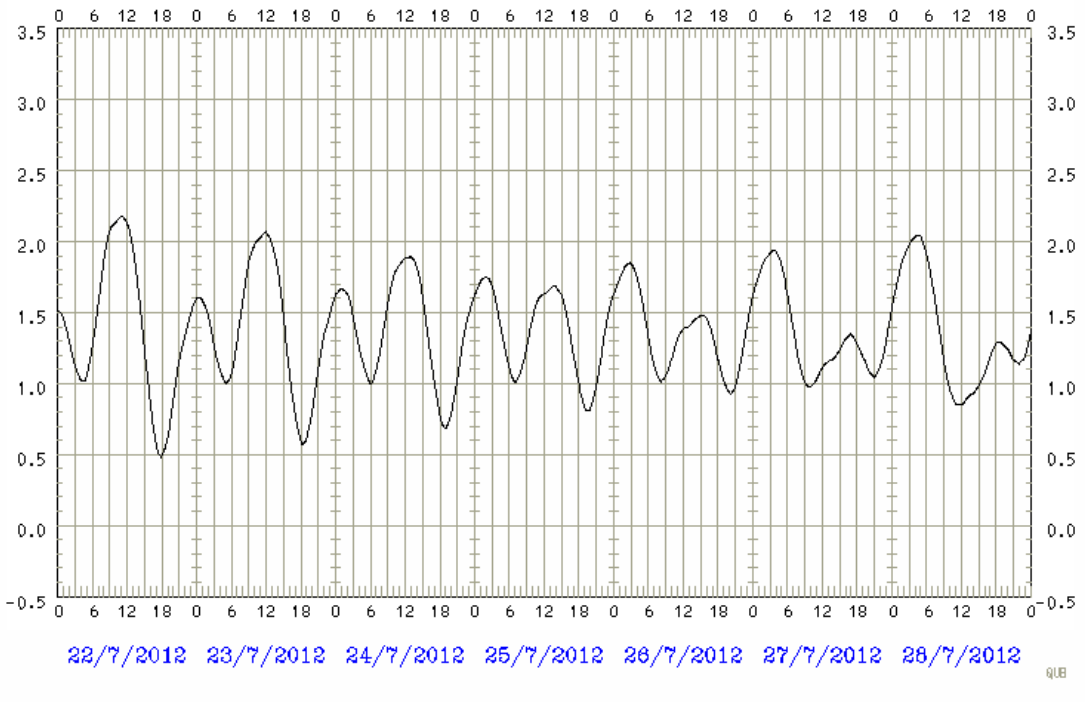
Meteorological Conditions on 27 July 2012

- **Hong Kong Observatory Weather Station at Hong Kong Observatory**
  Air Temperature: 25.1- 27.0 ℃ Relative humidity: 94%

- **Hong Kong Observatory Weather Station at Hong Kong Park**
  Air Temperature: 24.5- 27.1 ℃

- **The tidal data at Quarry Bay Station**

Tide Time	Tide Height (m)
03:37	1.9
09:50	1.0
16:50	1.3
20:52	1.0



Field Data Record Sheet

Monitoring Date: 13-8-2012 **Weather Condition:** Cloudy **Tidal Condition:** FLOOD

Temperature: 28.8-29.5°C **Relative Humidity:** 83-90%

Location	Time	Temperature	Relative Humidity (%)	Odour Intensity	Odour Nature	Possible Odour Sources	Duration	Wind Speed(m/s)	Wind Direction	Remarks
OP7	14:10	29.7	75.0	1	Rotten Egg	Sea	Continuous	0.6	S	
OP6	14:20	31.4	67.2	0				2.3	S	
OP5	14:27	32.0	65.5	0				2.0	S	
OP4	14:35	31.2	69.0	1-2	Rotten Egg	Sea	Continuous	1.7	S	
OP3	14:40	31.0	70.5	0				0.9	S	
OP2	14”50	31.2	67.0	0				0.2	S	
OP1	15:03	28.9	73.0	1-2	Rotten Egg	Sea	Continuous	2.2	S	

Remarks for Odour Intensity: The perceived odour intensity is to be divided into 5 levels which are ranked in the descending order as follows:
0 – Not detected. No odour perceived or an odour so weak that it cannot be easily characterised or described;
1 – Slight Identifiable odour, and slight chance to have odour nuisance;
2 – Moderate Identifiable odour, and moderate chance to have odour nuisance
3 – Strong Identifiable, likely to have odour nuisance;
4 – Extreme Severe odour, and unacceptable level

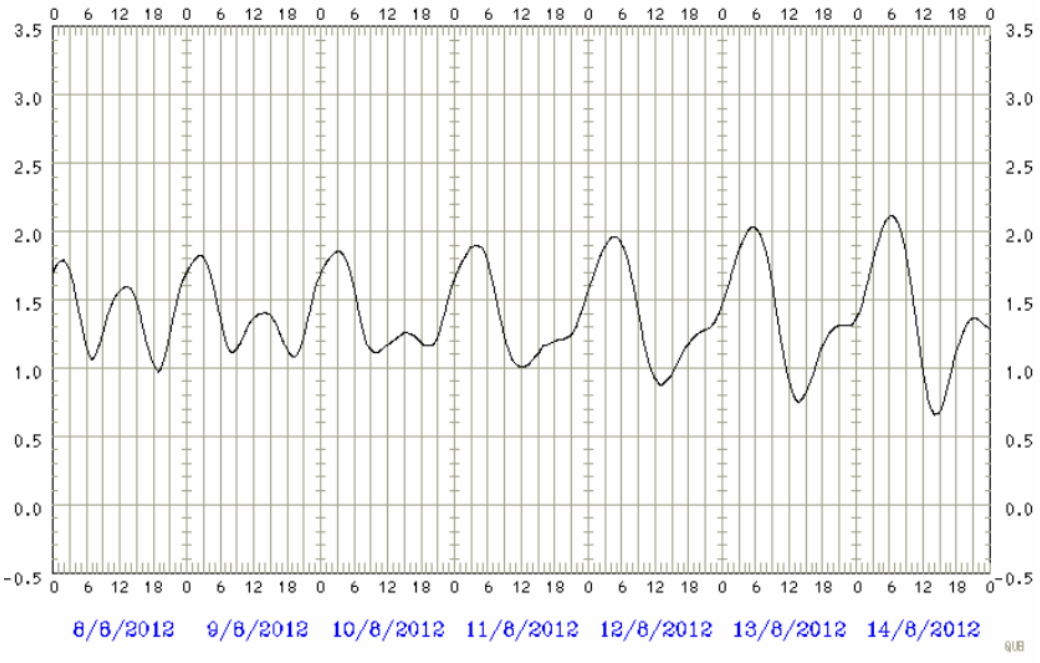
Meteorological Conditions on 13 August 2012

- **Hong Kong Observatory Weather Station at Hong Kong Observatory**
  Air Temperature: 26.4 - 30.1℃ Relative humidity: 83 %

- **Hong Kong Observatory Weather Station at Hong Kong Park**
  Air Temperature: 25.4 - 30.1℃

- **The tidal data at Quarry Bay Station**

Tide Time	Tide Height (m)
05:25	2.0
13:46	0.8
-	-
-	-



Field Data Record Sheet

Monitoring Date: 23-8-2012 **Weather Condition:** Cloudy **Tidal Condition:** Ebb

Temperature: 30.4-31.0°C **Relative Humidity:** 68-75%

Location	Time	Temperature	Relative Humidity (%)	Odour Intensity	Odour Nature	Possible Odour Sources	Duration	Wind Speed(m/s)	Wind Direction	Remarks
OP7	14:05	31.2	67.5	0				0.4	N	
OP6	14:15	31.9	64.3	0				0.7	N	
OP5	14:21	31.9	64.7	0				2.8	N	
OP4	14:26	32.4	62.9	0				3.1	N	
OP3	14:32	32.7	61.4	0				0.6	N	
OP2	14:38	32.8	62.0	0				0.2	N	
OP1	14:43	32.7	61.7	0-1	Rotten Egg	Sea	Intermittent	0.8	N	

Remarks for Odour Intensity: The perceived odour intensity is to be divided into 5 levels which are ranked in the descending order as follows:
0 – Not detected. No odour perceived or an odour so weak that it cannot be easily characterised or described;
1 – Slight Identifiable odour, and slight chance to have odour nuisance;
2 – Moderate Identifiable odour, and moderate chance to have odour nuisance
3 – Strong Identifiable, likely to have odour nuisance;
4 – Extreme Severe odour, and unacceptable level

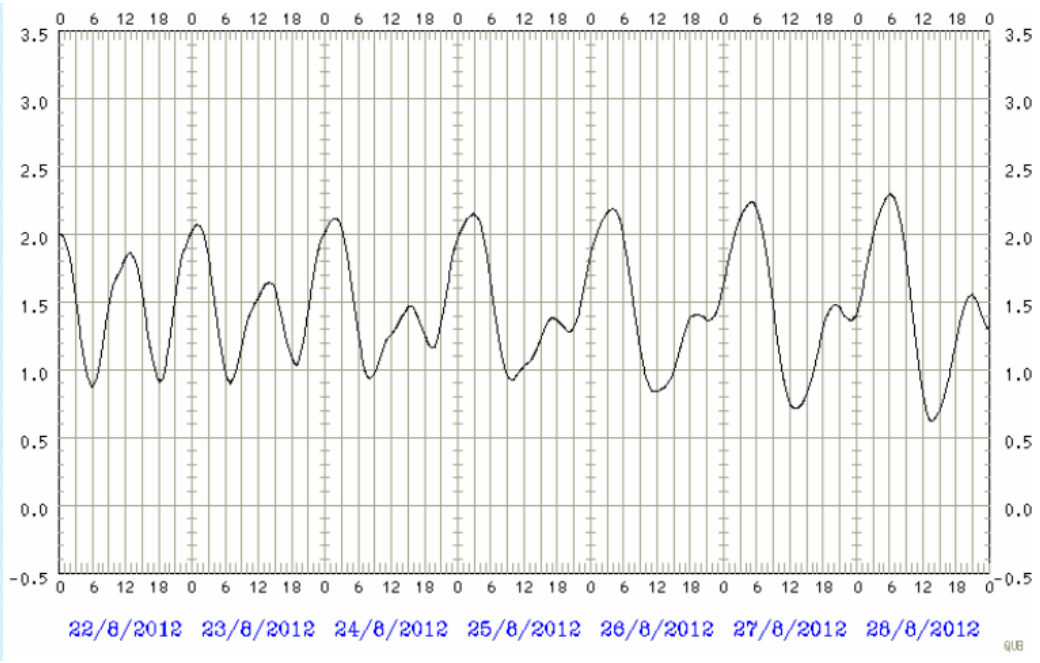
Meteorological Conditions on 23 August 2012

- **Hong Kong Observatory Weather Station at Hong Kong Observatory**
  Air Temperature: 26.6 – 31.8℃ Relative humidity: 64-86 %

- **Hong Kong Observatory Weather Station at Hong Kong Park**
  Air Temperature: 24.8 – 33.3℃

- **The tidal data at Quarry Bay Station**

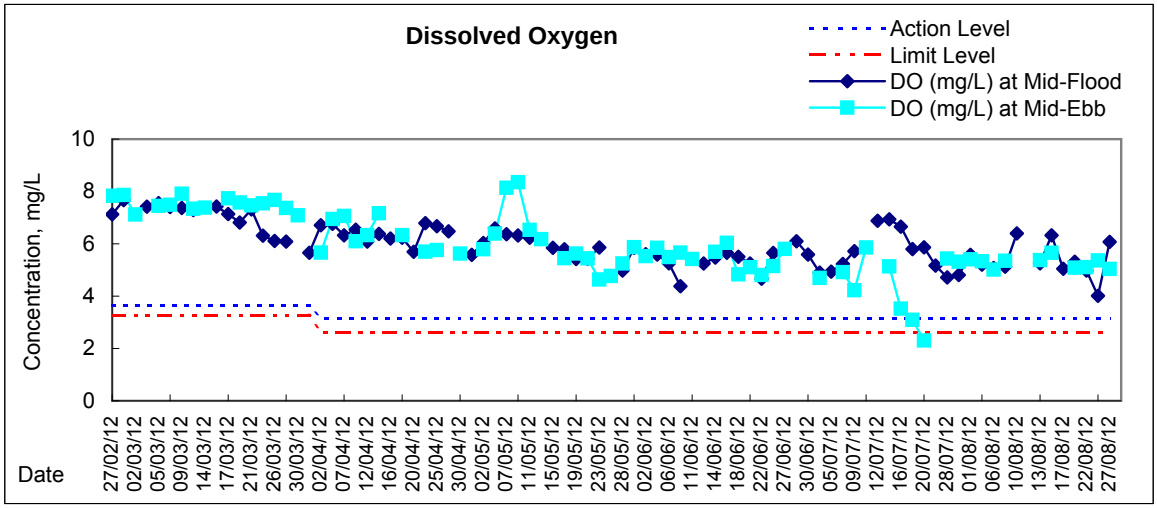
Tide Time	Tide Height (m)
0:59	2.1
6:53	0.9
13:58	1.6
18:47	1

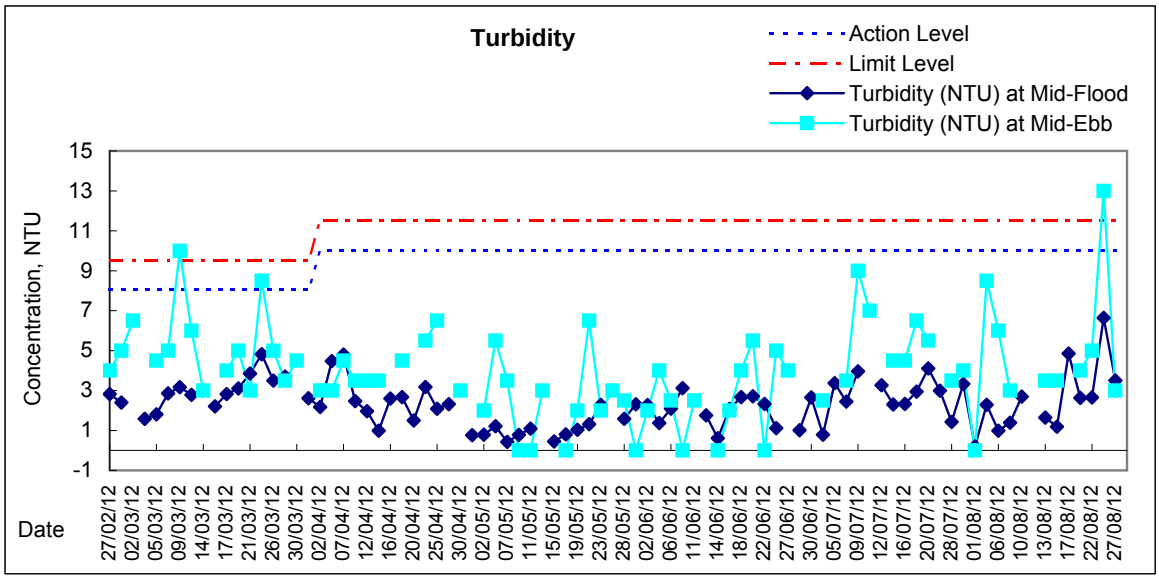


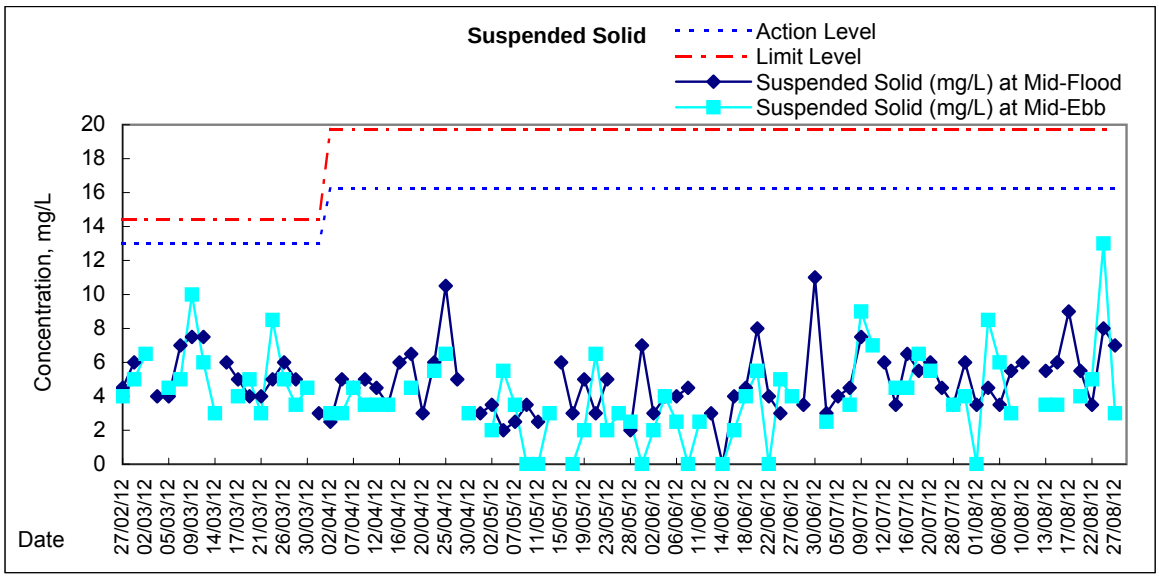
Appendix 4.3

Water Quality Monitoring Graphical Presentations

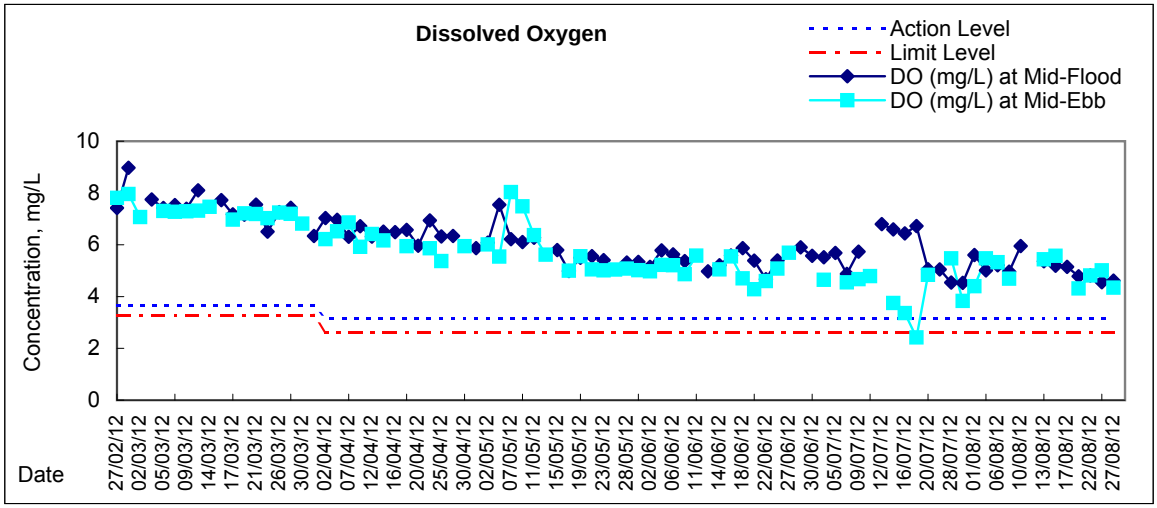
Graphic Presentation of Water Quality Result of WSD9 - Tai Wan

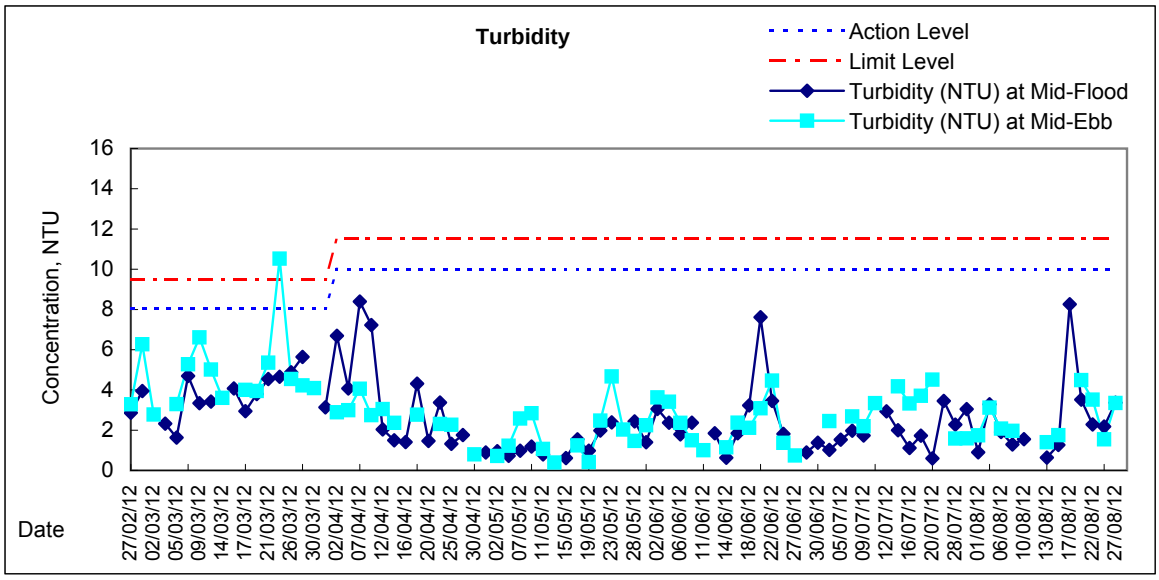


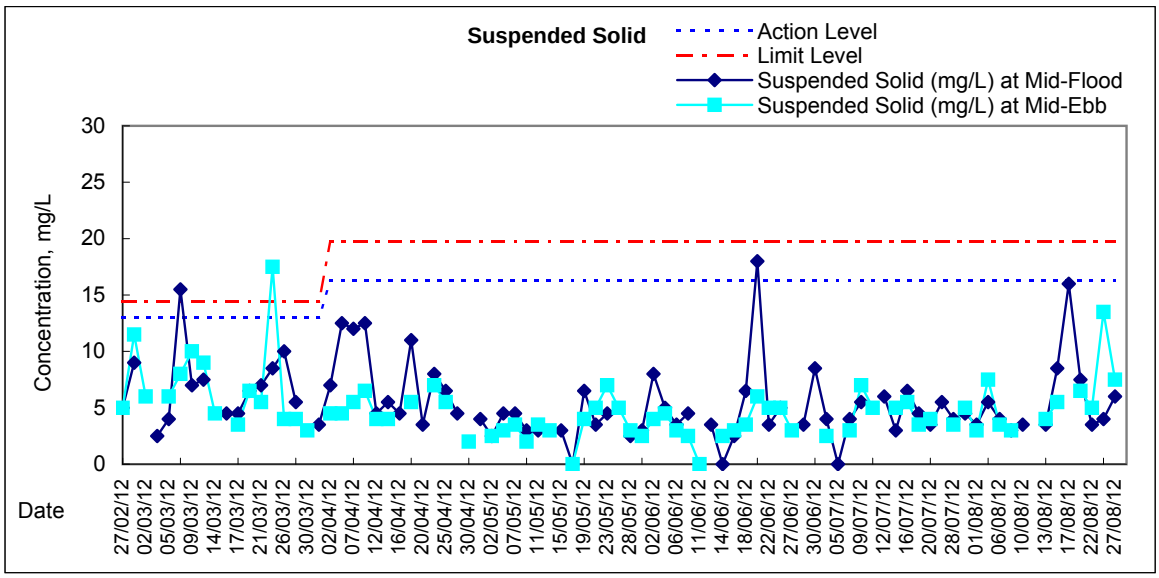




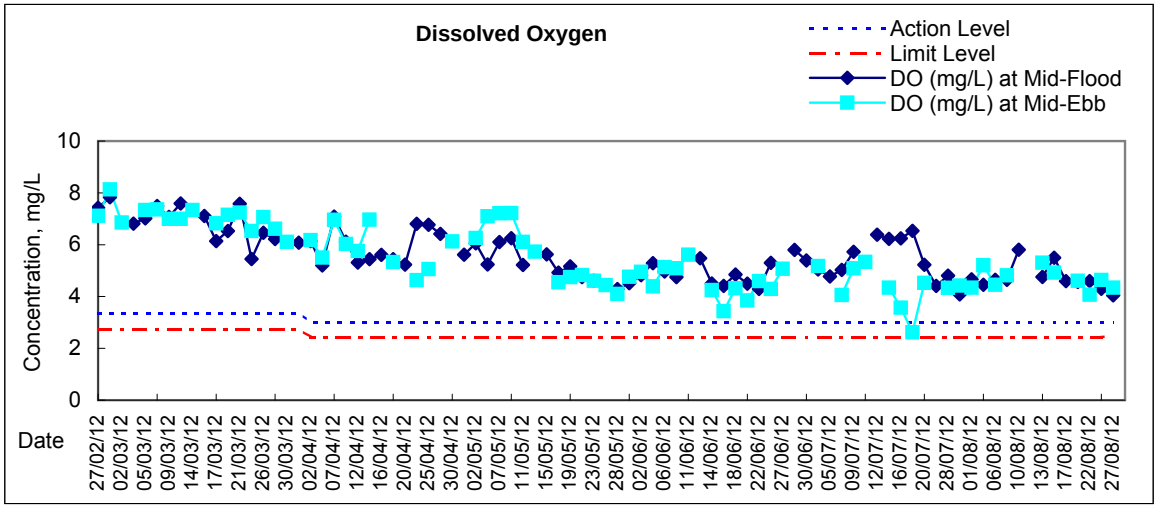
Graphic Presentation of Water Quality Result of WSD17 - Quarry Bay

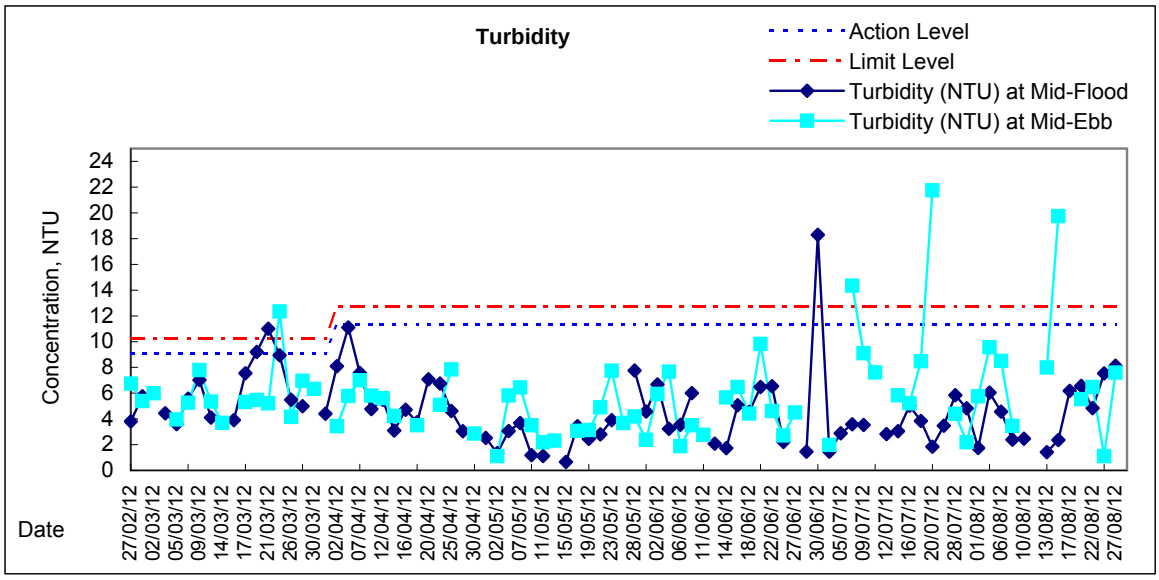


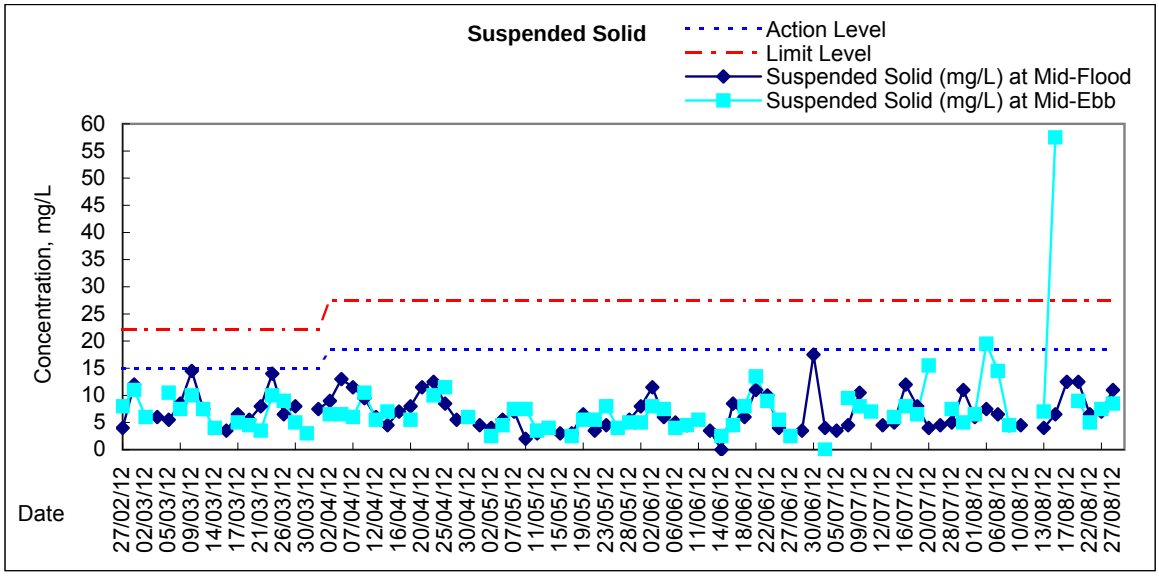




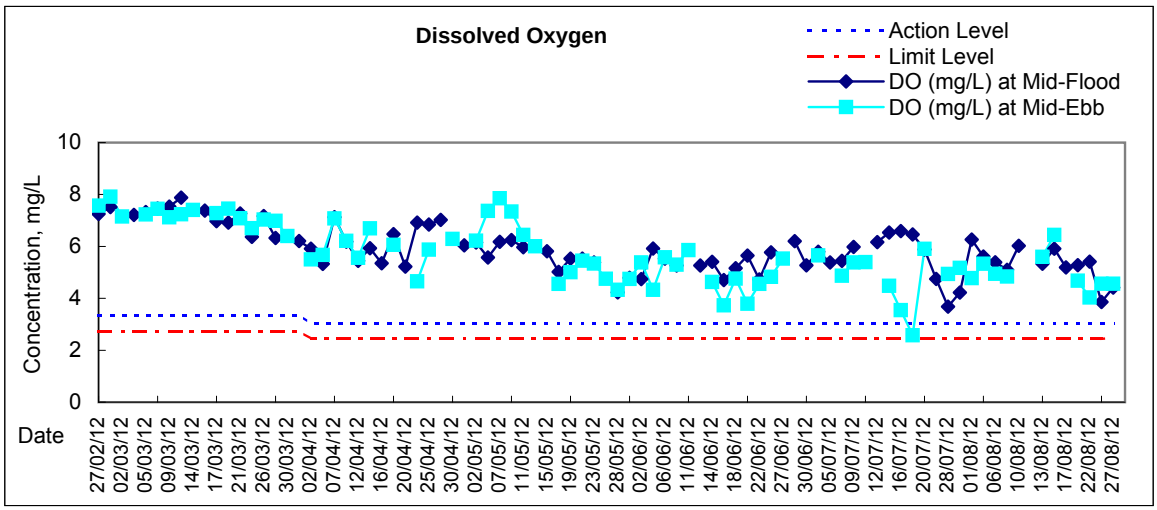
Graphic Presentation of Water Quality Result of C8 - City Garden

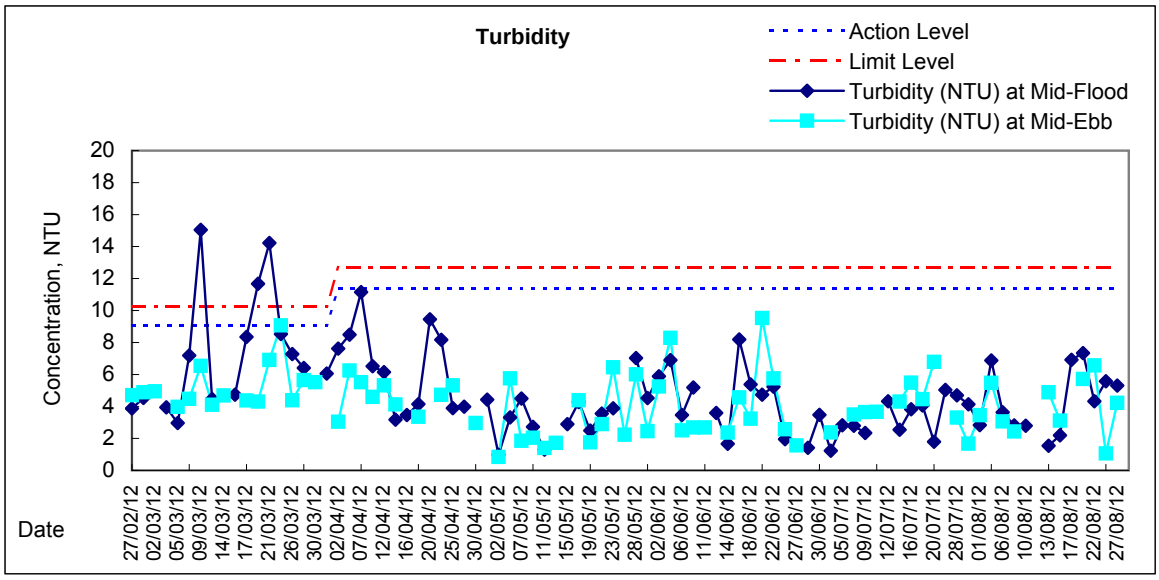


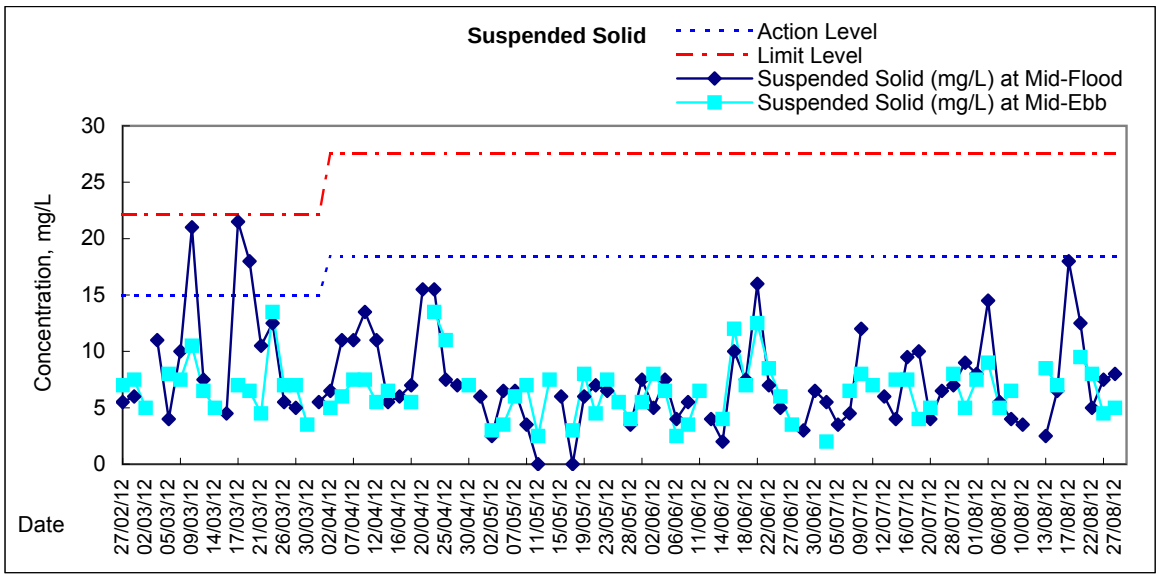




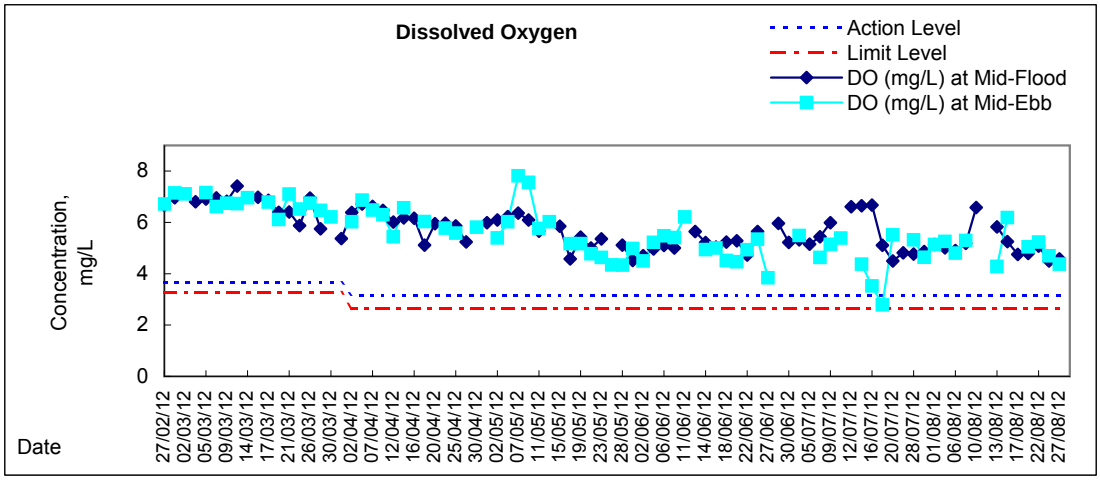
Graphic Presentation of Water Quality Result of C9 - Provident Centre

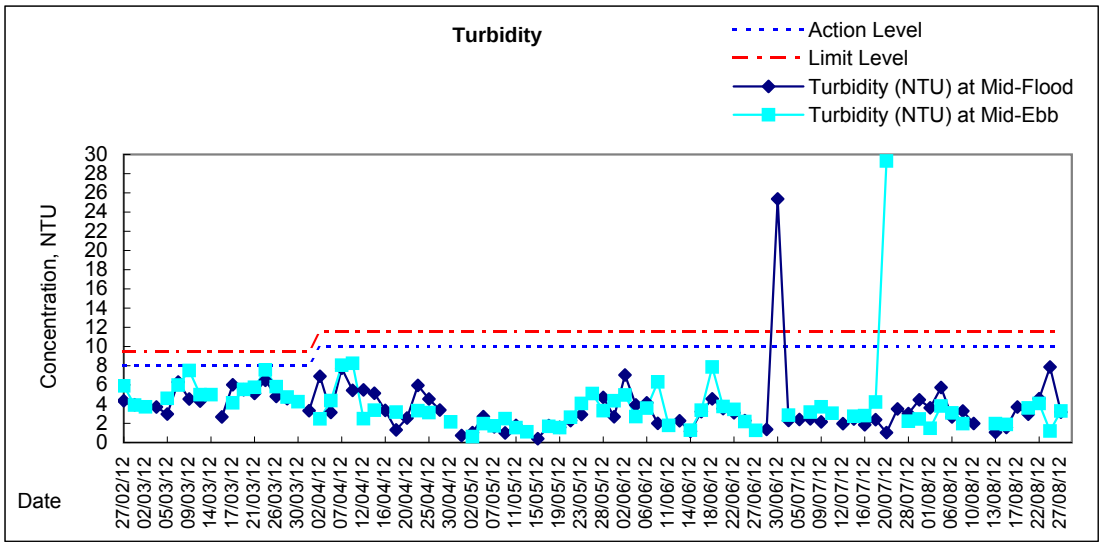


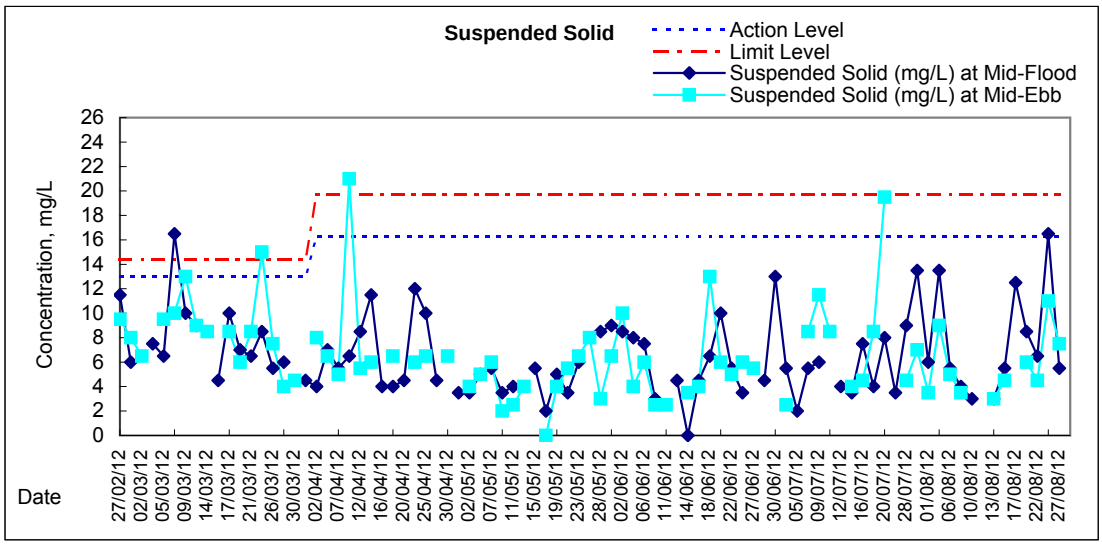




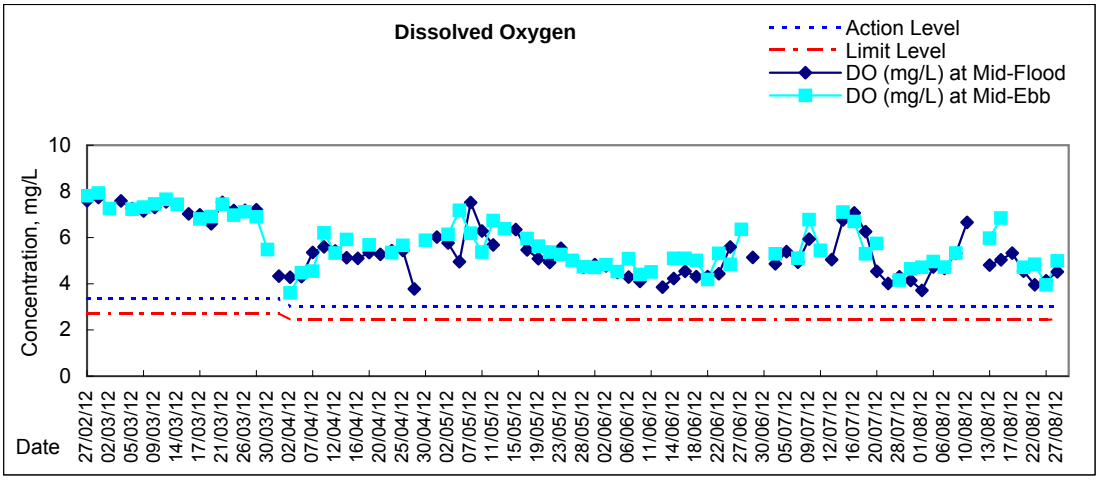
Graphic Presentation of Water Quality Result of WSD19 - Sheung Wan

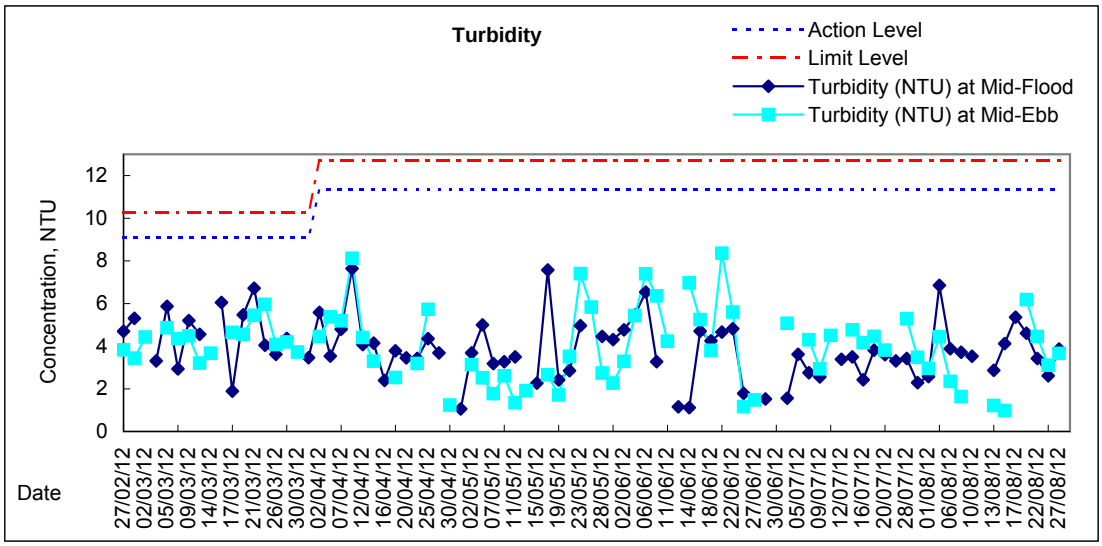


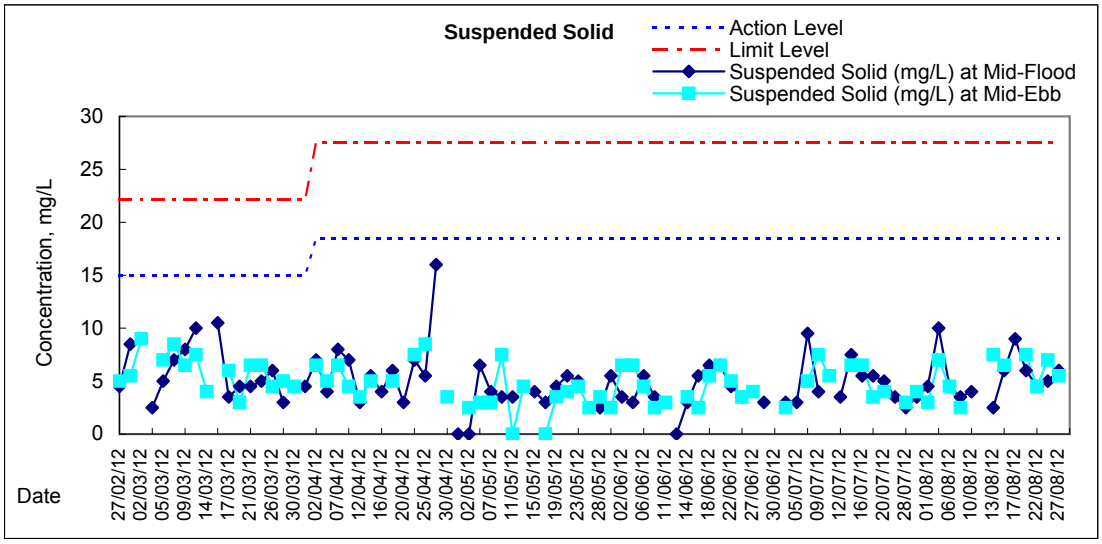




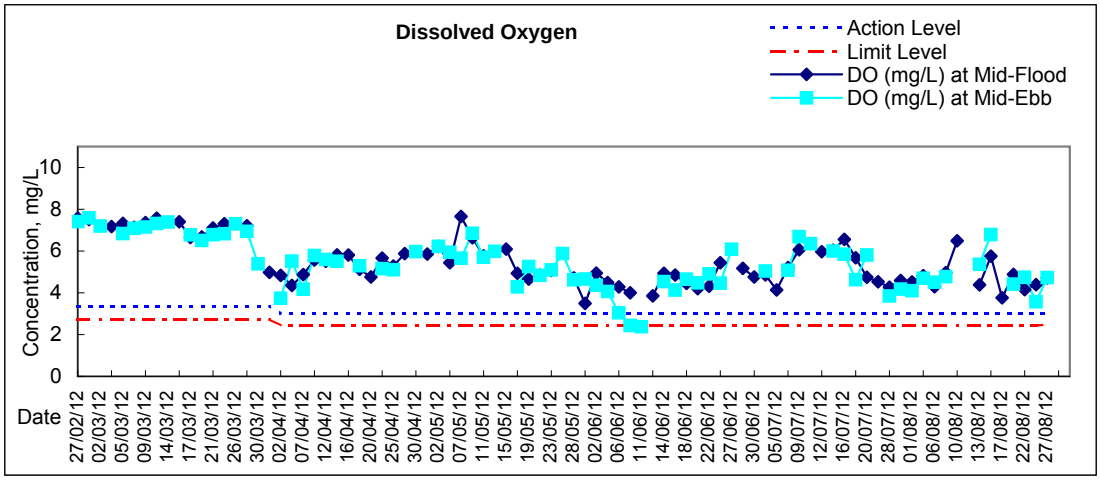
Graphic Presentation of Water Quality Result of C1 - HKCEC

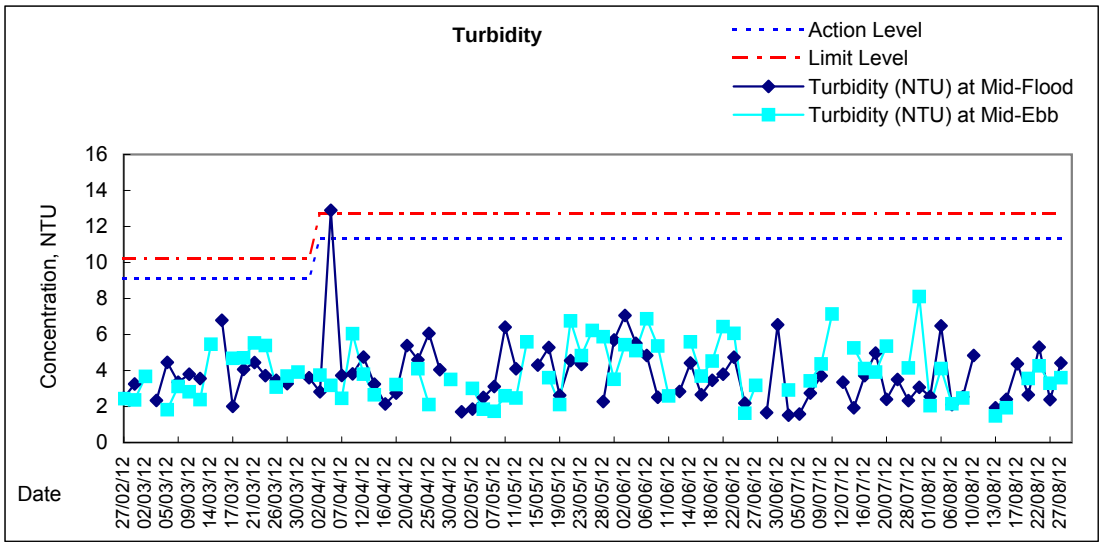


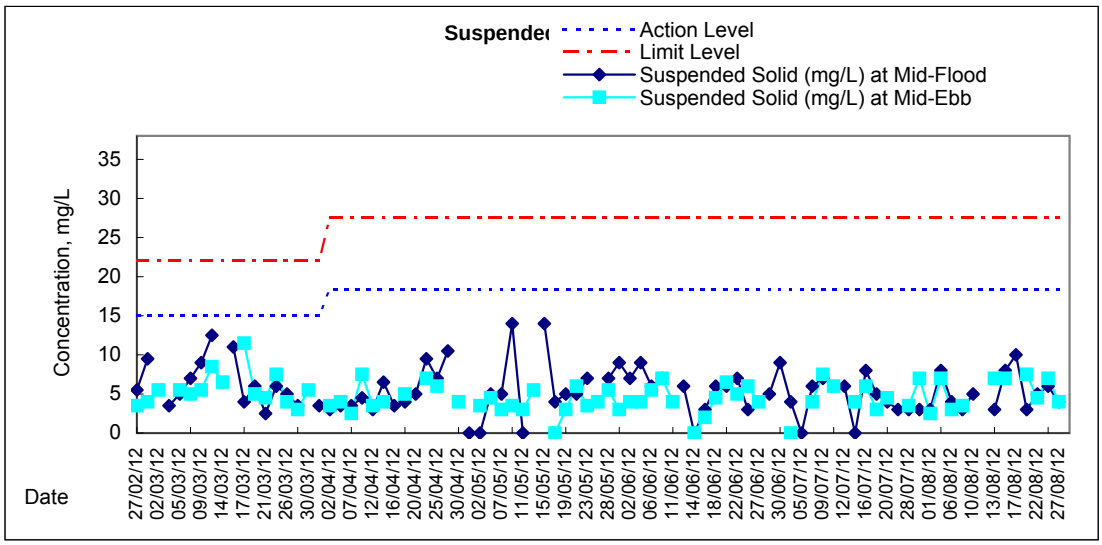




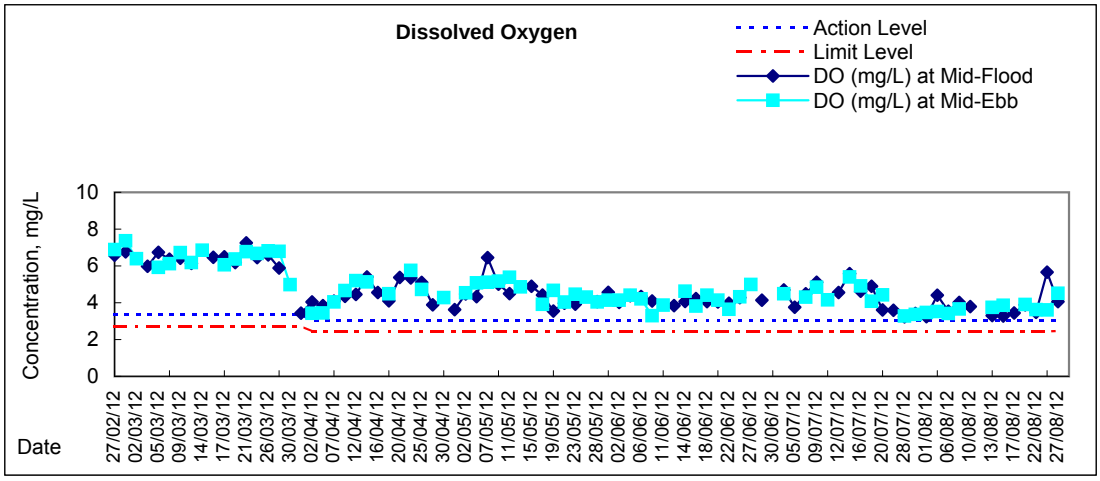
Graphic Presentation of Water Quality Result of C2 - TH / APA / SOC

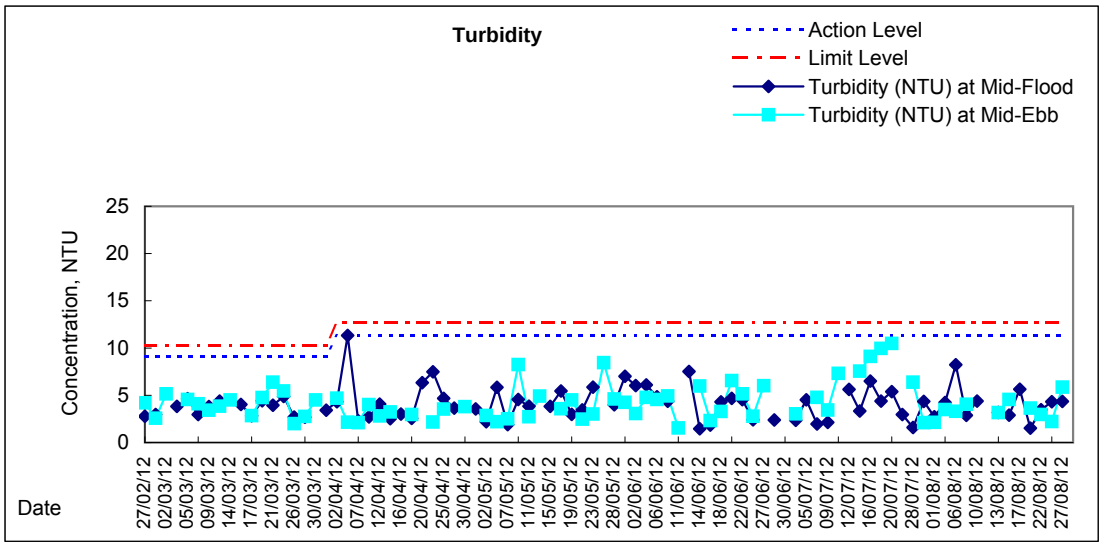


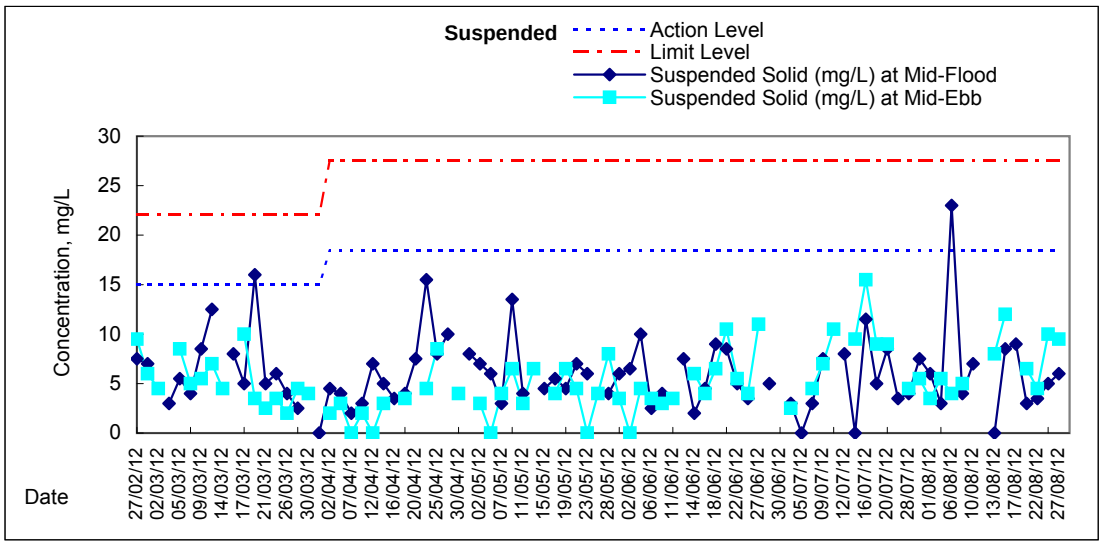




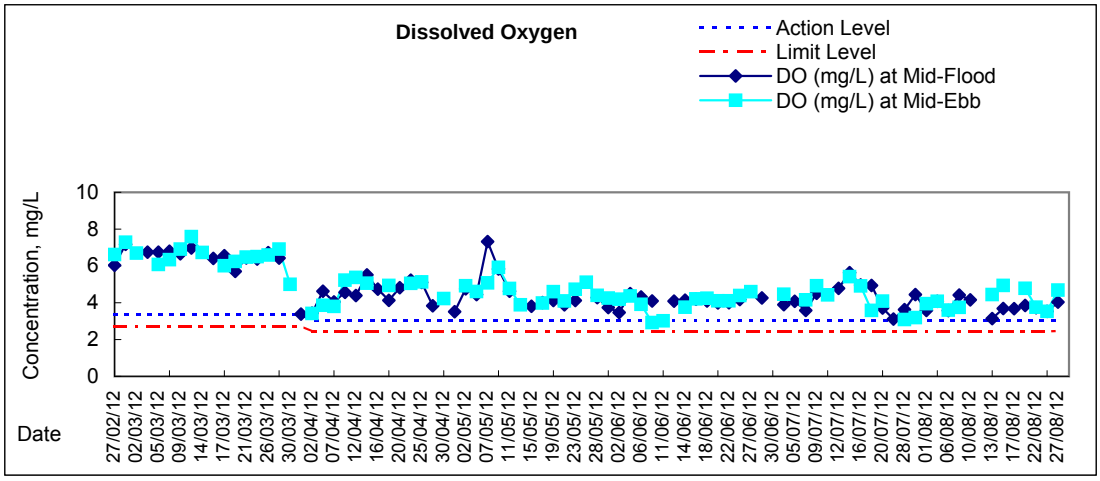
Graphic Presentation of Water Quality Result of C3 - WCT and GEC

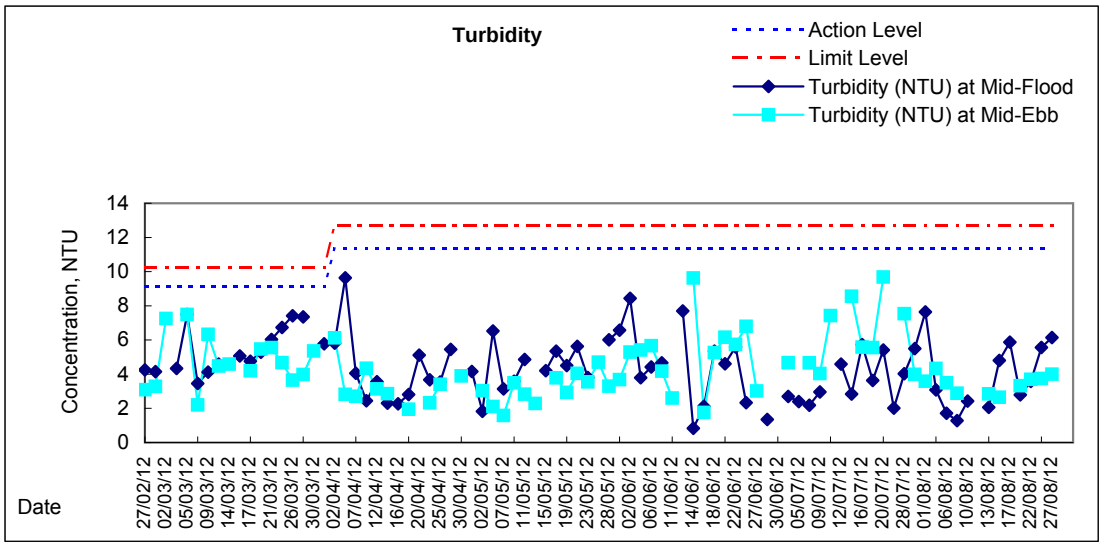


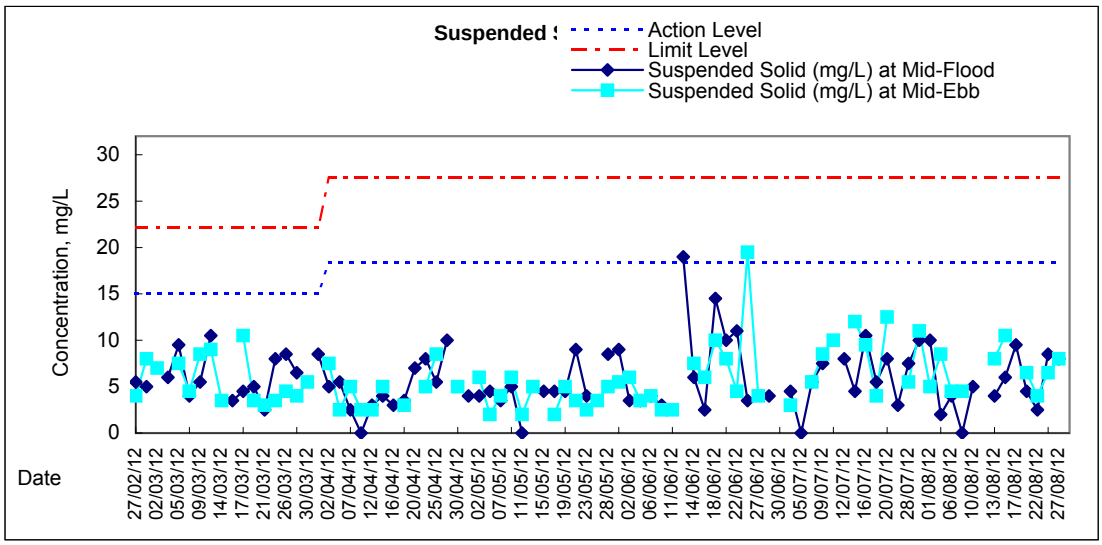




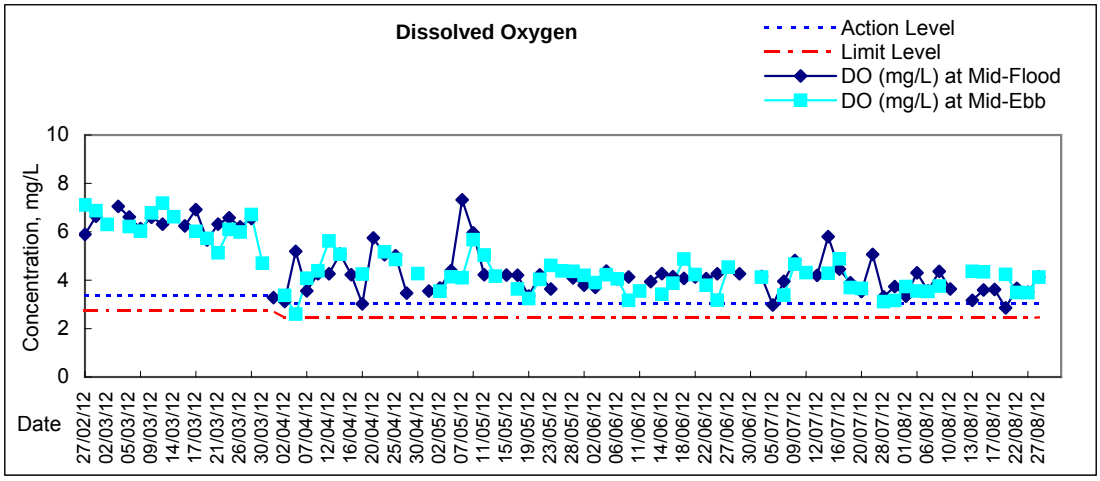
Graphic Presentation of Water Quality Result of C4e - WCT and GEC (Eastern)

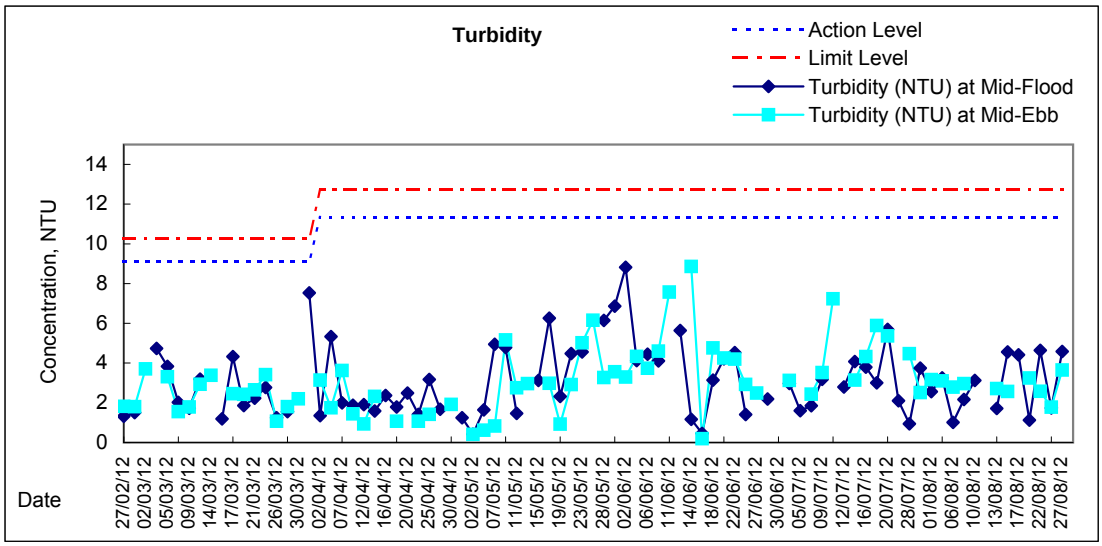


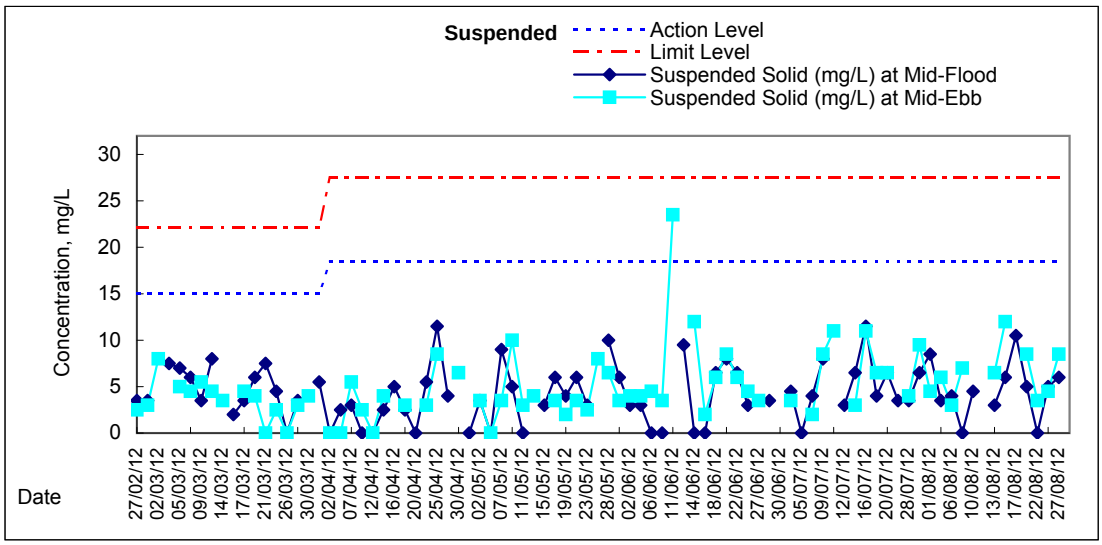




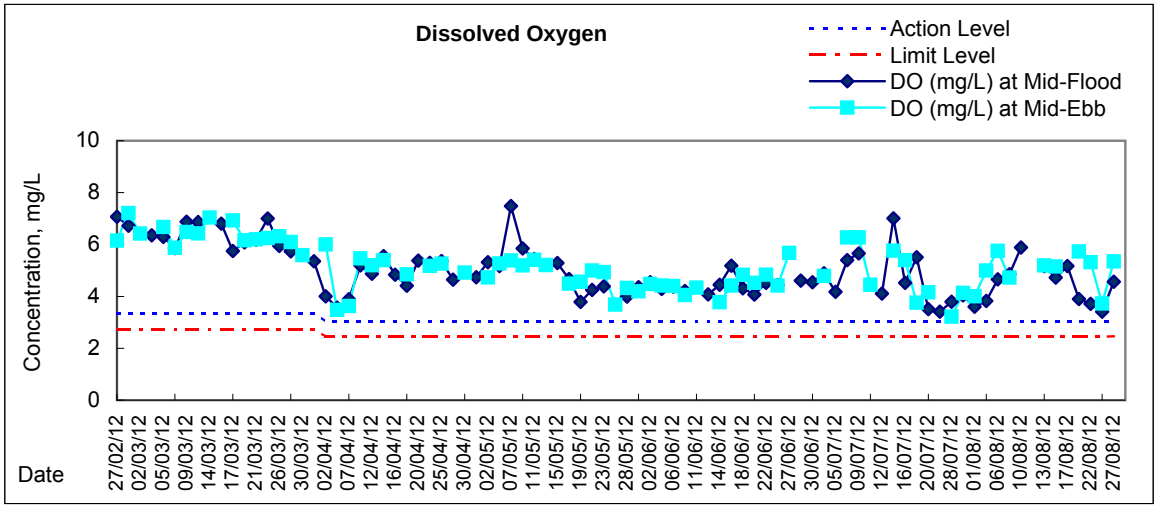
Graphic Presentation of Water Quality Result of C4w - WCT and GEC (Western)

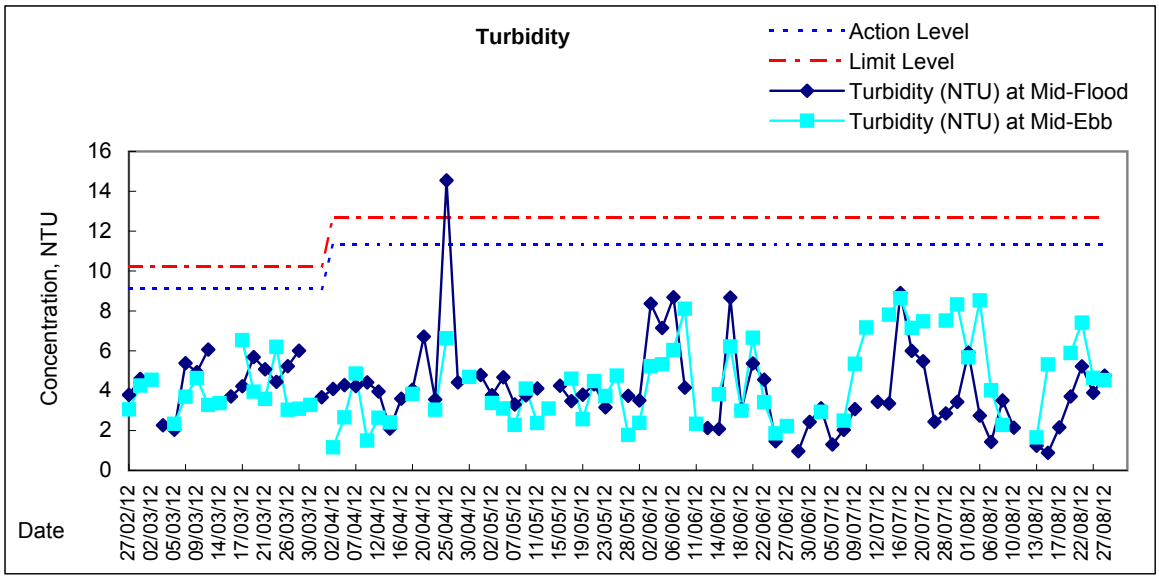


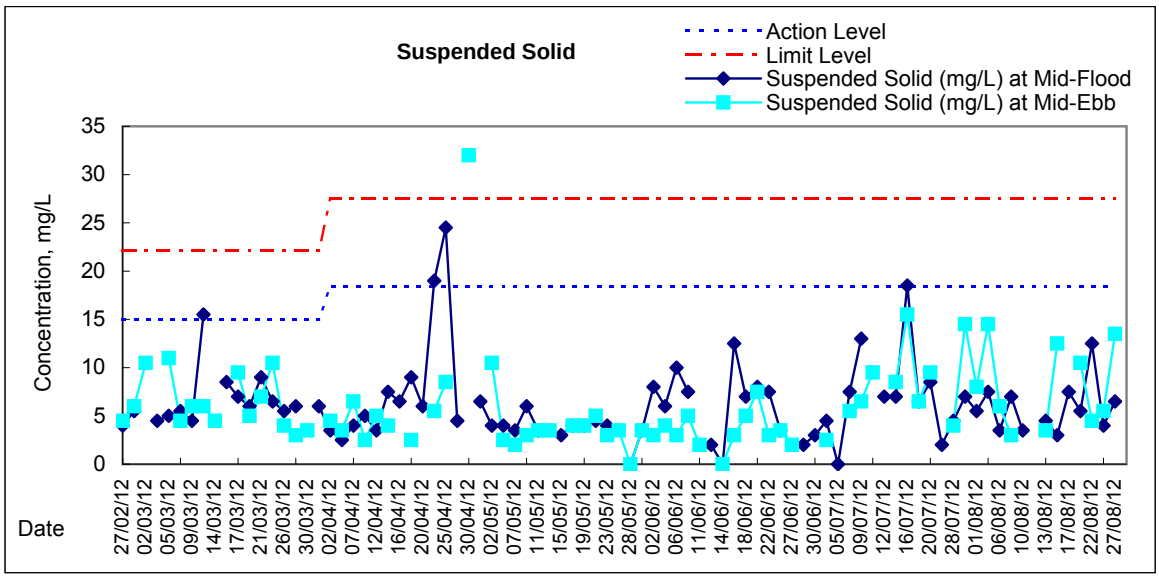




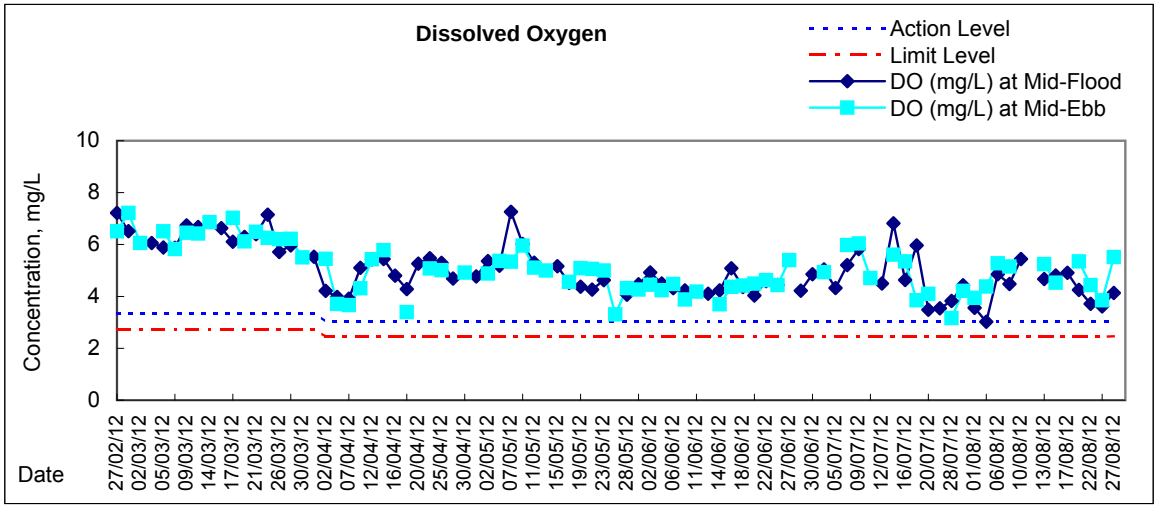
Graphic Presentation of Water Quality Result of C5e - SHKC (Eastern)

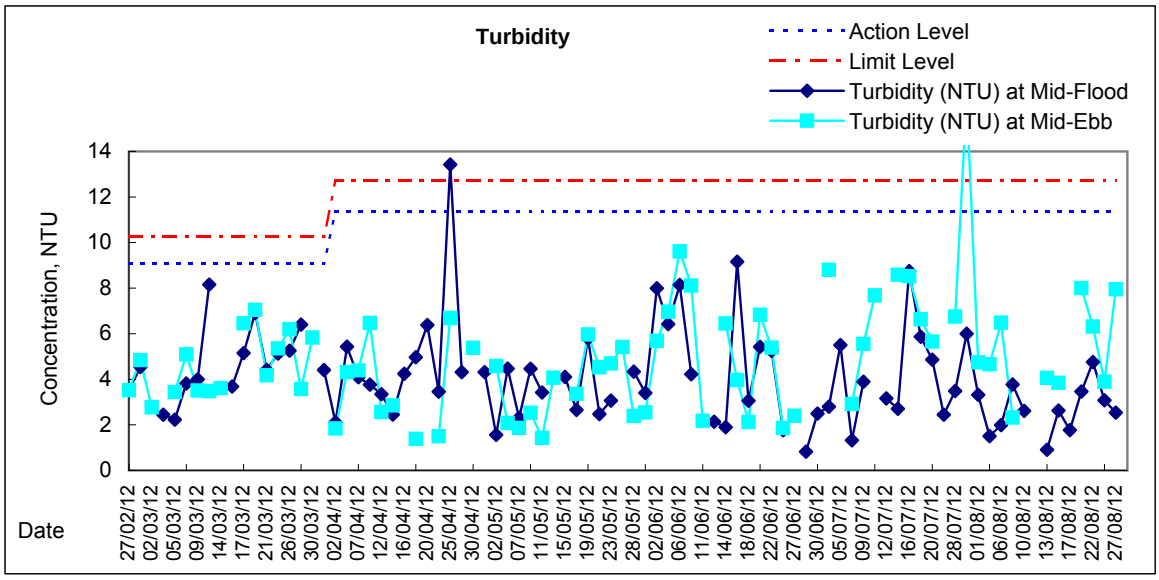


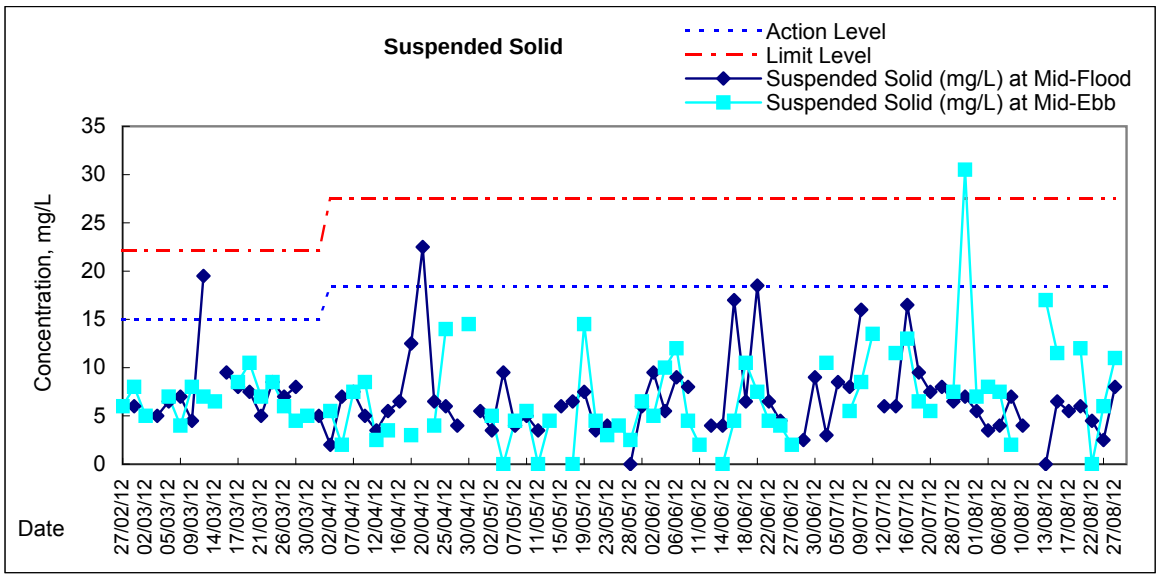




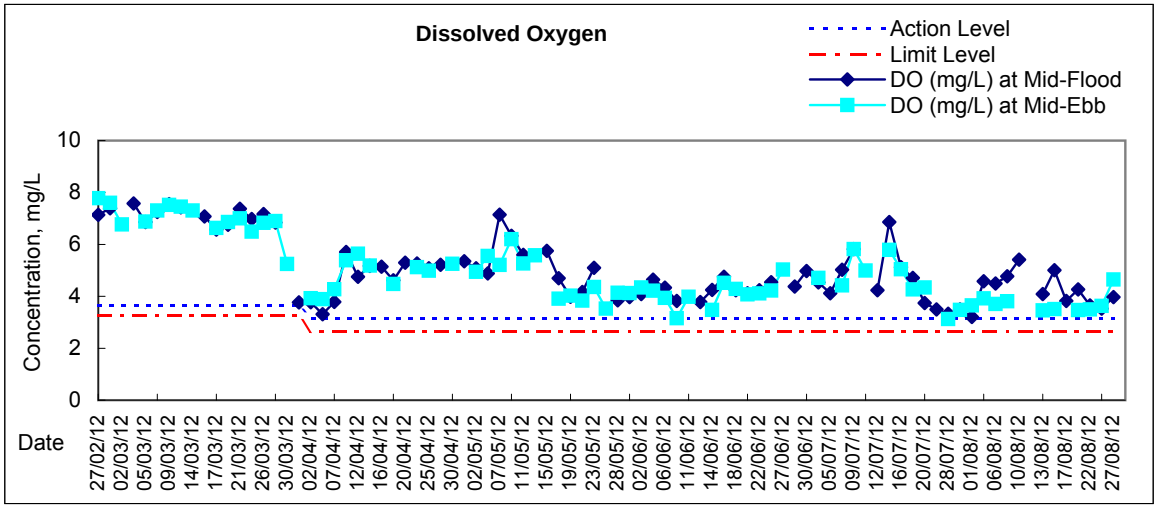
Graphic Presentation of Water Quality Result of C5w - SHKC (Western)

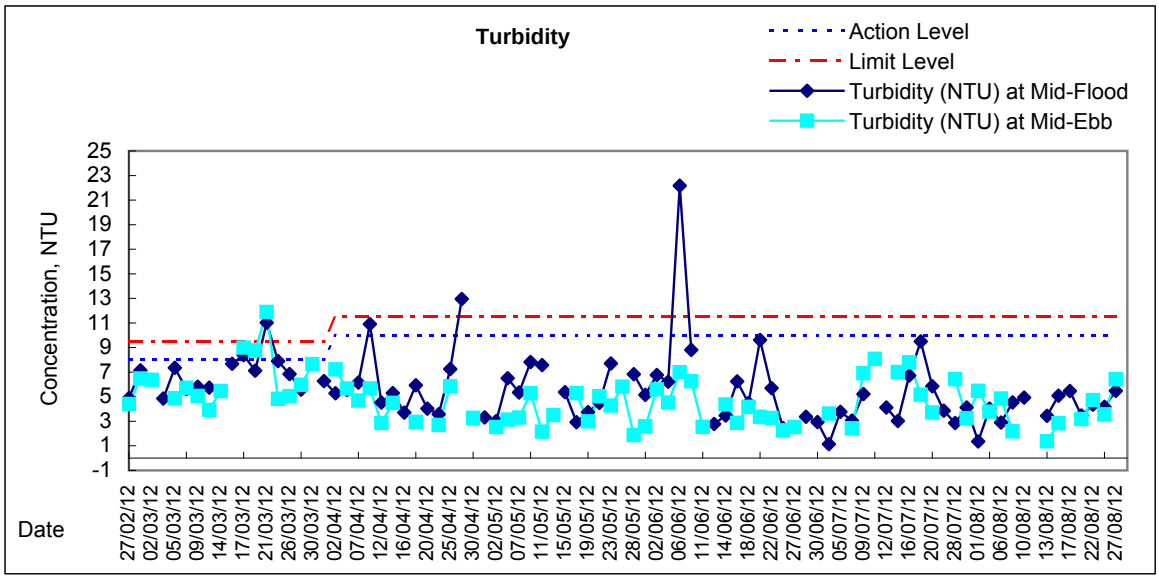


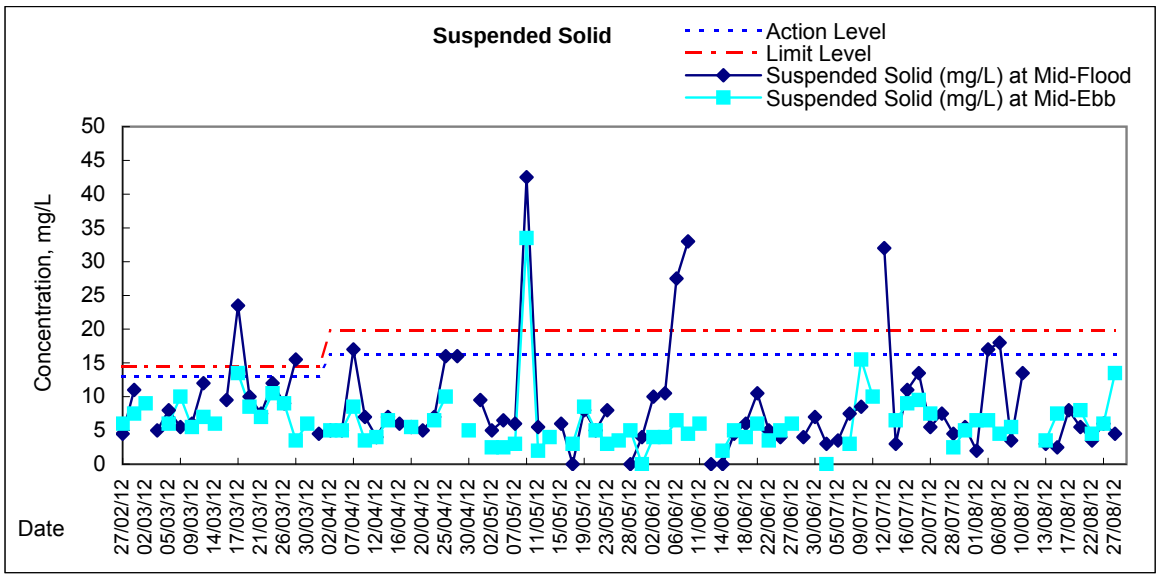




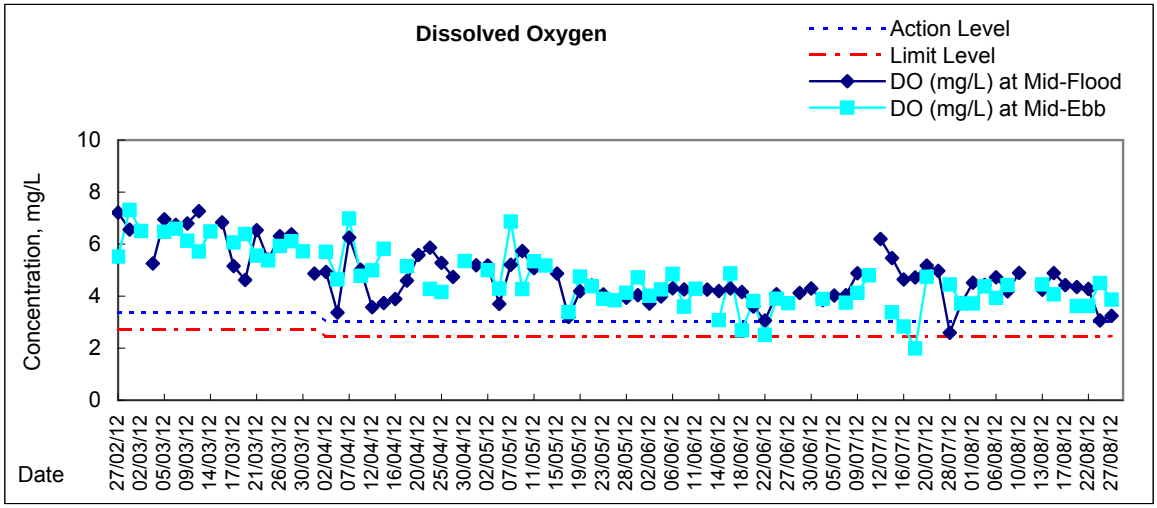
Graphic Presentation of Water Quality Result of WSD21 - Wan Chai

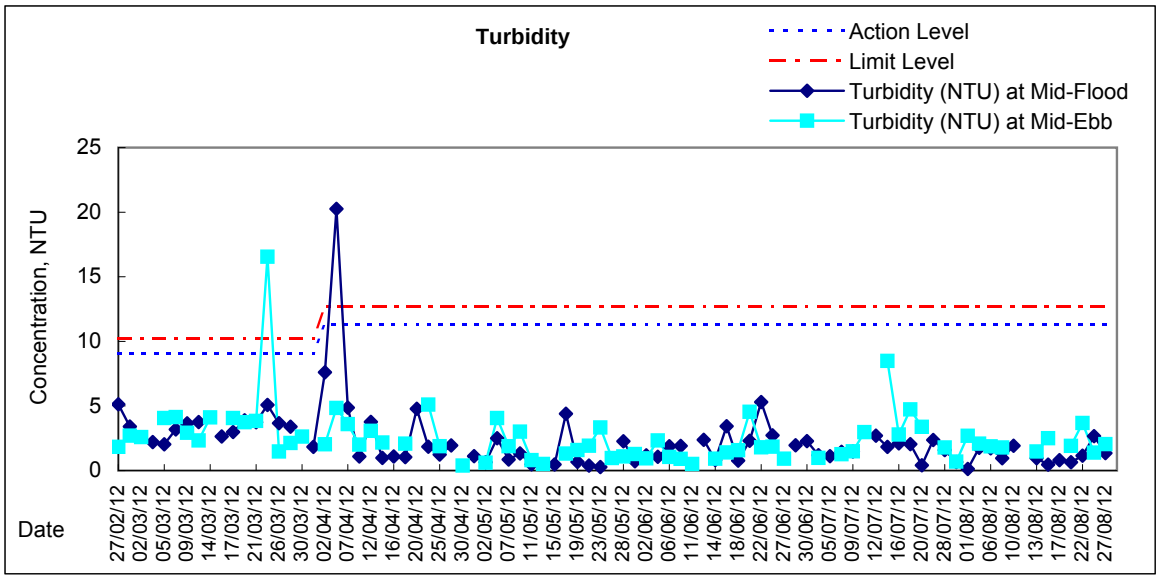


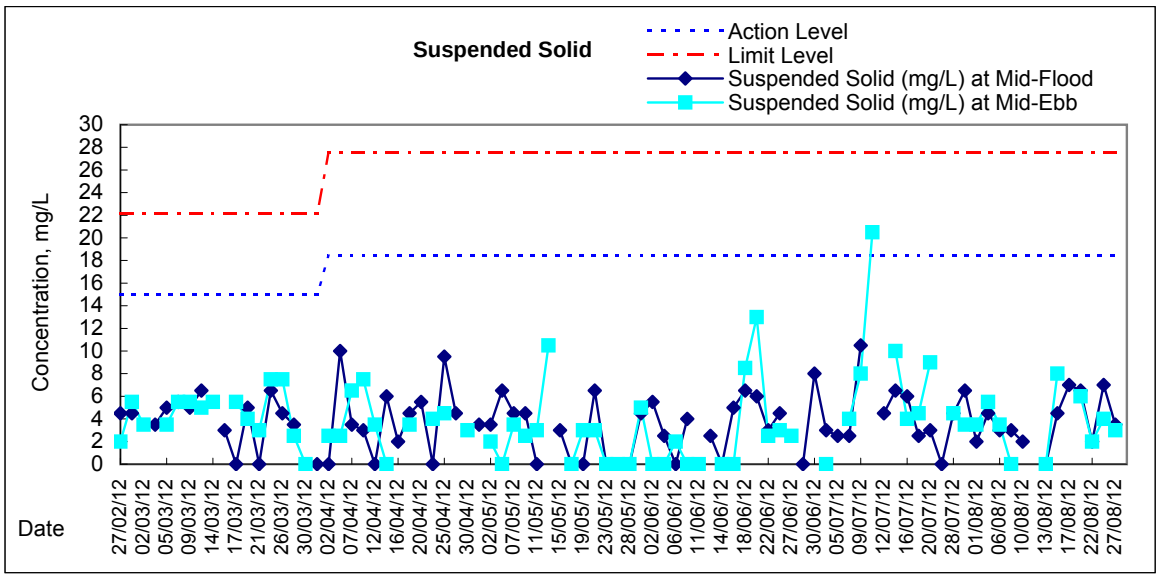




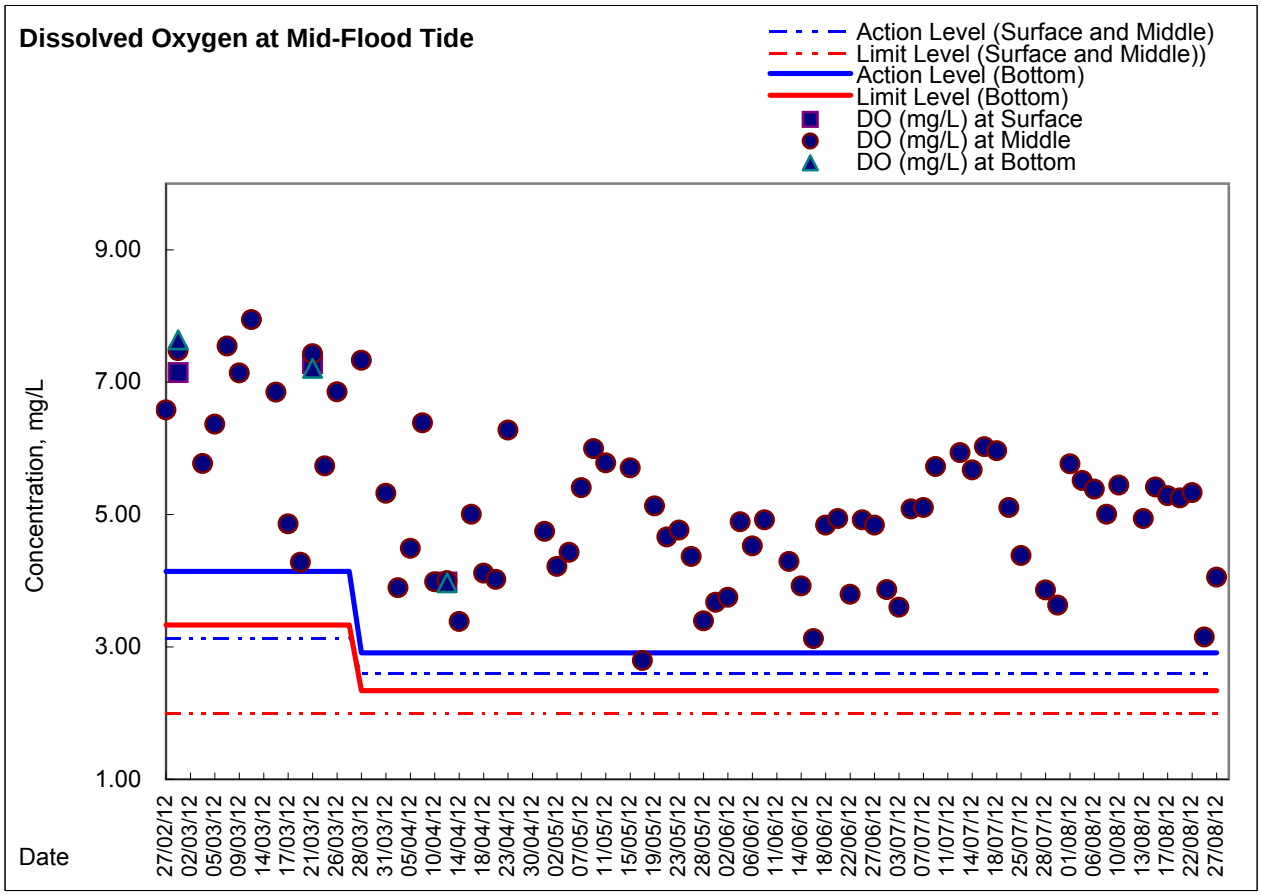
Graphic Presentation of Water Quality Result of C7 - Windsor House

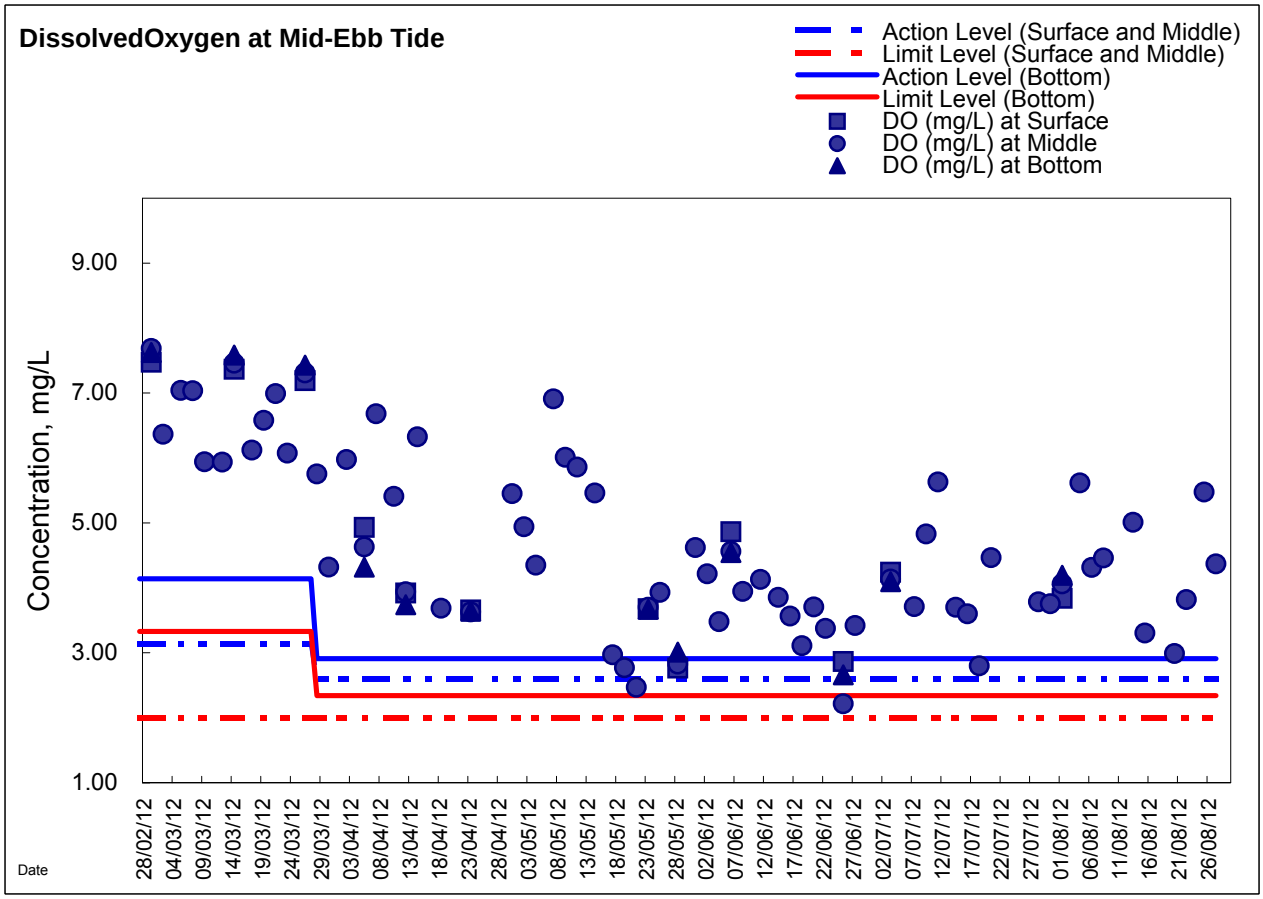




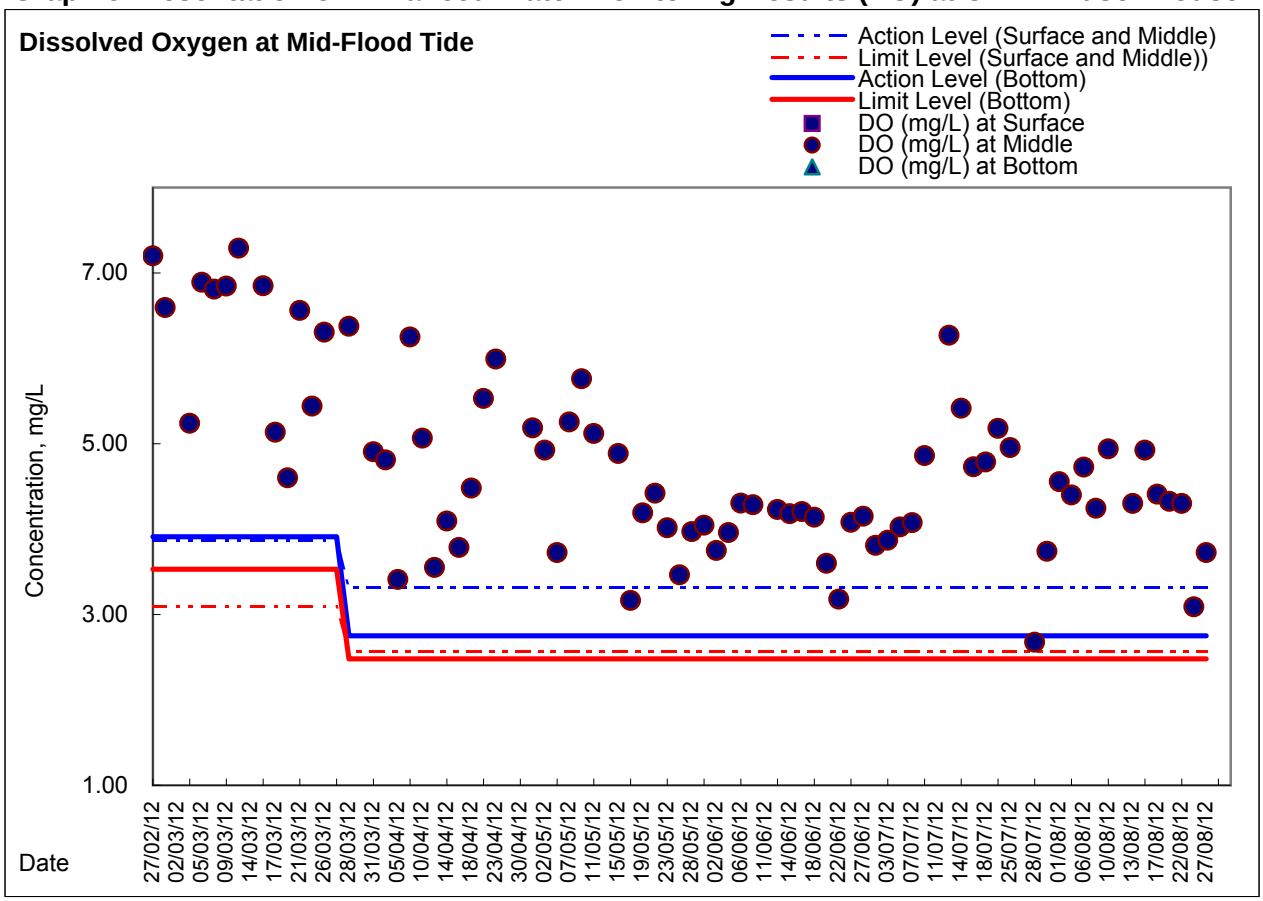


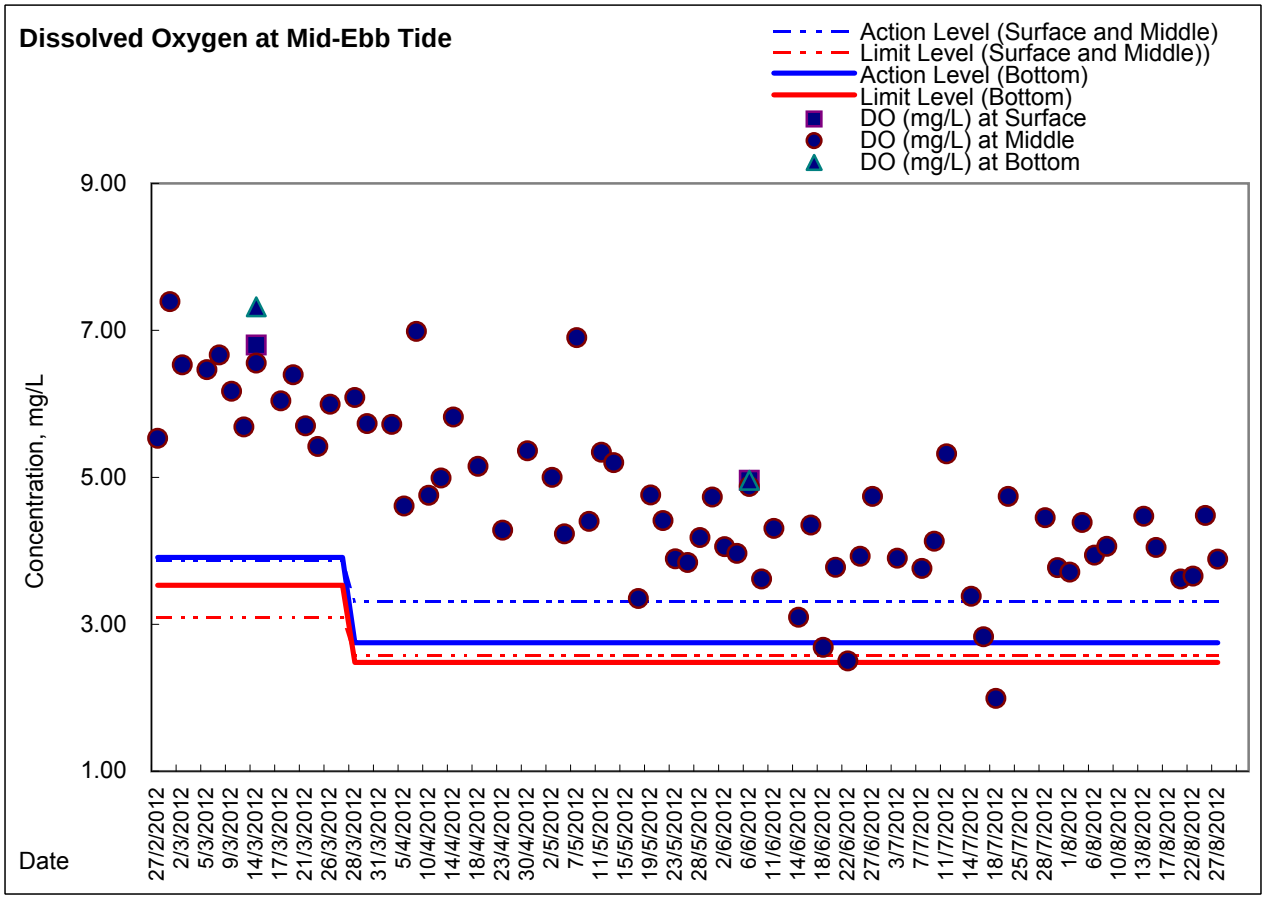
Graphic Presentation of Enhanced Water Monitoring Results (DO) at C6 - Excelsior Hotel



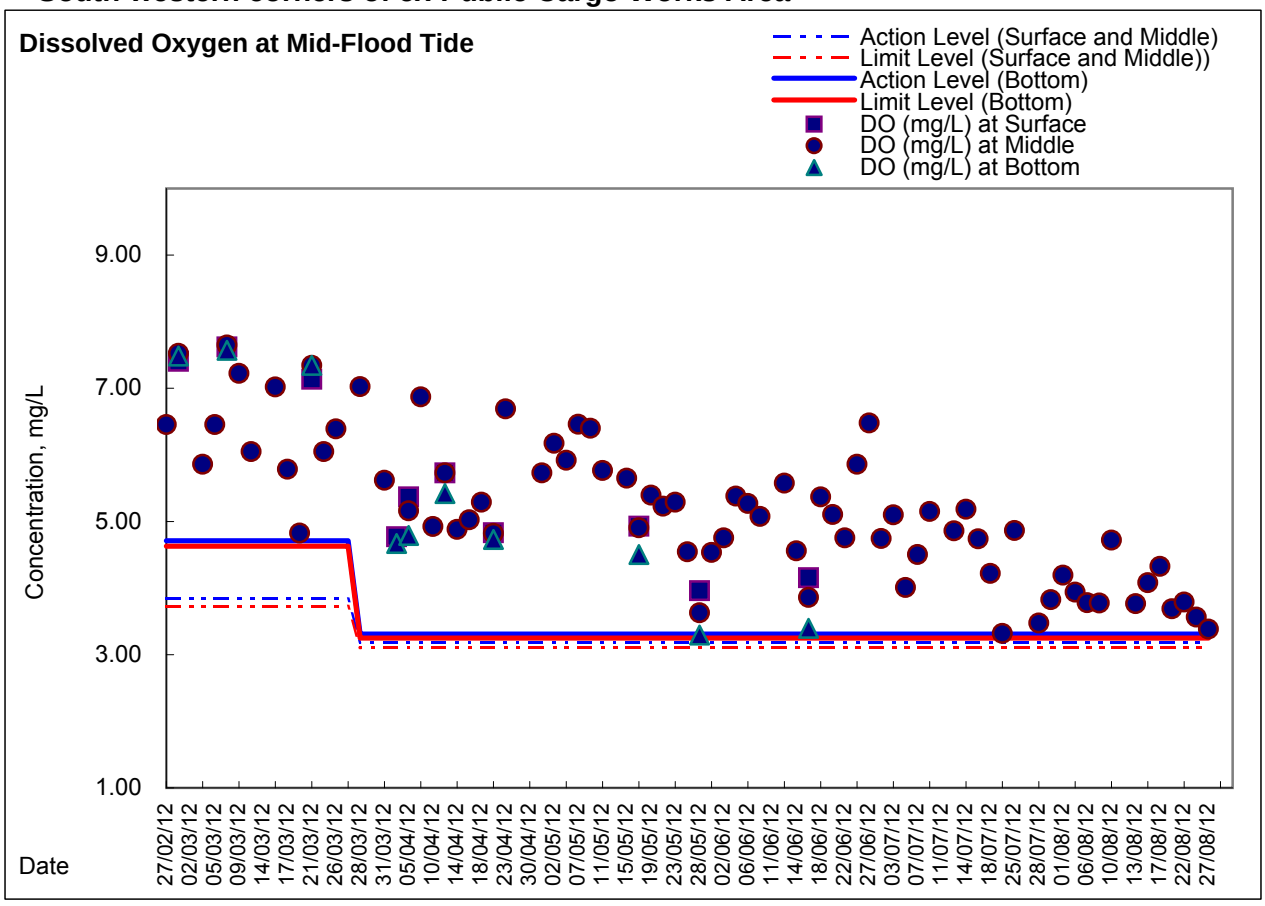


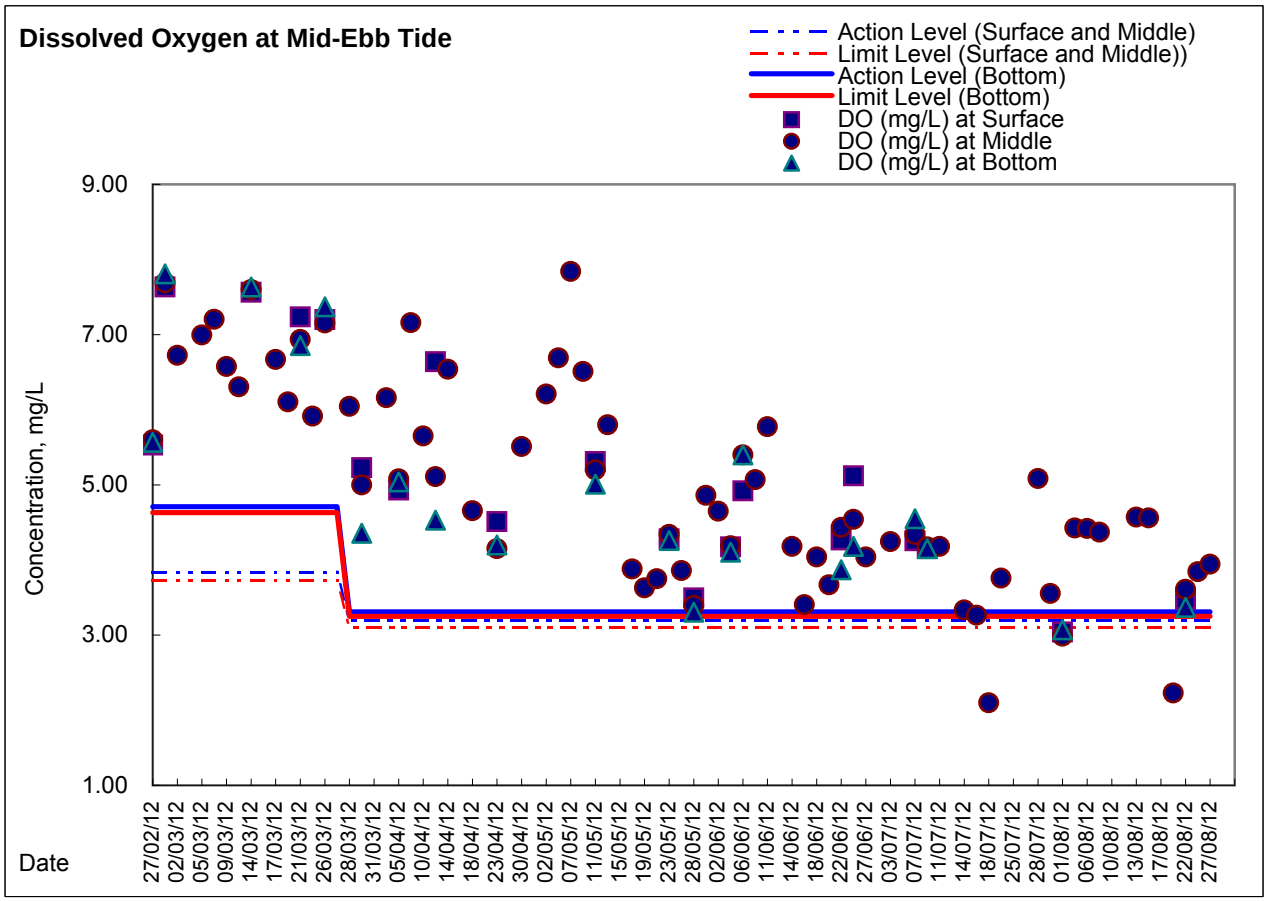
Graphic Presentation of Enhanced Water Monitoring Results (DO) at C7 - Windsor House



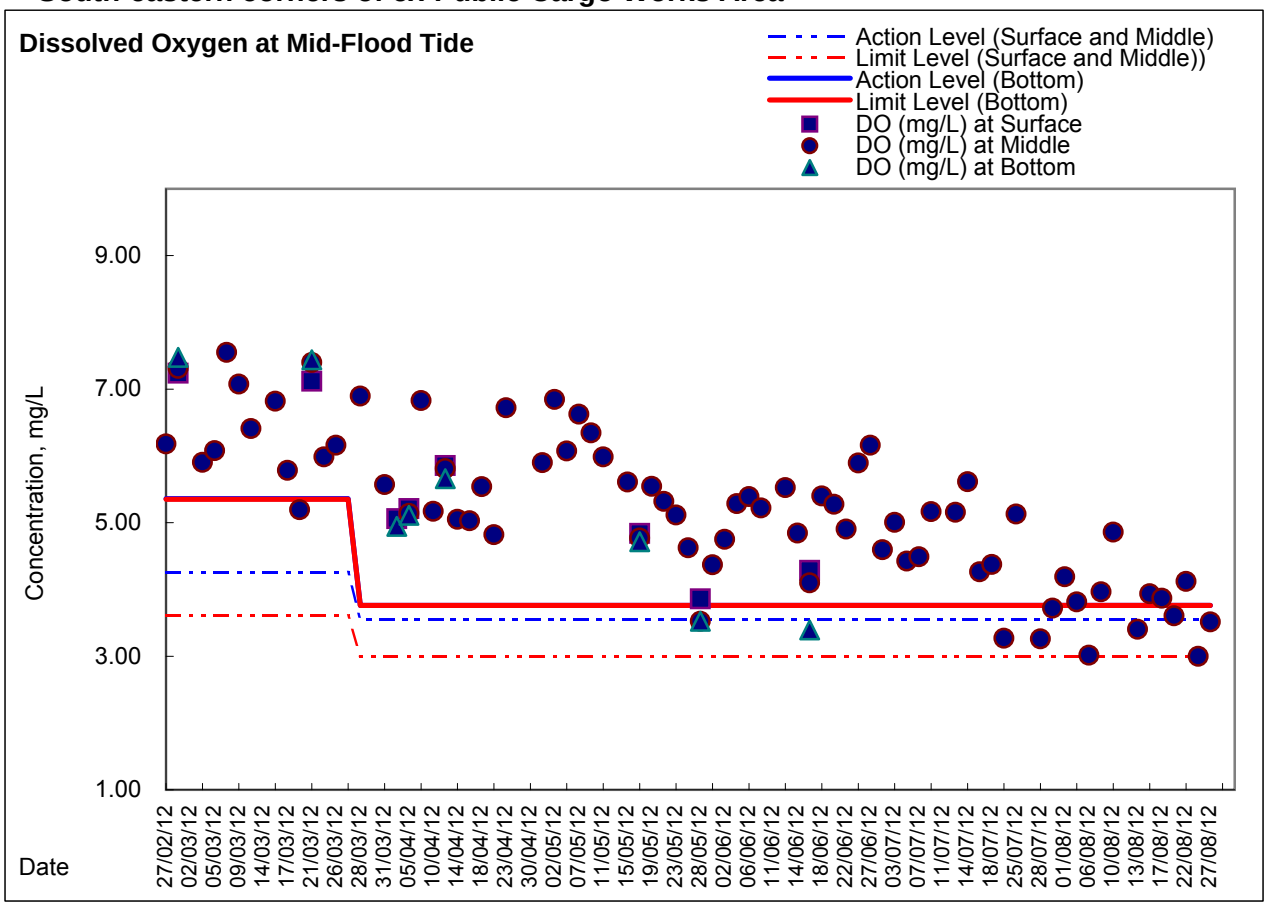


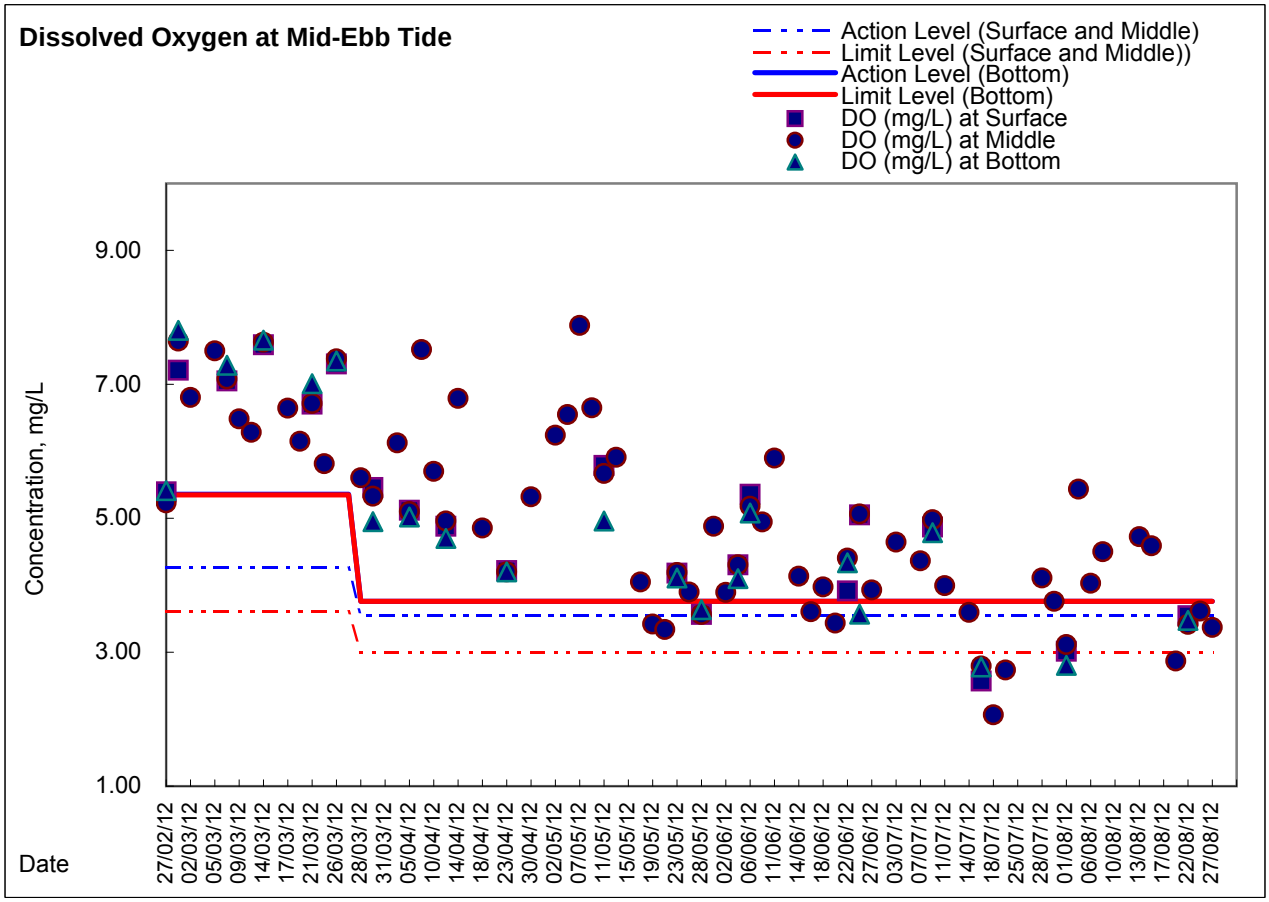
Graphic Presentation of Enhanced Water Monitoring Results (DO) at Ex-WPCWA SW - South-western corners of ex-Public Cargo Works Area





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





Appendix 4.3a

Additional Dissolved Oxygen Monitoring Results

Water Monitoring Result at Station A
Mid-Flood Tide

Location: Station A

Coordinate: 835468E, 815857N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-May-12	-	Cloudy	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12:25		Middle	1.5	27.00	27.00	27.00	7.89	7.89	7.89	29.10	29.10	29.10	59.3	58.9	59.1	4.05	3.98	4.02
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Jun-12	17:27	Sunny	Surface	1.0	27.10	27.10	27.10	7.89	7.89	7.89	30.19	30.19	30.19	62.9	62.4	62.7	4.23	4.19	4.21
	17:28		Middle	2.0	27.00	27.00	27.00	7.89	7.89	7.89	30.27	30.27	30.27	63.1	63.6	63.35	4.24	4.27	4.26
	17:29		Bottom	3.0	27.00	27.00	27.00	7.89	7.89	7.89	30.27	30.27	30.27	59.6	58.4	59.0	4.00	3.92	3.96
16-Jun-12	-	Cloudy	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16:06		Middle	1.5	27.60	27.60	27.60	7.77	7.77	7.77	29.78	29.78	29.78	63.3	62.2	62.8	4.22	4.13	4.18
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Jun-12	17:34	Sunny	Surface	1.0	28.70	28.70	28.70	7.79	7.79	7.79	29.16	29.16	29.16	61.5	61.2	61.4	4.05	4.04	4.05
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17:35		Bottom	3.0	28.50	28.50	28.50	7.78	7.78	7.78	29.24	29.24	29.24	59.4	58.0	58.7	3.95	3.85	3.90
25-Jun-12	20:06	Fine	Surface	1.0	28.50	28.50	28.50	7.82	7.82	7.82	22.45	22.50	22.48	79.7	79.6	79.7	5.46	5.44	5.45
	20:07		Middle	3.5	28.50	28.50	28.50	7.80	7.80	7.80	22.63	22.65	22.64	79.9	81.1	80.5	5.47	5.55	5.51
	20:08		Bottom	6.0	28.50	28.40	28.45	7.80	7.80	7.80	22.62	22.63	22.63	76.9	74.5	75.7	5.26	5.09	5.18

Water Monitoring Result at Station B
Mid-Flood Tide

Location: Station B

Coordinate: 835572E, 815961N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-May-12	12:20	Cloudy	Surface	1.0	27.00	27.00	27.00	7.86	7.86	7.86	29.41	29.41	29.41	59.7	59.8	59.8	4.04	4.05	4.05
	12:21		Middle	5.0	26.90	26.90	26.90	7.88	7.88	7.88	29.51	29.51	29.51	60.2	60.0	60.1	4.06	4.05	4.06
	12:22		Bottom	9.0	26.90	26.90	26.90	7.89	7.89	7.89	29.43	29.43	29.43	56.7	59.7	58.2	3.84	3.71	3.78
04-Jun-12	17:22	Sunny	Surface	1.0	27.60	27.60	27.60	7.85	7.85	7.85	29.78	29.78	29.78	68.4	66.2	67.3	4.56	4.42	4.49
	17:23		Middle	5.0	27.30	27.30	27.30	7.87	7.87	7.87	30.10	30.10	30.10	64.7	64.1	64.4	4.34	4.32	4.33
	17:24		Bottom	9.0	27.00	27.00	27.00	7.89	7.89	7.89	30.35	30.35	30.35	64.1	64.0	64.1	4.32	4.31	4.32
16-Jun-12	16:00	Cloudy	Surface	1.0	27.60	27.60	27.60	7.79	7.79	7.79	27.57	27.57	27.57	69.5	69.8	69.7	4.65	4.66	4.66
	16:01		Middle	5.5	27.50	27.50	27.50	7.80	7.80	7.80	30.28	30.28	30.28	58.9	58.3	58.6	3.92	3.89	3.91
	16:02		Bottom	10.0	27.40	27.40	27.40	7.58	7.58	7.58	30.22	30.22	30.22	50.7	47.7	49.2	3.38	3.18	3.28
20-Jun-12	17:26	Sunny	Surface	1.0	28.40	28.40	28.40	7.79	7.79	7.79	29.03	29.03	29.03	62.5	61.4	62.0	4.13	4.06	4.10
	17:27		Middle	5.5	28.00	28.00	28.00	7.79	7.79	7.79	29.07	29.07	29.07	56.9	56.1	56.5	3.78	3.74	3.76
	17:28		Bottom	10.0	28.00	28.00	28.00	7.70	7.70	7.70	29.00	29.00	29.00	52.4	51.6	52.0	3.49	3.44	3.47
25-Jun-12	20:00	Fine	Surface	1.0	28.40	28.40	28.40	7.86	7.86	7.86	22.48	22.47	22.48	84.7	84.6	84.7	5.82	5.80	5.81
	20:01		Middle	5.0	28.50	28.50	28.50	7.82	7.82	7.82	22.82	22.82	22.82	81.5	82.0	81.8	5.57	5.61	5.59
	20:02		Bottom	9.0	28.00	28.00	28.00	7.69	7.69	7.69	24.62	24.68	24.65	47.2	46.4	46.8	3.21	3.17	3.19

Water Monitoring Result at Station C
Mid-Flood Tide

Location: Station C

Coordinate: 835659E, 816271N

Date	Time	Weater Condition	Sampling Depth (m)		Water Temperature (°C)			pH (-)			Salinity (ppt)			DO Saturation (%)			DO (mg/L)		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-May-12	12:15	Cloudy	Surface	1.0	27.10	27.10	27.10	7.87	7.87	7.87	29.38	29.38	29.38	60.7	60.8	60.8	4.10	4.11	4.11
	12:16		Middle	7.0	26.90	26.90	26.90	7.93	7.93	7.93	29.57	29.58	29.58	58.0	57.9	58.0	3.93	3.95	3.94
	12:17		Bottom	13.0	26.80	26.80	26.80	7.95	7.95	7.95	29.63	29.63	29.63	56.3	57.5	56.9	3.82	3.91	3.87
04-Jun-12	17:15	Sunny	Surface	1.0	27.20	27.20	27.20	7.87	7.87	7.87	29.93	29.93	29.93	66.8	65.9	66.4	4.49	4.43	4.46
	17:16		Middle	6.5	27.10	27.10	27.10	7.87	7.87	7.87	30.00	30.00	30.00	65.1	65.8	65.5	4.36	4.42	4.39
	17:17		Bottom	12.0	27.00	27.00	27.00	7.88	7.88	7.88	30.16	30.16	30.16	62.7	62.4	62.6	4.22	4.20	4.21
16-Jun-12	15:55	Cloudy	Surface	1.0	27.60	27.60	27.60	7.80	7.80	7.80	29.31	29.31	29.31	68.4	67.9	68.2	4.58	4.53	4.56
	15:56		Middle	7.0	27.40	27.40	27.40	7.77	7.77	7.77	30.10	30.10	30.10	52.3	51.0	51.7	3.48	3.46	3.47
	15:57		Bottom	13.0	27.40	27.40	27.40	7.84	7.84	7.84	30.21	30.21	30.21	48.8	48.4	48.6	3.26	3.24	3.25
20-Jun-12	17:20	Sunny	Surface	1.0	28.20	28.20	28.20	7.83	7.83	7.83	29.00	29.00	29.00	63.3	62.6	63.0	4.20	4.15	4.18
	17:21		Middle	6.5	27.90	27.90	27.90	7.86	7.86	7.86	29.19	29.19	29.19	60.9	60.7	60.8	4.06	4.05	4.06
	17:22		Bottom	12.0	27.80	27.80	27.80	7.34	7.34	7.34	29.23	29.23	29.23	57.6	56.7	57.2	3.84	3.79	3.82
25-Jun-12	19:53	Fine	Surface	1.0	28.40	28.40	28.40	7.99	7.97	7.98	22.36	22.36	22.36	84.5	84.3	84.4	5.81	5.79	5.80
	19:54		Middle	6.5	28.40	28.30	28.35	7.85	7.85	7.85	23.14	23.04	23.09	76.6	77.6	77.1	5.24	5.31	5.28
	19:55		Bottom	12.0	27.60	27.60	27.60	7.75	7.75	7.75	27.58	27.59	27.59	47.2	46.5	46.9	3.28	3.14	3.21

Water Monitoring Result at Station A
Mid-Ebb Tide

Location: Station A

Coordinate: 835468E, 815857N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-May-12	17:05	Cloudy	Surface	1.0	27.30	27.30	27.30	7.86	7.86	7.86	29.25	29.25	29.25	60.1	59.9	60.0	4.05	4.03	4.04
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17:06		Bottom	3.0	27.30	27.30	27.30	7.86	7.86	7.86	29.50	29.50	29.50	59.6	59.3	59.5	4.01	3.99	4.00
04-Jun-12	12:15	Cloudy	Surface	1.0	27.00	27.00	27.00	7.87	7.87	7.87	30.15	30.15	30.15	63.2	62.6	62.9	4.25	4.21	4.23
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12:16		Bottom	3.0	27.10	27.10	27.10	7.86	7.86	7.86	30.31	30.30	30.31	62.3	62.6	62.5	4.19	4.21	4.20
16-Jun-12	-	Rainy	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10:46		Middle	1.5	27.30	27.30	27.30	7.82	7.82	7.82	29.64	29.64	29.64	50.8	49.7	50.3	3.40	3.32	3.36
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Jun-12	13:15	Sunny	Surface	1.0	28.10	28.20	28.15	7.86	7.85	7.86	29.36	29.37	29.37	54.6	54.3	54.5	3.62	3.59	3.61
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13:16		Bottom	3.0	28.10	28.10	28.10	7.89	7.89	7.89	29.42	29.17	29.30	53.9	54.0	54.0	3.58	3.59	3.59
25-Jun-12	15:25	Cloudy	Surface	1.0	28.30	28.30	28.30	7.79	7.79	7.79	23.17	23.13	23.15	76.5	76.7	76.6	5.23	5.17	5.20
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15:26		Bottom	4.0	28.30	28.30	28.30	7.77	7.77	7.77	23.58	23.59	23.59	72.4	72.5	72.5	4.94	4.95	4.95

Water Monitoring Result at Station B
Mid-Ebb Tide

Location: Station B

Coordinate: 835572E, 815961N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-May-12	16:53	Cloudy	Surface	1.0	27.10	27.10	27.10	7.88	7.88	7.88	29.48	29.48	29.48	59.6	60.2	59.9	4.02	4.06	4.04
	16:54		Middle	5.5	27.00	27.00	27.00	7.87	7.87	7.87	29.49	29.49	29.49	59.8	60.1	60.0	4.04	4.06	4.05
	16:55		Bottom	10.0	26.90	26.90	26.90	7.88	7.88	7.88	29.53	29.53	29.53	59.7	60.4	60.1	4.04	4.08	4.06
04-Jun-12	12:10	Cloudy	Surface	1.0	27.20	27.20	27.20	7.88	7.88	7.88	30.43	30.43	30.43	69.6	69.0	69.3	4.65	4.62	4.64
	12:11		Middle	5.5	27.10	27.10	27.10	7.89	7.89	7.89	30.44	30.44	30.44	67.5	67.2	67.4	4.53	4.51	4.52
	12:12		Bottom	10.0	26.90	26.90	26.90	7.87	7.87	7.87	30.31	30.31	30.31	57.9	53.0	55.5	3.70	3.57	3.64
16-Jun-12	10:42	Rainy	Surface	1.0	27.40	27.40	27.40	7.82	7.82	7.82	28.98	28.98	28.98	63.5	62.6	63.1	4.25	4.18	4.22
	10:43		Middle	5.5	27.50	27.50	27.50	7.82	7.82	7.82	30.06	30.06	30.06	64.0	62.2	63.1	4.26	4.15	4.21
	10:44		Bottom	10.0	27.50	27.50	27.50	7.78	7.78	7.78	29.98	29.98	29.98	58.3	53.9	56.1	3.92	3..61	3.92
20-Jun-12	13:10	Sunny	Surface	1.0	28.50	28.50	28.50	7.83	7.83	7.83	29.23	29.23	29.23	61.8	60.7	61.3	4.07	4.01	4.04
	13:11		Middle	5.5	28.10	28.10	28.10	7.90	7.90	7.90	29.55	29.55	29.55	59.4	59.8	59.6	3.94	3.97	3.96
	13:12		Bottom	10.0	28.00	28.00	28.00	7.81	7.81	7.81	28.68	28.42	28.55	52.4	52.6	52.5	3.52	3.56	3.54
25-Jun-12	15:19	Cloudy	Surface	1.0	28.20	28.20	28.20	7.81	7.80	7.81	23.33	23.35	23.34	76.9	77.8	77.4	5.26	5.32	5.29
	15:20		Middle	5.5	28.30	28.30	28.30	7.79	7.79	7.79	23.47	23.46	23.47	77.1	76.9	77.0	5.27	5.26	5.27
	15:21		Bottom	10.0	28.20	28.20	28.20	7.79	7.79	7.79	24.68	24.71	24.70	64.5	61.2	62.9	4.40	4.17	4.29

Water Monitoring Result at Station C
Mid-Ebb Tide

Location: Station C

Coordinate: 835659E, 816271N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-May-12	16:45	Cloudy	Surface	1.0	27.00	27.00	27.00	7.88	7.88	7.88	29.46	29.46	29.46	66.6	66.8	66.7	4.49	4.51	4.50
	16:46		Middle	7.0	27.00	27.00	27.00	8.04	8.04	8.04	29.45	29.45	29.45	67.9	67.0	67.5	4.58	4.53	4.56
	16:47		Bottom	13.0	26.90	26.90	26.90	7.92	7.92	7.92	29.48	29.48	29.48	64.8	65.1	65.0	4.40	4.41	4.41
04-Jun-12	12:05	Cloudy	Surface	1.0	26.90	26.90	26.90	7.88	7.88	7.88	30.31	30.31	30.31	73.1	72.4	72.8	4.92	4.87	4.90
	12:06		Middle	7.0	26.90	26.90	26.90	7.92	7.92	7.92	30.36	30.36	30.36	71.5	71.1	71.3	4.82	4.78	4.80
	12:07		Bottom	13.0	26.90	26.90	26.90	7.90	7.90	7.90	30.40	30.40	30.40	66.6	66.3	66.5	4.48	4.45	4.47
16-Jun-12	10:38	Rainy	Surface	1.0	27.50	27.50	27.50	7.92	7.92	7.92	29.81	29.81	29.81	67.5	67.2	67.4	4.51	4.49	4.50
	10:39		Middle	7.0	27.50	27.50	27.50	7.93	7.93	7.93	30.00	30.00	30.00	63.3	62.7	63.0	4.23	4.19	4.21
	10:40		Bottom	13.0	27.40	27.40	27.40	7.92	7.92	7.92	30.28	30.28	30.28	55.8	55.5	55.7	3.73	3.72	3.73
20-Jun-12	13:05	Sunny	Surface	1.0	28.00	28.00	28.00	7.88	7.88	7.88	29.32	29.32	29.32	66.8	67.2	67.0	4.45	4.47	4.46
	13:06		Middle	7.0	27.90	27.90	27.90	7.91	7.91	7.91	29.43	29.43	29.43	65.1	65.2	65.2	4.33	4.34	4.34
	13:07		Bottom	13.0	27.90	27.90	27.90	7.91	7.91	7.91	29.45	29.45	29.45	62.8	62.3	62.55	4.13	4.15	4.14
25-Jun-12	15:09	Cloudy	Surface	1.0	28.20	28.30	28.25	7.84	7.84	7.84	23.06	23.17	23.12	79.7	79.5	79.6	5.45	5.46	5.46
	15:10		Middle	7.5	28.30	28.30	28.30	7.83	7.83	7.83	23.54	23.54	23.54	76.8	78.7	77.8	5.44	5.60	5.52
	15:11		Bottom	14.0	27.90	28.00	27.95	7.24	7.24	7.24	22.61	22.61	22.61	56.8	57.8	57.3	3.85	3.92	3.89

Water Monitoring Result at Station A
Mid-Flood Tide

Location: Station A

Coordinate: 835468E, 815857N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
05-Jul-12	20:06	Fine	Surface	1.0	27.40	27.40	27.40	7.77	7.77	7.77	25.30	25.30	25.30	63.8	63.6	63.7	4.38	4.37	4.38
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20:08		Bottom	4.0	27.30	27.30	27.30	7.79	7.79	7.79	25.94	25.94	25.94	55.8	55.4	55.6	3.82	3.80	3.81
11-Jul-12	-	Fine	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22:46		Middle	1.5	28.60	28.60	28.60	8.04	8.05	8.05	21.47	21.48	21.48	72.5	72.7	72.6	5.41	5.43	5.42
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Jul-12	18:45	Fine	Surface	1.0	27.50	27.50	27.50	7.93	7.95	7.94	24.04	24.20	24.12	80.6	80.2	80.4	5.56	5.55	5.56
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18:49		Bottom	3.0	27.10	27.20	27.15	7.91	7.93	7.92	24.60	24.43	24.52	74.7	76.7	75.7	5.16	5.30	5.23
25-Jul-12	21:07	Cloudy	Surface	1.0	26.10	26.10	26.10	7.63	7.63	7.63	28.66	28.66	28.66	68.3	65.3	66.8	4.75	4.55	4.65
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21:09		Bottom	3.0	26.00	26.00	26.00	7.65	7.65	7.65	29.03	29.03	29.03	58.5	57.9	58.2	4.03	4.00	4.02

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station B
Mid-Flood Tide

Location: Station B

Coordinate: 835572E, 815961N

Date	Time	Weater Condition	Sampling Depth m		Water Temperature °C			pH -			Salinity ppt			DO Saturation %			DO mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
05-Jul-12	20:00	Fine	Surface	1.0	27.60	27.60	27.60	7.78	7.78	7.78	25.51	25.51	25.51	67.7	68.0	67.9	4.64	4.65	4.65
	20:02		Middle	5.0	27.50	27.50	27.50	7.76	7.76	7.76	26.66	26.67	26.67	57.0	56.5	56.8	3.90	3.87	3.89
	20:04		Bottom	9.0	27.20	27.20	27.20	7.80	7.80	7.80	26.98	26.98	26.98	54.9	55.2	55.1	3.77	3.79	3.78
11-Jul-12	22:41	Fine	Surface	1.0	28.30	28.20	28.25	8.10	8.09	8.10	19.71	19.71	19.71	71.5	71.0	71.3	5.39	5.36	5.38
	22:42		Middle	5.5	25.90	25.90	25.90	7.66	7.66	7.66	27.61	27.62	27.62	64.0	64.3	64.2	4.36	4.39	4.38
	22:43		Bottom	10.0	26.10	26.10	26.10	7.61	7.61	7.61	22.13	22.14	22.14	60.1	60.2	60.2	4.06	4.07	4.07
18-Jul-12	18:38	Fine	Surface	1.0	27.70	27.80	27.75	7.96	7.95	7.96	24.35	24.36	24.36	84.6	84.4	84.5	5.81	5.80	5.81
	18:40		Middle	5.0	26.70	26.40	26.55	7.79	7.86	7.83	27.30	25.80	26.55	54.8	57.8	56.3	3.83	4.02	3.93
	18:43		Bottom	9.0	23.90	24.20	24.05	7.58	7.64	7.61	29.59	29.53	29.56	13.5	10.1	11.8	0.96	0.72	0.84
25-Jul-12	20:58	Cloudy	Surface	1.0	25.80	25.80	25.80	7.65	7.65	7.65	28.63	28.63	28.63	70.2	68.8	69.5	4.89	4.60	4.75
	21:00		Middle	5.0	25.80	25.80	25.80	7.55	7.55	7.55	29.03	29.03	29.03	65.3	63.9	64.6	4.55	4.43	4.49
	21:02		Bottom	9.0	25.70	25.70	25.70	7.43	7.43	7.43	30.43	30.43	30.43	38.9	37.6	38.3	2.06	1.98	2.02

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station C
Mid-Flood Tide

Location: Station C

Coordinate: 835659E, 816271N

Date	Time	Weater Condition	Sampling Depth m		Water Temperature °C			pH -			Salinity ppt			DO Saturation %			DO mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
05-Jul-12	19:54	Fine	Surface	1.0	27.20	27.20	27.20	7.81	7.81	7.81	26.18	26.18	26.18	64.4	64.7	64.6	4.42	4.44	4.43
	19:56		Middle	6.5	27.20	27.20	27.20	7.79	7.79	7.79	26.34	26.34	26.34	63.3	63.4	63.4	4.34	4.34	4.34
	19:58		Bottom	12.0	27.20	27.20	27.20	7.78	7.78	7.78	26.33	26.33	26.33	62.8	62.7	62.8	4.30	4.30	4.30
11-Jul-12	22:35	Fine	Surface	1.0	28.40	28.40	28.40	8.16	8.15	8.16	19.37	19.39	19.38	78.1	78.2	78.2	5.23	5.24	5.24
	22:36		Middle	6.5	27.70	27.70	27.70	7.94	7.94	7.94	23.60	23.60	23.60	79.5	78.0	78.8	5.46	5.39	5.43
	22:37		Bottom	12.0	26.10	26.10	26.10	7.69	7.69	7.69	27.83	27.82	27.83	31.3	32.2	31.8	2.17	2.23	2.20
18-Jul-12	18:28	Fine	Surface	1.0	27.00	27.10	27.05	8.03	8.02	8.03	24.33	24.31	24.32	92.7	93.7	93.2	6.46	6.51	6.49
	18:30		Middle	7.0	26.40	26.00	26.20	7.94	7.90	7.92	25.47	25.52	25.50	70.4	71.3	70.9	4.88	4.99	4.94
	18:32		Bottom	13.0	25.60	25.50	25.55	7.61	7.60	7.61	26.81	26.80	26.81	40.0	22.3	31.2	1.44	1.59	1.52
25-Jul-12	20:40	Cloudy	Surface	1.0	25.90	25.90	25.90	7.61	7.61	7.61	28.73	28.73	28.73	69.5	68.9	69.2	4.86	4.79	4.83
	20:45		Middle	6.5	25.80	25.80	25.80	7.56	7.56	7.56	29.12	29.12	29.12	49.6	49.3	49.5	3.44	3.42	3.43
	20:50		Bottom	12.0	25.80	25.80	25.80	7.35	7.35	7.35	31.01	31.01	31.01	35.3	34.2	34.8	1.80	1.69	1.75

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station A
Mid-Ebb Tide

Location: Station A

Coordinate: 835468E, 815857N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
05-Jul-12	-	Amber Rainstrom	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Jul-12	14:00	Sunny	Surface	1.0	27.90	27.80	27.85	7.80	7.80	7.80	25.49	25.48	25.49	67.2	66.8	67.0	4.58	4.55	4.57
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14:01		Bottom	3.0	27.90	27.80	27.85	7.80	7.79	7.80	25.64	25.63	25.64	66.9	67.0	67.0	4.56	4.57	4.57
11-Jul-12	16:30	Sunny	Surface	1.0	28.90	28.90	28.90	8.16	8.16	8.16	22.57	22.57	22.57	128.9	130.7	129.8	8.77	8.89	8.83
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16:31		Bottom	4.0	28.90	28.90	28.90	8.13	8.13	8.13	22.66	22.66	22.66	115.9	117.2	116.6	7.88	7.97	7.93
18-Jul-12	9:45	Cloudy	Surface	1.0	27.30	27.20	27.25	7.93	7.92	7.93	22.79	22.77	22.78	72.6	72.2	72.4	5.05	5.03	5.04
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9:46		Bottom	4.0	27.30	27.20	27.25	7.92	7.91	7.92	23.30	23.31	23.31	71.0	70.6	70.8	4.94	4.89	4.92
25-Jul-12	-	Amber Rainstrom	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station B
Mid-Ebb Tide

Location: Station B

Coordinate: 835572E, 815961N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
05-Jul-12	-	Amber Rainstrom	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Jul-12	13:53	Sunny	Surface	1.0	27.60	27.50	27.55	7.83	7.83	7.83	25.46	25.47	25.47	68.2	68.6	68.4	4.67	4.69	4.68
	13:54		Middle	5.5	27.60	27.60	27.60	7.85	7.85	7.85	25.53	25.54	25.54	68.3	68.1	68.2	4.68	4.66	4.67
	13:55		Bottom	10.0	27.60	27.50	27.55	7.84	7.84	7.84	25.80	25.78	25.79	65.9	66.1	66.0	4.50	4.52	4.51
11-Jul-12	16:23	Sunny	Surface	1.0	28.60	28.60	28.60	8.15	8.15	8.15	22.54	22.54	22.54	123.7	122.9	123.3	8.44	8.40	8.42
	16:24		Middle	5.5	28.60	28.60	28.60	8.09	8.09	8.09	22.92	22.92	22.92	114.0	113.7	113.9	7.70	7.68	7.69
	16:25		Bottom	10.0	27.10	27.10	27.10	7.85	7.85	7.85	25.64	25.64	25.64	62.7	62.0	62.4	4.32	4.27	4.30
18-Jul-12	9:35	Cloudy	Surface	1.0	27.10	27.20	27.15	8.09	8.08	8.09	23.29	23.28	23.29	79.3	78.8	79.1	5.54	5.50	5.52
	9:36		Middle	6.0	27.20	27.20	27.20	7.94	7.93	7.94	23.50	23.51	23.51	73.5	73.8	73.7	5.12	5.14	5.13
	9:37		Bottom	11.0	23.10	23.20	23.15	7.62	7.61	7.62	31.42	31.43	31.43	8.1	7.0	7.6	0.58	0.50	0.54
25-Jul-12	-	Amber Rainstrom	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station C
Mid-Ebb Tide

Location: Station C

Coordinate: 835659E, 816271N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
05-Jul-12	-	Amber Rainstrom	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Jul-12	13:46	Sunny	Surface	1.0	27.60	27.50	27.55	7.83	7.83	7.83	25.01	25.02	25.02	75.2	74.3	74.8	5.15	5.09	5.12
	13:47		Middle	7.0	27.60	27.60	27.60	7.81	7.80	7.81	25.31	25.31	25.31	71.7	72.2	72.0	4.91	4.95	4.93
	13:48		Bottom	13.0	27.60	27.50	27.55	7.79	7.78	7.79	25.25	25.24	25.25	71.6	72.3	72.0	4.90	4.96	4.93
11-Jul-12	16:10	Sunny	Surface	1.0	28.30	28.30	28.30	8.10	8.10	8.10	22.19	22.19	22.19	124.2	124.3	124.3	8.54	8.55	8.55
	16:11		Middle	7.0	28.10	28.10	28.10	7.96	7.96	7.96	23.62	23.62	23.62	93.3	94.4	93.9	6.41	6.49	6.45
	16:12		Bottom	13.0	25.70	25.70	25.70	7.69	7.69	7.69	28.15	28.15	28.15	56.9	57.0	57.0	3.93	3.94	3.94
18-Jul-12	9:27	Cloudy	Surface	1.0	27.00	27.00	27.00	7.94	7.94	7.94	23.46	23.47	23.47	76.0	75.7	75.9	5.31	5.29	5.30
	9:28		Middle	7.5	26.00	26.10	26.05	7.85	7.86	7.86	26.54	26.55	26.55	48.2	47.8	48.0	3.38	3.34	3.36
	9:29		Bottom	14.0	22.70	22.60	22.65	7.70	7.71	7.71	32.07	32.06	32.07	15.2	14.7	15.0	1.09	1.06	1.08
25-Jul-12	-	Amber Rainstrom	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station A
Mid-Flood Tide

Location: Station A

Coordinate: 835468E, 815857N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
01-Aug-12	19:06	Fine	Surface	1.0	27.90	27.90	27.90	7.71	7.71	7.71	28.67	28.67	28.67	57.0	56.6	56.8	3.81	3.79	3.80
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	19:10		Bottom	3.0	27.80	27.80	27.80	7.71	7.71	7.71	28.84	28.84	28.84	57.5	57.1	57.3	3.85	3.81	3.83
06-Aug-12	20:56	Fine	Surface	1.0	27.80	27.80	27.80	7.70	7.70	7.70	28.65	28.65	28.65	64.4	62.6	63.5	4.30	4.19	4.25
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20:58		Bottom	3.0	27.60	27.60	27.60	7.69	7.69	7.69	28.67	28.67	28.67	56.7	56.1	56.4	4.25	4.20	4.23
17-Aug-12	16:50	Cloudy	Surface	1.0	26.78	26.78	26.78	7.62	7.62	7.62	28.21	28.21	28.21	76.9	75.2	76.1	5.30	5.14	5.22
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16:52		Bottom	3.0	26.72	26.72	26.72	7.61	7.61	7.61	29.72	29.72	29.72	80.8	81.1	81.0	5.48	5.49	5.49
22-Aug-12	21:00	Fine	Surface	1.0	28.10	28.10	28.10	7.67	7.67	7.67	27.79	27.79	27.79	59.7	58.0	58.9	4.74	4.60	4.67
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21:02		Bottom	2.0	27.20	27.20	27.20	7.76	7.76	7.76	27.50	27.50	27.50	60.4	60.8	60.6	4.03	4.07	4.05

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station B
Mid-Flood Tide

Location: Station B

Coordinate: 835572E, 815961N

Date	Time	Weater Condition	Sampling Depth m		Water Temperature °C			pH -			Salinity ppt			DO Saturation %			DO mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
01-Aug-12	18:59	Fine	Surface	1.0	27.90	27.90	27.90	7.71	7.71	7.71	28.89	28.89	28.89	58.1	58.0	58.1	3.87	3.87	3.87
	19:02		Middle	5.0	27.60	27.60	27.60	7.71	7.71	7.71	28.52	28.52	28.52	57.2	56.5	56.9	3.72	3.68	3.70
	19:04		Bottom	9.0	27.20	27.20	27.20	7.71	7.71	7.71	29.14	29.14	29.14	53.7	53.6	53.7	3.63	3.61	3.62
06-Aug-12	20:52	Fine	Surface	1.0	28.10	28.10	28.10	7.69	7.69	7.69	28.94	28.94	28.94	63.5	63.6	63.6	4.45	4.47	4.46
	20:53		Middle	5.0	27.70	27.70	27.70	7.71	7.71	7.71	28.93	28.93	28.93	59.6	59.0	59.3	4.66	4.64	4.65
	20:54		Bottom	9.0	27.40	27.40	27.40	7.72	7.72	7.72	28.65	28.65	28.65	57.7	57.8	57.8	4.48	4.49	4.49
17-Aug-12	16:45	Cloudy	Surface	1.0	26.40	26.40	26.40	7.84	7.84	7.84	30.11	30.11	30.11	88.3	87.4	87.9	5.99	5.93	5.96
	16:46		Middle	5.0	26.50	26.50	26.50	7.80	7.80	7.80	30.16	30.16	30.16	85.2	83.0	84.1	5.77	6.09	5.93
	16:47		Bottom	9.0	26.50	26.50	26.50	7.52	7.52	7.52	30.51	30.51	30.51	76.6	74.0	75.3	5.19	5.01	5.10
22-Aug-12	20:52	Fine	Surface	1.0	27.80	27.80	27.80	7.80	7.80	7.80	27.98	27.98	27.98	65.3	65.5	65.4	4.39	4.40	4.40
	20:54		Middle	5.0	27.70	27.70	27.70	7.80	7.79	7.80	28.44	28.44	28.44	62.0	61.2	61.6	4.16	4.11	4.14
	20:56		Bottom	9.0	27.60	27.60	27.60	7.79	7.79	7.79	28.87	28.87	28.87	54.3	54.1	54.2	3.65	3.64	3.65

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station C
Mid-Flood Tide

Location: Station C

Coordinate: 835659E, 816271N

Date	Time	Weater Condition	Sampling Depth m		Water Temperature °C			pH -			Salinity ppt			DO Saturation %			DO mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
01-Aug-12	18:53	Fine	Surface	1.0	27.60	27.60	27.60	7.75	7.75	7.75	28.72	28.72	28.72	59.6	59.3	59.5	4.00	3.98	3.99
	18:55		Middle	6.5	27.30	27.30	27.30	7.78	7.78	7.78	29.33	29.33	29.33	56.7	57.0	56.9	3.82	3.84	3.83
	18:57		Bottom	12.0	27.10	27.10	27.10	7.77	7.77	7.77	29.37	29.37	29.37	54.6	55.2	54.9	3.68	3.72	3.70
06-Aug-12	20:47	Fine	Surface	1.0	27.50	27.50	27.50	7.74	7.74	7.74	29.14	29.14	29.14	59.9	58.8	59.4	4.72	4.64	4.68
	20:48		Middle	6.5	27.40	27.40	27.40	7.74	7.74	7.74	29.16	29.16	29.16	59.1	59.0	59.1	3.97	3.96	3.97
	20:49		Bottom	12.0	27.30	27.30	27.30	7.75	7.74	7.75	28.77	28.77	28.77	58.1	58.4	58.3	4.04	4.07	4.06
17-Aug-12	16:40	Cloudy	Surface	1.0	26.60	26.60	26.60	8.09	8.09	8.09	30.13	30.13	30.13	93.6	91.9	92.8	6.34	6.16	6.25
	16:41		Middle	6.5	26.41	26.40	26.41	7.98	7.98	7.98	30.53	30.53	30.53	85.7	83.2	84.5	5.81	5.72	5.77
	16:42		Bottom	12.0	26.20	26.20	26.20	7.84	7.84	7.84	30.42	30.42	30.42	84.3	84.1	84.2	5.68	5.65	5.67
22-Aug-12	20:45	Fine	Surface	1.0	27.70	27.70	27.70	8.01	8.01	8.01	27.77	27.77	27.77	68.1	69.6	68.9	4.73	4.75	4.74
	20:47		Middle	7.0	27.60	27.60	27.60	7.82	7.82	7.82	28.45	28.45	28.45	62.0	62.4	62.2	4.17	4.20	4.19
	20:49		Bottom	13.0	27.70	27.70	27.70	7.80	7.80	7.80	28.36	28.36	28.36	62.7	62.3	62.5	4.21	4.19	4.20

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station A
Mid-Ebb Tide

Location: Station A

Coordinate: 835468E, 815857N

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO		
			m		°C			-			ppt			%			mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-Jul-12	8:55	Cloudy	Surface	1.0	26.00	26.10	26.05	7.59	7.58	7.59	28.30	28.30	28.30	47.9	47.3	47.6	3.31	3.27	3.29
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8:56		Bottom	4.0	26.00	26.10	26.05	7.59	7.59	7.59	28.40	28.40	28.40	45.5	45.6	45.6	3.14	3.15	3.15
01-Aug-12	11:47	Fine	Surface	1.0	27.60	27.60	27.60	7.69	7.69	7.69	27.22	27.22	27.22	62.1	63.6	62.9	4.18	4.27	4.23
	11:49		Middle	3.0	27.60	27.60	27.60	7.68	7.68	7.68	27.84	27.84	27.84	63.1	63.6	63.4	4.25	4.27	4.26
	11:51		Bottom	5.0	27.60	27.60	27.60	7.68	7.68	7.68	29.04	29.04	29.04	67.2	67.4	67.3	4.49	4.50	4.50
06-Aug-12	14:39	Sunny	Surface	1.0	27.90	27.90	27.90	7.66	7.66	7.66	28.55	28.55	28.55	55.7	56.1	55.9	3.72	3.74	3.73
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14:40		Bottom	4.0	27.70	27.70	27.70	7.70	7.70	7.70	28.85	28.85	28.85	55.0	54.5	54.8	3.68	4.00	3.84
22-Aug-12	15:10	Fine	Surface	1.0	27.90	27.90	27.90	7.72	7.72	7.72	25.29	25.29	25.29	55.7	55.8	55.8	3.80	3.81	3.81
	-		Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15:11		Bottom	3.0	27.90	27.90	27.90	7.77	7.77	7.77	28.11	28.11	28.11	66.0	65.0	65.5	4.43	4.36	4.40

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station B
Mid-Ebb Tide

Location: Station B

Coordinate: 835572E, 815961N

Date	Time	Weater Condition	Sampling Depth m		Water Temperature °C			pH -			Salinity ppt			DO Saturation %			DO mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-Jul-12	8:50	Cloudy	Surface	1.0	26.00	26.10	26.05	7.63	7.64	7.64	28.53	28.54	28.54	58.3	51.7	55.0	3.93	3.58	3.76
	8:51		Middle	5.5	25.90	25.90	25.90	7.62	7.62	7.62	28.59	28.60	28.60	50.5	50.6	50.6	3.49	3.50	3.50
	8:52		Bottom	10.0	25.90	25.80	25.85	7.63	7.64	7.64	28.71	28.72	28.72	49.5	49.4	49.5	3.42	3.41	3.42
01-Aug-12	11:33	Fine	Surface	1.0	27.50	27.50	27.50	7.72	7.72	7.72	26.43	26.43	26.43	68.4	68.5	68.5	4.61	4.62	4.62
	11:35		Middle	5.0	27.30	27.30	27.30	7.71	7.71	7.71	28.84	28.84	28.84	68.7	70.0	69.4	4.63	4.71	4.67
	11:37		Bottom	9.0	27.30	27.30	27.30	7.71	7.71	7.71	28.48	28.48	28.48	68.1	68.2	68.2	4.59	4.60	4.60
06-Aug-12	14:35	Sunny	Surface	1.0	28.10	28.10	28.10	7.72	7.72	7.72	29.08	29.08	29.08	64.2	63.4	63.8	4.27	4.21	4.24
	14:36		Middle	5.5	27.70	27.70	27.70	7.72	7.72	7.72	29.19	29.19	29.19	59.5	59.2	59.4	3.98	3.95	3.97
	14:37		Bottom	10.0	27.60	27.60	27.60	7.72	7.72	7.72	29.22	29.22	29.22	59.8	60.2	60.0	4.01	4.02	4.02
22-Aug-12	15:04	Fine	Surface	1.0	27.50	27.50	27.50	7.83	7.83	7.83	28.27	28.27	28.27	70.5	70.4	70.5	4.75	4.74	4.75
	15:05		Middle	5.5	27.60	27.60	27.60	7.82	7.82	7.82	28.07	28.07	28.07	70.6	71.4	71.0	4.76	4.80	4.78
	15:06		Bottom	10.0	27.40	27.40	27.40	7.81	7.81	7.81	28.32	28.32	28.32	70.2	70.2	70.2	4.72	4.72	4.72

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at Station C
Mid-Ebb Tide

Location: Station C

Coordinate: 835659E, 816271N

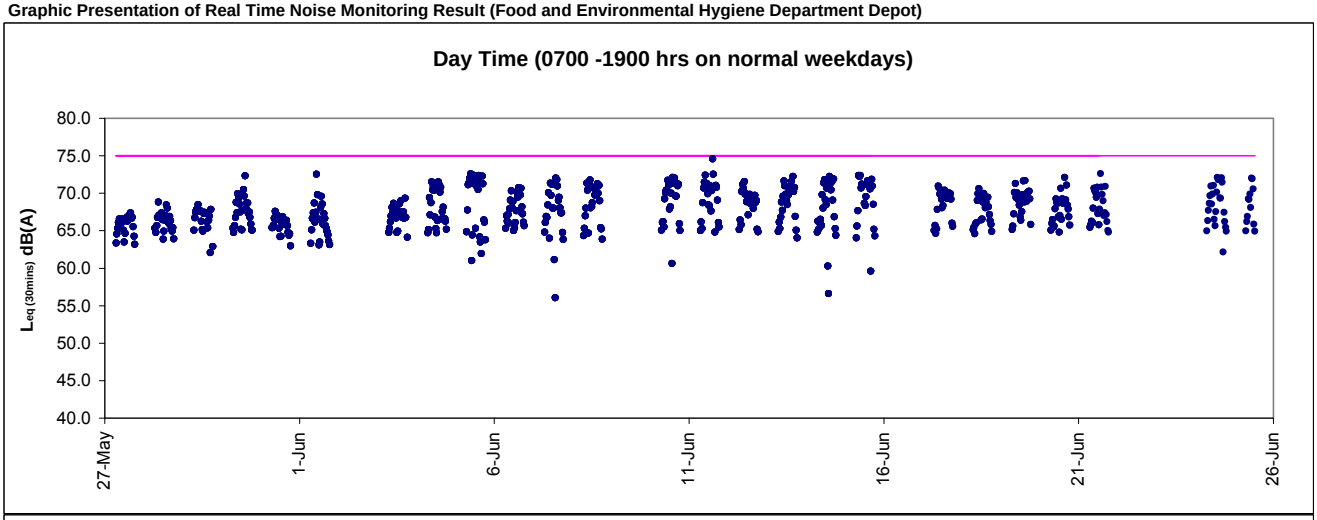
Date	Time	Weater Condition	Sampling Depth m		Water Temperature °C			pH -			Salinity ppt			DO Saturation %			DO mg/L		
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average
28-Jul-12	8:46	Cloudy	Surface	1.0	25.90	25.80	25.85	7.61	7.62	7.62	28.57	28.58	28.58	56.0	56.4	56.2	3.82	3.90	3.86
	8:47		Middle	7.0	25.90	25.90	25.90	7.66	7.67	7.67	25.67	25.68	25.68	53.8	53.2	53.5	3.72	3.68	3.70
	8:48		Bottom	13.0	25.90	25.90	25.90	7.70	7.71	7.71	29.15	29.14	29.15	48.9	48.1	48.5	3.38	3.32	3.35
01-Aug-12	11:25	Fine	Surface	1.0	27.60	27.60	27.60	7.79	7.79	7.79	28.65	28.65	28.65	78.6	78.8	78.7	5.23	5.27	5.25
	11:27		Middle	7.0	27.30	27.30	27.30	7.79	7.79	7.79	28.75	28.75	28.75	80.8	80.3	80.6	5.42	5.41	5.42
	11:29		Bottom	13.0	27.30	27.30	27.30	7.74	7.74	7.74	28.70	28.72	28.71	78.5	78.6	78.6	5.23	5.26	5.25
06-Aug-12	14:29	Sunny	Surface	1.0	27.60	27.60	27.60	7.89	7.89	7.89	28.85	28.85	28.85	67.4	66.6	67.0	4.52	4.47	4.50
	14:30		Middle	7.5	27.50	27.50	27.50	7.80	7.80	7.80	29.00	29.00	29.00	62.6	62.8	62.7	4.21	4.22	4.22
	14:31		Bottom	14.0	27.50	27.50	27.50	7.78	7.78	7.78	26.37	26.37	26.37	60.2	60.4	60.3	4.08	4.07	4.08
22-Aug-12	14:57	Fine	Surface	1.0	27.60	27.60	27.60	7.86	7.86	7.86	27.86	27.86	27.86	79.2	78.5	78.9	5.36	5.33	5.35
	14:58		Middle	7.5	27.60	27.60	27.60	7.83	7.83	7.83	28.14	28.14	28.14	71.7	72.8	72.3	4.82	4.90	4.86
	14:59		Bottom	14.0	27.60	27.60	27.60	7.83	7.83	7.83	28.17	28.17	28.17	72.7	72.6	72.7	4.86	4.86	4.86

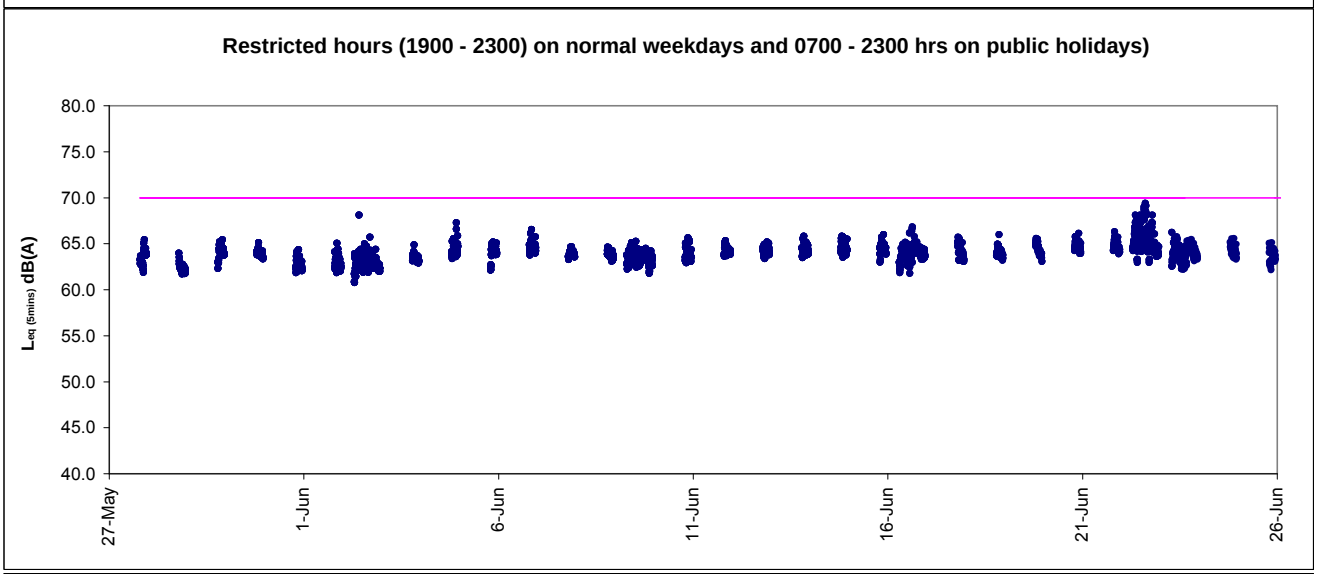
Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

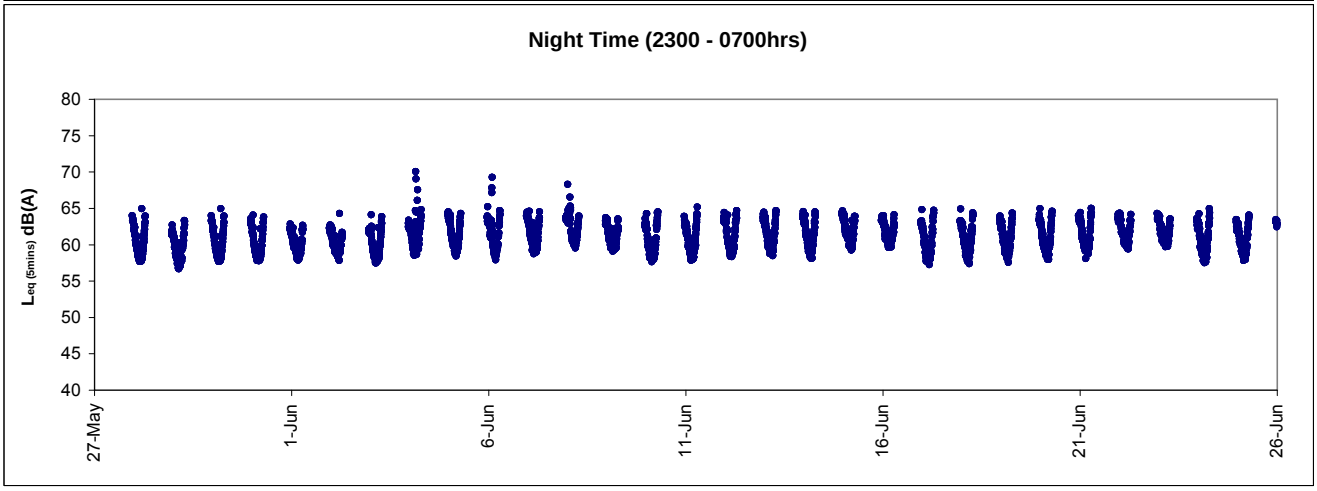
Appendix 4.4

Real-time Noise Monitoring Results and Graphical Presentations

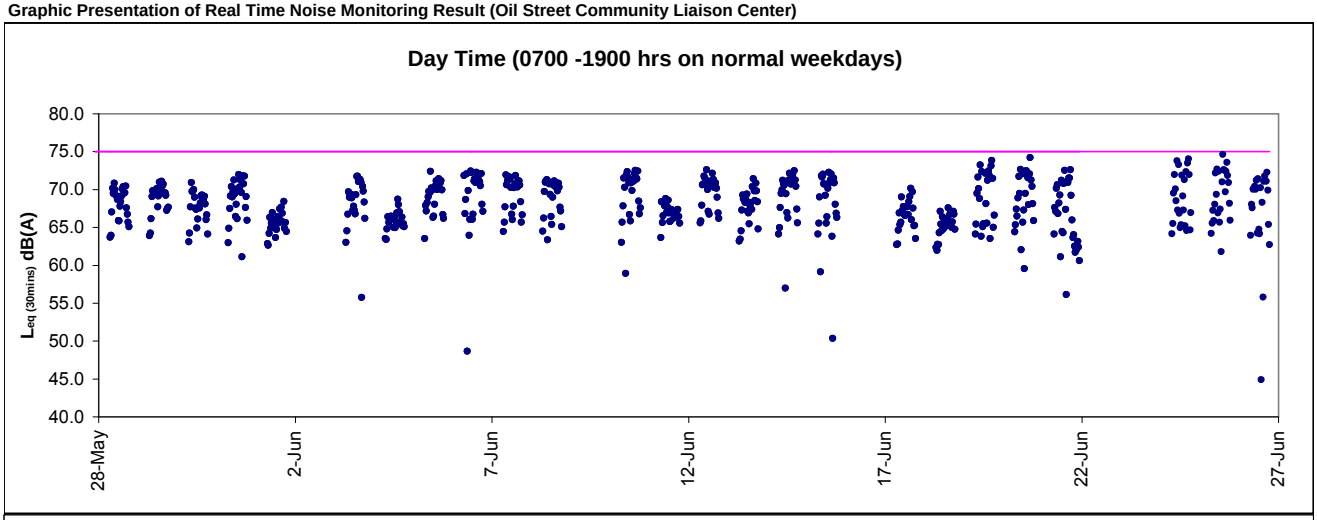
Graphic Presentation of Real Time Noise Monitoring Result (Food and Environmental Hygiene Department Depot)

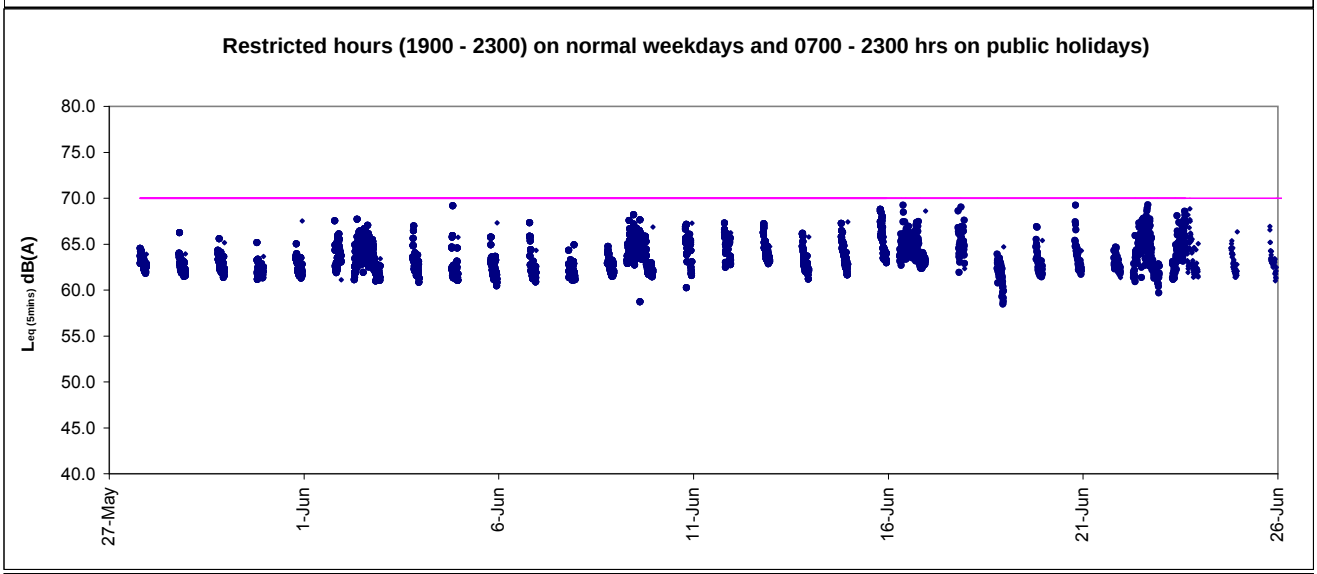


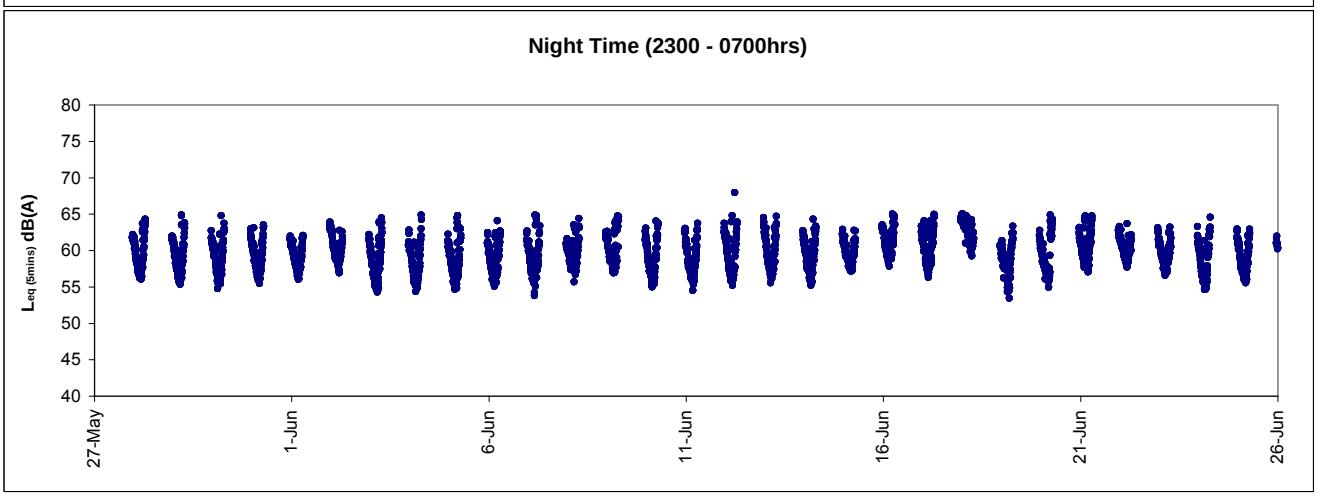




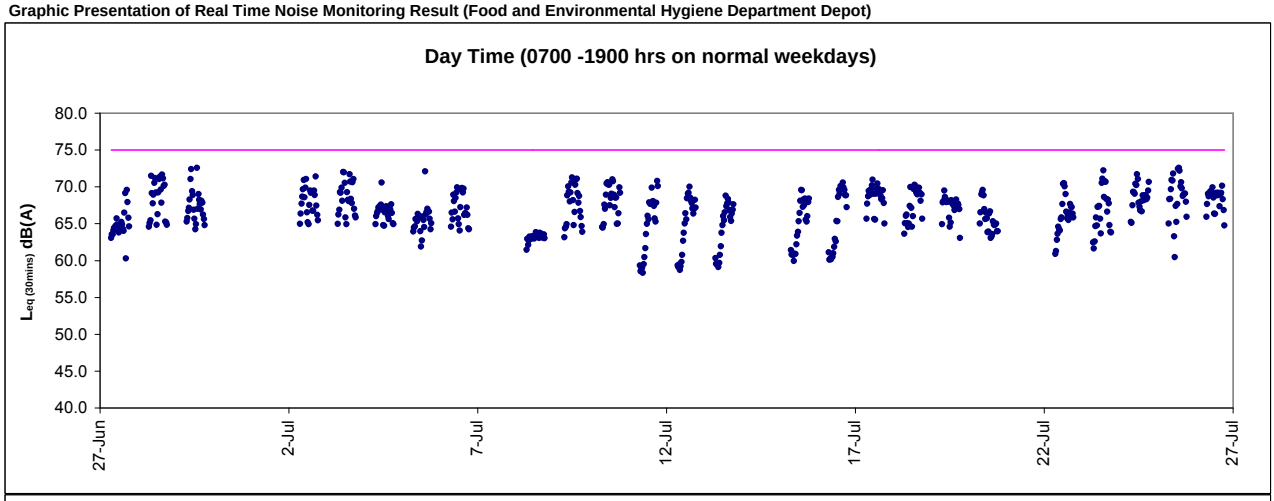
Graphic Presentation of Real Time Noise Monitoring Result (Oil Street Community Liaison Center)

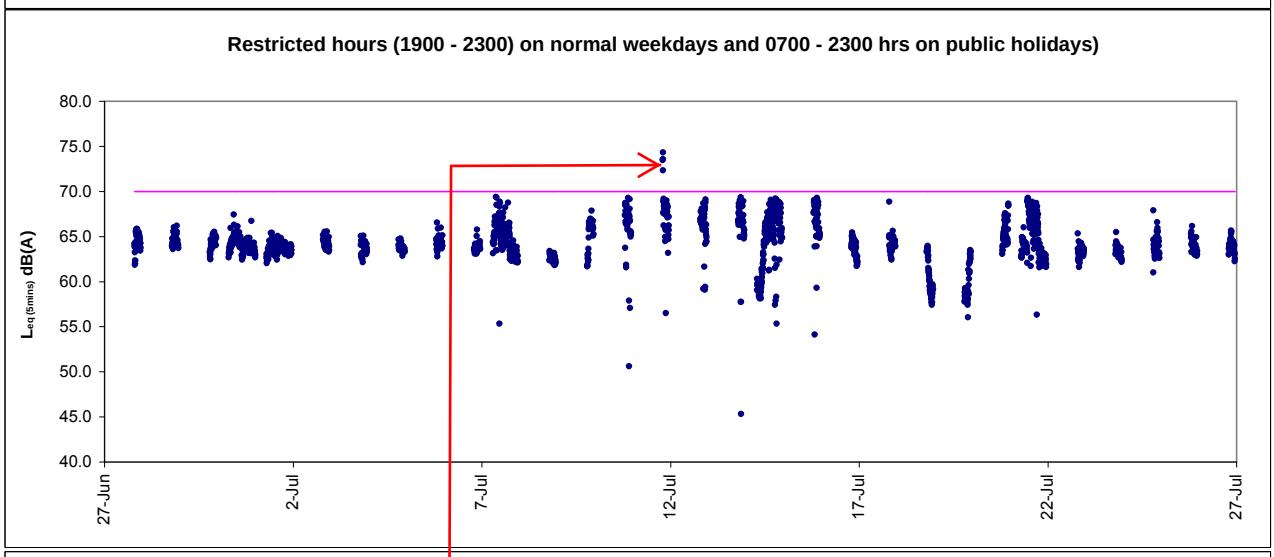


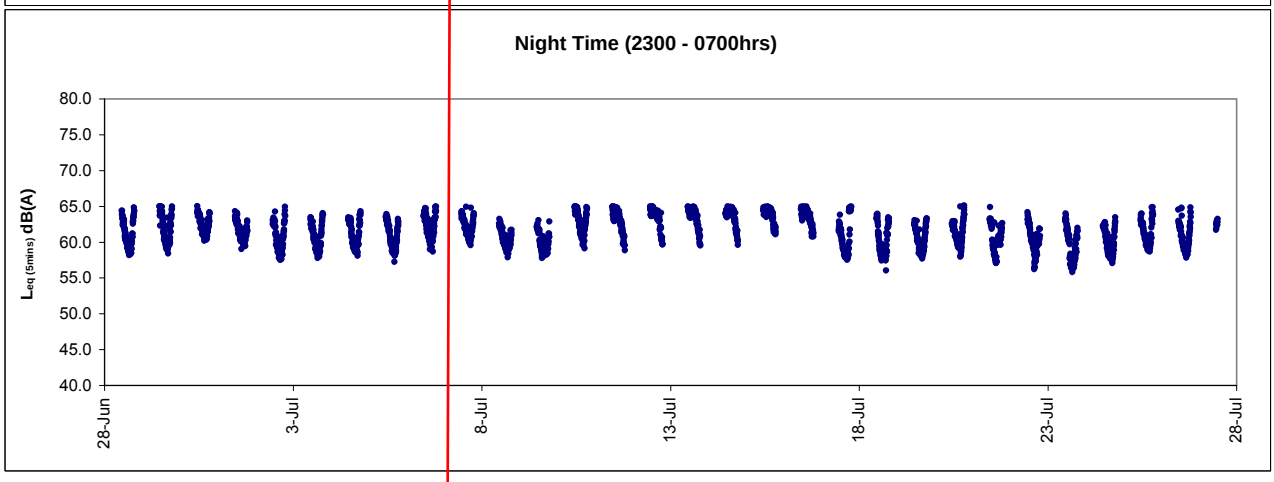




Graphic Presentation of Real Time Noise Monitoring Result (Food and Environmental Hygiene Department Depot)

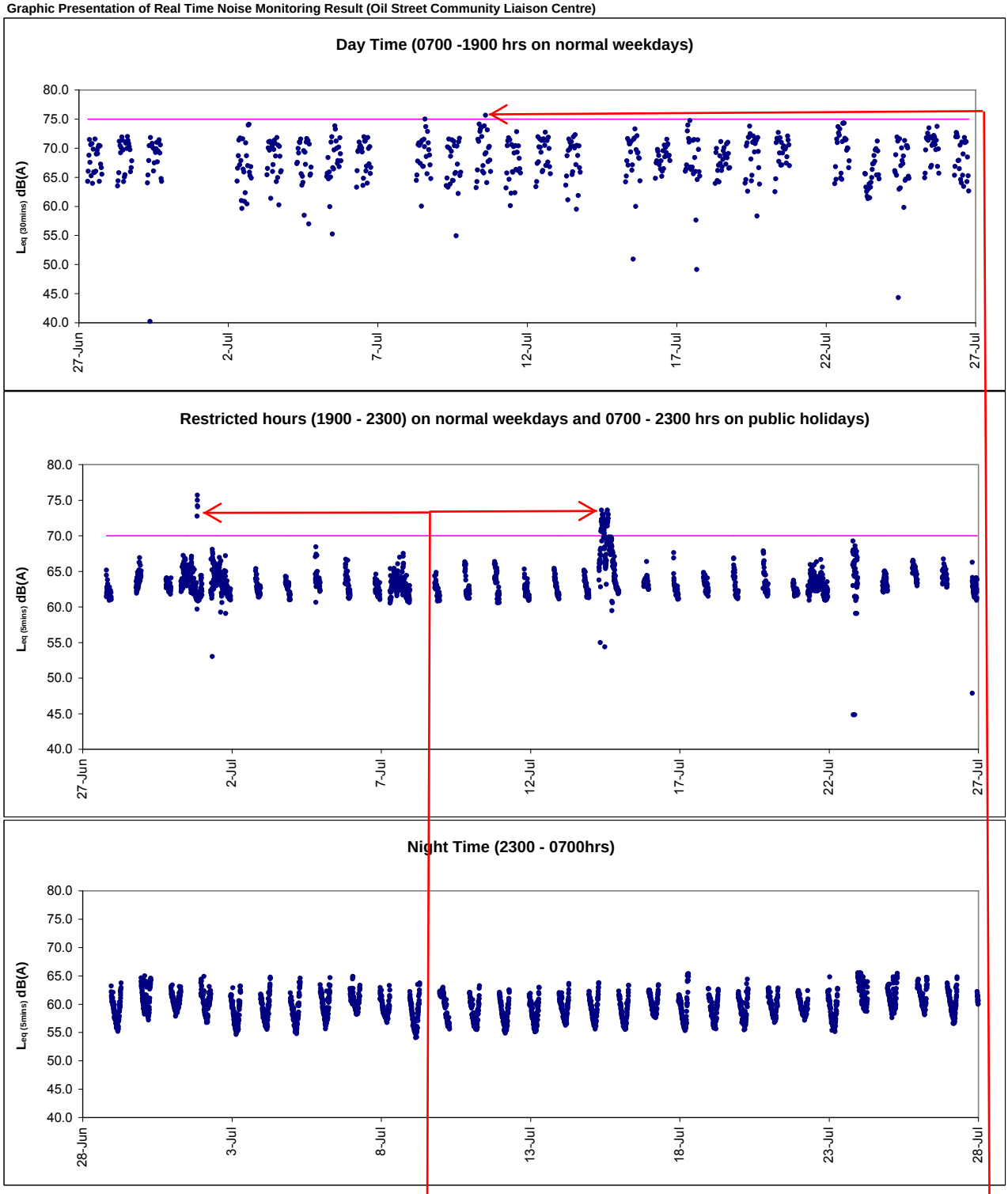






After checking work activities of contractors HY/2009/17 and HY/2009/19, it was found that no works were being performed during monitoring. Exceedances were not continuous in which contributed by traffic noise at Island Eastern Corridor.

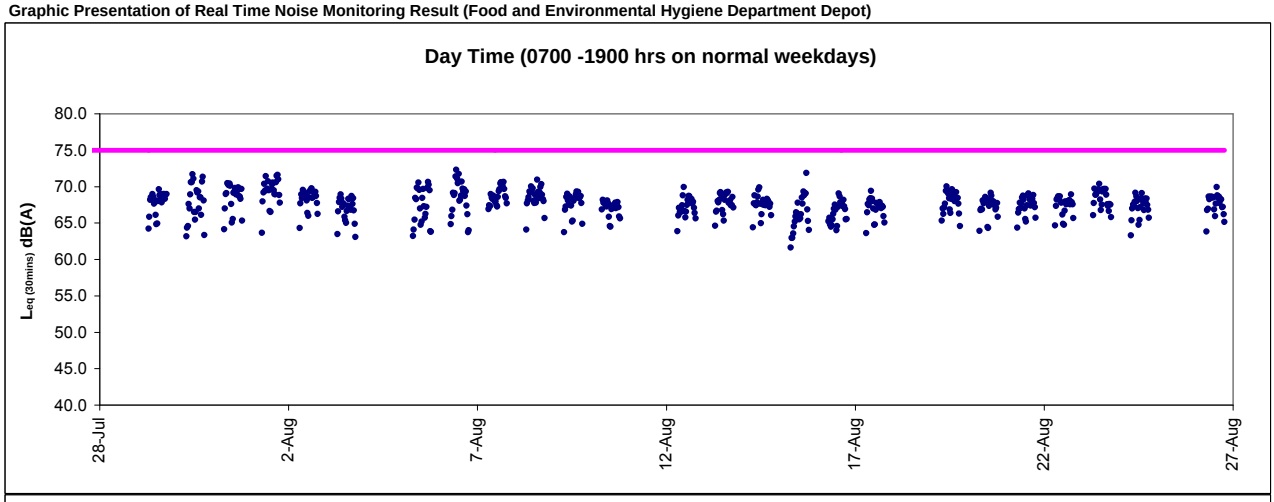
Graphic Presentation of Real Time Noise Monitoring Result (Oil Street Community Liaison Centre)

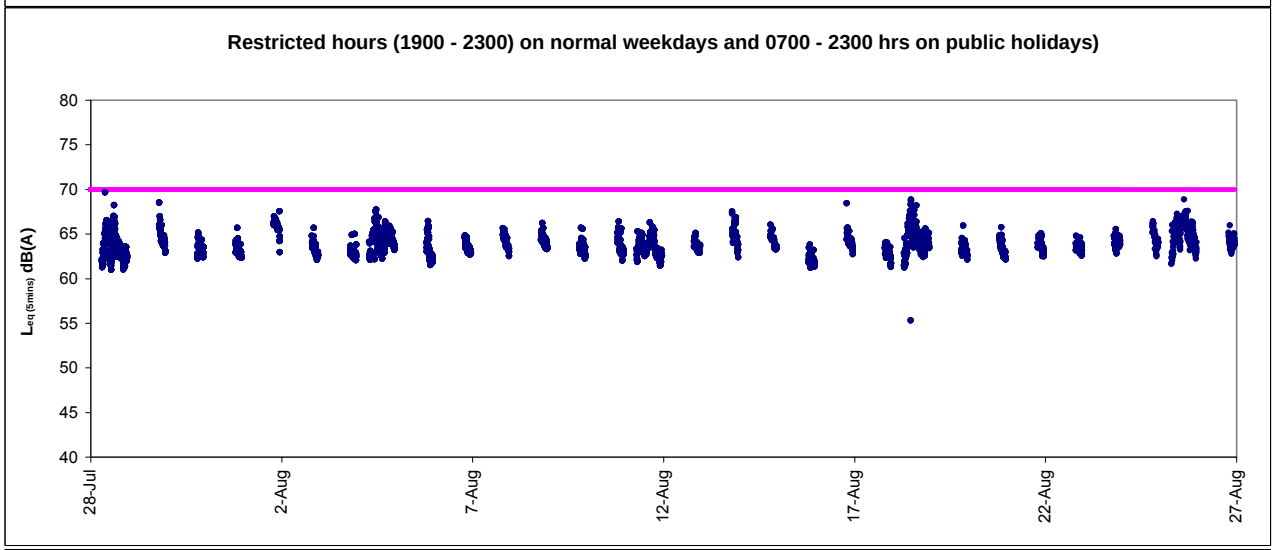


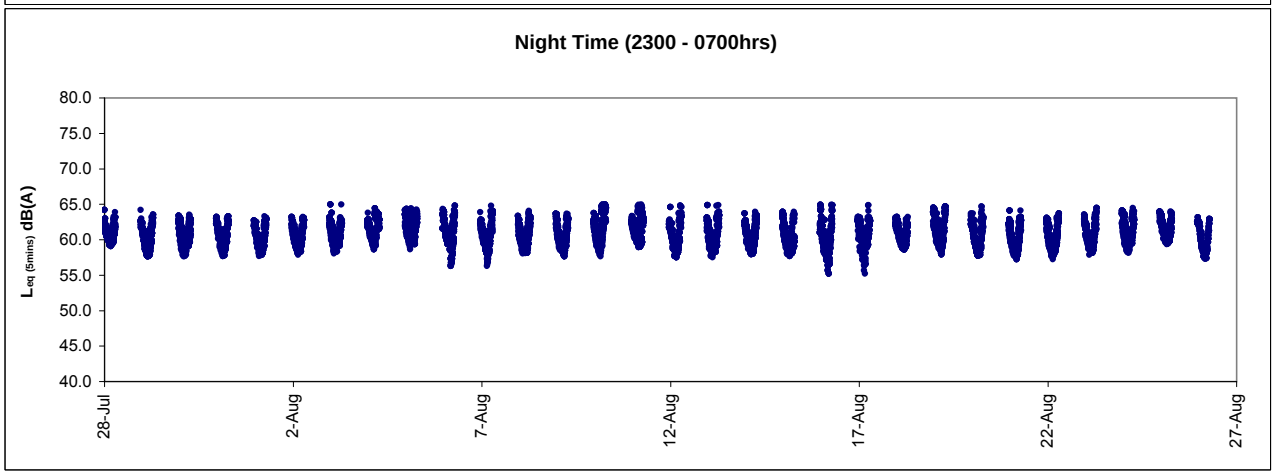
After checking work activities of contractor HY/2009/19, it was found that no works were being performed during monitoring. Exceedances were considered to be contributed by traffic noise at Island Eastern Corridor.

After checking work activities of contractor HY/2009/19, it was found that no major noisy activities were being performed. Exceedances were considered to be contributed by demolition works near the Oil Street Community Liaison Centre.

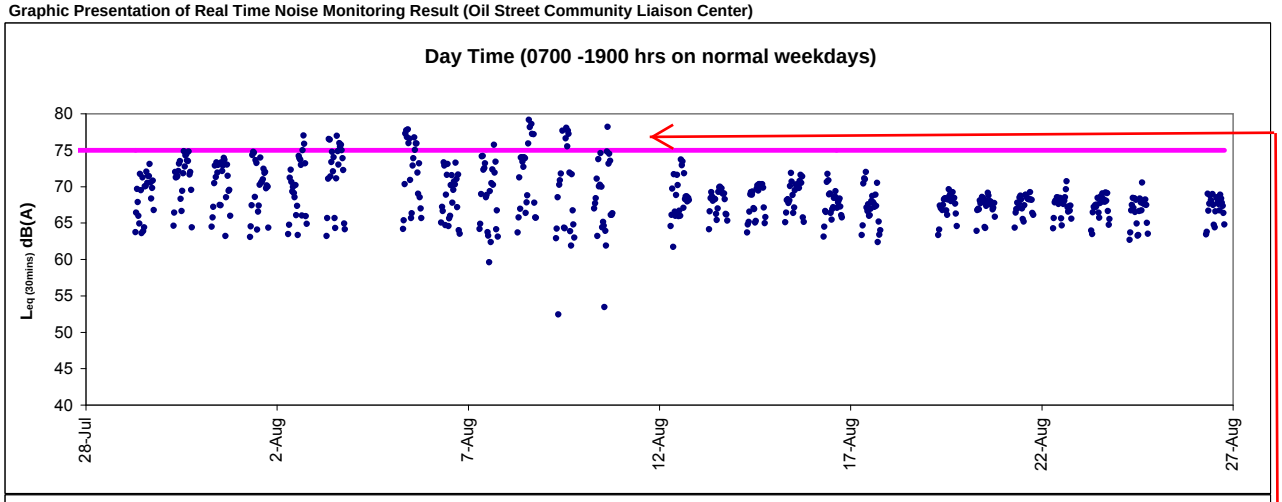
Graphic Presentation of Real Time Noise Monitoring Result (Food and Environmental Hygiene Department Depot)

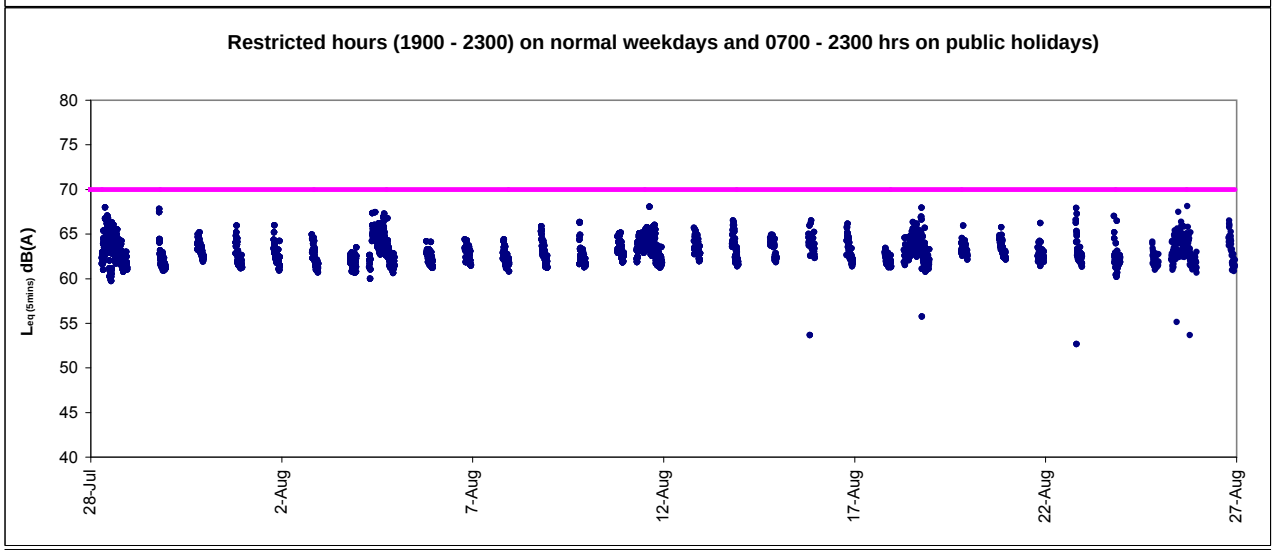


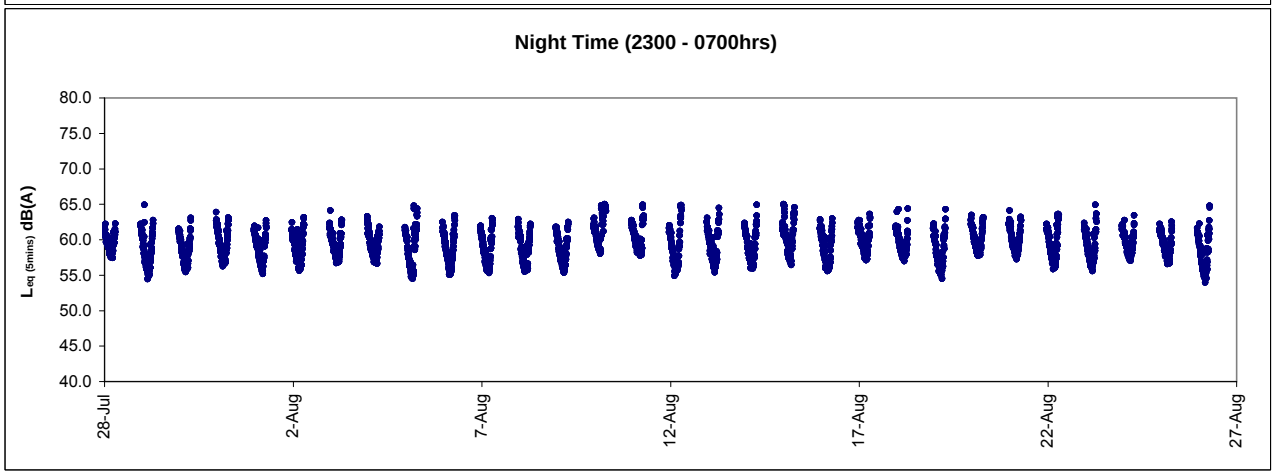




Graphic Presentation of Real Time Noise Monitoring Result (Oil Street Community Liaison Center)







After checking work activities of contractor HY/2009/19, it was found that no major noisy activities were being performed. Exceedances were considered to be contributed by demolition works near the Oil Street Community Liaison Centre.

Appendix 5.1

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 6.1

Complaints Log

Environmental Complaints Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
100321a	21/3/2010	ICC Case no. 1-224618029, Ms. Tsang	Location near Tin Hau	Complaint regarding the loud noise and dark smoke in the course of dredging works on 21 March 2010 (Sunday).	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, Police 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 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.	Closed

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

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
101108	8/11/2010	Mr. Nip received by ICC (CC Case)	Sai Wan Ho	Visual concern around the seaside silt screen outside the WSD freshwater intake pump at Sai Wan Ho (Monitoring station ref no.. WSD15)	1) Contractor for HY/2009/11has been regular checked of condition and removal of trapped rubbish before the dismantling of the floating silt screen to be replaced by wall mount silt screen. 2) Follow-up action had been immediately carried out to check and clear the floating refuse around the seaside silt screen after receipt of the complaint. 3) Removal of seaside silt screen outside the WSD freshwater intake (WSD15) by contractor HY/2009/11 was checked and confirmed dated 9 November 2010. Silt screen has been deployed into the existing steel frame at WSD15 for the protection of WSD salt water intake.	Closed
101110	10/11/2010	Mr. Wong, Harbour Heights (Management) Ltd.	Harbour Heights	Management office received their resident complained on the noise nuisance from the power mechanical equipment during the 0700 to 2200hrs	1) Contractor for HY/2009/11 was granted valid Construction Noise Permit no. GW-RS0870-10 for their dredging works during evening time. Contractor has implemented mitigation measures to reduce the working hour not later than 2230. 2) No noise exceedance was recorded at noise monitoring station at Victoria Centre on 4 and 10 November 2010 during daytime and evening time period. 3) It is considered as invalid complaint. No further complaints were received in the reporting month. The complaint is considered closed.	Closed
101203	3/12/2010, 01:45a.m.	The resident of Block 11, City Garden by ICC referral from Marine Department	North Point	Bad odour was generated from the dredging plant off North Point	1) The first investigation was carried out by Marine Department patrol in the morning on 3 Dec 2010 at around 10:00 and revealed that a few working barges were anchoring in the vicinity without carrying out dredging work. 2) A further specific investigation inspection on contractor's backhoe barge in the vicinity of City Garden was jointly conducted with Engineer Representatives (AECOM/RSS), and ET on 8 Dec 2010 at 11:30. No bad odour was noted during the investigation. 3) Routine dredging operation of the backhoe barge was performed during the jointed investigation inspection and it was revealed that no bad odour was attributed by the dredged materials inspected.	Closed
101206	6/12/2010	Ms Lui, the resident of 27/F, Block 10, City	City Garden, North Point	Two barges were generating noise at 22:00 on 6 December 2010 in which the noise from	1) ET confirmed the following information with resident site staff on the complaint: • It was referred to the filling operation at North Point	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
		Garden by ICC (ICC case: 1-266039336)		filling operation was louder than the traffic noise & visual impact was generated due to the spot-light pointing directly to the complainant flat, suspected the filling operation was part of Wanchai Development Phase II; Complainant also raised the same complaint to District Councillor, Mr. Hui on 7 Dec 2010 regarding the night-time noise and suspected earlier start of work at 06:30. Complaint also requested for limiting the plant operating hours from 09:00-21:00.	Reclamation of Central Wan Chai Bypass site area instead of part of Wanchai Development Phase II; • Two derrick barges were in operation at the time of complaint for placing 400 rockfill onto the excavation trench and for levelling the formation level to receive the pre-cast caisson seawall; • Flood light on the control mast of derrick barge have no lighting shields for the prevention of glare of flood lights; • No starting work on 7 Dec 2010 at 0630hours. 2) PME used in restricted hours were checked and confirmed compliant with valid CNP no. GW-RS0870-10. The noise level recorded on 6 Dec 2010 was complied with the noise criteria during restricted hour; 3) It was found that the occasional noise nuisance might be caused by the hitting or scratching onto the rock surface during loading down the grab onto the Grade 400 rockfill; 4) The absence of the lighting shields at flood light results in visual glare to the complainant at night-time. 5) Contractor was advised to minimize the finishing time of placing Grade 400 rockfill at 2100hrs and switch off all unnecessary flood lights apart from the light for the safety and security purpose; 6) No further complaint was received after implementation of proposed measures	
110415	15/04/2011	The resident, Mr Law at Victoria Centre by ICC (ICC#1-281451236)	North Point	A dust generation and a concern of mosquitoes breeding complaint in which suspected the filling operation was part of North Point Reclamation.	1) The concerned stockpile was a working stockpile under Contract HY/209/15 and was covered at night time after work. 2) Water spraying on the haul road and potential dust generating material at least 4 times a day was conducted by contractor that complies with the requirement. 3) It is considered invalid but preventive actions can be taken because the stockpile is relatively large and easily visible by complainant. 4) It was recommended that increasing the frequency of water spraying shall be conducted to all potential dust generating materials and activities. Besides, Contractor should consider to cover the idle part of the stockpile 5) The concern of mosquitoes breeding is out the scope of EM&A, the follow-up action is not reported in this monthly EM&A report.	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
110419	19/04/2011	Ms Chiu at Victoria Centre at Victoria Centre by ICC (ICC# 1-272874759)	North Point	The episode of night noise on 19/4/11 and 20/4/11 at 2:50 am and the noise lasted for 30 minutes per night.	1) According to the RSS's record, there was no construction works undertaken under the EP-356/2009 during the concern time period. 2) There was no abnormal real-time noise monitoring data recorded in RTN1 - FEHD Hong Kong Transport Section Whitefield Depot which is next to the Victoria Centre. 3) It is considered as invalid complaint under this Project.	Closed
110617	9/06/2011	Mr. Law from Victoria Centre Management Office	North Point	An odour nuisance suspected generating from the discharge point – Channel T at Watson Road in part of the site area was related to CWB under Contract no. HY/2009/11	1) The complaint was received by ET on 13 Jun 2011. During the weekly site inspection on 7 and 17 June 2011, there was no any odour impact detected in the site area. 2) According to the site record, there was muddy water discharged from the unknown source at upstream of Channel T during heavy rainstorm. No any site surface runoff to the Channel T and out of site boundary was observed in the inspection. 3) In order to prevent muddy water washing out to the water body under heavy rainstorm, a silt curtain was installed at the outfall of the channel by Contractor. ET confirmed with the Resident Site Staff that a silt curtain was installed at the outfall of the channel to prevent muddy water washing out to the water body under heavy rainstorm. Besides, regular cleaning of refuse in the channel has been conducted by Contractor. 4) A further site investigation on 28 June 2011 revealed that no odour nuisance was detected at the upstream of the Channel T and no source of odour nuisance was identified at site. As such, it was concluded that the source of odour nuisance was not related to the Project works. 5) Although no source of odour nuisance was identified at site, the muddy water and dirt from the unknown source at upstream of Channel T may cause a potential smell during low tide and low water flow. Contractor was reminded to remove the silt curtain at the channel on non-rainy day so as to avoid the accumulation of the sediment and dirt in the water channel.	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
110709	09/07/2011	Mr. Au from City Garden Management Office	North Point	A complaint letter to Contractor HY/2009/11 was raised by Cayley Property Management Limit on 9 July 2011 regarding a series of pump breakdown events at seawater intake of City Garden on 4, 6, 7 and 8 July 2011. A lot of rubbish such as plastic bags, nylon bags, nylon-wire mesh was observed sucking from the seawater intake at the seawater front of Block 7 of City Garden affecting the operation of seawater pump plant.	1) Contractor conducted formation works for installation of caisson seawall at C27, C28, C29 and C30 on 4, 6, 7 and 8 July 2011 and no dredging work was conducted during this time period 2) Water mitigation measures of an 80m long silt curtain at the site boundary in front of City Garden Relocation of silt curtain and silt curtain at the outfall of the channel were provided and maintained to accommodate the site works. All vessels are equipped with rubbish collection facilities and disposed the rubbish regularly. Also, daily cleaning actions had been taken by contractor to minimize floating refuse within the site boundary. 3) Moreover, it has been reported several times that discharged from outfall pipeline outside the site boundary near the intake of the pump maybe considered as another source of rubbish generation. 4) Referring to the record provided by Cayley Property Management Limit, the trapped rubbish was unlikely generated from the construction works. It was considered that complaint is invalid and not related to project.	Closed
110710	09/07/2011	Complainant by ICC (ICC no. 1-301520309	North Point	It was received at 00:56 on 10 July 2011. There was complained a derrick barge unloading rockfill material off the shore facing the Harbour Grant HK Hotel causing noise nuisance.	1) ET confirmed with the Resident Site Staff that the complaint was referred to Contract HY/2009/15 for the loading and unloading of fill material at two barges operation in the sea at around 300m adjacent to Island Eastern Corridor (Oil Street Chainage) where is outside the Site of HY/2009/15 in the period of around 19:45 on 9 July to 1:00 on 10 July 2011. 2) The material loading and unloading operation processed in restricted hours was checked without a valid CNP. It was found that the operation was due to an unexpected water leakage of the hopper barge and considered an incident. 3) According to the incident report provided from RSS on 20 July 2011, around 7:30 pm the barge S22 was inclined slightly and slightly water leakage might occur. Due to marine safety concern, the hopper barge would open the hopper to release the contained materials in order to reduce the weight and stabilize the barge. In consider of slight water leakage, the operator decided to use the nearby Derrick Barge ST32 to help for unload the general fill materials first and the unloading operation was started at around 7:45pm, and end at around 1:00 am. Contractor was reminder to provide frequent check of vessel condition	Closed

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

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
				Central-Wanchai Bypass at noon rather than in morning at 7am.	monitoring station at Victoria Centre on 25 July and 4 August 2011 during daytime while breaking and excavation works were undertaken during monitoring. 4) In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. No further complaint from complainant was received after proposed the mitigation measure.	
110727b	27/07/2011	Ms. Chiu by ICC no.1-304615409	North Point	Noise nuisance from the excavation works for the Highways Department adjacent to the Victoria Centre was conducted from 7am	1) It was referred by AECOM to ET on 28 July 2011 2) With reference to the construction noise monitoring at Vitoria Centre, no exceedance was recorded on 25 July and 4 and 10 August 2011 during daytime while breaking and excavation works were undertaken during monitoring. 3) As a mitigation measure to minimize the noise nuisance in the vicinity of the residents, rock breaking activities will be started at 8am.	Closed
	08/08/2011				4) However, complainant did not satisfy with the response on the noise nuisance from the rock-breaking during morning in front of Victoria Centre and then further complaint via 1823 on 7 August 2011. 5) Highways contacted the complainant on 15 August 2011 that the noisy rock breaking operation had been completed. *Remarks: There will be counted as two complaints in this complaint log.*	
110810	10/08/2011	Mr. Yip by ICC no. 1 – 306740207	North Point	Muddy water was discharged from work site to the seafront near Oil Street during heavy rain. The environmental protection measures were not good enough and are needed to rectify.	1) It was referred by AECOM to ET on 17 August 2011. 2) Confirmed with RE, Muddy water was caused by a heap of earth being washed to the sea by heavy rain. The heap of earth was referred as a small stockpile placed close to the seafront in front of Oil Street within the site area under handover transition period from contract HY/2009/11 to contract HY/2009/19. The necessary mitigation measures to protect the small stockpile against rainfall were missing at the time of complaint. 3) Due to the missing of mitigation measures to protect the small stockpile during handover transition period, loose material was washed into the harbour when heavy rain came. Muddy water was formed and dispersed in the sea that caused the water quality and visual concern to the public. The complaint was considered as valid. 4) Contractors were advised to relocate the loose materials	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					away from the coastline as far as practicable. Any loose material placed which needed to be placed near the coastline shall be properly compacted or covered as appropriate. To avoid any further environmental deficiency, Contractors shall ensure all necessary environmental mitigation measures will not be missing during site area handover.	
110826	26/08/2011	Grand Hyatt and a complainant by ICC	Wan Chai	Construction noise and vibration nuisance generated from the works at Convention Avenue and inside the HKCEC1 reclamation area.	1) Confirmed with the Resident Site Staff that the construction works were referred to the Contractor HK/2009/01. 2) The Excavator mounted breaker at Convention Avenue and Drilling rig at HKCEC1 reclamation area were the dominant construction noise source during this period. 3) The drilling rig at HKCEC1 reclamation area and excavator mounted breaker at Convention Avenue were then temporary suspended after received the complaint. 4) Investigation revealed that the erected noise barrier (4m cantilevered movable noise barrier for the drilling rig and 1m movable noise barrier for the excavator mounted breaker) were not located close to the plants to provide adequate noise screening. 5) Contractor was advised to avoid concurrent operation of construction plants at site. Further enhancement of movable noise barriers at HKCEC1 and providing noise enclosure for the excavator mounted breaker at Convention Avenue are needed. 6) Further site investigation and checking on 31 August and 7 September 2011 revealed that the implemented noise mitigation measures were in proper and minimize the noise impact.	Closed
110826A	26/08/2011	A complaint letter from Mr. Au of Cayley Property of City Garden	North Point	Harbor front adjacent to their cooling water intake suction which caused 3 times of system breakdown of the sea water pump on 9, 22 and 25 August 2011.	1) It was referred by AECOM to ET on 29 August 2011. Confirmed with the Resident Site Staff that the • construction works were referred to the Contractors HY/2009/11 and HY/2009/19. • The pump is located on the site area of HY/2009/19 • A temporary garbage defender was installed on 23 July 2011 by HY/2009/11 and the shape of the defender was adjusted on 8 August 2011 in order to excluse the outfall. • An ad hoc inspection of the effectiveness of garbage defender was conducted with RSS (CWB project	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					team), contractor of HY/200911 and HY/2009/19 and IECon 29 August 2011. Inspection report of it was submitted to RSS on 19 September 2011. • Daily cleaning near the water intake was conducted twice a day by contractor HY/2009/19. • In response to City Garden request, the contractors have set up the temporary garbage defender in function and collect the floating refuses, but cannot eliminate all refuses, in particular the refuse coming from the seabed 2) According to the complaint letter from Cayley Property, the outcomes of the preventive measures were not complying wih their expectation. 3) During on-site inspection, floating refuses observed occasionally outside the garbage defender. No conclusion could be made for the source of these floating refuses. On the other hand, some of the refuses were observed floating behind the garbage defender during investigation. 4) All daily cleaning actions had been taken by contractor to minimize floating refuse inside the construction site. 5) It was noted that the cooling water intake was accessible to the public. As such, fish breeding and fishing activities were observed even though a notice has already hoisted. Also, tripping of rubbish by the passers-by could result in a lot of rubbish accumulated around the intake point. 6) Referring to the record provided by CPML, there were a lot of nylon/ plastic bags and nylon wire mesh that matched those rubbishes generated from the public activities. 7) Contractors have fulfilled the requirement of site cleanness and no exceedance was recorded during Water Quality Monitoring. It is consider the cause of this complaint is not related to project and environmental issue in this project as well. No more complaint received after ad-hoc inspection	
111014	14/10/2011	The complainant, Ms. Tam complained via hotline 1823	Wan Chai	The polluted fumes and exhaust from the excavation by sub-contractor of CEDD on pedestrian way outside no.25 Harbour Road (in front of the Harbour Centre)	1) RSS notified ET to carry out investigation on 17 October 2011. 2) ET confirmed with the Resident Site Staff that the location of the excavator was within site area of Contract no. HK/2009/02 undertaking the water cooling main reprovision works along the Harbour Road. The plants including the excavator have been checked before using	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					at the site. However, the polluted fumes and exhausted from the excavator was caused due to insufficient maintenance of the plant after using at site. 3) After receiving the complaint, the excavator was then removal off-site for checking and maintenance works on 17 October 2011. 4) Contractor was reminded to enhance regular checking and maintenance to all plants at site. 5) RSS has replied to the complainant on the arrangement of the measures taken on 17 October 2011. Complainant was satisfied with the response and follow-up action taken by the Contractor.	
111104	04/11/2011	Mr. Liu from LCSD complained via Contractor Complaint Hotline	Wan Chai	Complain about a tree near the site of pipe installation works outside Wan Chai Swimming Pool at Harbour Road, the status is not healthy and roof ball of two trees inside the site near Renaissance Hong Kong Harbour View Hotel at Convention Avenue were half cut.	1) ET confirmed with the Resident Site Staff that • A tree near the site of pipe installation works outside Wan Chai Swimming Pool at Harbour Road is the Tree no. TA1122 under Contract no. HK/2009/02. Leaves of a branch of this tree were shrivelled. • Two trees inside the site near Renaissance Hong Kong Harbour View Hotel at Convention Avenue are the tree nos. A160 and A161 under Contract no. HK/2009/01. Part of roof ball of these two trees was covered by the metal plate. 2) Independent Tree Specialists for these two inspected the trees. Contractor HK/2009/01 has taken the measure as recommend downgrading the soil level around the trunk base. Reinstating of the ground works will be conducted in mid-December 2011. For the tree no. TA1122 under Contract no. HK/2009/02, the brown leaves were removed and fenced the tree with orange net is provided to prevent damage of tree trunk by construction works. The distance between the tree and the edge of the trench is kept approximate 2m. Two Contractors were reminded to carry out regular watering to the trees within their site area.	Waiting RSS respond
111106	06/11/2011	Police officer	Wan Chai	Construction noise generated from the site at about 6:30 a.m on 6 November 2011 and require to stop the machine operation	1) According to the information reported by Contractor, one BC cutter and hoist were operated for Diaphragm Wall construction of Shatin-Central Link to inspect bentonite pipes and ensure no damages and all the joints are tightened in good position. Then, the subcontractor for Diaphragm wall, SAMBO Korean foreman stopped the engine of the BC cutter immediately. The police officer recorded the details and HKID number of the foreman and then left. Due to the different language communication between the police officer and the Korean foreman, no	Keep in view for three months from the date of complaint recevied

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					CNP was checked by the police officer. 2) ET confirmed with the Resident Site Staff that same issue was also raised out by RSS at about 7:00a.m on the same day. Besides, it was confirmed that there is no valid Construction Noise Permit for the conducted construction works in the period between 2300 and 0700. 3) Due to insufficient communication between Contractor HK/2009/01 and their Korean Sub-contractor, Korean Sub-contractor had not notified to Contractor before carrying out the inspection of the BC cutter, hoists and bentonite pipes at about 6:00a.m to ensure no damages and all the pipe joints should be tightened and in good position. 4) Contractor was advised to enhance the communication between Contractor and sub-contractor and provide sufficient environmental training to all foreman and operators on restricted hour operation. Futhermore, Construction Noise Permit should be checked and in place for the construction works during restricted hour 5) This complaint was considered in relation to the conducted construction works during restricted hours without valid Construction Noise Permit. No more construction works were conducted during night time period. The construction works will be conducted in accordance with the time period stated in valid CNP. This complaint will be kept in view of any follow-up action from the relevant government activities.	
120405	05/04/2012	N/A	North Point	A complaint regarding excessive noise from construction sites of CBTS was observed daily before 7:30am except on public holidays, and the noise source was mainly from piling works. The complainant requested that construction works should start after 8:30am to avoid nuisance to nearby residents and a speedy follow-up and reply.	1) RSS notified ET on 5 April 2012. 2) ET confirmed with the Resident Site Staff that no piling works were performed during the concerned period. 3) After reviewing the results of noise monitoring (M2b and M3a), no exceedance was recorded during daytime period and the noise level was below 75dB(A). Site inspection for HY/2009/15 was conducted on 10 April 2012. The condition of noise mitigation measures around CBTS was found satisfactory. RSS confirmed that no pilings were performed during the concerned period. The major works included drilling, diaphragm wall construction and excavations. 4) HyD made a reply to the complainant on 16 April 2012 via 1823. HyD replied that the current works at CBTS were drilling, diaphragm wall construction and deep excavations. In order to minimize the noise generated	Closed

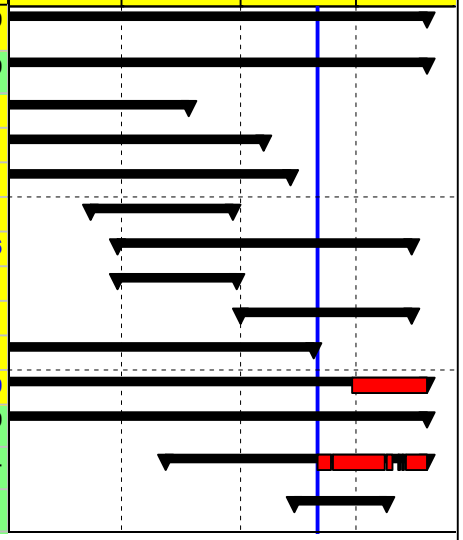
Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					from the above works, the Contractor had erected temporary noise barriers and provided noise blankets on plants. RSS would continue to work with the Contractor on the effectiveness of the environmental mitigation measures implemented on site. No further complaint was received after the response.	
120820	20/8/2012	Mr.Ho via hotline 1823	The exit of Causeway Bay typhoon Shelter and lighthouse	A complaint regarding turbid appearance in water quality generated from dredging operation at the exit of CBTS and lighthouse from two barges respectively in construction sites of CBTS on 18 and 19 August 2012 between 3:00 and 10:00pm. The complainant requested a follow-up and reply from relevant department.	1) RSS notified ET on 21 August 2012 2) ET confirmed with the Resident Site Staff that seawall blocks removal at north of TS1 and removal of rock armour at tip of Eastern Breakwater for HY/2009/15 were conducted during the concerned period on 18 August 2012, and seawall blocks removal at north of TS1 during the concerned period on 19 August 2012. 3) After reviewing the results of water monitoring at C7 on 17 and 20 August 2012, no exceedance was recorded and the water quality parameters were all below action level. Site investigation for HY/2009/15 was conducted on 21 August 2012. The investigation found that inadequate silt curtain for protecting trimming work at northern side of TS1, impermeable barrier were observed inadequate to protect the removed seawall location for trimming and dredging at TS1 and inadequate silt curtain were observed for protecting trimming work at breakwater at TS1. Reviewing the photo records of the concerned areas provided by RSS and investigations by RSS, it was found that the silt curtains around the concerned areas of northern TS1 and Eastern Breakwater were inadequate, and the silt curtains provided at both ends of the derrick barge were not fully enclosed. Also, after work, the silt curtains were not properly maintained to surround the affected work areas, causing silt water leakage into the Victoria Harbour. RSS confirmed that seawall blocks removal at north of TS1 and removal of amour rocks at tip of Eastern Breakwater for HY/2009/15 were conducted during the concerned period on 18 August 2012, and seawall blocks removal at north of TS1 during the concerned period on 19 August 2012. 4) HyD made a reply to the complainant on 23 August 2012 by phone. HyD replied that there would be on-going activities in the north side of TS1 and the end tip of Eastern Breakwater included filling and rock removal works. HyD explained to the complainant that the Contractor has deployed silt curtain to safeguard the water quality in the vicinity, but the silt curtain deployment	Closed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					requires further improvement. RSS has immediately urged the Contractor to implement mitigation measures and also stepped up supervision on Contractor's work. RSS would continue to work with the Contractor on the effectiveness of the environmental mitigation measures implemented on site, and the Contractor would take into account of ET and IEC's recommendations to enhance the environmental mitigation measures. No further complaint was received after the response.	

Appendix 7.1

Construction Programme of Individual Contracts

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
	Reclamation in NPR3 ver.9.5 2011_11_21	115	23	21-Jul-11 A	19-Dec-11	-39
	Landside	115	23	05-Aug-11 A	19-Dec-11	-39
	Installation Seawall Blocks to B6 and B7	55	0	13-Aug-11 A	18-Oct-11 A	
	Construct the Concrete Coping at B6 and B7	82	0	13-Aug-11 A	07-Nov-11 A	
	Laying Geotextile & Filter Material	86	0	05-Aug-11 A	14-Nov-11 A	
	Construct Open Channel U under IEC	33	0	23-Sep-11 A	30-Oct-11 A	
	Construct Open Channel U outside IEC	32	20	30-Sep-11 A	15-Dec-11	-36
	Construct the Drainage Pipeline at West of Open Channel U	34	0	30-Sep-11 A	31-Oct-11 A	
	Construct the Drainage Pipeline at East of Open Channel U	28	17	01-Nov-11 A	15-Dec-11	-31
	Unloading Sorted Public Fill behind new seawall	53	0	15-Aug-11 A	20-Nov-11 A	
	Reclamation	98	23	13-Aug-11 A	19-Dec-11	-39
	Seaside	100	23	21-Jul-11 A	19-Dec-11	-39
	Construction of Outlet Pipe from City Garden	54	20	12-Oct-11 A	19-Dec-11	-34
	Construction of B8	13	13	15-Nov-11 A	09-Dec-11	-31

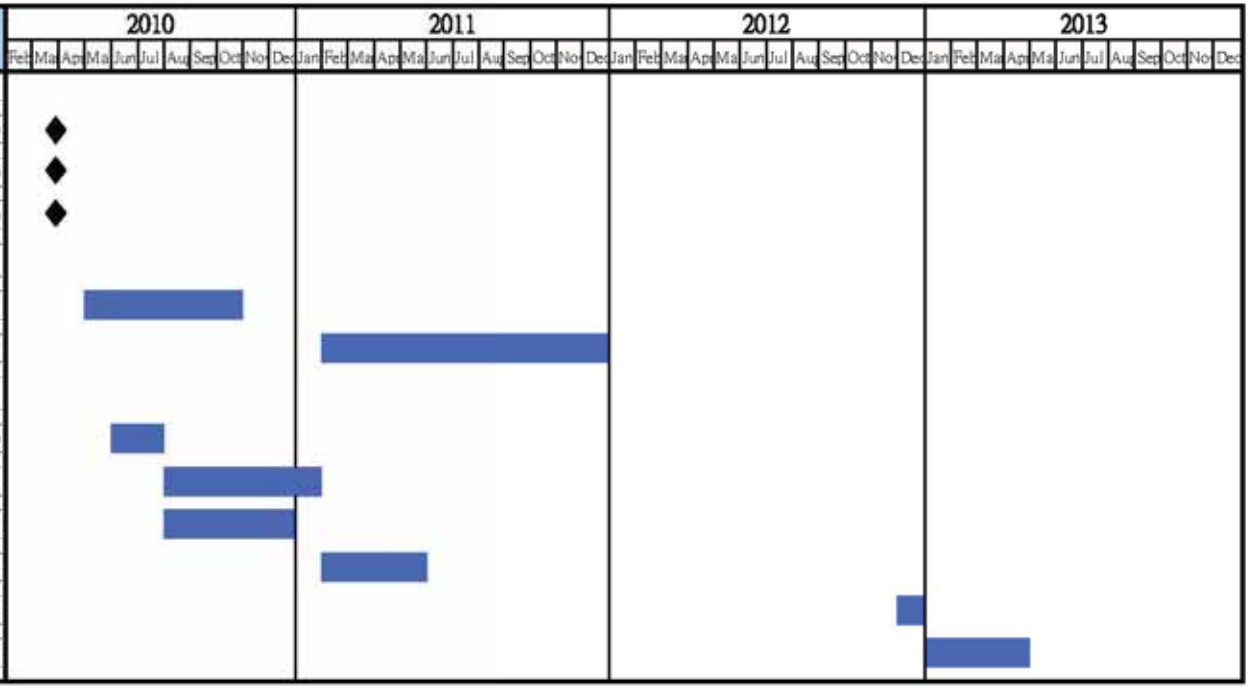


Contract No. HK/2009/01

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

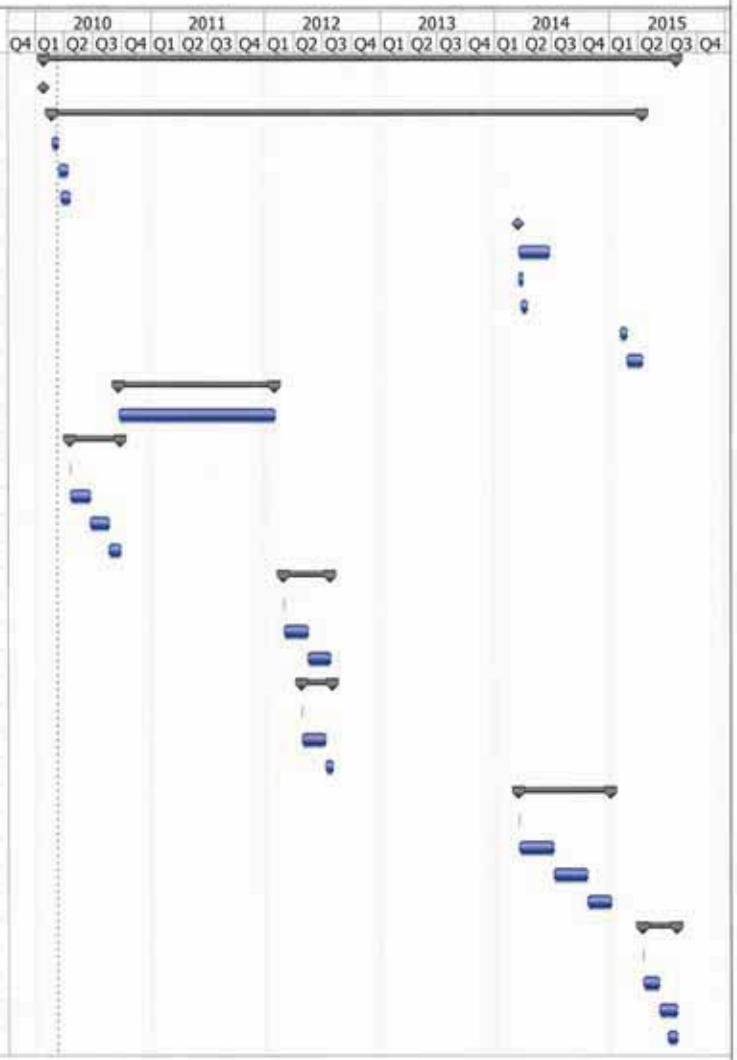
Working Programme for Marine Works (Dredging and Backfilling)

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)

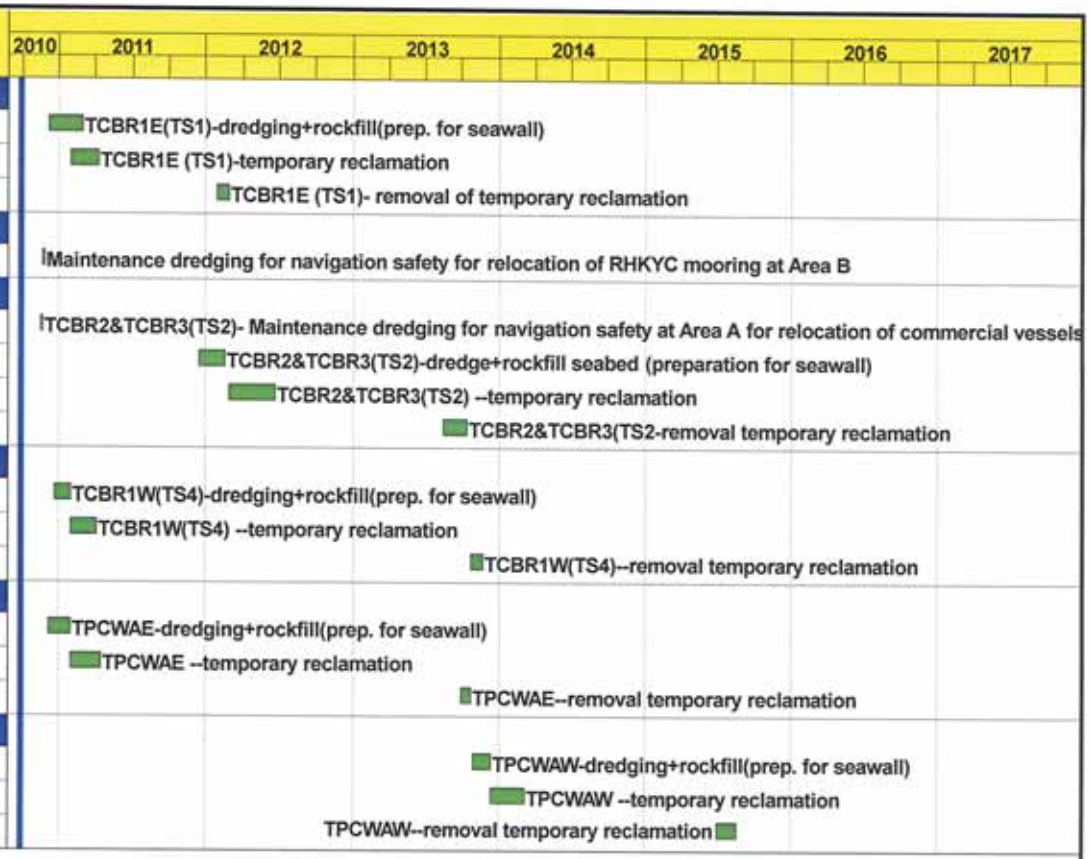
ID	Task Name	Duration	Start
1	**HK/2009/02-Marine & Reclamation Works**	**2008 d**	**Thu 28/1/10**
2	Contract Commencement	0 d	Thu 28/1/10
3	**General**	**1879 d**	**Mon 22/2/10**
4	Submission & obtain approval for marine GI	21 d	Mon 22/2/10
5	Stage 1 Marine GI for reclamation	30 d	Mon 15/3/10
6	Engineer's 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 | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Milestone | Rolled Up Progress | Split | External Tasks | Project Summary | Group By Summary | Deadline

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



Early Bar
Progress Bar
Critical Activity

?Primavera Systems, Inc.

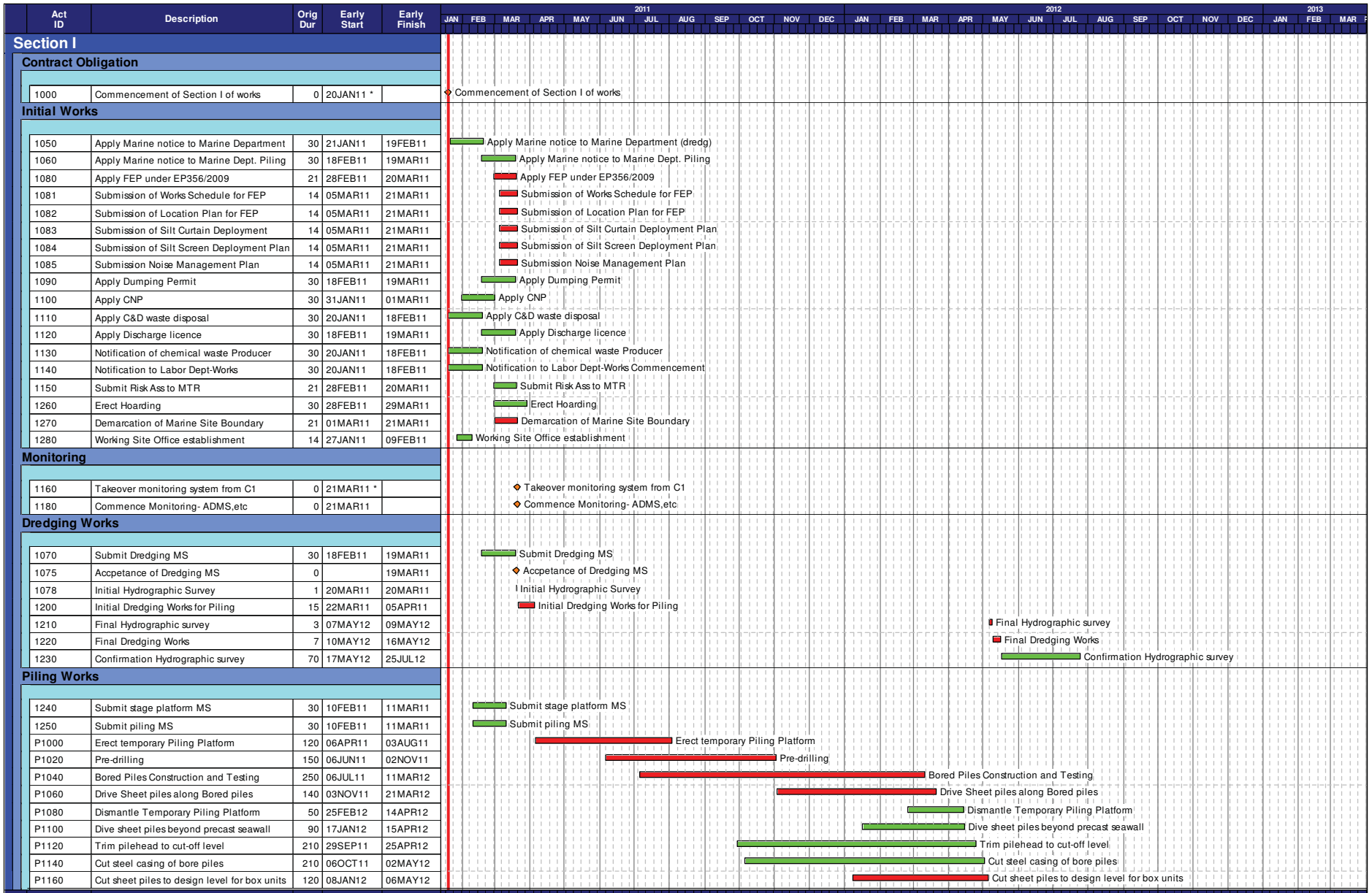
EP02

CHINA STATE CONSTRUCTION ENGG LTD

CONTRACT NO. HY/2009/15: CENTRAL
WAN CHAI BYPASS- TUNNEL (CBTS SECTION)

Prepared based on IWP Rev. 0

Date Prepared: 28 Oct 2010



Start date	20JAN11
Finish date	19DEC12
Data date	20JAN11
Run date	05MAR11
Page number	1A
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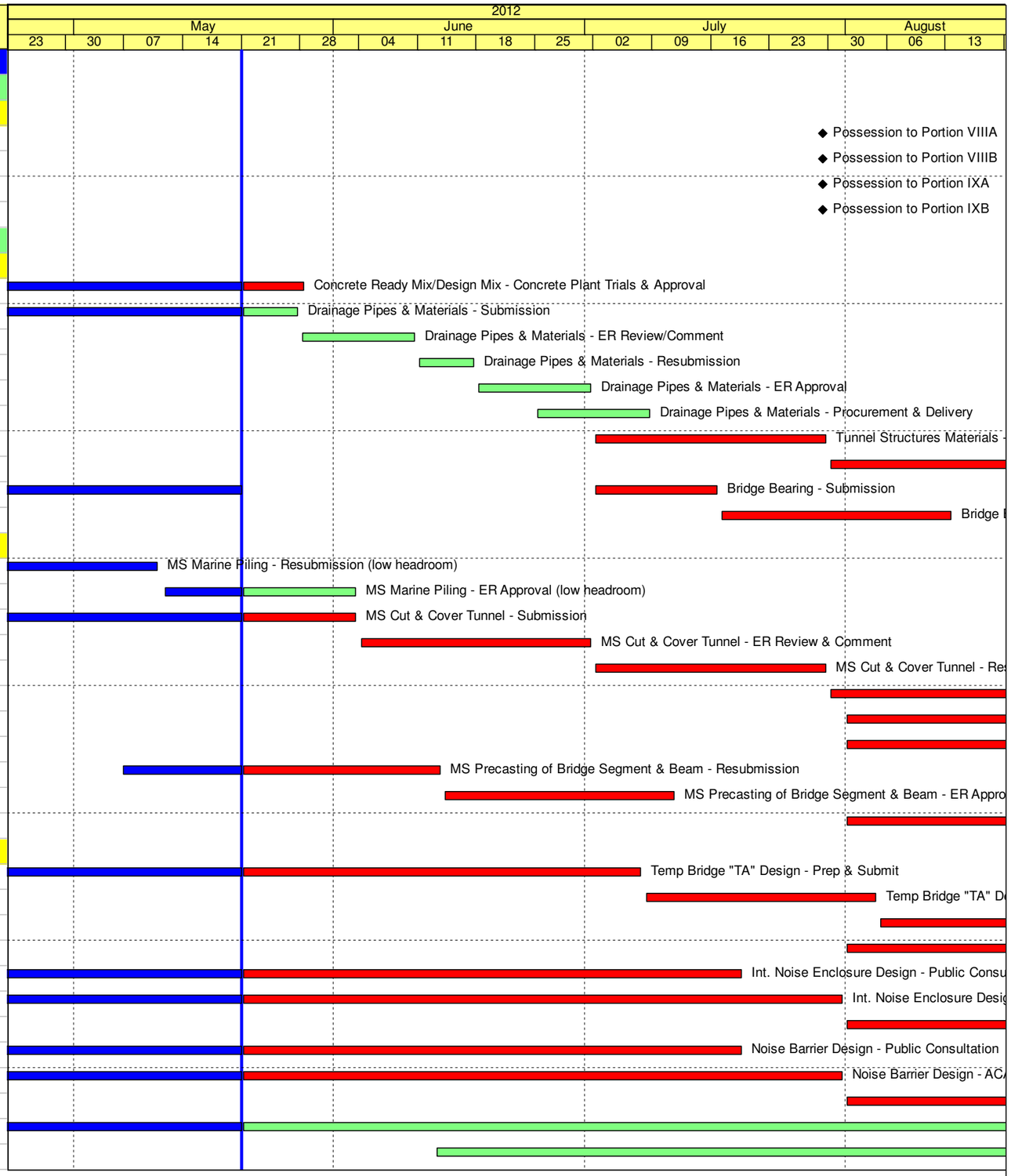
Contract no. HK/2010/06
Wan Chai Development Phase II- Central-Wan Chai Bypass over MTR Tsuen Wan Line

GAMMON-LEADER JV

Works Schedule of Marine Works for EP-356/2009

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

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

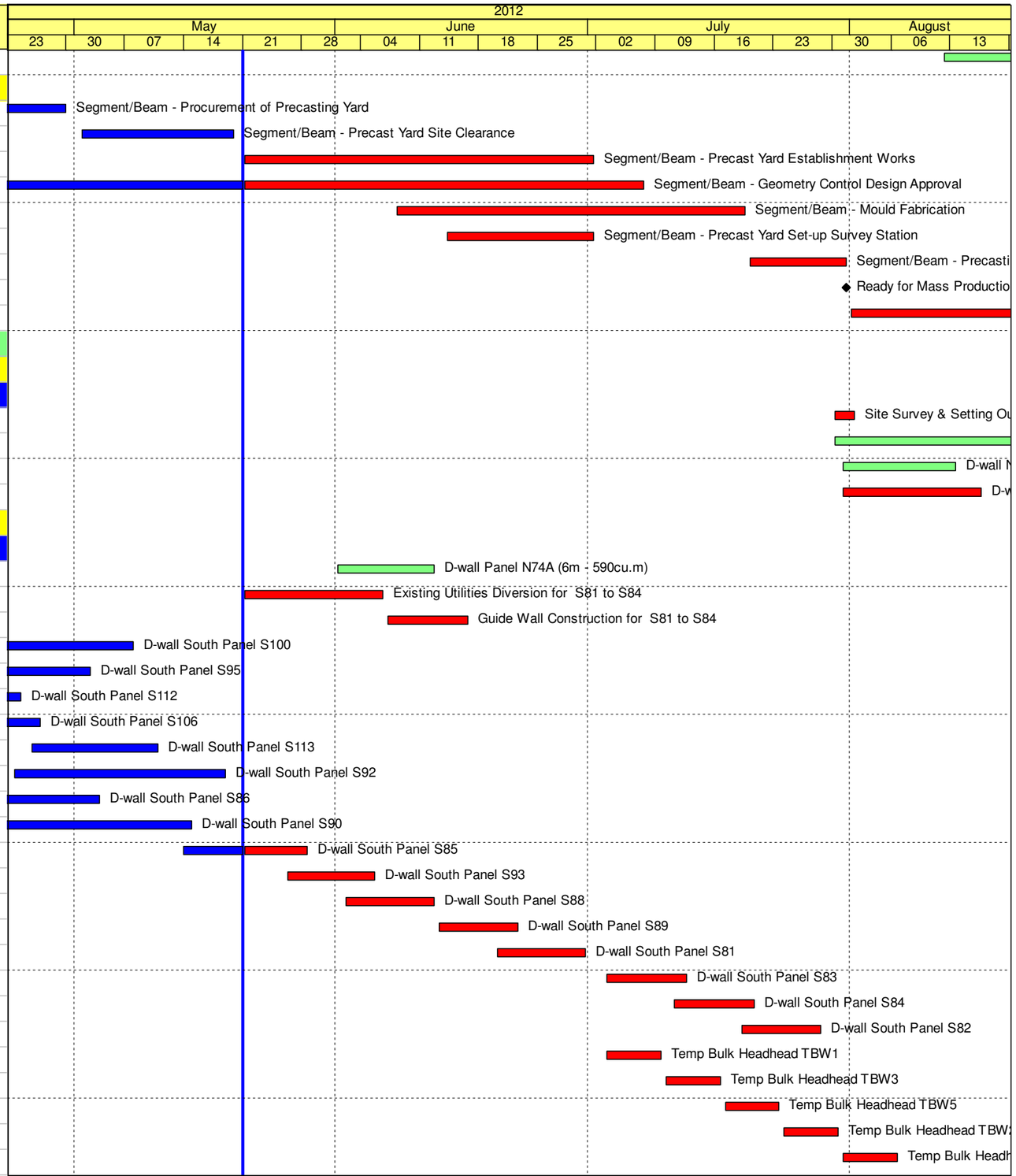


Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

Contract HY/2009/19

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

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

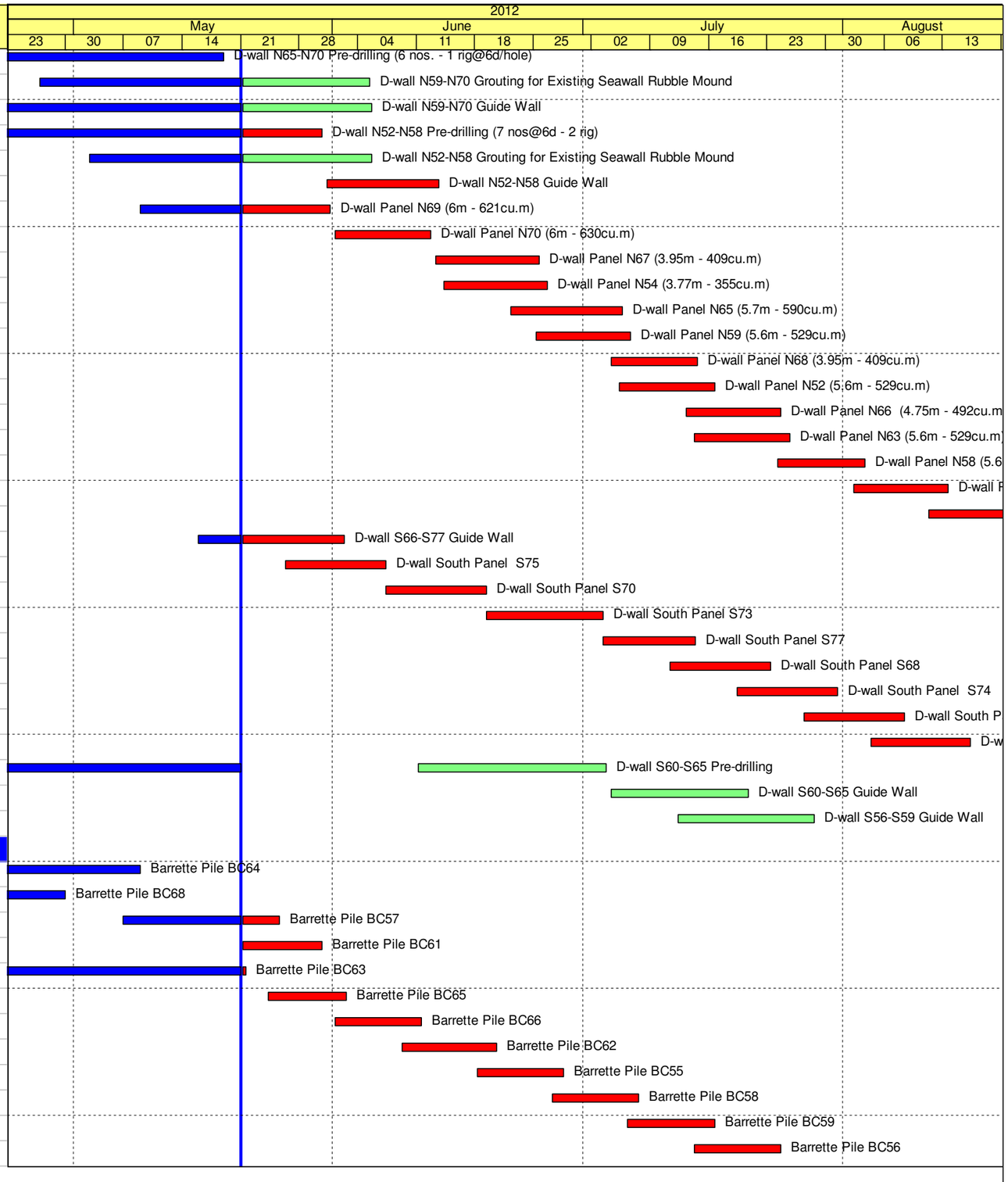


Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Contract HY/2009/19

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

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



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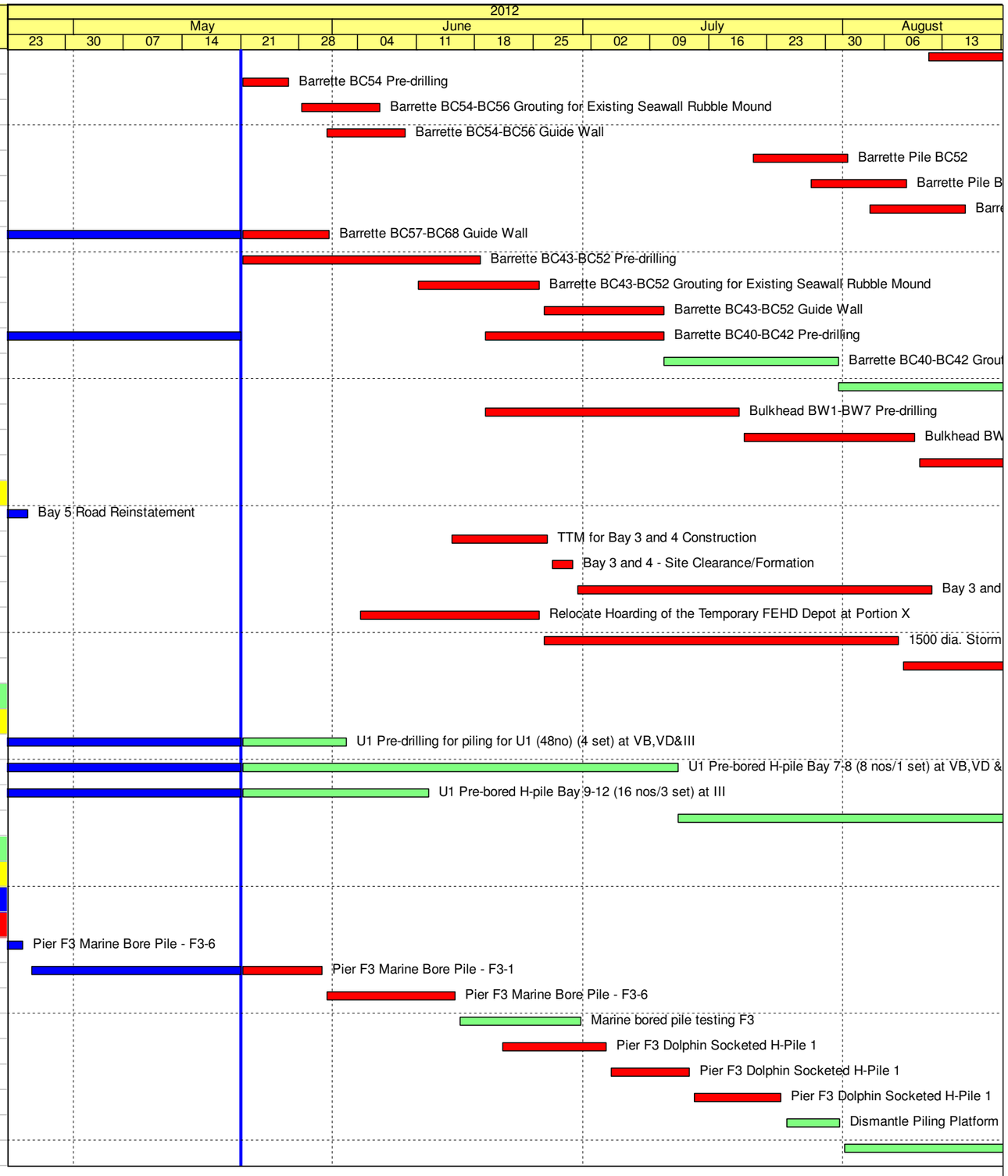
Milestone

Contract HY/2009/19

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

Activity ID	Activity Name	Rem Dur	Start	Finish
0522-2210.54	Barrette Pile BC54	9	11-Aug-12	21-Aug-12
0522-2185	Barrette BC54 Pre-drilling	6	21-May-12*	26-May-12
0522-2190	Barrette BC54-BC56 Grouting for Existing Seawall Rubble Mound	9	28-May-12	06-Jun-12
0522-2200	Barrette BC54-BC56 Guide Wall	9	31-May-12	09-Jun-12
0522-2210.52	Barrette Pile BC52	10	21-Jul-12	01-Aug-12
0522-2210.50	Barrette Pile BC50	10	28-Jul-12	08-Aug-12
0522-2210.51	Barrette Pile BC51	10	04-Aug-12	15-Aug-12
0522-2240	Barrette BC57-BC68 Guide Wall	10	23-Mar-12 A	31-May-12
0522-2270	Barrette BC43-BC52 Pre-drilling	25	21-May-12	18-Jun-12
0522-2280	Barrette BC43-BC52 Grouting for Existing Seawall Rubble Mound	12	11-Jun-12	25-Jun-12
0522-2290	Barrette BC43-BC52 Guide Wall	12	26-Jun-12	10-Jul-12
0522-2320	Barrette BC40-BC42 Pre-drilling	17	09-Apr-12 A	10-Jul-12
0522-2330	Barrette BC40-BC42 Grouting for Existing Seawall Rubble Mound	18	10-Jul-12	31-Jul-12
0522-2340	Barrette BC40-BC42 Guide Wall	18	31-Jul-12	21-Aug-12
0522-2360	Bulkhead BW1-BW7 Pre-drilling	25	19-Jun-12	19-Jul-12
0522-2370	Bulkhead BW1-BW7 Grouting for Existing Seawall Rubble Mound	18	20-Jul-12	09-Aug-12
0522-2380	Bulkhead BW1-BW7 Guide Wall	12	10-Aug-12	23-Aug-12
05.3 - Box Culvert T1				
0530-3010	Bay 5 Road Reinstatement	0	28-Mar-12 A	25-Apr-12 A
0530-3020	TTM for Bay 3 and 4 Construction	9	15-Jun-12*	26-Jun-12
0530-3030	Bay 3 and 4 - Site Clearance/Formation	3	27-Jun-12	29-Jun-12
0530-3040	Bay 3 and 4 - Trench excavation	36	30-Jun-12	11-Aug-12
0530-3210	Relocate Hoarding of the Temporary FEHD Depot at Portion X	18	04-Jun-12*	25-Jun-12
0530-3220	1500 dia. Storm Drain - Sheetpiles	36	26-Jun-12	07-Aug-12
0530-3230	1500 dia. Storm Drain - Excavation S79 to S94	15	08-Aug-12	24-Aug-12
06 - SECTION 3 OF THE WORKS				
06.2 - Box Culvert U1				
0620-2340	U1 Pre-drilling for piling for U1 (48no) (4 set) at VB,VD&III	12	10-Jan-12 A	02-Jun-12
0620-2345	U1 Pre-bored H-pile Bay 7-8 (8 nos/1 set) at VB,VD & III	43	12-Apr-12 A	12-Jul-12
0620-2355	U1 Pre-bored H-pile Bay 9-12 (16 nos/3 set) at III	20	05-Apr-12 A	12-Jun-12
0620-2350	U1 Pre-bored H-pile Bay 1-6 (24 nos/3 set) at VB	46	12-Jul-12	04-Sep-12
10 - SECTION X OF THE WORKS				
10.1 - E/B Bridges (Bridge D, E and F)				
10.1.1 - Marine Pier Construction				
Pier F03 to F15				
1011-1760.60	Pier F3 Marine Bore Pile - F3-6	0	26-Mar-12 A	25-Apr-12 A
1011-1760.70	Pier F3 Marine Bore Pile - F3-1	9	26-Apr-12 A	30-May-12
1011-1760.80	Pier F3 Marine Bore Pile - F3-6	14	31-May-12	15-Jun-12
1011-2090	Marine bored pile testing F3	12	16-Jun-12	30-Jun-12
1011-1750.10	Pier F3 Dolphin Socketed H-Pile 1	9	21-Jun-12	03-Jul-12
1011-1750.20	Pier F3 Dolphin Socketed H-Pile 1	9	04-Jul-12	13-Jul-12
1011-1750.30	Pier F3 Dolphin Socketed H-Pile 1	9	14-Jul-12	24-Jul-12
1011-1990	Dismantle Piling Platform at Pier F3	6	25-Jul-12	31-Jul-12
1011-2150	F3 Pile Cap Construction	18	01-Aug-12	21-Aug-12

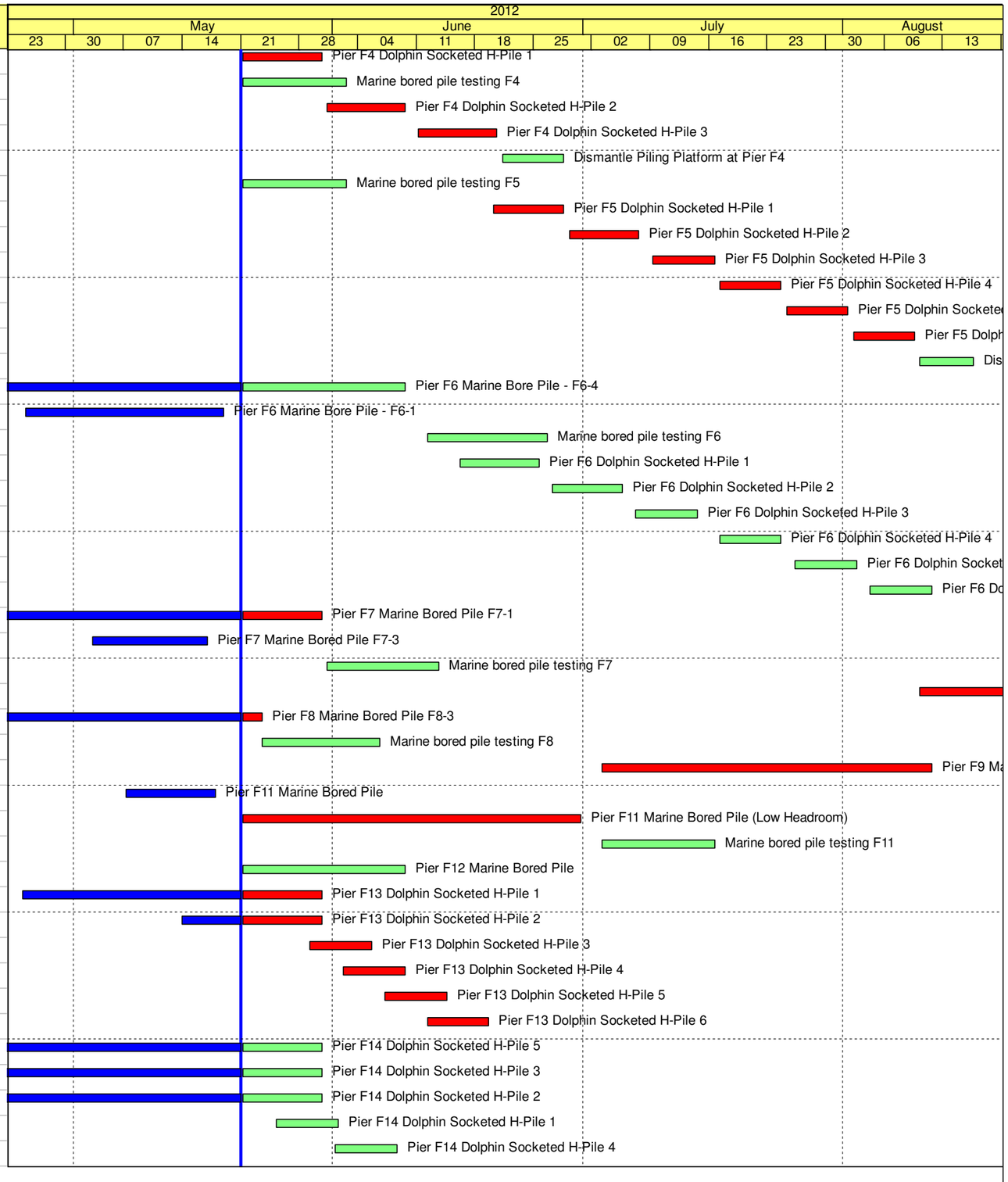


Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Contract HY/2009/19

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

Activity ID	Activity Name	Rem Dur	Start	Finish
1011-1850.10	Pier F4 Dolphin Socketed H-Pile 1	9	21-May-12*	30-May-12
1011-2095	Marine bored pile testing F4	12	21-May-12	02-Jun-12
1011-1850.20	Pier F4 Dolphin Socketed H-Pile 2	9	31-May-12	09-Jun-12
1011-1850.30	Pier F4 Dolphin Socketed H-Pile 3	9	11-Jun-12	20-Jun-12
1011-2000	Dismantle Piling Platform at Pier F4	6	21-Jun-12	28-Jun-12
1011-2100	Marine bored pile testing F5	12	21-May-12	02-Jun-12
1011-1810.10	Pier F5 Dolphin Socketed H-Pile 1	7	20-Jun-12	28-Jun-12
1011-1810.20	Pier F5 Dolphin Socketed H-Pile 2	7	29-Jun-12	07-Jul-12
1011-1810.30	Pier F5 Dolphin Socketed H-Pile 3	7	09-Jul-12	16-Jul-12
1011-1810.40	Pier F5 Dolphin Socketed H-Pile 4	7	17-Jul-12	24-Jul-12
1011-1810.50	Pier F5 Dolphin Socketed H-Pile 5	7	25-Jul-12	01-Aug-12
1011-1810.60	Pier F5 Dolphin Socketed H-Pile 6	7	02-Aug-12	09-Aug-12
1011-2010	Dismantle Piling Platform at Pier F5	6	10-Aug-12	16-Aug-12
1011-1800.30	Pier F6 Marine Bore Pile - F6-4	18	28-Feb-12 A	09-Jun-12
1011-1800.40	Pier F6 Marine Bore Pile - F6-1	0	25-Apr-12 A	19-May-12 A
1011-2105	Marine bored pile testing F6	12	12-Jun-12	26-Jun-12
1011-1790.10	Pier F6 Dolphin Socketed H-Pile 1	7	16-Jun-12	25-Jun-12
1011-1790.20	Pier F6 Dolphin Socketed H-Pile 2	7	27-Jun-12	05-Jul-12
1011-1790.30	Pier F6 Dolphin Socketed H-Pile 3	7	07-Jul-12	14-Jul-12
1011-1790.40	Pier F6 Dolphin Socketed H-Pile 4	7	17-Jul-12	24-Jul-12
1011-1790.50	Pier F6 Dolphin Socketed H-Pile 5	7	26-Jul-12	02-Aug-12
1011-1790.60	Pier F6 Dolphin Socketed H-Pile 6	7	04-Aug-12	11-Aug-12
1011-1920.30	Pier F7 Marine Bored Pile F7-1	9	11-Apr-12 A	30-May-12
1011-1920.40	Pier F7 Marine Bored Pile F7-3	0	03-May-12 A	17-May-12 A
1011-2110	Marine bored pile testing F7	12	31-May-12	13-Jun-12
1011-1910	Pier F7 Dolphin Socketed H-Pile (6 nos.)	42	10-Aug-12	27-Sep-12
1011-1864.40	Pier F8 Marine Bored Pile F8-3	3	31-Mar-12 A	23-May-12
1011-2115	Marine bored pile testing F8	12	23-May-12	06-Jun-12
1011-1806	Pier F9 Marine Bored Pile (Low Headroom)	35	03-Jul-12	11-Aug-12
1011-1780	Pier F11 Marine Bored Pile	0	07-May-12 A	18-May-12 A
1011-1781	Pier F11 Marine Bored Pile (Low Headroom)	35	21-May-12	30-Jun-12
1011-2130	Marine bored pile testing F11	12	03-Jul-12	16-Jul-12
1011-1825	Pier F12 Marine Bored Pile	18	21-May-12	09-Jun-12
1011-1890.10	Pier F13 Dolphin Socketed H-Pile 1	9	25-Apr-12 A	30-May-12
1011-1890.20	Pier F13 Dolphin Socketed H-Pile 2	9	14-May-12 A	30-May-12
1011-1890.30	Pier F13 Dolphin Socketed H-Pile 3	7	29-May-12	05-Jun-12
1011-1890.40	Pier F13 Dolphin Socketed H-Pile 4	7	02-Jun-12	09-Jun-12
1011-1890.50	Pier F13 Dolphin Socketed H-Pile 5	7	07-Jun-12	14-Jun-12
1011-1890.60	Pier F13 Dolphin Socketed H-Pile 6	7	12-Jun-12	19-Jun-12
1011-1782.10	Pier F14 Dolphin Socketed H-Pile 5	9	02-Apr-12 A	30-May-12
1011-1782.20	Pier F14 Dolphin Socketed H-Pile 3	9	07-Apr-12 A	30-May-12
1011-1782.30	Pier F14 Dolphin Socketed H-Pile 2	9	14-Apr-12 A	30-May-12
1011-1782.40	Pier F14 Dolphin Socketed H-Pile 1	7	25-May-12	01-Jun-12
1011-1782.50	Pier F14 Dolphin Socketed H-Pile 4	7	01-Jun-12	08-Jun-12



Remaining Level of Effort
Actual Level of Effort
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Milestone

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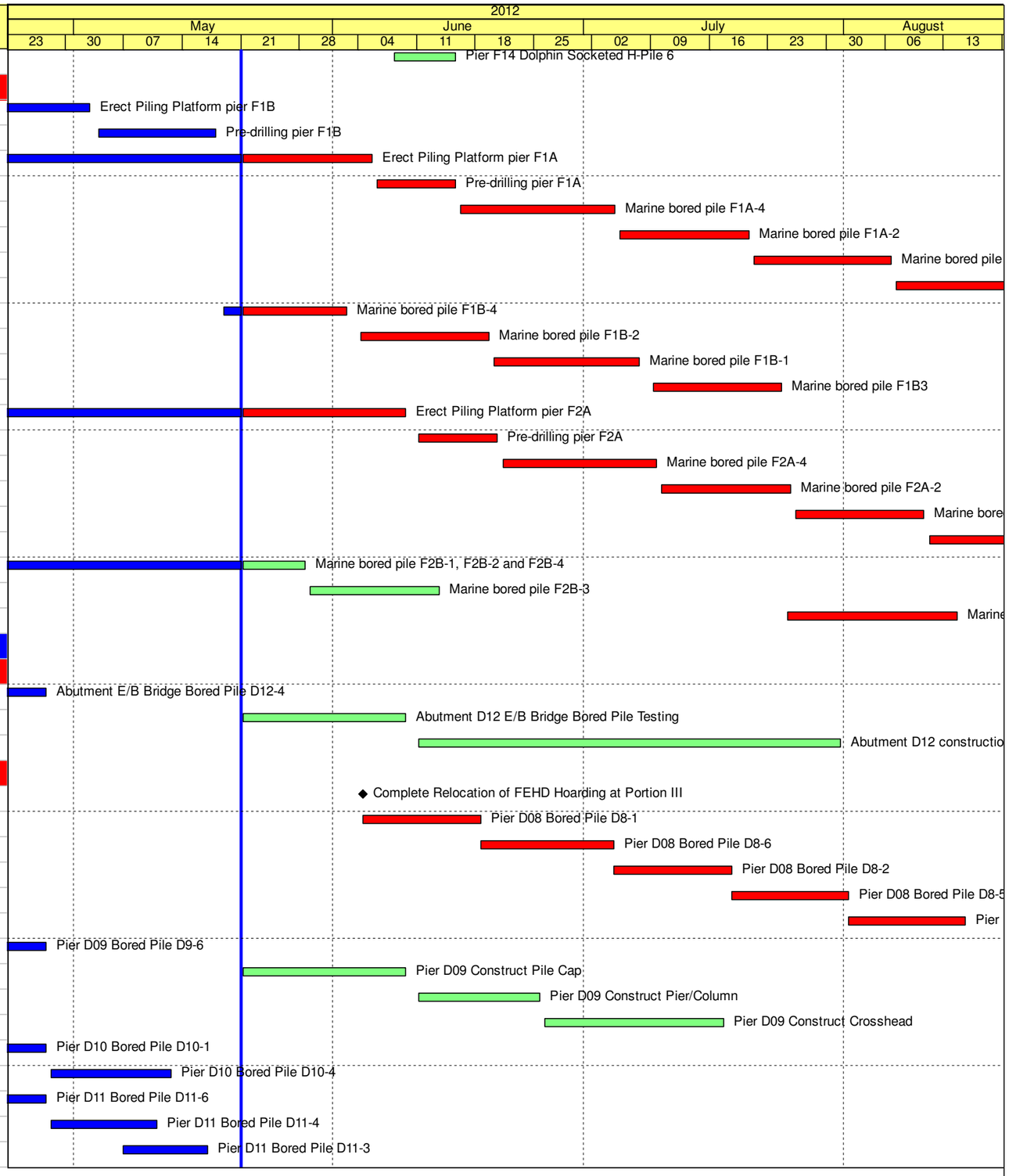
Three Month Rolling Programme (21 MAY 2012 to 20 AUG 2012)

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



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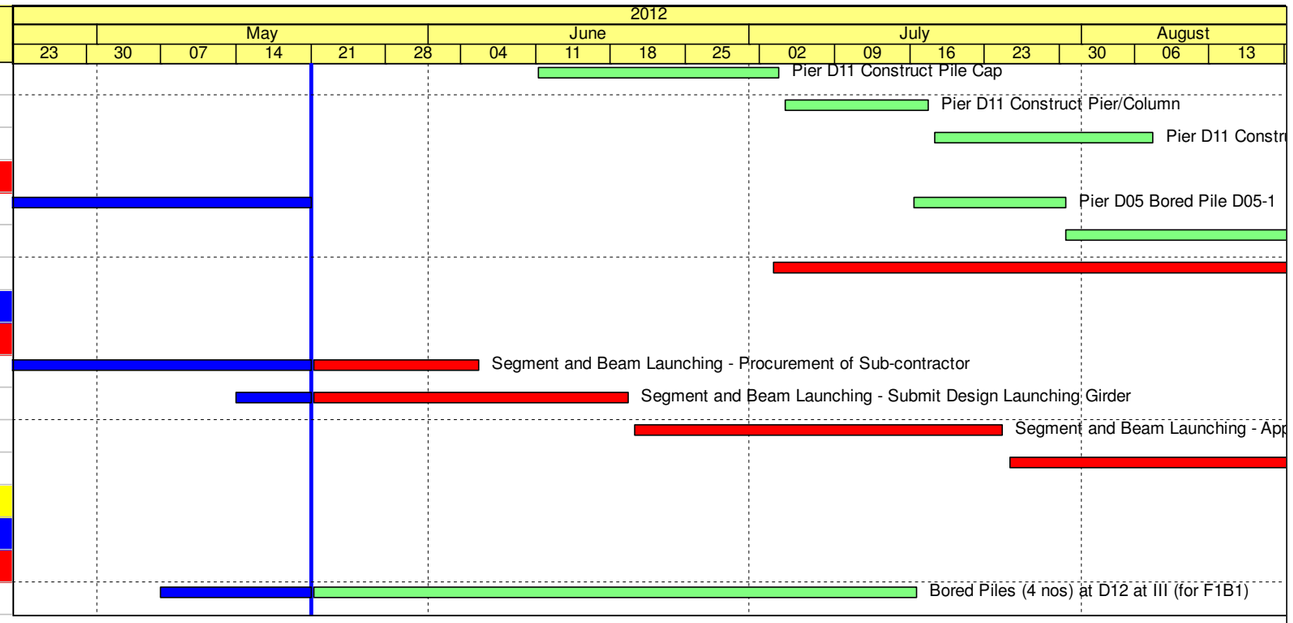
Activity ID	Activity Name	Rem Dur	Start	Finish
1012-1190	Pier D11 Construct Pile Cap	18	11-Jun-12	03-Jul-12
1012-1200	Pier D11 Construct Pier/Column	12	04-Jul-12	17-Jul-12
1012-1210	Pier D11 Construct Crosshead	18	18-Jul-12	07-Aug-12
Pier D05 to D07				
1012-1290.20	Pier D05 Bored Pile D05-1	13	02-Dec-11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



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